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An Annotated Bibliography of Scientific Literature, Records, and Management Plans Pertaining to the Recovery and Conservation of the Kirtland's Warbler (*Setophaga kirtlandii*)

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Abstract

Kirtland's warblers primarily nest in northern Lower Michigan and mostly winter in the central islands of The Bahamas. They were federally delisted under the U.S. Endangered Species Act in October 2019 after 60 years of conservation and management efforts. A search was conducted for all available literature pertaining to Kirtland's warblers, including historical and current information on conservation efforts, published scientific articles, dissertations, books, newspaper articles, unpublished agency reports and observation data, and personal correspondences pertaining to management. An annotated list of citations was compiled with a temporal scope ranging from 1852 to the present. This annotated bibliography is intended to be a reference for members of the scientific community, land managers, policymakers, and conservationists who are interested in the history of Kirtland's warbler recovery efforts, Kirtland's warbler ecology, and its jack pine ecosystem breeding habitat in northern Michigan. The literature is organized into eight broad categories: (1) life history, which is further broken down into five subcategories; (2) physical description; (3) breeding habitat; (4) winter habitat; (5) census and monitoring; (6) recovery plans and agreements; (7) conservation process through the years; and (8) human dimensions. The annotated bibliography is available at <https://doi.org/10.2737/NRS-GTR-214> as a printable document.

Keywords: Kirtland's warbler, full cycle demography and migration, nest parasitism and predation, jack pine breeding habitat, scrub-shrub wintering habitat, recovery planning and monitoring, human dimensions

Cover photo: Color-banded male Kirtland's warbler (*Setophaga kirtlandii*). Courtesy photo by Ron Austing. See description of photo on next page.

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An Annotated Bibliography of Scientific Literature, Records, and Management Plans Pertaining to the Recovery and Conservation of the Kirtland's Warbler (*Setophaga kirtlandii*)

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Cover Photo Description: The cover photo of a color-banded male Kirtland's warbler (*Setophaga kirtlandii*) was taken by Ron Austing in Oscoda County, Michigan, in June 2004. This photo was chosen because of the bird's movement history between wintering and breeding habitat. Initially banded on Eleuthera, The Bahamas, on 19 March 2004, the male was recaptured less than 3 months later on 9 June 2004 on a pin oak tree within its jack pine breeding habitat in northern Michigan. This male was the first Kirtland's warbler recorded singing in The Bahamas and is likely the most photographed Kirtland's warbler on the wintering grounds. The male represents the importance of taking a full life-cycle approach to species conservation. While this Kirtland's warbler is not perched here in the typical jack pine, pin oaks are an important feature of the jack pine ecosystem. If you set up a mist net next to an oak tree in their jack pine habitat, you are almost guaranteed to capture a bird.

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Singing male Kirtland's warbler taken in Adams County, Wisconsin, on 7 June 2008. U.S. Fish and Wildlife Service photo by Joel Trick.

INTRODUCTION

After 60 years of state and federal conservation and management efforts beginning in 1957, the Kirtland's warbler (*Setophaga kirtlandii*) population was federally delisted under the U.S. Endangered Species Act in October 2019. Initial federal listing was in 1966 under the Endangered Species Preservation Act. The 1973 Endangered Species Act required a recovery plan that provided direction and oversight to land managers (Byelich et al. 1976, as listed in section VI of the publication here). This recovery plan focused on the early limiting factors on the population and identified five actions to continue until the goal of a self-sustaining population of 1,000 nesting pairs of Kirtland's warblers could be established. These actions included: (1) monitoring singing males and the amount and quality of suitable nesting habitat within their core breeding range in northern Lower Michigan; (2) protecting the population from human disturbance, habitat destruction and degradation, predators, and parasites; (3) determining the feasibility and desirability of reintroduction techniques; (4) defining winter and migration habitat requirements, availability, and status; and (5) managing nesting habitat to ensure an annual minimum of 12,141 ha of suitably aged habitat is available on the landscape to sustain the population goal (Kepler et al. 1996, as listed in section III of the publication here). The primary land agencies involved in recovery actions for the Kirtland's warbler remain the USDA Forest Service including the Huron-Manistee National Forest and the Hiawatha National Forest, Michigan Department of Natural Resources, USDI Fish and Wildlife Service, and Michigan Department of Military and Veterans Affairs, Camp Grayling. The recovery goal of 1,000 breeding pairs was reached in 2001 and has been sustained since then through cooperative conservation.

The Kirtland's warbler is considered a "conservation-reliant" species, meaning that its continued presence on the landscape requires continued management intervention. In 2015, after the population goal was sustained for 14 years and the threats to the population were determined to be adequately managed to prevent substantial change post-delisting, a memorandum of understanding (MOU) was signed by the primary land management agencies to clarify long-term agency commitment to Kirtland's warbler conservation (U.S. Fish and Wildlife Service et al. 2016, as listed in section VI of the publication here). This MOU was deemed essential prior to official delisting to prevent the population declining and becoming imperiled again. The coordination of Kirtland's warbler conservation and management transitioned from the Recovery Team to the Kirtland's Warbler Conservation Team (KWCT), which consists of public and private partners working together to preserve, protect, and expand the Kirtland's warbler population (<https://www.kwconservation.org/>). The KWCT continues to foster coordination and communication among partners to develop business and management plans ensuring the future persistence of this conservation-reliant warbler. Currently, the KWCT consists of breeding range, nonbreeding range, and human dimensions subcommittees that continue to focus on some of the same conservation actions identified in the recovery plan such as habitat management, brown-headed cowbird control, population monitoring, public awareness of the conservation need, and research priorities. The KWCT developed a business plan that includes the identification of funding needs to implement priority actions, establishment of multiple trust funds, and planning of future fundraising efforts. This public-private partnership is the first of its kind in the country and serves as a model for future conservation of rare and conservation-reliant species both before and after delisting.

PURPOSE

This annotated bibliography is intended to be a reference for members of the scientific community, land managers, policymakers, and conservationists who are interested in the history of the Kirtland's warbler recovery efforts, Kirtland's warbler ecology, and its jack pine ecosystem breeding habitat in northern Michigan. This bibliography documents the essential roles that science, monitoring, management, and education played in the conservation and recovery of this warbler. Based on the nature and breadth of the integrated programs and efforts it took by multiple agencies to recover this species, a wealth of policy, management, and scientific knowledge has been produced during this effort. This compilation puts the recovery efforts into a historical context by explaining the thinking behind management actions and policy decisions as well as providing the science conducted on the species itself and the jack pine ecosystem, chronologically showing how knowledge advanced throughout recovery efforts. In addition, grouping the vast amount of information into categories helps to guide and inform interested parties on the evolution and progression of information gathered in the category of interest. With a declining species, there is a vast amount of foundational work that must be considered in recovery efforts, and this work can be the basis for future conservation work and research. This bibliography can be used to help managers, researchers, and agencies to strategize into the future. This is particularly important given social, economic, and environmental stochasticity requiring creative problem-solving to sustain the species in a future with existing or new stressors such as climate change and land use changes.

SCOPE AND USE

As a nearly complete compilation of literature and records, this bibliography provides historical and current information on Kirtland's warbler conservation efforts, including published scientific articles, dissertations, books, newspaper articles, unpublished agency reports and observation data, and personal correspondences pertaining to management. Some of the citations are missing information such as year, author, and title. Many sources were photocopies gleaned from files of various agencies and organizations involved with Kirtland's warbler recovery and management. The pertinent information was not always noted on the copies. While efforts were made to fill in the missing information, these efforts were not always successful. This missing information may make it difficult for readers to find these sources, but hard copies and portable document format (PDF) files are available from the lead author at mepetrucha@hotmail.com.

This bibliography is currently available as a downloadable and printable document through Treesearch (<https://doi.org/10.2737/NRS-GTR-214>). An archive of hard copies and a database of electronic files of the Kirtland's warbler literature are being created and will be publicly available at a future date. The references included in the bibliography are also available as a downloadable Endnote™ database or basic text file.

At the time of publication, this bibliography contained almost 2,200 sources of literature organized into eight broad categories: (1) life history; (2) physical description; (3) breeding habitat; (4) winter habitat; (5) census and monitoring; (6) recovery plans and agreements; (7) conservation process through the years; and (8) human dimensions. Within the life history category, there are five subcategories: breeding biology, nest parasitism and predation, winter biology, full annual life cycle, and migration. Records pertaining to multiple aspects of the Kirtland's warbler may be found in more than one category. Annotated citations are listed alphabetically by author within each category. Each scientific study listed in the bibliography is followed by a concise summary of primary results.

CATEGORY DESCRIPTIONS

I. Life History

The Kirtland's warbler is a long-distance, neotropical, migratory bird, which is defined as breeding in the United States or Canada during the summer and wintering in the neotropics of Mexico, Central and South America, or the Caribbean Islands. Kirtland's warblers nest on the ground in dense, young (3–20 years) jack pine (*Pinus banksiana*) forests on nutrient-poor and well-drained soils in northern Lower Michigan, with smaller populations in Michigan's Upper Peninsula, Wisconsin, and Ontario. Kirtland's warblers arrive on the nesting grounds in early to mid-May and leave these areas from late August through September. The wintering grounds are primarily scrub habitats of the central islands of the Bahamian archipelago. Much of the research and management efforts were focused on understanding the species' life history, so we have divided records into five subcategories.

I.A. Breeding Biology

Breeding biology is the most studied aspect of Kirtland's warblers because not much was known about their life history when they were first discovered. The species was first discovered in 1851 during spring migration near Cleveland, Ohio, but it was not until 1903 that its nesting range in northern Lower Michigan was discovered. This section includes papers pertaining to all aspects of Kirtland's breeding biology from arrival on the breeding grounds to the post-fledging period prior to fall migration. Topics include territory establishment and size, pair formation, mating systems, mating success with and without cowbird parasitism, and productivity. Also included in this section are summer (1 June to 31 July) occurrence records, nesting locations, and dispersal to new breeding grounds. The nesting period is represented by subjects including nest construction, materials, placement, number of eggs, nesting success, and incubation, brooding, and fledging periods. Papers on movement during the breeding season and post-breeding dispersal and occurrence are also included. Topics on diet and foraging during the breeding period, genetics, longevity, and overviews of breeding life history may be found here.

I.B. Nest Parasitism and Predation

Low productivity due to nest parasitism by the brown-headed cowbird (*Molothus ater*) was identified as one of the primary contributing factors for the decline of the Kirtland's warbler. Brown-headed cowbirds reproduce by laying eggs in other birds' nests, and when they hatch they may roll the host eggs out of the nest or become the primary recipient of food often at the expense of the host's young. The cowbirds evolved in the prairie regions and followed agricultural development into Michigan in the late 1800s after the forests were harvested. As a result, Kirtland's warblers had no evolutionary coping mechanism. A major portion of this category contains reports on results of the cowbird control program during the breeding season that began in 1972. Additional papers cover the response of cowbirds to Kirtland's warbler habitat management and cowbird removal, impacts of reducing cowbird removal efforts, and cowbird management. Also included are the impacts of nest parasitism on Kirtland's warblers and other members of the jack pine community, cowbird biology and evolution, the nest parasitism process, and the building and operating of cowbird traps.

I.C. Winter Biology

Kirtland's warblers winter primarily on the central islands of the Bahamian archipelago. Until recently, little information was known of their winter biology. As such, most of the papers in this section are winter occurrence and distribution records. Other papers cover sex and

age differences in site fidelity, food resource tracking, body condition, territory size, and movement. Also included are studies on stable isotopes used to determine winter distribution, their winter diet and insect and fruit abundance, training efforts of local biologists to perform field studies, and the effects of hurricanes on birds.

I.D. Full Annual Life Cycle

Understanding and protecting the full annual life cycle of long-distance, neotropical migrating birds such as the Kirtland's warbler is necessary in the conservation and recovery of imperiled species. This section includes papers covering the connectivity of several or all aspects of Kirtland's warbler life history (breeding biology, winter biology, and migration). Many of the papers provide an overview of Kirtland's warbler life history, including papers on long-term population viability incorporating the full annual cycle as well as the influence of climate change, impact of changing environments on the gut microbiome, and carry-over effects of winter climate on spring arrival date and reproductive success. Several publications involving the same individual Kirtland's warbler on both the wintering and breeding areas are included. Other topics include telecoupling, threats and risks during the full annual life cycle, and conjecture on Kirtland's warbler status before recorded history.

I.E. Migration

Migration continues to be the least understood process of long-distance migrants such as the Kirtland's warbler. Despite the great volume of papers in this category, migration continues to be an area of interest and an information gap in Kirtland's warbler natural history. Most of the sources are Kirtland's warbler spring and fall migration records ranging from the 1852 publication of the type specimen to the present time. Some information included in these records are locations, migration stopover habitat, migration behavior, and foraging and food consumed. The migration records come from ornithological journals, bird records committee reports, state bird books, and other publications along with a few nonpublished records. There are also papers on spring and fall migration routes, migration threats and hazards, duration of migration, and stopover locations.

II. Descriptions and Physical Appearance

The Kirtland's warbler is a blue-gray-backed warbler with a yellow underside that sings from the tops of jack pine trees or standing snags. It pumps its tail as it searches for insects and blueberries while hopping on the ground or from tree to tree. This section covers physical descriptions including body measurements of all ages and plumage characteristics during all seasons. Many of the sources are identification keys and bird guides. Vocalizations are described including song rates, times, singing locations, and sonograms. Papers on other species misidentified as the Kirtland's warbler in the winter such as Bahama and magnolia warblers can be found in here. Other papers describe their behavior, flight pattern, general range, and morphology.

III. Breeding Habitat

The availability of suitable breeding habitat was recognized as one of the primary contributing factors for the Kirtland's warbler population decline and sustained low numbers. Accordingly, breeding habitat characteristics are the second most studied aspect of Kirtland's warbler conservation. Historically, fire played an important role in creating these young jack pine forests, but with fire suppression, suitable nesting habitat on the landscape became limited. Management began to focus on creating nesting habitat through artificial regeneration such as plantations. Consequently, many of the studies included in this section compare fire regenerated habitat to artificially regenerated habitat. While most of the papers refer to habitat

in the northern Lower Peninsula of Michigan, habitat in the Upper Peninsula, Wisconsin, Ontario, and Minnesota are also represented.

This section contains descriptions of Kirtland's warbler breeding habitat and jack pine ecosystems, papers and guides on habitat management and jack pine silviculture, habitat accomplishment reports, and comparisons of natural and artificial regeneration of jack pine. Results from studies of stand size and available habitat compared to population size, soil nutrients, jack pine growth, wildfire, jack pine regeneration methods, plant succession and floristic composition, snags, and other wildlife species using jack pine ecosystems created through habitat management are included. Records referencing jack pine management that is guided by regenerating adequate amounts of breeding habitat using natural fire and prescribed burns, planting, and seeding to sustain the population are included. Other subjects contained in this section are the importance of the landscape ecosystem approach in Kirtland's warbler habitat management and landscape ecosystem descriptions, the role of fire, impacts of climate change, monetary yields and costs of habitat management, emissions of burning versus mechanical regeneration, Kirtland's warbler use of red pine, establishment of preserves for Kirtland's warblers, and vegetation changes since European colonization.

IV. Winter Habitat

Kirtland's warblers primarily winter on the central islands of Bahama archipelago in low coppice, a broadleaf hardwood forest less than 4.6 meters in height. Until recently, little was known of their winter habitat. This section is comprised of papers on Kirtland's warbler wintering habitat descriptions, including vegetation composition, distribution, and use by Kirtland's warblers. Papers on the effects of hurricanes, goat grazing, fire, and human disturbance are presented. Other topics covered are habitat creation and maintenance, effects of habitat destruction, fruit abundance, the impacts of climate change, and Caribbean pine.

V. Census and Monitoring

The first decennial Kirtland's Warbler Census was conducted in 1951, but it became an annual census in 1972 after a 60 percent decline was documented in 1971. Most of the records in this category are Kirtland's Warbler Census, survey, and monitoring reports from Michigan, Wisconsin, Ontario, Quebec, and Minnesota. Other topics include Kirtland's Warbler Census history, methodology, and instructions, along with the relationship of population to habitat amount and conditions, and comparisons and evaluations of survey methods.

VI. Recovery Plans and Agreements

This section is comprised of federal, state, and local Kirtland's warbler recovery plans, recovery plan revisions, post-delisting monitoring plans, and habitat and other management plans. Included are interagency and cooperative agreements and memorandums of understanding between agencies and other groups defining management roles, funding agreements, amendments, restrictions, and work sharing. Also found in this category are methods for protecting essential breeding habitat, creation of management areas, economic analysis, study and work plans, and biological opinions.

VII. Conservation Process Through the Years

Given that the Kirtland's Warbler Recovery Team was the first recovery team ever appointed under the 1973 Endangered Species Act and that the species is one of the first conservation-reliant vertebrate species removed from the list, this section is particularly important from

a conservation history perspective. This section consists of Kirtland's warbler conservation and recovery topics such as histories of the Kirtland's Warbler Advisory Committee, Kirtland's Warbler Recovery Team, and Kirtland's Warbler Conservation Team. Other papers cover pre- and post-Endangered Species Act recovery efforts, reintroduction and cross-fostering pilot studies, state and federal government recovery policies, Endangered Species Act listing and delisting documents, instructions for creating a recovery team and writing a recovery plan, establishment of Kirtland's warbler management areas, conservation reliance, and summaries of recovery efforts.

VIII. Human Dimensions

This section contains papers, reports, and articles pertaining to the human and social aspects of Kirtland's warbler conservation and management. Information and education reports, plans, surveys, and efforts for Kirtland's warbler tours, the Jack Pine Wildlife Viewing Tour, Kirtland's Warbler Festival, and the Kirtland's Warbler GeoTour are located here. Topics also include biographies, interviews, and obituaries of people involved with Kirtland's warblers along with human interactions and perceptions and efforts to make Kirtland's warbler the Michigan state bird. Public ceremonies and dedications, book reviews, editorials, personal trip accounts, pamphlets and fact sheets, requests for donations or volunteers, and how to find Kirtland's warblers are also included.



Female Kirtland's warbler with young in the nest, taken in Northern Lower Peninsula of Michigan. Courtesy photo by Ron Austing.

THE BIBLIOGRAPHY

I. LIFE HISTORY

I.A. Breeding Biology

Abbott, G.A. 1915. Abbott's collection of North American warblers' eggs. *Oologist*. 32: 129–130.

29 June 1907, 1 nest with 5 eggs collected, Oscoda County, Michigan. [130].

Adams, C.C. 1903. Discovery of the breeding area of Kirtland's warbler in Michigan. *Science, New Series*. 18: 217.

Announces that E.H. Frothingham collected a male Kirtland's warbler in northern Michigan, and that on a subsequent trip to the area, N.A. Wood took specimens of a nest and an egg (see Wood 1903).

AECOM. 2016. Henvey Inlet Wind Energy Centre—environmental assessment—final. Markham, ON.

On 15, 19, and 26 June 2015, 1 singing male Kirtland's warbler; and 15 June 2015, 1 female Kirtland's warbler, Henvey Inlet First Nations, Parry Sound District, Ontario. Also discusses potential impacts on Kirtland's warblers and other sensitive species. (Refer to pages 60–61, 64, 116–117, 120, 124–127, 129, 152, 168, 181, 185, 197, 199, 205.)

Aird, P. 1989. The dispersal of the Kirtland's warbler: myths and reality. In: *At the crossroads—extinction or survival. Proceedings of the Kirtland's warbler symposium*. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 32–39.

Hypothesizes that Kirtland's warblers that migrate to Wisconsin, Michigan's Upper Peninsula, and Canada may be dispersers looking for new breeding grounds, and not strays. Includes conservation note about how migrating warblers are attracted to bright lights.

Aird, P.; Pope, D. 1987. Kirtland's warbler. In: Cadman, M.D.; Eagles, F.J.; Helleiner, F.M., eds. Atlas of the breeding birds of Ontario. Waterloo, ON: Federation of Ontario Naturalists and the Long Point Bird Observatory, University of Waterloo Press: 388–389.

Discusses Kirtland's warbler breeding status in Ontario. Includes maps.

Aird, P.L. 1977. Rare bird found in Ontario. University of Toronto Faculty of Forestry and Landscape Architecture, September 1977.

Provides a brief overview of the Kirtland's warbler and details the search for Kirtland's warblers on Canadian Forces Base Petawawa in Renfrew County, Ontario, including the discovery of a male in 1977.

Allen, J.A. 1903. Notes and news. Auk. 20: 457–460.

Notes that the discovery of the Kirtland's warbler breeding area by N.A. Wood was announced by the University of Michigan Museum.

Allen, J.A. 1904. Kirtland's warbler. The Auk. 21: 506–507.

Reviews Adams 1904 and Wood 1904.

Anderson, W.L.; Storer, R.W. 1976. Factors affecting Kirtland's warbler nesting success. The Jack-Pine Warbler. 54: 105–115.

Concludes that cowbirds are a major threat to Kirtland's warbler nesting success. Other environmental factors also influence nesting success, and within the range evaluated, researcher visits had no effect on nesting success. Suggestions for management are also provided.

Anich, N.; Ward, P. 2014. Kirtland's warbler conspecific playback experiment 2014 report.

A conspecific attraction was used to attempt to lure Kirtland's warblers to suitable but unoccupied habitats in Wisconsin. Four sites with 3 callboxes per site were deployed across northern Wisconsin. One male was attracted to a site in Bayfield County and color-banded.

Anich, N.M. 2010. Monitoring the Kirtland's warbler population in Adams County, Wisconsin. The Passenger Pigeon. 72(2): 143–150.

A personal account documenting in detail the 2009 Kirtland's warbler field season in Adams County, Wisconsin. The first male was found 12 May and the first female on 19 May. In Adams County, 10 males, 10 females, and 10 nests were found. At least 6 of the nests were successful in producing an estimated 23 young. Also reports a nest in Marinette County fledged 3 young. The breeding habitat is described.

Anich, N.M.; North, E.; Ward, M.P. 2016. Kirtland's warbler conspecific playback experiment 2016 Report. Wisconsin Department of Natural Resources.

Callboxes were deployed for the third consecutive year at 2 sites in opposite corners of northern Wisconsin in Bayfield and Marinette Counties to attract Kirtland's warblers. In Bayfield County, 3 males and 1 female were detected, and 1 nest fledged 5 young. In Marinette County, 4 males and 3 females were detected at the playback stands, and 2 of 3 nests succeeded, fledging 10 young. Concludes that conspecific playbacks appear to be an effective means of establishing populations of Kirtland's warblers in Wisconsin, despite the great distances from source populations.

Anich, N.M.; Ward, M.P. 2017. Using audio playback to expand the geographic breeding range of an endangered species. Diversity and Distributions. 23: 1499–1508. <https://doi.org/10.1111/ddi.12635>.

An attempt to extend the breeding range of Kirtland's warblers in Wisconsin was made by broadcasting conspecific songs at 2 sites that were far from source populations but had a history of intermittent occupancy. Over the course of 3 years, 7 males and 4 females occupied the sites. Concludes that conspecific playback demonstrates effectiveness over much greater distances than previously thought and can be a powerful tool to assist recovery of endangered species.

Arnold, E. 1904a. Nesting of Kirtland's warbler in Northern Michigan, 1904. Bulletin of the Michigan Ornithological Club. 5: 67–68.

Reports the taking of the first set of eggs of Kirtland's warbler on 15 June 1904 in Oscoda County. Describes nest, eggs, and locality, and notes that they were deposited in the J.L. Childs collection.

Arnold, E. 1904b. Another nest of Kirtland's warbler. Auk. 21: 487–488.

15 June 1904, 1 male specimen, 1 female specimen, 1 nest, and 4 eggs of Kirtland's warbler collected, Oscoda County, Michigan.

Arnold, E. 1904c. Kirtland's warbler. The Oologist. 21: 171.

15 June 1904, 1 male specimen, 1 female specimen, and 1 nest collected, Oscoda County, Michigan. 29 June 1904, 1 nest and 4 eggs collected, Oscoda County, Michigan. (Erroneously claims credit for the type set of eggs.)

Arnold, E. 1905. The taking of the type set, nest and four eggs of *Dendroica kirtlandi* in Oscoda County, northern Michigan, June 15, 1904, by Edward Arnold of Battle Creek. The Warbler. 1(2): 1–3.

14 June 1904, 1 male Kirtland's warbler, Oscoda County, Michigan. 15 June 1904, 1 male and 1 female Kirtland's warbler specimens, their nest, and 4 eggs collected, Oscoda County [mistakenly claimed as the type set]. The 15 June 1904 specimens (male, female, nest, and eggs) were deposited in the J.L. Childs collection. Describes the eggs, nest and surrounding area, and behavior of the male while singing. Includes color plate of eggs.

Arnold, E. 1911. A short summer outing in Newfoundland, 1911. The Auk. 29: 72–79.

Notes in passing his June 1905–1907 studies of Kirtland's warbler nesting habits in northern Michigan.

Barrows, W.B. 1921. New nesting areas of Kirtland's warbler. Auk. 38: 116–117.

1 June 1920, at least 12 male Kirtland's warblers singing, upper Muskegon River, Clare County, Michigan, no nests found. 20–22 June 1920, 25–30 pairs sight/song records with 1 nest found containing 1 Kirtland's egg and 3 cowbird eggs, with a fourth cowbird egg on the ground, Michigan National Forest, Iosco County, Michigan. Also mentions cowbird parasitism and habitat.

Bart, J.; Bronson, C. 1994. Inclusion of a genetics component in the simulation model for Kirtland's warblers: recommendations to the recovery team. Columbus, OH.

Discusses whether a genetic component should be added to a Kirtland's warbler population simulation program being developed. Recommends that a genetic component not be added at this time.

Bart, J.; Kepler, C.; Sykes, P.; Bocetti, C. 1999. Evaluation of mist-net sampling as an index to productivity in Kirtland's warblers. Auk. 116(4): 1147–51. <https://doi.org/10.2307/4089698>.

Reports on the correlation between mist-net indices and productivity of Kirtland's warblers. The study found that: (1) capture rates were not useful as a direct measure of productivity in Kirtland's warblers; (2) capture rates varied substantially among sites (thus capture rates at a single site did not provide a useful index to population-wide productivity); and (3) population-wide capture rates provided useful indices to population-wide productivity.

Batchelder, C.F. 1891. Warren's revised report on the birds of Pennsylvania. The Auk. 8: 101–103.

Criticizes Warren (1890) for describing Kirtland's warbler as breeding in Pennsylvania without further substantiation. [102].

Baughman, J. 1998. Kirtland's warbler (*Dendroica kirtlandii*): 30 May 1998, Vilas County. The Passenger Pigeon. 60: 358–359.

30 May 1998, 1 singing male Kirtland's warbler, Vilas County, Wisconsin.

Baughman, J.E. 1998. Kirtland's warbler (*Dendroica kirtlandii*): 20 June 1997. The Passenger Pigeon. 60: 98.

20 June 1997, 2 singing male Kirtland's warblers found in 5- to 10-foot-tall jack pine, Vilas County, Wisconsin.

Belter, D. 2007. Kirtland's warbler (*Dendroica kirtlandii*): 7 June 2006, on Cemetery Road, northeast of Black River Falls, Jackson County. The Passenger Pigeon. 69: 247–248.

7 June 2006, 2 singing male Kirtland's warblers, 1 photographed, Cemetery Road, northeast of Black River Falls, Jackson County, Wisconsin.

Belyea, G.Y. 1980. Michigan bird survey, summer 1980. The Jack-Pine Warbler. 58: 158–163.

8–10 June 1980, 4 Kirtland's warbler nests found, Crawford County, Michigan. 6–15 June 1980, 242 singing male Kirtland's warblers found on the Michigan census. [158, 162].

Berger, A.J. 1966. Experiences with insectivorous birds in captivity. The Jack-Pine Warbler. 44(2): 65–72.

Discusses raising birds in captivity and emphasizes a proper aviary and a suitable diet. Kirtland's warblers are included in the discussion of species raised.

Berger, A.J.; Radabaugh, B.E. 1968. Returns of Kirtland's warblers to the breeding grounds. Bird-Banding. 39(3): 161–186.

Analyzes banding histories of Kirtland's warblers including number of times returned, pairs mating in successive years, longevity, and double-broodedness. Includes black-and-white photograph of female, and maps of breeding grounds.

Bird Studies Canada. 2006. Endangered Kirtland's warbler spotted. Bird Studies Canada Latest News. 18 August 2006.

Reports at least 2 Kirtland's warblers spent the summer at Armed Forces Base, Petawawa, Ontario, Canada.

Birder's World. 2007. Kirtland's warblers found nesting outside of Michigan. Birder's World. 21(5): 14.

Reports on the first Kirtland's warbler breeding outside of Michigan, with a nest found in Wisconsin in 2007. A photograph of color-banded male is included in the article and on the cover.

Birder's World. 2008. Kirtland's warblers breed outside Michigan again. Birder's World. October 2008.

Reports that Kirtland's warbler nesting occurred in Wisconsin in 2008, and a record number of 1,792 singing males were counted on the 2008 Kirtland's Warbler Census. Includes photographs of a color-banded male, a female, and a fledgling.

Black, C.T. 1949. Seasonal records of Michigan birds—spring migration, 1949. The Jack-Pine Warbler. 27: 111–127.

8 May 1949, 2 male Kirtland's warblers, Fletcher's Settlement, Kalkaska County. Also reported in Oscoda County and Crawford County. [124].

Black, C.T. 1950. Seasonal records of Michigan birds—breeding season, 1949. The Jack-Pine Warbler. 21: 31–38.

28–30 May 1949, 6 male Kirtland's warblers, southern Ogemaw County, Michigan. 17 June 1949, 2 Kirtland's eggs, Lovells, Crawford County, Michigan. [37].

Black, C.T. 1955. Michigan bird survey, spring, 1955. The Jack-Pine Warbler. 33(3): 87–94.

10 May 1955, 1 Kirtland's warbler, Saginaw, Saginaw County. 12 May 1955, Kirtland's warbler arrived in Kalkaska County. [92].

Blain, A.W. 1903a. Editorial. Bulletin of the Michigan Ornithological Club. 4: 63.

Reports N.A. Wood's discovery of a Kirtland's warbler nest. Also notes the collection of 5 male specimens, 3 July 1903 in Oscoda County.

Blain, A.W. 1903b. Editorial. Bulletin of the Michigan Ornithological Club. 4: 77.

Reports that Norman Wood's account on the discovery of the Kirtland's warbler breeding area will be deferred to another issue, and that Wood made a second trip to Oscoda County with Professor Reighard.

Bocetti, C.I. 1992. A comparative study of the mating system and recruitment of the Kirtland's warbler in various habitats: 1992 annual report.

Reports on a project with the purpose to compare mating and reproductive success of Kirtland's warblers in plantations and wildfire areas. Tentative conclusions are that fewer males are unmated, and more are polygynous in wildfire areas than in plantations, and it appears that females are selecting to nest in wildfire areas more than plantations. The number of young produced per nest is not significantly different between wildfire and plantations.

Bocetti, C.I. 1993. Hatching year Kirtland's warbler captured in unusual habitat. The Wilson Bulletin. 105: 532–533.

5 August 1986, Ogemaw County, Michigan, an immature Kirtland's warbler (sex unknown) was captured in mixed coniferous-deciduous secondary growth surrounded by mature coniferous growth. The nearest occupied breeding habitat was 4.8 km away.

Bocetti, C.I. 1994. Density, demography, and mating success of Kirtland's warblers in managed and natural habitats. The Ohio State University.

A comparative investigation of Kirtland's warbler density, mating success, and reproductive success in plantation and naturally regenerated habitat. The study was divided into three major parts: (1) a landscape scale evaluation of the density of singing males in all habitat types; (2) a local scale evaluation of habitat characteristics, mating success of males, and demography in wildfire areas and plantations; and (3) an investigation of nest placement patterns of females within and between established male territories. The landscape analysis revealed that the density of male Kirtland's in plantations was 0.21 per 40 acres per year over the life of the stand; the density in wildfire sites was 0.19 per year over the life of the stand; and harvested stands support 0.02 males per 40 acres over the life of the stand. Local-scale evaluation showed that plantations have more unmated males (28 percent vs. 8 percent) and fewer polygynous males (6 percent vs. 22 percent) than wildfire sites. Reproductive success per nest was very similar between habitats. Predation rates were lower in plantations, but not significantly. Females used plantations significantly less than wildfire areas. Plantations produced fewer young than wildfire areas, but plantations produce enough young to serve as a source. The local scale evaluation found that plantations had similar landscape features of wildfire habitat, but plantations had lower jack pine density, fewer openings, lower percent cover of ground vegetation species and woody debris, and higher percent cover of sedge compared to wildfire habitat. Management recommendations and suggestions for further research are provided.

Brady, R. 2012. WSO Records Committee report: spring 2011. The Passenger Pigeon. 74(1): 115–122.

29 May 2011, 1 singing male Kirtland's warbler photographed in a stand of 2- to 6-foot-tall jack pines, Marinette County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (#2011-024). [118].

Brigham, E.M., Jr. 1941. Spring campout held at Higgins Lake. The Jack-Pine Warbler. 19: 78–85.

Kirtland's warbler is on the list of birds sighted (only data provided). [85].

Brown, J.L. 1969. Territorial behavior and population regulation in birds: a review and re-evaluation. The Wilson Bulletin. 81(3): 293–329.

Reviews Mayfield (1960) data to determine the breeding density in relation to population density. Concludes that the Kirtland's warblers are not limited during the breeding because of their current population density and that they do not occupy areas of suboptimal habitat.

Burns, F.L. 1921. Comparative periods of nestling life of some North American Nidicolae. The Wilson Bulletin. 33: 177–182.

Kirtland's warbler nestling period is listed at 12–13 days. [180].

Burns, F.L. 1924. The philosophy of birds' nests and comparative calology in consideration of some local nidicolus birds. The Wilson Bulletin. 36: 188–200.

States that the Kirtland's warbler builds a nest that is countersunk and is covered naturally by means of the site. [189].

Burrell, M.V.A.; Charlton, B.N. 2016. Ontario Bird Records Committee report for 2015. Ontario Birds. 34(2): 147–177.

10–14 May 2015, 1 female Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2015-055). 11–15 May

2015, 1 female Kirtland's warbler photographed, Rondeau Provincial Park, Chatham-Kent County, Ontario, accepted by OBRC (2015-056). 13 May 2015, 1 male Kirtland's warbler photographed, Inverhuron Provincial Park, Bruce County, Ontario, accepted by OBRC. 7–13 July 2015, 1 singing male Kirtland's warbler photographed and song recorded, Starr Island, Muskoka County, Ontario, accepted by OBRC (2015-095). The Muskoka County record presumably pertains to the same individual male that maintained a territory at the same site during summer 2014 (see Burrell and Charlton 2015). [170].

Byrne, A.M. 2008. The spring migration: western Great Lakes region. *North American Birds*. 62(3): 411–414.

29 May 2008, 4 Kirtland's warblers, Adams County, Wisconsin. [413].

Byrne, A.M. 2013. Spring migration: March through May 2012: western Great Lakes. *North American Birds*. 66(3): 487–489.

1 May 2012, 1 early Kirtland's warbler, Ogemaw County, Michigan. 5 May 2012, 1 Kirtland's warbler, Washtenaw County, Michigan. 17 May 2012, 1 Kirtland's warbler, Iosco County, Michigan. 27 May 2012, 1 Kirtland's warbler, Chippewa County, Michigan. Also reports 17 Kirtland's males in Adams County, Wisconsin, and singles in 3 other Wisconsin counties. [489].

Carleton, G. 1954. A trip to Kirtland's warbler land. *Linnaean Newsletter*. 7: 2–3.

June 1953, 1 male, 1 female, and 1 immature male Kirtland's warbler sighted, Crawford County, Michigan. Also provides a summary of J. Van Tyne's remarks on the history of the Kirtland's warbler to the Wilson Club meeting.

Childs, J.L. 1904. Eggs of Kirtland's warbler taken. *The Warbler* 2(1): 60.

Reports that the first Kirtland's warbler nest and eggs, along with the 2 square feet of turf in which it was built, had been collected in northern Michigan. The nest and eggs were sent to the John Lewis Childs collection.

Childs, J.L. 1906. Ornithological collection of John Lewis Childs, Floral Park, N.Y. *The Warbler*. 2: 66–106.

Presents a list of Childs' collection. Included are 1 male Kirtland's warbler specimen, 1 female specimen, 5 eggs, and 1 nest with 4 eggs, all collected during June in Michigan. [99].

Christensen, D. 2011. Kirtland's of Golden Sands. *The Passenger Pigeon*. 73(4): 405–407.

Discusses Kirtland's warblers found in Wisconsin and how the Plumb Creek Timber Company is working with state and federal governments to manage Kirtland's on their land. The 2011 nesting season and habitat is summarized. Describes some of the other species using the habitat and concludes that what is good for Kirtland's is good for their neighbors, including humans.

Cooper, N.W.; Marra, P.P. 2020. Hidden long-distance movements by a migratory bird. *Current Biology*. 30: 1–7. <https://doi.org/10.1016/j.cub.2020.07.056>.

Radio tags were placed on 163 Kirtland's warblers (137 male, 26 female) on Cat Island, The Bahamas, during the winter and tracked with an automated radio-telemetry system on the breeding grounds. Of the 63 individuals that remained alive during the 2018 and 2019 breeding seasons, 20 (32 percent) did not breed and 43 (68 percent) bred. It was found that a surprising proportion of breeders and most nonbreeders made long-distance (5–77 km) movements during the breeding season, mostly after sunset (65 percent), while conspecifics remained within their small territories. Movements peaked during the nestling and fledgling periods. A literature review

revealed that Kirtland's warblers moved farther than most species in absolute distances, and farther than all other species in normal daily movements. The authors suggest these long-distance movements are to inform future dispersal decisions.

Crins, W.J. 2011. The regional reports: the nesting season: June through July 2010: Ontario. North American Birds. 64(4): 583–587.

6 June 2010, 1 singing male Kirtland's warbler, east side of Algonquin Provincial Park, Ontario. First park record.

Cuthbert, N.L. 1963. Michigan bird survey, spring, 1962. The Jack-Pine Warbler. 41: 20–47.

12 May 1962, 1 Kirtland's warbler, Fletcher area, Kalkaska County. 25 May 1962, 1 Kirtland's warbler, Fletcher area, Kalkaska County. 26 May 1962, approximately 6 singing male Kirtland's warblers, South Branch (Oscoda County). [37].

Cuthbert, N.L. 1964. Michigan bird survey, spring, 1963. The Jack-Pine Warbler. 42: 195–227.

11 May 1963, 2 Kirtland's warblers, Crawford County. 19 May 1963, 3 Kirtland's warblers, Crawford County. 12 May 1963, 3 Kirtland's warblers, Kalkaska County. 25 May 1963, 3 Kirtland's warblers, Kalkaska County. [220].

Cuthbert, N.L. 1965. Preliminary report on an attempt to reduce the cowbird population at the Kirtland's warbler management area (a progress report to the U.S. Forest Service).

Reports on the results of a 1965 study of brown-headed cowbird control in the Mack Lake Management Area. A total of 158 (99 male, 59 female) cowbirds were shot, and 68 (24 male, 36 female, 8 juvenile) cowbirds were trapped. Parasitism of Kirtland's nests was 19 percent that year compared to 63 percent in 1964 and 54 percent in 1963.

Cuthbert, N.L. 1979. 1978 Kirtland's warbler nesting summary. Report to KW Recovery Team meeting—June 27–28, 1979.

Provides details on a nesting study where 25 Kirtland's warbler nests produced 80 fledglings (3.2/nest).

Cuthbert, N.L. 1980a. 1979 Kirtland's warbler nesting summary. Report to KW Recovery Team and USFWS—Feb 6–7, 1980.

Out of 35 Kirtland's warbler nests found, 22 nests (63 percent) fledged, producing 94 fledglings (2.69/nest). Reports that during cowbird control from 1972 to 1979, an average of 2.77 fledglings per nest.

Cuthbert, N.L. 1980b. 1980 Kirtland's warbler nest summary. Report to the K.W. Recovery Team and the USFWS.

Out of 23 Kirtland's warbler nests found, 17 produced 69 fledglings.

Cuthbert, N.L. 1981. 1981 Kirtland's warbler nesting summary: Report to USFWS, Michigan DNR, USFS, and KW Recovery Team.

Out of 19 Kirtland's warbler nests found, 13 produced 55 fledglings.

Cuthbert, N.L.; Radabaugh, B.E. [N.d.]. Tables and figures for informal report of effects of cowbird control on Kirtland's warbler reproduction.

Presents tables, maps, and figures on cowbird trapping and shooting, Kirtland's warbler nests and nest contents, and cowbird parasitism on Kirtland's and other species.

David, N.; Gosselin, M. 1978. The spring migration: Quebec region. American Birds. 32(5): 981–983.

27 May 1978, 1 singing male Kirtland's warbler, southwest Quebec. Photographs of the bird in hand are provided. The bird was apparently unmated and banded as a nestling in 1974 in Michigan. Another unmated male was found in 1977 on the grounds of Canadian Armed Forces Base Petawawa in Ontario. [982].

David, N.; Gosselin, M. 1979. The autumn migration: Quebec region. American Birds. 33(2): 158–159.

Reports that the male Kirtland's warbler discovered in the Gatineau River valley (27 May 1978, David and Gosselin 1978) was feeding a young yellow-rumped warbler at the very beginning of the reporting period (August–November 1978). [159].

Deloria, C.M. 2000. Kirtland's warbler (*Dendroica kirtlandii*) diet and its relationship to warbler age, sex, and jack pine stand characteristics. Michigan State University.

Kirtland's warbler fecal samples (n = 202) were collected from June through September 1995–1997. Samples were analyzed to determine Kirtland's warbler diet, and how diet is affected by bird age and sex, and various jack pine stand characteristics such as age, regeneration method, size, and location. The most important food items were spittlebugs, ants, blueberry, beetles, and moth larvae. Neither warbler age or sex, nor jack pine characteristics, affected diet.

Deloria-Sheffield, C.M.; Millenbah, K.F.; Bocetti, C.I.; Sykes, P.W., Jr.; P.W.; Kepler, C.B. 2001. Kirtland's warbler diet as determined through fecal analysis. Wilson Bulletin. 113(4): 384–387. [https://doi.org/10.1676/0043-5643\(2001\)113\[0384:KSWDAD\]2.0.CO;2](https://doi.org/10.1676/0043-5643(2001)113[0384:KSWDAD]2.0.CO;2).

Kirtland's warbler fecal samples (n = 202) collected from June to September, 1995–1997, were analyzed. Major food items recorded were Homoptera (61 percent of samples), Hymenoptera (45 percent), blueberry (42 percent), Coleoptera (25 percent), and Lepidoptera (22 percent).

DeRubeis, A. 2015. The summer season: 2014. The Passenger Pigeon. 77:123–157.

Reports that the 2014 Kirtland's Warbler Census found 11 males in Adams County, 1 in Bayfield County, and 1 in Marinette County. Adams County had 7 females, 3 nests, and 8–10 fledglings. These totals are down from the 2013 numbers. [149].

DeRubeis, A. 2016. The summer season: 2015. The Passenger Pigeon. 78(2): 207–252.

During the 2015 Kirtland's Warbler Census, Wisconsin reported 19 males (14 in Adams County, 2 in Bayfield County, and 3 in Marinette County), with 2 more found outside the census period. At least 14 females were present in Adams County, and the 14 pairs had 13 successful nests (and 2 unsuccessful nests) that fledged 34–51 young. Marinette County had 1 female that successfully fledged 2 young between 28 and 30 July, the latest recorded fledging date in the state. The total number of adults and young Kirtland's in Wisconsin in the summer of 2015 was between 72 and 89 birds. The last observation date was on 1 July, where a female was seen carrying food in Marinette County. [208, 238].

Donner, D.M. 2007. Spatiotemporal response of the male Kirtland's warbler population to changing landscape structure over 26 years. University of Wisconsin-Madison.

Evaluates how changing landscape structure from forest management and wildfire disturbances influenced population size, growth, and spatial distribution of Kirtland's warblers within their restricted breeding range in northern Lower Michigan. From 1979–2004, the male population increased five-fold, while suitable habitat more than doubled on the landscape. The overall amount of suitable habitat and the relative area of wildfire-regenerated habitat were the most important factors explaining the population trend. Spatiotemporal distribution of males shifted across the landscape in response to the amount and location of wildfire habitat. Males shifted from wildfire to plantation.

Donner, D.M.; Probst, J.R.; Ribic, C.A. 2008. Influence of habitat amount, arrangement, and use on population trend estimates of male Kirtland's warblers. *Landscape Ecology*. 23(4): 467–480. <https://doi.org/10.1007/s10980-008-9208-9>.

Examines how male Kirtland's warbler population size and spatial dispersion were influenced by 26 years of forest management and wildfire disturbance. The male Kirtland's population increased from 205 in 1979 to 1,322 in 2004. The total amount of suitable habitat and the relative area of wildfire regenerated habitat were the most important factors explaining the population trend. Suitable habitat increased 149 percent during that time period. The male population shifted temporally and spatially from wildfire to plantation.

Douglass, D.W. 1951. Kirtland's warbler. *Michigan Conservation*. 20: 33.

Describes Kirtland's warbler habitat, plumage, and nest.

Douglass, D.W. 1952. Kirtland's warbler. In: Roberts, H.D.; Messner, C.J., eds. *Enjoying birds in Michigan*. Michigan Audubon Society: 4–5.

Reprints Douglass 1951 describing Kirtland's warbler habitat, plumage, and nest. Includes a map of breeding range.

Douglass, D.W. 1958. Kirtland's warbler. In: Spenser, H.H., ed. *Enjoying birds in Michigan*. Michigan Audubon Society: 4–5.

Updates Douglass 1951 and 1952. Includes a color plate of Kirtland's warbler male, female, and young.

Eskelsen, J. 2007. Kirtland's warblers found nesting outside Michigan. *Birder's World*. October 2007.

Reports on 3 active Kirtland's warbler nests in Wisconsin in 2006.

Follen Sr., D. 1980. Kirtland's warbler. *The Passenger Pigeon*. 42: 86.

7 July 1979, 1 singing male Kirtland's warbler, Jackson County, Wisconsin. (This is the same record as Roberts and Roberts 1980 even though the dates [7 June in Roberts and Roberts] differ.)

Ford, E.R. 1931. Note on Kirtland's warbler. *The Auk*. 48: 276.

2 June 1930, numerous Kirtland's warbler sight and song records, Au Sable River district, Michigan. Describes habitat, song and singing times, and behavior.

Frank, J. 1996. WSO records committee report—summer 1995. The Passenger Pigeon. 58(1): 71–74.

4 June 1995, 1 singing male Kirtland's warbler photographed, Jackson County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (#95-023). [72].

Frank, J. 1997. WSO records committee report—summer 1996. The Passenger Pigeon. 59(1): 81–84.

30 June to 7 July 1996, 1 singing male Kirtland's warbler, Vilas County, Wisconsin. 7 rare bird reports received, including 2 audio recordings, accepted by Wisconsin Society for Ornithology Records Committee (#96-080). [83].

Frank, J. 1998a. WSO records committee report—spring 1998. The Passenger Pigeon. 60(4): 399–405.

30 May 1998, 1 singing male Kirtland's warbler, Vilas County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (#98-048). [403].

Frank, J. 1998b. WSO records committee report—summer 1997. Passenger Pigeon. 60(1): 99–102.

19 June to 3 July 1997, 2 singing male Kirtland's warblers, Vilas County, Wisconsin. Accepted by Wisconsin Society for Ornithology Records Committee with 7 rare bird reports received (#97-070 and #96-080). [101].

Frank, J. 1999. WSO records committee report—summer 1998. The Passenger Pigeon. (1): 129–131.

Late May to at least 5 June 1998, 1 singing male Kirtland's warbler, Vilas County, Wisconsin. Rare bird reports for 1, 3, and 5 June. Accepted by Wisconsin Society for Ornithology Records Committee (#98-048). [130].

Frank, J. 2004. WSO records committee report: fall 2003. The Passenger Pigeon. 66(2): 162–165.

31 May 2003, 1 singing male Kirtland's warbler, Vilas County, Wisconsin. Accepted by Wisconsin Society for Ornithology Records Committee. (#2002-083). [169].

Frank, J. 2006. WSO records committee report: summer 2005. The Passenger Pigeon. 68(1): 77–82.

17–23 June 2005, 3 or 4 singing male Kirtland's warblers, Jackson County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (#2005-062). [78].

Frank, J. 2007. WSO Records Committee report summer 2006. The Passenger Pigeon. 69: 251–252.

4–7 June 2006, 2 Kirtland's warblers to 29 July 2006, 1 Kirtland's warbler, Jackson County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (2006-041). [252].

Frank, J. 2008a. WSO Records Committee report: summer 2007. The Passenger Pigeon. 70(2): 225–228.

19 June 2007, 1 heard only singing male Kirtland's warbler, Adams County, Wisconsin, not accepted by Wisconsin Society for Ornithology Records Committee (#2007-058). [228].

Frank, J. 2008b. WSO records committee report: winter 2007–2008. The Passenger Pigeon. 70(4): 441–448.

9 June 2006, 1 singing male Kirtland's warbler, Marinette County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (#2006-105). [446].

Frank, J. 2010. WSO records committee report: spring 2009. The Passenger Pigeon. 72(1): 83–89.

30 May 2009, 1 singing male Kirtland's warbler, Adams County, Wisconsin, not accepted by Wisconsin Society for Ornithology Records Committee (#2009-032). The committee felt that the bird was almost certainly correctly identified, but the description was not reflective of that. [88].

Frank, J. 2011a. WSO records committee report: spring 2010. The Passenger Pigeon. 73(1): 73–77.

May 2012, banded Kirtland's warblers photographed, Adams County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (#2010-022). Additional Kirtland's were reported from Bayfield County. [75].

Frank, J. 2011b. WSO records committee report: summer 2010. The Passenger Pigeon. 73(2): 156–163.

6 June 2010, 1 Kirtland's warbler photographed, Bayfield County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee (#2010-043). [158].

Frank, J.C. 1998c. Kirtland's warbler (*Dendroica kirtlandii*): 25 and 26 July 1997, Vilas County. The Passenger Pigeon. 60: 97–98.

25–26 July 1998, 2 singing male Kirtland's warblers, Vilas County, Wisconsin.

Frothingham, E.H. 1903. Another Kirtland's warbler from Michigan. Bulletin of the Michigan Ornithological Club. 4: 61.

15 June 1903, 1 male Kirtland's warbler specimen, western Oscoda County. The specimen was deposited in the University of Michigan Museum of Zoology. Two other males were seen and several more were heard in eastern Crawford and western Oscoda Counties.

Frothingham, E.H. 1906. Notes on the birds of the Michigan Forest Reserve. Eighth Report Michigan Academy of Science. 8: 157–161.

6–22 July 1904, 2 Kirtland's warbler pairs observed repeatedly in scrub oak, north of Higgins Lake, Crawford County. 25 August 1904, 1 male Kirtland's warbler, Roscommon County. [160].

Fussman, J.L. 1997. Foraging ecology of Kirtland's warblers in managed and natural breeding habitat. The Ohio State University.

Examines prey availability as a factor influencing breeding habitat selection by Kirtland's warblers and characterizes their foraging behavior. Managed plantations and natural wildfire-regenerated jack pine stands were very similar in terms of insect abundance, diversity, distribution, and warbler behavior. Kirtland's were observed foraging and used jack pines most often, but also used ground vegetation and pin oak, which was used whenever it was available. Arthropods were collected and identified from various aged jack pines in order to compare density, diversity, and distribution as a function of stand age. Insect biomass was less in old nesting habitat than in young nesting habitat and was much less in mature habitat. Female Kirtland's foraged much lower than males. Management recommendations and future research needs are provided. A table of arthropod taxa collected in jack pine and ground vegetation is included.

Goodwin, C.E. 1978. Regional reports: the winter season: December 1, 1977–February 28, 1978: Ontario region. *American Birds*. 32(3): 342–346.

June 1977, 1 singing male Kirtland's warbler, Petawawa Military Camp, Ontario. Discusses possible records at Petawawa from 1916 and the habitat. [345].

Gopalan, S. 2016. The spring season 2015. *The Passenger Pigeon*. 78(1): 69–127.

9 May 2015, 1 Kirtland's warbler, Bender Park, Milwaukee County, Wisconsin. Reported from the breeding area in Adams County by 15 May. [111].

Gopalan, S. 2017. The spring season 2016. *The Passenger Pigeon*. 79(1): 23–98.

The only spring 2016 Wisconsin Kirtland's warbler accounts came from Adams County. First observed 14 May, high counts of 3 were observed on 20 May and 22 May. [27, 85].

Gopalan, S. 2018. The spring season: 2017. *The Passenger Pigeon*. 80(1): 13–77.

The only spring 2017 Wisconsin Kirtland's warbler accounts came from Adams County. First observed 18 May, high counts of 3 were observed on 19 May and 25 May. [16, 66].

Gopalan, S. 2019. The spring season: 2018. *The Passenger Pigeon*. 81:23–71.

Kirtland's warblers were seen 15–28 May 2018; no locations provided. First seen 15 May with a high count of 9 on that day. [66].

Government of Canada. 2006. Description of residence for Kirtland's warbler (*Dendroica kirtlandii*) in Canada. Species at Risk Act Public Registry, 2006. http://www.sararegistry.gc.ca/plans/showDocument_e.cfm?id=1129.

Describes the residence (nest and habitat) of Kirtland's warbler in Canada. Discusses the period of occupancy and provides a map of known occurrences.

Greenway, J.C., Jr. 1958. Extinct and vanishing birds of the world. Special Publication No. 13. New York: American Committee for International Wild Life Protection.

Contains a brief note concerning the limited breeding range with the opinion that the Kirtland's warbler is in no great danger of extinction.

Greenway, J.C., Jr. 1967. Extinct and vanishing birds of the world. New York: Dover.

Contains a brief note concerning the limited breeding range. The first edition had the opinion that the Kirtland's warbler is "in no great danger of extinction." This revised edition deletes that opinion. [36, 41-43].

Gross, M.E. 1937. Michigan—bird student's paradise. *The Jack-Pine Warbler*. 15: 5–12.

Reports on a birding trip, which includes Kirtland's warbler sightings. [7, 10-11].

Gross, J.; Grveles, K. 2010. Kirtland's warbler.

Provides an overview of Kirtland's warbler life history and its status in Wisconsin.

Grveles, K.M. 2009. A warble from the barrens. Wisconsin Natural Resources Magazine. April.

Provides a life history of the Kirtland's warbler, focusing on Wisconsin. Also details Wisconsin's conservation strategy.

Gunn, W.H.W. 1958. The nesting season: Ontario-Western New York. Audubon Field Notes. 12: 408–410.

8–30 June 1958, numerous sightings of 1 singing male Kirtland's warbler in jack pine, McVicar, Bruce County, Ontario. No female or nest was found. [410].

Gustafson, D. 1997. Kirtland's warbler (*Dendroica kirtlandii*): 4 July 1996, Vilas County. The Passenger Pigeon. 59: 79–80.

4 July 1996, 1 singing male Kirtland's warbler in jack pine, Vilas County, Wisconsin.

Harrington, P. 1939. Kirtland's warbler in Ontario. The Jack-Pine Warbler. 17: 95–97.

May through July 1916, Kirtland's warbler sight/song records, Petawawa Military Camp, Ontario. 5 June 1939, 1 male Kirtland's warbler, Petawawa Military Camp, Ontario. Black-and-white photographs of male and female are included. The male was photographed 15 July 1932, Oscoda County, Michigan; the female was photographed 25 June 1932, Red Oak, Oscoda County, Michigan.

Harrison, C. 1978. A field guide to the nests, eggs, and nestlings of North American birds. Glasgow, Scotland: Collins.

Discusses Kirtland's warbler nest, breeding season, eggs, incubation period, nestling and nestling period, and nest habitat. Includes color plate of egg. [269, pl. 60].

Harrison, H.H. 1984. Kirtland's warbler. In: Wood Warblers' World. New York: Simon and Schuster: 172–178.

Provides an overview of Kirtland's warbler biology and history. Includes several photographs of the bird, nest, and habitat.

Harwood, M. 1981. Kirtland's warbler: a born loser? Audubon. 83: 98–111.

Discusses and describes the 1980 Mack Lake Fire, forestry practices, life history, history, census, and steps taken to protect the Kirtland's warbler.

Hayes, J.; Probst, J.R.; Rakstad, D. 1986. Effect of mating status and time of day on Kirtland's warbler song rates. The Condor. 88(3): 386–388. <https://doi.org/10.2307/1368892>.

Reports on the variation in song rates of mated (29) and unmated (23) male Kirtland's warblers throughout the day. Unmated birds sang more frequently than mated, and unmated males showed a continuous decline in singing throughout the day.

Herrick, F.H. 1939. The individual vs. the species in behavior studies. The Auk. 56: 244–249.

Discusses the necessity of observing a sufficient quantity of individuals to draw conclusions in behavior studies. The author feels that with the Kirtland's warbler, this information could be obtained from a single pair of Kirtland's due to their limited population and breeding area. [245].

Hibbard, S.; Aird, P.S. 1978. Records of the Kirtland's warbler in Canada. Toronto, ON: University of Toronto.

Lists all known Kirtland's warbler records for Canada with authenticity ratings and provides a location map.

Higman, P.J.; Cuthrell, D.L.; Monfils, M. 2005. Re-assessment of known occurrences and additional surveys for rare species at Camp Grayling Maneuver Training Center. Lansing, MI: 1–15.

Surveys were conducted in 2004 at the Camp Grayling Maneuver Training Center to reassess the status of previously documented rare plant and animal occurrences and search for additional occurrences of these or other rare species. Kirtland's warblers were found at 3 sites totaling 2 pairs and 10 additional singing males. Another site with singing males was discovered during the Kirtland's Warbler Census. Several species abstracts are provided, including Olson's (2002) abstract for Kirtland's warbler. [1, 3, 11, 15].

Hoffman, R. 1989. History of Kirtland's warbler found in Wisconsin. In: At the crossroads: extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 29–31.

Reports on the history and current (through 1988) status of Kirtland's warbler in Wisconsin. Describes Wisconsin's survey methods.

Hoffman, R. 2007. Kirtland's warbler (*Dendroica kirtlandii*): 29 July 2006, off Cemetery Road in Jackson County, the same location the June reports came from. The Passenger Pigeon. 69: 248–249.

29 July 2006, 1 singing male Kirtland's warbler, Cemetery Road, Jackson County, Wisconsin.

Hoffman, R. 2008. Lessons from the seasons: summer 2007. The Passenger Pigeon. 70(2): 201–203.

Documents the discovery of the first Wisconsin Kirtland's warbler nests and discusses the history of sightings in Wisconsin. Cowbird control and habitat requirements are also mentioned. Provides guidelines for ethical birding in Kirtland's warbler habitat.

Hoffman, R. 2009. The summer season: 2008. The Passenger Pigeon. 71: 167–180.

Summer 2008, 20 Kirtland's warblers in 6 Wisconsin counties with 12 verified by the U.S. Fish and Wildlife Service. Five nests were found, with 2 nests fledging 10 young, 2 nests predated, and 1 raising a cowbird chick. [177].

Hoffman, R. 2010. The summer season: 2009. The Passenger Pigeon. 72(2): 161–180.

Wisconsin Kirtland's warbler surveys in 2009 found 20 birds in 6 counties. A total of 5 nests were found with 2 nests being successful and fledging 10 juveniles; 2 nests were predated; and 1 nest raised a cowbird. [161, 177].

Hoffman, R. 2011. The summer season: 2010. The Passenger Pigeon. 73(2): 108–130.

For the 2010 breeding season in Wisconsin, 20 male and 11 female Kirtland's warblers were found in Adams County, producing 12 to 18 young. Marinette County had 6 males and 1 female, but no nesting was confirmed. Single males were also found in Bayfield, Douglas, and Washburn Counties. [110–124].

Hoffman, R. 2012. The summer season: 2011. The Passenger Pigeon. 74(2): 161–182.

During the 2011 breeding season in Wisconsin, Kirtland's warblers were found in Adams County (20 male, 11 female), Marinette County (2 males), Bayfield County (1 male), Douglas County (1 male), and Vilas County (1 female). No evidence of breeding was found in Vilas County, and an estimated 9–17 young were produced in Adams County. [162, 178].

Hoffman, R. 2013. The summer season: 2012. The Passenger Pigeon. 75(2): 173–196.

A total of 20 male and 10 female Kirtland's warblers producing 8–13 young were reported during the 2012 breeding season in Adams County, Wisconsin. During the 6–20 June census period, 23 singing males were counted in Adams (19), Marinette (3), and Douglas (1) Counties. Kirtland's counted outside the census period were in Adams (1), Marinette (1), Bayfield (1), Douglas (2), and Vilas (1) Counties. [185].

Hoffman, R. 2014. The summer season: 2013. 2014. The Passenger Pigeon. 76(2): 293–314.

For the 2012 breeding season, Wisconsin reported 15 male and 9 female Kirtland's warblers in Adams County made 12 nesting attempts with 8 failing. The 4 successful nests fledged 13 young. Marinette County had a female on eggs 17 June, but the nest was empty on 26 June. Single Kirtland's were also in Bayfield and Douglas Counties. [310].

Holden, F.M. 1960. Wood's search for the type nest of the Kirtland's warbler. The Jack-Pine Warbler. 38(3): 84–102.

Reports on an effort to pinpoint the exact location from which N.A. Wood collected the Kirtland's warbler type nest. Many excerpts from Wood's journal and notebook are used as documentation. Includes maps of the area and a black-and-white photograph of the site of the first nest of the Kirtland's warbler.

Holden, F.M. 1964. Discovery of the breeding area of the Kirtland's warbler. The Jack-Pine Warbler. 42(3): 278–290.

Documents and adds additional information on the discovery of the Kirtland's warbler breeding area by T.G. Gale and E.H. Frothingham. The male Kirtland's warbler specimen, taken in Crawford County on 15 June 1903, convinced N.A. Wood to make the trip on which he discovered the type nest (Wood 1904).

Horton, K.J. 1975. A successful K.W. summer? Michigan Audubon Newsletter. 32(4): 7.

Notes Kirtland's warbler nesting success for the 1975 breeding season and land use difficulties with the Michigan National Guard.

Horton, K.J. 1977. Kirtland's warbler nesting success revealed. Michigan Audubon Newsletter. October.

Reports on the 1977 Kirtland's warbler nesting success, where 31 nests were found and 19 were successful. A total of 131 eggs were laid, 88 hatched, and 66 fledged. Reports that of 27 males banded in 1976, 19 returned to their nesting grounds. Calls for donations to the Kirtland's warbler fund.

Ingersoll, E. 1880. A history of nests and eggs of American birds. Salem, MA: S.E. Cassino and Company: 143.

Notes that nothing yet is known about Kirtland's warbler breeding. [143].

James, R.D. 1984a. Ontario bird records committee report for 1983. Ontario Birds. 2: 53–65.
8–13 August 1945, 2 adults and at least 1 recently fledged young Kirtland's warblers, Barrie, Simcoe County, Ontario, accepted by Ontario Bird Records Committee. [61].

James, R.D. 1984b. The breeding bird list for Ontario: additions and comments. Ontario Birds. 2(1): 24–29.

Includes information on possible historical breeding in Ontario and discusses the Speirs (1984) breeding record. [26–27].

James, R.D. 1991. Annotated checklist of the birds of Ontario. 2nd ed. Toronto: Royal Ontario Museum, Life Sciences Miscellaneous Publications.

Updates James et al. (1976) with the addition of one accepted Kirtland's warbler breeding record. All other information is the same. [70].

Johnson, D.H. 1979. Estimating nest success: the Mayfield method and an alternative. The Auk. 96(4): 651–661.

Kirtland's warbler data are used in a critique of and revision of Mayfield's (1961) method of calculating nest success.

Johnson, R. 1989. Kirtland's warbler (*Dendroica kirtlandii*). The Passenger Pigeon. 51: 123.
20 June 1988, 1 singing male Kirtland's warbler, Douglas County, Wisconsin.

Jones, L. 1903. Kirtland warbler (*Dendroica kirtlandi*) found breeding. Wilson Bulletin. 15: 101.

Offers congratulations on the discovery of the Kirtland's warbler breeding area in Michigan.

Jones, W. 1988. Banding report: Wisconsin Kirtland's warblers: 1988.

3 June 1988, 1 adult male Kirtland's warbler color-banded, Douglas County, Wisconsin. 18 June 1988, 1 adult male Kirtland's warbler color-banded, Jackson County, Wisconsin.

Kavanaugh, K. 2007. Kirtland's warbler (*Dendroica kirtlandii*): 9 June 2006, Marinette County. The Passenger Pigeon. 69: 249.

9, 15, and 26 June 2006, 1 singing male Kirtland's warbler, Marinette County, Wisconsin.

Kelley, A.H. 1971. Michigan bird survey, summer 1971. The Jack-Pine Warbler. 49: 115–124.

Summer 1971, 62 male Kirtland's warbler song records and 16 nests (9 parasitized by cowbirds) reported, Crawford, County, Michigan. [121].

Kenaga, E.E. 1956. Birding in the Saginaw Bay area. The Jack-Pine Warbler. 34(2): 38–56.

Kirtland's warbler is listed for the Au Sable and Hale areas of Iosco County. Occurrence dates of May 17–? and nesting dates of June 10–18 are provided. Maps of the area are included. [40, 53].

Kenaga, E.E. 1960. Michigan bird survey, summer, 1960. The Jack-Pine Warbler. 39: 55–59.

11 June 1960, 1 Kirtland's warbler nest and 4 eggs, Kalkaska County, Michigan. 19 June 1960, 1 Kirtland's warbler nest and 4 eggs, Kalkaska County, Michigan. 25 June 1960, 1 Kirtland's warbler nest with 1 egg and 3 young, Kalkaska County, Michigan. 4 July 1960, 12 Kirtland's warblers with

1 pair nesting, Grayling, Crawford County, Michigan. [58].

Kenaga, E.E. 1962. Michigan bird survey, summer, 1961. The Jack-Pine Warbler. 40: 57–61.

25 August 1916, 1 Kirtland's warbler, Oscoda County, Michigan. [59].

Kepler, C.B.; Sykes, P.W., Jr.; P.W.; Jett, D.A. 1987. Kirtland's warbler studies in Michigan: summary of program for summer 1987.

Provides updates on 3 Kirtland's warbler programs: color-banding, radio telemetry, and habitat utilization. Mist nets were operated from 1 July to 29 September, capturing 29 Kirtland's. Between 15 July and 25 August, 16 Kirtland's (3 adults and 13 young) were radio-tagged. Radios remained in place up to 25 days, with 159 radio-detections. False infrared aerial photographs were taken of all active and numerous potential Kirtland's warbler colony sites.

King, T.L.; Eackles, M.S.; Henderson, A.P.; Bocetti, C.I.; Currie, D.; Wunderle, J.M. 2005. Microsatellite DNA markers for delineating population structure and kinship among the endangered Kirtland's warbler (*Dendroica kirtlandii*). Molecular Ecology Notes. 5(3): 569–571. <https://doi.org/10.1111/j.1471-8286.2005.00998.x>.

The isolation and characterization of 23 microsatellite DNA markers of Kirtland's warblers were documented. Results revealed moderate to high levels of allelic diversity and heterozygosity.

King, W.B. 1981. Endangered birds of the world, the ICBP bird red data book. Washington, DC: Smithsonian Institution Press. Volume 2.

Kirtland's warbler is described as breeding in Michigan and wintering in The Bahamas, having been recorded from most of the larger islands. November 1977, adult male and a second Kirtland's at Veracruz, Mexico.

Klimkiewicz, M.K.; Clapp, R.B.; Futcher, A.G. 1983. Longevity records of North American birds: Remizidae through Parulinae. Journal of Field Ornithology. 54(3): 287–294.

Gives the oldest age for a Kirtland's warbler as 9 years old. [287, 293].

Korducki, M. 1997. Kirtland's warbler(*Dendroica kirtlandii*): 6 July 1996, Vilas County. The Passenger Pigeon. 59: 79.

6 July 1996, 1 unbanded singing male Kirtland's warbler, Vilas County, Wisconsin.

Korducki, M. 1999. Kirtland's warbler (*Dendroica kirtlandii*): 5 June 1998, South of Land O'Lakes, Vilas County. The Passenger Pigeon. 61: 125–126.

5 June 1998, 1 singing male Kirtland's warbler, south of Land O'Lakes, Vilas County, Wisconsin.

Landis, L. 1972. Trouble for Michigan's bird of fire. Audubon. 74: 34–35.

Provides an overview of the Kirtland's warbler population and management efforts. Includes photographs of male, female, and nest and nestling.

Lapin, C. N.; Anich, N.M.; Jaskiewicz, L.L.; DeValk, A.J.; Woodford, M.P. 2022. A male Kirtland's warbler observed feeding yellow-rumped warbler nestlings. Northeastern Naturalist Notes. 29: N6-N8.

A report on the observation of a male Kirtland's warbler feeding yellow-rumped warbler nestlings in Vilas County, Wisconsin.

Latta, S.C.; Parkes, K.C. 2001. A possible *Dendroica kirtlandii* hybrid from Hispaniola. Wilson Bulletin. 113(4): 378–383. [https://doi.org/10.1676/0043-5643\(2001\)113\[0378:APDKHF\]2.0.CO;2](https://doi.org/10.1676/0043-5643(2001)113[0378:APDKHF]2.0.CO;2).

Reports the capture of a possible Kirtland's/Blackburnian warbler on 24 October 1997, near Cabo Rojo, Pedernales Province, Dominican Republic. Presents a detailed description and color photographs of the bird and discusses the possible parentage.

Legler, K. 1989. 9–18 June 1988, Jackson County. The Passenger Pigeon. 51: 124–125.

9–18 June 1988, 4 male Kirtland's warblers, Jackson County, Wisconsin.

Leopold, N.F., Jr. 1924. The Kirtland's warbler in its summer home. The Auk. 41(1): 44–58. <https://doi.org/10.2307/4074086>.

Describes, in detail, Leopold's journey from Chicago to northern Michigan in an attempt to find the Kirtland's warbler in 1922 and 1923. Included are detailed descriptions of song, behavior, nest and young, habitat, hand feeding of adult male and nestling, food, and cowbird parasitism. Included is a timeline of adults feeding young and photographs of adult male, nest, young, and eggs.

Leshner, F. 1991. Kirtland's warbler (*Dendroica kirtlandii*). The Passenger Pigeon. 53(1): 99.

10 June 1990, 1 singing male Kirtland's warbler photographed, Jackson County, Wisconsin.

Levin, R.; Trick, J.; DeCapita, M. 2007. Rare bird nests are cause for celebration. Endangered Species Bulletin. 24(4): S8.

Announces the discovery of 3 Kirtland's warbler nests in Wisconsin in the summer of 2007. These represent the first documented nesting in Wisconsin.

Lyons, L. 2003. The secret life of Michigan's "bird of fire": what you don't know about Kirtland's warbler. The Jack-Pine Warbler. 80(3): 14, 17.

Summarizes observations of Kirtland's warblers made on the breeding grounds.

Mahan, H.D. 1963. Michigan bird survey, summer 1962. The Jack-Pine Warbler. 41: 75–79.

10 June 1962, 4 Kirtland's warblers, Kalkaska County. 23–24 June 1962, 9 Kirtland's warblers banded, Kalkaska and Ogemaw Counties. 30 June 1962, 4 Kirtland's warblers, Roscommon County. 7 July 1962, 4 Kirtland's warblers, Roscommon County. [77].

Mann, B.A. 2016. Summer: Ontario. North American Birds. 69(3/4): 383–385.

8–13 July 2015, 1 singing male Kirtland's Warbler, Starr Island, Muskoka County, Ontario, second straight year in that location. [385].

Marengo, W. 2021. Western Great Lakes: summer 2021. North American Birds. <https://wp.me/p8iY2g-c5E>.

Kirtland's warblers were reported from 13 counties in their normal breeding area in Michigan's Lower Peninsula and were also documented in 3 counties in the Upper Peninsula as well as 4 counties in Wisconsin. Michigan had a record high count of 86 individuals from Iosco County.

Mayfield, H.F. [N.d.]. The Kirtland's warbler.

Typewritten overview of Kirtland's warbler breeding life history. Includes history, the nesting ground behavioral notes, nesting period, song, and cowbird. Also lists other birds found nesting on Kirtland's warbler areas and birds not found nesting. The latest date mentioned is 1951.

Mayfield, H. 1961. Nesting success calculated from exposure. The Wilson Bulletin. 73(3): 255–261.

Presents a technique for the analysis of nesting success when comparatively few nests are found before the start of incubation, or for which the outcome is unknown. Kirtland's warbler data is used as an example.

Mayfield, H. 1962. Barrow's account of the Kirtland's warbler in 1920. The Jack-Pine Warbler. 40(1): 2–9.

Publishes excerpts from an oral paper that W.B. Barrows presented to the American Ornithologists' Union on 10 November 1920 in Washington, DC. The paper discusses his field trips to study the Kirtland's warbler on its breeding grounds, and includes detailed information on habitat, behavior, and cowbird parasitism.

Mayfield, H. 1963. Notes on Kirtland's warbler written at the time of finding them in Oscoda Co. July 2–8, 1903. Norman A. Wood.

A transcription by Harold Mayfield of Norman Wood's notes taken during the trip where he found the Kirtland's warbler type nest and a trip later in the year to the same area. The notebook starts with his departure to northern Michigan on 29 June 1903.

Mayfield, H.F. 1965. A forest burns to save a bird. Animals. 7: 470–73.

Discusses Kirtland's warbler life history and management efforts. Includes a range map and several photographs of habitat, nest, and prescribed burn.

Mayfield, H.F. 1975. Suggestions for calculating nest success. The Wilson Bulletin. 87(4): 456–466.

Offers suggestions to simplify the Mayfield method for calculating nest success (Mayfield 1961), using examples based on Kirtland's warbler data.

Maynard, C.J. 1884. A new catalog of bird's skins, nests and eggs obtained on The Bahamas by C.J. Maynard.

Kirtland's warbler is included in the catalog.

Maynard, C.J. 1890. Eggs of North American birds. Boston: De Wolfe, Fiske and Co.

Notes that the eggs and breeding grounds of Kirtland's warblers are unknown, though they may occasionally nest in Michigan and other nearby states. [133].

Mengel, R.M. 1964. The probable history of species formation in some northern wood warblers (Parulidae). Living Bird. 3: 9–43.

Briefly speculates on the Kirtland's warbler's relictual distribution. [28, 30].

Michigan Department of Natural Resources. 1972. Kirtland's warblers hold steady; show good potential for future gains. Michigan Department of Natural Resources News Bulletin, August 9, 1972.

Reports about 200 Kirtland's warbler pairs on the 1972 Kirtland's Warbler Census, the cowbird program where about 2,000 cowbirds were removed and only 2 of 31 Kirtland's nests were parasitized. Program requested photographers to contact the Michigan Department of Natural Resources or Michigan Audubon Society to obtain pictures instead of disturbing warblers.

Michigan Department of Natural Resources. 2022. Kirtland's warbler operational plan: March 21, 2016: approved by Forest Resources and Wildlife Divisions Joint Management Team (as amended): February 7, 2022. 16 p.

The purpose of this plan is to provide information and operational guidance to Department of Natural Resources (DNR) staff, conservation partners, and the public on how the DNR will manage state-administered lands for Kirtland's warbler. The plan includes detailed guidance on habitat management, land-use conflict minimization, and cooperation with other agencies to minimize the impact of cowbirds. It also provides a commitment from the DNR to continue to financially support the Kirtland's warbler program.

Miller, H.L. The fires and the Phoenix. 1964. In: The Old Au Sable. Grand Rapids, MI: William B. Eeramans Publishing Co.: 163–180.

Tells the history of the Au Sable Valley, including fire history, the discovery of the Kirtland's warbler breeding area and life history, and George Mason.

Mueller, W.P. 2013. Kirtland's warbler. In: Kreitinger, K.; Steele, Y.; Paulios, A., eds. The Wisconsin all-bird conservation plan, version 2.0. Wisconsin bird conservation initiative. Madison, WI: Wisconsin Department of Natural Resources. 4 p.

Provides information on Kirtland's warbler population trends and concerns, breeding, habitat, management, and research needs.

Mueller, W.P.; Kowalchuk, C. 2009. Birds of Wisconsin—an annotated checklist. The Passenger Pigeon. 71(3): 239–282.

Kirtland's warbler is considered a very rare migrant and breeder in Wisconsin with recent confirmed breeding. Listed as a species of special concern in Wisconsin. [270].

Mulvihill, B. 1974. Kirtland's warbler sighted in Somerset County. Bulletin of the Audubon Society of Western Pennsylvania. 39: 6.

22 September 1974, 1 Kirtland's warbler, Stoughton Lake, Jennerstown, Pennsylvania.

Nature Canada. 1978. Rare bird found in Ontario. Nature Canada. 7(1): 26.

9 June into July 1977, 1 male Kirtland's warbler banded, Petawawa Military Base, Ontario.

New York State Ornithological Association. 2014. Photo gallery: summer 2014. The Kingbird. 64: 329–336.

7 June 2014, 1 male Kirtland's warbler photographed, Fort Drum, Jefferson County, New York. 1 June 2014, 1 male Kirtland's warbler photographed, Hamlin Beach, Monroe County, New York. [330].

North, E.; Anich, N.M.; Ward, M.P. 2015. Kirtland's warbler conspecific playback experiment 2015 report.

Conspecific attraction was used to attempt to lure Kirtland's warblers to suitable but unoccupied habitats in Wisconsin. This technique uses persistent broadcast of the primary song of a species to induce individuals to settle in an area. At the Bayfield County site, 3 males were detected. At the Marinette County site, 3 males and 2 females were detected with 1 nest found.

Olah, A.M.; Ribic, C.A.; Grveles, K.; Warner, S.; Lopez, D.; Pidgeon, A. M. 2022. Kirtland's warbler breeding productivity and habitat use in red pine-dominated habitat in Wisconsin, USA. Avian Conservation and Ecology. 17(1): 3. <https://doi.org/10.5751/ACE-02009-170103>. 23 p.

Kirtland's warbler productivity and nest success was estimated, nest and fledgling success was monitored, and habitat use was characterized in Wisconsin red pine-dominated plantations from 2015–2017. Overall, reproductive success in the central Wisconsin breeding population that used red pine-dominated plantations was like that of Kirtland's warblers breeding in typical jack pine habitat in the range core. Trees were closer together and herbaceous vegetation was taller and denser within territories than at randomly located points outside of territories. Females selected nest sites with deeper dead ground vegetation and live vegetation that was taller and denser than was available at randomly located points within male territories. Nest success was not strongly influenced by within-patch habitat factors. Concludes that young red pine-dominated habitat appears to approximate young jack pine in habitat quality for Kirtland's warblers, and this may provide managers some flexibility in habitat maintenance for this conservation-reliant species.

Orr, C.D. 1975. 1974 breeding success of the Kirtland's warbler. The Jack-Pine Warbler. 53(2): 59–66.

A study of breeding Kirtland's warblers in Ogemaw and Oscoda Counties. Provides detailed descriptions of nest, eggs, fledglings, and double-broods. Causes for failures and successes, cowbird parasitism, and nest canopy vegetation are discussed.

Peterson, M.S. 1999. Kirtland's warbler (*Dendroica kirtlandii*): 3 June 1998, Jack Pine plantation, Vilas County. The Passenger Pigeon. 61: 126.

3 June 1998, 1 singing male Kirtland's warbler, Vilas County, Wisconsin.

Peterson, T., Mrs. 1941. Getting one's share of Michigan warblers. The Jack-Pine Warbler. 19: 49–58.

Discusses the author's Kirtland's warbler sightings from 1931–1935 and 1937–1940 in Crawford and Oscoda Counties, Michigan. [49, 56, 57].

Petrucha, M.E. 1994. Early spring arrival of Kirtland's warbler. Michigan Birds and Natural History. 1(2): 18.

3 May 1990, a male Kirtland's warbler was found in Iosco County, Michigan. This is the earliest arrival recorded on the breeding grounds and for Michigan, tying a record from 3 May 1904. (Trapping season should read "to 29 June" not "29 July.")

Petrucha, M.E. 1995. Kirtland's warbler in Clare County. Michigan Birds and Natural History. 2(2): 89.

22 June 1994, 2 male Kirtland's warblers heard, Clare County, Michigan. 23 June 1994, 1 male heard, and 1 agitated female Kirtland's warbler sighted, Clare County, Michigan. These represent the first Kirtland's warblers found in Clare County since 1920.

Petrucha, M.E. 2005. First record of Kirtland's warbler in Grand Traverse County. Michigan Birds and Natural History. 12(2): 46–48.

Describes details of the discovery of the first Kirtland's warbler in Grand Traverse County, Michigan, in June 2002, and the search for a female. The bird was in atypical habitat and a habitat description is provided. A male was also present in 2003 and 2004. A mate was never found in any year.

Petrucha, M.E. 2011. New early arrival date for Kirtland's warbler on the breeding grounds. Michigan Birds and Natural History. 18(1): 17.

1 May 2010, 1 singing male Kirtland's warbler, Foster Township, Ogemaw County, Michigan. This record represents the earliest arrival on the breeding grounds, and in the state.

Pettingill, O.S., Jr. 1959. Notes on the birds of the Straits region, Michigan. The Jack-Pine Warbler. 36: 7–11.

Presque Isle State Forest, Presque Isle County, Michigan, is listed as a nesting locality, with 2–8 singing males heard there during the summers of 1951-1957. [10].

Pettingill, O.S., Jr. 1970. Ornithology in laboratory and field. 4th ed. Minneapolis, MN: Burgess.

Kirtland's warbler is used as an example in discussions of niche, range, song, brood parasitism, and population size.

Pinkowski, B.C. 1976. Michigan bird survey, spring 1976. The Jack-Pine Warbler. 54: 117–128.

14 May 1976, 3 singing male Kirtland's warblers on the breeding grounds. [125].

Pinkowski, B.C. 1978. Michigan bird survey, spring 1978. The Jack-Pine Warbler. 56(3): 151–159.

30 May 1978, 1 Kirtland's warbler recovered, Ottawa, Quebec. The bird was banded in Crawford County, Michigan, as a nestling in 1974. [157].

Polk, J. 1989. 9–18 June 1988, Jackson County. The Passenger Pigeon. 51: 124–125.

9–18 June 1988, 3 singing male Kirtland's warblers, Jackson County, Wisconsin.

Polk, J. 1996. Kirtland's warbler (*Dendroica kirtlandii*): 4 June 1995, W. Staffon Rd., Jackson County. The Passenger Pigeon. 58(1): 68.

4 June 1995, 1 singing male Kirtland's warbler photographed, West Staffon Road, Jackson County, Wisconsin.

Polk, J. Kirtland's warbler. 2006. The Passenger Pigeon. 68(1): 73–74.

17-23 June 2005, 3–4 singing male Kirtland's warblers, Jackson County, Wisconsin. The birds were in a medium-short red pine - jack pine - oak mix near jack pines of the same height. Habitat, and the songs of 4 and plumage of 3 birds, are described.

Powell, D.J. 1983a. Michigan bird survey, spring 1983. The Jack-Pine Warbler. 61(3): 83–90.

12 May 1983, Kirtland's warblers, Crawford County, Michigan. [88].

Powell, D.J. 1983b. Michigan bird survey, summer 1983. *The Jack-Pine Warbler*. 61(4): 101–104.

9–17 June 1983, 1 male Kirtland's warbler, Gwinn, Marquette County, Michigan. [103].

Prestby, T. 2007. Kirtland's warbler (*Dendroica kirtlandii*): 6 June 2006, near Cemetery Road, Jackson County. *The Passenger Pigeon*. 69: 248.

6 June 2006, 2 singing male Kirtland's warblers, Jackson County, Wisconsin.

Probst, J.R. 1985. Summer records and management implications of Kirtland's warbler in Michigan's Upper Peninsula. *The Jack-Pine Warbler*. 63(1): 9–16.

Reports on a successful search for Kirtland's warbler in Michigan's Upper Peninsula 1979–1983. A male Kirtland's was found in both 1982 and 1983 in the same burn near Gwinn, Marquette County, and represents the first records for the Upper Peninsula.

Probst, J.R. 1986. A review of factors limiting the Kirtland's warbler on its breeding grounds. *American Midland Naturalist*. 116(1): 87–100. <https://doi.org/10.2307/2425940>.

Presents a review and synthesis of published and unpublished reports of Kirtland's warbler demography. Historical and recent trends, reproductive potential, mortality, fate of spring returns, annual recruitment, habitat limitations, and cowbird parasitism are all discussed. Research needs are presented and a habitat shortfall for 1986–1987 is predicted.

Probst, J.R. 1988. Kirtland's warbler breeding biology and habitat management. In: Hoekstra, T.W.; Capp, J., eds. *Integrating forest management for wildlife and fish*. Gen. Tech. Rep. NC-122. St. Paul, MN: USDA Forest Service, North Central Experiment Station: 28–35.

Four areas of Kirtland's warbler biology and habitat management were reviewed and discussed: (1) warbler habitat requirements; (2) warbler demography; (3) how geography of suitable habitat affects stand colonization and duration of occupancy; and (4) habitat management strategies.

Probst, J.R. 1991. Kirtland's warbler: *Dendroica kirtlandii*. In: Brewer, R.; McPeck, G.A.; Adams, R.J., eds. *The atlas of breeding birds of Michigan*. East Lansing, MI: Michigan State University Press: 414–417. <https://www.unhcr.org/publications/manuals/4d9352319/unhcr-protection-training-manual-european-border-entry-officials-2-legal.html?query=excom>.

Provides a breeding habitat description, seasonal occurrence, status, and conservation of Kirtland's warbler. Includes maps of historic and current breeding distribution, as well as a drawing of male and photo of female on nest.

Probst, J.R.; Donner, D.M. 2011. Kirtland's warbler (*Setophaga kirtlandii*). In: Chartier, A.T.; Baldy, J.J.; Brenneman, J.M., eds. *The second Michigan breeding bird atlas*. Kalamazoo, MI: Kalamazoo Nature Center: 1–5.

Provides the life history, focusing mainly on the breeding period, of the Kirtland's warbler, and the results of 2002–2008 atlas period, including a comparison to the first (1983–1988) atlas period.

Probst, J.R.; Donner, D.M.; Bocetti, C.I.; Sjogren, S. 2003. Population increase in Kirtland's warbler and summer range expansion to Wisconsin and Michigan's Upper Peninsula, USA. *Oryx*. 37(3): 365–373. <https://doi.org/10.1017/S0030605303000632>.

Documents the range expansion, breeding records and dispersal, and population dynamics of Kirtland's warblers to Michigan's Upper Peninsula, Wisconsin, and other extralimital summer records.

Probst, J.R.; Hayes, J.P. 1992. Pairing success of Kirtland's warblers in marginal vs. suitable habitat. *The Auk*. 104: 234–241.

Pairing success of male Kirtland's warblers in different quality of habitats was investigated to test the hypothesis that a lower proportion of pairing occurred in marginal habitat. Sixty percent of males in marginal habitat were paired compared to 95 percent in suitable habitat. It was estimated that overall, 85 percent of males are paired and that estimates of fall immatures were about 36 percent lower than uncorrected estimates.

Puma, D. a la; Heikkinen, C. 2015. The spring season: 2014. *The Passenger Pigeon*. 77(1): 27–78.

11 May 2014, 1 Kirtland's warbler, Adams County, Wisconsin. A total of 2–3 birds of both genders were present through the end of May. [69].

Radabaugh, B. 1968a. Report on the field studies on the Kirtland's warbler (*Dendroica kirtlandii*) on the Kirtland's Warbler Management Unit (KWMA), Oscoda County, Michigan, during the 1968 Season.

Reports on 27 Kirtland's warbler nests found, of which 36 percent were parasitized by brown-headed cowbirds. There were 33 Kirtland's fledged from 10 nests, and 2 cowbirds fledged from 2 other nests.

Radabaugh, B.E. 1967. A nesting study of the Kirtland's warbler on the Kirtland's Warbler Management Area, Huron National Forest—1967.

Summarizes the 1967 Kirtland's warbler field season where 17 males were present on the study area. Cowbird parasitism was found on 7 out of 25 nests (28 percent). Parasitism was also found in 17 nests of 8 other species. At least 39, and possibly 53, Kirtland's warblers fledged.

Radabaugh, B.E. 1968b. A study of population dynamics of the Kirtland's warbler (*Dendroica kirtlandii*). Detroit, MI: Wayne State University. 95 p. M.S. thesis.

The main objectives of this study were nest monitoring, censusing singing males, banding, observing returns, and generating survival data for Kirtland's warblers. Interseason interchange between sites is discussed. Over 42 percent of Kirtland's Warbler nests found were parasitized by cowbirds. Hatching success was 63.5 percent in nonparasitized nests and 31 percent in parasitized nests. For adult returns from one year to another, males returned 82.6 percent and females 63.2 percent, suggesting a long life span for a small bird. Polygyny was observed 9 times and double-broodedness 7 times. Summaries of life history and previous Kirtland's studies, and the brown-headed cowbird control study, are also provided.

Radabaugh, B.E. 1972a. Double-broodedness in the Kirtland's warbler. *Bird-Banding*. 43(1): 55.

Reports on 9 occurrences of double-broodedness in Kirtland's warblers. Discusses the possibility that double-broodedness is genetic, but current data is insufficient to draw any conclusions.

Radabaugh, B.E. 1972b. Polygamy in the Kirtland's warbler. *The Jack-Pine Warbler*. 50(2): 48–52.

Provides data to support the conclusion that approximately one-third of the adult Kirtland's warblers present in the east Mack Lake area, Oscoda County, Michigan from 1966–1968 were involved in polygynous matings. Also discusses possible causes for the behavior.

Radabaugh, B.E.; Radabaugh, F.E.; Radabaugh, C.A. 1964. A nesting survey of the Kirtland's Warbler Management Area, Huron National Forest—1964.

Presents results from Kirtland's warbler studies in 1964 focusing on nesting activities and cowbird parasitism. The study took place in the habitat created by the 1946 Mack Lake Fire. A total of 26 nests were found involving 18 pairs of Kirtland's including 1 complete nest found on 9 May. There were 5 renestings and 3 second nestings. Cowbird parasitism occurred in 71 percent of the nests with 20 Kirtland's and 12 cowbirds fledging.

Radabaugh, B.E.; Radabaugh, F.E.; Radabaugh, C.A. 1965. A nesting survey of the Kirtland's Warbler Management Area, Huron National Forest—1965. Royal Oak, Michigan.

Reports on 24 Kirtland's warbler nests found. Three nests were abandoned during construction; 4 of the 21 remaining nests were parasitized. At least 30, and possibly 42, Kirtland's fledged from at least 10 and possibly 13 nests. A total of 49 Kirtland's were banded (5 males, 7 females, 36 nestlings, and 1 fledgling). Another male was banded in Presque Isle County and 14 previously banded Kirtland's were found.

Radabaugh, B.E.; Radabaugh, F.E.; Radabaugh, C.A. 1966a. A nesting study of the Kirtland's warbler on the Kirtland's Warbler Management Area, Huron National Forest—1966.

Summarizes on the 1966 Kirtland's warbler field season where 20 males and 19 females were present on the study area. Cowbird parasitism was found in 1 out of 21 nests, and 1 out of 34 nests of 11 other species. Fourteen Kirtland's warbler nests fledged 60 young. Also reports 70 Kirtland's banded and 17 previously banded birds returned.

Radabaugh, B.E.; Radabaugh, F.E.; Radabaugh, C.A. 1966b. Returns of Kirtland's warblers banded as nestlings. *The Wilson Bulletin*. 73(3): 322.

Provides data on 5 Kirtland's warblers banded as nestlings (out of 253) that were seen as adults.

Reardon, B. 1998. Kirtland's warbler (*Dendroica kirtlandii*): 19 June 1997, Vilas County. *The Passenger Pigeon*. 60: 97.

19 June 1997, singing male Kirtland's warblers, Vilas County, Wisconsin.

Reed, C.A. 1904. North American birds eggs. 1st ed. New York: Doubleday, Page and Company.

Provides brief descriptions of Kirtland's warbler range and plumage. The discovery of the first nest and egg are discussed in detail. [300].

Refsnider, R.L.; Trick, J.A.; Goyette, J.L. 2009. 2008 capture and banding of Kirtland's warblers (*Dendroica kirtlandii*) in Wisconsin. *Passenger Pigeon*. 71(2): 115–121.

Reports on 8 male Kirtland's warblers that were captured and color-banded in 2008 in Wisconsin, and 1 male captured that was banded on Eleuthera, The Bahamas, on 20 March 2008.

Reinoehl, J. 2005. Michigan bird survey, spring 2005 (March–May). *Michigan Audubon Newsletter*. 12(4): 207–234.

9 May 2005, 1 Kirtland's warbler, Alcona County, Michigan, first reported date. 17 May 2005, 15 Kirtland's warblers, Ogemaw County, Michigan. 27 May 2005, 1 Kirtland's warbler, Presque Isle Light House, Presque Isle County, Michigan. After 28 May 2005, Kirtland's warblers in Chippewa County, Michigan, and Schoolcraft County, Michigan [227].

Richard, T. 2008. Confirmed occurrence and nesting of the Kirtland's warbler at CFB Petawawa, Ontario: a first for Canada. Ontario Birds. 26(1): 2–15.

Documents and discusses the 2006 survey and 2007 Kirtland's warbler nesting on Canadian Forces Base Petawawa, Ontario, the first nest detected in Canada.

Richard, T. 2010. CFB Petawawa Kirtland's warbler survey and monitoring programme summary report. 2006–2010.

Reports on Kirtland's warbler occurrence on Canadian Forces Base Petawawa from 2006–2010. During the summer of 2006, 3 males were observed. In 2007, 2 males and 1 female were observed with nesting confirmed. A pair fledging 4 young plus 2 single males were found in 2008. In 2009, 2 nesting pairs produced at least 3 fledglings. In 2010, 2 pairs and 1 single male were detected. One pair fledged 2 young, while the number of young fledged by the second pair was unknown. Breeding habitat is described. Birds were color-banded from 2006–2009.

Richard, T. 2013. Seven years later Kirtland's warbler at Garrison Petawawa. Ontario Birds. 31(3): 148–159.

Details the surveying and monitoring of Kirtland's warblers at Garrison Petawawa from 2006–2013, including information on arrival dates, territory sizes, and habitat use. Sightings of Kirtland's warblers in suitable breeding habitat from 1900–2005 are also included.

Robbins, S., Jr. [N.d.]. Birds of Wisconsin.

Includes a summary of Kirtland's warbler observations in Wisconsin.

Roberts, H.; Roberts, N. 1979. Field notes: the summer season: June 1–August 31, 1978. The Passenger Pigeon. 41: 81–89.

10 June 1978, 1 Kirtland's warbler, Jackson County, Wisconsin. 15 June 1978, another Kirtland's warbler was found at same location. [81, 88].

Roberts, H.; Roberts, N. 1981. Field notes: the summer season: June 1 to July 31, 1980. The Passenger Pigeon. 43: 52–59.

14 June 1980, 1 Kirtland's warbler, Jackson County, Wisconsin. Third consecutive year in that location for a Kirtland's in Jackson County. [52, 58].

Roberts, J.O.L. 1971. Survival among some North American wood warblers. Bird-Banding. 42(3): 165–184.

Mentions that Kirtland's warbler produces 1.4 fledglings/pair, and an annual survival rate of 60 percent. [172, 174, 175].

Roberts, N.; Roberts, H. 1980. Field notes: the summer season: June 1–July 31, 1979. The Passenger Pigeon. 42: 77–83.

7 June 1979, 1 Kirtland's warbler, Jackson County, Wisconsin. (Same record as Follen 1980, even though the dates differ.) [77, 82].

Roberts, T.S. 1934. Bird portraits in color: 295 North American species. Minneapolis, MN: University of Minnesota Press.

Notes Kirtland's warbler breeding area, egg color, and song. Includes a color plate of a male. [pl. 17].

Ross, R.D. 1954. Birds of the prairies and the Black Hills. Bulletin of the Massachusetts Audubon Society. 38: 3–10.

17 May 1953, 1 singing male Kirtland's warbler, south of Mio, Oscoda County, Michigan. [3-4].

Schempf, P.F. 1976. A late record of the Kirtland's warbler. The Jack-Pine Warbler. 54: 40.

29 September 1975, 1 Kirtland's warbler, Mack Lake Management Area, Oscoda County, Michigan.

Schilke, P.R. 2011. Monitoring extracolonial Kirtland's warblers in Wisconsin. The Passenger Pigeon. 73(1): 145–151.

Documents in detail the monitoring of Kirtland's warblers in Adams, Bayfield, Douglas, and Marinette Counties, Wisconsin, during June and July 2010. A total of 13 male and female warblers and 1 nest was found away from the main colony in Adams County. A table of birds by sex and site is included. A history of previous Kirtland's warbler monitoring in Wisconsin is provided. Included are photographs of a color-banded male and a nest site. The origins of Wisconsin's Kirtland's warblers, why nesting colonies like the main one in Adams County have failed to develop in other parts of the state, and why some territorial birds disappear are discussed.

Schoener, T.W. 1968. Sizes of feeding territories among birds. Ecology. 49(1): 123–141.

Uses Kirtland's warbler data from Mayfield (1960) in a determination of the relationships between body weight, clutch size, breeding territory size, and food types among various bird species. [125].

Schultz, T. 1997. Kirtland's warbler (*Dendroica kirtlandii*): 3 July 1996, Vilas County. The Passenger Pigeon. 59: 78–79.

3 July 1996, 1 singing male Kirtland's warbler, Vilas County, Wisconsin.

Shea, A.K. 1991. The spring season: 1991. The Passenger Pigeon. 53(4): 335–352.

30 May 1991, 1 singing male Kirtland's warbler, Jackson, County, Wisconsin. Same location as the previous year. [349].

Sherony, D. 2014. Kirtland's warblers and New York State. New York Birders. 43(4): 1, 9.

1 June 2014, 1 singing male Kirtland's warbler photographed, Hamlin Beach State Park, New York.
4 June 2014, 1 territorial singing male Kirtland's warbler photographed, Fort Drum, New York; the bird stayed for 2 weeks. Briefly mentions that there were 7 Kirtland's records prior to the 2 mentioned, but none included physical documentation such as sound recordings or photographs. Discusses 2 of these records with written details: 6 September 1952, 1 male Kirtland's warbler, Montezuma National Wildlife Refuge, New York; and 18 May 2010, 1 singing male Kirtland's warbler, Wilson, New York.

Short, E.H. 1904. The discovery of the first known nest of Kirtland's warbler. The Oologist. 21(4): 53–55.

Summarizes Wood's (1904) account of the first Kirtland's warbler nest.

Smith, R.P. 1997. Regional reports: Upper Peninsula. Michigan Out-of-Doors. [Month unknown]: 66.

Reports that 5 male and 1 female Kirtland's warblers were banded in Michigan's Upper Peninsula in 1997 compared to 8 banded in 1996. A juvenile male banded in Schoolcraft County in 1996 returned to the county in 1997 and was seen with a female. Reproduction was confirmed both years.

Soulen, T.K. 1989. The summer season: 1988. The Passenger Pigeon. 51(1): 111–120.

June 1988, 8 Kirtland's warblers, Douglas, Jackson, and Washburn Counties, Wisconsin. No evidence of breeding was found.

Soulen, T.K. 1991. The summer season: 1990. The Passenger Pigeon. 53(1): 83–94.

10 June 1990, 1 singing male Kirtland's warbler photographed, Jackson County, Wisconsin. The bird was later banded. [92].

Soulen, T.K. 1992. The summer season: 1991. The Passenger Pigeon. 54(1): 85–94.

Much of June 1991, 1 Kirtland's warbler, Jackson County, Wisconsin. [93].

Soulen, T.K. 1993. The summer season: 1992. The Passenger Pigeon. 55(1): 81–92.

Summer 1992, 1 Kirtland's warbler, Washburn County, Wisconsin. [90].

Soulen, T.K. 1995. The summer season: 1994. The Passenger Pigeon 57(1): 41–50.

Reports that no Wisconsin Kirtland's warblers found in the summer season for second year in a row. [48].

Soulen, T.K. 1996. The summer season: 1995. The Passenger Pigeon. 58(1): 55–64.

4 June 1995, 1 singing male Kirtland's warbler photographed, Jackson County, Wisconsin. [56, 62].

Soulen, T.K. 1997. The summer season: 1996. The Passenger Pigeon 59(1): 61–72.

30 June 1996, 1 Kirtland's warbler, Vilas County, Wisconsin. The bird was present for at least 1 week. [62, 70].

Soulen, T.K. 1998. The summer season: 1997. The Passenger Pigeon. 60(1): 77–89.

Summer 1997, 2 singing male Kirtland's warblers, Vilas County, Wisconsin. Summer 1997, 3 singing male Kirtland's warblers, Marinette County, Wisconsin; a photograph of 1 of the males can be found on page 86. [78, 86].

Soulen, T.K. 1999. The summer season: 1998. The Passenger Pigeon. 61(1): 101–114.

15 June 1998, last reported date for 1 male Kirtland's warbler, Vilas County, Wisconsin. [102, 112].

Soulen, T.K. 2006. The summer season: 2005. The Passenger Pigeon. 68(1): 53–68.

17–23 June 2005, 4 Kirtland's warblers, Jackson County, Wisconsin. [56, 64].

Soulen, T.K. 2007. The summer season: 2006. The Passenger Pigeon. 69(2): 229–242.

9 June 2006, 1 singing male Kirtland's warbler, Marinette County, Wisconsin. In Adams County, 3 singing males were found. [230, 239].

Southern, W.E. 1961. A botanical analysis of Kirtland's warbler nests. The Wilson Bulletin. 73(2): 148–154.

For this study, 25 Kirtland's warbler nests were examined and 20 were dismantled. Whenever possible, the nest materials were identified and weighed. Nest measurements were recorded, and only the 16 nests that contained eggs were used in determining average nest dimensions. At least

29 species of plants were used in nest construction, and details of each species and where it was used in the nest are provided. Nest dimensions, habitat requirements, and photographs of nests are included.

Spahn, R.G. 1997. Kirtland's warbler (*Dendroica kirtlandii*): 30 June 1996, Stormy Lake, CE Atlas Block, Vilas County. *The Passenger Pigeon*. 59: 78.

30 June–7 July 1996, 1 singing male Kirtland's warbler, Stormy Lake, Vilas County, Wisconsin.

Speirs, D.H. 1984. The first breeding record of Kirtland's warbler in Ontario. *Ontario Birds*. 2(2): 80–84.

Describes 2 adult Kirtland's warblers with a juvenile 8–13 August 1945, and a male 31 August 1945 in Oro Township, Simcoe County, Ontario. The habitat the birds were reported in was hardwoods with no jack pine in the immediate vicinity. Accepted as Ontario's first breeding record by the Ontario Bird Records Committee.

Stromborg, K.L. 1978. Patuxent Wildlife Research Center—analytical report—PR-1552. Laurel, Maryland.

Six Kirtland's warbler eggs were analyzed for pesticide residues. Only 1 egg contained residues, which was 0.54 parts per million of polychlorinated biphenyls (PCB). Concludes that the extremely low levels of contamination of the current and preceding samples of eggs indicate that Kirtland's warblers carry only background levels of contaminants, and are most probably not being influenced by them, and it is inadvisable to continue analysis of Kirtland's warbler eggs.

Strong, W.A. 1919. Curious eggs. *Oologist*. 36: 180–181.

31 May 1908, 1 set of 2 Kirtland's warbler and 2 brown-headed cowbird eggs collected, Crawford County, Michigan. [181].

Svingen, P.H. 2008. The nesting season: western Great Lakes. *North American Birds*. 61(4): 588–590.

19 May 2007, 3 singing male Kirtland's warblers, Plum Creek Timber Company land, Wisconsin. A total of 8 males, 3 females, and 3 nests were found in Wisconsin. No evidence of Kirtland's nestlings was found. Cowbirds were raised by 2 pairs and the third nest was found empty. The Kirtland's Warbler Census reported 1,697 singing males in Michigan with 31 found in the Upper Peninsula, the highest total ever. [589].

Svingen, P.H. 2009. The nesting season: western Great Lakes. *North American Birds*. 62(4): 562–564.

Reports 20 Kirtland's warblers found in 6 Wisconsin counties. A total of 12 were later confirmed by the U.S. Fish and Wildlife Service, with 5 nests found that fledged 10 young; 2 nests were predated and another parasitized.

Svingen, P.H. 2010. The nesting season: western Great Lakes. *North American Birds*. 4(4): 600–602. <https://doi.org/10.5962/bhl.title.54113>.

Reports 7 or 8 successful Kirtland's warbler nests out of 11 in Wisconsin in 2009, fledging at least 26 young. A total of 1,795 Kirtland's warblers were found on the 2009 census in Michigan, with 30 in the Upper Peninsula. [601].

Svingen, P.H. 2011. The nesting season: western Great Lakes. North American Birds. 64(4): 595–597.

A total of 24 male and 13 female Kirtland's warblers in 5 Wisconsin counties fledged at least 12 young. The Kirtland's Warbler Census reported 1,733 singing males in Michigan. [596].

Svingen, P.H. 2012. The nesting season: western Great Lakes. North American Birds. 65(4): 633–635.

Wisconsin reported 22 male and 11 female Kirtland's warblers in 5 counties, fledging about 17 young from 11 nests. A record 1,805 singing males were counted on the Michigan census. [634].

Svingen, P.H. 2014. Nesting season: western Great Lakes. North American Birds. 67(4): 600–602.

Reports that 2,004 singing male Kirtland's warblers were found on the 2013 census, down from the 2,060 males found in 2012 but still the second highest total ever. In Wisconsin, 9 pairs produced 13 young in Adams County. Marinette County had a failed nesting attempt, and 1 Kirtland's was found in Douglas County. [601].

Svingen, P.H. 2016. Summer: Illinois and Indiana. North American Birds. 69(3/4): 399–401.

Wisconsin reported 31 of 51 young Kirtland's warblers fledging from 10 nests. A nest was reported from Marinette County, only the third away from the Adams County breeding area. [400].

Sykes, P.W., Jr. 1989a. A technique to prevent capturing birds in unattended, furred mist nets. North America Bird Bander. 14(2): 45–46.

For a color-banding study of Kirtland's warblers on the breeding grounds, a method using a strip of roofing felt (to avoid capture of birds on days that nets are not being operated) was developed and is described.

Sykes, P.W., Jr.; Bocetti, C.I.; Moore, L.A. 1993. Male Kirtland's warbler with incubation patch. The Wilson Bulletin. 105(2): 354–356.

A male Kirtland's warbler with a brood patch was captured 19 July 1991 at Mack Lake in Oscoda County, Michigan. This appears to be the first documented case of a male Parulinae with a brood patch.

Sykes, P.W., Jr.; Carpenter, J.W.; Holzman, S.; Geissler, P.H. 1990. Evaluation of three miniature radio transmitter attachment methods for small passerines. Wildlife Society Bulletin. 18(1): 41–48.

Three radio transmitter attachment methods (adhesive, velcro, and harness) were evaluated using common yellowthroats as a preliminary study for use on Kirtland's warblers. The adhesive method was determined to be the preferred attachment method.

Sykes, P.W., Jr.; Munson, D.J. 1989b. Late record of Kirtland's warbler on the breeding grounds. The Jack-Pine Warbler. 67(3): 101.

1 October 1988, 1 adult female Kirtland's warbler banded, Mack Lake Burn, Oscoda County, Michigan. This is the latest date for a Kirtland's on the breeding ground.

Sykes, P.W., Jr.; Kepler, C.B.; Jett, D.A.; DeCapital, M.E. 1989c. Kirtland's warblers on the nesting grounds during the post-breeding period. The Wilson Bulletin. 101(4): 545–558.

Eighty-four Kirtland's warblers were captured 122 times at 5 study sites on their breeding grounds

during the post-breeding season (1 August–30 September) from 1984–1987. This indicates that a large number of birds remain in their breeding areas through September.

Szymczak, A. 2011. The spring season: 2010. The Passenger Pigeon. 73(1): 23–62.

10 May 2010, 1 Kirtland's warbler, Adams County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee. 21 May 2010, 1 male Kirtland's warbler photographed, Wisconsin, photograph provided. [34, 54].

Szymczak, A. 2012. The spring season: 2011. The Passenger Pigeon. 74(1): 69–108.

13 May 2011, 1 Kirtland's warbler, Adams County, Wisconsin, first arrival of the season. 29 May 2011, 1 male Kirtland's warbler photographed, Marinette County, Wisconsin. [100].

Szymczak, A. 2013. The spring season: 2012. The Passenger Pigeon. 75(1): 57–102.

11 May 2012, 4 color-banded male Kirtland's warblers, Adams County, Wisconsin, second earliest Wisconsin arrival date (10 May is the earliest). Singing males were also reported in Bayfield, Douglas, Marinette, and Vilas Counties. [91].

Tazik, D.J.; Cornelius, J.D. 1993. Status of the black-capped vireo at Fort Hood, Texas, Volume III: Population and nesting ecology. USACERL Technical Report EN-94/01.

This study details the population and nesting ecology of the black-capped vireo. The study documents annual survival, reproductive success, and limiting factors. Kirtland's warbler is referenced several times as a comparison to study results, including a comparison of nesting success between cowbird parasitized and unparasitized nests of several bird species and cowbird success in nests of selected bird species. [31, 37, 40, 42, 43, 45, 89, 90].

Terrell, M. 1998. Keeping track of the Kirtland's. Michigan Natural Resources.

Reports on the Kirtland's warbler color-banding project. Includes several photographs.

Terres, J.K. 1980. The Audubon Society encyclopedia of North American birds. New York: Alfred A. Knopf.

Provides an overview of Kirtland's warbler management efforts, feeding habits, nest, eggs, incubation period, age, weights, and range. [972].

Tessen, D. 1981. Kirtland's warbler found again in Jackson Co. The Passenger Pigeon. 43: 64.

14 June 1980, 1 Kirtland's warbler, Jackson County, Wisconsin.

Tessen, D. 1997. 1996—a memorable year. The Passenger Pigeon. 59(1): 53–60.

2 July 1996, 1 singing male Kirtland's warbler, Vilas County, Wisconsin. [58].

Tessen, D. 1998a. Kirtland's warbler (*Dendroica kirtlandii*): 22 June 1997, 6 July 1997, Vilas County. The Passenger Pigeon. 60: 96–97.

22 June 1997, 6 July 1997, 2 singing male Kirtland's warblers, Vilas County, Wisconsin.

Tessen, D. 2007. Kirtland's warbler (*Dendroica kirtlandii*): 4 June 2006, jack pine area on Cemetery Road north of Highway 54, east of Black River Falls, Jackson County. The Passenger Pigeon. 69: 248.

4 June 2006, 2 singing male Kirtland's warblers, Cemetery Road north of Highway 54 and east of Black River Falls, Jackson County, Wisconsin.

Tessen, D.D. 1978. The nesting season: western Great Lakes region. American Birds. 32: 1162–1166.

10 June–18 July 1978, 2 singing male Kirtland's warblers, Black River Falls State Forest, Jackson County, Wisconsin. Also notes the results of the Michigan Kirtland's Warbler Census where 193 males were reported. Includes a photograph of a banded male. [1165].

Tessen, D.D. 1979. The nesting season: western Great Lakes region. American Birds. 33: 864–866.

June–early July 1979, 1 and probably 2 singing male Kirtland's warblers, Jackson County, Wisconsin. Also notes (erroneously) that 310 singing males were counted on the 1977 Kirtland's Warbler Census. [866].

Tessen, D.D. 1980. The nesting season: western Great Lakes region. American Birds. 34: 896–898.

14 June 1980, 1 Kirtland's warbler, Jackson County, Wisconsin, third consecutive year found here. Also reports briefly on the 1980 Kirtland's Warbler Census during which 242 males were counted in Michigan. [898].

Tessen, D.D. 1983. The nesting season: western Great Lakes region. American Birds. 37: 990–992.

9–17 June 1983, 1 male Kirtland's warbler, Gwinn, Michigan. [992].

Tessen, D.D. 1988. The nesting season: western Great Lakes region. American Birds. 42: 1289–1293.

30 May–24 June 1988, 8 territorial Kirtland's warblers found by the Wisconsin Department of Natural Resources (2 in Douglas County, 2 in Washburn County, and 4 in Jackson County). [1292].

Tessen, D.D. 1989. The nesting season: western Great Lakes region. American Birds. 43: 1317–1320.

June 1989, 1 Kirtland's warbler, Douglas County, Wisconsin. June 1989, 1 Kirtland's warbler, Jackson County, Wisconsin. [1319].

Tessen, D.D. 1990. The nesting season: western Great Lakes region. American Birds. 44: 1135–1137.

10–14 June 1990, 1 Kirtland's warbler banded, Jackson County, Wisconsin. Third straight year for Kirtland's in Wisconsin (2 in 1988, 2 in 1989, and 1 in 1990). Also reports 265 singing males on the 1990 Kirtland's Warbler Census. [1137].

Tessen, D.D. 1991. The summer season: western Great Lakes region. American Birds. 45: 1117–1120.

Through late June 1991, 1 Kirtland's warbler, Jackson County, Wisconsin. [1119].

Tessen, D.D. 1992. The summer season: western Great Lakes region. American Birds. 46(5): 1136–1139.

8–26 June 1992, 1 Kirtland's warbler banded, Washburn County, Wisconsin. Fifth consecutive summer record for Wisconsin and the fourth Kirtland's banded in 5 years. [1139].

Tessen, D.D. 1995. The summer season: western Great Lakes region. National Audubon Society Field Notes. 49(5): 929–932.

4 June 1995, 1 Kirtland's warbler photographed, Jackson County, Wisconsin. The bird was found at the same site where one was banded in 1990, returning again in 1991. The 1995 bird was not banded and could not be found again. Also reports 765 males found on the 1995 Kirtland's Warbler Census. [930, 931, 932].

Tessen, D.D. 1996. The summer season: western Great Lakes region. National Audubon Society Field Notes. 50(5): 951–954.

30 June–13 July 1996, 1 male Kirtland's warbler, west of Conover, Vilas County, Wisconsin, second consecutive year in this spot. The bird was found in mature jack pines. [953].

Tessen, D.D. 1997. The nesting season: western Great Lakes region. Field Notes. 51: 998–1001.

18 June–6 July 1997, 2 territorial male Kirtland's warblers, Vilas County, Wisconsin, and 3 territorial males, Marinette County, Wisconsin. Also reports 728 singing males found on the 1997 Kirtland's Warbler Census (19 Upper Peninsula, 709 Lower Peninsula). Includes a photograph of a Wisconsin male. [1000, 1001].

Tessen, D.D. 1998b. The fall migration: western Great Lakes region. Field Notes. 52(1): 61–65.

11 and 15 August 1997, Kirtland's warblers (number unspecified), Little Lake, Marquette County, Michigan, probably the first fall records for the Upper Peninsula. 18 August 1997, 1 Kirtland's warbler, Mack Lake, Oscoda County, Michigan. [65].

Tessen, D.D. 1998c. The nesting season: western Great Lakes region. Field Notes. 52(4): 456–460.

27 May until late June 1998, 1 Kirtland's warbler, Vilas County, Wisconsin. Reports 804 males (790 Lower Peninsula, 14 Upper Peninsula) on the Kirtland's Warbler Census for 1998. [460].

Tessen, D.D. 1999. Kirtland's warbler (*Dendroica kirtlandii*): 1 June 1998, Northern Vilas County. The Passenger Pigeon. 61: 126.

1 June 1998, 1 singing male Kirtland's warbler, northern Vilas County, Wisconsin.

The Friends of Algonquin Park. 2009. Big lessons from a returning(?) neighbour. The Raven. 50(2): 1–4.

Discusses Kirtland's warbler nesting at Canadian Forces Base Petawawa and the implications for conservation.

Thompson, F.R.; Lewis, S.J.; Green, J.; Ewert, D. Status of neotropical migrant landbirds in the Midwest: identifying species of management concern. In: Finch, D.M.; Stangel, W., eds. Status and management of neotropical migratory birds. Gen. Tech. Rep. RM-229. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 145–158. <https://doi.org/10.2737/RM-GTR-229>.

A total of 110 species of neotropical migrant landbirds breeding in the Midwest were ranked by

decreasing management concern. Kirtland's warbler was ranked as the species of most concern. [147, 150, 157].

Tiede, D. 2017. The summer season: 2016. The Passenger Pigeon. 79(2): 181–235.

The first 2016 Wisconsin Kirtland's warbler found was 13 May in Adams County. Reports that Wisconsin found 30 singing males during the Kirtland's Warbler Census with 20 in Adams County, 3 in Bayfield County, 6 in Marinette County, and 1 in Vilas County. There were 17 Kirtland's pairs producing 21 nests and 34–38 fledglings. One nest failed due to depredation and the other due to cowbird parasitism. [182, 226].

Tiede, D. 2018. The summer season: 2017. The Passenger Pigeon. 80: 105–151.

Kirtland's warblers were reported from 5 Wisconsin counties. A singing male in Jackson County in late June was the first summer report for that county since 2006. The first arrival in Adams County was on 15 May. Bayfield, Marinette, and Vilas were the other counties reporting Kirtland's. The 2017 Wisconsin census reported 31 singing males compared to 30 in 2016. A total of 53 individuals (33 male and 20 female) were confirmed across 4 counties with 19 pairs accounting for 20 nests of which 5 failed. The successful nests produced an estimated 49–63 fledglings. [137].

Trautman, M.B. 1979. Experiences and thoughts relative to the Kirtland's warbler. The Jack-Pine Warbler. 57(3): 135–140.

The author discusses his personal experiences with Kirtland's warblers in Michigan from the mid-1920s through the mid-1930s, including population fluctuations, colony locations, habitat, behavior, song, nest and eggs, and other species using Kirtland's warbler habitat. Speculates about adverse effects of fall hurricanes on migrating warblers, and correlates hurricane cycles with population fluctuations.

Trick, J.A.; Grveles, K.; DiTommaso, D.; Robaidek, J. 2008. The first Wisconsin nesting record of Kirtland's warbler (*Dendroica kirtlandii*). The Passenger Pigeon. 79(2): 93–102.

Provides an overview of recent history and current status of Kirtland's warblers and details the first Wisconsin nesting of the species in 2007. Includes a graph of the Kirtland's Warbler Census, map of Wisconsin breeding areas, and several photographs. Gives plans for 2008.

Trick, J.A.; Grveles, K.; Goyette, J.L. 2009. The 2008 nesting season: first documented successful nesting of Kirtland's warbler (*Dendroica kirtlandii*) in Wisconsin. The Passenger Pigeon. 71(2): 100–114.

Documents the efforts taken during the 2008 Kirtland's warbler nesting season. Includes cowbird trapping, information and education, monitoring, banding, surveys, 2009 plans, and many color photographs.

Trick, J.; Refsnider, R. 2012. Post-breeding passive netting of Wisconsin Kirtland's warblers in 2012.

Hatching year Kirtland's warblers were targeted for color-banding to see if they return to the local area the following year to breed. A single hatching year Kirtland's was captured and banded. Information on other species captured and observed in the study area is provided.

Trick, J.; Refsnider, R.; Warner, S. 2014. Kirtland's warbler banding activities in Wisconsin 2014. <https://www.fws.gov/midwest/GreenBay/endangered/kiwa/2014/pdf/kiwa2014BandingTrickEtAl.pdf>.

In 2014, 5 male, 2 female, and 6 nestling Kirtland's warblers were color-banded in Wisconsin.

Provides a summary of Kirtland's color-banded from 2008–2014 and color-banding protocol for nestling Kirtland's.

Trine, C.L., ed. 2005. Long-lived Kirtlands' [sic] warblers. Ornithological Newsletter. 2005 August.

Reports the capture of a male Kirtland's warbler in Ogemaw County, Michigan, on 8 June 2005 banded as an adult in 1996, making the bird at least 10 years old, the oldest on record. The record was broken 4 days later, with another male captured in Ogemaw County, Michigan, that had been banded as an adult in 1995, making the bird at least 11 years old.

United States Fish and Wildlife Service. 1983. Kirtland's warbler transmitter development/tracking studies. Athens, GA: Patuxent Wildlife Research Center.

Describes a new 1.1-gram transmitter design for use on Kirtland's warblers. Provides results on a preliminary weight-lifting study from 1982 using pine siskins as a surrogate species. Future study plans with tracking surrogate species during post-breeding, fall migration, and winter are detailed. Providing studies with surrogate species go well, the same tracking work with Kirtland's warblers will ensue.

United States Fish and Wildlife Service. 1986. Regional news: region 3. Endangered Species Technical Bulletin. 11(10 and 11): 10.

Reports that 27 Kirtland's warblers were color-banded and 6 were radio-tracked. Adults were noted to remain near their established territories, while the young tended to move a mile or more from the nest area.

United States Fish and Wildlife Service. 2008. Wisconsin Kirtland's warbler 2008 nesting season summary. Green Bay, WI.

Summarizes the 2008 Kirtland's warbler activities in Wisconsin, where 8 males, several females, and 5 nests were found, with 2 nests producing 5 fledglings each. Over 300 brown-headed cowbirds were captured in Adams County. A total of 9 male Kirtland's were captured. One had been banded in The Bahamas earlier in 2008, and the others were color-banded. A field trip to see Kirtland's was conducted for 72 Wisconsin Society for Ornithology members.

United States Fish and Wildlife Service. 2009. Wisconsin Kirtland's warbler 2009 season summary. Green Bay, WI.

Summarizes the 2009 Kirtland's warbler activities in Wisconsin, where a total of 12 males and 12 females were found. Of a total of 11 recorded nesting attempts, 7 to 8 nests were successful, fledging an estimated 26 to 30 young. A total of 3 brown-headed cowbird traps were operated, capturing 303 cowbirds (221 male, 82 female). Six male, 1 female, and 3 fledgling Kirtland's warblers were color-banded, and 2 field trips were organized.

United States Fish and Wildlife Service. 2010. Wisconsin Kirtland's warbler 2010 season summary. Green Bay, WI.

Summarizes the 2010 Kirtland's warbler activities in Wisconsin, where a minimum of 24 males (23 during the official census period) and 13 females were found. Of a total of 16 nesting attempts, 3–5 nests were successful, fledging 12–18 young. Three cowbird traps were operated, capturing 216 (151 male, 65 female) brown-headed cowbirds. A total of 9 male Kirtland's were color-banded. There were also 2 Kirtland's warbler field trips held with 70 participants.

United States Fish and Wildlife Service. 2011. Wisconsin Kirtland's warbler 2011 season summary. Green Bay, WI.

Summarizes the 2011 Kirtland's warbler activities in Wisconsin where a minimum of 22 male (21 during the official census period) and 11 female Kirtland's were found. Of a total of 11 recorded nesting attempts, 4 nests were known to be successful, fledging an estimated 9 to 17 young. Three cowbird traps were operated, capturing 166 (114 male, 52 female) brown-headed cowbirds. A total of 6 male and 1 female Kirtland's warblers were color-banded, and 2 field trips with 64 participants were conducted.

United States Fish and Wildlife Service. 2012. Wisconsin Kirtland's warbler 2012 season summary. Green Bay, WI

Summarizes Kirtland's warbler activities in Wisconsin for 2012. A total of 20 male and 10 female Kirtland's were documented in Adams County. Out of 14 nesting attempts, 4 were successful, fledging an estimated 8–13 young. A total of 71 sites in 7 counties of suitable Kirtland's habitat were searched, documenting 24 singing males in 5 counties, with 23 found during the official census period. Three cowbird traps were operated, removing 143 male and 73 female cowbirds. Seven male and 1 recently fledged young Kirtland's were banded. Field trips were provided on 2 days to observe Kirtland's.

United States Fish and Wildlife Service. 2014. Wisconsin Kirtland's warbler 2014 season report. <http://www.fws.gov/midwest/GreenBay/endangered/kiwa/2014/2014SeasonSummary.html>.

Summarizes Kirtland's warbler activities in Wisconsin for 2014 where 11 males and 7 females were present in Adams County. Eight nesting attempts were made by 7 pairs, and 3 nests fledged 8–10 young. During the official census period, 13 singing males were found. Six adult male, 2 adult female, and 6 nestling Kirtland's were color-banded. A Kirtland's warbler playback experiment was conducted, which found 1 male Kirtland's. (See Anich and Ward 2014 for more details.) Four cowbird traps were operated, capturing 100 male and 10 female brown-headed cowbirds. There were 3 Kirtland's warbler field trips with a total of 56 participants.

United States Fish and Wildlife Service. 2015. Wisconsin Kirtland's warbler 2015 season report. Green Bay, WI.

Summarizes 2015 Kirtland's warbler activities in Wisconsin, where 21 male and 16 female Kirtland's warblers were found, and 13 out of 16 nests produced 36–53 fledged young. During the official Kirtland's Warbler Census period, 19 singing males were found. Ten adult male and 11 nestling Kirtland's warblers were color-banded. The Kirtland's warbler playback experiment was again conducted (see North et al. 2015), where 6 male and 2 female Kirtland's were observed. In Adams County, 5 cowbird traps were operated, and 363 (229 male, 134 female) brown-headed cowbirds were captured. A total of 4 Kirtland's warbler field trips with 67 participants were given.

United States Fish and Wildlife Service. 2016. Wisconsin Kirtland's warbler 2016 season report. Green Bay, WI.

Summarizes 2016 Kirtland's warbler activities in Wisconsin where 28 males and 17 females were confirmed. A total of 21 nests were found, and 10 were successful, with 37–38 young fledged. During the official census period, 30 singing males were detected. Thirteen adult males, 1 females, and 30 nestlings were color-banded. The Kirtland's warbler playback experiment was again conducted. The playback experiment involves the use of audio playback of Kirtland's songs to attract and consolidate roaming northern birds to attempt to establish new breeding populations, with 7 male and 4 females found. Cowbird trapping was conducted in Adams County, capturing 266 (168 male, 95 female, 3 juvenile) brown-headed cowbirds. In Adams County, 3 field trips with 70 participants were given. Kirtland's warbler studies (nest cameras, cowbird tracking, nestling tracking, and a vegetation study) by the University of Wisconsin are also summarized.

United States Fish and Wildlife Service. 2017. Wisconsin Kirtland's warbler 2017 nesting season report. Green Bay, WI.

Summarizes the 2017 Kirtland's warbler activities in Wisconsin where 33 males and 20 females were found, producing 15 successful nests out of 20 found, and 49–63 young fledged. During the official Kirtland's Warbler Census period, 31 singing males were found. A total of 61 Kirtland's (30 males, 2 females, and 29 nestlings) were color-banded. The results from 2014–2016 Kirtland's warbler playback experiments are given and suggest that playback could be used to establish additional populations in areas where habitat exists. In Adams County, 4 cowbird traps were operated, capturing 240 (168 male, 48 female, 24 juvenile) brown-headed cowbirds. Three Kirtland's warbler field trips were given to 66 people. A summary of habitat management, and graduate research is given.

United States Fish and Wildlife Service. 2018. Wisconsin Kirtland's warbler 2018 nesting season report. Green Bay, WI.

Discusses the proposed Kirtland's warbler delisting. Also summarizes 2018 Kirtland's warbler activities in Wisconsin where 34 males and 17 females were found, producing 11 successful nests out of 16 found, and 42–47 young fledged. During the official Kirtland's Warbler Census period, 32 singing males were found. A total of 30 Kirtland's (8 males and 22 nestlings) were color-banded. The results from 2014–2018 Kirtland's warbler playback experiments are given and suggest that playback could be used to establish additional populations in areas where habitat exists. In Adams County, 4 cowbird traps were operated, capturing 280 (246 male, 32 female, 2 juvenile) brown-headed cowbirds. Two Kirtland's warbler field trips were given to 53 people. A summary of habitat management and graduate research is given.

United States Fish and Wildlife Service. 2020. Wisconsin Kirtland's warbler 2019 nesting season report. Green Bay, WI.

Discusses the delisting of Kirtland's warbler and summarizes the 2019 Kirtland's warbler activities in Wisconsin where 23 males and 16 females were found, producing 13 successful nests out of 16 found, and 54–59 young fledged. During the official Kirtland's Warbler Census period, 32 singing males were found. The results from 2019 Kirtland's warbler playback experiments are given. In Adams County, 5 cowbird traps were operated, capturing 736 (451 male, 253 female, 32 juvenile) brown-headed cowbirds. One Kirtland's warbler field trip was given to 32 people. Summaries of habitat management and acknowledgments are given.

United States Fish and Wildlife Service; Wisconsin Department of Natural Resources. 2007. State of wildlife: North Central. The Wildlife Professional. 1(3): 13.

Reports on the first Kirtland's warbler nest found in Wisconsin, June 2007.

Van Dyke, F.; Harju, S.; Hindy, M.; Cannata, N.; Schnidt, E.; Hillman, E.; Sargent, A.; Keas, B. 2022. Comparative detection, density, and reproductive performance of Kirtland's warbler in jack and red pine. The Journal of Wildlife Management. 86:e22233. <https://doi.org/10.1002/jwmg.22233>. 16 p.

From 2016–2018, density and detection probabilities in jack pine and red pine stands were estimated through repeated visits to a limited number of stands. Estimates of species detection probability indicated that ≥ 1 male Kirtland's warbler would be detected on most sites when any were present, but individual detection probabilities were less and varied by stand type, indicating that single visits to sites would underestimate numbers and that accurate estimation of detection probability was important for estimation of density in different stand types. Estimates of detection of Kirtland's warbler population size in jack pine versus red pine stands in the same areas and breeding seasons are provided. Concludes that Kirtland's could reproduce in red pine stands that are adjacent to jack pine and red pine could be interspersed in jack pine plantations. It is also suggested that the Kirtland's Warbler Census underestimates the number of singing males.

Van Tyne, J. 1938. Checklist of the birds of Michigan. Occasional Papers No. 379. Ann Arbor, MI: University of Michigan Press, Museum of Zoology.

Lists the Michigan counties in which Kirtland's warbler is a summer resident. Notes one Kirtland's record north of the breeding range: 1885, 1 specimen, Spectacle Reef Lighthouse, northeast of Cheboygan. Considers Kirtland's a very rare transient south of the breeding area. [34].

Van Tyne, J.; Hamerstrom, F.N., Jr.; Hamerstrom, F. 1942. Breeding bird census: jack pine barrens. Audubon. 44(2): 30.

13–21 June 1942, 2 Kirtland's warbler pairs with nests found, Oscoda County, Michigan.

Van Tyne, J.; Hamerstrom, F.N., Jr.; Hamerstrom, F. 1943. Audubon Magazine's seventh breeding bird census: jack pine barrens. Audubon. 45(2): 23–24.

13–20 June 1943, 1 Kirtland's warbler pair with nest discovered, Oscoda County, Michigan. [23].

Van Tyne, J.; Mayfield, H.; Hiatt, L.O. 1944. Audubon Magazine's eighth breeding bird census: jack pine barrens. Audubon. 46(2): 23.

4–29 June 1944, 2 Kirtland's warbler pairs with nests found, Oscoda County, Michigan.

Verner, J.; Willson, M.F. 1969. Mating systems, sexual dimorphism, and the role of male North American passerine birds in the nesting cycle. Ornithological Monographs. 9: 1–79.

Kirtland's warbler is described as a monogamous species, with polygyny reported but apparently abnormal. Also provides a timeline and information on nest building, incubation, nestlings, and fledglings. [22].

Walkinshaw, L.H. 1932. With Kirtland's warbler among the jack pines. Bird-Lore. 34: 196–199.

Provides details on a trip to the Kirtland's warbler area of Michigan. Discusses nest, eggs, behavior, and habitat. Includes photographs of a male and habitat.

Walkinshaw, L.H. 1940. A Kirtland's warbler return. The Jack-Pine Warbler. 18: 91–92.

Provides details on a trip to the Kirtland's warbler area of Michigan. Discusses nest, eggs, behavior, and habitat. Includes photographs of a male and habitat.

Walkinshaw, L.H. 1956. Some corrections. The Jack-Pine Warbler. 34: 153–154.

Corrects Wickstrom 1953 to read “nest with 1 young, 1 egg.” [154].

Walkinshaw, L.H. 1972a. Kirtland's warbler—endangered. American Birds. 26(1): 3–9.

Documents 40 years of personal experiences with Kirtland's warblers, including the first banding of a Kirtland's. Presents data on nesting success and nest parasitism, from 1931–1971, including 4 nest histories. Discusses threats, possible reasons for reproductive failures, and steps to be taken to increase survival of the species. Includes photographs of habitat and a female at a nest.

Walkinshaw, L.H. 1975a. Summary of 1975 Kirtland's warbler nesting.

Provides data from 1975 where 38 Kirtland's warbler nests were found with a 71 percent success rate, and 2 were parasitized by cowbirds. Also contains banding data.

Walkinshaw, L.H. 1976a. Kirtland's and blackpoll warbler banding recoveries. *The Jack-Pine Warbler*. 54: 92–93.

Discusses Kirtland's warbler bandings, recoveries, and histories for 1972–1975, including a detailed history of a male eventually found dead in Cincinnati, Ohio. (See Maslowski 1975 and Walkinshaw 1976b.)

Walkinshaw, L.H. 1976b. 1976 Kirtland's warbler nesting success.

Provides Kirtland's warbler nesting data for 1972–1976 including number of nests, eggs, nestlings, and fledglings. Also provides brown-headed cowbird parasitism, eggs, hatchlings, and fledglings.

Walkinshaw, L.H. 1977a. An alternative view. *Bird Watch*. 5: 1–3.

Discusses the various factors affecting Kirtland's warbler population size.

Walkinshaw, L.H. 1977b. History of a female Kirtland's warbler and her descendants. *The Jack-Pine Warbler*. 55(2): 63–68.

Discusses the life history for a female Kirtland's warbler during the summers of 1970–1975 using reproductive data and provides additional information on her offspring.

Walkinshaw, L.H. 1978. The history of a female Kirtland's warbler and her descendants. *Birding*. 10: 59–62.

Discusses the life history for a female Kirtland's warbler during the summers of 1970–1975 using reproductive data and provides additional information on her offspring. (Reprints Walkinshaw 1977b.)

Walkinshaw, L.H. 1979. Returns of the rare Kirtland's warbler. *Ring*. 9: 93–96.

Provides the life history of Kirtland's warblers, along with banding and recovery data.

Walkinshaw, L.H. 1980. Some records of birds banded in Michigan. *The Jack-Pine Warbler*. 58: 131–141.

Provides detailed Kirtland's warbler banding and recovery data, including records of nesting success. [134–135].

Walkinshaw, L.H. 1988. Nest observations of the Kirtland's warbler: a half century quest. Ann Arbor, MI: University Microfilms International.

Walkinshaw's Kirtland's warbler field notes from 1931–1977.

Walkinshaw, L.H. [N.d.]. Kirtland's warbler.

Summarizes some of Walkinshaw's Kirtland's warbler work from 1931–1974.

Walkinshaw, L.H. [N.d.]. Kirtland's warbler studies.

Provides a history of Walkinshaw's 1931–1983 studies with Kirtland's warblers.

Walkinshaw, L.H.; Faust, W. 1973. Nesting success of Kirtland's warbler in Crawford County, Michigan.

In 1973, 23 out of 33 Kirtland's warbler nests found were successful and averaged 3.52 fledglings per nest.

Walkinshaw, L.H.; Faust, W.; Masters, L.; Hoffman, R.; Brow, J.; Shake, B. 1972b. 1972 nesting of Kirtland's warbler: artillery range, Lovells Management Area, Pere Cheney Colonies, Crawford County, Michigan.

Reports that 31 Kirtland's warbler nests were found producing 135 eggs and 97 fledglings. Cowbirds parasitized 6.25 percent of the Kirtland's nests.

Walkinshaw, L.H.; Faust, W.R. 1974. Some aspects of Kirtland's warbler breeding biology. The Jack-Pine Warbler. 52(2): 64–75.

Provides breeding information gathered in Crawford County, Michigan, on Kirtland's warbler reproduction on nestling returns and on breeding of 1-year-old individuals, following brown-headed cowbird removal. Family histories of many Kirtland's are included, as are several photographs.

Walkinshaw, L.H.; Faust, W.R. 1975b. 1974 Kirtland's warbler nesting success in Northern Crawford County, Michigan. The Jack-Pine Warbler. 53(2): 54–58.

Reports on the 1974 nesting success of Kirtland's warblers post cowbird removal. A total of 108 Kirtland's nests were found, with 75 successful nests fledging 293 young, and 5 nests were parasitized by cowbirds.

Walkinshaw, L.R. 1976c. A Kirtland's warbler life history. American Birds. 30: 773–774.

Provides banding and recovery records for a male Kirtland's warbler banded 2 July 1971 at Mack Lake, Oscoda County, Michigan, which was found dead on 27 September 1975 in Cincinnati, Ohio. Notes that the specimen was deposited in the collection of the Cincinnati Museum. (See Maslowski 1975 and Walkinshaw 1976a.)

Wallace, G.J. 1945. Seasonal records of Michigan birds, summer. The Jack-Pine Warbler. 23: 165–176.

23 June 1945, 2 male Kirtland's warblers, Lovells, Crawford County. [174].

Wallace, G.J. 1946. Seasonal records of Michigan bird-spring. The Jack-Pine Warbler. 24: 154–167.

In the period 30 May–2 June 1946, 1 Kirtland's warbler, Higgins Lake, Roscommon County, Michigan. [155].

Wallace, G.J. 1965. Michigan bird survey, spring, 1964. The Jack-Pine Warbler. 43: 26–38.

9 May 1964, 15 Kirtland's warblers, Mio, Oscoda County, Michigan. 8 May 1964, 4 Kirtland's warblers (1 sight and 3 song records), Crawford County, Michigan. 31 May 1964, 3 Kirtland's warblers, Presque Isle County, Michigan. [35].

Wallace, G.J. 1977. Environmental status of the Lake Michigan region. In: Birds of the Lake Michigan Drainage Basin. Argonne, IL. Vol. 14.

Lists Kirtland's warbler as a very rare summer resident in the Lake Michigan Drainage Basin with 2 pairs in Wexford County in 1974. Briefly notes season of occurrence, habitat, and chief food eaten. [23, 86, 92].

Wallace, G.J.; Black, C.T. 1948. Seasonal records of Michigan birds, summer and fall, 1947. The Jack-Pine Warbler. 26: 22–34.

Notes that Kirtland's warblers were recorded in Oscoda, Crawford, and Kalkaska Counties, Michigan. Several nest records are included. [32].

Walters, M. 1980. The complete birds of the world. Newton Abbot, United Kingdom: David and Charles.

Kirtland's warbler is listed with brief information on habitat, food, and number of eggs. [289].

Weiland, E.C. 1964. Michigan bird survey, summer 1963. The Jack-Pine Warbler. 42: 255–273.

6 July 1963, 3 Kirtland's warblers, Kalkaska County, Michigan. 16 June 1963, 2 Kirtland's warblers, Kalkaska County, Michigan. 15 June 1963, 3 Kirtland's warblers, Oscoda County, Michigan. 20 June 1963, Kirtland's warbler nest with 3 young (1 banded), Presque Isle County, Michigan. [268].

Weir, R.D. 1985. The nesting season: Ontario region. American Birds. 39: 905–909.

22 June–9 July 1985, 1 singing male Kirtland's warbler, southern Ontario, third summer bird found in 9 years. [908].

Weir, R.D. 1987. The spring migration: Ontario region. American Birds. 41: 422–428.

15 May 1987, 1 male Kirtland's warbler, Rondeau Provincial Park, Ontario. [423, 426].

Wickstrom, G. 1951a. Seasonal records of Michigan birds, summer 1951. The Jack-Pine Warbler. 29: 107–114.

Notes Kirtland's warbler nesting records for Crawford, Iosco, and Oscoda Counties, Michigan, and mentions a new nesting area in Presque Isle County, Michigan. Discusses the first census, which was undertaken in 1951. [107, 114].

Wickstrom, G. 1951b. Seasonal records of Michigan birds, spring 1951. The Jack-Pine Warbler. 29: 91–101.

Spring 1951, 1 new colony of 13 nesting Kirtland's warblers found, Iosco County, Michigan. [92, 99].

Wickstrom, G. 1952a. Seasonal records of Michigan birds, spring 1952. The Jack-Pine Warbler. 30: 79–92.

17 May 1952, 5 Kirtland's warblers, Oscoda County, Michigan. 21 May 1952, 3 Kirtland's warblers, Iosco County, Michigan. 24 May 1952, 8 Kirtland's warblers, Oscoda County, Michigan. 31 May 1952, 2 Kirtland's warblers, Onaway, Presque Isle County, Michigan. [90].

Wickstrom, G. 1952b. Seasonal records of Michigan birds, summer 1952. The Jack-Pine Warbler. 30: 125–131.

21 May 1952, 3 male Kirtland's warblers, near Tawas, Iosco County, Michigan. 27 June 1952, 8 male Kirtland's warblers, near Grayling, Crawford County, Michigan. 28 June 1952, 13 Kirtland's warblers, Oscoda County, Michigan. 5 July 1952, 12 male Kirtland's warblers between Eldorado and Grayling, Crawford County, Michigan. [130].

Wickstrom, G. 1953. Seasonal records of Michigan birds, spring 1953. The Jack-Pine Warbler. 31: 79–95.

10 May 1953, 2 Kirtland's warblers, Mio, Oscoda County, Michigan. 15 May 1953, Kirtland's warbler(s), Kalkaska County, Michigan. (For corrections, see Walkinshaw 1956.) [91].

Wilson, A.S.; Marra, P.P.; Fleischer, R.C. 2012. Temporal patterns of genetic diversity in Kirtland's warblers (*Dendroica kirtlandii*), the rarest songbird in North America. BMC Ecology. 12: 1–11. <https://doi.org/10.1186/1472-6785-12-8>.

The impact of low population sizes of Kirtland's warbler on genetic variation was examined. Samples from 1903–1912, 1929–1955, and 2008–2009 were compared. Allelic richness was highest in the 1903–1912 sample, and lowest in the 2008–2009 sample. The authors conclude that the temporal genetic patterns are the result of the declining population compressing into available habitat and a consequence of existing at low numbers for several decades.

Wood, N.A. 1903. Notes on trips June 28–July 17 1903 by Norman A. Wood: discovery of Kirtland's warbler 1903.

Digital scan of Norman Wood's field notes when he found the Kirtland's warbler type nest. Includes several maps and a newspaper clipping about the trip.

Wood, N.A. 1904. Discovery of the breeding area of Kirtland's warbler. Bulletin of the Michigan Ornithological Club. 5: 1–13. <http://www.biodiversitylibrary.org/item/127712>.

Describes the discovery of the Kirtland's warbler type nest, the behavior and song of the adult, other bird life, and the botany of the breeding area. Also describes the discovery of the breeding area by Frothingham and Gale, and Wood's journey from Ann Arbor to northern Michigan. Provides data on 23 birds taken in Michigan and on 8 sight records. At least 16 of the specimens were deposited in the University of Michigan Museum of Zoology. Includes photographs of habitat, nest, and egg.

Wood, N.A. 1926. In search of new colonies of Kirtland warblers. The Wilson Bulletin. 38: 11–13.

Describes a trip to the breeding grounds to look for new Kirtland's warbler colonies and photograph nests. Includes miscellaneous sight records and refutes the claim by Edward Arnold (1908) that Arnold found the type eggs and nest in 1904. Wood 1904 made the discovery in 1903.

Wood, N.A. 1951. The birds of Michigan. Miscellaneous Publications No. 75. Ann Arbor, MI: University of Michigan Press, Museum of Zoology.

15 May 1875, 1 female Kirtland's warbler, near Scio, Washtenaw County, Michigan. 16 May 1879, 1 female Kirtland's warbler, near Scio, Washtenaw County, Michigan. 11 May 1883, 1 male Kirtland's warbler, Battle Creek, Calhoun County, Michigan. 21 May 1885, 1 male Kirtland's warbler, Spectacle Reef Lighthouse, Mackinac County, Michigan. 15 May 1886, 1 female Kirtland's warbler, Kalamazoo County, Michigan. 18 May 1888, 1 male Kirtland's warbler, in the area of Ann Arbor, Washtenaw County, Michigan. 14 May 1902, 1 female Kirtland's warbler, in the area of Ann Arbor, Washtenaw County, Michigan. 6 May 1905, 1 male Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan. 13 and 16 May 1907, 1 male Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. 10 May 1911, 1 Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. 21 May 1915, 1 Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. Early September 1915 and 1916, several Kirtland's warblers, near Luzerne, Oscoda County, Michigan. 9 May 1916, 1 male Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. 9 September 1916, 1 male Kirtland's warbler, near Luzerne, Oscoda County, Michigan. 28 September 1919, 1 male Kirtland's warbler, 7 miles south of Houghton Lake Village, Roscommon County, Michigan. 21 May 1926, 1 female Kirtland's warbler, Fish Point, Tuscola County, Michigan. 1 September 1930, male Kirtland's warblers, southeast of Lovells, Crawford County, Michigan. 20 August 1933, male Kirtland's warblers, Red Oak, Oscoda County, Michigan. 26 August 1933, male Kirtland's warblers, southeast of Lovells, Oscoda County, Michigan. Deposition records are noted if known. [402-404].

Wood, N.A.; Frothingham, E.H. 1905. Notes on the birds of the Au Sable Valley, Michigan. Auk. 22(1): 39–54.

Provides several Kirtland's warbler records from Crawford County, Michigan, for July 1903 and July 1904, including a pair seen for several days carrying insects in nontypical habitat. Also mentions early arrival and nesting dates and fall migration dates. [41, 44, 52].

Wormington, A. 1985. Ontario Bird Records Committee report for 1984. Ontario Birds. 3(1): 2–17.

14–19 May 1979, 1 male Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 16 May 1974, 1 Kirtland's warbler, Toronto, Metropolitan Toronto, Ontario, accepted by OBRC. 8–13 June 1958, 1 territorial male Kirtland's warbler, McVicar, Bruce County, Ontario, accepted by OBRC. 15 May 1984, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. 16 May 1976, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. [12, 15, 16].

Wormington, A. 1986. Ontario Bird Records Committee report for 1985. Ontario Birds. 21(2): 3–18.

9 June–14 July 1977, 1 territorial male Kirtland's warbler photographed, Petawawa, Renfrew County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 2 June–18 July 1978, 1 territorial male Kirtland's warbler photographed, Petawawa, Renfrew County, Ontario, accepted by OBRC. [15].

Wormington, A. 2013. Spring migration: Ontario. North American Birds. 66(3): 471–478.

5 May 2012, 1 Kirtland's warbler, Stoney Creek, Hamilton County Ontario. 26 May 2012, 1 Kirtland's warbler, Carden Alvar, Ontario. 21 May through at least 30 May 2012, 2 territorial singing male Kirtland's warblers, Petawawa Military Reserve, Renfrew County, Ontario. [476].

Youngman, J. 2005. Kirtland's warbler nest on the Baraga Plains. Brockway Lookout. 12(2): 2.

Reports on finding a pair of Kirtland's warblers feeding young on 28 July and 2 August 2005 in Marquette County, Michigan.

Zimmerman, D.A.; Van Tyne, J. 1959. A distributional check-list of the birds of Michigan. Occasional Papers of the Museum of Zoology. University of Michigan. 608: 1–63.

Lists Michigan counties for which there are Kirtland's warbler breeding records and cites 3 additional records outside of the breeding range: 21 May 1926, 1 Kirtland's warbler specimen, Fish Point, Tuscola County, Michigan; 10 May 1955, 1 male Kirtland's warbler, Saginaw, Saginaw County, Michigan; and 21 May 1885, 1 female Kirtland's warbler specimen, Spectacle Reef Lighthouse, Mackinac County, Michigan. The Spectacle Reef Kirtland's warbler specimen was deposited in the collection of the University of Michigan Museum of Zoology. [48].



Brown-headed cowbird trap in Northern Lower Michigan. U.S. Fish and Wildlife Service photo by Chris Mensing.

I.B. Nest Parasitism and Predation

Bailey, L.A. 2007. Brown-headed cowbird response to Kirtland's warbler habitat management and cowbird trapping in Michigan. Michigan State University. <https://doi.org/10.1016/j.jaci.2012.05.050>.

The overall goals were to: (1) analyze the effects of jack pine stand sizes and ages on cowbird relative abundance and density; (2) determine correlations between cowbird trap captures and surrounding land cover; and (3) develop a habitat suitability index model for the brown-headed cowbird. Avian point counts and vegetation surveys were performed to collect data on cowbirds in Kirtland's warbler habitat. Cowbird abundance was greater in large stands (81 ha), had no association to stand age, and was positively correlated with host abundance and species richness. Michigan land cover data were analyzed with cowbird trap data. Cowbird captures were positively correlated with agricultural and urban areas, and with upland deciduous and mixed forests, and were negatively correlated with upland and lowland coniferous forest. A habitat suitability index model for brown-headed cowbirds was constructed using the following suitability index variables: distance to feeding areas, distance to edge, percent ground cover, and percent mid-story cover. A historical and ecological review of the brown-headed cowbird is also provided.

Benson, B.; Lovell, C. 2010. Brown-headed cowbird trapping efforts for the protection of Kirtland's warblers in Wisconsin.

A total of 216 brown-headed cowbirds (151 male, 65 female) were captured in 3 traps in Adams County, Wisconsin.

Bull, J.N.; Chaffee, E.S.; Gaasch, M.E.; Goist, K.C., Jr.; Lumpkin, S.; McDaniel, J.W. 1975. Control of cowbird parasitism on Kirtland's warbler through use of natural behavior patterns.

To see if the results could be applied toward cowbird control, both laboratory and field experiments were done to determine if cowbirds could discriminate on the basis of color, and if cowbirds possessed preferential response tendencies on the basis of color. Adequate evidence was not found for a control method based on color. The study found a high rate of Corvid predation (particularly blue jays) on dummy nests.

Bureau of Sport Fisheries and Wildlife. 1973. Annual Report Fiscal Year 1973.

Discusses cowbird trapping and the increase in the number of Kirtland's fledged per nest. Mentions the U.S. Forest Service did 500 acres of Kirtland's warbler habitat work. [13-14, figs. 9-19].

Cooper, N.W.; Rushing, C.S.; Marra, P.P. 2019. Reducing the conservation reliance of the endangered Kirtland's warbler through adaptive management. Journal of Wildlife Management. 83(6): 1297-1305. <https://doi.org/10.1002/jwmg.21714>.

An adaptive management approach was used to experimentally reduce cowbird trapping efforts across nearly all of the Kirtland's warbler breeding range from 2015-2018. Despite reducing and eventually eliminating cowbird trapping, only 20 cowbirds were detected, and 4 of 514 (1 percent) nests were parasitized. Results indicate that the cowbird control program can at least temporarily be suspended, thereby reducing conservation reliance in the Kirtland's warbler and freeing funds for other management.

Cuthbert, N.L. 1965. Preliminary report on an attempt to reduce the cowbird population at the Kirtland's Warbler Management Area. A progress report to the U.S. Forest Service.

Reports on the results of a 1965 study of brown-headed cowbird control in the Mack Lake Management Area. A total of 158 (99 male, 59 female) cowbirds were shot, and 68 (24 male, 36 female, 8 juvenile) cowbirds were trapped. Parasitism of Kirtland's nests was 19 percent that year compared to 63 percent in 1964 and 54 percent in 1963.

Cuthbert, N.L. 1966. 1966 preliminary account of an attempt to reduce cowbird parasitism at the Kirtland's Warbler Management Area, Huron National Forest. A report to the U.S. Forest Service. Mt. Pleasant, MI.

Presents the results of the 1966 brown-headed cowbird removal study in Oscoda County. Trapping was used more than shooting in 1966 as trapping was a more efficient method. A study of Kirtland's warbler nesting success was also made in Ogemaw County where no cowbird control occurred. A total of 699 cowbirds (396 males, 183 females, and 120 juveniles) were trapped, and 80 (51 males and 29 females) were shot. A total of 135 of the cowbirds trapped late in the season were banded and released. Provides a summary of Radabaugh's 1966 work on Kirtland's nest success in the cowbird removal area (60 Kirtland's fledglings and only 1 of 21 nests parasitized) and an adjacent area where no cowbirds were removed (10 of 14 nests were parasitized). In the Ogemaw County area where no cowbird removal was done in this study, 25 of 29 Kirtland's nests were parasitized.

Cuthbert, N.L.; Radabaugh, B.E. [N.d.]. Tables and figures for informal report of effects of cowbird control on Kirtland's warbler reproduction.

Presents tables, maps, and figures on cowbird trapping and shooting, Kirtland's warbler nests and nest contents, and cowbird parasitism on Kirtland's and other species.

De Groot, K.L. 1998. Community-wide impacts of a generalist brood parasite, the brown-headed cowbird (*Molothrus ater*). University of Guelph.

Investigates the effects of the Kirtland's warbler cowbird removal program on songbird community structure. The study found that cowbird traps were very effective at removing cowbirds up to at least 5 km from traps. Concludes that the influence of cowbirds on communities of hosts is generally weak but recommends further investigation of the effects of parasitism on songbird communities in landscapes with greater densities of cowbirds.

De Groot, K.L.; Smith, J.N.M. 2001. Community-wide impacts of a generalist brood parasite, the brown-headed cowbird (*Molothrus ater*). Ecology. 82(1): 868–881. [https://doi.org/10.1890/0012-9658\(2001\)082\[0868:CWIOAG\]2.0.CO;2](https://doi.org/10.1890/0012-9658(2001)082[0868:CWIOAG]2.0.CO;2).

Compares songbird communities in stands of young jack pine where cowbirds have been removed for 5–11 years to similar sites 5–10 km and more than 10 km from cowbird traps. Removal sites contained 4–9 percent more host individuals. Concludes that cowbirds do not strongly influence the composition of songbird communities in Michigan jack pines.

De Groot, K.L.; Smith, J.N.M.; Taitt, M.J. 1999. Cowbird removal programs as ecological experiments: measuring community-wide impacts of nest parasitism and predation. Studies in Avian Biology. 18: 229–234.

By comparing areas where cowbirds had been removed for 5–11 years to matched habitats where there had been no recent cowbird removal, the Kirtland's warbler cowbird removal program was used to test the hypothesis that cowbirds alter the composition of host communities through nest parasitism. Cowbird removal sites had a higher percentage of suitable hosts relative to control sites. Cowbirds were removed for 2 years from a site in British Columbia where song sparrows had experienced intense cowbird parasitism and frequent nest failure. Failure rates declined sharply after cowbird removal but remained high at nearby sites where no removal was performed. Both approaches suggest that cowbirds have more profound effects than is currently recognized.

DeCapita, M.E. 1979. 1978 brown-headed cowbird control project in Kirtland's warbler nesting range, Michigan. Lansing, MI.

A total of 3,411 brown-headed cowbirds (1,754 male, 1,639 female, 18 juvenile) were removed from Kirtland's warbler breeding habitat. A total of 385 (181 male, 201 female, 3 juvenile) were captured outside of warbler breeding habitat, banded, and released to gather information on cowbird movements and kill trap effectiveness. Included are data on cowbird movements from recaptures.

DeCapita, M.E. 1984. Annual report: 1983: control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan. East Lansing, MI.

A total of 4,324 brown-headed cowbirds (2,128 male, 2,196 female) were removed from Kirtland's warbler breeding habitat. A list of other species captured and banded is included.

DeCapita, M.E. 1986. Annual report: 1985: control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan. East Lansing, MI.

A total of 4,740 brown-headed cowbirds (2,644 male, 2,082 female, 14 juvenile) were removed from Kirtland's warbler breeding habitat. Reports that 715 people from 37 states, Washington, DC, 3 Canadian provinces, and Great Britain attended the Kirtland's warbler tours. Provides a list of nontarget species captured and banded.

DeCapita, M.E. 1987a. Control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan: 1986. East Lansing, MI.

A total of 4,184 brown-headed cowbirds (2,328 male, 1,781 female, 75 juvenile) were removed from Kirtland's warbler breeding habitat. Reports that 627 people from 34 states, Washington, DC, Canada, England, and Wales attended the Kirtland's warbler tours. A list of other species captured and banded is provided.

DeCapita, M.E. 1987b. Control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan: 1987. East Lansing, MI.

A total of 3,900 brown-headed cowbirds (2,291 male, 1,549 female, 60 juvenile) were removed

from Kirtland's warbler breeding habitat. Reports that 670 people from 35 states, Canada, Washington, DC, and Great Britain attended the Kirtland's warbler tours. Provides a list of other species captured.

DeCapita, M.E. 1989. Control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan 1988. East Lansing, MI.

A total of 5,540 brown-headed cowbirds (2,932 male, 2,589 female, 19 juvenile) were removed from Kirtland's warbler breeding habitat. Reports that 828 people from 33 states, Canada, Finland, and Kenya attended the Kirtland's warbler tours. Provides a list of nontarget species captured and banded.

DeCapita, M.E. 1990. Control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan 1989. East Lansing, MI.

A total of 5,790 brown-headed cowbirds (2,907 male, 2,881 female, 2 juvenile) were removed from Kirtland's warbler breeding habitat. Reports that 852 people from 32 states, Venezuela, Great Britain, and Canada attended the Kirtland's warbler tours. A list of nontarget species captured is included.

DeCapita, M.E. 1991a. Control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan 1990. East Lansing, MI.

A total of 7,595 brown-headed cowbirds (3,818 male, 3,771 female, 6 juvenile) were removed from Kirtland's warbler breeding habitat. Reports that 818 people from 32 states, 5 provinces, Great Britain, Hungary, Finland, the Netherlands, and Kenya attended the Kirtland's warbler tours. A list of nontarget species captured is provided.

DeCapita, M.E. 1991b. 1991 control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan. East Lansing, MI.

A total of 4,670 brown-headed cowbirds (2,576 male, 2,088 female, 6 juvenile) were removed from Kirtland's warbler breeding habitat. A total of 586 people from 40 states, 3 Canadian provinces, and Great Britain attended the Kirtland's warbler tours. A list of target species captured are included.

DeCapita, M.E. 1993. 1992 control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan. East Lansing, MI.

A total of 3,737 brown-headed cowbirds (2,003 male, 1,730 female, 4 juvenile) were removed from Kirtland's warbler breeding habitat. The Kirtland's warbler tours were attended by 725 people from 35 states, Washington, DC, 4 Canadian provinces, and 5 additional countries. Includes a list of nontarget species captured.

DeCapita, M.E. 1994. 1993 control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan. East Lansing, MI.

A total of 4,614 brown-headed cowbirds (2,361 male, 2,246 female, 7 juvenile) were removed from Kirtland's warbler breeding habitat. A total of 775 people from 38 states, 2 Canadian provinces, and 5 additional countries participated in the Kirtland's warbler tours. Provides a list of other species captured.

DeCapita, M.E. 2000. Brown-headed cowbird control on Kirtland's warbler nesting areas in Michigan, 1972–1995. In: Smith, J.N.M.; Cook, T.L.; Rothstein, S.I.; Robinson, S.K.; Sealy, S.G., eds. Ecology and management of cowbirds and their hosts. Austin: University of Texas Press: 333–341.

Discusses 24 years (1972–1995) of brown-headed cowbird removal from Kirtland's warbler breeding habitat and implications for warbler recovery. Includes an overview of Kirtland's natural history and management, and cowbird trapping methods.

DeCapita, M.; Cordes, M.L. 1985. Annual report: 1984: control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan. East Lansing, MI.

A total of 4,119 cowbirds (2,183 male, 1,936 female) were removed from warbler areas. Blue jay capture and a test of seed selection is discussed. A table of other species captured is included.

DeCapita, M.E.; Thrune, W.J. 1980. Annual report: 1979 control of brown-headed cowbirds on Kirtland's warbler nesting range, Michigan. Lansing, MI.

A total of 3,691 cowbirds (1,954 male, 1,721 female, 16 juvenile) were removed from Kirtland's warbler breeding habitat, and 273 (126 male, 143 female, 4 juvenile) were banded. Removal, banding, and movement summaries are provided. Nontarget species banded and released are included, as well as a discussion of blue jay capture and movement. Includes a summary of Kirtland's nesting success before and after cowbird trapping.

Deloria, C.M.; DeCapita, M.E. 1997. 1996 control of brown-headed cowbirds on Kirtland's warbler nesting areas of northern Michigan. East Lansing, MI.

A total of 3,201 brown-headed cowbirds (1,844 male, 1,357 female, 0 juvenile) were removed from Kirtland's warbler breeding habitat. Kirtland's warbler tours had 606 people from 38 states, 2 Canadian provinces, Sweden, and England participate. Totals of nontarget species captured are included.

Deloria, C.M.; DeCapita, M.E. 1998. 1997 control of brown-headed cowbirds on Kirtland's warbler nesting areas of northern Michigan. East Lansing, MI.

A total of 3,626 brown-headed cowbirds (1,929 male, 1,695 female, 2 juvenile) were removed from Kirtland's warbler breeding habitat. Reports 722 people from 40 states, District of Columbia, 4 Canadian provinces, Sweden, England, United Kingdom, India, The Bahamas, and Antarctica participated in the Kirtland's warbler tours. Other species captured are included.

Deloria, C.M.; DeCapita, M.E.; Crawford, M.W. 1999. 1998 control of brown-headed cowbirds and Kirtland's warbler tours on Kirtland's warbler nesting areas of northern Michigan. East Lansing, MI.

A total of 3,143 brown-headed cowbirds (1,937 male, 1,154 female, 52 juvenile) were removed. Grayling Kirtland's warbler tour had 773 people from 41 states and 9 foreign countries. Includes lists of birds seen on the tours and nontarget birds captured. Also discusses cowbird trap modifications and the 1998 Kirtland's Warbler Census.

Ehrlich, P.R.; Dobbin, D.S.; Wheye, D. 1998. Conservation of Kirtland's warbler. In: The birder's handbook. New York: Simon and Schuster: 527, 529.

Briefly discusses the history, cowbird control, and population numbers of Kirtland's warblers. Speculates on why numbers are low. Mistakenly states some blue jays are removed during cowbird trapping.

Elbert, D. 2012. 2011 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

A total of 1,637 cowbirds (1,240 adult male, 396 adult female, 1 juvenile) were removed in 2011. Possible reasons for the low catch total are discussed. Includes data on 205 nontarget species captured.

Elbert, D.; Mensing, C. 2010. 2010 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

A total of 3,540 cowbirds (2,142 adult male, 1,390 adult female, 8 juvenile) were removed in 2010. Includes data on 320 nontarget species captured. Also reports 1,773 singing male Kirtland's on the 2010 census.

Faaborq, J.; Holmes, R.T.; Anders, A.D.; Bildstein, K.L.; Dugger, K.M.; Gauthreaux, S.A.; Heglund, P. [et al.]. 2010. Recent advances in understanding migration systems of new world land birds. *Ecological Monographs*. 80(1): 3–48. <https://doi.org/10.1890/09-0395.1>.

Highlights recent lessons and critical gaps in knowledge about migration. Discusses cowbird control and mentions that despite 15 years of cowbird removal, Kirtland's warbler numbers did not increase until the amount of available habitat increased. [9-10].

Floyd, T., ed. 2005. Letters to the editor: cowbirds. *Birding*. 37: 13–22.

Several letters responding to Rothstein 2004. Includes rebuttal from Rothstein.

Friedman, H. 1929. The cowbirds: a study in the biology of social parasitism. Springfield, IL: Charles C. Thomas.

A comprehensive life history of all cowbird species. Provides annotations of 3 citations that contain mention of cowbird parasitism on Kirtland's warblers: Barrows 1921; Leopold, Jr. 1924; and Strong 1919. [200, 245–246].

Friedmann, H. 1963. Host relations of the parasitic cowbirds. *Bulletin* 2. Washington, DC: United States National Museum.

A detailed discussion on the history and impacts of cowbird parasitism on Kirtland's warblers is included in a decades long study on cowbird host–parasite relations. [7, 8, 11, 19, 25, 40, 108–111].

Friedmann, H.; Kiff, L.F.; Rothstein, S.I. 1977. A further contribution of knowledge of the host relations of the parasitic cowbirds. *Smithsonian Contributions to Zoology*. 235: 1–75. <https://doi.org/10.5479/si.00810282.235>.

Documents and clarifies the relations existing among the many hosts of several cowbird species. Kirtland's warbler is mentioned. [8, 9, 51].

Graham, F., Jr. 1995. Unnatural predation. *Audubon*.

Discusses the problems that raccoons, skunks, domestic cats, and cowbirds present on birds. Kirtland's warblers and cowbirds are used as 1 example. [89].

Grzybowski, J. 2005. Letters to the editor: cowbirds. *Birding*. 37: 18, 20.

Refutes Rothstein 2004. Includes rebuttal by Rothstein.

Horton, K.J. 1972. What happened to K.W.? Michigan Audubon Newsletter. 20(2): 4.

Discusses breeding habitat and cowbirds as possible explanations for the decline in Kirtland's warbler population size.

Kelley, A.H. 1970. Michigan bird survey, summer 1970. The Jack-Pine Warbler. 48: 97–103.

Summer 1970, 18 Kirtland's warbler nests reported with most parasitized by cowbirds, Crawford County, Michigan. [100].

Kelley, A.H. 1967. Michigan bird survey, summer 1967. The Jack-Pine Warbler. 45: 112–116.

Early July 1967, 6 Kirtland's warbler nests, including 2 parasitized, Crawford County, Michigan. [114].

Kelley, A.H. 1969. Michigan bird survey, summer 1969. The Jack-Pine Warbler. 47: 126–131.

26–29 June 1969, 9 Kirtland's warbler nests found parasitized by cowbirds, Crawford County, Michigan. [128].

Kelley, A.H. 1971. Michigan bird survey, summer 1971. The Jack-Pine Warbler. 49: 115–124.

Summer 1971, 62 male Kirtland's warbler song records and 16 nests (9 parasitized by cowbirds) reported, Crawford County, Michigan. [121].

Kelly, S.T.; DeCapita, M.E. 1982. Cowbird control and its effect on Kirtland's warbler reproductive success. Wilson Bulletin. 94(3): 363–365.

Summarizes the U.S. Fish and Wildlife Service's cowbird control program (1972–1981) and its effect on Kirtland's warbler nesting and fledgling success. Nest parasitism dropped from 59 percent prior to cowbird control to an average of 3.4 percent during cowbird control. Warbler fledgling success rose from less than 1 per nest before cowbird control to 2.76 during cowbird control, but a corresponding rise in singing male Kirtland's census did not occur.

Kostecke, R.M. 2005. Letters to the editor: cowbirds. Birding. 37: 16–18.

Refutes Rothstein 2004. Includes rebuttal by Rothstein.

Line, L. 1993. Silence of the songbirds. National Geographic. June 1993.

Focuses on the impact of brown-headed cowbirds on songbirds. Kirtland's warblers are briefly mentioned. Provides photographs of a Kirtland's and a forester setting a fire. [88-89].

Lousias, C.; Deloria, C.M.; DeCapita, M.E. 1999. 1999 annual report of the brown-headed cowbird control program and Kirtland's warbler tours on Kirtland's warbler nesting areas of northern Michigan. East Lansing, MI.

A total of 4,399 brown-headed cowbirds (2,608 male, 1,745 female, 46 juvenile) were removed in 1999. Grayling Kirtland's warbler tours reported that 917 people from 42 states and 5 foreign countries participated. Includes a graph of census numbers from 1951–1999 including numbers at Mack Lake.

Mangold, L.K.; Richter, J.M.; DeCapita, M.E. 1995. 1994 control of brown-headed cowbirds on Kirtland's warbler nesting areas in northern Michigan. East Lansing, MI.

A total of 3,109 brown-headed cowbirds (1,862 male, 1,242 female, 5 juvenile) were removed from Kirtland's warbler breeding habitat. Also reports that 595 people from 39 states and 5 foreign countries attended the Kirtland's warbler tours. A list of other species captured is included.

Margenau, E.L.; Cooper, N.W.; Brown, D.J.; Donner, D.M.; Marra, P.P.; Ryan, P. 2022. Spatially structured brown-headed cowbird control measures and their effects on Kirtland's warbler long-term population sustainability. Wildlife Research. 2022: A–K. <https://doi.org/10.1071/WR22037>.

Cowbird abundance and nest parasitism rates in Kirtland's warbler breeding habitat in Michigan were determined by point counts and nest monitoring to determine the maximum sustainable parasitism rate for Kirtland's warblers under several spatially structured cowbird removal designs. A Kirtland's warbler population simulation model was developed using the program STELLA Professional. Study results showed that low cowbird abundance and nest parasitism following suspension of cowbird removal efforts indicated that resuming the removal program may not be required in the short term. If cowbird numbers increased in the future, Kirtland's could sustain a maximum of 13 percent to 18 percent decline in reproductive rate due to parasitism before the population would decline, but the cowbird abundance threshold where trapping should be reimplemented has yet to be determined. Continued monitoring of cowbird abundance and Kirtland's warbler reproductive success is recommended and should provide greater insight into this relationship and help managers determine if cowbird control measures need to be restarted.

Mattsson, J.P.; DeCapita, M.E. 1977. 1977 brown-headed cowbird control program in Kirtland's warbler nesting range, Michigan. Lansing, MI.

A total of 3,284 brown-headed cowbirds (1,845 male, 1,405 female, 34 juvenile) were removed from Kirtland's warbler breeding habitat. A total of 226 cowbirds (122 male, 86 female, 18 juvenile) were banded and released. Recovery data of banded cowbirds is included. Other species banded are also listed. Guided tours into Kirtland's warbler habitat had 711 participants from 30 states and 4 countries.

Mayfield, H. 1961. Cowbird parasitism and the population of the Kirtland's warbler. Evolution. 15(2): 174–179. <https://doi.org/10.2307/2406078>.

Discusses the effect of brown-headed cowbirds on Kirtland's warblers. Provides an overview of geographic range, migration, and breeding habitat. A Kirtland's warbler and jack pine range map is included.

Mayfield, H. 1962. Barrow's account of the Kirtland's warbler in 1920. The Jack-Pine Warbler. 40(1): 2–9.

Publishes excerpts from an oral paper W.B. Barrows presented to the American Ornithologists' Union 10 November 1920 in Washington, DC. The paper discusses his field trips to study the Kirtland's warbler on its breeding grounds and includes detailed information on habitat, behavior, and cowbird parasitism.

Mayfield, H. 1965a. Chance distribution of cowbird eggs. The Condor. 67(3): 257–263. <https://doi.org/10.2307/1365404>.

Kirtland's warbler is one of the species included in a study on cowbird egg distribution. [258–262].

Mayfield, H. 1965b. The brown-headed cowbird, with old and new hosts. Living Bird. 4: 12–28.

Kirtland's warbler is included in a description of host species.

Mayfield, H. 1977a. Brown-headed cowbird agent of extermination? American Birds. 31(2): 107–113.

Provides details of the process of cowbird parasitism and the effect on Kirtland's warblers. Cowbird range expansion is also discussed.

Mayfield, H.F. 1962. Vestiges of a proprietary interest in nests by the brown-headed cowbird parasitizing the Kirtland's warbler. *Auk*. 78: 162–166.

Evidence is presented suggesting that female brown-headed cowbirds show vestigial proprietary interest in Kirtland's warbler nests, as opposed to laying an egg then moving on. Also includes a discussion of documented incidents of parasitism.

Mayfield, H.F. 1977b. Brood parasitism: reducing interactions between Kirtland's warblers and brown-headed cowbirds. In: Temple, S.A., ed. *Endangered birds: management techniques for preserving threatened species. Proceedings of the symposium on management techniques for preserving endangered birds*. Madison: University of Wisconsin Press: 85–91.

Cowbird traps and the cowbird removal program are described. Summarizes the results of the cowbird control program for the Kirtland's warbler. Notes that parasitism of nests has been significantly reduced, and the resulting production of young has been very high. Possible reasons for the slow recovery of the species are discussed. A map of Kirtland's warbler critical habitat is provided.

Mayfield, H.F. 1977c. Rescuing a warbler. *Michigan Out-of-Doors*. 31(6): 62–64.

Provides a history of the Kirtland's warbler and discusses the limits of habitat and nesting range and the problem with cowbird parasitism.

McGeen, D.S. 1989. A review of the predator-prey interactions versus habitat considerations for the Kirtland's warbler. In: *At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium*. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 70–84.

Discusses the Kirtland's warbler-brown-headed cowbird interaction as a predator-prey situation. The habitat-warbler-cowbird interaction was also examined. Concludes that while cowbird removal was successful, it did not result in an increase in the Kirtland's population, so habitat appears to be the main factor in determining warbler population numbers.

Mensing, C.J. 2002. 2001 annual report of the brown-headed cowbird control program and Kirtland's warbler tours on Kirtland's warbler nesting areas of northern Lower Michigan. East Lansing, MI.

A total of 3,906 brown-headed cowbirds (2,621 male, 1,258 female, 27 juvenile) were removed from Kirtland's warbler breeding habitat in 2001. The Kirtland's warbler tours were attended by 636 participants from 36 states and 5 foreign countries. Included are sections on nontarget species captured in the traps, missing and escaped cowbirds, and other species seen on the tours.

Mensing, C.J. 2003. 2002 brown-headed cowbird control and Kirtland's warbler tour report. East Lansing, MI.

A total of 3,722 brown-headed cowbirds (2,233 male, 1,487 female, 2 juvenile) were removed from Kirtland's warbler breeding habitat in 2002. Kirtland's warbler tours were attended by 777 people from 40 states and 7 foreign countries. Included is a discussion on missing and escaped cowbirds and results of a tour participation survey.

Mensing, C.J. 2004. 2003 Brown-headed cowbird control and Kirtland's warbler tour report. East Lansing, MI.

A total of 5,441 brown-headed cowbirds (2,873 male, 2,568 female) were removed from Kirtland's warbler breeding habitat in 2003. Tours were attended by 685 people from 39 states and 5 foreign countries. Included is a discussion on missing and escaped cowbirds, other birds captured, other birds observed, and the results of a tour participation survey.

Mensing, C.J.; DeCapita, M.E. 2001. 2000 annual report of the brown-headed cowbird control program and Kirtland's warbler tours on Kirtland's warbler nesting areas of northern Lower Michigan. East Lansing, MI.

A total of 4,345 brown-headed cowbirds (2,801 male, 1,510 female, 34 juvenile) were removed from Kirtland's warbler breeding habitat in 2000. Also reports 641 participants from 40 states and 4 foreign countries attended the Kirtland's warbler tour out of Grayling.

Morgan, T.D. 2005. Letters to the editor: Cowbirds. Birding. January/February: 13–15.

Provides a rebuttal to Rothstein 2004, arguing that research shows that cowbird removal programs do greatly increase the reproductive success of other passerines.

Morrison, M.L.; Hall, L.S.; Robinson, S.K.; Rothstein, S.I.; Hahn, D.C.; Rich, T.D., eds. 2001. Research and management of the brown-headed cowbird in western landscapes. Studies in Avian Biology. Vol. 18. <https://sora.unm.edu/node/83>.

A collection of papers relating to the brown-headed cowbird from the proceedings of a symposium. Kirtland's warbler is referenced several times. [22, 107, 109, 117, 130, 230, 256, 257, 260, 268].

Murk, J.F. [N.d.]. Analysis of band returns for information upon local movements of red-winged blackbirds and brown-headed cowbirds.

Red-winged blackbirds and brown-headed cowbirds were banded from 26 April 1978 through 9 July 1978 in Kirtland's warbler breeding habitat in order to study local movements. Results show males of both species were more likely to move than females. One interesting result showed female cowbirds were most trap susceptible early in the trapping season.

Ortega, C.P.; Chace, J.F.; Peer, B.D., eds 2005. Management of cowbirds and their hosts: balancing science, ethics, and mandates. Ornithological Monographs. Fayetteville, AR: The American Ornithologists' Union. <https://doi.org/10.2307/40166809>.

A collection of papers resulting from the symposium "Ecology and Evolution of Host-Parasite Interactions and Cowbird Management" in 2003. The papers were selected specifically because they deal with issues critical to management of cowbirds and their hosts: laws, efficacy, endangered hosts, landscape and landscape-use issues, and evolutionary implications. Kirtland's warbler is mentioned multiple times. [1, 7, 8, 17, 24, 91, 99, 104, 105, 109].

Peer, B.D.; Rivers, J.W.; Rothstein, S.I. 2013. Cowbirds, conservation, and coevolution: potential misconceptions and directions for future research. Chinese Birds. 4(1): 15–30. <https://doi.org/10.5122/cbirds.2013.0009>.

Potential misconceptions about cowbirds are discussed, and future research directions are suggested. The Kirtland's warbler/brown-headed cowbird relationship is used in several examples. [19-20, 25].

Radabaugh, B. 1968. Report on the field studies on the Kirtland's warbler (*Dendroica kirtlandii*) on the Kirtland's Warbler Management Unit (KWMA), Oscoda County, Michigan, during the 1968 season.

Reports on 27 Kirtland's warbler nests found, of which 36 percent were parasitized by brown-headed cowbirds. There were 33 Kirtland's fledged from 10 nests, and 2 cowbirds were fledged from 2 other nests.

Radabaugh, B.E. 1971. October 30, 1971.

Compares cowbird parasitism between cowbird removal and nonremoval areas. Out of 205 Kirtland's warbler nests with eggs found, 83 (40.4 percent) were parasitized by brown-headed cowbirds. On the cowbird control area, 117 nests were found, and 25 (21.3 percent) were parasitized. Of the 88 nests found outside the control area, 58 (65.9 percent) were parasitized.

Radabaugh, B.E.; Radabaugh, F.E.; Radabaugh, C.A. 1964. A nesting survey of the Kirtland's warbler Management Area, Huron National Forest—1964.

Presents results from Kirtland's warbler studies in 1964 focusing on nesting activities and cowbird parasitism. The study took place in the habitat created by the 1946 Mack Lake Fire. A total of 26 nests were found involving 18 pairs of Kirtland's including 1 complete nest found on 9 May. There were 5 renestings and 3 second nestings. Cowbird parasitism occurred in 71 percent of the nests with 20 Kirtland's and 12 cowbirds fledging.

Richter, J.M.; DeCapita, M.E. 1996. 1995 control of brown-headed cowbirds on Kirtland's warbler nesting areas of northern Michigan. East Lansing, MI.

A total of 5,855 brown-headed cowbirds (3,070 male, 2,782 female, 3 juvenile) were removed from Kirtland's warbler breeding habitat in 1995. The Kirtland's warbler tours were attended by 724 people from 39 states, 3 Canadian provinces, and 6 other countries. A summary of nontarget birds captured is presented. Reports that 765 singing male Kirtland's warblers were counted on the 1995 census.

Robinson, S.K.; Grzybowski, J.A.; Rothstein, S.I.; Brittingham, M.C.; Petit, L.J.; Thompson, F.R. 1993. Management implications of cowbird parasitism on neotropical migrant songbirds. In: Finch, D.M.; Stangel, P.W., eds. Status and management of neotropical migratory birds. Gen. Tech. Rep. RM-229. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 93–102. <https://doi.org/10.2737/RM-GTR-229>.

Brown-headed cowbird natural history, control, and effects on host species, including Kirtland's warbler, are discussed. [93–94, 96].

Rodenhouse, N.L.; Best, L.B.; O'Connor, R.J.; Bollinger, E.K. 1993. Effects of temperate agriculture on neotropical migrant landbirds. In: Finch, D.M.; Stangel, P.W., eds. Status and management of neotropical migratory birds. Gen. Tech. Rep. RM-229. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 280–295. <https://doi.org/10.2737/RM-GTR-229>.

Kirtland's warbler is mentioned in conjunction with cowbird parasitism. [281].

Rothstein, S.I. 1975. An experimental and teleonomic investigation of avian brood parasitism. *The Condor*. 77(3): 250–271. <https://doi.org/10.2307/1366221>.

Experiments on 640 nests of 43 species were performed. Cowbird parasitism was imitated by placing artificial and sometimes real cowbird eggs into bird nests. The study found that of the species with sufficient data, 23 are accepters, and 7 are rejecters. Postulates that Kirtland's warblers may be unable to evolve rejection adaptations due to the small population and that they have only been recently exposed to cowbirds. [264, 265].

Rothstein, S.I. 2004. Brown-headed cowbirds: villain or scapegoat. *Birding*. 36: 374–384.

Discusses cowbird phylogeny, diversity, history, and control with 4 endangered species programs, including Kirtland's warbler. Concludes cowbird control is not necessary. [378-379, 380].

Rothstein, S.I.; Cook, T.L. 2000. Cowbird management, host population limitation, and efforts to save endangered species. In: Smith, J.N.M.; Cook, T.L.; Rothstein, S.I.; Robinson, S.K.; Sealy, S.G., eds. Ecology and management of cowbirds and their hosts. Austin: University of Texas Press: 323–332.

Discusses how cowbird parasitism and control has affected several endangered species including the Kirtland's warbler.

Rothstein, S.I.; Peer, B.D. 2005. Conservation solutions for threatened and endangered cowbird (*Molothrus* spp.) hosts: separating fact from fiction. Ornithological Monographs. 57: 98–114. <https://doi.org/10.2307/40166817>.

A series of questions are provided that should be addressed before the start of a cowbird control program. The authors encourage managers to determine whether or not cowbirds are a serious pressure on the host population, whether cowbird control resources could have greater management benefits if used elsewhere, and if it is possible to define conditions that will indicate cowbird control is no longer needed. Kirtland's warbler is mentioned numerous times.

Shake, W.F.; Mattsson, J.P. 1975. Three years of cowbird control: an effort to save the Kirtland's warbler. 1975. The Jack-Pine Warbler. 53(2): 48–53.

Presents data and a discussion of the Kirtland's warbler cowbird control program, including trapping methods, removal program, and banding efforts. Includes a photograph of a cowbird trap.

Siegle, R.; Ahlers, D. 2004. Brown-headed cowbird management techniques manual. Denver, CO: U.S. Department of Interior, Bureau of Reclamation, Technical Service Center, Ecological Planning and Assessment Group.

This manual addresses successful techniques for trapping cowbirds, the evaluation process that leads to a decision to initiate a cowbird control program, and how to determine its success. Kirtland's warbler is one of the case studies presented. [11, 14–15, 21, 35, 40].

Tazik, D.J.; Cornelius, J.D. 1993. Status of the black-capped vireo at Fort Hood, Texas, Volume III: Population and nesting ecology. USACERL Technical Report EN-94/01.

This study details the population and nesting ecology of the black-capped vireo documenting annual survival, reproductive success, and limiting factors. Kirtland's warbler is referenced several times as a comparison to study results including a comparison of nesting success between cowbird parasitized and unparasitized nests of several bird species and cowbird success in nests of selected bird species. [31, 37, 40, 42, 43, 45, 89, 90].

Throne, W.J. 1981. Annual report: 1980 brown-headed cowbird control program in Kirtland's warbler nesting range, Michigan. East Lansing, MI.

A total of 2,967 cowbirds (1,538 male, 1,429 female) were removed from Kirtland's warbler breeding habitat in 1980. Included are summaries of other species captured and the effect of cowbird trapping on warbler production. The Kirtland's warbler tours out of Grayling were attended by 491 people from 27 states and 3 foreign countries.

United States Fish and Wildlife Service. 1973. 1973 summary of cowbird trapping on Kirtland's warbler nesting areas. Lansing, MI.

A total of 3,305 brown-headed cowbirds (1,995 male, 1,195 female, 115 juvenile) were removed from Kirtland's warbler nesting habitat, and 190 (118 male, 72 female) were banded and released. Summaries of removal, banding, and movement summaries are provided. Reports that of 33 Kirtland's nests being studied, 0 were parasitized. A table of nontarget species captured is provided.

United States Fish and Wildlife Service. 1975a. The 1974 cowbird trapping program on the Kirtland's warbler nesting area. Lansing, MI.

A total of 4,075 cowbirds (2,195 male, 1,717 female, 163 juvenile) were removed from Kirtland's warbler nesting areas. A total of 846 cowbirds (242 male, 261 female, 343 juvenile) were banded, and 54 cowbirds (47 male, 7 female) banded in 1973 were recovered. Includes map of banded cowbird movements and a table of other species banded. Tours to see Kirtland's warblers were attended by 250 people.

United States Fish and Wildlife Service. 1975b. The 1975 cowbird program on the Kirtland's warbler breeding ground. Lansing, MI.

A total of 3650 cowbirds (2,026 male, 1,463 female, 161 juvenile) were removed from Kirtland's warbler breeding areas. An additional 531 cowbirds (215 male, 231 female, 85 juvenile) were banded and 18 cowbirds (13 male, 5 female) were equipped with radio transmitters to obtain data on movements and activity areas. A summary of cowbird recaptures and movements is given. Movement maps of radio equipped birds are provided. Includes tables and figures of cowbirds removed and banded, movements, and other species banded. Guided tours from Grayling and Mio were attended by 1,386 people from 34 states, 3 Canadian provinces, Australia, Japan, and Sweden.

United States Fish and Wildlife Service. 1976. Building and operating a decoy trap for live-capturing cowbirds and other birds. Twin Cities, MN.

Provides plans for building and assembly of a cowbird trap, and instructions on operation.

United States Fish and Wildlife Service. 1977. Annual report: brown-headed cowbird control program in Kirtland's warbler nesting range, Michigan. Lansing, MI.

A total of 4,299 cowbirds (2,193 male, 1,994 female, 112 juvenile) were removed from Kirtland's warbler breeding habitat in 1976, and 550 (249 male, 291 female, 10 juvenile) were banded and released. A summary of removal and banding is provided. Twelve adult cowbirds (6 male, 6 female) were equipped with radio transmitters, and a summary is provided including movements. A table of other species captured is included. Kirtland's warbler tours were attended by 647 people from 30 states, Canada, Great Britain, and Puerto Rico.

United States Fish and Wildlife Service. 1981. Annual report: 1981: control of brown-headed cowbirds in the northern Michigan nesting range of the Kirtland's warbler. East Lansing, MI.

A total of 2,856 cowbirds (1,770 male, 1,085 female, 1 juvenile) were removed from Kirtland's warbler breeding habitat. Blue jays and other species captured are discussed, and a summary of the effect of cowbird control on the Kirtland's warbler is included. The Kirtland's warbler guided tours were attended by 609 participants from 24 states, 3 foreign countries, and Puerto Rico.

United States Fish and Wildlife Service. 1983. Annual report: 1982 control of brown-headed cowbirds in the northern Michigan nesting range of the Kirtland's warbler. East Lansing, MI.

A total of 2,499 cowbirds (1,568 male, 893 female, 38 juvenile) were removed from Kirtland's warbler habitat. A list of other species captured is provided. Guided tours to see Kirtland's warblers were attended by 623 participants from 32 states, Washington, DC, and 3 foreign countries.

United States Fish and Wildlife Service. 2001. USFWS Kirtland's warbler tour results 2001 and brown-headed cowbird control results 2001.

Reports 662 Kirtland's warbler tour participants from 36 states and 5 foreign countries. Fifty-two other avian species were seen during the tours. Tour results from 1974–2001 and the 2001 brown-

headed cowbird removal are provided. Preliminary results from the 2001 cowbird trapping season are presented, with approximately 3,900 cowbirds being removed.

United States Fish and Wildlife Service. 2004. 2004 brown-headed cowbird control report. East Lansing, MI.

A total of 2,478 brown-headed cowbirds (1,533 adult males, 940 adult females, 5 juveniles) were removed from Kirtland's warbler breeding habitat in 2004. The report provides temporal and spatial distribution, age and sex data, nontarget species, and missing and escaped cowbird information. A table of 21 nontarget species captured is included. Also reports 1,341 singing males found on the 2004 Kirtland's Warbler Census.

United States Fish and Wildlife Service. 2005. 2005 brown-headed cowbird control report. East Lansing, MI.

A total of 1,120 brown-headed cowbirds (719 adult males, 398 adult females, 3 juveniles) were removed from Kirtland's warbler breeding habitat in 2005. The report provides temporal and spatial distribution, age and sex data, nontarget species, and missing and escaped cowbird information. A table of nontarget species captured is included. Reports that 1,420 singing males were recorded on the 2005 Kirtland's Warbler Census.

United States Fish and Wildlife Service. 2007a. 2006 brown-headed cowbird control report. East Lansing, MI.

A total of 3,568 cowbirds (2,260 adult male, 1,698 adult female, 43 juvenile) were removed in 2006 from Kirtland's warbler breeding areas. Missing and escaped cowbirds are discussed. Includes data on 189 individuals of 18 nontarget species captured. Reports that 1,486 singing males were found on the 2006 Kirtland's Warbler Census.

United States Fish and Wildlife Service. 2007b. 2007 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

A total of 3,418 cowbirds (2,054 adult male, 1,343 adult female, 29 juvenile) were removed from Kirtland's warbler breeding areas in 2006. The report provides temporal and spatial distribution, age and sex data, and missing and escaped cowbird information. Includes data on 315 individuals of 8 nontarget species captured. The 2007 Kirtland's Warbler Census recorded 1,707 singing males.

United States Fish and Wildlife Service. 2008a. Wisconsin Kirtland's warbler 2008 nesting season summary. Green Bay, WI. <https://www.fws.gov/midwest/GreenBay/endangered/kiwa/2008Summary.html>.

Summarizes the 2008 Kirtland's warbler activities in Wisconsin, where 8 male, several female, and 5 nests were found, with 2 nests producing 5 fledglings each. Over 300 brown-headed cowbirds were captured in Adams County. A total of 9 male Kirtland's were captured. One had been banded in The Bahamas earlier in 2008, and the others were color-banded. A field trip to see Kirtland's was conducted for 72 Wisconsin Society for Ornithology members.

United States Fish and Wildlife Service. 2008b. 2008 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

The brown-headed cowbird trapping program removed 3,135 cowbirds (1,941 adult male, 1,167 adult female, 27 juvenile) in 2008. The report provides temporal and spatial distribution, age and sex data, and missing and escaped cowbird information. Includes data on 186 nontarget individuals captured. Also reports 1,803 singing male Kirtland's warblers were counted on the 2008 census.

United States Fish and Wildlife Service. 2009. Wisconsin Kirtland's warbler 2009 season summary. Green Bay, WI.

Summarizes the 2009 Kirtland's warbler activities in Wisconsin, where a total of 12 male and 12 female were found. Of a total of 11 recorded nesting attempts, 7 to 8 nests were successful, fledging an estimated 26 to 30 young. A total of 3 brown-headed cowbird traps were operated, capturing 303 cowbirds (221 male, 82 female). Six male, 1 female, and 3 fledgling Kirtland's warblers were color-banded, and 2 field trips were organized.

United States Fish and Wildlife Service. 2010a. Wisconsin Kirtland's warbler 2010 season summary. Green Bay, WI.

Summarizes the 2010 Kirtland's warbler activities in Wisconsin, where a minimum of 24 males (23 during the official census period) and 13 females were found. Of a total of 16 nesting attempts, 3–5 nests were successful, fledging 12–18 young. Three cowbird traps were operated, capturing 2016 (151 male, 65 female) brown-headed cowbirds. A total of 9 male Kirtland's were color-banded. There were also 2 Kirtland's warbler field trips with 70 participants held.

United States Fish and Wildlife Service. 2010b. 2009 brown-headed cowbird control in Kirtland's warbler nesting areas in Michigan, northern Lower Michigan. East Lansing, MI.

A total of 4,160 cowbirds (2,460 adult male, 1691 adult female, 9 juvenile) were removed from Kirtland's warbler breeding areas in 2009. The report provides temporal and spatial distribution, age and sex data, and missing and escaped cowbird information. Includes data on 316 nontarget individuals captured. Also reports that 1,826 singing male Kirtland's warblers were counted on the 2009 census.

United States Fish and Wildlife Service. 2011. Wisconsin Kirtland's warbler 2011 season summary. Green Bay, WI.

Summarizes the 2011 Kirtland's warbler activities in Wisconsin where a minimum of 22 male (21 during the official census period) and 11 female Kirtland's were found. Of a total of 11 recorded nesting attempts, 4 nests were known to be successful, fledging an estimated 9–17 young. Three cowbird traps were operated, capturing 166 (114 male, 52 female) brown-headed cowbirds. A total of 6 male and 1 female Kirtland's warblers were color-banded, and 2 field trips with 64 participants were conducted.

United States Fish and Wildlife Service. 2012. Wisconsin Kirtland's warbler 2012 season summary. Green Bay, WI.

Summarizes Kirtland's warbler activities in Wisconsin for 2012. A total of 20 male and 10 female Kirtland's were documented in Adams County. Out of 14 nesting attempts, 4 were successful, fledging an estimated 8–13 young. A total of 71 sites in 7 counties of suitable Kirtland's habitat were searched, documenting 24 singing males in 5 counties, with 23 found during the official census period. Three cowbird traps were operated, removing 143 male and 73 female cowbirds. Seven male and 1 recently fledged young Kirtland's were banded. Field trips were provided on 2 days to observe Kirtland's.

United States Fish and Wildlife Service. 2014a. Wisconsin Kirtland's warbler 2014 season report.

Summarizes Kirtland's warbler activities in Wisconsin for 2014 where 11 males and 7 females were present in Adams County. Eight nesting attempts were made by 7 pairs, and 3 nests fledged 8–10 young. During the official census period, 13 singing males were found. Six adult male, 2 adult female, and 6 nestling Kirtland's were color-banded. A Kirtland's warbler playback experiment was conducted, which found 1 male Kirtland's. (See Anich and Ward 2014 for more details.) Four cowbird traps were operated, capturing 100 male and 10 female brown-headed cowbirds. There were 3 Kirtland's warbler field trips with a total of 56 participants.

United States Fish and Wildlife Service. 2014b. 2012 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

A total of 1,658 cowbirds (1,144 adult male, 496 adult female, 18 juvenile) were removed in 2012 from Kirtland's warbler breeding areas. The report provides temporal and spatial distribution, age and sex data, and missing and escaped cowbird information. Includes data on 350 nontarget species captured. A record high of 2,090 singing males was counted on the 2012 Kirtland's Warbler Census.

United States Fish and Wildlife Service. 2015a. Wisconsin Kirtland's warbler 2015 season report. Green Bay, WI.

Summarizes 2015 Kirtland's warbler activities in Wisconsin, where 21 male and 16 female Kirtland's warblers were found, and 13 out of 16 nests produced 36–53 fledged young. During the official Kirtland's Warbler Census period, 19 singing males were found. Ten adult male and 11 nestling Kirtland's warblers were color-banded. The Kirtland's warbler playback experiment was again conducted (see North et al. 2015), where 6 male and 2 female Kirtland's were observed. In Adams County, 5 cowbird traps were operated, and 363 (229 male, 134 female) brown-headed cowbirds were captured. A total of 4 Kirtland's warbler field trips with 67 participants were given.

United States Fish and Wildlife Service. 2015b. 2015 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

The brown-headed cowbird control program removed 1,245 cowbirds (838 adult male, 406 adult female, 1 juvenile) from Kirtland's warbler breeding areas in 2015. The report provides temporal and spatial distribution, age and sex data, and missing and escaped cowbird information. Includes data on 227 nontarget species captured.

United States Fish and Wildlife Service. 2016a. Wisconsin Kirtland's warbler 2016 season report. Green Bay, WI.

Summarizes 2016 Kirtland's warbler activities in Wisconsin where 28 males and 17 females were confirmed. A total of 21 nests were found, and 10 were successful, with 37–38 young fledged. During the official census period, 30 singing males were detected. Thirteen adult male, 1 female, and 30 nestlings were color-banded. The Kirtland's warbler playback experiment was again conducted. The playback experiment involves the use of audio playback of Kirtland's songs to attract and consolidate roaming northern birds to attempt to establish new breeding populations, with 7 male and 4 females found. Cowbird trapping was conducted in Adams County, capturing 266 (168 male, 95 female, 3 juvenile) brown-headed cowbirds. In Adams County, 3 field trips with 70 participants were given. Kirtland's warbler studies (nest cameras, cowbird tracking, nestling tracking, and a vegetation study) by the University of Wisconsin are also summarized.

United States Fish and Wildlife Service. 2016b. 2013 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

The brown-headed cowbird control program removed 2,036 cowbirds (1,396 adult male, 637 adult female, 3 juvenile) from Kirtland's warbler breeding areas in 2013. The report provides temporal and spatial distribution, age and sex data, and missing and escaped cowbird information. Includes data on 247 nontarget species captured.

United States Fish and Wildlife Service. 2016c. 2014 brown-headed cowbird control in Kirtland's warbler nesting areas, northern Lower Michigan. East Lansing, MI.

The brown-headed cowbird control program removed 1,500 cowbirds (1,149 adult male, 351 adult female, 0 juvenile) from Kirtland's warbler breeding areas in 2014. The report provides temporal and spatial distribution, age and sex data, and missing and escaped cowbird information. Includes data on 278 nontarget species captured.

United States Fish and Wildlife Service. 2017. Wisconsin Kirtland's warbler 2017 nesting season report. Green Bay, WI.

Summarizes the 2017 Kirtland's warbler activities in Wisconsin where 33 male and 20 females were found, producing 15 successful nests out of 20 found, and 49–63 young fledged. During the official Kirtland's Warbler Census period, 31 singing males were found. A total of 61 Kirtland's (30 male, 2 female, and 29 nestlings) were color-banded. The results from 2014–2016 Kirtland's warbler playback experiment are given and suggest that playback could be used to establish additional populations in areas where habitat exists. In Adams County, 4 cowbird traps were operated, capturing 240 (168 male, 48 female, 24 juvenile) brown-headed cowbirds. Three Kirtland's warbler field trips were given to 66 people. A summary of habitat management and graduate research is given.

United States Fish and Wildlife Service. 2018. Wisconsin Kirtland's warbler 2018 nesting season report. Green Bay, WI.

Discusses the proposed Kirtland's warbler delisting. Also summarizes 2018 Kirtland's warbler activities in Wisconsin where 34 male and 17 females were found, producing 11 successful nests out of 16 found, and 42–47 young fledged. During the official Kirtland's Warbler Census period, 32 singing males were found. A total of 30 Kirtland's (8 male and 22 nestlings) were color-banded. The results from 2014–2018 Kirtland's warbler playback experiments are given and suggest that playback could be used to establish additional populations in areas where habitat exists. In Adams County, 4 cowbird traps were operated, capturing 280 (246 male, 32 female, 2 juvenile) brown-headed cowbirds. Two Kirtland's warbler field trips were given to 53 people. A summary of habitat management and graduate research is given.

United States Fish and Wildlife Service. 2020. Wisconsin Kirtland's warbler 2019 nesting season report. Green Bay, WI.

Discusses the delisting of Kirtland's warbler and summarizes the 2019 Kirtland's warbler activities in Wisconsin where 23 male and 16 females were found, producing 13 successful nests out of 16 found, and 54–59 young fledged. During the official Kirtland's Warbler Census period, 32 singing males were found. The results from 2019 Kirtland's warbler playback experiment are given. In Adams County, 5 cowbird traps were operated, capturing 736 (451 male, 253 female, 32 juvenile) brown-headed cowbirds. One Kirtland's warbler field trip was given to 32 people. Summaries of habitat management and acknowledgments are given.

U.S. Department of Agriculture, Forest Service. 1965. A report of progress during 1965 on Your Huron-Manistee National Forest. Cadillac, MI.

Mentions a study on the effect of cowbird control on Kirtland's warbler nesting success, and that nesting success was up in 1964. [7].

U.S. Department of Agriculture, Forest Service. 1996. 1996 Hiawatha NF Kirtland's warbler summary.

A total of 14 male and 6 female Kirtland's warblers were located in 1996 in Michigan's Upper Peninsula. On 19 June 1996, 4 male and 1 female Kirtland's were color-banded. In the first year of Upper Peninsula cowbird trapping, 4 traps caught 360 cowbirds.

U.S. Department of Agriculture, Forest Service. 1997. Hiawatha National Forest: 1997 Kirtland's warbler management program.

Reports on 618 acres of Kirtland's warbler habitat created. Eleven male and 4 female Kirtland's warblers found on the census. Two adult male Kirtland's color-banded on 23 June 1997, and 17 brown-headed cowbirds were trapped. Future habitat plans are given.

Walkinshaw, L.H. 1971. Cowbird parasitism of Kirtland warbler nests.

Presents Kirtland's warbler data for 1931–1971, where 54 of 91 (59.3 percent) Kirtland's warbler nests were parasitized.

Walkinshaw, L.H. 1972. Kirtland's warbler—endangered. *American Birds*. 26(1): 3–9.

Documents 40 years of personal experiences with Kirtland's warblers, including the first banding of a Kirtland's. Presents data on nesting success and nest parasitism, from 1931–1971, including 4 nest histories. Discusses threats, possible reasons for reproductive failures, and steps to be taken to increase survival of the species. Includes photographs of habitat and a female at a nest.

Walkinshaw, L.H. 1976. 1976 Kirtland's warbler nesting success.

Provides Kirtland's warbler nesting data for 1972 to 1976 including number of nests, eggs, nestlings, and fledglings. Also provides brown-headed cowbird parasitism, eggs, hatchlings, and fledglings.

Walkinshaw, L.H.; Faust, W.R. 1975. 1974 Kirtland's warbler nesting success in Northern Crawford County, Michigan. *The Jack-Pine Warbler*. 53(2): 54–58.

Reports on the 1974 nesting success of Kirtland's warblers post cowbird removal. A total of 108 Kirtland's nests were found, with 75 successful nests fledging 293 young and 5 nests parasitized by cowbirds.

Wildlife Services. 2016. 2016 brown-headed cowbird management in Kirtland's warbler nesting areas, northern Lower Michigan. Gaylord, MI.

A total of 981 cowbirds (681 adult male, 300 adult female, 0 juvenile) were removed from Kirtland's warbler breeding areas in 2016. Discussed are the temporal distribution of catch, age and sex data, and missing and escaped cowbirds. Includes data on 295 nontarget species captured, and cowbirds captured from 1972–2016.

Winters, R.O. 1973. Cowbird trapping and the Kirtland's warbler. In: *Wildlife damage management, internet center for bird control seminars proceedings*. University of Nebraska—Lincoln: 102–104.

Provides a history of the cowbird removal program and discusses the effects of cowbird removal on the nesting success of Kirtland's warbler.



Kirtland's warbler feeding on the fruit of wild sage (*Lantana involucrate*) on Eleuthera, The Bahamas. Wild sage, along with snow berry and black torch, make up the majority of the Kirtland's warbler's winter diet. Courtesy photo by Dave Currie.

I.C. Winter Biology

A Kirtland's warbler sighting on Eleuthera, Bahamas. [N.d.]. Bahamas National Trust News and Activities: 32–33.

9 November 1975, 1 Kirtland's warbler, Eleuthera, The Bahamas. 1 male Kirtland's warbler, Crooked Island, The Bahamas (no date provided).

Bangs, O. 1900. Notes on a collection of Bahama birds. The Auk. 17: 283–293.

5 April 1897, 1 male Kirtland's warbler specimen, Nassau, New Providence, The Bahamas. 4 March 1897, 1 female Kirtland's warbler specimen, Nassau, New Providence, The Bahamas. [292].

Beebe, R. 1977. The Kirtland's warbler. Bahamas Naturalist. 3: 38–41.

Provides information on Bahamian Kirtland's warbler records and habitat.

Berle, P.A.A. 1986. Firsts. Christmas bird count update. May 1986.

Reports the first record of a Kirtland's warbler logged on a Christmas bird count on Eleuthera, The Bahamas. Also mentions 1 during count week on Grand Turk Island.

Bermuda Audubon Society Newsletter. First record of Kirtland's warbler in Bermuda. 2005. Bermuda Audubon Society Newsletter. 16(1): 2.

18–19 December 2004, 1 Kirtland's warbler videotaped, Hog Bay Park, Bermuda. Bermuda's first record.

Blanchard, D. 1965. Kirtland's warbler in winter on Grand Bahama Island. The Jack-Pine Warbler. 43(1): 39–42.

16 November 1963, 1 sight record, Grand Bahama, The Bahamas. Refers to several sight records in the period of 1959–1961. (Note: Reported behavior of Kirtland's warbler foraging on tree trunks

like a nuthatch; matches that of The Bahamas race of yellow-throated warbler, now Bahama warbler. See White 1996 and 1998.)

Bond, J. 1940. Checklist of birds of the West Indies. Philadelphia, PA: Academy of Natural Sciences of Philadelphia.

Cites the original Kirtland's warbler description and lists the islands in The Bahamas for which there are records. [131–132].

Bond, J. 1947. Field guide to birds of the West Indies. New York: Macmillan.

Includes a Kirtland's warbler plumage description and a note concerning range. [189–190].

Bond, J. 1951. First supplement to the checklist of birds of the West Indies. Philadelphia, PA: Academy of Natural Sciences of Philadelphia.

20 November 1890, 1 Kirtland's warbler specimen, Port Howe, Cat Island, The Bahamas. The specimen was deposited in the Academy of Natural Sciences, Philadelphia. [18].

Bond, J. 1956. Check-list of birds of the West Indies. Academy of Natural Sciences of Philadelphia. 214 p.

Cites the original Kirtland's warbler description, lists the islands in The Bahamas for which there are records, and provides Florida transient dates of 11 October–1 November and 19–27 April. [152–153].

Bond, J. 1957. Second supplement to the check-list of birds of West Indies. Philadelphia, PA: The Academy of Natural Science.

1 Kirtland's warbler (date unspecified), Cat Cay, The Bahamas. 1 Kirtland's warbler (date unspecified), Harbour Island, The Bahamas. [9].

Bond, J. 1961. Sixth supplement to the check-list of birds of the West Indies. Philadelphia, PA: The Academy of Natural Science.

19 November 1960, 3 Kirtland's warblers, Grand Bahama, The Bahamas. [11].

Bond, J. 1964. Ninth supplement to the check-list of birds of the West Indies. Philadelphia, PA: The Academy of Natural Science.

Late December 1962, 1 Kirtland's warbler, Grand Bahama, The Bahamas. November 1963, 1 Kirtland's warbler, Grand Bahama, The Bahamas. [10].

Bond, J. 1968. Thirteenth supplement to the check-list of birds of the West Indies. Philadelphia, PA: The Academy of Natural Science.

9, 11 November 1967, 1 Kirtland's warbler, Great Abaco, The Bahamas. 16 November 1967, 1 Kirtland's warbler, Fresh Creek, Andros, The Bahamas. 30 March 1968, 1 Kirtland's warbler, Fresh Creek, Andros. 27 August 1967, 1 Kirtland's warbler, Hog Island, The Bahamas. 5 August 1967, 1 Kirtland's warbler, Grand Bahama, The Bahamas. [8,10].

Bond, J. 1969. Fourteenth supplement to the check-list of birds of the West Indies. Philadelphia, PA: The Academy of Natural Science.

Winter or early spring 1969, 1 Kirtland's warbler, Freeport, Grand Bahama, The Bahamas. [8].

Bond, J. 1976. Twentieth supplement to the check-list of birds of the West Indies. Philadelphia, PA: The Academy of Natural Science.

11–22 March 1972, 1 male Kirtland's warbler, Crooked Island, The Bahamas. [11].

Bond, J. 1979. Birds of the West Indies. 4th ed. London: Collins.

Provides a Kirtland's warbler plumage description, mentions range, and notes wintering dates. [198].

Bond, J. 1980. Twenty-third supplement to the check-list of birds of the West Indies. Philadelphia, PA: The Academy of Natural Science.

1 Kirtland's warbler (date unspecified), Grand Bahama, The Bahamas. [9].

Bond, J. 1982. Twenty-fourth supplement to the check-list of birds of the West Indies. Philadelphia, PA: The Academy of Natural Science.

10 February 1978, 1 female Kirtland's warbler, North Caicos, Turks and Caicos. [12].

Bonhote, J.L. 1903. On a collection of birds from the Northern Islands of the Bahama Group. Ibis. 3: 273–315.

25 March 1902, 1 male Kirtland's warbler specimen, Little Abaco, The Bahamas. April 1902, 1 male Kirtland's warbler specimen, Nassau, New Providence, The Bahamas. A physical description of the male is provided. [280–281].

Brace, W. 2000. Quest for rare and elusive bird. Abaco Journal. 26.

9 January 2000, 1 male Kirtland's warbler photographed, Williams Road, Abaco, The Bahamas. Includes a photograph of the bird and a description of the journey to find the bird.

Brundell-Bruce, P.G. 1975. The birds of New Providence and the Bahama Islands. London: Collins.

Describes Kirtland's warbler plumage and notes the paucity of sight records during the winter season. [109].

Brunner, A.R.; Cooper, N.W.; Marra, P.P. 2020. First known record of Kirtland's warbler (*Setophaga kirtlandii*) observed and captured in Jamaica. The Wilson Journal of Ornithology. 132: 746–749.

12 February 2019, 1 female Kirtland's warbler was observed, captured, and photographed, Font Hill Nature Reserve, Jamaica. This represents the first record of a Kirtland's for Jamaica. The bird spent at least 7 weeks at the study site. Numerous measurements and observations are provided. Habitat descriptions and photographs with comparisons are included for both the Jamaican and typical Bahamian wintering habitat are included.

Buden, D.W. 1979. Ornithogeography of the Southern Bahamas. Louisiana State University. https://digitalcommons.lsu.edu/gradschool_disstheses/3325.

Lists Kirtland's warbler records as: 11, 12, and 22 March 1973, Crooked Island; 8 March sometime between 1935 and 1940, Great Inagua; 1 female 10 February 1978, Bellefield Landing, North Caicos; 9 January 1891, Caicos Islands. [17, 138].

Buden, D.W. 1987. The birds of Cat Island, Bahamas. *The Wilson Bulletin*. 99(4): 579–600.

20 November 1890, 1 Kirtland's warbler collected (#48134, Academy of Natural Sciences, Philadelphia) by J. Percy Moore, Cat Island, The Bahamas.

Capp, J.; Mehlman, D. 2003. Teaming for bird conservation in the Americas. *Birdscapes*.

Reports on a new joint program between The Nature Conservancy and the USDA Forest Service's Office of International Programs to help conserve the migratory birds that winter in Latin America and the Caribbean. Kirtland's warbler is used as one of the examples.

Carey, E.; Wunderle, J.M., Jr.; Ewert, D.N. 2004. A research and training program for conservation of wintering Kirtland's warbler and associated species in The Bahamas: the first field season. *The Journal of Caribbean Ornithology*. 17: 81–85.

Outlines a plan to increase knowledge of the winter biology and habitats of the Kirtland's warbler and other focal bird species in those habitats, as well as train Bahamians in the methods of field biology and natural resources management. Provides a summary of the first field season on Andros and Eleuthera.

Challinor, D., Jr. 1962. Recent sight record of Kirtland's warbler in The Bahamas. *The Wilson Bulletin*. 74(3): 290.

27 March 1957, 1 male Kirtland's warbler, Hog Island, The Bahamas. Includes notes on feeding behavior, habitat, and tail-wagging.

Chapman, F.M. 1908. *Camps and cruises of an ornithologist*. New York: D. Appleton and Company.

27 or 28 April 1907, 1 tail-wagging Kirtland's warbler feeding on the berries of low "sage" bushes, Cat Cay, The Bahamas. [224].

Clench, M.H. 1978. Search ends: a Kirtland's at last. *Audubon Society of Western Pennsylvania. Bulletin* 42(10): 1, 8.

10 February 1978, 1 female Kirtland's warbler sight record, North Caicos, The Bahamas. The habitat and behavior of the bird are described, as is the search for the bird.

Connor, H.A.; Loftin, R.W. 1985. The birds of Eleuthera Island, Bahamas. *Florida Field Naturalist*. 14(4): 77–104.

Lists Kirtland's warbler as previously reported, but not located on this study.

Cooper, N.W.; Ewert, D.N.; Wunderle, J.M.; Helmer, E.H.; Marra, P.P. 2019. Revising the wintering distribution and habitat use of the Kirtland's warbler using playback surveys, citizen scientists, and geolocators. *Endangered Species Research*. 38: 79–89. <https://doi.org/10.3354/ESR00937>.

Data from playback surveys, eBird, and geolocator tracking data were used to refine the distribution and habitat use of wintering Kirtland's warblers. Concludes the majority of wintering Kirtland's are found in the central Bahamas using broadleaf scrub habitat.

Cory, C.B. 1879. Capture of Kirtland's warbler (*Dendroica kirtlandi*) in The Bahama Islands. Bulletin of the Michigan Ornithological Club. 4: 118

9 January 1879, 1 female Kirtland's warbler specimen, Hawk's Nest, Andros, The Bahamas. Includes a physical description and measurements of the bird, and notes that it preferred thick brush and that its stomach contained the remains of insects.

Cory, C.B. 1885. A list of the birds of the West Indies, including the Bahama Islands and the Greater and Lesser Antilles excepting the Islands of Tobago and Trinidad. Boston: Estes and Lauriat.

Kirtland's warbler is listed for New Providence and Andros, The Bahamas. [8].

Cory, C.B. 1886. The birds of the West Indies including the Bahama Islands, the Greater and Lesser Antilles, excepting the Islands of Tobago and Trinidad. The Auk. 3(1): 1–59.

Kirtland's warbler is listed as common in winter at New Providence and Andros, The Bahamas. The author speculates that the bird winters as far south as Long Island and may possibly breed in The Bahamas. [38].

Cory, C.B. 1890. The Birds of the Bahama Islands containing many birds new to the Islands, and a number of undescribed winter plumages of North American species. Revised. Boston: Estes and Lauriat.

9 January (year unspecified), 1 female Kirtland's warbler specimen, Hawk's Nest, Andros. Provides a plumage description and physical measurements. Notes that the bird preferred keeping to the thick brush rather than the more open areas and its stomach contained insect remains. Includes Purdie's 1879 list of known specimens. (The 1880 edition contains identical information.) [66–68, 226].

Cory, C.B. 1891a. A list of birds taken and observed in Cuba and the Bahama Islands, during March and April 1891. The Auk. 8: 292–296.

3–20 April 1891, 3 Kirtland's warbler specimens, Berry Islands, The Bahamas. Specimens were also taken on Abaco and the Caicos Islands (see Cory 1891b). Considered not uncommon in The Bahamas. [295].

Cory, C.B. 1891b. List of the birds collected by C.L. Winch in the Caicos Islands and Inagua, Bahamas, during January and February, and in Abaco, in March 1891. Ardea. 8: 296–298.

January–February 1891, 2 Kirtland's warbler specimens, Caicos Islands, The Bahamas, March 1891, Kirtland's warbler specimen (numbers unspecified), Abaco, The Bahamas. Reports that the naturalists of the Albatross expedition found Kirtland's not uncommon on Rum Cay. 297, 298.

Cory, C.B. 1892. Catalogue of West Indian birds containing a list of all species known to occur in the Bahama Islands, the Greater Antilles, the Caymans, and the Lesser Antilles, excepting the islands of Tobago and Trinidad. Boston: Cory, Charles B.

Kirtland's warbler is listed to being found on Abaco, Berry Islands, Eleuthera, New Providence, Andros, Watling's Island, Green Cay, North. Caicos, Grand Caicos, and East Caicos, The Bahamas. The author hypothesizes that the Kirtland's warbler is resident in The Bahamas. [118, 155].

Currie, D.; Wunderle, J.; Ewert, D. 2003. The most elusive bird in The Bahamas? Getting to grips with wintering Kirtland's warblers. World Birdwatch. 25(4): 13–15.

Details the history of the Kirtland's warbler in The Bahamas and studies done in the past.

Describes the work done with the Kirtland's warbler research and training project from October 2001 to the present.

Currie, D.; Wunderle, J.M.; Ewert, D.N.; Davis, A.; McKenzie, Z. 2005. Winter avian distribution and relative abundance in six terrestrial habitats on Southern Eleuthera, The Bahamas. *Caribbean Journal of Science*. 41(1): 88–100.

One Kirtland's warbler was detected on a point count and at least 5 others were detected between points using playback on southern Eleuthera, The Bahamas, between 22 January to 10 March 2003. All were found in secondary vegetation. Twenty-four other Kirtland's warblers were found at 9 sites on southern Eleuthera, mostly in secondary habitat, between December 2002 and April 2003. The effect of disturbance and vegetation structure on bird assemblages is described.

Currie, D.; Wunderle, J.M., Jr.; Freid, E.; Ewert, D.N.; Lodge, D.J. 2019. Kirtland's warbler *Setophaga kirtlandii*. In: *The natural history of The Bahamas: a field guide*. Ithaca, NY: Cornell University Press: 374–375.

Provides Kirtland's warbler distribution and status for The Bahamas. Physical, habitat, vocalization, and tail-wagging descriptions are also given.

Dobson, A.; White, A.; Norton, R.L. 2009. The fall migration: West Indies and Bermuda. *North American Birds*. 63(1): 173–176.

10 October 2008, 1 Kirtland's warbler, Eleuthera, The Bahamas, first one of the season. Six warblers resighted, the oldest being banded in 2002, and 11 new birds banded in October and November. The number of unbanded birds seemed higher than the year before, reflecting a good breeding season. [175].

Elwell, L. 1979. January 9, 1979—Allan's Cay Group, Exuma Island's, Bahama: approximately noon.

9 January 1979, 1 Kirtland's warbler photographed, Allan's Cay group, Exuma Islands, The Bahamas. The bird was in thick, brushy vegetation.

Elwonger, M.; Kirwan, G. 2001. A birding trip report: Cuba: February 13–21, 1999; March 21–April 2, 1999; January 14–21, 2001; with 4 days in the Dominican Republic March 21–24.

13 February 1999, 1 probable Kirtland's warbler, Bermejas, Cuba in the trip notes. The bird list shows 1 Kirtland's warbler on 14 February.

Emlen, J.T. 1977. Land bird communities of Grand Bahama Island: the structure and dynamics of an avifauna. *Ornithological Monographs*. 24: 1–129.

Kirtland's warbler is considered a rare winter visitor on Grand Bahama, never seen in 500 hours of field observation. Reports 1 captured by Dr. Paul Fluck there in April 1969 in submature pine habitat. [126].

Everton, J.; Wunderle, J.M., Jr.; Currie, D.; Ewert, D.N.; White, J.D.; Carey, E. 2009. A brief history of the Kirtland's warbler research and training [sic] program. In: Sealey, K.S.; Freid, E., eds. *Proceedings of the 12th symposium on the natural history of The Bahamas*. San Salvador: Gerace Research Centre: 59–65.

Presents a history of the Kirtland's Warbler Research and Training Program. Future work is projected focusing on the winter ecology of Kirtland's warblers and linkages to the breeding areas, evaluating the ecology of species associated with Kirtland's, and building Bahamian conservation capacity.

Ewert, D. 2022. The Kirtland's warbler: a special Bahamas wintering bird. Eleutheran: The Newspaper. April/May: 30.

An article that focuses on the winter habitat and biology of Kirtland's warblers. Information on breeding habitat and migration is also briefly discussed.

Ewert, D.N.; Wunderle, J.M., Jr.; Carey, E. 2006. The Kirtland's warbler research and training project: past, present, and proposed future directions.

States the principal objectives as: (1) obtain information on the habitat use and winter ecology of the Kirtland's warbler and associated resident and migrant species; and (2) train Bahamian students to increase conservation capacity in The Bahamas. A detailed project history is provided as well as sections on project research, building partnerships for Kirtland's conservation, future of the project, summary of the overall research strategy, collaborators and their contributions, awards, and publications.

Faanes, C. 1986a. Grand Turk Island, British West Indies CBC summary. American Birds. 40: 1029.

31 December 1985 (+/-3 days), 1 Kirtland's warbler, Grand Turk, Turks and Caicos.

Faanes, C.A. 1985. Memorandum to the director of Patuxent Wildlife Research Center, Laurel, MD: summary of field work on Kirtland's warbler winter ecology.

Presents the following Kirtland's warbler records: 30 January 1985, 1 female, New Providence, The Bahamas. 2 February 1985, 1 male, Paradise Island, The Bahamas. 10 February 1985, 1 male, South Caicos, Turks and Caicos. 11 February 1985, 2 males and 1 female, Grand Turk, Turks and Caicos. 20 February 1985, 1 male, Eleuthera, The Bahamas. 7 March 1985, 1 male, Grand Turk, Turks and Caicos. 13–14 March 1985, 1 female, Dominican Republic, Hispaniola. 1 April 1985, 1 female, Inagua, The Bahamas. 2 April 1985, 1 male, Inagua, The Bahamas.

Faanes, C.A. 1986b. Memorandum to director, Patuxent Wildlife Research Center, Laurel, MD: summary of 1985–1986 winter field work on Kirtland's warbler winter ecology.

Provides a summary of Kirtland's warbler winter field work in The Bahamas, Turks and Caicos, Dominican Republic, and Haiti from 11 December 1985 to 28 March 1986. On Eleuthera, The Bahamas, a female Kirtland's was located on 11 December 1985 and a banded male, originally banded in the area in February 1985, was located 13 December 1985. Both were seen on numerous days, but no other dates are mentioned. Foraging observations ($n = 408$) were made of both birds, with 70 percent of foraging being on Lantana berries. The other 30 percent consisted of bark-gleaning, flycatching, leaf-scratching, and ground probing. Almost 97 percent of possible Kirtland's warbler habitat on Eleuthera was surveyed and a rudimentary classification system was developed. The fruit and flower production of Lantana was examined, and fruit was collected for caloric and nutrient content. Bird census plots were set up and 210 net-hours were spent trying to capture the female Kirtland's. The female was never captured but the male was caught 4 times. A female Kirtland's warbler was observed on 23 and 29 December 1985. Vegetation and bird census plots were established. Notes on weather, trips to other islands, and recommendations for future research are provided.

Faanes, C.A.; Haney, J.C. 1989. First record of Kirtland's warbler from the Dominican Republic and additional bird observations. Caribbean Journal of Science. 25(1–2): 30–35.

14–15 March 1985, 1 female Kirtland's warbler, 1 km north of Laguna Saladilla, Dominican Republic. First Kirtland's warbler record for Dominican Republic and southern most record.

Gochfeld, M. 1979. Wintering ranges of migrant warblers of eastern North America. *American Birds*. 33: 742–745.

Gives the Kirtland's warbler wintering range as The Bahamas. [742, 744].

Hagner, C. 2006. The secret life of the Kirtland's warbler. The Nature Conservancy.

Chronicles the work done by The Bahamas Kirtland's Warbler Research and Training Project.

Haney, J.C.; Lee, D.S.; Walsh-McGehee, M. 1998a. A quantitative analysis of winter distribution and habitats of Kirtland's warblers in The Bahamas. *The Condor*. 100(2): 201–217.

Compiles and analyzes 101 reports of 194 individual Kirtland's warblers from the Bahama Archipelago, 1841–1997. Concludes majority of Kirtland's winter in Caribbean pine habitat.

Haney, J.C.; Lee, D.S.; Walsh-McGehee, M. 1998b. Winter in The Bahamas may be no vacation for Kirtland's warbler. *Endangered Species Bulletin*. 23(4): 20–21.

Briefly discusses Kirtland's warbler habitat in The Bahamas.

Hannah, A. 2015. Kirtland's warbler banded as nestling in Wisconsin confirmed in Bahamas.

6 April 2015, 1 color-banded Kirtland's warbler, Cat Island, The Bahamas. The bird was banded as a nestling in 2014 in Wisconsin.

Hess, P. 2005. Kirtland's warbler winter ecology. *Birding*. 37: 361–362.

Summarizes the work done in The Bahamas on Kirtland's warblers with emphasis on the work starting in 2002 on Eleuthera.

Howe, W. 1986. Governor's Harbour, Eleuthera, Bahamas. *American Birds*. 40(4): 1029.

2 January 1986, 1 Kirtland's warbler, Governors Harbour, Eleuthera, The Bahamas.

Hundley, M.H. 1967. Recent wintering records of the Kirtland's warbler. *The Auk*. 84: 425–426.

Discusses all Bahamian Kirtland's warbler records from 1870–1957. Provides details, dates, and locations for the 1959–1966 sight record, noting vegetation types in which birds were seen. Mentions that on several occasions, an individual warbler would land on the lower section of a pine trunk and then work its way upward, circling the tree and probing beneath the bark similar to a brown creeper. After reaching the branched portion of the tree, the warbler would fly to the base of another tree and repeat the behavior. Notes that Harold Mayfield and other breeding ground experts had never seen this type of behavior in a Kirtland's. (This feeding behavior is common in the Bahamian race of the yellow-throated warbler, now called the Bahama warbler [White 1996, 1998].)

Isada, A.P. 2006. First sight record Kirtland's warbler (*Dendroica kirtlandii*) in Cuba. *North American Birds*. 60(3): 462–463.

8 November 2004, 1 Kirtland's warbler, Cayo Coco, Ciego de Avila Province, Cuba. Describes the habitat, location, and field marks.

Jennings, A.H. 1888. List of birds observed at New Providence, Bahama Islands, March–June, 1887. Johns Hopkins University Circulars. 7(63): 39.

Kirtland's warbler is listed as a specimen taken sometime between March and June 1887 on New Providence, The Bahamas. (According to Chapman 1899, the record is based on 8 specimens.)

Joint Nature Conservation Committee. 2008. Information sheet on Ramsar wetlands.

Mentions Kirtland's warblers have occurred on the Turks and Caicos Islands. [3].

Jones, T.M.; Akresh, M.E.; King, D.I. 2013. Recent sightings of Kirtland's warblers on San Salvador Island, The Bahamas. The Wilson Journal of Ornithology. 125(3): 637–642. <https://doi.org/10.1676/13-0071>.

24 January 2012, 1 after second year (ASY) female Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. 1 March 2012, 1 second year (SY) male Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. 10 March 2012, ASY female Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. 22 December 2012, 1 hatching year female Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. Also discusses 16 observations of at least 6 other Kirtland's warblers. The habitat is described, and a map is provided.

King, W.B. 1981. Endangered birds of the world, the ICBP bird red data book. Version 2. Washington, DC: Smithsonian Institution Press.

Kirtland's warbler is described as breeding in Michigan and wintering in The Bahamas, having been recorded from most of the larger islands. November 1977, adult male and a second Kirtland's at Veracruz, Mexico.

Kuch, I.K. 1979. Letter to Harold Mayfield, 7 August 1979.

6 February 1979, 1 Kirtland's warbler, Deepwater Cay, The Bahamas. The bird was found in the grass of a yard, feeding in agave flowers.

Lane, J. 1975. Kirtland's warbler in Mexico. American Birds. 29: 144.

11 November 1974, 1 male and 1 female or juvenile Kirtland's warblers, 20 miles south of Veracruz, Mexico. A habitat description of the sighting area is included.

Latta, S.C.; Tossas, A.; Sutton, A.; Gonzalez, H.; Hamel, P.B.; DeSante, D. 2003. Research, monitoring, and conservation of neotropical migratory land birds in the West Indies: a report to the Society for the Conservation and Study of Caribbean Birds (SCSCB) by the Neotropical Migratory Bird Working Group of the SCSCB. The Journal of Caribbean Ornithology. 16(1): 1–21.

Summaries of research projects undertaken on each island that focused on neotropical migratory birds were collected. Under The Bahamas, it states: "Beyond general surveys, occasional mist-netting, and intensive searching for Kirtland's warbler, little work has been completed in the Bahama Islands." Provides a brief overview of the ongoing Kirtland's warbler work. [7].

Lee, D.S.; Walsh-McGehee, M.; Haney, J.C. 1997. A history, biology and re-evaluation of the Kirtland's warbler habitat in The Bahamas. Bahamas Journal of Science. 4: 19–29.

Provides an overview of the biology of wintering Kirtland's warblers and a historical summary in The Bahamas. Theorizes that the Caribbean pine community is a key component of winter habitat.

Leukering, T. 1986. The 86th Christmas bird count. *American Birds*. 40(4): 589–595.

Briefly discusses the 2 Kirtland's warblers found on the 86th Christmas bird count. [590].

Levy, S. 2006. Atomic detectives. *Nature*. 442(3): 504–506.

Reports on a stable isotope study of Kirtland's warblers to determine where they spend the winter.

Mason, C.R. 1963. More birds listed for Grand Bahama. *Florida Naturalist*. 36: 78.

December 1962, 1 Kirtland's warbler, 5 miles west of Freeport, Grand Bahama, The Bahamas.

Mayfield, H.F. 1972. Winter habitat of Kirtland's warbler. *The Wilson Bulletin*. 84(3): 347–349.

Summarizes and discusses all that is known about Kirtland's warbler winter habitat and occurrences.

Mayfield, H.F. 1996. Kirtland's warblers in winter. *Birding*. 28(1): 34–39.

Provides a general background and history of the Kirtland's warbler in The Bahamas. Concludes that the preferred winter habitat consists of large areas of low, sparse vegetation, and does not appear to be associated with Caribbean pine. Includes several photographs of winter habitat and a map of migration.

Maynard, C.J. 1896. The birds of eastern North America: with original descriptions of all the species which occur east of the Mississippi River, between the Arctic Circle and the Gulf of Mexico, with full notes upon their habits, etc. Revised. Newtonville, MA: C.J. Maynard & Co.

Provides an extremely detailed physical description of male and female Kirtland's warblers and discusses Maynard's encounters with the warbler in The Bahamas (26 records for Nassau, New Providence, and 1 record for Southern Bight, Andros, are included). Includes color plates of male and female. [592–596, pl. 17, pl. 21].

Mayr, E. 1953. Additional notes on the birds of Bimini, Bahamas. *The Auk*. 70: 499–501.

Reports that despite a diligent search, no Kirtland's warblers were found. [501].

Miller, J.R. 1978. Notes on birds of San Salvador Island (Watlings), the Bahamas. *The Auk*. 95: 281–287.

States that despite hundreds of man hours, Kirtland's warbler has never been encountered on San Salvador Island, despite keeping a watch for it. [286].

Moore, P.; Gape, L. 2009. Bahamas. In: Devenish, C.; Diaz Fernandez, D.F.; Clay, R.P.; Davidson, I.; Yopez Zabala, I., eds. Important bird areas in the Americas: priority sites for biodiversity conservation. Quito, Ecuador: BirdLife International: 71–78.

Provides a general introduction to The Bahamas, a description of the conservation and protected area system, ornithological importance, and an IBA overview. Praises the Kirtland's Warbler Research and Training Program and mentions the Kirtland's warbler. [73, 74, 75].

Moore, P.; Gape, L. 2008. Bahamas. In: Wege, D.C.; Anadon-Irizarry, eds. Important bird areas in the Caribbean: key sites for conservation. BirdLife International: 53–81.

Provides a general introduction to The Bahamas and a description of the conservation in the archipelago. Provides information on each island. Kirtland's warbler is mentioned several times. [55, 56, 58, 59, 65, 71].

Murphy, P. 1985. Quick takes. Bird Watcher's Digest. 7(5): 6.

Reports on Kirtland's warbler studies in the wintering grounds looking at distribution and habitat. Also mentions the 1985 Kirtland's Warbler Census where 217 singing males were counted.

Norton, R. 1996. The autumn migration: West Indies region. National Audubon Society Field Notes. 50: 120, 122.

25 November 1995, 1 Kirtland's warbler, Lucayan National Park, Grand Bahama, The Bahamas. [122].

Norton, R.L. 1986a. The spring migration: West Indies region. American Birds. 40: 528–529.

14 December 1985–28 March 1986, 1 Kirtland's warbler, Eleuthera, The Bahamas. [528, 529].

Norton, R.L. 1986b. The winter season: West Indies region. American Birds. 40: 338–339.

14 December 1985–6 February 1986, 1 male and 1 female Kirtland's warbler, Eleuthera, The Bahamas (The Governor). [339].

Norton, R.L. 1988a. The autumn migration: West Indies region. American Birds. 42: 142–144.

13 November 1987, 1 Kirtland's warbler, Abaco, The Bahamas. [144].

Norton, R.L. 1988b. The winter season: West Indies region. American Birds. 43: 371–372.

14 February 1989, 1 adult male Kirtland's warbler, north of Governor's Harbour, Eleuthera, The Bahamas. Same site as one that was located in February 1985. [372].

Norton, R.L. 1993. The winter season: West Indies region winter 1991–1992. American Birds. 47: 304.

13 December 1991, 1 Kirtland's warbler, Coral Harbour Road, Eleuthera, The Bahamas. Same location as 5 winters previous.

Norton, R.L. 2000a. The fall migration: West Indies. North American Birds. 54(1): 109–111.

28 October 1999, 1 Kirtland's warbler, near Hole-in-the-Wall, South Abaco, The Bahamas. [110].

Norton, R.L. 2000b. The winter season: West Indies. North American Birds. 54(2): 223–225.

9 January 2000, 1 Kirtland's warbler photographed, Hole-in-the-Wall, South Abaco, The Bahamas. [223, 225].

Norton, R.L.; Dobson, A.; Levesque, A. 2020. Fall 2017: West Indies. North American Birds. 2020. <https://wp.me/p8iY2g-9wt>.

26 October 2017, 2 Kirtland's warblers photographed, South Eleuthera, The Bahamas. [5].

Norton, R.L.; Dobson, A.; Levesque, A. 2021a. West Indies and Bermuda: fall 2018. North American Birds. 2021. <https://wp.me/p8iY2g-aiJ>.

21 October 2018, a group of 6 Kirtland's warblers, Landfall Park, San Salvador, The Bahamas. 8 November 2018, 2 male Kirtland's warblers, Walkers Tract, San Salvador, The Bahamas. [4].

Norton, R.L.; Dobson, A.; Levesque, A. 2021b. West Indies and Bermuda: spring 2018. North American Birds. 2021. <https://wp.me/p8iY2g-aix>.

15 March 2018, 1 Kirtland's warbler, Maderia Road, Eleuthera, The Bahamas. 16 March 2018, 1 Kirtland's warbler, Mingo Road, Eleuthera, The Bahamas. 16 March 2018, 2 Kirtland's warblers, Rock Sound Commonage land, South Eleuthera, The Bahamas. 22 March 2018, 3 Kirtland's warblers, Rock Sound, South Eleuthera, The Bahamas. 24 March 2018, 4 Kirtland's warblers, Ebenezer's Church Road, Cat Island, The Bahamas. [5].

Norton, R.L.; White, A. 2001. The nesting season: West Indies. North American Birds. 55(4): 493–494.

The following statement appears in the addendum: "At Middle Caicos, Turks and Caicos Is., researchers for the Darwin Initiative Project found 'several' Kirtland's warblers in the dry woodlands as reported in the May newsletter of the Turks and Caicos National Trust (tc.nat-trust@tcitway.tc)." [494].

Norton, R.L.; White, A.; Dobson, A. 2002a. The winter season: West Indies. North American Birds. 56(2): 235–237.

23 February 2002 1 Kirtland's warbler found north of the Fresh Creek Bridge, North Andros, The Bahamas. [236].

Norton, R.L.; White, A.; Dobson, A. 2002b. The spring migration: West Indies. North American Birds. 56(3): 372–374.

Reports on 8 Kirtland's observed in broad-leaf coppice south of Tarpum Bay, Eleuthera, The Bahamas, from 9 March–28 April 2002. [372, 373, 384].

Norton, R.L.; White, A.; Dobson, A. 2003a. The fall migration: West Indies and Bermuda. North American Birds. 57(1): 131–133.

At least 4 of the 6 Kirtland's warblers banded on Eleuthera in spring 2003 returned to the same site, and 4 more were banded in the fall. [133].

Norton, R.L.; White, A.; Dobson, A. 2003b. The winter season: West Indies. North American Birds. 57(2): 272–274.

From December 2002 to February 2003, the Kirtland's Warbler Research and Training Project discovered 30 Kirtland's warblers at 12 different sites in south and central Eleuthera, The Bahamas, not including the previously known Madeira Road site. The sightings included a color-banded male believed to be at least 7 years old. [274].

Norton, R.L.; White, A.; Dobson, A. 2004a. The fall migration: West Indies and Bermuda. North American Birds. 58(1): 158–161.

Researchers with the Kirtland's Warbler Training and Research Project saw at least 30 birds (70 percent of which were color-banded) across 7 monitoring sites in south Eleuthera. Other sites were discovered, and more warblers were expected to be banded in winter 2003–2004. [160].

Norton, R.L.; White, A.; Dobson, A. 2004b. The spring migration: West Indies and Bermuda. North American Birds. 58(3): 449–451.

12 March 2004, 1 Kirtland's warbler, Jake Jones Road, San Salvador, The Bahamas. First San Salvador record since 1966. [551].

Norton, R.L.; White, A.; Dobson, A. 2005a. The fall migration: West Indies and Bermuda. North American Birds. 59(1): 166–169.

Many banded Kirtland's warblers returned to Eleuthera, The Bahamas. [169].

Norton, R.L.; White, A.; Dobson, A. 2005b. The winter season: West Indies and Bermuda. North American Birds. 59(2): 341–344.

Cuba's first Kirtland's warbler was at Cayo Coco in November 2004, and Bermuda's first Kirtland's warbler was found during the Christmas Bird Count, 18 December 2004. In The Bahamas, the Kirtland's Warbler Research and Training Project found almost 50 Kirtland's warblers on south Eleuthera. [344].

Norton, R.L.; White, A.; Dobson, A. 2006. The spring migration: West Indies and Bermuda. North American Birds. 60(3): 456–460.

11 March 2006, 1 female Kirtland's warbler photographed, near the junction of Hole-in-the-Wall and Soldier Roads, Abaco, The Bahamas. The bird was relocated 2 weeks later. Also reports 113 Kirtland's banded on south Eleuthera, The Bahamas, over the past 4 winters. [458, 459].

Norton, R.L.; White, A.; Dobson, A. 2007a. The spring migration: West Indies and Bermuda. North American Birds. 61(3): 526–529.

During the previous winter and spring, the Kirtland's Warbler Research and Training Project on Eleuthera, The Bahamas, banded 38 new Kirtland's warblers and found 18 color-banded individuals, 2 of which had been banded in Michigan the previous summer. [528].

Norton, R.L.; White, A.; Dobson, A. 2007b. The winter season: West Indies and Bermuda. North American Birds. 61(2): 345–348.

2 January 2007, 1 male Kirtland's warbler, near Hole-in-the-Wall, Abaco, The Bahamas. [347].

Norton, R.L.; White, A.; Dobson, A. 2008a. The fall migration: West Indies and Bermuda. North American Birds. 62(1): 171–174.

In October and November 2007, the Kirtland's Warbler Research and Training Project captured or sighted 10 banded Kirtland's warblers and banded 6 more. [173].

Norton, R.L.; White, A.; Dobson, A. 2008b. The spring migration: West Indies and Bermuda. North American Birds. 62(3): 491–494.

12 April 2008, 2 Kirtland's warblers, New Providence, The Bahamas. 27 April 2008, 1 Kirtland's warbler, Rock Sound, Eleuthera, The Bahamas. Reports that the Kirtland's Warbler Research and Training Program on south Eleuthera recaptured 22 previously banded Kirtland's warblers and color-banded 26 new birds during the winter and spring seasons. [493].

Norton, R.L.; White, A.; Dobson, A. 2008c. The winter season: West Indies and Bermuda. North American Birds. 62(2): 319–321.

October and November 2007, the Kirtland's Warbler Research and Training Project resighted or recaptured 15 previously banded Kirtland's warblers and banded 11 more on Eleuthera, The Bahamas. [320–321].

Norton, R.L.; White, A.; Dobson, A. 2009a. The winter season: West Indies and Bermuda. North American Birds. 63(2): 339–342.

The Kirtland's Warbler Research and Training Project banded 28 Kirtland's warblers on Eleuthera,

The Bahamas, through February 2009, and spotted 12 that were previously banded, one of which nested in Wisconsin in 2008. [342].

Norton, R.L.; White, A.; Dobson, A. 2013a. The winter season: West Indies and Bermuda. North American Birds. 67(2): 356–359.

9, 18, and 27 February 2013, 1 Kirtland's warbler, San Salvador, The Bahamas. [358].

Norton, R.L.; White, A.; Dobson, A.; Levesque, A. 2014. The spring migration: West Indies and Bermuda. North American Birds. 67(3): 532–534.

3, 10, 11 March and 1 April 2013, Kirtland's warblers, San Salvador, The Bahamas. 21 April 2013, 1 Kirtland's warbler, Hole-in-the-Wall, Abaco, The Bahamas. 6–23 March 2013, 3 Kirtland's warblers, Crooked Island, The Bahamas. 23–27 March 2013, no Kirtland's warblers were found on Acklins Island, The Bahamas, likely due to the fact that preferred food plants were not fruiting. 30 March–7 April 2013, 25+ Kirtland's warblers, San Salvador, The Bahamas. 7–14 April 2013, 12 Kirtland's warblers, Eleuthera, The Bahamas. [534].

Norton, R.L.; White, A.; Dobson, A.; Levesque, A. 2016. Spring: West Indies and Bermuda. North American Birds. 69(3, 4): 508–510.

13 March 2015, 1 Kirtland's warbler, Gerace Research Center, San Salvador, The Bahamas. 31 March 2015, 1 Kirtland's warbler, central Eleuthera, The Bahamas. In 3 weeks of searching on Abaco, The Bahamas, a research team only found 4 Kirtland's warblers, all on 14 March 2015 along the Hole-in-the-Wall Road south of the pine forest. They found the same 4 the next day. The research team also found 47 Kirtland's on Cat Island from 5–11 April 2015.

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2009b. The fall migration: West Indies and Bermuda. North American Birds. 64(1): 169–172.

24 October 2009, 1 Kirtland's warbler (appears to be a male from the photograph), found in coppice near Treasure Cay, Abaco, The Bahamas. 19 November 2009, 1 Kirtland's warbler, undisclosed location on New Providence, The Bahamas. 13 and 15 November 2009, 4-5 Kirtland's warblers, Madera Road, Eleuthera, The Bahamas. [171].

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2009c. The spring migration: West Indies and Bermuda. North American Birds. 63(3): 518–521.

3 March 2009, 2 Kirtland's warblers photographed, Hawksbill Cay, Exumas, The Bahamas. During winter 2008–2009, the Kirtland's Warbler Research and Training Project banded 41 new Kirtland's warblers, resighted 13, and recaptured 2 previously banded birds. The last resights for the season were 2 color-banded birds on 28 April 2009 near Tarpum Bay, Eleuthera. One was sighted on 29 April at Rock Sound, Eleuthera. [51].

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2010a. Fall migration: West Indies and Bermuda. North American Birds. 64(1): 169–172.

25 October 2009 1 male Kirtland's warbler photographed in coppice near Treasure Cay, Abaco, The Bahamas, the first for northern Abaco in at least 50 years. 19 November 2009, 1 Kirtland's warbler photographed, undisclosed location on New Providence, The Bahamas. 13 and 15 November 2009, 4–5 Kirtland's warblers, Madera Road, Eleuthera, The Bahamas. [171].

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2010b. The spring migration: West Indies and Bermuda. North American Birds. 64(3): 511–514.

13 April 2010, 1 Kirtland's warbler, Midshipman's Road, Grand Bahama, The Bahamas. 8 April

2010, 1 first-year female Kirtland's warbler, Hole-in-the-Wall, Abaco, The Bahamas. 9 April 2010, 1 Kirtland's warbler, Georgetown, Exumas, The Bahamas. Also reports that the Kirtland's Warbler Research and Training Project banded 10 Kirtland's warblers, recaptured 1 that had been banded last season, and resighted several color-banded individuals from previous years. [513].

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2010c. The winter season: West Indies and Bermuda. North American Birds. 64(2): 337–340.

18 February 2012, 1 Kirtland's warbler, near the Queen's Highway, not far from Moss Town, Great Exuma, The Bahamas. 21 February–7 March 2010, at least 10 Kirtland's were seen at 4 locations in south Eleuthera, The Bahamas. 20 February–3 March 2010, 12 Kirtland's warblers found and 5 banded, Long Island, The Bahamas. 18 December 2009, 1 Kirtland's warbler photographed, New Providence, The Bahamas. [339-340].

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2011. The fall migration: West Indies and Bermuda. North American Birds. 65(1): 181–184.

10 October 2010, 1 Kirtland's warbler photographed, Nassau, New Providence, The Bahamas. [183].

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2012. The winter season: December 2011 through February 2012: West Indies and Bermuda. North American Birds. 66(2): 359–361.

6 December 2011, 1 Kirtland's warbler, Hole-in-the-Wall, Abaco, The Bahamas. 12 January 2012, 3 Kirtland's warblers, Hole-in-the-Wall, Abaco, The Bahamas. 24 January 2012, 1 Kirtland's warbler, San Salvador, The Bahamas. [361].

Norton, R.L.; White, A.; Dobson, A.; Massiah, E. 2013b. Spring migration: West Indies and Bermuda. North American Birds. 66(3): 567–569.

23 March 2012, 6 Kirtland's Warblers, Madiera Road, Eleuthera, The Bahamas. 11–20 April 2012, 9 Kirtland's warblers, south Eleuthera, The Bahamas. [569].

Pashley, D.N.; Martin, R.P. 1988. The contribution of Christmas Bird Counts to knowledge of the winter distribution of migratory warblers in the neotropics. American Birds. 42(4): 1164–1176.

December 1985, 1 Kirtland's warbler, Governor's Harbour, Eleuthera, The Bahamas. First Christmas Bird Count record of this species. [1167, 1168-1169, 1170, 1174].

Purdie, H.A. 1879. Another Kirtland's warbler (*Dendroica kirtlandi*). Bulletin of the Nuttall Ornithological Club. 4: 185–186.

16 May 1879, 1 female Kirtland's warbler specimen, Ann Arbor, Washtenaw County, Michigan. Second week in October 1841, 1 male Kirtland's warbler specimen, between Abaco, The Bahamas and Cuba. 13 May 1851, 1 male Kirtland's warbler specimen, near Cleveland, Ohio. June 1860, 1 female Kirtland's warbler specimen, near Cleveland, Ohio. First week in May 1872, 1 male Kirtland's warbler specimen, Cincinnati, Hamilton County, Ohio. 15 May 1895, 1 female Kirtland's warbler specimen, Ann Arbor, Washtenaw County, Michigan. May 1878, 1 male and 1 female Kirtland's warbler specimens, Rockport, Cuyahoga County, Ohio. 9 January 1879, 1 female Kirtland's warbler specimen, Andros, The Bahamas.

Radabaugh, B.E. 1972. Report on a field trip to the Northern Bahama Islands from 7 February to 14 April 1972 on behalf of the National Audubon Society and the New York Zoological Society.

The purpose of the trip was to find Kirtland's warblers, survey and assess habitat changes, and determine what the warbler's requirements are in the winter and correlate these findings with habitat changes observed. No Kirtland's warblers were found. Discusses timber harvesting and farming and concludes that the greatest alteration of habitat was to pine lands via pulpwood harvesting. Includes several photographs of timber harvesting and habitat.

Radabaugh, B.E. 1973. Report of a trip to some central and southern islands of the Commonwealth of The Bahamas in search of Kirtland's warblers from 5 January to 3 April 1973.

The principal purposes were to observe and assess recent habitat changes, to find Kirtland's warblers, and to correlate the Kirtland's warbler winter requirements. One male Kirtland's warbler was observed on 11, 12, and 22 March 1973, about 1 mile east of Brown, Crooked Island, The Bahamas. Details on behavior, feeding, territory shape and size, and habitat are provided. Other bird species observed are listed.

Radabaugh, B.E. 1974. Kirtland's warbler and its Bahama wintering grounds. The Wilson Bulletin. 86(1951): 374–383.

11, 12, and 22 March 1973, 1 male Kirtland's warbler, Crooked Island, The Bahamas. The only Kirtland's found in 800 hours of field work. The behavior and habitat of the warbler is described, and previous records and the environmental changes in the area are discussed.

Ridgway, R. 1891. List of birds collected on the Bahama Islands by the Naturalists of the Fish Commission Steamer Albatross. The Auk (8): 333–339.

4–9 March, 4 Kirtland's warbler specimens, Watling's Island (now San Salvador), The Bahamas. 12 April, 2 Kirtland's warbler specimens, Green Cay, The Bahamas. [337, 338].

Ridgway, R. 1902. The birds of North and Middle America: a descriptive catalogue of the higher groups, genera, species, and subspecies of birds known to occur in North America, from the Arctic Lands to the Isthmus of Panama, the West Indies and other islands of the Caribbe. Washington, DC: Government Printing Office.

Provides detailed physical descriptions of spring adult male and female Kirtland's warblers. Also included is a bibliography of articles pertaining to Kirtland's warbler specimens published through 1900. Lists areas that Kirtland's specimens have been taken. [603–605].

Riley, J.H. 1905. Birds of the Bahama Islands. In: Shattuck, G.B., ed. The Bahama Islands. New York: The MacMillan Company: 347–368.

Lists Kirtland's warbler as occurring in The Bahamas on Abaco, Little Abaco, Berry Islands, Eleuthera, New Providence, Andros, Green Cay, Watlings Island (now San Salvador), North Caicos, Grand Caicos, East Caicos, and Athels Island. [366].

Robertson, W.B., Jr. 1968. The spring migration: Florida region. Audubon Field Notes. 22: 516–520.

30 March and 6 April 1968, 1 Kirtland's warbler, Fresh Creek, Andros, The Bahamas. [519].

Smart, G. 2016. Overview of the endangered species program. In: Perry, M.C., ed. The history of Patuxent: America's wildlife research story. Reston: U.S. Geological Survey: 141–146.

Summarizes the work of Paul W. Sykes, Jr., on Kirtland's warblers in The Bahamas. [145–146].

Sorenson, L.; Wunderle, J.M. 2017. First photographic record of Kirtland's warbler in Cuba! <http://www.birdscaribbean.org/2017/03/first-photographic-record-of-kirtlands-warbler-in-cuba/>.

23 February 2017, 1 male Kirtland's warbler photographed, Cayo Guillermo Cay, Cuba. Includes photographs of the bird, gumbo limbo berries the bird was feeding on, and a picture of the habitat. Also provides an overview of winter range, habitat, and biology.

Sykes, P.W., Jr. 1989. Kirtland's warblers on their wintering grounds in the Bahama Archipelago: a preliminary report. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 28.

Gives results of surveys in 1985 and 1986 for Kirtland's warblers on 15 islands in the Bahama Archipelago where at least 6 individuals were found. Foraging behavior of 2 Kirtland's observed and habitat notes are provided. Concludes Kirtland's favor second growth coppice 3–10 feet tall or virgin low scrub and the factor or factors suppressing the population do not appear to be on the wintering grounds.

The Nature Conservancy. 2011. The Bahamas: scoring the Kirtland's trifecta.

Reports that the Leon Levy Native Plant Preserve provides some habitat for wintering Kirtland's warblers. Additionally, a small number of Kirtland's warblers have been observed in the Harrold and Wilson Ponds National Park on New Providence as well as in the Exuma Cays Land and Sea Park on Hawksbill Cay.

United States Fish and Wildlife Service, Patuxent Wildlife Research Center. Kirtland's warbler transmitter development/tracking studies. 1983.

Describes a new 1.1-gram transmitter design for use on Kirtland's warblers. Provides results on a preliminary weight-lifting study from 1982 using pine siskins as a surrogate species. Future study plans with tracking surrogate species during post-breeding, fall migration, and winter are detailed, providing studies with surrogate species go well.

VanTyne, J.; Mayfield, H. 1952. Bird records from New Providence and Eleuthera Islands, Bahamas. Occasional Papers of the Museum of Zoology: University of Michigan. Ann Arbor, MI: University of Michigan Press.

Reports that the authors failed to find any Kirtland's warblers despite a careful search in every sort of habitat over 59 man-days of searching. [1].

Wallace, G.J. 1968. Another August record of Kirtland's warbler on its wintering grounds. The Jack-Pine Warbler. 46(1): 7.

27 August 1967, 1 male Kirtland's warbler, Paradise Beach, on an island across the bay from Nassau, New Providence Island, The Bahamas. Also discusses other early Bahamian records.

Walsh-McGehee, M.; Lee, D.S.; Haney, J.C. 1998. Kirtland's warblers in the Bahama Archipelago: a compilation of records and reports and a bibliography of the species on

its wintering grounds. In: Wilson, T.K., ed. Proceedings of the seventh symposium on the natural history of the Bahamas. San Salvador: 119–131.

Lists 111 reports of 199 individual Kirtland's warblers from the Bahama Archipelago between 1841 and 1997. A bibliography is also included.

White, A.W. 1998. A birder's guide to the Bahamas Islands (including Turks and Caicos). Colorado Springs, CO: American Birding Association, Inc.

Discusses the difficulty of finding Kirtland's warblers in The Bahamas and other birds that can be mistaken for Kirtland's. Mentions some places warblers have been found. [10, 36, 78, 101, 105, 124, 194, 202, 203, 225–226].

White, A.; Norton, R.L.; Dobson, A. 2005. The winter season: West Indies and Bermuda. North American Birds. 59(2): 341–344.

November 2004, 1 Kirtland's warbler at Cayo Coco, Cuba, first record for Cuba. 18–19 December 2004, 1 Kirtland's warbler found on the Bermuda Christmas Bird Count and photographed (p. 372), Bermuda's first record. The Kirtland's Warbler Research and Training Project found almost 50 Kirtland's warblers on south Eleuthera, The Bahamas, during the winter of 2004–2005. [344].

White, A.; Norton, R.L.; Dobson, A. 2006. The winter season: West Indies and Bermuda. North American Birds. 60(2): 299–302.

4, 5, 11 February 2006, 1 Kirtland's warbler photographed, New Providence, The Bahamas. [301].

White, A.; Norton, R.L.; Dobson, A. 2007. Spring migration: West Indies and Bermuda. North American Birds. 61(3): 526–529.

Reports that 38 Kirtland's warblers were banded in spring and past winter by the Kirtland's Warbler Research and Training Project on south Eleuthera, The Bahamas, and found 18 color-banded individuals. [528].

Wiley, J.W.; Wunderle, J.M. 1993. The effects of hurricanes on birds, with special reference to Caribbean Islands. Bird Conservation International. 3(4): 319–349. <https://doi.org/10.1017/S0959270900002598>.

Mentions that hurricanes have been implicated in the decline of Kirtland's warblers, but the potential for mass destruction of wintering populations is small because they are dispersed through the widely separated islands. Also mentions that warbler population declines have coincided with hurricanes that swept across the northern Bahama Islands in 1964 and 1965. [338].

Wunderle, J.M.; Bainton, A.; Dean, P.; Lodge, D.J. 2002. Kirtland's warbler observations: trip 1 (17–18 March 2002, Eleuthera, The Bahamas); additional observations of Kirtland's warblers trip 2 (3–6 April 2002).

Trip 1: 17 March 2002, 2 male and 2 female Kirtland's warblers, Madiera Road, Eleuthera, The Bahamas. 18 March 2002, 4 male Kirtland's warblers were captured and color-banded, 1 unknown Kirtland's warbler bounced off net, and 1 unknown observed, Madiera Road, Eleuthera, The Bahamas. Also provides a list of other bird species detected and a vegetation description. Trip 2: The Madiera Road, Eleuthera, The Bahamas site was revisited to search for banded Kirtland's warblers, capture and band additional Kirtland's, obtain warbler foraging observations, measure vegetation characteristics, and obtain preliminary insect collections. The 4 previously banded Kirtland's were relocated. 4 April 2002, 1 male Kirtland's warbler captured and color-banded. 6 April 2002, 1 female Kirtland's warbler captured and color-banded. Two unbanded Kirtland's were observed, for a total of at least 8 individual Kirtland's present. Foraging observations and vegetation characteristics are provided.

Wunderle, J.M., Jr.; Currie, D.; Helmer, E.H.; Ewert, D.N.; White, J.D.; Ruzycki, T.S.; Parresol, B.; Kwit, C. 2010a. Kirtland's warblers in anthropogenically disturbed early-successional habitats on Eleuthera, The Bahamas. *The Condor*. 112(1): 123–137. <https://doi.org/10.1525/cond.2010.090134>.

Habitat was quantified at 153 Kirtland's warbler capture sites on Eleuthera, The Bahamas. Sites were low coppice 3–28 years old resulting from human disturbance. Canopies in capture sites were lower (mean 1.8 m) than in random plots (mean 2.7 m). Feeding observations were also reported, with fruit being consumed 69 percent of the time.

Wunderle, J., Jr.; Ewert, D. 2010b. The Kirtland's Warbler Research and Training Project. *The All-Bird Bulletin*.

The Kirtland's Warbler Recovery Plan ranks wintering warbler population and habitat research as high priorities, and recommends building The Bahamas' conservation capacity. This led to the initiation of the Kirtland's Warbler Research and Training Project by the USDA Forest Service International Institute of Tropical Forestry and The Nature Conservancy in collaboration with The Bahamas National Trust and the College of The Bahamas. A summary of accomplishments is provided.

Wunderle, J.M., Jr.; Lebow, P.K.; White, J.D.; Currie, D.; Ewert, D.N. 2014. Sex and age differences in site fidelity, food resource tracking, and body condition of wintering Kirtland's warblers (*Setophaga kirtlandii*) in The Bahamas. *Ornithological Monographs*. Vol. 2014.

The study was conducted on Eleuthera, The Bahamas. Overwinter site persistence was low and variable among study sites. Site fidelity differed by sex (males > females) and age class (adults > juveniles). Measures of food resources were reliable positive predictors of site fidelity. Birds that shifted between study sites within a winter moved to sites with higher biomass of ripe fruit and ground arthropods. Late-winter rain had a positive effect on body mass, corroborating previous Kirtland's warbler studies that showed carryover effects on the breeding grounds and that survival in the following year was positively correlated with March rainfall in The Bahamas. Concludes that conservation efforts in The Bahamas archipelago should focus on protecting the least-drought-prone early successional habitats and sites with favored fruit species.



When Kirtland's warblers that were color-banded were captured on the breeding grounds in The Bahamas for feather samples, this bird was discovered to still be wearing a radio telemetry transmitter. The transmitter harnesses were designed to fall off before spring migration. The antenna was missing. Courtesy photo by Carol Bocetti.

I.D. Full Annual Life Cycle

Amadon, D. 1953. Migratory birds of relict distribution: some inferences. *The Auk*. 70: 461–469.

Discusses relict species using Kirtland's warbler as one example. A relict species is defined as one whose numbers or range or both have undergone drastic reductions. [463, 465, 466].

American Ornithologists' Union. 1895. Check-list of North American birds. 2nd ed. New York: American Ornithologists' Union.

Documents the history of the names *Sylvicola kirtlandi* and *Dendroica kirtlandi*. Adds a few states to the brief description of the range. [280].

American Ornithologists' Union. 1886. The code of nomenclature and check-list of North American birds. New York: American Ornithologists' Union.

Documents the history of the names *Sylvicola kirtlandi* and *Dendroica kirtlandi*. Also includes a brief description of Kirtland's warbler range. [311].

American Ornithologists' Union. 1910. Check-list of North American birds. 3rd ed. New York: American Ornithologists' Union.

Includes an updated and expanded description of Kirtland's warbler geographic range. [317–318].

American Ornithologists' Union. 1957. Check-list of North American birds. 5th ed. New York: American Ornithologists' Union.

Documents the history of the names *Sylvicola kirtlandi* and *Dendroica kirtlandi*. Also includes a brief description of the range, adds breeding and wintering locations, and speculates that the prior range of Kirtland's may have been more extensive. [502].

American Ornithologists' Union. 1983. Check-list of North American birds: the species of birds of North America from the Arctic through Panama, including the West Indies and Hawaiian Islands. 6th ed. New York: American Ornithologists' Union.

Kirtland's warbler is recorded as breeding in Michigan and wintering throughout The Bahamas. Migration records given generally from: Illinois, western Ohio, western Pennsylvania, southwest Quebec, Minnesota, Missouri, Kentucky, West Virginia, Alabama, Georgia, Florida, and Veracruz, Mexico. [616–617].

American Ornithologists' Union. 1998. Check-list of North American birds. 7th ed. New York: American Ornithologists' Union.

Lists the Michigan counties where Kirtland's warblers breed and lists summer Wisconsin locations. States that the Kirtland's winters in The Bahamas, but winter distribution is largely unknown. Also gives states where seen on migration and provides a brief habitat description. [547].

Baker, R.J. 1989. Population viability and the Kirtland's warbler. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 12–27.

Reviews population viability and discusses population viability analysis and how it might apply to the Kirtland's warbler.

Barrows, W.B. 1912. Michigan bird life. Lansing, MI: Michigan Agricultural College.

Provides Kirtland's warbler descriptions of physical characteristics, song, recorded specimens, and habitat. Specimens from the following Michigan counties are recorded: Calhoun, Crawford, Kalamazoo, Mackinac, Oscoda, and Washtenaw. Includes black-and-white drawing of bird. [618–623].

BirdLife International. 2012. *Dendroica kirtlandii*, Kirtland's warbler: the IUCN red list of threatened species 2012. <http://dx.doi.org/10.2305/IUCN.UK.2012-1.RLTS.T22721722A39850126.en>.

Provides an overview of Kirtland's warbler life history and gives an assessment as a near threatened species.

Blake, E.R.; Greenway, J.C., Jr.; Howell, T.R.; Lower, G.H., Jr.; Mayr, E.; Monroe, B.L., Jr.; Paynter, R.A., Jr.; Rand, A.L.; Traylor, M.A. 1968. Check-list of birds of the world. Paynter, R.A., Jr., ed. Cambridge, MA: Harvard University Museum of Comparative Zoology. Vol. 14.

Provides citation for the original description, Baird 1852, and notes summer and winter ranges. [32].

Bleck, C. 1997. Warbler watchers. Michigan Out-of-Doors. October 1997.

Reports on the Kirtland's warbler color-banding project. Also covers the census and habitat requirements. An overview of the Kirtland's Warbler Festival and Auto Tour is also provided.

Bocetti, C.I.; Donner, D.M.; Mayfield, H.F. 2014. Kirtland's warbler (*Setophaga kirtlandii*). In: Poole, A., ed. The birds of North America online. Ithaca: Cornell Lab of Ornithology: 1–48. <https://doi.org/10.2173/bna.19>.

Provides the most complete and up to date life history of the Kirtland's warbler.

Brinkley, E.S.; Cutright, N.J. 2004. State of the region. North American Birds. 58: 533–534.

Describes the Kirtland's warbler as a benchmark species for species-based conservation and gives examples why. Also gives the 2004 singing male census total of 1,341.

Brown, D.J.; Donner, D.M.; Ribic, C.A.; Bocetti, C.I. 2019. Influence of climate change and postdelisting management on long-term population viability of the conservation-reliant Kirtland's warbler. Ecology and Evolution. 2019;00: 1–14. <https://doi.org/10.1002/ece3.5547>.

Attempts to quantify the vulnerability of Kirtland's warbler to projected environmental changes on the wintering and breeding grounds due to climate change. A population-level simulation model was developed incorporating annual environmental conditions on the wintering and breeding grounds. Results indicate that the Kirtland's warbler population is stable under current conditions. Reduced breeding grounds habitat quantity resulted in reductions of the population size but did not cause extinction. Projected large reductions in wintering grounds precipitation caused the population to decline, with risk of extinction magnified when breeding habitat quantity or quality also decreased. The study indicates that probability of long-term persistence for Kirtland's warbler will depend on climate change impacts to wintering grounds habitat quality.

Brown, D.J.; Ribic, C.A.; Donner, D.M. 2017a. Supplementary analysis: using a full annual cycle model to evaluate long-term population viability of the conservation-reliant Kirtland's warbler after successful recovery. Journal of Applied Ecology. 54: 439–449.

Brown et al. 2017b simulated the influence of reducing annual productivity by 41 percent and 57 percent on long-term population viability of Kirtland's warbler. Here, additional impacts of 5 percent, 10 percent, 20 percent, and 30 percent reduction in productivity on long-term viability are simulated.

Brown, D.J.; Ribic, C.A.; Donner, D.M.; Nelson, M.D.; Bocetti, C.I.; Deloria-Sheffield, C.M. 2016. Data from: Using a full annual cycle model to evaluate long-term population viability of the conservation reliant Kirtland's warbler after successful recovery. Dryad Digital Repository. <http://dx.doi.org/10.5061/dryad.kk85k>.

Data repository for Brown et al. 2017b.

Brown, D.J.; Ribic, C.A.; Donner, D.M.; Nelson, M.D.; Bocetti, C.I.; Deloria-Sheffield, C.M. 2017b. Using a full annual cycle model to evaluate long-term population viability of the conservation-reliant Kirtland's warbler after successful recovery. Journal of Applied Ecology. 54(2): 439–449. <https://doi.org/10.1111/1365-2664.12776>.

To help inform the delisting decision and long-term management efforts for the Kirtland's warbler, a population simulation model was developed that incorporated both winter and breeding habitat dynamics, and it projected population viability based on current conditions and potential future scenarios. Simulations indicate that the jack pine planting and cowbird removal programs continue to be necessary for the long-term persistence of Kirtland's warbler populations.

Chapman, F.M. 1898. Kirtland's warbler (*Dendroica kirtlandi*). The Auk. 15(4): 289–293.

Discusses winter distribution, discusses migration, and speculates that the breeding area is in the Hudson Bay region. The song is described and includes notes on behavior. Also provides an annotated list of recorded specimens through 1897 and a list of 33 previously unpublished records

of specimens taken in The Bahamas by J.C. Maynard during the period 1884 through 1897. Includes a color plate of 2 Kirtland's.

Chapman, F.M. 1899. Further notes on *Dendroica kirtlandi*. The Auk. 16: 81

Adds 1 record, 25 May 1891, 1 Kirtland's warbler specimen, Winnebago County, Illinois, to Chapman 1898, and states that the record for Jennings 1888 represents not 1, but 8 Kirtland's specimens. (Chapman's reference to the Nelson Ornithological Chapter should read Wilson Ornithological Chapter.)

Chapman, F.M. 1907. The warblers of North America. New York: D. Appleton and Company.

Provides a detailed description of Kirtland's warbler physical characteristics and distribution including all known records of spring and fall migrations. A section by N.A. Wood provides details of the breeding area, habitat, nest and eggs, nesting dates, behavior, and song. Also includes color plate of male and female and black-and-white photograph of eggs. [206–209, pl. 11, figs. 77, 78].

Chapman, F.M. 1914. Handbook of birds of eastern North America. Revised. New York: D. Appleton and Company.

Deletes the Kirtland's warbler nesting area speculations from Chapman (1895) and adds notes on the type nest, breeding grounds, migration, wintering area, and song. [457–458].

Chapman, F.M. 1920. What bird is that? New York: D. Appleton and Company.

Provides a brief description of Kirtland's warbler plumage, range, behavior during migration, song, and eggs. Includes a color plate of bird. [106–107, pl. 8].

Cooke, W.W. 1905. The winter ranges of the warblers (Mniotiltidae). The Auk. 22: 296–299.

Lists the Kirtland's warbler as migrating through the southeastern United States and wintering in The Bahamas. [298].

Cooper, N.W.; Ewert, D.N.; Hall, K.R.; Rockwell, S.M.; Currie, D.; Wunderle, J.M.; White, J.D.; Marra, P.P. 2018. Resighting data reveal weak connectivity from wintering to breeding grounds in a range-restricted and endangered long-distance migratory passerine. Avian Conservation and Ecology. 13(1): 1–11. <https://doi.org/10.5751/ACE-01159-130109>.

A combination of visual searches and radiotelemetry was used to relocate 89 Kirtland's warblers on the breeding grounds that were captured and banded on 2 islands in the central Bahamas. It was found that regardless of wintering island, Kirtland's warblers intermixed heavily on the breeding grounds, having migrated to sites throughout the entire breeding range, indicating weak connectivity between the wintering and breeding grounds. These results suggest that loss of habitat at a wintering site would have a diffuse effect across the entire population.

Cooper, N.W.; Hallworth, M.T.; Marra, P.P. 2017. Light-level geolocation reveals wintering distribution, migration routes, and primary stopover locations of an endangered long-distance migratory songbird. Journal of Avian Biology. 48(2): 209–219. <https://doi.org/10.1111/jav.01096>.

Light-level geolocators were placed on 84 male Kirtland's warblers across their Michigan breeding range. Geolocators were recovered from 27 males. Most males wintered in the central Bahamas and exhibited a loop migration pattern. Reports on timing of migration and identifies 3 primary stopover regions. Spring and fall migration are compared.

Covert, A.B. 1903. Remarks on the recent capture of a Kirtland's warbler in Michigan. 1903. Bulletin of the Michigan Ornithological Club. 4: 47–49.

15 June 1903, 1 male Kirtland's warbler specimen plus 3 singing males sighted, western Oscoda County, Michigan (this is the same area the type nest was found 3 weeks later, Wood 1904). A detailed habitat description is provided along with other bird species encountered. The author speculates that the Kirtland's migration route follows river valleys. Discusses arrival dates on the breeding grounds and concludes that Kirtland's pair on the wintering grounds and arrive on the breeding grounds already impregnated.

Davie, O. 1898. Nests and eggs of North American birds. 5th ed. Columbus, OH: The Landon Press.

Provides a summary of 9 Kirtland's warbler records through 1879 and mentions there are about a dozen in all. Notes that the breeding area is unknown and nest and eggs have not been described. [445–446].

Dawson, W.L. 1903. The birds of Ohio. Columbus, OH: The Wheaton Publishing Co.

Provides detailed descriptions of Kirtland's warbler physical appearance, behavior, and song. Describes the taking of the type specimen and notes range. Also discusses various U.S. records through 1903 and notes the discovery of the breeding grounds. [162–164, 658].

Ducey, J. 1978. Will the Kirtland's warbler return? Ford Times. April 1978.

Provides a detailed Kirtland's warbler life history and information on management efforts. Includes accounts of the discovery of the bird and the breeding area.

Ewert, D. 2005a. Report to the U.S. Fish and Wildlife Service: wintering Kirtland's warblers found on Michigan breeding grounds. Federal Endangered Species Permit PRT-697830, Subpermit 04-09. East Lansing, MI.

Reports on work done in 2004 in Michigan. From 11 May to 19 June 2004, a total of 371 male and 10 female Kirtland's warblers were observed well enough to determine if they were banded. Nine were found with color-bands, with 8 having been banded in The Bahamas. Five of 8 were captured and crown feathers were taken for stable isotope analysis. The Bahamian banded birds were found on 5 sites, indicating that birds wintering together do not breed together.

Ewert, D. 2005b. Report to the U.S. Fish and Wildlife Service, Federal Endangered Species Permit PRT-697830, Subpermit No. 04-09. Lansing, MI.

Reports on activities in May–June 2005 in Michigan jack pine stands. A total of 848 male and 104 female Kirtland's warblers were observed closely enough to check for bands. Eight males banded in The Bahamas were found as were 3 Michigan banded males. The Bahamian banded birds were widely scattered in Michigan, indicating birds wintering together do not breed together.

Ewert, D.N.; Wunderle, J.M., Jr.; Eberly, C.W.; Huber, P.W.; Carey, E. 2009. The Kirtland's warbler: interagency and international cooperation works. Endangered Species Bulletin. 26(1, 2): 31–38.

Reports on ongoing studies of wintering Kirtland's warblers in The Bahamas, primarily through the work of the Kirtland's Warbler Research and Training Project. Results from the work to date are given and emphasize how collaboration with agencies in 3 countries has furthered the goal of contributing to a comprehensive, rangewide approach to Kirtland's warbler conservation.

Figgins, J.D. 1945. Birds of Kentucky. Funkhouser, W.D., ed. Lexington, KY: University of Kentucky.

Kirtland's warbler physical characteristics and range are described. States that Kirtland's migrates through the Mississippi River Valley to Michigan. (The county of nest discovery given is incorrect as is the spelling of Kirtland's. No Kentucky data are provided.) [283].

Forbush, E.H.; May, J.B. 1939. Natural history of the birds of eastern and central North America. Boston: Houghton Mifflin Company.

Provides brief notes on Kirtland's warbler identification, song, nest and eggs, and range. Habitat and its tail-wagging habit are described. Includes a color plate of a male. [438, pl. 94].

Fretwell, S. 1976. Saving the Kirtland's warbler—options. The Bird Watch. 4(5): 1–3.

Discusses several options on how Kirtland's warblers are limited, including nest predation, winter food, and winter roosting sites. Also mentions cowbird parasitism. Ends with stating that in the next issue, he will explain how the Kirtland's are going extinct due to competition for winter food.

Graham, F. 2001. Birds that won't be with us. American Birds. 44(5): 1074–1081.

States that if ever there were a species marked for extinction, it would be the Kirtland's warbler. Gives background on life history and why the author believes Kirtland's will go extinct, stating that it is a sad fact that the Kirtland's warbler, like an increasing number of species, can now be saved only by perpetual human intervention. [1078].

Hall, K.; Ewert, D. 2012. Kirtland's warbler protection: revealing the links between breeding and wintering habitats. In: Michigan's wildlife action plan: state wildlife grants funding in action: project summaries 2005–2010. Lansing, MI: Michigan Department of Natural Resources Wildlife Division Report No. 3532: 65.

A total of 952 Kirtland's warblers (848 males, 104 females) were observed sufficiently enough to determine their banding status; 11 of the 848 males were banded. Eight of the 11 banded birds found had been color-banded in The Bahamas, and 3 had been banded in Michigan. The breeding territory for 26 percent of the Bahamas-banded males were identified, and these territories were scattered among the townships within the species' breeding range. Data suggest that Kirtland's warblers over wintering at the same site breed at 2 or more different sites, meaning there is no tight linkage between wintering and breeding areas at such a fine spatial scale. For 1 of the Bahamas-banded birds, an estimated maximum duration of migration of 34 days was determined. Also, 2 very old color-banded Kirtland's were discovered, one 10 and one 11 years old, breaking the previous longevity record of 9 years old.

Halliday, T. 1978. Vanishing birds: their natural history and conservation. New York: Holt, Rinehart and Winston.

Briefly describes plumage, jack pine requirements, management efforts, and the cowbird problem. Includes a black-and-white drawing of birds. [114–115, 253, 261].

Harryman, S.; Harryman, C. 1997. Survival of the endangered Kirtland's warbler depends on fire, jack pine habitat, and intensive human intervention. Birder's World. June 1997.

Popular article that describes the life history of the Kirtland's warbler.

Hellmayer, C.E. 1935. Catalogue of birds of the Americas and the adjacent islands in Field Museum of Natural History and including all species and subspecies known to occur in

North America, Mexico, Central America, South America, the West Indies, and Islands of the Caribbean. Osgood, W.H., ed. Chicago: Field Museum of Natural History.

Describes Kirtland's warbler range and notes general locations for 18 specimens. [407–408].

Henshaw, H.W.; Allen, A.A. 1937. Warblers, friends of our forests. In: Grosvenor, G.; Wetmore, A., eds. The book of birds. Washington, DC: National Geographic Society: 2: 179–207.

Briefly discusses Kirtland's warbler range, behavior, nest, eggs, and migration dates. Includes a color plate. [202–203].

Huber, K.R. 1982. The Kirtland's warbler (*Dendroica kirtlandii*): an annotated bibliography 1852–1980. Ann Arbor, MI: Museum of Zoology, University of Michigan.

The most complete Kirtland's warbler annotated bibliography of literature up to 1980.

Hulina, J.; Bocetti, C.; Campa, H., III; Hull, V.; Yang, Wu; Liu, J. 2017. Telecoupling framework for research on migratory species in the Anthropocene. Elementa. 5: 1–23. <https://doi.org/10.1525/elementa.184>.

The framework of telecoupling (socioeconomic and environmental interactions over distances) was applied to Kirtland's warblers. Results show accomplishments from long-term research and recovery efforts. The results also show 24 research gaps. An important gap is a lack of systematic studies on feedback among breeding, wintering, and stopover sites, as well as other “spillover” systems that may affect and be affected by migration.

Knittle, C.E.; Kolz, A.L.; Bourassa, J.B.; Johnson, R.E. 1985. Miniature radio-transmitter development for Kirtland's warbler tracking studies. In: Weeks, R.W.; Long, F.M., eds. Proceedings fifth international conference of wildlife biotelemetry. Laramie, WY: University of Wyoming: 1–18.

Reports on the development and testing of a radio-transmitter for eventual use on Kirtland's warblers. Recommends that a transmitter of this type could be used on the warbler for post-fledging mortality studies and local movement studies on the breeding and wintering grounds.

Line, L. 1964. The bird worth a forest fire. Audubon Magazine. 66: 370–375.

Reports on a U.S. Forest Service prescribed burn to create Kirtland's warbler breeding habitat, a study on cowbirds, and a monument dedicated to Kirtland's. A detailed life history of the Kirtland's warbler and several photographs are included.

Loewenstein, B. 1981. Kirtland's warbler comeback continues. Natural Resources Register. 1(3): 24–25.

Provides an overview of Kirtland's warbler breeding habitat, nest parasitism, the census, migration, the wintering area, and recovery plan objectives.

Lyons, L. 2003. Efforts assure future for bird. Michigan Out-of-Doors. May 2003.

Provides an overview of the Kirtland's warbler life history.

MacKenzie, J.P.S. 1977. Birds in peril. Toronto: Pagurian Press Ltd.

Discusses Kirtland's warbler history of human interaction, life cycle, population decline, management efforts, and censuses. [159–168].

Mahan, H.D. 1975. The Kirtland's warbler. The Explorer. 17(1): 24–27.

Provides a detailed life history of the Kirtland's warbler. Includes photographs of a male, a female at a nest, and nesting habitat.

Mayfield, H. 1960. The Kirtland's warbler. Bloomfield Hills, MI: Cranbrook Institute of Science.

Provides the most detailed and complete information on all aspects of Kirtland's warbler life history and management techniques through 1960. Includes numerous photographs and maps.

Mayfield, H. 1987. Bird of fire: Kirtland's warbler update. The Michigan Audubon News.

Provides an overview of Kirtland's warbler history, life history, and the census. Mentions the Kirtland's Warbler Recovery Team and discusses possible reasons for population limitations.

Mayfield, H. [N.d.]. Kirtland's warbler.

Provides the management history and life history of the Kirtland's warbler.

Mayfield, H.F. 1974. The jack pine warbler. American Forests. 80(9): 44–45.

Presents Kirtland's warbler life history, including the census and management.

Mayfield, H.F. 1975. The numbers of Kirtland's warblers. The Jack-Pine Warbler. 53(2): 39–47.

A total of 167 singing male Kirtland's warblers were found on the 1974 census, down from 216 in 1973, and the lowest total ever. Discusses Kirtland's warbler population size from prehistoric times through the present, along with the effects of cowbird parasitism, survival on the wintering grounds, and problems on migration.

Mayfield, H.F. 1983. Kirtland's warbler, victim of its own rarity? The Auk. 100: 974–976.

Speculates on several factors that may limit Kirtland's warbler populations including breeding habitat, cowbirds, migration, and the wintering area.

Mayfield, H.F. 1984. Kirtland's warbler: why so rare? The Living Bird Quarterly. 3(2): 4–8.

Discusses various aspects of Kirtland's warbler biology and reasons for its rarity including nesting habitat, wintering area, and migration.

Mayfield, H.F. 1988. Jack pine puzzle. Birder's World.

Discusses possible reasons for Kirtland's warbler rarity including cowbirds, wintering habitat, and migration. Several photographs are included.

Mayfield, H.F. 1989. Perspective on the Kirtland's warbler. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 1–7.

Provides Kirtland's warbler prehistory, early historical record, reasons for rarity, and habitat requirements.

Mayfield, H.F. 1992. Kirtland's warbler. In: Pool, A.; Stettenheim, P.; Gill, F., eds. The birds of North America. No. 19. Philadelphia, PA: Smith-Edwards-Dunlap Company: 1–16.

Provides a comprehensive, authoritative summary of current knowledge of the Kirtland's warbler life history.

Maynard, C.J. 1918. Directory to the birds of eastern North America. West Newton, MA: C.J. Maynard.

Provides brief plumage and song descriptions and notes life history for *Agreocantor kirtlandi*, Kirtland's warbler. (Title page says 1907; actually, published in 1918 per author's note.) [243–244].

Michigan Audubon Society. [N.d.]. Jack pine warbler story.

Reprints Line 1964. Includes additional information and photographs of the bird and managed burn.

Mohlenbrock, R.H. 1989. Mack Lake, Michigan. Natural History. 10/89: 91–95.

Provides a history and life history of the Kirtland's warbler and contact information for taking the U.S. Forest Service tours out of Mio. It should be noted that the author incorrectly names Spencer F. Blair as naming the warbler after Dr. Kirtland with the correct name being Spencer F. Baird.

Moleski, G.J. 1991. Discovery Kirtland's warbler. Museum.

Describes the history and life history of the Kirtland's warbler.

Morse, D.H. 1989. American warblers: an ecological and behavioral perspective. Cambridge, MA: Harvard University Press.

Provides a historical background for the Kirtland's warbler and discusses possible reasons for its rarity. [246–252].

Olson, J.A. 2002. Special animal abstract for *Dendroica kirtlandii* (Kirtland's warbler). Lansing, MI: Michigan Natural Features Inventory.

Provides a detailed overview of the life history of the Kirtland's warbler.

Payne, R.B. 1983. A distributional checklist of the birds of Michigan. Hamilton, W.D., ed. Ann Arbor, MI: Museum of Zoology, University of Michigan.

Contains a description of Kirtland's warbler breeding areas, numbers, and migration. [48-49].

Peterle, T.J. 1978. X-ray microanalysis of Kirtland's warbler feathers. Columbus, OH.

A preliminary report where a scanning electron microscope together with an X-ray microanalyzer will be used to determine the mineral content of Kirtland's warbler feathers. Six feathers from live Kirtland's captured in Michigan, Ontario, and Wisconsin, along with at least 50 feather samples from museum specimens, will be analyzed in the hopes of determining where Kirtland's spent the winter and summer. The analysis process is explained.

Petrucha, M.; Thompson, P.; McKenzie, Z.; Huber, P. 2003. 2003 Kirtland's warbler Bahamian banding verification on the summer breeding grounds.

Documents the band verification and search results of color-banded Kirtland's warblers found during the 2003 Kirtland's Warbler Census. Four of these birds had color-codes matching birds banded in The Bahamas, with 3 being captured to read the U.S. Fish and Wildlife Service band number for verification. The fourth bird was not recaptured as it was a female and believed to be nesting. Details for these 4 birds along with 3 others are provided. Also included are recommendations for future color-banding activities.

Radabaugh, B.E. 1965. Ancestry of the Kirtland's warbler. The Peacock. 2: 30–34.

Speculates on the pre-history of the Kirtland's warbler and its habitat compared to the present.

Radtke, R.E.; Byelich, J.; Irvine, G. 1983. Endangered bird of fire—the Kirtland’s warbler. In: Hayes, J., ed. U.S. Department of Agriculture Yearbook 1983: 174–181.

Provides an overview of Kirtland’s warbler life history focusing on habitat management. The history of the census and recovery efforts are presented.

Rapai, W. 2012. The Kirtland’s warbler: the story of a bird’s fight against extinction and the people who saved it. Ann Arbor, MI: University of Michigan Press.

Tells the story of Kirtland’s warbler history, management, research, and recovery through personal accounts of the people involved.

Ridgway, R. 1881. Nomenclature of North American birds chiefly contained in the United States National Museum. Washington, DC: Government Printing Office.

Kirtland’s warbler is listed in the catalog. [18].

Rockwell, S.; Marra, P. 2010. IRMS#: 0007: Carry-over effects of winter population limitation in the endangered Kirtland’s warbler. In: Smithsonian Institution OUSS/MCI stable isotope mass spectrometry facility FY09 report of activities. Smithsonian Institution: 7.

Stable isotopes will be used to: (1) examine whether the consequences of winter habitat and diet affect arrival dates and body condition of Kirtland’s warblers on the breeding grounds; and (2) assess the influence of these carry-over effects on their reproductive success.

Rockwell, S.M. 2013. Carry-over effects from the non-breeding season influence spring arrival dates, reproductive success, and survival in an Endangered Migratory Bird, the Kirtland’s warbler (*Setophaga kirtlandii*). University of Maryland.

Stable-isotope analyses of male Kirtland’s warbler tissues collected upon spring arrival revealed inconsistent yearly effects. Winter habitat and diet differences among males within years did not seem to have strong carry-over effects, but mean spring arrival dates were delayed following drier winters, suggesting that carry-over effects in this species may be driven more by annual variation in rainfall. There was a strong male age by rainfall interaction, with first-time breeders responding more strongly to changes in rainfall than experienced adults. Regardless of age, drier winters and delayed arrival and nest initiation were significantly associated with fewer offspring fledged in the subsequent breeding season. Analysis of mark-recapture data showed that apparent survival is also positively associated with winter rainfall in The Bahamas. Kirtland’s warbler survival probabilities are relatively high within the summer and winter periods but are lower during migration. It is suggested that the high mortality rate found during migration is not solely due to the challenges of migration alone but may in fact be a carry-over effect that is tightly linked to winter rainfall in The Bahamas. Combining survival and productivity data into a simple projection model revealed that the population growth rate of this species may become negative if Bahamas March rainfall drops more than 18 percent from its current mean. Climate change models predict continued drying trends in the Caribbean, which could have negative consequences on the population dynamics of the Kirtland’s warbler. These results emphasize the importance of understanding the effects of climatic variation on demographic rates and underscore the need for continued research on the ecology of migratory animals throughout the annual cycle.

Rockwell, S.M.; Bocetti, C.I.; Marra, P.P. 2012. Carry-over effects of winter climate on spring arrival date and reproductive success in an endangered migratory bird, Kirtland’s warbler (*Setophaga kirtlandii*). Auk. 129(4): 744–752. <https://doi.org/10.1525/auk.2012.12003>.

The potential effects on the breeding biology of Kirtland’s warblers by climate change during the non-breeding period was examined. Data on spring arrival dates and number of fledglings were used to show males arrive on breeding grounds later following drier winters. First time breeders were much more sensitive to changes in rainfall than experienced males. Regardless of age,

however, drier winters and delayed arrival and nest initiation were significantly associated with fewer offspring fledged. These results are important because the Caribbean region is currently experiencing a significant drying trend, and climate change models predict that the severity of this drought will continue to increase. Any resulting adjustments to the timing of migration could constrain spring arrival dates and limit reproductive success for the Kirtland's warbler, as well as other neotropical migrants wintering in the Caribbean.

Rockwell, S.M.; Wunderle, J.M.; Sillett, T.S.; Bocetti, C.I.; Ewert, D.N.; Currie, D.; White, J.D.; Marra, P.P. 2017. Seasonal survival estimation for a long-distance migratory bird and the influence of winter precipitation. *Oecologia*. 183(3): 715–726. <https://doi.org/10.1007/s00442-016-3788-x>.

Mark-recapture data from male Kirtland's warbler on the breeding grounds and wintering grounds were analyzed to generate annual, oversummer, overwinter, and migratory survival rates. The annual survival rate was 0.58 +/- 0.12 SE. Monthly survival for the summer was 0.963 +/- 0.005 SE, and 0.977 +/- 0.002 SE for the winter. Monthly survival during migration was substantially lower at 0.879 +/- 0.05 SE, accounting for about 44 percent of all annual mortality. Factors pertaining to survival and mortality are discussed.

Ryel, L.A. 1981. Population change in the Kirtland's warbler. *The Jack-Pine Warbler*. 59(3): 76–91.

After the 60 percent population decline of Kirtland's warbler from 1961 to 1971, several hypotheses for the drop were discussed and evaluated. Cowbird parasitism had been almost eliminated since 1971 but did not result in a warbler population increase. Comparisons of recent population numbers suggest Kirtland's are not density dependent. Winter habitat has not changed much, but over-winter survival seems to vary with the amount of rainfall and the population appears to be regulated on the wintering grounds. On the breeding grounds, habitat decreased by 44 percent from 1961–1971. Habitat management was increased to ensure enough breeding habitat for the future.

Sherry, T.W.; Holmes, R.T. 1993. Are populations of neotropical migrant birds limited in summer or winter? Implications for management. In: Finch, D.M.; Stangel, P.W., eds. *Status and management of neotropical migratory birds*. Gen. Tech. Rep. RM-229. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 47–57. <https://doi.org/10.2737/RM-GTR-229>.

Reviews currently available information about neotropical-nearctic bird populations. Suggests these species may be limited in both winter and summer, and possibly migration. Provides recommendations for management of migratory species. Kirtland's warbler is briefly discussed. [49, 51, 52, 53].

Sherry, T.W.; Holmes, R.T. 1996. Winter habitat quality, population limitation, and conservation of neotropical-nearctic migrant birds. *Ecology*. 77(1): 36–48.

Patterns of habitat use and demography of migrant songbirds were reviewed. The authors conclude that populations of these migrants are at least partly limited during the winter, illustrate the processes by which individuals become distributed locally among winter habitats, and identify consequences of human activities. Correlations between winter rainfall and survival of Kirtland's warblers citing Mayfield 1993 are mentioned. [41].

Simon, N.; Geroudet, P. 1970. Kirtland's warbler *Dendroica kirtlandii*. 1970. In: *Last survivors: the natural history of animals in danger of extinction*. London: Patrick Stephens: 72–75.

Provides a summary of Kirtland's warbler history, life history, and population status.

Skeen, H.; Cooper, N.; Hackett, S.; Bates, J.; Marra, P. 2020. Impact of changing environments on the gut microbiome of a migratory songbird. *Molecular Ecology*.

The gut microbiome of Kirtland's warblers was examined on their wintering ground in The Bahamas and breeding grounds in Michigan demonstrating that their gut microbiome changes over time and is influenced by changing environments due to migration. A total of 176 fecal samples were collected (93 in The Bahamas, 63 in the first Michigan capture period, and 20 in the second Michigan recapture period). Thirty-four individuals were captured in both The Bahamas and in Michigan with 10 of those individuals sampled in the second Michigan period. This is the first time a bird has been sampled at multiple time points across their annual cycle.

Stricker, V. 1965. Kirtland's warbler: feathers and flame. *National Parks Magazine*. October 1965.

Provides a history and life history of Kirtland's warblers. Includes a map of the breeding grounds and photographs of habitat.

Sprunt, A., Jr. 1951. Golden cheek of the Cedar Brakes. *Audubon Magazine*. 53: 13–16.

Compares the golden-cheeked warbler (*Dendroica chrysoparia*) with the Kirtland's and Colima (*Vermivora crissalis*) warblers. [16].

Sykes, P.W., Jr. 1996. Kirtland's warbler. In: Rodgers, J.A., Jr.; Kale, H.W., III; Smith, H.T., eds. *Rare and endangered biota of Florida: birds*. Gainesville, FL: University Press of Florida. Vol. V: 113–123.

Includes Kirtland's warbler plumage description, migration sightings for Florida, breeding habitat description, threats, demographic characteristics, key behaviors, and conservation measures taken and proposed.

Sykes, P.W., Jr. 1997. A closer look: Kirtland's warbler. *Birding*. 29(3): 220–227.

Provides information on Kirtland's warbler winter and breeding habitat, present status, distribution, and conservation and research needs. Includes several photographs of Kirtland's, and a map of the breeding area.

Taverner, P.A. 1905. The origin of the Kirtland's warbler. *Ontario Natural Science Bulletin*. 1: 13–17.

Theorizes that the winter range keeps the Kirtland's warbler population from growing and discusses migration and possible former ranges.

The Bird Populations Institute. 1977. Kirtland's warbler project report. *The Bird Watch*. 5(2): 1–4.

Notes Kirtland's warbler studies proposed by the Bird Populations Institute, Kansas State University. Includes a rebuttal to Fretwell 1976 by Larry Walkinshaw along with breeding statistics. Also provides a section on what people can do for the Kirtland's Warbler Project.

The Grapevine. 1979. Kirtland's warbler: the fight to save a vanishing species. *The Grapevine*.

Provides an overview of Kirtland's warbler life history.

Thompson, P.; Petrucha, M. 2005. 2005 Kirtland's warbler banding summary.

Summarizes Kirtland's warbler work in The Bahamas and reports on the recapture of Bahamian

banded Kirtland's in Michigan, where feathers from the forehead and toenail clippings were collected for genetic analysis and isotope ratio analysis to determine food habits in The Bahamas. Details are provided on several birds, including 1 that was still carrying a radio tag from the Bahamian radio telemetry work, and 2 birds that were at least 10 and 11 years old, the oldest ever recorded.

Titus, H. 1956. Mr. Kirtland's special warbler. Ford Times. May: 44–46.

A popular article providing a life history overview of the Kirtland's warbler with paintings by Charles Harper.

Twomey, A.C. 1936. Climographic studies of certain introduced and migratory birds. Ecology. 17(1): 122–132.

Notes that the temperature and humidity in The Bahamas during the winter months fall within those of northern Michigan during the Kirtland's warbler nesting season. Includes climographs of the Kirtland's winter and summer ranges. [127, 131].

United States Fish and Wildlife Service. 1980. Selected vertebrate species of the seacoast of the United States—Kirtland's warbler. Washington, DC.

Provides a general overview of Kirtland's warbler life history, distribution, requirements, and conservation of the warbler. Includes a map of known distribution of the warbler and lists authorities on the bird.

United States Office of Endangered Species and International Activities. 1973. Threatened wildlife of the United States. Bureau of Sport Fisheries and Wildlife Resource Publication 114. Washington, DC.

Provides a Kirtland's warbler plumage description, distribution, number of eggs laid, reasons for population decline, and current and future protective measures undertaken. [175–176].

Van Tyne, J. 1951. The distribution of the Kirtland's warbler (*Dendroica kirtlandii*). Proceedings of the International Ornithological Congress. 10: 537–544.

Provides a description of Kirtland's warbler breeding grounds, winter range, and spring and fall migrations. Includes maps of breeding range, winter range, and migration routes; and lists several records.

Van Tyne, J. Kirtland's warbler. 1953. In: Bent, A.C., ed. Life histories of North American wood warblers. Washington, DC: Smithsonian Institution: 417–428.

Provides a detailed history, life history, and habitat descriptions of the Kirtland's warbler. Annual distribution is discussed, and numerous records are provided. Photographs of males, females, nest with eggs, and habitat are included.

Walkinshaw, L.H. 1939. Kirtland's warbler or the jack-pine warbler. The Jack-Pine Warbler. 17: 97–98.

Provides an overview of Kirtland's warbler history, and summer, winter, and migration ranges.

Walkinshaw, L.H. 1983. The Kirtland's warbler: the natural history of an endangered species. Bloomfield Hills, MI: Cranbrook Institute of Science.

Provides a complete life history and history of the Kirtland's warbler up to 1982. Discusses family histories of several Kirtland's.

Watts, A. 2020. Forest management brings the Kirtland's warbler back from the brink of extinction. *The Forestry Source*. 25(4): 1, 14.

Several people involved with Kirtland's warbler recovery and future management are interviewed, covering topics such as the recovery and conservation teams, research into habitat requirements, population sustainability, and past, current, and future habitat management. The Kirtland's life cycle is described, as is jack pine marketability. The original listing under the Endangered Species Act, recovery, and eventual removal from the list are described.

Wetmore, A. 1964. *Garden birds of North America*. Washington, DC: National Geographic Society.

Describes Kirtland's warbler life history and management efforts. Includes a color plate of a male. [280].

Winkler, R. 2007. Endangered species protection: Kirtland's warbler. *National Geographic News*. 14 June 2007.

Provides an overview of Kirtland's warbler life history, habitat, cowbirds, the census, and tours.

Wunderle, J.M., Jr.; Arendt, W.J. 2017. The plight of migrant birds wintering in the Caribbean: rainfall effects in the annual cycle. *Forests*. 8(115): 1–12. <https://doi.org/10.3390/f8040115>.

Results of migrant bird research in the Caribbean are summarized. Studies of the effects of late winter drought in The Bahamas on Kirtland's warbler annual survival and breeding success are reviewed.



Kirtland's warbler photographed on 12 May 2022 on migration at Magee Marsh in Ohio. The bird is seen in typical dense, scrubby migration habitat, similar in structure to both the breeding and wintering habitats. Courtesy photo by Magee Marsh.

I.E. Migration

Adams, C.C. 1904. The migration route of the Kirtland's warbler. *Bulletin of the Michigan Ornithological Club*. 5: 14–21.

Offers a hypothesis concerning the Kirtland's warbler migration route. A map of possible route is included. (For refutation, see Cooke 1905. For reviews, see Allen 1904 and Jones 1904.)

Ahern, B. 2014. Field observations: spring report: March–May 2014. *Florida Field Naturalist*. 42(4): 172–184.

19 April 2014, 1 male Kirtland's warbler, Merritt Island National Wildlife Refuge, Brevard County, Florida. [181].

Aird, P. 1994. The Kirtland's warbler recovery team may be interested in the following record of a Kirtland's warbler sighted in Ontario in 1993.

19 August 1993, 1 singing male Kirtland's warbler, Campsite #116, Balsam Lake, Killarney Provincial Park, Ontario.

Allair, J. 2003. Atlantic flyway review: Long Point Observatory. *North America Bird Bander*. 28: 189–190.

A Kirtland's warbler bounced out of a mist net, Long Point Bird Observatory, Ontario. [189–190].

Allen, J.A. 1880. Langdon's ornithological field notes. *Bulletin of the Nuttall Ornithological Club*. 5: 232–233.

(Review.) 4 May 1880, 1 male Kirtland's warbler specimen, near Cleveland, Ohio. 12 May 1880, 1 female Kirtland's warbler specimen, near Cleveland, Ohio. (See Langdon 1880.) [233].

Allen, J.A. 1892. Keyser's bird-dom. The Auk. 9: 63.

Reviews Keyser 1891. Mentions that a Kirtland's warbler is one of Keyser's much prized discoveries.

Allen, J.A. 1904. Kirtland's warbler. The Auk. 21: 506–507.

Reviews Adams 1904 and Wood 1904.

American Birding Association. 2004. Sightings. Winging It. 16(6): 10.

Mid-May 2004, 1 Kirtland's warbler, DuPage County, Illinois.

American Birding Association. 2005. The regional reports: spring migration: March through May 2005: pictorial highlights. North American Birds. 59: 526–532.

10 May 2005, 1 female Kirtland's warbler photographed, Fort De Soto Park, Florida, third verifiable record. (See also Anderson 2005.) [528].

American Birding Association. 2006. The regional reports: spring migration: March through May 2006: pictorial highlights. North American Birds. 60(3): 467–472.

23 May 2006, 1 male Kirtland's warbler photographed, Gillson Park, Wilmette, Illinois, 2 photographs presented. 21 May 2006, 1 male Kirtland's warbler photographed, Point Pelee, Ontario, 1 photograph presented. [470, 471].

American Birding Association. 2012. Pictorial highlights. North American Birds. 66(1): 194–201.

20–21 October 2011, 1 male Kirtland's warbler photographed, Wilton Manors, Brevard County, Florida. [197].

American Birding Association. 2013. Pictorial highlights. North American Birds. 66: 570–576.

22 May 2012, 1 male Kirtland's warbler photographed, Erie, Erie County, Pennsylvania, the fifth accepted record for Pennsylvania. [571].

Anderson, B.H. 1995. Records Committee report: eleventh report of the Florida Ornithological Society Records Committee: 1993. Florida Field Naturalist. 23(2): 38–43.

22 April 1993, 1 male Kirtland's warbler, Jungle Trail about 100 meters north of County Road 510, Orchard Island, Indian River County, Florida, accepted by FOSRC. [41].

Anderson, B.H. 2005. The spring migration: Florida. North American Birds. 59: 426–429.

10 May 2005, 1 female Kirtland's warbler photographed, Fort De Soto, Florida. Florida's third verifiable record. (See American Birding Association 2005 for photograph.) [428].

Anderson, B.H.; Bankert, A. 2009. The spring migration: Florida. North American Birds. 63: 413–416.

24 April 2009, 1 male color-banded Kirtland's warbler photographed, Lori Wilson Park, Brevard County, Florida. The warbler was banded in Oscoda County, Michigan in 2008. [416].

- Anderson, B.H. 2012. The fall migration: Florida. North American Birds. 66(1): 62–67.**
20–21 October 2011, 1 adult male Kirtland's warbler, Wilton Manors, Broward County, Florida. [67].
- Anderson, B.H. 2014. The spring migration: Florida. North American Birds. 67(3): 432–436.**
5 May 2013, 1 Kirtland's warbler photographed, San Felasco Hammock Preserve State Park, Florida. [435].
- Anderson, M.; Kemp, T. 1989. The spring season 1989: 1 March–31 May. The Ohio Cardinal. 12(3): 1–14.**
19 May 1989, 1 Kirtland's warbler, Reno Beach, Ohio. [3, 11].
- Anderson, R.M. 1907. The birds of Iowa. Proceedings of the Davenport Academy of Sciences. 11: 125–417.**
Linn County, Iowa, partially decomposed possible male Kirtland's warbler found dead. [390].
- Atherton, L.S.; Atherton, B.H. 1982. The autumn migration: August 1–November 30, 1981: Florida region. American Birds. 36(2): 168–171.**
1 August 1981, 1 Kirtland's warbler, Lower Saddlebunch Key, Florida. Florida's earliest fall record. [171].
- Audubon Bulletin. September, 1967. Audubon Bulletin. 144: 18.**
September 1967, 1 Kirtland's warbler, Chicago, Illinois.
- Aune, V. 2003. Kirtland's warbler (*Dendroica kirtlandii*): 8 October 2002, Waukesha, Waukesha County. The Passenger Pigeon. 65: 103–104.**
8 October 2002, 1 probable male Kirtland's warbler, Waukesha, Waukesha County, Wisconsin.
- Baerg, W.J. 1951. Birds of Arkansas. Bulletin 258. Fayetteville, AR: University of Arkansas, College of Agriculture, Arkansas Experimental Station.**
23 September 1939, 1 Kirtland's warbler, Arkansas County, Arkansas. 24 September 1939, 1 Kirtland's warbler, Arkansas County, Arkansas. 28 September 1939, 1 Kirtland's warbler, Arkansas County, Arkansas. [146].
- Bagg, A.C.; Eliot, S.A. 1937. Birds of the Connecticut Valley in Massachusetts. Northampton, MA: Hampshire Bookshop.**
26 May 1916, 1 Kirtland's warbler sighted, Roslindale, Massachusetts. Discusses migration and provides a few records during migration. Also provides a description of plumage and the breeding grounds. [567].
- Bailey, H.H. 1925. The birds of Florida: a popular and scientific account of the 425 species and subspecies of birds that are now and that have been found within the state and its adjacent waters; with special reference to their relation to agriculture. Baltimore, MD: The Author by The Williams and Wilkins Company.**
Kirtland's warbler is listed as an extremely rare Florida migrant in October and April (19th through 27th). Includes color plate of male and female. [128, pl. 70].

Bailey, H.H. 1930. In memorium. Bailey Museum and Library of Natural History Bulletin. 4: 4.

Reginald Hardgreaves Bulley's obituary. Mentions that Bulley's collection of Ohio bird skins, including a Kirtland's warbler, was given to H.H. Bailey, and researchers are free to contact Bailey concerning use of the collection.

Bailey, W. 1955. Birds in Massachusetts: when and where to find them. South Lancaster, MA: College Press.

26 May 1916, 1 Kirtland's warbler sight record, Roslindale, Massachusetts. The author feels the record is open to question. [188–189].

Baille, J.L. 1953. The spring migration: Ontario-Western New York region. Audubon Field Notes. 7: 270–272.

10 May 1953, 1 Kirtland's warbler, Point Pelee, Ontario. [271].

Bain, M. 1992. Ontario Bird Records Committee report for 1991. Ontario Birds. 10(2): 43–63.

22 May 1991, 1 adult Kirtland's warbler, Leslie Street Spit, Metropolitan Toronto, Ontario, accepted by Ontario Bird Records Committee. [56].

Bain, M.J.C. 2003. The fall migration: Ontario region. North American Birds. 57(1): 49–52.

24 August 2002, 1 Kirtland's warbler, Cobourg, Ontario. Third record for Northumberland County. [52].

Bain, M.J.C. 2021. Spring 2017: Ontario. North American Birds. <https://wp.me/p8iY2g-ajT>.

9 May 2017, 1 singing male Kirtland's warbler, West Beach, Point Pelee National Park, Ontario. 13 May 2017, 1 male Kirtland's warbler photographed, Rondeau Provincial Park, Chatham-Kent County, Ontario. 14 May 2017, 1 probable young male Kirtland's warbler, Tip, Point Pelee National Park, Ontario. 14 May 2017, 1 male Kirtland's warbler, Sheridan's Point, Pelee Island, Ontario. 16 May 2017, 1 female (actually a male) Kirtland's warbler, Prince Edward Point, Ontario. 16 May 2017, 1 male Kirtland's warbler, east of Wheatley, Ontario. 28 May 2017, 1 male Kirtland's warbler photographed, south of Kincardine, Bruce County, Ontario. 28 May 2017, 1 male Kirtland's warbler, near Southampton, Ontario. [14, 16].

Baird, R.L. 1905a. Bird migration at Oberlin, Ohio. The Wilson Bulletin. 17(3): 75–83.

Provides migration dates for Oberlin, Ohio, based on data from the past 10 years. Kirtland's warbler dates are listed as arrival, 5–10 May; departure, 11 May. [79].

Baird, S.F. 1874. Review of American birds in the Museum of the Smithsonian Institution. Part I, North and Middle America (1864–1872). Washington, DC: Smithsonian Institution.

Discusses the 3 Kirtland's warbler specimens and 1 sighting recorded through 1860. Deposition records are provided for 2 of the specimens. [206–207].

Baird, S.F.; Brewer, T.M.; Ridgway, R. 1905b. A history of North American birds. Boston: Little, Brown, and Company. Vol. 1.

Provides a thorough physical description of the type specimen and mentions 2 other specimens and 1 sighting recorded through 1860. Includes color plate of male head. [1:221, 272, pl. 14].

Baker, J.L. 1991. FOS Records Committee report. Florida Field Naturalist. 19(3): 88–89.

24 October 1989, 1 Kirtland's warbler, Merritt Island National Wildlife Refuge, Brevard County, Florida, not accepted by Florida Ornithological Society Records Committee. [89].

Barbour, R.W.; Peterson, C.T.; Rust, D.; Shadowen, H.E.; Whitt, A.L., Jr. 1973. Kentucky birds: a finding guide. Lexington, KY: University of Kentucky Press.

Provides 1 Kirtland's warbler record, 15 May (no year). States that Kirtland's undoubtedly cross Kentucky in migration. [78].

Barger, N.R. 1941. May field notes: Kirtland warbler reported. The Passenger Pigeon. 3: 59.

May 1941, 1 Kirtland's warbler, Appleton, Wisconsin.

Barnhart, L. 1980. Kirtland's warbler documentation. Ohio Cardinal. 3(3): 44.

12 September 1980, 1 adult male Kirtland's warbler, Camp Hervida 4-H Camp, Waterford Township, Ohio.

Bartel, K.E. 1932a. New birds for 1932. The Oologist. 50(4): 55.

1932 (28 April, see Bartel and Reuss 1932b), 1 Kirtland's warbler, Blue Island, Cook County, Illinois.

Bartel, K.E.; Reuss, A. 1932b. Birds of Blue Island, Cook County, Illinois. The Oologist. 49(1): 112–113.

28 April (1932, see Bartel 1933), 1 Kirtland's warbler, Blue Island, Cook County, Illinois. [113].

Bartlett, H.T. 1995. Ohio Bird Records Committee report. The Ohio Cardinal. 18: 57–58.

18 September 1994, 1 Kirtland's warbler, Magee Marsh Bird Trail, Lucas County, Ohio. Not accepted by Ohio Bird Records Committee. [58].

Bartlett, T. 1980a. The reports: fall migration: 1 August–30 November 1980. The Ohio Cardinal. 3(3): 9–35.

12 September 1980, 1 adult male Kirtland's warbler, 4 miles south of Waterford, Washington County, Ohio. Also reports a Kirtland's warbler was sighted in Vienna, West Virginia, which is 12 miles southeast of the Waterford bird by 12 miles, a few days before. [29].

Bartlett, T. 1980b. The reports: spring migration: 1 March–31 May, 1980. The Ohio Cardinal. 3(1): 12–28

21 May 1980, 1 female Kirtland's warbler banded, Crane Creek Park, Ohio. Also lists sources of other Ohio records. [25].

Batts, H.L., Jr. 1957. A preliminary report on seasonal distribution of birds in Kalamazoo County, Michigan. The Jack-Pine Warbler. 35(1): 9–13.

Lists Kirtland's warbler as a rare transient and provides observation dates as 15–17 May. (Does not specify years on which dates are based.) [13].

Bernard, R.F. 1966. The fall migration: western Great Lakes region. Audubon Field Notes. 20: 45–46, 50–53.

24 September 1965, 1 immature male Kirtland's warbler banded and photographed, Cranbrook Institute campus, Michigan. [52].

Bernard, R.F. 1967. The spring migration: western Great Lakes region. Audubon Field Notes. 21: 510–513.

Spring 1967, 1 Kirtland's warbler, Green Bay, Wisconsin. [512].

Black, C.T. 1954. Michigan bird survey, winter, 1953–54, and spring 1954. The Jack-Pine Warbler. 32: 119–131.

Provides the following spring Michigan Kirtland's warbler records: 14 May 1954, Kalkaska County; 19 May 1954, Lovells, Crawford County; 30 May 1954, Hale, Iosco County. [132].

Black, C.T. 1955. Michigan bird survey, spring, 1955. The Jack-Pine Warbler. 33(3): 87–94.

10 May 1955, 1 Kirtland's warbler, Saginaw, Saginaw County. 12 May 1955, Kirtland's warbler arrived in Kalkaska County. [92].

Blackwelder, E. 1899. A note on Kirtland's warbler (*Dendroica kirtlandi*). The Auk. 16: 359–360.

22 May 1899, 1 male Kirtland's warbler specimen, Morgan Park, Chicago, Illinois. Song and behavior are described.

Blankenship, K. 2009. The fall migration: Southern Atlantic region. North American Birds. 63(1): 61–65.

1 October 2008, 1 Kirtland's warbler, Transylvania County, North Carolina, fourth state record. [64].

Blankenship, K. 2011. The fall migration: Southern Atlantic region. North American Birds. 65(1): 55–59.

27 September 2010, 1 Kirtland's warbler photographed, Cowen's Ford, North Carolina. [58–59].

Boardman, E.T.; Barto, E. 1937. A pictorial guide to the families of birds. Cranbrook Institute of Science. Bulletin no. 9. Bloomfield Hills, MI: Cranbrook Institute of Science.

Kirtland's warbler is listed as a migrant in southeastern Michigan. Arrival dates are provided. [44].

Boggs, I.B. Kirtland's warbler. The Redstart. 11(4, 5): 26.

16 May 1943, 1 Kirtland's warbler, Suncrest Park area, Morgantown, West Virginia. 9 May 1937, 1 Kirtland's warbler, Sunset Beach-Lake Lynn area, Morgantown, West Virginia. (Brooks and Boggs 1937 gives date as 19 May 1937, as does Brooks 1944.)

Bohlen, D.H. 1989. The birds of Illinois. Bloomington and Indianapolis: Indiana University Press.

Discusses Indiana's 11 Kirtland's warbler records. [161].

Bolden, J. 2011. The 2011 Indiana Audubon Society Big May Day Bird Count. Indiana Audubon Quarterly. 29(4): 16–31.

14 May 2011, 1 Kirtland's warbler, Warren County, Indiana. [16, 30].

Bolsinger, J.S. 2014a. Behavior and habitat use of a Kirtland's warbler on Fort Drum, NY. The Kingbird. 64(4): 301–303.

4–18 June 2014, 1 singing male Kirtland's warbler, Fort Drum, Jefferson County, New York. The bird was in the same area the entire time, in a 5–6 ha, 1.7–5 m tall young red pine stand on sandy soil, with 750–1,000 trees/ha. Also mentions a Kirtland's warbler a few days before at Hamlin Beach State Park, New York; 5 Kirtland's warbler sight reports from the Rochester, New York, area prior to 1960; 1 Kirtland's warbler in 1952 from Montezuma National Wildlife Refuge, New York; and 1 Kirtland's warbler, May 2010 in western New York.

Bolsinger, J.S. 2014b. Region 6—St. Lawrence. The Kingbird. 64(4): 350–356.

1 June 2014, 1 Kirtland's warbler, western New York. 4–18 June 2014, 1 singing male Kirtland's warbler, Fort Drum, New York. [352–353, 356].

Bontly, M. 2010. The spring season: 2009. The Passenger Pigeon. 72(1): 39–70.

Reports that no formal documentation for Kirtland's warbler was accepted by the Records Committee, but the U.S. Fish and Wildlife Service reported 2 males on 12 May 2009 in Adams County, with 13 total Kirtland's found in May. Marinette County had a bird on 20 May 2009. [47, 63].

Borror, D.J. 1950. A check list of the birds of Ohio, with the migration dates for the birds of central Ohio. Ohio Journal of Science. 50(1): 1–32.

Kirtland's warbler is listed as a very rare migrant. Approximate arrival and departure dates for Ohio based on data from 1922–1949 are given. [8, 26].

Bowman, M.C. 1983. FOS Records Committee annual report for 1982. Florida Field Naturalist. 11: 42–44.

1 August 1981, 1 Kirtland's warbler, Saddlebunch Key, Monroe County, Florida, not accepted by Florida Ornithological Society Records Committee (82-015). [44].

Bowman, R. 2000. Records Committee report: thirteenth report of the Florida Ornithological Society Records Committee: 1996, 1997, 1998, 1999, and 2000. Florida Field Naturalist. 28(3): 138–160.

16 October 1999, 1 Kirtland's warbler photographed, New Smyrna Dunes Beach, New Smyrna Beach, Volusia County, Florida, accepted by Florida Ornithological Society Records Committee. 20 October 1997, 1 Kirtland's warbler, 3 miles south of Sebastian Inlet, Indian River County, Florida, not accepted by Florida Ornithological Society Records Committee. [142, 145, 158].

Bowman, R. 2004. Fourteenth report of the Florida Ornithological Society Records Committee: 2001–2002. Florida Field Naturalist. 32(1): 7–33.

25 October 1999, 1 adult Kirtland's warbler, near Kissimmee, Orange County, Florida, not accepted by FOSRC. [18, 31].

Bowman, R. 2006. Fifteenth report of the Florida Ornithological Society Records Committee: 2003–2005. Florida Field Naturalist. 34: 69–102.

17 October 2003, 1 Kirtland's warbler, near Pensacola, Escambia County, Florida, not accepted by Florida Ornithological Society Records Committee (03-525). [85–86].

Bragg, L.M. 1912. Local fauna: birds of South Carolina: supplement. Bulletin of the Charleston Museum. 8(3): 27–33.

14 October 1910, 1 Kirtland's warbler observed, Oakland Plantation, Christ Church Parish, South Carolina. [32].

Brimley, C.S.; Grey, J.H., Jr. 1941. The season. CXL. August 1 to October 1, 1941: Carolina region. Audubon Magazine. 43: 567–568.

23 September 1941, 1 Kirtland's warbler, Rocky Mount, North Carolina. [568].

Brinkley, E.S. 2003. The changing seasons: displacements. North American Birds. 57(3): 307–315.

18 May 2003, 1 Kirtland's warbler, Indiana, Pennsylvania. 17 May 2003, 1 Kirtland's warbler, Long Point, Ontario. 10 May 2003, 1 Kirtland's warbler, Pt. Pelee, Ontario. Also gives the 2003 Kirtland's Warbler Census total of 1,202. [313].

Brock, K.J. 1982. Kirtland's warbler, a rara avis extraordinaire, occurs in Indiana. Indiana Audubon Quarterly. 60: 30–33.

17–18 May 1981, 1 female Kirtland's warbler, Chesterton, Porter County, Indiana.

Brock, K.J. 1993. The autumn migration: August 1–November 30, 1992: middle western prairie region. American Birds. 47(1): 98–103.

9 October 1992, 1 Kirtland's warbler, Lake Chautauqua National Wildlife Refuge, Illinois. Illinois' third fall record and first since 1978. [103].

Brock, K.J. 1994. The spring season: middle western prairie region. National Audubon Society Field Notes. 48: 302–306.

15 May 1994, 1 Kirtland's warbler, Chagrin River Metropark, Willoughby, Ohio. [305–306].

Brock, K.J. 1995a. Kirtland's warbler: Indiana's first fall record. Indiana Audubon Quarterly. 73: 1–2.

24 September 1994, 1 color-banded adult female Kirtland's warbler, Whiting Park, Indiana. Provides description of bird, habitat, and behavior. Banded in Ogemaw County, Michigan, 16 July 1992. Gives color-band combination (Y/I, A/B) and band number (2020-64041).

Brock, K.J. 1995b. The fall season: middle western prairie region. National Audubon Society Field Notes. 49(1): 52–56.

24 September 1994, adult female color-banded Kirtland's warbler, Whiting Park, Indiana. The bird was originally banded as an after hatching year female 16 July 1992 in Michigan. First fall record for Indiana. [56].

Brock, K.J. 1995c. The spring season: middle western prairie region. National Audubon Society Field Notes. 49(3): 256–260.

21–22 May 1995, 1 female Kirtland's warbler, Magee Marsh, Ohio. [259].

Brock, K.J. 1997a. The fall season: middle western prairie region. National Audubon Society Field Notes. 51(1): 62–67.

13–15 September 1996, 1 color-banded immature male Kirtland's warbler, Chicago-Montrose, Illinois. The bird was color-banded 15 August 1996 in Ogemaw County, Michigan. [66].

Brock, K.J. 1997b. The regional reports: spring migration: March 1–May 31, 1997: middle western prairie region. Field Notes. 51(4): 875–880.

14 May 1997, 1 singing male Kirtland's warbler, Kelly's Island, Ohio. 15–17 May 1997, 1 male Kirtland's warbler, Magee Marsh, Ohio. [878].

Brock, K.J. 2000. The spring migration: middle western prairie region. North American Birds. 54(3): 287–290.

13 May 2000, 1 female Kirtland's warbler banded, Navarre Marsh, Ottawa County, Ohio. [290].

Brock, K.J. 2001. The spring migration: middle western prairie region. North American Birds. 55(3): 304–307.

5–6 May 2001, 1 male Kirtland's warbler, Paulding County, Ohio. [307].

Brock, K.J. 2002. The spring migration: middle western prairie region. North American Birds. 56(3): 310–314.

6 May 2002, 1 Kirtland's warbler, Metzger Marsh, Ohio. [314].

Brock, K.J. 2003. The spring migration: Illinois and Indiana region. North American Birds. 57(3): 346–349.

10 May 2003, 1 female Kirtland's warbler, Indiana Dunes State Park, Indiana. [349].

Brock, K.J. 2020. Spring Indiana field notes 2020. Indiana Audubon Quarterly. 98(3): 18–26.

3 May 2020, 1 singing male Kirtland's warbler, Warsaw, Indiana, third consecutive spring for Kirtland's in the state. [18, 25].

Brooks, M. 1944. A checklist of West Virginia birds. West Virginia University, Agricultural Experiment Station Bulletin 316. Morgantown, WV: West Virginia University, Agricultural Experiment Station.

19 May 1937, 1 Kirtland's warbler, Ice's Ferry, Monongalia County, West Virginia. 16 May 1943, 1 Kirtland's warbler, Morgantown, West Virginia. [43].

Brooks, M.; Boggs, I.B. 1937. A sight record of Kirtland's warbler in West Virginia. The Redstart. 4: 61.

19 May 1937, 1 Kirtland's warbler, Coopers Rock State Park near Cheat Lake, Monongalia County, West Virginia.

Brothers, M. 2016. Spring + summer: Florida. North American Birds. 69(3/4): 379–382.

7 May 2015, 1 singing male Kirtland's warbler, Lantana Nature Preserve, Florida. [381].

Bull, J. 1989. Spring migration in the Kirtland's warbler. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 40–50.

Summarizes spring migration records of Kirtland's warbler with regard to habitat and behavior, and 2 days of observations of a male Kirtland's 22–23 May 1983 in Michigan City, Indiana.

Bumgardner, B. 2012. Report of the Indiana Bird Records Committee—2011. Indiana Audubon Quarterly. 90(2): 47–53.

14 May 2011, 1 Kirtland's warbler, Pine Creek Methodist Camp, Warren County, Indiana. Accepted by the Indiana Bird Records Committee (IBRC) (6700-KIWA-006-WARN2011). Only the sixth record reviewed and accepted by the IBRC. [52].

Bumgardner, B. 2019. Table of contents. Indiana Audubon Quarterly. 97(4): front cover, 3.

19 September 2019, 1 Kirtland's warbler photographed, West Lafayette, Indiana.

Burleigh, T.D. 1958. Georgia birds. Norman: University of Oklahoma Press.

12 April 1902, 1 female Kirtland's warbler specimen, Cumberland Island, Georgia. 14 April 1903, 1 female Kirtland's warbler specimen, Cumberland Island, Georgia. 27 April 1904, 1 male Kirtland's warbler specimen, Cumberland Island, Georgia. 16 April 1902, 1 Kirtland's warbler specimen, St. Mary's, Georgia. 27 August 1909, 1 Kirtland's warbler sighted, Savannah, Georgia. Lists status as a rare transient and includes brief notes on plumage and habits. [358–359].

Burrell, M. 2015. 2014 Ontario Bird Records Committee (OBRC) annual meeting. http://www.ofo.ca/ofo-docs/OBRC2014_AGM_minutes.pdf.

A motion to remove Kirtland's warbler from the OBRC review list was presented. The motion was defeated. A list of 20 OBRC accepted records, and 13 additional reports from 2010–2014 in southern Ontario, are provided. [6, App. 3].

Burrell, M.V.A.; Charlton, B.N. 2015. Ontario Bird Records Committee report for 2014. Ontario Birds. 33(2): 50–81.

9 May 2014, 1 male Kirtland's warbler photographed, Long Point Provincial Park, Norfolk County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2014-035). 19 May 2014, 1 female Kirtland's warbler photographed, Port Rowan, Norfolk County, Ontario, accepted by OBRC (2014-059). 27 May–15 June 2014, 1 male photographed, Starr Island, Muskoka County, Ontario, accepted by OBRC (2014-020). 28 May 2014, 1 male Kirtland's warbler photographed, Toronto Islands, Metropolitan Toronto, Ontario, accepted by OBRC (2014-063). 15 June 2014, 1 male Kirtland's warbler photographed, Rohallion, Kawartha Lakes, Ontario, accepted by OBRC (2014-166). Correction to 2013 report (Ontario Birds 32: 54–81): under Kirtland's warbler, change “(Eric W. Holden, Brandon R. Holden; 2013-026)” to “(Eric W. Holden, Brandon R. Holden, Jeremy L. Hatt; 2013-026). Under Kirtland's warbler change “(Barbara N. Charlton, David M. Bell, Brandon R. Holden; 2013-028)” to “(Barbara N. Charlton, David M. Bell, Brandon R. Holden, Jeremy L. Hatt; 2013-028).” [69–70].

Burrell, M.V.A.; Charlton, B.N. 2016. Ontario Bird Records Committee report for 2015. Ontario Birds. 34(2): 147–177.

10–14 May 2015, 1 female Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2015-055). 11–15 May 2015, 1 female Kirtland's warbler photographed, Rondeau Provincial Park, Chatham-Kent County, Ontario, accepted by OBRC (2015-056). 13 May 2015, 1 male Kirtland's Warbler photographed, Inverhuron Provincial Park, Bruce County, Ontario, accepted by OBRC. 7–13 July 2015, 1 singing

male Kirtland's warbler photographed and song recorded, Starr Island, Muskoka County, Ontario, accepted by OBRC (2015-095). The Muskoka County record presumably pertains to the same individual male that maintained a territory at the same site during summer 2014 (see Burrell and Charlton 2015). [170].

Burrell, M.V.A.; Charlton, B.N.; Burrell, K.G.D. 2017. Ontario Bird Records Committee report for 2016. Ontario Birds. 35: 58–85.

Beginning in 2017, reports from Kirtland's warblers in the Ontario Bird Records Committee (OBRC) south review zone are no longer requested. 9 May 2016, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2016-106). 9 May 2016, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2016-107). 11–12 May 2016, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2016-104). 12 May 2016, 1 singing male Kirtland's warbler song recorded, Oakville, Halton County, Ontario, accepted by OBRC (2016-103). 12 May 2016, 1 female Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2016-105). 17 May 2016, 1 male Kirtland's warbler, Inverhuron Provincial Park, Bruce County, Ontario, accepted by OBRC (2016-102). 24 May 2016, 1 female Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2016-108). Correction to the 2015 report (Ontario Birds 34: 50–81): Under Kirtland's warbler (2015-055), change the last date to 15 May. [59, 77–78].

Butler, A.W. 1891. A catalogue of the birds of Indiana. Brookville, IN: Indiana Horticultural Society.

Kirtland's warbler is included in the hypothetical list for Indiana, with no Indiana specimens reported to date. [115].

Butler, A.W. 1894. Notes on Indiana birds. In: Proceedings of the Indiana Academy of Science 1893. Brookville, IN: Indiana Academy of Science: 116–120.

1 May 1893, 1 Kirtland's warbler specimen, Wabash, Indiana. The specimen was deposited in Butler's collection. Includes Kirtland's warbler records through 1893 and discusses the possible migration route. [119–120].

Butler, A.W. 1896. Additional notes on Indiana birds. In: Waldo, C.A., ed. Proceedings of the Indiana Academy of Science 1895. Indianapolis, IN: Wm. B. Burford: 162–168.

7 May 1895, 1 singing male Kirtland's warbler specimen, near Wabash, Indiana. [168].

Butler, A.W. 1898. The birds of Indiana. In: Indiana Department of Geology and Natural Resources 22nd annual report. Indianapolis, IN: Wm. B. Burford: 515–1187.

4 May 1892, 1 Kirtland's warbler specimen, Wabash, Indiana. 7 May 1895, 1 Kirtland's warbler specimen, Wabash, Indiana. Also includes other records through 1895, and discusses the possible migration route and breeding grounds. (Butler includes a Pennsylvania record that is cited many times in other publications until it is corrected by Stone 1898.) See also Stejneger 1899. [1070–1072].

Butler, A.W. 1927. Searching for interesting bird records. Indiana Audubon Bulletin. 1927: 10–13.

4 May 1872, 1 male Kirtland's warbler specimen and 1 Kirtland's warbler sight record, Avondale, Ohio. [11].

Butler, A.W. 1929. Rare birds in Cincinnati collections. *The Auk*. 46: 196–199.

4 May 1872, 1 male Kirtland's warbler specimen, plus 1 other sighted, Avondale, Hamilton County, Ohio. The specimen is reported to be in the collection of Charles Dury. (Stone 1986 reports 2 males.) [196–197].

Byrne, A.M. 2009. The spring migration: western Great Lakes region. *North American Birds*. 63(3): 433–436. <https://doi.org/10.5962/bhl.title.54113>.

Spring 2009, 6 female and 8 male Kirtland's warblers, Adams County, Wisconsin. [465].

Byrne, A.M. 2011. The spring migration: western Great Lakes region. *North American Birds*. 65(3): 443–445.

Spring 2011, 22 adult Kirtland's warblers returned to 4 Wisconsin counties. [445].

Byrne, A.M. 2016. Spring: western Great Lakes. *North American Birds*. 69(3/4): 397–399.

9 May 2015, 1 Kirtland's warbler, Milwaukee County, Wisconsin. 10 May 2015, 1 Kirtland's warbler, Washtenaw County, Michigan. 16 May 2015, 1 Kirtland's warbler, Iosco County, Michigan, away from the breeding area. 24 May 2015, 1 Kirtland's warbler, Iosco County, Michigan, away from the breeding area. Wisconsin also reported Kirtland's from 2 other counties.

Caldwell, C. 2018a. Species accounts. *The Ohio Cardinal*. 41: 113–139.

Mentions 2 Ohio Kirtland's warbler posts from Lucas County and 1 from Lake County. All had descriptions and 1 had a photo, but no reports were filed with the Ohio Bird Records Committee. [136].

Caldwell, C. 2018b. Species accounts. *The Ohio Cardinal*. 42: 3–32.

30 September 2018, 1 Kirtland's warbler photographed, Darby Creek, Franklin County, Ohio. [29].

Caldwell, C. 2020. Species accounts. *The Ohio Cardinal*. 43(3): 113–139.

12 May 2020, 1 male Kirtland's warbler photographed, Headwaters Park, Geauga County, Ohio. Other 2020 Ohio Kirtland's reports came from several Lucas County locations, 1 photographed in Erie County, and 1 from Warren County. A photograph of the 12 May bird is included. [136].

Caldwell, C. 2021a. Comments on the season. *The Ohio Cardinal* 44: 117–118.

5–11 May 2021, 5 Kirtland's warblers, Ohio. [117].

Caldwell, C. 2021b. Species accounts. *The Ohio Cardinal*. 44: 121–154.

5 and 8 May 2021, 1 Kirtland's warbler, East Harbor, Ohio. 5 May 2021, 1 Kirtland's warbler, Oak Openings Preserve Metropark, Ohio. 5–6 May 2021, 1 Kirtland's warbler, Maumee Bay, Ohio. 9 May 2021, 1 Kirtland's warbler, Bay Metropark, Erie County, Ohio. 11 May 2021, 1 Kirtland's warbler, Stillwater Prairie Preserve, Miami County, Ohio. [143].

Caldwell, C. 2022a. Species accounts, spring 2022. *The Ohio Cardinal*. 45: 141–168.

A total of 11 migrant Kirtland's warblers were found in Ohio from 1–16 May 2022 in Allen, Cuyahoga, Hamilton, Lucas, Summit, Union, and Washington Counties. 1 May, 1 photographed, Bluffton University Nature Preserve, Allen County. 11–14 May, 1 was along the CCE Trail. 13 May, a male and female were photographed at the Magee Marsh Boardwalk. 16 May, 1 was in

Summit County, 1 at Maumee Bay Boardwalk, and 1 at the Cleveland Lakefront Nature Preserve, Cuyahoga County. [165].

Caldwell, C. 2022b. Years ago. The Ohio Cardinal. 45: 185.

The spring issue reported 3 Kirtland's warblers.

Campbell, L. 1968. Birds of the Toledo area. Toledo, OH: The Blade.

15 May 1908, 1 adult male Kirtland's warbler specimen, Catawba Island, Ottawa County, Ohio. 22 September 1929, 1 Kirtland's warbler, Springfield Township, Lucas County, Ohio. 22 May 1952, 1 Kirtland's warbler, Pearson Park, Oregon, Lucas County, Ohio. 24 May 1954, 1 Kirtland's warbler, Put-in-Bay Lighthouse, Ottawa County, Ohio. 16 May 1964, 1 Kirtland's warbler, Lakeside. 12 May 1966, 1 Kirtland's warbler, Oak Openings Park, Lucas County, Ohio. [245].

Campbell, L. Birds of 1974. Toledo Naturalists' Association Yearbook 1974: 70–73.

24 May 1974, 1 Kirtland's warbler, Toledo, Ohio, area. [70].

Campbell, L. 1975. Bird records for 1975. Toledo Naturalists' Association Yearbook 1975: 64–70.

16 May 1975, 1 Kirtland's warbler, Toledo, Ohio, area. [65].

Campbell, L. Bird report 1979. Toledo Naturalists' Association Yearbook 1979: 5–11.

9 May 1979, 1 Kirtland's warbler, Crane Creek Bird Trail, Ohio. [6].

Campbell, L. 1984. Area bird report for 1984. Toledo Naturalists' Association Yearbook 1984: 2–9.

11 May 1984, 1 Kirtland's warbler, Swan Creek Metropark, Ohio. [6].

Campbell, L. 1987. Bird life in 1987. Toledo Naturalists' Association Yearbook 1987: 45–54.

9 May 1987, 1 Kirtland's warbler photographed, Crane Creek Park, Ohio. Also provides historical area records. [49].

Campbell, L. 1989. Birds vs. weather—1989. Toledo Naturalists' Association Yearbook 1989: 25–32.

15 May 1989, 1 Kirtland's warbler, Toledo, Ohio, area. [28].

Campbell, L. 1990. Birds vs. weather—1990. Toledo Naturalists' Association Yearbook 1990.

April 1990 (no specific date given; just "seen before May 1st"), 1 Kirtland's warbler, Toledo, Ohio, area. [44].

Campbell, L.W. 1931. Checklist: birds of Toledo, Ohio and vicinity. Toledo, OH: Toledo Nature Society.

22 September 1929, 1 Kirtland's warbler, near Holland, Ohio. Listed as a very rare migrant for Toledo, based on data for 1926–1930. [16].

Campbell, L.W. 1940. Birds of Lucas County. Toledo Museum of Science Bulletin. 1(1): 1–225.

22 September 1929, 1 Kirtland's warbler, Holland sand pit, Lucas County, Ohio. 15 May 1909, 1 male Kirtland's warbler specimen, Catawba Point, Ottawa County, Ohio. Listed as a rare visitor in Ohio. [146, 183].

Campbell, L.W. 1977. Annual bird report—1977. Toledo Naturalists' Association Yearbook 1977: 89–93.

21 May 1977, 1 Kirtland's warbler, Toledo, Ohio, area. [91].

Capparelli, A.; Janvrin, J. 2021. Spring 2021: Ontario. North American Birds. <https://wp.me/p8iY2g-baJ>.

14 May 2021, 1 Kirtland's warbler, Point Pelee National Park, Essex County. 14 May 2021, 1 Kirtland's warbler, Windsor, Essex County. 15 May 2021, 1 Kirtland's warbler, Rondeau Provincial Park, Chatham-Kent County. 15–16 May 2021, 1 Kirtland's warbler, Rondeau Provincial Park, Chatham-Kent County. 19 May 2021, 1 Kirtland's warbler, Point Pelee National Park, Essex County. [9].

Carper, B. Field notes—spring 2016 (Mar.–May). Indiana Audubon Quarterly. 94(3): 5–15.

10 May 2016, 1 male Kirtland's warbler photographed, Cowles Bog, Indiana Dunes National Lakeshore, Porter County, Indiana. 17 May 2016, 1 female Kirtland's warbler photographed, Whiting Park, Lake County, Indiana. [3, 5, 14, front and back covers].

Cefus, J. 2021 Recent actions of the Ohio Bird Records Committee, May 2021. The Ohio Cardinal. 44: 157–158.

It was decided that Kirtland's warbler would remain on the Ohio Review Species List despite the number of recent records. [157].

Chamberlain, E.B. 1936. Seasonal list of South Carolina birds: revised to November, 1936. Leaflet no. 8. Charleston Museum.

Kirtland's warbler is listed as a rare transient, having been seen 27 April and 29 October (no years provided). [17].

Chapel, R. 1993. Field notes: the 1993 fall season. Meadowlark. 2(2): 65–80.

9 October 1992, 1 Kirtland's warbler, Lake Chautauqua National Wildlife Refuge, Mason County, Illinois. [65, 77].

Chapel, R. 1997. Field notes: the 1996 fall season. Meadowlark. 6(2): 67–80.

13–15 September 1996, 1 male color-banded Kirtland's warbler, Montrose Harbor, Chicago, Illinois. [67, 77].

Chapman, F.M. 1891. A catalogue of the birds of New Jersey. The Auk. 8: 104–105.

Reviews "A Catalogue of the Birds of New Jersey" and reports numerous errors including Kirtland's warbler being listed as rare and seen during migrations. [105].

Chapman, F.M. 1895. Bulletins 4 and 5 of the Wilson Ornithological Chapter. The Auk. 12: 286–287.

25 May 1894, 1 Kirtland's warbler, Winnebago County, Illinois, reported in Bulletin 4. [286].

Charlton, B. 2016. 2015 Ontario Bird Records Committee (OBRC) annual meeting. http://www.ofo.ca/ofo-docs/OBRC2015_AGM_Minutes.pdf.

A motion to remove Kirtland's warbler from the Ontario Bird Records Committee review list was presented. The motion was defeated. A list of 32 records from southern Ontario (2011–2015) is presented.

Chipman, I. 1968. Field notes: spring season: March 1–May 31, 1967. The Passenger Pigeon. 30: 34–53.

25–25 May 1967, 1 Kirtland's warbler sighted, Green Bay, Wisconsin. Seventh state record. [49].

Chubb, H.E. 1880. Spring field notes. Forest and Stream. 14: 307.

4 May 1880, 1 male Kirtland's warbler specimen, Cleveland, Ohio. Provides a description of the scrub habitat it was found in, flycatching behavior, and measurements. Mentions the bird was never more than 2 feet above the ground.

Clench, M.H. 1973. The fall migration route of Kirtland's warbler. The Wilson Bulletin. 85(4): 417–428.

Provides detailed information on an immature male Kirtland's warbler captured and banded 21 September 1971 at Powdermill Nature Reserve near Rector, Westmoreland County, Pennsylvania. The bird was recaptured twice at the same location during the following 11 days. Summarizes fall Kirtland's migration records and includes maps of migration records.

Clench, M.H.; Leberman, R.C. 1978. Weights of 151 species of Pennsylvania birds analyzed by month, age, and sex. Bulletin of Carnegie Museum of Natural History. 5: 1–87.

September and October 1971, 1 immature Kirtland's warbler, Powdermill Nature Reserve, near Rector, Westmoreland County, Pennsylvania (see Clench 1973 for more details). Provides the weights for all 3 captures. [51].

Coder, K.D.; Jackson, J.J. 1994. Kirtland's warbler (*Dendroica kirtlandii*). Publication FOR 94-033. University of Georgia School of Forest Resources Extension.

Fact sheet intended to help landowners become aware of federally designated and protected species. Shows general location of Kirtland's warbler as being in North Carolina, South Carolina, and Georgia.

Colburn, T. 2022. President's message. Chip Notes. May 2022: 2–4.

Discusses the possible reasons for the increase in number of Kirtland's warbler migration sightings in Ohio. Reasons include Kirtland's population increase, an increase in birders, weather, and migrant traps.

Collett, P. 1983. Kirtland's warbler near Williamstown, W. Va. The Redstart. 50: 107–108.

17 May 1983, 1 Kirtland's warbler, between Williamstown and Boaz, West Virginia, near the Ohio River. 1 Kirtland's Warbler, Reno, Ohio "a year or so ago."

Columban, B. 1968. Kirtland's warbler. *The Passenger Pigeon*. 30: 29.

25–26 May 1967, 1 Kirtland's warbler, Green Bay, Wisconsin.

Conlon, B.; Harlan, R. The reports—spring 1996. *The Ohio Cardinal*. 16: 84–97.

10 May 1996, 1 male Kirtland's warbler, Oak Openings Metropark, Lucas County, Ohio.

Cook, A.J. 1893. *Birds of Michigan*. Lansing, MI: Michigan Agricultural Experiment Station State Agricultural College.

11 May 1883, 1 Kirtland's warbler specimen, Battle Creek, Calhoun County, Michigan. May 1888, 1 Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan. 1 Kirtland's warbler (date unspecified), Straits of Mackinac, Mackinac County, Michigan. 1879, 2 Kirtland's warbler specimens, Washtenaw County, Michigan. 21 May 1885, 1 Kirtland's warbler, Straits of Mackinac, Michigan. [115].

Cook, C.W. 2000. Two sight records of Kirtland's warbler from North Carolina. *The Chat*. 64(1): 21–25.

20 May 1995, 1 female Kirtland's warbler, mile post 426, Blue Ridge Parkway, Jackson County, North Carolina. 23–24 September 1995, 1 female Kirtland's warbler, milepost 235 Blue Ridge Parkway, Alleghany County, North Carolina. Provides description of both birds and discusses previous North Carolina records.

Cooke, W.W. 1888. Report on bird migration in the Mississippi Valley in the years 1884 and 1885. Merriam, C.H., ed. Washington, DC: Government Printing Office.

8 May 1885, 1 Kirtland's warbler specimen, St. Louis, Missouri. (Also cited as: U.S. Department of Agriculture, Biological Survey, Bulletin no. 2; and U.S. Biological Survey, Bulletin no. 2.) [254].

Cooke, W.W. 1904a. Distribution and migration of North American wood warblers. *Bulletin no. 18*. Washington, DC: U.S. Department of Agriculture, Division of Biological Survey.

Describes Kirtland's warbler breeding, wintering, and migratory ranges. Provides several records. [9, 16, 9–92].

Cooke, W.W. 1904b. The migration of warblers: seventh paper. *Bird-Lore*. 6: 199–200.

Lists location, month, and day for known Kirtland's warbler records, and mentions the discovery of the first nest. Includes a color plate of male and female.

Cooke, W.W. 1905. An untenable theory of bird migration. *The Condor*. 7: 8–9.

Refutes Adams 1904 theory concerning the migration route of the Kirtland's warbler.

Cooke, M.T. 1921. Birds of the Washington region. *Proceedings of the Biological Society of Washington*. 34: 1–22.

25 September 1887, 1 Kirtland's warbler, Washington, DC, area. Listed among the rare, irregular, or accidental visitors. [12].

Cooke, M.T. 1929. Birds of the Washington, DC, region. *Proceedings of the Biological Society of Washington*. 42: 1–80.

25 September 1887, 1 Kirtland's warbler specimen, Fort Myer, Virginia, and another Kirtland's sighted 1 week later, Fort Myer, Virginia. Listed as accidental for the region. [58].

Cooper, N.W.; Hallworth, M.T.; Marra, P.P. 2017. Light-level geolocation reveals wintering distribution, migration routes, and primary stopover locations of an endangered long-distance migratory songbird. *Journal of Avian Biology*. 48(2): 209–219. <https://doi.org/10.1111/jav.01096>.

Light-level geolocators were placed on 84 male Kirtland's warblers across their Michigan breeding range. Geolocators were recovered from 27 males. Most males wintered in the central Bahamas and exhibited a loop migration pattern. Reports on timing of migration and identifies 3 primary stopover regions. Spring and fall migration are compared.

Cordle, S. 2005. DC area, 5/24/05. irdeast@listserv.arizona.edu. <http://listserv.arizona.edu/archives/birdeast.html>.

18 May 2005, 1 Kirtland's warbler stunned after window strike, Bethesda, Montgomery County, Maryland. (URL link is broken.) [3].

Cory, C.B. 1896. A list of the birds of eastern North America. Boston: Bradley Whidden.

Kirtland's warbler is listed as occurring in Florida and Illinois (only data provided). [38].

Cory, C.B. 1898. Kirtland's warbler (*Dendroica kirtlandii*) in Florida. *The Auk*. 15: 331.

19 April 1897, 1 Kirtland's warbler sighted, West Jupiter, Florida. 27 April 1897, 1 Kirtland's warbler specimen, West Jupiter, Florida.

Cory, C.B. 1909. The birds of Illinois and Wisconsin. Chicago: Field Museum of Natural History.

7 May 1894, 1 Kirtland's warbler specimen, Glen Ellyn, DuPage County, Illinois. 25 May 1894, 1 Kirtland's warbler specimen, Winnebago County, Illinois. 22 May 1899, 1 male Kirtland's warbler specimen, Morgan Park, Chicago, Illinois. 1 Kirtland's warbler shot but escaped (date unspecified), Lake Koshkonong, Wisconsin. July 1903, 15 young and old Kirtland's warbler specimens, nest, and eggs collected, Oscoda County, Michigan. 8 May 1885, 1 male Kirtland's warbler specimen, near St. Louis, Missouri. Includes a detailed physical description of spring male and female Kirtland's and a fall and winter description of immature birds. [659–661].

Coues, E. 1874. Birds of the North-West: a hand-book of American ornithology, containing accounts of all the birds inhabiting the Great Missouri Valley, and many others, together representing a large majority of the birds of North America, with copious biographical detail. Boston: Estes and Lauriat.

May 1872, 1 Kirtland's warbler specimen, Hamilton County, Ohio. [753].

Coues, E. 1880. Description of the female *Dendroeca kirtlandi*. *Bulletin of the Nuttall Ornithological Club*. 5: 49–50.

16 May 1879, 1 female Kirtland's warbler specimen, Ann Arbor, Michigan. Provides a detailed description of plumage and measurements. The specimen was deposited in the U.S. National Museum.

Covert, A.B. 1876. Birds of lower Michigan. *Forest and Stream*. 6: 99, 132.

15 May 1875, 1 female Kirtland's warbler specimen, lower Michigan. (See Covert 1881 for more details.) Notes that the bird is very rare. [132].

Covert, A.B. 1881. Annotated list of the birds and mammals of Washtenaw County, Michigan. In: History of Washtenaw County, Michigan. Chicago: Chas. C. Chapman and Co.: 173–194.

15 May 1875, 1 Kirtland's warbler specimen (female, see Covert 1876), Scio, Washtenaw County, Michigan. 16 May 1879, 1 Kirtland's warbler specimen, Scio, Washtenaw County, Michigan. [177].

Craighill, F.H. 1937. Recent additions to the North Carolina check list. The Chat. 1(1): 5.

2 September 1936, 1 Kirtland's warbler sighted, near Rocky Mount, North Carolina.

Craighill, F.H. 1942. Craighill's last letter about North Carolina birds. The Chat. 6: 25–26.

23 September 1941, 1 Kirtland's warbler, Rocky Mount, North Carolina. 22 September 1938, 1 Kirtland's warbler, Rocky Mount, North Carolina. 2 September 1936, 1 Kirtland's warbler, Rocky Mount, North Carolina.

Cranford, M.H. 2010. Ontario Bird Records Committee report for 2009. Ontario Birds. 28(2): 58–86.

9 May 2009, 1 male Kirtland's warbler video recorded, Pelee Island, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2006-060). 20 May 2009, 1 Kirtland's warbler, Long Point (Old Cut), Norfolk County, Ontario, not accepted by OBRC (2009-062). [74].

Cranford, M.H. 2012. Ontario Bird Records Committee report for 2011. Ontario Birds. 60(2): 66–93.

2 May 2011, 1 male Kirtland's warbler photographed, Rondeau Provincial Park, Chatham-Kent County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2011-088), early record for the province. 6 May 2011, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2011-086). 8 May 2011, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2011-035). 10 May 2011, 1 male Kirtland's warbler, Pelee Island, Essex County, Ontario, accepted by OBRC (2011-044). 11 May 2011, 1 male Kirtland's warbler photographed, Long Point Provincial Park, Norfolk County, Ontario, accepted by OBRC (2011-085). 13 May 2011, 1 Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2011-130). [85].

Cranford, M.H. 2013. Ontario Bird Records Committee report for 2012. Ontario Birds. 31: 58–85.

5 May 2012, 1 male Kirtland's warbler photographed, Stoney Creek, Hamilton County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2012-046). 26 May 2012, 1 male Kirtland's warbler photographed, and song recorded, Kirkfield (Carden Alvar), Municipality of Kawartha Lakes, Ontario, accepted by OBRC (2012-057). 28 May 2012, 1 male Kirtland's warbler, Goshen, Huron County, Ontario, accepted by OBRC (2012-060). [79].

Crins, W.J. 2003. Ontario Bird Records Committee report for 2002. Ontario Birds. 21(2): 54–76.

14 May 2002, 1 Kirtland's warbler, East Beach, Point Pelee National Park, Essex County, Ontario, accepted by Ontario bird Records Committee (OBRC). 14 May 2002, 1 female Kirtland's warbler, Sleepy Hollow, Point Pelee National Park, Essex County, Ontario, accepted by OBRC. 19 May 2002, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, accepted by OBRC. 24 May 2002, 1 female Kirtland's warbler photographed, Dyer's Bay, Bruce County, Ontario, accepted by OBRC. 29 August 2002, 1 Kirtland's warbler, Cobourg, Northumberland County, Ontario, accepted by OBRC. [72].

Crins, W.J. 2004. Ontario Bird Records Committee report for 2003. Ontario Birds. 22: 54–74.

15 May 2003, 1 male Kirtland's warbler, Courtright Ridge, Long Point, Norfolk County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 17 May 2003, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC, photograph provided. 5 June 2003, 1 Kirtland's warbler, Niagara-on-the-Lake, Niagara County, Ontario, not accepted by OBRC. [61, 70, 73].

Crins, W.J. 2005. Ontario Bird Records Committee report for 2004. Ontario Birds. 23: 54–75.

11 May 2004, 1 male Kirtland's warbler videotaped, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 17–19 May, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC. 13 May 2004, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. [70, 73, 74].

Crins, W.J. 2006. Ontario Bird Records Committee report for 2005. Ontario Birds. 24: 54–74.

11 May 2005, 1 male Kirtland's warbler, Ruscom Shores Conservation Area, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 25–26 May 2005, 1 male Kirtland's warbler photographed, 4 km west of Port Bruce, Elgin County, Ontario, accepted by OBRC. 11 May 2005, 1 Kirtland's warbler, Rondeau Provincial Park, Chatham-Kent County, Ontario, not accepted by OBRC. [68, 72].

Crins, W.J. 2007. Ontario Bird Records Committee report for 2006. Ontario Birds. 25: 50–68.

21 May 2006, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee. Photograph provided. [63].

Cross, B. 2001. 2000 report of the Virginia Avian Records Committee (VARCOM). The Raven. 72: 163–170.

25 September 1999, 1 Kirtland's warbler, Frederick County, Virginia, not accepted by Virginia Avian Records Committee (VARCOM). 10 May 1995, 1 Kirtland's warbler, Wise County, Virginia, circulating through VARCOM. 8 May 2000, 1 Kirtland's warbler, Wise County, Virginia, circulating through VARCOM. [168, 169].

Curry, R. 1991. Ontario Bird Records Committee report for 1990. Ontario Birds. 9(2): 18–44.

26 May 1990, 1 male Kirtland's warbler photographed, Cabot Head, Bruce County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 31 May 1990, 1 male Kirtland's warbler photographed, Port Hope, Northumberland County, Ontario, accepted by OBRC, detailed drawing provided. 17 June 1961, 1 male Kirtland's warbler specimen collected, Pointe au Baril, Parry Sound County, Ontario, accepted by OBRC. [37, 38].

Cypert, E. 1959. Kirtland's warbler on St. Simon's Island. The Oriole. 24: 38–39.

19 September 1959, 1 Kirtland's warbler, St. Simon's Island, Georgia.

Dailey, K.E. 2015. Field observations: spring report: March—May 2015. Florida Field Naturalist. 43(4): 189–198.

7 May 2015, 1 singing male Kirtland's warbler, Lantana Nature Preserve, Florida. [189, 196].

Dailey, K.E. 2016. Field observations: spring report: March–May 2016. Florida Field Naturalist. 44(4): 178–188.

27 April 2016, 1 Kirtland's warbler, coastal Volusia County, Florida. [178, 186].

Dailey, K.E. 2017a. Field observations: spring report: March–May 2017. Florida Field Naturalist. 45(4): 113–122.

8 May 2017, 1 Kirtland's warbler, Maritime Hammock, Brevard County, Florida. [113, 120].

Dailey, K.E. 2017b. Field observations: winter report: December 2016– February 2017. Florida Field Naturalist. 45(3): 87–98.

11–16 February 2017, 1 Kirtland's warbler, Bill Baggs Cape Florida State Park, Florida. [87, 95].

Dailey, K.E. 2018. Field observations: fall report: August–November 2017. Florida Field Naturalist. 46(2): 48–61.

23–24 October 2017, 1 Kirtland's warbler, Sebastian Inlet State Park, Florida. [48, 58].

Dailey, K.E. 2019. Field observations: fall report: August–November 2018. Florida Field Naturalist. 47(2): 84–95.

21 October 2018, 1 Kirtland's warbler photographed, Washington Oaks Gardens State Park, Flagler County, Florida. [84, 92].

Dailey, K.E. 2020. Field observations: fall report: August–November 2019. Florida Field Naturalist. 48(2): 65–73.

1 October 2019, 1 Kirtland's warbler, Playalinda Beach, Brevard County, Florida. [71].

Darnell, M. 1956. Kirtland's warbler. The Migrant 27(3): 53.

28 September 1956, 1 Kirtland's warbler seen feeding in low pines, Greeneville, Tennessee.

Davis, R. 1996. Briefs for the files. The Chat. 60: 114–128.

23–24 September 1995, 1 immature female Kirtland's warbler sighted, Mahogany Rock Overlook, Blue Ridge Parkway, North Carolina. [126].

Davis, R. 1999. Briefs for the files. The Chat. 63(4): 182–191.

28 April 1999, 1 singing male Kirtland's warbler, near Zebulon, North Carolina. [189].

Davis, R. 2002a. Briefs for the files: all dates fall 2001. The Chat. 68: 65–78. https://www.carolinabirdclub.org/chat/issues/2004/v68n3briefs_spring_2004.pdf.

25 August 2001, 1 male Kirtland's warbler singing full song, Mayesville, South Carolina. Song heard at same site once before in the spring. [76].

Davis, R. 2002b. The fall migration: southern Atlantic Coast. North American Birds. 56(1): 41–44.

25 August 2001, Kirtland's warbler giving full spring song, Mayesville, South Carolina. Unverified by sight. [43].

Davis, R. 2003a. Briefs for the files: all dates spring 2003. *The Chat*. 67(3): 110–122.

18 May 2003, 1 singing male Kirtland's warbler, Zebulon, North Carolina. Not seen, heard only at close range. One heard at same site, by same person, 23 April 1999. [121].

Davis, R. 2003b. The spring migration: southern Atlantic Coast. *North American Birds*. 57(3): 333–336.

18 May 2003, 1 Kirtland's warbler heard at close range, Zebulon, North Carolina. 23 April 1999, 1 Kirtland's warbler, Zebulon, North Carolina. 7 May 1994, 10 May 1995, 8 May 2000 (2 birds), and 11 May 2000, all from Wise County, Virginia. [336].

Deignan, H.G. 1961. Type specimens of birds in the United States National Museum. *United States National Museum Bulletin*. 221: 1–718.

Provides a detailed record of the Kirtland's warbler type specimen and discusses the inconsistencies concerning collector and date. [539].

Dennis, D.W. 1905. Capture of the Kirtland warbler near Richmond, Ind. *The Auk*. 22: 314.

13 May 1905, 1 female Kirtland's warbler specimen, Richmond, Indiana. The bird was shot in a clump of low bushes. Notes that it was silent, fearless, and was tail-wagging.

Dennis, D.W.; Petry, L.C. 1905. A specimen of Kirtland's warbler, secured May 13, 1905. In: *Proceedings of the Indiana Academy of Science, 1905. Indiana Academy of Science*: 197.

13 May 1905, 1 female Kirtland's warbler specimen, found in a second-growth thicket 5 miles east of New Paris, Ohio in Wayne County, Indiana. (This record is actually in Preble County, Ohio. See Petrucha et al. 2013.) Behavior and habitat are described.

Denton, J.F.; Chamberlain, B.R. 1950. The fall migration: southern Atlantic Coast region. *Audubon Field Notes*. 4: 9–11.

11 October 1949, 1 Kirtland's warbler, Columbia area, South Carolina, fourth state fall record. [10].

Derleth, A. 1947. Sac prairie summer. *The Passenger Pigeon*. 96: 106–108.

10 September 1947, Kirtland's warbler in lilacs, Wisconsin (only data provided). [108].

Devitt, O.E. 1967. *The Birds of Simcoe County, Ontario*. 2nd revision. Barrie, ON: Brereton Field Naturalists' Club.

16–21 May 1964, 1 singing male Kirtland's warbler photographed, Vespra Township, Ontario. 19 May 1967, 1 Kirtland's warbler, Little Lake, Ontario. [144].

Dinsmore, J.J.; Kent, T.H.; Koenig, D.; Petersen, P.C.; Roosa, D.M. 1984. *Iowa birds*. Ames, IA: Iowa State University Press.

1 Kirtland's warbler (no date given), Linn County, Iowa, found partially decomposed and dubiously identified. 10 May 1979, 1 Kirtland's warbler, Chicago, Illinois. 26 September 1978, 1 Kirtland's warbler Chicago, Illinois. 1967, 1 Kirtland's warbler, Green Bay, Door County, Wisconsin. 10 June–18 July 1978, 1 Kirtland's warbler, Black River Falls, Jackson County, Wisconsin. [265].

Dobos, R.Z. 1996. Ontario Bird Records Committee report for 1995. *Ontario Birds*. 14(2): 50–71.

21 May 1995, 1 female Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 14 May 1995, 1 Kirtland's warbler, Point

Pelee National Park, Essex County, Ontario, not accepted by OBRC. 26 May 1995, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. 4 September 1995, 1 Kirtland's warbler, Long Point Provincial Park (Old Cut), Haldimand-Norfolk County, Ontario, not accepted by OBRC. [65, 69].

Dobos, R.Z. 1997. Ontario Bird Records Committee report for 1996. Ontario Birds. 15(2): 47–66.

10 May 1996, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee. [61].

Dobos, R.Z. 1998. Ontario Bird Records Committee report for 1997. Ontario Birds. 16(2): 51–80.

24 May 1997, 1 male Kirtland's warbler, St. Williams Forestry Station, Haldimand-Norfolk County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 14 May 1996, 1 male Kirtland's warbler, Stoney Point, Essex County, Ontario, accepted by OBRC. 16 May 1996, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, accepted by OBRC. 19 May 1997, 1 Kirtland's warbler, Rondeau Provincial Park, Kent County, Ontario, not accepted by OBRC. 21 May 1997, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. [70, 75].

Dobos, R.Z. 1999. Ontario Bird Records Committee report for 1998. Ontario Birds. 17(2): 62–83.

15 May 1998, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 21 May 1998, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, accepted by OBRC. 13–14 May 1997, 1 male Kirtland's warbler photographed, Cedarcroft Property, Delaware, Middlesex County, Ontario, accepted by OBRC. [75].

Domagalski, R.C. 1994. Wisconsin extreme dates. The Passenger Pigeon. 56(2): 99–121.

Gives extreme Kirtland's warbler Wisconsin dates of 18 May 1941, Outagamie County, and 24 July 1978, Jackson County. [117].

Dunakin, M. 1996. A Kirtland's warbler in Paulding County. Ohio Cardinal. 19(1): 6.

21 September 1995, 1 male Kirtland's warbler, Paulding County, Ohio. The bird was color-banded, band #2020-63954, 5 June 1995, 6 miles south of Luzerne, Oscoda County, Michigan.

Duncan, R.A.; Duncan, L.R. 2004. The fall migration: central southern. North American Birds. 58(1): 89–92.

17 October 2003, 1 Kirtland's warbler, north Pensacola, Florida. First for northwest Florida since 1953. [92].

Dunnell, A.; Dunnell, K. 1985. Kirtland's warbler at Great Stirrup Cay. The Jack-Pine Warbler. 63(1): 61.

31 March 1984, breeding plumaged adult male Kirtland's warbler captured, Great Stirrup Cay, Berry Islands, The Bahamas. Caught by hand, apparently exhausted from being caught in a storm. It flew away after 15–20 minutes.

Eckert, K. 1983a. Proceedings of the Minnesota Ornithological Records Committee. The Loon. 54: 41–43.

9 September 1982, 1 Kirtland's warbler, Lebanon Hills Park, Dakota County, Minnesota. Not accepted by Minnesota Ornithological Records Committee. [43].

Eckert, K.R. 1983b. Proceedings of the Minnesota Ornithological Records Committee. The Loon. 55: 117–119.

22 May 1983, 1 Kirtland's warbler, Minneapolis, Hennepin County, Minnesota. Not accepted by Minnesota Ornithological Records Committee. [118].

Eckert, K.R. 1991. Proceedings of the Minnesota Ornithological Records Committee. The Loon. 63: 41–42.

24 May 1990, 1 Kirtland's warbler, Olson Lake, Washington County, Minnesota. 2 August 1990, 1 Kirtland's warbler, Woodbury, Washington County, Minnesota. Neither record accepted by Minnesota Ornithological Records Committee. [42].

Edscorn, J.B. 1979. The autumn migration: August 1–November 30, 1978: Florida region. American Birds. 33(2): 169–171.

27 October 1978, 1 Kirtland's warbler, Jonathan Dickinson State Park, Florida. [171].

Ehn, K. 2020. Fall Indiana field notes 2019. Indiana Audubon Quarterly. 98(1): 6–12.

19–20 September 2019, 1 Kirtland's warbler photographed, Lafayette, Tippecanoe County, Indiana. (The article mistakenly reports as 2 separate Kirtland's in 2 counties.) [6, 12].

Ellis, J.B. 1915. Migratory notes taken fall 1915 by J.B. Ellis, Chokoloskee, Fla. Oologist. 32(12): 207–209.

11 October 1915, 1 Kirtland's warbler, Chokoloskee, Florida.

Esten, S.R. 1938. Etta Wilson's Marion County migration records. Indiana Audubon Society Yearbook. 16: 41–47.

Kirtland's warbler is listed as a very rare migrant in Indiana. [45].

Ewert, D.N.; Soulliere, G.J.; Macleod, R.D.; Shieldcastle, M.C.; Rodewald, P.G.; Fujimura, E.; Shieldcastle, J.; Gates, R.J. 2006. Migratory bird stopover site attributes in the western Lake Erie basin.

Kirtland's warbler is categorized as one of the watch list species that uses the area with multiple causes for concern across the entire range mentioned. [27].

Ewert, D.N.; Hall, K.R.; Wunderle, J.M.; Currie, D.; Rockwell, S.M.; Johnson, S.B.; White, J.D. 2012. Duration and rate of spring migration of Kirtland's warblers. Wilson Journal of Ornithology. 124(1): 9–14. <https://doi.org/10.1676/11-073.1>.

The spring duration of migration was documented for 5 Kirtland's warblers from Eleuthera, The Bahamas, to their Michigan breeding grounds, with an average of 15.8 days (range 13–23 days).

Fargo, W.G. 1934. Walter John Hoxie. The Wilson Bulletin. 46(3): 169–196.

Biography of W.J. Hoxie, a noted ornithologist. 1 Kirtland's warbler, Chatham County, Georgia, was "reported recently" and is included in a list of Georgia records from Hoxie's annotated list of the birds of Chatham County, Georgia, which appeared in 8 installments in the Savannah Morning News beginning April 30, 1911. [191, 192].

Faver, A.R. 1949. Kirtland's warbler seen at Eastover, Richland County, S.C. The Chat. 13(5): 79–80.

14 October 1949, 1 Kirtland's warbler, Eastover, Richland County, South Carolina. The bird was in a yard feeding in plum trees, and then it flew into dense undergrowth. Provides 8 other Kirtland's records from South Carolina and 3 from North Carolina.

Faver, A.R. 1969. Birding at Beaumont. The Chat. 33(4): 88–89.

The author gives accounts of her 3 Kirtland's warbler records from her yard in Eastover, South Carolina.

Faver, A.R. 1951. Chats and other warblers at Eastover, S.C. The Chat. 15: 82–83.

14 October 1949, 1 Kirtland's warbler feeding in plum trees, Eastover, Richland County, South Carolina. 1 September 1951, 1 tail-wagging Kirtland's warbler feeding in a sunflower patch, Eastover, South Carolina. [83].

Faver, A.R. 1953. Rare warblers in the Carolinas. The Chat. 17(2): 30–33.

13 May 1851, 1 Kirtland's warbler, Cleveland, Cuyahoga County, Ohio. 2 September 1936, 1 Kirtland's warbler; 22 September 1938, 1 Kirtland's warbler; 23 September 1941, 1 Kirtland's warbler; all at Rocky Mount, Edgecomb County, North Carolina. 1886, 1 Kirtland's warbler, in the "low country," South Carolina. 1888, 1 Kirtland's warbler, Chester, Chester County, South Carolina. 29 October 1903, 1 Kirtland's warbler, Charleston, Charleston County, South Carolina. 4 October 1910, 1 Kirtland's warbler, Charleston, South Carolina. 5 May 1925, 1 Kirtland's warbler, Gaffney, Cherokee County, South Carolina. 14 October 1949, 1 Kirtland's warbler, Eastover, Richland County, South Carolina. 1 September 1951, 1 Kirtland's warbler, Eastover, South Carolina. Briefly describes population status. Includes black-and-white drawing of bird. [31, 32–33].

Faver, A.R. 1967. Kirtland's warbler at Eastover, S.C. The Chat. 31(4): 98.

22 September 1967, 1 male Kirtland's warbler feeding in evergreen shrubbery in yard, Eastover, South Carolina. The bird did not use the dripping water birdbath. 14 October 1949, 1 Kirtland's warbler, Eastover, South Carolina. 1 September 1951, 1 Kirtland's warbler, Eastover, South Carolina.

Fazio, V.W., III. 1996. Ohio Bird Records Committee report. The Ohio Cardinal. 19: 14–15.

20 May 1995, 1 singing male Kirtland's warbler, Magee Marsh, Lucas County, Ohio. Initially accepted by Ohio Bird Records Committee on a 10-1 margin, then later rejected on a 4-7 margin. [14].

Fazio, V.W., III; Johnson, T. 2014. The spring migration: Eastern Highlands and Upper Ohio River Valley. North American Birds. 67(3): 437–441.

14–15 May 2013, 2–3 Kirtland's warblers, Magee Marsh, Lucas County, Ohio. [440].

Fazio, V.W., III; Johnson, T. 2016. Spring: Eastern Highlands and Upper Ohio Valley. North American Birds. 69(3/4): 385–389.

13 May 2015, 1 Kirtland's warbler, Oak Openings, Lucas County, Ohio. 17 May 2015, 1 Kirtland's warbler photographed, Highbanks Metro Park, Delaware County, Ohio. [389].

Fazio, V.W., III; Leidy, G.; Wiltraut, R. 2009. The spring migration: Eastern Highlands and Upper Ohio River Valley. North American Birds. 63: 425–429.

12 May 2009, 1 Kirtland's warbler, Adams County, Ohio. 16 May 2009, 1 Kirtland's warbler window strike, Cuyahoga County, Ohio. 17–18 May, 1 second-year male Kirtland's warbler, Magee Marsh, Ohio. 21 May 2009, 1 Kirtland's warbler, Lake County, Ohio. 21–22 May 2009, 1 Kirtland's warbler, Magee Marsh, Ohio. [428].

Fazio, V.W., III; Leidy, G.; Wiltraut, R. 2010a. The spring migration: Eastern Highlands and Upper Ohio River Valley. North American Birds. 64(3): 419–424.

14 May 2010, 1 singing male Kirtland's warbler, East Beach, Magee Marsh Wildlife Area, Lucas County, Ohio. 21 May 2010, 1 singing male Kirtland's warbler, East Beach, Magee Marsh Wildlife Area, Lucas County, Ohio. [423].

Fazio, V.W., III; Pulcinella, N. 2004. The spring migration: Eastern Highlands and Upper Ohio River Valley. North American Birds. 58(3): 364–369.

8 May 2004, 1 male Kirtland's warbler, Knox County, Ohio. 9 May 2004, 1 male Kirtland's warbler Erie County, Ohio. 16 May 2004, 1 male Kirtland's warbler, Cuyahoga County, Ohio. [368].

Fazio, V.W., III; Pulcinella, N. 2005a. The fall migration: Eastern Highlands and Upper Ohio River Valley. North American Birds. 59(1): 69–73.

25 September 2004, 1 Kirtland's warbler, Kirtland, Lake County, Ohio. [73].

Fazio, V.W., III; Wiltraut, R. 2005b. The spring migration: Eastern Highlands and Upper Ohio River Valley. North American Birds. 59(3): 429–433.

15–16 May 2005, 1 Kirtland's warbler, Magee Marsh Wildlife Area, Lucas County, Ohio. This bird was not a Kirtland's, but a magnolia warbler (Bruce Miller, pers. comm.). 23–25 May 2005, 1 female Kirtland's warbler photographed, Magee Marsh Wildlife Area, Lucas County, Ohio. Photograph included. [432, 433].

Fazio, V.W., III; Wiltraut, R. 2006. The spring migration: Eastern Highlands and Upper Ohio River Valley. North American Birds. 60(3): 372–375.

10 May 2006, 2 male Kirtland's warblers, Headlands (Beach State Park), Ohio. 22 May 2006, 1 female Kirtland's warbler, Headlands (Beach State Park), Ohio. 24 May 2006, 1 female Kirtland's warbler, Headlands (Beach State Park), Ohio. 21 May 2006, 1 Kirtland's warbler, Magee (Marsh Wildlife Area), Ohio. [375].

Fazio, V.W., III; Wiltraut, R. 2010b. The fall migration: Eastern Highlands and Upper Ohio River Valley region. North American Birds. 64(1): 70–75.

18 September 2009, 1 Kirtland's warbler, East Harbor State Park, Ottawa County, Ohio. [74].

Fazio, V.W., III; Wiltraut, R. 2013. Spring migration: March through May 2012: Eastern Highlands and Upper Ohio River Valley. *North American Birds*. 66(3): 478–483.

22 May 2012, 1 Kirtland's warbler, Erie County, Pennsylvania, fourth documented record for Pennsylvania. [482].

Fedak, J.; Fedak, L.; Fedak, D. 2001. Kirtland's warbler. *Pennsylvania Birds*. 15(2): 63.

12 May 2001, 1 singing male Kirtland's warbler, Piney Tract, Clarion County, Pennsylvania.

Fialkovich, M. 2003a. Birds of note—March through May 2003. *Pennsylvania Birds*. 17: 115–117.

18 May 2003, 1 Kirtland's Warbler, State Game Lands 273, Indiana County, Pennsylvania. [117].

Fialkovich, M. 2003b. Local notes—March through May 2003. *Pennsylvania Birds*. 17: 118–155.

18 May 2003, 1 singing male Kirtland's warbler, State Game Lands 273, Pennsylvania. [142].

Fialkovich, M. 2003c. Summary of the season—spring migration 2003. *Pennsylvania Birds*. 17(2): 114.

Spring 2003, 1 Kirtland's warbler, Indiana County, Pennsylvania.

Fleming, J.H. 1907. Birds of Toronto, Canada: part II, land birds. *The Auk*. 24: 71–89.

16 May 1900, 1 male Kirtland's warbler specimen, Toronto, Ontario. [84].

Fleming, J.H. 1913. Birds. In: Faull, J.H., ed. *The natural history of the Toronto region: Ontario, Canada*. Toronto: The Canadian Institute: 212–237.

Kirtland's warbler is listed as accidental with 1 record. [233].

Forbush, E.H. 1929. *Birds of Massachusetts and other New England states*. Norwood, MA: Norwood Press. Vol. 3.

26 May 1916, 1 male Kirtland's warbler, Roslindale, Massachusetts. [267].

Ford, E.R. 1956. *Birds of the Chicago region*. Chicago: The Chicago Academy of Sciences.

7 May 1894, 1 Kirtland's warbler specimen, DuPage County, Illinois, in the collection of S.S. Gregory, Jr., Winnetka. 21 May 1899, 1 Kirtland's warbler, Cook County, Illinois. 18 May 1934, 1 Kirtland's warbler, Jackson Park, Illinois. 12 May 1947, 6 sight records in hawthorns, on Salt Creek near LaGrange, Illinois. [77].

Ford, E.R.; Sanborn, C.C.; Coursen, C.B. 1934. *Birds of the Chicago region*. Chicago Academy of Science, Program of Activities. 5: 19–80.

7 May 1894, 1 Kirtland's warbler specimen, DuPage County, Illinois. 21 May 1899, 1 Kirtland's warbler specimen, Cook County, Illinois. 25 May 1918, 1 Kirtland's warbler, Tremont, Porter County, Indiana. 9 May 1924, 1 Kirtland's warbler, Tremont, Indiana. [63].

Frank, J. 2000. WSO Records Committee report—fall 1999. *The Passenger Pigeon*. 63(1): 135–142.

Reports on a Kirtland's warbler rare bird report submitted with a photograph for 19 September 1999. Concludes that photo fits a fall male magnolia warbler. [142].

Frank, J. 2003. WSO Records Committee report—fall 2002. *The Passenger Pigeon*. 65(1, 2): 106–115.

8 October 2002, 1 Kirtland's warbler bathing in a backyard cascade pool, Waukesha County, Wisconsin. Wisconsin's first fall record. Accepted by Wisconsin Society for Ornithology Records Committee (#2002-083). [113].

Frank, J. 2004. WSO Records Committee report: spring 2004. *The Passenger Pigeon*. 66(4): 435–442.

8 May 2004, 1 male Kirtland's warbler, Barron County, Wisconsin. Not accepted by Wisconsin Society for Ornithology Records Committee (#2004-030). [440].

Frey, E.S. 1943. Centennial checklist of the birds of Cumberland County, Pennsylvania, and her borders, 1840–1943. Lemoyne, PA: E.S. Frey.

Frey cites, with doubt, a Kirtland's warbler specimen from 25 June 1885 reported in Warren 1890. (The record proved to be a mistake. See Stone 1898.) [52–53].

Funkhouser, W.D. 1925. *Wildlife in Kentucky*. Frankfort, KY: The Kentucky Geological Survey.

Lists Kirtland's warbler records in Kentucky as 7–19 May, 28 September, Bowling Green (no years provided). Provides a brief description and considers Kirtland's as rare migrants. [281].

Galbraith, D.P. 1965. Possible Kirtland's warbler. *The Loon*. 37: 86–87.

13–16 May 1965, 1 male Kirtland's warbler, Minneapolis, Minnesota. Seen on the 13th and the 16th.

Ganier, A.F. 1933. A distributional list of the birds of Tennessee. Nashville, TN: Tennessee Department of Game and Fish.

Kirtland's warbler is listed as a very rare transient for Tennessee. [35].

Gault, B.T. 1894. Kirtland's warbler in northeastern Illinois. *The Auk*. 11: 258.

7 May 1894, 1 male Kirtland's warbler specimen taken in hazel bushes, Glen Ellyn, Illinois.

Gault, B.T. 1922. Check list of the birds of Illinois. Chicago: Illinois Audubon Society.

Lists definite Illinois spring records from Glen Ellyn, Du Page County; Winnebago County; and Morgan Park, Chicago. [74].

Genesee Ornithological Society. 1985. The birds of Monroe County, New York: annotated list. *Proceedings of the Rochester Academy of Science, Inc.* 16(1): 1–86.

Lists 5 records of Kirtland's warblers in Monroe County, New York: 18 May 1919; 14 September 1928; 9 May 1942; 20 September 1942; and 26–30 May 1943. [49].

Georgia Ornithological Society Checklist Committee. 1986. Annotated checklist of Georgia birds. *Georgia Ornithological Society Occasional Publications No. 10*.

12 May 1969, 1 Kirtland's warbler, Athens, Clarke County, Georgia. 17 October 1975, 1 Kirtland's warbler, Jekyll Island, Glynn County, Georgia. 7 September 1981, 1 Kirtland's warbler, Pendergrass, Jackson County, Georgia. Former status described as "probably rare" transient spring and fall new status is "accidental."

Gibbs, M. 1879. Annotated list of the birds of Michigan. Bulletin of the United States Geological and Geographical Survey. 5: 418–497.

Kirtland's warbler is described as a rare straggler. [484].

Gibbs, M. 1885. The birds of Michigan. Forest and Stream. 25: 4–5.

15 May 1875, 1 Kirtland's warbler specimen, Scio. 16 May 1879, 1 Kirtland's warbler specimen, Scio. 11 May 1883, 1 Kirtland's warbler specimen, Battle Creek. Considers Kirtland's warblers as an irregular straggler in Michigan's southern counties. [5].

Gibbs, M. 1898. Additions to the avifauna of Kalamazoo County, Michigan. Bulletin of the Michigan Ornithological Club. 2: 7.

Between 1885 and 1898, 1 Kirtland's warbler specimen, Kalamazoo County, Michigan.

Gilmer, A.K. 2010. Annual report of the Virginia Avian Records Committee. The Raven. 81(1): 30–33.

25 September 2007, 1 Kirtland's warbler, Grayson County, Virginia. Accepted by Virginia Avian Records Committee. [32].

Given, A.; Beaton, G.; Click, J.; Glover, L.; Harvey, S.; Hill, C.; McCullough, K.; Post, W.; Wagner, S. 2018. 2017 annual report of the South Carolina Bird Records Committee. The Chat. 82(3): 75–81.

17 October 2016, 1 Kirtland's warbler, Camden, Kershaw County, South Carolina, accepted by South Carolina Bird Records Committee. [80].

Given, A.; Beaton, G.; Click, J.; Glover, L.; Harvey, S.; Hill, C.; McCullough, K.; Pitts, I.; Wagner, S. 2020. 2019 annual report of the South Carolina Bird Records Committee. The Chat. 84: 73–77.

7 October 2019, 1 Kirtland's warbler, Fants Grove Wildlife Management Area, Charleston County, South Carolina, accepted by the South Carolina Bird Records Committee, third South Carolina record. [76].

Given, A.; Beaton, G.; Glover, L.; Harvey, S.; Hill, C.; McCullough, K.; Pitts, I.; Wagner, S. 2019. 2018 annual report of the South Carolina Bird Records Committee. The Chat. 83: 80–86.

5 September 2018, 1 Kirtland's warbler captured, banded, and photographed, Kiawah Island, Charleston County, South Carolina, accepted by the South Carolina Bird Records Committee. [85].

Glauser, K. Kirtland's warbler fuss. The Ohio Cardinal. 10(1): 35–36.

9 May 1987, 1 Kirtland's warbler feeding low in the trees, Crane Creek Bird Trail, Ohio.

Goetz, R.E. 1990. Third report of the Illinois Ornithological Records Committee. Illinois Birds and Birding. 6(1): 9–14.

26 September 1988, 1 Kirtland's warbler, Lincoln Park, Chicago, Cook, County, Illinois, accepted by Illinois Ornithological Records Committee (IORC) (1978.003). 21 September 1988, 1 Kirtland's warbler, Olive Park, Chicago, Cook County, Illinois, not accepted by IORC (1988.099). [11, 13].

Goodpaster, W. 1941. Birds of southwestern Ohio. Journal Cincinnati Society of Natural History. 22: 6–40.

May 1872, 1 Kirtland's warbler specimen, Avondale, Ohio. The specimen is in the Dury Collection. [30].

Goodwin, C.E. 1963. Worth noting. Ontario Naturalist. 1: 23–26.

1 June 1963, 1 Kirtland's warbler, Eastbourne, Ontario. [25, 26].

Goodwin, C.E. 1979. Birds last spring. Ontario Naturalist. 19(3): 44.

14–19 May 1979, 1 dingy male Kirtland's warbler, Point Pelee National Park, Ontario.

Goodwin, C.E. 1982. Regional reports: the autumn migration: August 1–November 30, 1981: Ontario region. American Birds. 36(2): 171–174.

9 September 1981, 1 Kirtland's warbler, Morton, Ontario. [174].

Gopalan, S. 2016. The spring season 2015. The Passenger Pigeon. 78(1): 69–127.

9 May 2015, 1 Kirtland's warbler, Bender Park, Milwaukee County, Wisconsin. Reported from the breeding area in Adams County by 15 May. [111].

Graber, J.W.; Graber, R.R.; Kirk, E.L. 1983. Illinois birds: wood warblers. Illinois Natural History Survey Biological Notes. 118: 80–81.

Lists and discusses the 15 Illinois Kirtland's warbler records.

Granlund, J. 1997. The spring migration: western Great Lakes region. Field Notes. 51: 871–874.

24 May 1997, 1 Kirtland's warbler, Shiawassee National Wildlife Refuge, Saginaw County, Michigan. 26 May 1997, 1 Kirtland's warbler, Bay City State Park, Bay County, Michigan. [874].

Granlund, J. 1998. The spring migration: March 1 to May 31, 1998: western Great Lakes region. Field Notes. 52(3): 331–334.

27 May 1998, 1 Kirtland's warbler, Vilas County, Wisconsin. 10 May 1998, 1 singing male Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan. [333].

Granlund, J. 2004. The spring migration: March through May 2004: western Great Lakes region. North American Birds. 58: 374–376.

8 May 2004, 1 Kirtland's warbler, Barron County, Wisconsin. [376].

Greene, E.R.; Griffin, W.W.; Odum, E.P.; Stoddard, H.L.; Tomkins, I.R.; Murphey, E.E. 1945. Birds of Georgia: a preliminary check-list and bibliography of Georgia ornithology. Athens, GA: University of Georgia Press.

12 April 1902, 1 female Kirtland's warbler specimen, Cumberland Island, Georgia. 16 April 1902, 1 Kirtland's warbler specimen, Camden County, Georgia. 14 April 1903, 1 female Kirtland's warbler specimen, Cumberland Island, Georgia. 27 April 1904, 1 male Kirtland's warbler specimen, Cumberland Island, Georgia. One Kirtland's warbler specimen, St. Mary's, Georgia, sent to Dr. LaPrade. [60].

Greene, J.C.; Janssen, R.B. 1975. Minnesota birds: where, when, and how many. Minneapolis: University of Minnesota Press.

13 May 1892, 1 Kirtland's warbler, Hennepin County, Minnesota. Kirtland's is described as accidental in Minnesota. [159].

Greene, M.A. 1997. Report of the Tennessee Bird Records Committee. The Migrant. 68(3): 94–95.

13 May 1997, 1 Kirtland's warbler, Eastern State Wildlife Area, Knox County, Tennessee, accepted by Tennessee Bird Records Committee. Second accepted record for the state. [95].

Greene, R.F. 1902. A successful collector. American Society of Curio Collectors Yearbook 1902: 64–65.

Biography of Willis W. Worthington and mentions that Worthington secured the sixth known Kirtland's warbler specimen taken in the United States. It was collected along the South Carolina coast between fall 1885 and June 1886. [64].

Greenlaw, J.S. 2014. Twenty-second report of the Florida Ornithological Society Records Committee: 2012. Florida Field Naturalist. 42(4): 153–171.

20–21 October 2011, 1 likely male Kirtland's warbler photographed, Richardson Historic Park and Nature Preserve, Wilton Manors, Broward County, Florida, accepted by Florida Ornithological Society Records Committee (2011-870). [164].

Greenlaw, J.S. 2015. Twenty-third report of the Florida Ornithological Society Records Committee: 2013. Florida Field Naturalist. 43(1): 19–36.

5 May 2013, 1 Kirtland's warbler, Moonshine Creek Trail, San Felasco Hammock State Preserve, Alachua County, Florida, accepted by Florida Ornithological Society Records Committee (2013-956). [31].

Greenlaw, J.S. 2016a. Twenty-fourth report of the Florida Ornithological Society Records Committee: 2014. Florida Field Naturalist. 44(1): 29–44.

19 April 2014, 1 female Kirtland's warbler photographed, Haulover Canal, Merritt Island National Wildlife Refuge, Brevard County, Florida, accepted by Florida Ornithological Society Records Committee (2014-1013). [39].

Greenlaw, J.S. 2016b. Twenty-fifth report of the Florida Ornithological Society Records Committee: 2015. Florida Field Naturalist. 44(3): 116–131.

7 May 2015, 1 Kirtland's warbler video-recorded, Lantana Nature Preserve, 206 North Atlantic Drive, South Palm Beach, Palm Beach County, Florida, accepted by Florida Ornithological Society Records Committee (2015-1073). [126].

Greenman, D. 1972. Wisconsin's eighth Kirtland's warbler. The Passenger Pigeon. 34: 40.

21 May 1971, 1 Kirtland's warbler in upper branches of oaks, Redgranite, Wisconsin.

Gregory, A.C. 1994. The third Pennsylvania May count May 14, 1994. Pennsylvania Birds. 8: 72–75.

14 May 1994, 1 Kirtland's warbler, Franklin County, Pennsylvania. [73].

Griscom, L. 1950. L. Griscom letter to J. Van Tyne.

9 September 1919, 1 Kirtland's warbler, 20 miles due west of St. Marks, Florida, just west of the western boundary of St. Marks Wildlife Refuge.

Gross, M.E. 1938. Kirtland's warbler on migration. The Jack-Pine Warbler. 16: 28–29.

22 May 1938, 3 Kirtland's warblers, at least 1 a singing male, in a tangle of vines and low trees, Ottawa Park (Ottawa County), Michigan.

Grveles, K.; Matteson, S.; Eichhorst, S.; Kreitinger, K. 2011. Protecting bird migration stopover habitat in the western Great Lakes.

States that in Wisconsin, Kirtland's warblers fall departure occurs in July and are a species of greatest conservation need. [11, 13, 77].

Guilford, H.M. 1893. *Dendroica kirtlandi* in Minnesota. The Auk. 10: 86.

13 May 1892, 1 male Kirtland's warbler specimen in hedge of small plum trees, near Minneapolis, Minnesota.

Gullion, G.W. 1964. A second probable Kirtland's warbler record for the Cloquet Forest Research Center. The Loon. 36: 106–107.

20 May 1964, 1 Kirtland's warbler foraging in an alder, Cloquet Forest Research Center, Minnesota. 18 July 1958, 1 Kirtland's warbler, Cloquet Forest Research Center, Minnesota.

Gunn, W.H.W. 1958. The spring migration: Ontario-Western New York. Audubon Field Notes. 12: 348–352.

16 May 1958, 1 Kirtland's warbler, Toronto, Ontario. [351].

Haas, F.; Haas, B. 1994a. Notes from the field. Pennsylvania Birds. 8: 99–104.

Spring 1994, 1 Kirtland's warbler, near Little Cove, Franklin County, Pennsylvania. [101].

Haas, F.; Haas, B. 1994b. Rare and unusual bird reports. Pennsylvania Birds. 8: 105–106.

14 May 1994, 1 Kirtland's warbler, near Little Cove, Franklin County, Pennsylvania. [106].

Haas, F.; Haas, B. 1994c. Summary of the season—April through June 1994. Pennsylvania Birds. 8: 97–98.

1 Kirtland's warbler, Franklin County, Pennsylvania. [98].

Haas, F.C. 2000. Birds of note—July through September 2000. Pennsylvania Birds. 14(3): 155–156.

26 August 2000, 1 Kirtland's warbler, Williams Township, Northampton County, Pennsylvania. [156].

Haas, F.C.; Haas, B.M. 1997. Birds of note—April through June 1997. Pennsylvania Birds. 11: 90.

14 May 1997, 1 Kirtland's warbler, Presque Isle State Park, Erie County, Pennsylvania.

Hall, G.A. 1972. The fall migration: Appalachian region. *American Birds*. 26(1): 62–66.

Fall 1971, 1 Kirtland's warbler banded, Powdermill Nature Reserve, Westmoreland County, Pennsylvania. [65].

Hall, G.A. 1975. The fall migration August 1–November 30, 1974: Appalachian region. *American Birds*. 29(1): 57–61.

21–22 September 1974, 1 Kirtland's warbler, Somerset County, Pennsylvania. [61].

Hall, G.A. 1981. The spring migration: March 1–May 31, 1981: Appalachian region. *American Birds*. 33(5): 822–825.

23 May 1981, 1 Kirtland's warbler, Allegheny County, Pennsylvania. First western Pennsylvania record. [824].

Hall, G.A. 1983. The spring migration: March 1–May 31, 1983: Appalachian region. *American Birds*. 37(5): 868–871.

17 May 1983, 1 Kirtland's warbler, near Boaz, West Virginia. [871].

Hall, G.A. 1990. The autumn migration: August 1–November 30, 1989: Appalachian region. *American Birds*. 44: 88–92.

1 October 1989, 1 Kirtland's warbler, Washington, Tennessee. [91].

Hall, G.A. 1991. The autumn migration: August 1–November 30, 1990: Appalachian region. *American Birds*. 45: 102–105.

5 October 1990, 1 Kirtland's warbler, near Blairsville, Union County, Georgia. [104].

Hall, G.A. 1994. The spring season: Appalachian region. *National Audubon Society Field Notes*. 48(3): 296–299.

7 and 9 May 1994, 1 Kirtland's warbler, Wise, Virginia, first spring record for Virginia. 14 May 1994, 1 Kirtland's warbler, Franklin County, Pennsylvania. [298].

Hall, G.A. 1995. The spring season: Appalachian region. *National Audubon Society Field Notes*. 49(3): 248–252.

10 May 1995, 1 Kirtland's warbler, near Wise, Virginia, attracted by playing taped song. 20 May 1995, 1 Kirtland's warbler, mile post 426.15, Blue Ridge Parkway, North Carolina. [252].

Hall, G.A. 1996. The autumn migration: Appalachian region. *National Audubon Society Field Notes*. 50(1): 50–55.

23 September 1995, 1 Kirtland's warbler, Blue Ridge Parkway, Alleghany County, North Carolina. [54].

Hall, G.A. 1997. The spring migration: Appalachian region. *Field Notes*. 51: 867–871.

14 May 1997, 1 Kirtland's warbler, Presque Isle State Park, Pennsylvania. 15 May 1997, 1 Kirtland's warbler, Cranberry Township, Butler County, Pennsylvania. [870].

Hannikman, R. 1977. Noteworthy records. *The Cleveland Bird Calendar*. 73(2): 17–21.

21 May 1977, 1 singing male Kirtland's warbler, North Chagrin Metropark, Cuyahoga County, Ohio. [20].

Hannikman, R. 2009. Sighting highlights. The Cleveland Bird Calendar. 105(2): 20–34.

21 May 2009, 1 Kirtland's warbler, a residence in North Perry bordering the Lakes Shore Reservation Metropark. [30].

Hanson, D. 1976. Just before placing the small bird in the trash... Audubon. 78: 140.

Fall 1975, 1 color-banded Kirtland's warbler found dead in Westwood, Ohio. The bird was banded as a nestling in Michigan in 1971 and color-banded there in 1973. This is the first time a banded Kirtland's had been found outside the Michigan breeding grounds. The bird was made into a study skin at the Cincinnati Museum.

Harger, E. 1965. Michigan bird survey, summer, 1964. The Jack-Pine Warbler. 43: 85–93.

13 June 1964, 12 singing male Kirtland's warblers, Kalkaska County. 16 June 1964, 1 Kirtland's warbler pair with nest and 5 eggs, Kalkaska County. 6 June 1964, 4 Kirtland's warblers, Oscoda County. [92].

Harlan, R. 1991. The Ohio Cardinal. 14(3): 12–26.

18 May 1990, 1 male Kirtland's warbler, Magee Marsh, Ohio. Accepted by Ohio Bird Records Committee. [26].

Harlan, R. 1994a. Ohio's earliest published spring warbler arrival dates. The Ohio Cardinal. 17: 85–87.

Gives Ohio's earliest Kirtland's warbler migration arrival date as 30 April 1975 in Seneca County.

Harlan, R. 1994b. The reports—spring 1994. The Ohio Cardinal. 17: 90–109.

15 May 1994, 1 probable female Kirtland's warbler, Chagrin River Metropark, Ohio. [103–104].

Harlan, R. 1995a. A brief history of Kirtland's warbler in Ohio. The Ohio Cardinal. 18(3): 81–83.

Gives an overview of Kirtland's warbler records in Ohio up to 1995. Discusses migration timing in Ohio, sightings by year and a breakdown by county.

Harlan, R. 1995b. The reports—spring 1995. The Ohio Cardinal. 18(3): 88–103.

21–22 May 1995, 1 female Kirtland's warbler, Magee Marsh Bird Trail, Ohio. [99].

Harlan, R. 2000. Further afield. The Ohio Cardinal. 23: 117–120.

13 May 2000, 1 female Kirtland's warbler banded, Navarre Marsh, Ohio. Author details his disagreement with the decision to bring the bird 8 miles to Magee Marsh to show it off, then take it back to release. [119–120].

Harrigan, M. 1994. Kirtland's warbler heard at Pt. Pelee. The Jack-Pine Warbler. 71(4): 5.

18 May 1994, 2 singing male Kirtland's warblers heard, Koperagon Conservation Reserve, Point Pelee, Ontario.

Hatcher, J. B. 1960. Rare Kirtland's warbler at Aiken, S.C. The Chat. 24: 102–103.

5 October 1960, 1 female Kirtland's warbler, Aiken, South Carolina.

Heath, S.A. 2002. Annual report of the Virginia Avian Records Committee. The Raven. 73(2): 59–62.

10 May 1995, 1 Kirtland's warbler, Wise County, Virginia, not accepted by Virginia Avian Records Committee (VARCOM). 8 May 2000, 1 Kirtland's warbler, Wise County, Virginia, not accepted by VARCOM. 3 September 2001, 1 Kirtland's warbler, Compton Mountain, Buchanan County, Virginia, circulating through VARCOM. [61, 62].

Heath, S.A. 2003. Annual report of the Virginia Avian Records Committee. The Raven. 74(1): 76–78.

3 September 2001, 1 Kirtland's warbler, Compton Mountain, Buchanan County, Virginia, rejected by Virginia Avian Records Committee. [77].

Helme, A.H. 1904. The Ipswich sparrow, Kirtland's warbler, and Sprague's pipit in Georgia. The Auk. 21: 291.

12 April 1902, 1 female Kirtland's warbler specimen, Cumberland Island, Georgia.

Hengeveld, J.D.; McMullen, K.A.; Williamson, G.A. 2006. The spring migration: Illinois and Indiana region. North American Birds. 60(3): 376–378.

23 May 2006, 1 male Kirtland's warbler photographed, Wilmette, Illinois. (For photographs, see American Birding Association. 2006.) [378].

Hengeveld, J.D.; McMullen, K.A.; Williamson, G.A. 2011. The spring migration: Illinois and Indiana. North American Birds. 65(3): 439–442.

14 May 2011, 1 Kirtland's warbler, Warren County, Illinois. [442].

Hengeveld, J.D.; McMullen, K.A.; Williamson, G.A. 2016. Spring: Illinois and Indiana. North American Birds. 69(3/4): 390–393.

16–17 May 2015, 1 singing male Kirtland's warbler photographed, Montrose, Illinois. [392].

Hengeveld, J.D.; McMullen, K.A.; Williamson, G.A. 2021a. Summer 2019: Illinois and Indiana. North American Birds. <https://wp.me/p8iY2g-9R8>.

19–20 September 2019, 1 Kirtland's warbler photographed, Lafayette, Tippecanoe County, Indiana. Indiana's third fall record. [9, 10].

Hengeveld, J.D.; McMullen, K.A.; Williamson, G.A. 2021b. Spring 2020: Illinois and Indiana. North American Birds. <https://wp.me/p8iY2g-ald>.

3 May 2020, 1 singing male Kirtland's warbler, Kosciusko County, Indiana third consecutive spring record. 18 May 2020, 1 Kirtland's warbler, Geneva, Kane County, Illinois, fourth record in the last 6 years. [11, 15].

Hengeveld, J.D.; McMullen, K.A.; Williamson, G.A. 2021c. Spring 2021: Illinois & Indiana. North American Birds. <https://wp.me/p8iY2g-ckl>.

17 May 2021, 1 singing male Kirtland's warbler, Dunes State Park, Indiana. 21 May 2021, 1 Kirtland's warbler, Cowles Bog, Porter County, Indiana. [11, 16].

Henninger, W. 1906. A preliminary list of the birds of Seneca County, Ohio. The Wilson Bulletin. 18(2): 47–60.

11 May 1906, 2 Kirtland's warblers walking on the ground and gleaning in low saplings, Seneca County, Ohio. [58].

Henninger, W.F.; Kuenning, G.A. 1907. All day with the birds. The Wilson Bulletin. 20: 96–98.

14 May 1908, 1 Kirtland's warbler, New Bremen, Ohio. [98].

Henninger, W.F. 1908. Bird notes from middle western Ohio. The Wilson Bulletin. 20: 208–210.

14 May 1908, 1 Kirtland's warbler, New Bremen, Ohio. The bird was "seen, but unfortunately could not be shot." [209].

Henninger, W.F. 1910. Personals: our members here and there. The Wilson Bulletin. 22: 127–128.

16 May 1909, 2 Kirtland's warbler specimens, Catawba, Ohio. One was deposited in the collection of N.A. Wood. (Date later reported as 15 May 1909 in Henninger 1912.) [128].

Henninger, W.F. 1912. Field notes: notes from the Tri-Reservoir region in Ohio. The Wilson Bulletin. 24(3): 155–156.

15 May 1909, 1 Kirtland's warbler specimen, Catawba Point, Ohio. Originally deposited in N.A. Wood's collection; now returned to W.F. Henninger's collection (date originally reported as 16 May 1909 in Henninger 1910).

Hibbard, S.; Aird, P.L. 1978. Records of the Kirtland's warbler in Canada.

Lists all known Kirtland's warbler records for Canada with authenticity ratings and provides a location map.

Hiemenz, N. 1965. Unusual Minnesota records: Kirtland's warbler. The Loon. 37: 52–53.

22 May 1944, 1 tail-wagging male Kirtland's warbler along the river, Tourist Park, St. Cloud, Minnesota.

Hiemenz, N. 1980. A 1944 record for the Kirtland's warbler. The Loon. 52: 112.

22 May 1944, 1 male Kirtland's warbler, St. Cloud, Stearns County, Minnesota.

Higbee, M. 2003. Kirtland's warbler Indiana County. Pennsylvania Birds. 17(2): 108–109.

18 May 2003, 1 singing male Kirtland's warbler, State Game Lands 273, Indiana County, Pennsylvania. Also lists other Pennsylvania records.

Hoffman, R. 1989. History of Kirtland's warbler found in Wisconsin. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 29–31.

Reports on the history and current (through 1988) status of Kirtland's warbler in Wisconsin. Describes Wisconsin's survey methods.

Hoffman, D. 2003a. Birds of note. Pennsylvania Birds 17(4): 281–282.

2–3 September 2003, 1 Kirtland's warbler, Northampton County, Pennsylvania. Second county record. [282].

Hoffman, D. 2003b. Local notes—August through November 2003. Pennsylvania Birds. 17: 283–313.

2–3 September 2003, 1 Kirtland's warbler, Northampton County, Pennsylvania. [308].

Hoffman, D. 2003c. Summary of the season—fall (August through November) 2003. Pennsylvania Birds. 17: 279–280.

2–3 September 2003, 1 Kirtland's warbler, Northampton County, Pennsylvania. [280].

Holden, B.R. 2014. Ontario Bird Records Committee report for 2013. Ontario Birds. 32(2): 54–81.

15 May 2013, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2013-028). 18 May 2013, 1 female Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2013-026). 18 May 2013, 1 male Kirtland's warbler photographed, Rondeau Provincial Park, Chatham-Kent County, Ontario, accepted by OBRC (2013-027). 4 September 2013, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC (2013-136). [73, 79].

Holden, B.R. 2018. Kirtland's warbler consuming ants during migration in Ontario. Michigan Birds and Natural History. 25(3): 172–174.

Documents the previously unreported Kirtland's warbler behavior of foraging on ants during migration.

Holder, M.L. 2002. The spring migration: Ontario. North American Birds. 56(3): 301–304.

14 May 2002, 1 female Kirtland's warbler, Sleepy Hollow, Ontario. 14 May 2002, 1 female or immature male Kirtland's warbler, East Beach, Point Pelee, Ontario. 19 May 2002, male Kirtland's warbler, DeLaurier Trail, Ontario. [303].

Holder, M.L. 2003. The spring migration: Ontario. North American Birds. 57(3): 340–342.

15 May 2003, 1 Kirtland's warbler, Breakwater, Long Point, Ontario, Long Point's second record. 17 May 2003, 1 Kirtland's warbler, Point Pelee, Ontario. [342].

Holder, M.L. 2004. The spring migration: Ontario. North American Birds. 58(3): 361–363.

11 May 2004, 1 adult male Kirtland's warbler, Point Pelee, Ontario. 17–19 May 2004, 1 immature male Kirtland's warbler, Point Pelee, Ontario. [363].

Holder, M.L. 2005. The spring migration 2005: Ontario. North American Birds. 59(4): 590–591.

9–14 May 2005, 1 Kirtland's warbler, Point Pelee, Ontario. 11–14 May 2005, 1 Kirtland's warbler, Point Pelee, Ontario. [591].

Holder, M.L. 2006. The spring migration: Ontario. North American Birds. 60(3): 369–371.

21 May 2006, 1 Kirtland's warbler, Point Pelee National Park, Ontario. [371].

Holder, M.L. 2008. The spring migration: Ontario. North American Birds. 62(3): 398–402.

15 May 2008, 1 male Kirtland's warbler, Point Pelee National Park, Essex County Ontario. 23 May 2008, 1 Kirtland's warbler, Mississagi Straits, Manitoulin County, Ontario. [401].

Howell, A.H. 1928. Birds of Alabama. 2nd ed. Montgomery, AL: Alabama Department of Game and Fisheries in cooperation with the U.S. Department of Agriculture, Bureau of Biological Survey.

10 May 1908, 1 Kirtland's warbler, Woodbine, Alabama. A brief description of general habits is also included. [305–306].

Howell, A.H. 1932. Florida Bird Life. New York: Coward-McCann and the Florida Department of Game and Fresh Water Fish in cooperation with the U.S. Department of Agriculture, Bureau of Biological Survey.

Provides a description of both adult male and female Kirtland's warblers and their range. Lists 5 Florida records through 1918. [406–407].

Hoxie, W. 1886. Kirtland's warbler on St. Helena Island, South Carolina. The Auk. 3: 412–413.

27 April 1886, 1 male Kirtland's warbler specimen, St. Helena Island, South Carolina. The specimen was deposited in the collection of W.W. Worthington, Shelter Island, New York. 3 May 1886, 3 Kirtland's warblers, at least 1 a singing male, St. Helena Island, South Carolina. Habitat and behavior for the May sightings are discussed.

Hoy, P.R. 1852. Notes on the ornithology of Wisconsin. Transactions of the Wisconsin State Agricultural Society. 2: 341–364.

20 May 1853 (actually 1852), 1 Kirtland's warbler, Racine, Wisconsin. [349].

Hurley, G.F. 1963. Field notes: the fall season: September 1 to November 30, 1962. The Redstart. 30(1): 24–34.

3 September 1962, 1 Kirtland's warbler, Dillon Dam, Ohio. [33].

Hussong, C. 1956. Kirtland's warbler in Door County. The Passenger Pigeon. 18: 122–123.

20 May 1956, 1 Kirtland's warbler in a strip of vegetation between a road and the shore, near Fairland, Wisconsin (25 miles northeast of Green Bay).

Hutton, E., Jr. 1984. The origin of migration of some bird species. The Redstart. 51(3): 99–102.

Speculates on the migration of the Kirtland's warbler during the present and the Pleistocene.

Iliff, M. 1996. The autumn migration: mid-Atlantic region. National Audubon Society Field Notes. 50(1): 32–35.

24 September 1995, 1 Kirtland's warbler, Hog Island Wildlife Management Area, Virginia, fourth Virginia record and first for the Coastal Plain. [35].

Iliff, M.J. 1999. The fall migration: middle Atlantic Coast region. North American Birds. 53(1): 39–43.

27–28 September 1998, 1 Kirtland's warbler, Curles Neck Farm, Virginia. [39, 42].

Iliff, M.J.; Sullivan, B.L.; Wood, C.L. 2011. The changing seasons: The eBird era. *North American Birds*. 65(3): 394–405.

Notes that Kirtland's warblers, whose population is increasing, turned up as migrants in spring 2011 with 1 in Indiana, 2 in Ohio, and 12 in Ontario. [395].

Imhof, T.A. 1954. When do birds occur at Birmingham. *Alabama Bird Life*. 2(3–4): 25–32.

7 May 1936, 1 Kirtland's warbler, Municipal Airport, Birmingham, Jefferson County, Alabama. Considers Kirtland's as a casual spring migrant. [31].

Imhof, T.A. 1956. Present status of the Alabama bird list. *Alabama Bird Life*. 4(3–4): 24–26.

Kirtland's warbler is described as hypothetical in Alabama. [26].

Imhof, T.A. 1962. *Alabama birds*. Montgomery, AL: The University of Alabama Press.

7 May 1936, 1 female Kirtland's warbler, Municipal Airport, Birmingham, Jefferson County, Alabama. 10 May 1908, 1 Kirtland's warbler, Woodbine, Coosa County, Alabama. [474–475, pl. 33].

Imhof, T.A. 1971. Official list of the birds of Alabama. *Alabama Bird Life*. 19: 7–14.

Kirtland's warbler is described as hypothetical in Alabama. Three Kirtland's are listed, 7 May, 10 May, and 5 October. [13].

Imhof, T.A. 1976. *Alabama birds*. 2nd ed. Montgomery, AL: The University of Alabama Press.

7 May 1936, 1 female Kirtland's warbler, Birmingham, Jefferson County, Alabama. 5 October 1966, 1 Kirtland's warbler, Jacksonville, Calhoun County, Alabama. 10 May, 1 Kirtland's warbler, Woodbine, Coosa County, Alabama. Describes Kirtland's as casual on migration in Alabama. [355–356, pl. 33].

James, D. 1968. The fall migration: central southern region. *Audubon Field Notes*. 22: 50–54.

5 October 1966, 1 Kirtland's warbler, Jacksonville, Calhoun County, Alabama, third report for the state and the first for fall. [53].

James, R.D. 1983. Ontario Bird Records Committee report for 1982. *Ontario Birds*. 1: 7–15.

14 May 1982, 1 male Kirtland's warbler, Rondeau Provincial Park, Ontario, accepted by Ontario Bird Records Committee. [13].

James, R.D. 1991. Annotated checklist of the birds of Ontario. 2nd ed. Toronto: Royal Ontario Museum, Life Sciences Miscellaneous Publications.

Updates James et al. 1976 with the addition of 1 accepted Kirtland's warbler breeding record. All other information is the same. [70].

James, R.D.; McLaren, P.L.; Barlow, J.C. 1976. Annotated checklist of the birds of Ontario. Toronto: Royal Ontario Museum, Life Sciences Miscellaneous Publications.

Kirtland's warbler is noted as a former summer resident, currently a very rare migrant in the south. Dates in Ontario are given as 10 May–12 July and 9 August–2 October, with 3 specimens and over a dozen sight records. [45].

Janssen, R.B. 1987. Birds in Minnesota. Minneapolis: University of Minnesota Press.

13 May 1982 (actually 1892), 1 Kirtland's warbler specimen (MMNH #5724), Hennepin County, Minnesota. 22 May 1944, 1 Kirtland's warbler, St. Cloud, Stearns County, Minnesota. [271–272].

Janssen, R.B.; Hertz, A.X. 1996. County occurrences of Minnesota birds. Minnesota Ornithologists' Union Occasional Papers No. 1. Minneapolis: The Minnesota Ornithologists' Union.

Kirtland's warbler is listed in Minnesota for Hennepin and Stearns Counties. [7].

Jasper, T. 1881. Studer's popular ornithology. The birds of North America. New York and Columbus, OH: Jacob H. Studer and Co. Vol. 1.

May 1851, 1 Kirtland's warbler specimen, near Cleveland, Ohio. 9 July (actually June) 1860, 1 Kirtland's warbler specimen, near Cleveland, Ohio, in the collection of R.K. Winslow. No date: 1 Kirtland's warbler specimen, at sea between the islands of Cuba and Abaco. [172].

Jenness, P.M. 1925. Kirtland's warbler in North Carolina. Bird-Lore. 27: 252–253.

5 May 1925, 1 singing male and 1 female Kirtland's warblers, Irene Mills Park, Gaffney, South Carolina. Discusses 4 other published records from South Carolina. States that Kirtland's warbler has not been recorded from North Carolina (despite the title).

Johnson, D.B.; Clyne, P.R.; Deaton, M.F. 1998. Fourth report of the Illinois Ornithological Records Committee. Meadowlark. 7(2): 50–65.

12 May 1996, 1 Kirtland's warbler, Schiller Woods Forest Preserve, Cook County, Illinois. Not accepted by Illinois Ornithological Records Committee (IORC) (1996.035). 13–15 September 1996, 1 first fall male color-banded Kirtland's warbler, Montrose Harbor, Chicago, Cook County, Illinois, accepted by IORC (1996.063). Color-bands indicate bird was banded as a hatching year male on 15 August 1996 in Ogemaw County, Michigan. [60, 64].

Johnson, D.B.; Stotz, D.F. 1999. Fifth report of the Illinois Ornithological Records Committee. The Meadowlark. 8(2): 53–62.

14 May 1997, 1 Kirtland's warbler, West DuPage Woods, DuPage County, Illinois, not accepted by Illinois Ornithological Records Committee (1997.021). [61].

Jones, L. 1895. Record of the work of the Wilson Chapter for 1893 and 1894 on the Mniotiltidae. The Wilson Bulletin. 7: 1–21.

7 May 1894, 1 Kirtland's warbler specimen, Glen Ellyn, Illinois, first state record. 25 May 1894, 1 Kirtland's warbler specimen, Winnebago County, Illinois, second state record. [14, 20].

Jones, L. 1900. Kirtland's warbler (*Dendroica kirtlandi*) at Oberlin, Ohio. The Wilson Bulletin. 12(3): 1–2.

7 and 9 May 1900, 1 singing male Kirtland's warbler specimen in an orchard, Oberlin, Ohio, just outside the city limits. The bird was seen and heard on both days and taken as a specimen on 9 May. The author thinks they were 2 different birds. 9 May 1900, 1 Kirtland's warbler song record, "South Woods," 1 mile south of Oberlin, Ohio. Also provides a detailed song description.

Jones, L. 1902. Kirtland's warbler (*Dendroica kirtlandi*) again in Ohio. The Wilson Bulletin. 14: 104–105.

28 August 1902, 1 singing male Kirtland's warbler, in Ohio opposite Ashland, Kentucky. 28 August

1902, 1 Kirtland's warbler, in Ohio opposite Ashland, Kentucky. Both birds were chasing each other in low willow and locust trees. (Jones 1903 gives these birds as specimens taken.)

Jones, L. 1903a. Additional records of Ohio birds. *The Ohio Naturalist*. 4(5): 112–113.

3 May 1878, 1 Kirtland's warbler specimen. Taken by A. Hall, not W. and J. Hall as previously reported. [112].

Jones, L. 1903b. The birds of Ohio: a revised catalog. *Ohio State Academy of Science Special Papers* No. 6.

13 May 1851, 1 Kirtland's warbler type specimen, near Cleveland, Cuyahoga County, Ohio. June (May?) 1860, 1 Kirtland's warbler specimen, near Cleveland, Hamilton County, Ohio. First week in May 1872, 1 Kirtland's warbler specimen, Cincinnati, Ohio. May 1878, 1 Kirtland's warbler specimen, Rockport, Cuyahoga County, Ohio. 4 May 1880, 1 Kirtland's warbler specimen, Cleveland, Ohio. 12 May 1880, 1 Kirtland's warbler specimen, Cleveland, Ohio. 1891, 1 Kirtland's warbler specimen, Springfield, Clark County, Ohio. 11 May 1900, 1 Kirtland's warbler specimen, Oberlin, Lorain County, Ohio (most likely the bird taken 9 May 1900 (Jones 1900)). 28 August 1902, 2 Kirtland's warbler specimens, near Ironton, Lawrence County, Ohio. [185].

Jones, L. 1904a. Oberlin all day with the birds. 1904. *The Wilson Bulletin*. 16: 43–50.

9 May 1904, 1 male Kirtland's warbler, Oak Point, Oberlin, Ohio. [45–46, 50].

Jones, L. 1904b. Spring migration in Lorain County, O., 1904. *The Wilson Bulletin*. 16: 55–57.

Spring 1904, 1 Kirtland's warbler, Lorain County, Ohio, second county record. [57].

Jones, L. 1906a. Nineteen years of bird migration at Oberlin, Ohio. *The Wilson Bulletin*. 26: 198–205.

Gives the median first spring migration date for Kirtland's warblers as 6 May, based on 3 records. The earliest spring date was 2 May 1906. [203].

Jones, L. 1906b. Some noteworthy Lorain County records for 1906. *The Wilson Bulletin*. 18: 74–75.

2 May 1906, 1 male Kirtland's warbler, Lorain County, Ohio, third county record. [75].

Jones, L. 1906c. The birds of Cleveland, Ohio, and vicinity. *The Wilson Bulletin*. 18: 110–120.

14 October 1886, 1 Kirtland's warbler found under an electric light mast, Cleveland, Ohio. Reports 2 Kirtland's taken at Lakeland, Ohio, in the past 5 years. Theorizes that the Kirtland's warbler migrates through the Muskingum and Cuyahoga Valleys. [112, 118–119].

Jones, L. 1910. The birds of Cedar Point and vicinity. *The Wilson Bulletin*. 22: 97–115.

9 May 1900, 1 singing male Kirtland's warbler in an orchard. 11 May 1900, 1 singing male Kirtland's warbler in the "South Woods." 11 May 1900, singing male Kirtland's warbler specimen in an orchard (same location as 9 May bird). 2 May 1906, 1 singing male Kirtland's warbler. All records were from the Oberlin quadrangle of Ohio. (The dates of the 9 May 1900 singing male and 11 May 1900 singing male specimen from the orchard are given as 7 and 9 May 1900, respectively, in Jones 1900.) 9 May 1904, 1 singing male Kirtland's warbler, Oak Point. 2 May 1906, 1 singing male Kirtland's warbler, "South Woods." Jones states that he expects to find Kirtland's on the Cedar Point sand spit but so far has not. [114].

Jones, L. 1917. A season of abundance of birds in central Ohio. *The Wilson Bulletin*. 29: 166.

21–23 May 1917, 1 Kirtland's warbler, Columbus, Ohio.

Kain, T., ed. 1987. *Virginia's birdlife: an annotated checklist*. 2nd ed. The Virginia Society of Ornithology, Inc.

25 September 1887, 1 Kirtland's warbler specimen, Fort Myer, Virginia. 2 October 1887, 1 Kirtland's warbler, Fort Myer, Virginia. 1 September 1974, 1 Kirtland's warbler, Kerr Reservoir, Virginia. Kirtland's warblers are considered accidental in Virginia. [98].

Kain, T. 1990. Documentation of rare species in Virginia. *The Raven*. 61: 82–84.

Kirtland's warbler is listed as having 3 accepted records in Virginia. [84].

Kain, T. 1995. 1995 report of the VSO Records Committee. *The Raven*. 66: 95–99.

7–9 May 1994, 1 singing male Kirtland's warbler, Wise County, Virginia, accepted by Virginia Society of Ornithology Records Committee (VSORC). 16 May 1992, 1 Kirtland's warbler, Shenandoah National Park, Virginia, under evaluation by VSORC. [96, 99].

Kain, T. 1996. 1996 report of the Virginia Avian Records Committee. *The Raven*. 67: 101–106.

16 May 1992, 1 Kirtland's warbler, Shenandoah National Park, Virginia, rejected by Virginia Avian Records Committee (VARCOM). 24 September 1995, 1 Kirtland's warbler, Hog Island Wildlife Management Area, Virginia, under evaluation by VARCOM. [105, 106].

Kain, T. 1998. 1997 report of the Virginia Avian Records Committee. *The Raven*. 69: 46–52.

24 September 1995, 1 Kirtland's warbler, Hog Island Wildlife Management Area, Surry County, Virginia, rejected by Virginia Avian Records Committee (VARCOM). 30 September 1996, 1 Kirtland's warbler, Arlington County, Virginia, rejected by VARCOM. [51].

Kale, H.W., II. 1982. The spring migration: Florida region. *American Birds*. 36: 843–846.

29 April 1982, 1 male Kirtland's warbler, Hypoluxo Island, Florida.

Kalwasinski, M. 2019. The 2018 IAS Big May Day Bird Count. *Indiana Audubon Quarterly*. 97(1): 20–27.

12 May 2018, 1 Kirtland's warbler, Elkhart County, Indiana. [20, 27].

Kalwasinski, M. 2020. 2019 Indiana Audubon May Day Bird Count. *Indiana Audubon Quarterly*. 98(1): 15–21.

11 May 2019, 1 Kirtland's warbler, Porter County, Indiana. [15, 21].

Kashian, D.M.; Barnes, B.V.; Walker, W.S. 2003. Ecological species groups of land-form level ecosystems dominated by jack pine in northern Lower Michigan. *Plant Ecology*. 166: 75–91.

Eight ecological species groups of ground flora were developed in ecosystems dominated by jack pine formerly or currently occupied by Kirtland's warblers in northern Lower Michigan. These species groups may be used in part to determine upon which landforms jack pine will grow slowest and will be occupied longer by Kirtland's.

Kassebaum, D. 2006. Kirtland's warbler records for Illinois. <http://bh2.htc.net/~kdan/kirtlandswarbler.htm>.

Provides records and sources for Illinois Kirtland's warbler occurrences. (URL link is broken.)

Keller, R. 1996. Local notes: Berks County. Pennsylvania Birds. 10: 161.

5 September 1996, 1 Kirtland's warbler, near Reading, Berks County, Pennsylvania.

Kelley, A.H. 1966. Michigan bird survey, fall 1965. The Jack-Pine Warbler. 44(1): 30–35.

24 September 1965, 1 immature male Kirtland's warbler banded, Bloomfield Hills, Oakland County, Michigan. [30, 34].

Kelley, A.H. 1969. Michigan bird survey, spring 1969. The Jack-Pine Warbler. 47(3): 91–98.

10 May 1969, 1 Kirtland's warbler "pair" sighted, Erie Game Area, Monroe County, Michigan. [91, 96].

Kelley, A.H. 1974. Michigan bird survey, fall 1973. The Jack-Pine Warbler. 52(1): 33–43.

7 August 1973, 1 immature Kirtland's warbler, Davisburg, Oakland County, Michigan. [40].

Kelley, A.H. 1978. Birds of southeastern Michigan and southern Ontario. Bulletin no. 57. Bloomfield Hills, MI: Cranbrook Institute of Science.

10 May 1953, 1 male Kirtland's warbler, Point Pelee, Ontario. 10 May 1959, 1 Kirtland's warbler banded, Point Pelee, Ontario. 24 September 1965, 1 immature male Kirtland's warbler banded and photographed, Cranbrook Institute, Oakland County, Michigan. 7 August 1973, 1 Kirtland's warbler, near Davisburg, Oakland County, Michigan. [74].

Kelley, A.H. 1983. Birds of S.E. Michigan and S.W. Ontario: notes on the years 1975–1981. The Jack-Pine Warbler. 61(1): 3–12.

Updates Kelley 1978 for the years 1975–1981. 14 to 19 May 1979, 1 Kirtland's warbler, Point Pelee. [11].

Kelley, A.H.; Middleton, D.S.; Nickell, W.P.; Detroit Audubon Society Bird Survey Committee. 1963. Birds of the Detroit-Windsor area: a ten-year survey. Cranbrook Institute of Science Bulletin 45.

10 May 1953, 1 singing male Kirtland's warbler, Point Pelee National Park, Essex County, Ontario. 10 May 1959, 1 male Kirtland's warbler banded, Point Pelee National Park, Essex County, Ontario. [87].

Kells, W.L. 1901. Two warblers new to Canada. The Ottawa Naturalist. 14: 230–234.

16 May 1900, 1 male Kirtland's warbler specimen, Toronto, Ontario. Provides a brief background and physical description. [230–231].

Kemp, T. 2005. Recent actions of the Ohio Bird Records Committee. The Ohio Cardinal. 28(3): 129–131.

16 May 2004, 1 Kirtland's warbler, Cuyahoga County, Ohio, accepted by the Ohio Bird Records Committee (OBRC). 8 May 2004, 1 Kirtland's warbler, Knox County, Ohio, accepted by OBRC. 25 September 2004, 1 Kirtland's warbler, Lake County, Ohio, accepted by OBRC. 30 April 2005, 1 Kirtland's warbler, Adams County, Ohio. 16 May 2005, 1 Kirtland's warbler, Magee Marsh, Ohio. 25 May 2005, 1 Kirtland's warbler, Magee Marsh, Ohio. [130, 131].

Kemper, C. 1977. A comparison of Iowa and Wisconsin checklists. *The Passenger Pigeon*. 39: 345–346.

Reports 7 Wisconsin Kirtland's records with no specimens or photographs. [346].

Kemsies, E.; Randle, W. 1953. *Birds of southwestern Ohio*. Ann Arbor, MI: Edwards Brothers, Inc.

May 1872, 1 Kirtland's warbler specimen, Avondale, Ohio. The specimen is housed in the Cincinnati Society of Natural History collection. [46].

Kenaga, E.E. 1959. Michigan bird survey, spring, 1959. *The Jack-Pine Warbler*. 37(4): 152–158.

11 May 1959, 1 Kirtland's warbler, Grand Beach, Berrien County, Michigan. 22 May 1959, 1 Kirtland's warbler, Grayling, Crawford County, Michigan. 28 May 1959, 1 Kirtland's warbler, Kalkaska County, Michigan. [152, 157].

Kenaga, E.E. 1960. Michigan bird survey, spring, 1960. *The Jack-Pine Warbler*. 38(4): 148–154.

21 May 1960, 12 Kirtland's warblers, Clear Lake, Montmorency County, Michigan. 22 May 1960, 6 singing male Kirtland's warblers, Grayling, Crawford County, Michigan. 27 May 1960, 1 Kirtland's warbler banded, Grand Beach, Berrien County, Michigan. 28 May 1960, 3 Kirtland's warblers, Oscoda, Iosco County, Michigan. [150, 152].

Kendall, J. 2011. Field notes—spring 2011. *Indiana Audubon Quarterly*. 89(3): 5–17.

14 May 2011, 1 Kirtland's warbler, Indiana. Indiana's first record in 5 years and eleventh overall. [16].

Keyser, L.S. 1891. *Bird-dom*. Boston, MA: D. Lothrop Company.

Pre-1891, 1 singing male Kirtland's warbler, Springfield, Clark County, Ohio. [63–65].

Kirkpatrick, J. 1860. Kirtland's warbler. *Ohio Farmer*. 9, no. 9 June 1860 (1860): 179

Late spring 1860, 1 female Kirtland's warbler specimen, Cleveland, Ohio. The specimen was given to R. K. Winslow and subsequently lost; see Wheaton 1882 for a complete quote of the article.

Kirkwood, F.C. 1895. A list of the birds of Maryland. *Transactions of the Maryland Academy of Sciences*. 1: 241–381.

25 September 1887, 1 Kirtland's warbler specimen, Fort Myer, Virginia. No Maryland records are included. [356].

Kleen, V.M. 1975. The spring migration: middlewestern prairie region. *American Birds*. 29: 858–862.

30 April 1975, 1 Kirtland's warbler photographed, Tiffin, Ohio. [861].

Kleen, V.M. 1976. The fall migration: middlewestern prairie region. *American Birds*. 30: 77–82.

27 September 1975, 1 banded Kirtland's warbler, Cincinnati, Ohio. A brief life history of the bird is given. Apparently the first recovery of a banded Kirtland's outside of Michigan. [78, 80].

Kleen, V.M. 1979. The spring migration: middlewestern prairie region. American Birds. 33: 775–778.

26 September 1978, 1 Kirtland's warbler, Chicago, Illinois. 10 May 1979, 1 Kirtland's warbler, Chicago, Illinois. [778].

Kleen, V.M. 1980. The spring migration: middlewestern prairie region. American Birds. 34: 781–785.

21 May 1980, 1 female Kirtland's warbler banded and photographed, Magee Marsh Wildlife Area, Ohio. [784].

Klonick, A.S. 1952. Summary of summer resident and early fall migration in New York State. The Kingbird. 2: 65.

Early September 1952, 1 singing male Kirtland's warbler, Montezuma National Wildlife Refuge, Seneca County, New York.

Knight, R.L. 1993. Report of the Tennessee Bird Records Committee. The Migrant. 64(3): 53–57.

1 October 1989, 1 Kirtland's warbler, Jonesborough, Washington County, Tennessee, not accepted by Tennessee Bird Records Committee (TBRC). 8 October 1989, 1 Kirtland's warbler, Chattanooga, Hamilton County, Tennessee, not accepted by TBRC. [56].

Knight, R.L. 1998. The official list of Tennessee birds 1998 update. The Migrant. 69(1): 7–12.

Kirtland's warbler is listed as a provincial species. [11].

Koes, R.F.; Taylor, P. 1998. The spring migration: prairie provinces region. Field Notes. 52(3): 345–347.

16 May 1998, 1 Kirtland's warbler, Delta, Manitoba. [346].

Kratter, A. 2007. FOS Records Committee secretary's report.

29 October 2006, 1 adult male Kirtland's warbler, Lake Kissimmee State Park, Polk County, Florida, not accepted by Florida Ornithological Society Records Committee (FOSRC) (06-616). 10 May 2005, 1 female Kirtland's warbler photographed, Fort De Soto County Park, Pinellas County, Florida, accepted by FOSRC (07-642). 10–12 May 2007, 1 female Kirtland's warbler photographed, Sebastian Inlet State Park, Indian River County, Florida, accepted by FOSRC (07-648). [1, 6, 8].

Kratter, A. 2008. FOS Records Committee minutes 19 January 2008 meeting.

11 October 2007, 1 Kirtland's warbler, 117 Pinion Circle, Ormond Beach, Volusia County, Florida, not accepted by Florida Ornithological Society Records Committee (07-651). [5–6].

Kratter, A. 2009. FOS Records Committee minutes 15 August 2009 meeting.

24 April 2009, 1 color-banded male Kirtland's warbler, Lori Wilson Park, Brevard County, Florida. The bird was banded in Oscoda County, Michigan, in the summer of 2008. Florida Ornithological Society Records Committee (09-737).

Kratter, A. 2018. Twenty-sixth report of the Florida Ornithological Society Records Committee: 2016. Florida Field Naturalist. 46(1): 8–28.

27 April 2016, 1 Kirtland's warbler photographed, New Smyrna Beach, Volusia County, Florida. Mentions 10 spring Florida occurrences (19 April–10 May) and 2 fall occurrences (16 and 20 October). [21].

Kratter, A.W. 2008. Seventeenth report of the Florida Ornithological Society Records Committee: 2007. Florida Field Naturalist. 36(4): 94–111.

10 May 2005, 1 female Kirtland's warbler photographed, Fort De Soto Park, Pinellas County, Florida, accepted by Florida Ornithological Society Records Committee (FOSRC) (07-642). 10–12 May 2007, 1 female Kirtland's warbler photographed, Sebastian Inlet State Park, Indian River County, Florida, accepted by FOSRC (07-648). 29 October 2006, 1 adult male Kirtland's warbler, Lake Kissimmee State Park, Polk County, Florida, not accepted by FOSRC (06-616). [102, 106–107].

Kratter, A.W. 2010a. Nineteenth report of the Florida Ornithological Society Records Committee: 2009. Florida Field Naturalist. 38(4): 150–174.

24 April 2009, 1 color-banded male Kirtland's warbler, Lori Wilson Park, Brevard County, Florida. The bird was banded in Oscoda County, Michigan, in the summer of 2008. Florida Ornithological Society Records Committee 09-737. [162].

Kratter, A.W. 2010b. Eighteenth report of the Florida Ornithological Society Records Committee: 2008. Florida Field Naturalist. 38(1): 15–31.

11 October 2007, 1 Kirtland's warbler, Ormond Beach, Volusia County, Florida, not accepted by Florida Ornithological Society Records Committee (07-651). [28].

Kratter, A.W. 2012. Twenty-first report of the Florida Ornithological Society Records Committee: 2011. Florida Field Naturalist. 40(3): 85–100.

14 February 2011, 1 Kirtland's warbler, Corkscrew Swamp Sanctuary, Collier County, Florida, not accepted by Florida Ornithological Society Records Committee (2011-860). [96].

Kratter, A.W. 2018. Twenty-seventh report of the Florida Ornithological Society Records Committee: 2016–2017. Florida Field Naturalist. 46(4): 96–117.

11–17 February 2017, 1 Kirtland's warbler photographed, Bill Baggs Cape Florida State Park, Miami-Dade County, Florida, Florida Ornithological Society Records Committee (FOSRC) (2017-1216). Likely the first Kirtland's to overwinter in the United States. 8 May 2017, 1 Kirtland's warbler photographed, Maritime Hammock Sanctuary, Brevard County, Florida, accepted by FOSRC (2017-1237). Also mentions 1 Kirtland's warbler specimen from Palm Beach County, Florida, collected in April 1896. [110].

Kratter, A.W. 2019. Twenty-eighth report of the Florida Ornithological Society Records Committee: 2017–2018. Florida Field Naturalist. 47(2): 60–81.

24 October 2018, 1 Kirtland's warbler photographed, Sebastian Inlet State Park, Indian River County, Florida. Accepted by Florida Ornithological Society Records Committee (FOSRC) (#2018-1279). Provides a summary of Florida accepted records. 7 May 2018, 1 Kirtland's warbler, Ocean Bay Riverside Park, St. Lucie County, Florida. FOSRC (#2018-1311) considers this record to be unresolved, despite 5 of the 7 members voting to accept the record. [74, 79].

Kress, S.W. 1968. Field observations of the Wheaton Club. Wheaton Club Bulletin. 13: 61.

21 May 1967, 1 Kirtland's warbler, Magee Marsh, Ohio.

Kumlien, L.; Hollister, N. 1903. Birds of Wisconsin. Bulletin Wisconsin Natural History Society. 3: 1–143.

20 May 1853, 1 Kirtland's warbler, Racine, Wisconsin. 24 May 1893, 1 Kirtland's warbler, Lake Koshkonong, Wisconsin. Kirtland's warbler is included on the hypothetical list for Wisconsin. [133–134].

Kumlien, L.; Hollister, N. 1951. Birds of Wisconsin. Madison, WI: Wisconsin Society for Ornithology, Inc.

20 May 1853, 1 Kirtland's warbler, Racine, Wisconsin. 24 May 1893, 1 male Kirtland's warbler was shot and wounded in a willowy marsh, then escaped from hands, near Lake Koshkonong, Wisconsin. 19 May 1917, 1 Kirtland's warbler, Madison, Wisconsin. May 1941 (Barger 1941), 1 Kirtland's warbler, Appleton, Wisconsin. 23 May 1946, 1 Kirtland's warbler, Rhinelander, Wisconsin. [117–118].

Langdon, F.W. 1877. A catalogue of the birds of the vicinity of Cincinnati with notes. Salem, MA: The Naturalist's Agency.

1 Kirtland's warbler, Avondale, Ohio. [6].

Langdon, F.W. 1879. A revised list of Cincinnati birds. The Journal of the Cincinnati Society of Natural History. 1: 167–193.

May 1872, 1 Kirtland's warbler specimen, Avondale, Ohio, in the collection of Mr. Dury. [172].

Langdon, F.W. 1880. Ornithological field notes, with five additions to the Cincinnati avifauna. The Journal of the Cincinnati Society of Natural History. 3: 121–127.

4 May 1880, 1 male Kirtland's warbler specimen, near Cleveland, Ohio. 12 May 1880, 1 female Kirtland's warbler specimen, near Cleveland, Ohio. (Smithsonian National Museum of Natural History gives 4 May 1880 as a female, which would indicate that the 12 May bird is the male.)

Langille, J.H. 1884. Our birds in their haunts: a popular treatise on the birds of eastern North America. Boston, MA: S.E. Cassino and Company.

Provides a description of male and female Kirtland's warblers. Mentions that 5 specimens have been taken in Ohio, 2 near Ann Arbor, Michigan, and 1 at sea near The Bahamas. [593].

Langille, J.H. 1892. Our birds in their haunts: a popular treatise on the birds of eastern North America. New York: Orange Judd.

Provides a description of male and female Kirtland's warblers. Mentions that 5 specimens have been taken in Ohio, 2 near Ann Arbor, Michigan, and 1 at sea near The Bahamas. [593].

Langlois, T.; Langlois, M. 1964. Annotated list of birds of South Bass Island, Lake Erie. Wheaton Club Bulletin. 9: 46.

Kirtland's warbler listed as a spring and fall migrant on South Bass Island. [46].

Langridge, H.P. 1993. Regional reports: spring season: Florida region. American Birds. 47: 406–408.

22 April 1993, 1 Kirtland's warbler, barrier island in Indian River County, Florida. About the sixteenth Florida report. [407].

Langridge, H.P.; Hunter, G. 1984. Kirtland's warbler sighting in Palm Beach County, Florida. Florida Field Naturalist. 12: 9–10.

29 April 1892, 1 Kirtland's warbler, in a residential area with vestiges of tropical hammock, Hypoluxo Island, Palm Beach County, Florida. A description of habitat, behavior, and plumage is given. 19 April 1897, 1 Kirtland's warbler, West Juniper, Palm Beach County, Florida. 27 April 1897, 1 Kirtland's warbler, West Juniper, Palm Beach County, Florida. 9 September 1919, 1 Kirtland's warbler, Wakulla County, Florida. 1 May 1933, 1 Kirtland's warbler, Duval County, Florida. 26 April 1934, 1 Kirtland's warbler, Gainesville, Alachua County, Florida. 21 September 1958, 1 Kirtland's warbler, Dade County, Florida. 2–3 November 1961, 1 Kirtland's warbler, Palm Beach County, Florida. 12 April 1970, 1 Kirtland's warbler, Gainesville, Florida. 27 October 1978, 1 Kirtland's warbler, Martin County, Florida. The possible migration route is generally described.

Leberman, R.C. 1976. The birds of the Ligonier Valley. Special publication no. 3. Pittsburgh, PA: Carnegie Museum of Natural History.

21 September 1971, 1 immature Kirtland's warbler, Powdermill Nature Reserve, Westmoreland County, Pennsylvania. The same bird was recaptured 26 September 1971 and 2 October 1971. [46].

Leberman, R.C. 2001. The spring migration: Appalachia. North American Birds. 55(3): 298–301.

12 May 2001, 1 singing male Kirtland's warbler, Piney Tract, Clarion County, Pennsylvania. [300].

Leberman, R.C. 2003. The spring migration: eastern highlands and Upper Ohio valley. North American Birds. 57(3): 343–345.

18 May 2003, 1 Kirtland's warbler, Indiana, Pennsylvania. Found on a Pennsylvania Audubon Society outing. [345].

Leberman, R.C.; Clench, M.H. 1972. Bird-banding at Powdermill 1971; and ten years reviewed. Research report no. 30. Pittsburgh, PA: Powdermill Nature Reserve.

21 September 1971, 1 immature Kirtland's warbler banded, 3 miles south of Rector, Westmoreland County, Pennsylvania. The bird was encountered intermittently through 2 October 1971. [3, 10, 36].

LeGrand, H.E., Jr. 1987. The autumn migration: southern Atlantic Coast region. American Birds. 41: 72–75.

17 September 1986, 1 Kirtland's warbler, Simpsonville, South Carolina. At least 6 previous records for South Carolina, although none in over 10 years. 29 August 1982, 1 Kirtland's warbler, 10 miles north of Statesville, North Carolina. [75].

LeGrand, H.E., Jr. 1990. The nesting season: southern Atlantic Coast region (spring 1990 report). American Birds. 44: 124–127.

1 May 1990, 1 singing male Kirtland's warbler, near Lugoff, South Carolina. [1127].

LeGrand, H.E., Jr. 1991. Briefs for the files. The Chat 55: 35–40.

1 May 1990, 1 singing male Kirtland's warbler, near Lugoff, South Carolina. [40].

LeGrand, H.E., Jr.; Camburn, K.E.; Cooper, S.; Davis, R.J.; Dean, E.V.; Forsythe, W.K.; Phippen, J.S.; Tove, M.H.; Tyndall, R.T. 2009. 2008 annual report of the North Carolina Bird Records Committee. The Chat. 73(1): 1–4.

1 October 2008, 1 Kirtland's warbler, Hospital Fields, Transylvania County, North Carolina, accepted by North Carolina Bird Records Committee.

LeGrand, H.E., Jr.; Camburn, K.E.; Cooper, S.; Davis, R.J.; Dean, E.V.; Forsythe, W.K.; Phippen, J.S.; Tove, M.H.; Tyndall, R.T. 2011. 2010 annual report of the North Carolina Bird Records Committee. The Chat. 75(1): 1–5.

27 September 2010, 1 Kirtland's warbler photographed, Cowan's Ford Wildlife Refuge in Mecklenburg County, North Carolina, accepted by North Carolina Bird Records Committee (NCBRC) believed to be the first state record documented by tangible evidence. Approximately 2 weeks before 27 September record, 1 Kirtland's warbler, Cowan's Ford Refuge, Mecklenburg County, North Carolina, not accepted by NCBRC; it was considered as a mystery bird and was left unidentified by the observer. With Kirtland's not being considered, it was not identified as a Kirtland's until after the 27 September was reported over the carolinabirds listserv. As it was influenced by the report of the 27 September bird, the majority of the members felt that the description was not detailed enough to conclusively document the extremely rare Kirtland's warbler, as well as the identification being after the fact. [2, 4].

LeGrand, H.E., Jr.; Carter, D.S.; Cooper, S.; Davis, R.J.; Fussell, J.O., III; Thompson, S.R.B.; Tove, M.H. 1996. Report of the North Carolina Bird Records Committee 1995. The Chat. 60: 136–141.

20 May 1995, 1 female Kirtland's warbler, Blue Ridge Parkway near Haywood Gap (milepost 426.2), accepted by the North Carolina Bird Records Committee (NCBRC). 24 September 1995, 1 Kirtland's warbler, Blue Ridge Parkway near milepost 235, Wilkes County, North Carolina, accepted by NCBRC. [140].

LeGrand, H.E., Jr.; Davis, R.J.; Fussell, J.O., III; Lynch, M.; Thompson, S.R.B.; Tove, M.H.; Wright, J.S. 1990. Report of the North Carolina Bird Records Committee 1990. The Chat. 54: 53–58.

29 August 1982, 1 Kirtland's warbler, Iredell County, North Carolina, accepted by the North Carolina Bird Records Committee. [58].

LeGrand, H.E., Jr.; Davis, R.J.; Fussell, J.O., III; Lynch, M.; Thompson, S.R.B.; Tove, M.H.; Wright, J.S. 1991. Report of the North Carolina Bird Records Committee 1991. The Chat. 56: 52–55.

Fall 1991, 1 Kirtland's warbler, Outer Banks, North Carolina, not accepted by North Carolina Bird Records Committee. [55].

LeGrand, H.E., Jr.; Davis, R.J.; Fussell, J.O., III; Lynch, M.; Thompson, S.R.B.; Tove, M.H.; Wright, J.S. 1993. Report of the North Carolina Bird Records Committee 1992. The Chat. 57: 65–68.

28 September 1991, 1 Kirtland's warbler, Ocracoke Island, North Carolina, not accepted by the North Carolina Bird Records Committee (NCBRC). 2 September 1936, 1 Kirtland's warbler, Rocky Mount, North Carolina, not accepted by the NCBRC. [67].

Leidy, G.; Wiltraut, R.; Canterbury, R. 2011. The spring migration: eastern highlands and upper Ohio River Valley. *North American Birds*. 65(3): 433–439.

4–7 May 2011, 1 Kirtland's warbler, Columbus, Ohio. 29 May 2011, 1 Kirtland's warbler heard, Cuyahoga County, Ohio. [438].

Lewy, A.; Bartel, K.E. 1943. Seney National Wildlife Refuge. *Audubon Bulletin*. 48: 11–16.

August 1943, 1 possible Kirtland's warbler, Seney National Wildlife Refuge, Schoolcraft County, Michigan. [15].

Little, R.S., ed. 1969. Field observations of the Wheaton Club. *Wheaton Club Bulletin*. 14: 32.

19 May 1968, 1 Kirtland's warbler, Locust Point, Ohio.

Loetscher, F.W. 1968. Kirtland's warbler at Danville. *The Kentucky Warbler*. 44(3): 51.

15 May 1968, 1 male Kirtland's warbler, Christian Children's Home, Danville, Kentucky.

Loftin, H.; Stedman, S.J.; Francis, T.L. 1987. An annotated check-list of the birds of Bay County, Florida (including St. Andrews State Recreation Area). Panama City, FL: The Bay County Audubon Society.

1 October 1946, 1 Kirtland's warbler, Bay County, Florida. [29].

Lomas, P.L. 1965. Tuckered warbler. *Michigan Conservation*. 35(5): 32.

Spring 1965, 1 male Kirtland's warbler, between Captivia Pass and Redfish Pass in the Gulf of Mexico, Florida.

Loomis, L.M. 1889. A rare bird in Chester Co., South Carolina. *The Auk*. 6: 74–75.

11 October 1888, 1 Kirtland's warbler specimen, possibly female, Chester County, South Carolina.

Loomis, L.M. 1891. A further review of the avian fauna of Chester County, South Carolina. *The Auk*. 8: 167–173.

11 October 1888, 1 female Kirtland's warbler specimen, South Carolina. Discusses the trans-Appalachian movement of several birds through Chester County, South Carolina, including the Kirtland's warbler. The author suggests that South Carolina is along the Kirtland's migration route and records from the state are not just wanderers. [52, 53, 171].

Lound, M.; Lound, R. 1957. 1956 in review. *The Passenger Pigeon*. 19: 66–72.

20 May 1956, 1 Kirtland's warbler, Door County, Wisconsin. [72].

Lupient, M. 1951. Seasonal report. *The Flicker*. 23: 50–53.

May 1951, 1 singing male Kirtland's warbler, Como Park, St. Paul, Minnesota. [51].

Macoun, J. 1900. Catalogue of Canadian birds. Ottawa: Geological Survey of Canada.

16 May 1900, 1 singing male Kirtland's warbler specimen. [622–623].

Macoun, J.; Macoun, J.M. 1909. Catalogue of Canadian birds. Ottawa: Canada Department of Mines, Geological Survey Branch.

16 May 1900, 1 singing male Kirtland's warbler specimen. [652–653].

Macoun, J.; Macoun, J.M. 1915. Catalogue des Oiseau du Canada. Ottawa: Naturaliste a la Commission geolgique du Canada.

Contains the same information as Macoun and Macoun (1909), only in French. [776–777].

Main, A.K. 1925. Bird companions. Boston, MA: Gorham Press.

Discusses the birds of Wisconsin where Kirtland's warbler appears on the list of occasionally seen birds. [282].

Marks, C.F.; Wright, H.F. 1950. Spring flight. Indiana Audubon Quarterly. 28(3): 64–76.

11 May 1950, 1 Kirtland's warbler, Hamilton County, Indiana. 21 May 1950, 1 Kirtland's warbler, Randolph County, Indiana. [73].

Martin, J.W. 1901. Two warblers new to Canada. The Petrel. 1: 9.

16 May 1900, 1 male Kirtland's warbler specimen, near Toronto, Ontario. Also briefly discusses known records.

Maryland Ornithological Society. 2008. MD/DCRC database abridged version: District of Columbia.

30 September 1979, 1 Kirtland's warbler, Joint Base Anacostia-Bolling, Washington, DC. The record was not accepted (2003-031). [15].

Maryland Ornithological Society. 2008. MD/DCRC database abridged version: Maryland.

18 May 2005, 1 Kirtland's warbler, Thoreau Drive, Maryland. The record was not accepted (2005-043). [88].

Maslowski, K.; Drury, R. 1931. Catalogue of the Charles Dury collection of North American birds. Proceedings of the Junior Society of Natural Sciences. 1: 67–107.

4 May 1892, 1 male Kirtland's warbler specimen, Avondale, Ohio, listed as catalogue item no. 644. [95].

Maslowski, K.H. 1975. Westwood child finds banded rare Kirtland warbler, dead. The Cincinnati Enquirer. October 5, 1975.

27 September 1975, 1 banded female Kirtland's warbler specimen, 3123 McHenry Road, Westwood, Ohio, found dead after striking a window. The bird had been banded as a nestling 2 July 1971, 4 miles southeast of Mio, Michigan. It was recaptured by L. Walkinshaw 18 June 1973, 20 miles northeast of Mio where a blue plastic band was added. The specimen was housed at Cincinnati Museum of Natural History.

Maslowski, K.H. 2010. Rare Kirtland's warbler strikes window. In: Storrs, G., ed. A naturalist afield: reflections on Cincinnati nature, 1937–1984: Cincinnati Museum Center Scientific Contribution Number 4. Saline, MI: McNaughton and Gunn, Inc.: 333–334.

27 September 1975, 1 banded female Kirtland's warbler specimen, 3123 McHenry Road, Westwood, Ohio. Found dead after striking a window. The bird was banded as a nestling 2 July 1971, 4 miles southeast of Mio, Michigan. It was recaptured by L. Walkinshaw 18 June 1973,

20 miles northeast of Mio where a blue plastic band was added. The specimen was housed at Cincinnati Museum of Natural History.

Mason, C.R. 1960. Heretofore unpublished records of the Kirtland's warbler (*Dendroica kirtlandii*). The Florida Naturalist. 33: 226.

13 October 1935, 1 Kirtland's warbler, near Salt Run, Anastasia Island, St. John's County, Florida. Early May 1930 or 1931, 1 female Kirtland's warbler specimen, by Grimes on the road to Sawpit Creek, Florida. The specimen was discarded after an unsuccessful attempt to make a study skin out of it.

Mayfield, H.F. 1988. Do Kirtland's warblers migrate in one hop? The Auk. 105: 204–205.

Discusses Kirtland's warbler spring and fall migration records and routes. Postulates that Kirtland's warblers may not pause during migration until near the end of their destinations.

McClanahan, R.C. 1935. Fifty years after. Florida Naturalist. 8: 53–59.

26 April 1934, 1 Kirtland's warbler, Gainesville, Florida. [56].

McClanahan, R.C. 1936. Annotated list of the birds of Alachua County, Florida. Proceedings Florida Academy of Sciences. 1: 91–102.

26 April 1934, 1 Kirtland's warbler, Bivan's Arm, Florida.

McCormac, J. 2002. Recent actions of the Ohio Bird Records Committee. The Ohio Cardinal. 25(4): 198–199.

6 May 2002, 1 Kirtland's warbler, Lucas County, Ohio. 14 May 2002, 1 Kirtland's warbler photographed, Erie County, Ohio. Both records were accepted by the Ohio Bird Records Committee. [199].

McKenzie, P.M. 1973. Kirtland's warbler sighted in Somerset County. Audubon Society of Western Pennsylvania. Bulletin 37(7): 10.

26 August 1972, 1 male Kirtland's warbler, Wellersburg, Somerset County, Pennsylvania.

McQuown, J.O. 1944. The Kirtland warbler in the Cleveland region. Cleveland Bird Calendar. 40(1): 8.

7 October 1931, 2 Kirtland's warblers, Cleveland, Ohio. 2 September 1935, 1 Kirtland's warbler, Cleveland, Ohio. 8 September 1940, 1 Kirtland's warbler, Cleveland, Ohio. 5 October 1941, 2 Kirtland's warblers, Cleveland, Ohio. 26 September 1943, 1 Kirtland's warbler, Cleveland, Ohio.

Mengel, R.M. 1965. The birds of Kentucky. Storer, R.W., ed. Ornithological Monographs No. 3. American Ornithologists' Union.

Gives Kentucky Kirtland's warbler dates as 7–19 May and 28 September. No years given. States that there is little question that Kirtland's warblers sometimes cross Kentucky during migration. Mentions 2 Ohio records just outside Kentucky. 4 May 1872, 2 male Kirtland's warblers, 1 seen and 1 specimen taken, Cincinnati. [522].

Merriam, C.H. 1885. Kirtland's warbler from the Straits of Mackinac. The Auk. 2: 376.

21 May 1885, 1 male Kirtland's warbler specimen, killed from striking the lighthouse, Spectacle Reef, Mackinac County, Michigan.

Michigan Audubon Society. 1954. Seasonal records of Michigan birds—errata. The Jack-Pine Warbler. 32: 86.

Deletes the 1946 report of a Kirtland's warbler in Imlay City, Michigan, by Wallace 1946.

Mlodinow, S. 1984. Chicago area birds. Chicago: Chicago Review Press.

Lists Chicago, Illinois, area Kirtland's warbler records. [170].

Monkman, D. 2006. Birds of Pelee and Rondeau. The Examiner. June 6, 2006.

20 May 2006, 1 singing male Kirtland's warbler, Point Pelee National Park, Essex County, Ontario. The bird was in tangled brush bordering the beach, singing and gleaning insects in a jumble of wind-fallen trees and leafy vines.

Monroe, B.L., Jr. 1994. The birds of Kentucky. Indianapolis, IN: Indiana University Press.

15 May 1994, 1 male Kirtland's warbler, Christian Children's Home, Danville, Boyle County, Kentucky. [105].

Moore, T. 1991. From the field—August–November 1990. The Oriole. 56: 18–28.

5 October 1990, 1 Kirtland's warbler, Blairsville, Georgia. [27].

Morgante, M. 2010. Region 1—Niagara frontier. The Kingbird. 60(3): 227–234.

18 May 2010, 1 Kirtland's warbler, Wilson, Niagara County, New York. [229, 234].

Mott, P.R. 1982. Florida birds: spring migration. The Florida Naturalist. 55(3): 15.

Late April 1982, 1 male Kirtland's warbler, Hypoluxo Island, Palm Beach County, Florida.

Motts, P.H. 1995. Cyclist finds a Kirtland's warbler at Magee Marsh. The Ohio Cardinal. 18: 79–80.

21 May 1995, 1 female Kirtland's warbler, Magee Marsh, Ohio.

Moyer, L.B. 1908. Song of Kirtland's warbler. Bird-Lore. 10: 264.

16 May 1908, 1 singing male Kirtland's warbler, LaGrange, Illinois. Includes a description of the song.

Mumford, R.E.; Keller, C.E. 1984. The birds of Indiana. Bloomington, IN: Indiana University Press.

Discusses Indiana Kirtland's warbler records. [270].

Murray, J.J. 1931a. Editorial notes. The Raven. 2(7): 1.

One or more Kirtland's warblers seen in May 1931. One Kirtland's warbler specimen taken in the fall at Bristol, Virginia.

Murray, J.J. 1931b. A consolidated list of the birds of nine local regions of Virginia. The Raven. 2(2): 1–16.

Kirtland's warbler is listed from the Bristol region as a migrant. [16].

Murray, J.J. 1936. Some Virginia ornithologists: 4, William Palmer. 1856–1921. The Raven. 7(5): 3–4.

Mentions that William Palmer added Kirtland's warbler to the Virginia's list. [4].

Murray, J.J. 1952. A check-list of the birds of Virginia. Virginia Society of Ornithology.

28 September 1887 (date should be 25 September 1887, per Smith and Palmer 1888), 1 Kirtland's warbler specimen, Fort Myer, Virginia, and another 1 week later, Fort Myer, Virginia. [95].

Musselman, T.E. 1921. A history of the birds of Illinois. Journal of the Illinois State Historical Society. 14(1/2): 1–73.

Kirtland's warbler is listed as a very rare migrant. Mistakenly states that the warbler nests in the Hudson Bay region. [63].

Nash, C.W. 1905. Check list of the vertebrates of Ontario and catalogue of specimens in the biological section of the Provincial Museum: birds. Toronto: L.K. Cameron.

16 May 1900, 1 Kirtland's warbler specimen, near Toronto, Ontario. Speculates that Kirtland's may breed in Ontario as they do in Michigan. [74].

Nehrling, H. 1893. Our native birds of song and beauty, being a complete history of all the songbirds, flycatchers, hummingbirds, swifts, goatsuckers, woodpeckers, kingfishers, trogons, cuckoos, and parrots, of North America. Milwaukee, WI: George Brumder. Vol. 1.

8 May 1885, 1 Kirtland's warbler specimen, St. Louis, Missouri. Notes a few other general locations for other specimens. [Vol. 1: 231].

New York State Avian Records Committee. 2012. Report of the New York State Avian Records Committee for 2010. The Kingbird. 62(2): 95–128.

18 May 2010, 1 female Kirtland's warbler, Burt, Town of Wilson, Niagara County, New York. The bird was found in a loose tangle of grapevine in a yard. Accepted as supplemental by the New York State Avian Records Committee (2010-45-A). (See New York State Ornithological Association 2012 for sketch.) [96, 117–119].

New York State Ornithological Association. 2012. Photo gallery: winter 2011–2012. The Kingbird. 62: 142–149.

Sketch of Kirtland's warbler found 18 May 2010, Burt, Niagara County, New York. [149].

New York State Ornithological Association. 2014. Photo gallery: summer 2014. The Kingbird. 64: 329–336.

7 June 2014, 1 male Kirtland's warbler photographed, Fort Drum, Jefferson County, New York. 1 June 2014, 1 male Kirtland's warbler photographed, Hamlin Beach, Monroe County, New York. [330].

Newman, D.L. 1957. Noteworthy records. 1957. The Cleveland bird calendar. 53(2): 10–13.

19 May 1957, 1 singing male Kirtland's warbler in tamarack among a thick swamp zone, west bank of Buttonbush Bog, Holden Arboretum, Cuyahoga County, Ohio. [12].

Nicholls, R. 2004. Kirtland's warbler sighting at Gordon Park. The Cleveland Bird Calendar. 100(2): 30–31.

16 May 2004, 1 singing male Kirtland's warbler in pine trees, Gordon Park, Cleveland, Ohio.

Nicholson, C.P. 1983. The official list of Tennessee birds. The Migrant. 54: 2–5.

Kirtland's warbler is listed as a provisional species in Tennessee. [4].

Nickell, W.P. 1965a. Kirtland's warbler banded at Cranbrook in fall migration. The Jack-Pine Warbler. 43(4): 153.

24 September 1965, 1 immature male Kirtland's warbler banded (#110-82325) and photographed, Cranbrook Institute of Science, Bloomfield Hills, Oakland County, Michigan.

Nickell, W.P. 1965b. Kirtland's warbler comes to Cranbrook. Cranbrook Institute of Science Newsletter. 35: 38–39.

24 September 1965, 1 immature male Kirtland's warbler banded, Cranbrook Institute of Science, Oakland County, Michigan, first record for Oakland County.

Nolan, V., Jr. 1954. The spring migration: middlewestern prairie region. Audubon Field Notes. 8: 314–316.

24 May 1953, 1 female Kirtland's warbler specimen, Perry Monument, South Bass Island, Ohio. [316].

Nolan, V., Jr. 1955. The spring migration: middlewestern prairie region. Audubon Field Notes. 9: 333–335.

29 May 1955, 1 Kirtland's warbler, near Utica, Ohio. [335].

Nolan, V., Jr. 1956. The spring migration: middlewestern prairie region. Audubon Field Notes. 10: 336–338.

18 May 1956, 1 singing male Kirtland's warbler, Cincinnati, Ohio. [338].

O'Hara, R.T. 1952. Region 3—Lake Ontario. The Kingbird. 2: 69–70.

Early September 1952, 1 singing male Kirtland's warbler, Montezuma National Wildlife Refuge, Monroe County, New York. [70].

Ontario Bird Records Committee. 2017. Ontario Bird Records Committee 2016 AGM. http://www.ofo.ca/ofo-docs/OBRC2017_AGM_Minutes.pdf.

A motion to remove the Kirtland's warbler from the Ontario Bird Records Committee review list was passed. [3].

Paget, J.M. 1983. Two recent Georgia sightings of the Kirtland's warbler. The Oriole. 48(2 and 3): 42.

17 October 1975, 1 immature female Kirtland's warbler in thick brush, Jekyll Island, Glynn County, Georgia. 7 September 1981, 1 Kirtland's warbler, near ponds at Pendergrass, Jackson County, Georgia.

Parkes, K.C.; Leberman, R.C. 1971. A Kirtland's warbler banded at Powdermill. Powdermill Nature Reserve Educational Release No. 89. November 4, 1971.

21 September 1971, 1 immature Kirtland's warbler banded, Powdermill Nature Reserve, Pennsylvania. The bird was recaptured 26 September and 2 October 1971 in the same location. 27 September 1964, 1 Kirtland's warbler, Lewisville, Pennsylvania. 10 May 1959, 1 Kirtland's warbler banded, Point Pelee, Ontario.

Paxton, R.O.; Burgiel, J.C.; Cutler, D.A. 2001. The fall migration: Hudson-Delaware. North American Birds. 55(1): 31–35.

26 August 2000, 1 adult Kirtland's warbler, Easton, Northampton County, Pennsylvania. [31, 34].

Peake, R.H. 2001. The Kirtland's warbler as a spring migrant in Virginia. The Raven. 72(1): 60–62.

7 and 9 May 1994, 1 singing male Kirtland's warbler, Wise Reservoir, Virginia. 10 May 1995, 1 singing male Kirtland's warbler, Wise Reservoir, Virginia. 8 May 2000, 2 singing male Kirtland's warblers, Wise Reservoir, Virginia. 11 May 2000, 1 singing male Kirtland's warbler, Wise Reservoir, Virginia.

Pearson, T.G.; Brimley, C.S.; Brimley, H.H. 1942. Birds of North Carolina. Raleigh, NC: North Carolina Department of Agriculture, State Museum.

2 September 1936, 1 Kirtland's warbler, Rocky Mount, North Carolina. 22 September 1938, 1 Kirtland's warbler, Rocky Mount, North Carolina. 23 September 1941, 1 Kirtland's warbler, Rocky Mount, North Carolina. Also includes a description of physical characteristics and range. [308, 316, pl. 32].

Pearson, T.G.; Brimley, C.S.; Brimley, H.H. 1959. Birds of North Carolina. Raleigh, NC: North Carolina Department of Agriculture, State Museum.

2 September 1936, 1 Kirtland's warbler, Rocky Mount, North Carolina. 22 September 1938, 1 Kirtland's warbler, Rocky Mount, North Carolina. 23 September 1941, 1 Kirtland's warbler, Rocky Mount, North Carolina. States that Kirtland's breed in 3 Michigan counties, winter in The Bahamas, and have only been found in North Carolina at Rocky Mount. A physical description is included. [328].

Persons, T.B.; Petrucha, M. 2009. First record of Kirtland's warbler (*Dendroica kirtlandii*) for Maine. North American Birds. 63(2): 345–347.

2 June 2008, 1 singing male Kirtland's warbler photographed, Kennebunk Plains Wildlife Management Area, York County, Maine, first well-documented Kirtland's for New England.

Peterjohn, B.G. 1981. The spring migration: middlewestern prairie region. American Birds. 35: 828–832.

17 May 1981, 1 Kirtland's warbler, Chesterton, Indiana. Indiana's third record. [831].

Peterjohn, B.G. 1983. The spring migration: middlewestern prairie region. American Birds. 37: 874–878.

22–23 May 1983, 1 male Kirtland's warbler photographed, Michigan City, Indiana. Indiana's fourth record. A photograph is included. [877].

Peterjohn, B.G. 1987. The spring migration: middlewestern prairie region. American Birds. 41: 437–441.

9 May 1987, 1 adult male Kirtland's warbler photographed, Magee Marsh Wildlife Management Area, Ohio. [440].

Peterjohn, B.G. 1989. Birds of Ohio. Bloomington, IN: University of Indiana Press.

Discusses Ohio Kirtland's warbler records and the type specimen. [173–174].

Peters, D. 2007. Birds in the Saginaw Bay area: March 1st, 2007, thru May 13th, 2007. <https://www.saginawbaybirding.org>.

11–13 May 2007, 1 Kirtland's warbler photographed, Tawas Point State Park, Iosco County, Michigan. [14].

Peters, D.J. 2012. Birds in the Saginaw Bay area: March 1st, 2012, thru May 31st, 2012. <http://www.saginawbaybirding.org>.

17 May 2012, 1 Kirtland's warbler, Tawas Point State Park, Iosco County. 12 May 2012, 10 Kirtland's warblers, Iosco County, found on the North American Migration Count. [12].

Petersen, P.C., Jr. 1967. The fall migration: middlewestern prairie region. Audubon Field Notes. 21: 44–45.

4–5 September 1966, 1 Kirtland's warbler, Chicago, Cook County, Illinois. [45].

Petersen, P.C., Jr. 1968. The fall migration: middlewestern prairie region. Audubon Field Notes. 22: 612–614.

4–5 September 1966, 1 Kirtland's warbler, Chicago, Cook County, Illinois. The author feels that due to recent correspondence, the record is subject to reasonable doubt and "should be considered deleted for lack of independent verification by observers of known competence." [613].

Peterson, M.S. 2003. The fall season: 2002. The Passenger Pigeon. 65(1 and 2): 74–92.

8 October 2002, 1 Kirtland's warbler, Waukesha County, Wisconsin. [76, 89].

Peterson, P.C. 1964. The spring migration: middlewestern prairie region. Audubon Field Notes. 18: 454–456.

16 May 1964, 1 Kirtland's warbler, Lakeside, Ohio. [456].

Petersen, W.R. 2009. The nesting season: New England. North American Birds. 62: 532–537.

2 June 2008, 1 singing male Kirtland's warbler photographed, Kennebunk Plains, York County, Maine. First well-documented Kirtland's in New England. [537].

Petrucha, M.E. 2018. Kirtland's warbler hazards and mortality during migration. Michigan Birds and Natural History. 25(3): 163–171.

Provides all known records (5) of Kirtland's warbler mortality during migration, not including 48 specimens deliberately collected. Also gives Kirtland's encounters with migration hazards that did not result in death. Possible hazards during migration are discussed.

Petrucha, M.E.; Sykes, P.W., Jr.; Huber, P.W.; Duncan, W.W. 2013. Spring and fall migrations of the Kirtland's warbler (*Setophaga kirtlandii*). North American Birds. 66(3): 382–427.

A comprehensive compilation of Kirtland's warbler spring and fall migration records from 1851 through 2011. Included are details on migration biology, habitat, and maps.

Petrucha, M.E.; Urquhart, G.R. 2000. Kirtland's warbler migration sighting in Bay Co. Michigan Birds and Natural History. 7(4): 205–206.

26 May 1997, 1 male Kirtland's warbler, Bay City State Park, Bay County, Michigan. Provides behavior and habitat descriptions. Second record for Bay County.

Petruschke, H. 2004. Female Kirtland's warbler, Kirtland, September 25, 2004. The Cleveland Bird Calendar. 100(4): 67–68.

25 September 2004, 1 female Kirtland's warbler, Kirtland, Ohio.

Petry, L.C. 1909. Records of a Kirtland's warbler. Bird-Lore. 11: 177.

18 May 1908, 1 female Kirtland's warbler, Richmond, Indiana. 14 May 1909, 1 male Kirtland's warbler, Urbana, Ohio. 13 May 1905, 1 Kirtland's warbler, New Paris, Ohio. 7 May 1906, 1 Kirtland's warbler, Richmond, Indiana.

Pickens, A.L. 1928. Birds of upper South Carolina: a study in geographical distribution. The Wilson Bulletin 40: 238–246.

Reports that the Kirtland's warbler has been recorded as a migrant in the eastern portion of the Piedmont region. [243].

Pierce, E. 1987. Crane Creek Kirtland's warbler. The Ohio Cardinal. 10(1): 37.

9 May 1987, 1 singing male Kirtland's warbler, Crane Creek State Park, Ohio.

Pittaway, R. 1995. Ontario Bird Records Committee report for 1994. Ontario Birds. 13(2): 46–65.

18–20 May 1994, 1 Kirtland's warbler, Rondeau Provincial Park, Kent County, Ontario, accepted by the Ontario Bird Records Committee (OBRC). 9 May 1993, 1 first summer male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC. 12 May 1993, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. 16 May 1993, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. [59, 60, 64].

Post, W.; Gauthreaux, S.A., Jr. 1989. Status and distribution of South Carolina birds. Charleston, SC: Contributions from the Charleston Museum 18.

Kirtland's warbler is considered a very rare migrant in South Carolina with 3 specimens and 6 acceptable sightings with no acceptable reports since 1967. Date ranges given are 27 April (1886) through 5 May (1925) and 1 September (1951) through 29 October (1903). [53].

Potter, E.F.; Parnell, J.F.; Teulings, R.P. 1980. Birds of the Carolinas. Chapel Hill: The University of North Carolina Press.

1 September 1974, 1 Kirtland's warbler, south shore of Kerr Lake, North Carolina. Provides an overview of other records in the Carolinas as well as the seasonal migration route through the area. [322].

Potter, E.F.; Radovsky, F.J. 1992. Kirtland's warbler on the North Carolina coast in fall: its occurrence and possible significance. The Chat. 56: 21–29.

28 September 1991, 1 Kirtland's warbler, Ocracoke Island, Hyde County, North Carolina. Summarizes other North Carolina records, discusses fall migration period, and discusses possible fall migration routes.

Potter, J.M., Jr. 1975. Kirtland's warbler seen in Mecklenburg County, Virginia. The Raven. 46: 27–29.

1 September 1974, 1 Kirtland's warbler, Kerr Lake, Virginia.

Powell, D.J. 1983. The spring migration: western Great Lakes region. *American Birds*. 37: 871–874.

14 May 1983, 1 Kirtland's warbler, Milwaukee County Zoo, Wisconsin. First Wisconsin sighting in several years. [874].

Powell, D.J. 1991. The spring season: western Great Lakes region. *American Birds*. 45: 447–450.

23 May 1991, 1 Kirtland's warbler, Jackson County, Wisconsin. 15–16 May 1991, 1 Kirtland's warbler, Tawas Point State Park, Michigan. [450].

Powell, P. 1986. FOS Records Committee report. *Florida Field Naturalist*. 14: 107–109.

29 April 1982, 1 Kirtland's warbler, Hypoluxo Island, Palm Beach County, Florida. Accepted by Florida Ornithological Society Records Committee (#82-025). [108].

Pranty, B. 1993. Field observations: spring report: March–May 1993. *Florida Field Naturalist*. 21(4): 121–128.

2 April 1993, 1 Kirtland's warbler, barrier island in Indian River County, Florida. [126].

Pranty, B. 1998. Field observations: fall report: August–November 1997. *Florida Field Naturalist*. 26(2): 48–59.

20 October 1997, 1 Kirtland's warbler, Vero Beach, Indian River County, Florida. [55].

Pranty, B. 2000a. Field observations: fall report: August–November 1999. *Florida Field Naturalist*. 28(2): 78–90.

17 October 1999, 1 female Kirtland's warbler photographed, Smyrna Dunes Park, Volusia County, Florida. Accepted by Florida Ornithological Society Records Committee. [78, 79, 87].

Pranty, B. 2000b. The fall migration: Florida. *North American Birds*. 54(1): 43–46.

17 October 1999, 1 Kirtland's warbler photographed, Smyrna Dunes Park, Volusia County, Florida. [45].

Pranty, B. 2005. Field observations: spring report: March–May 2005. *Florida Field Naturalist*. 33(4): 132–142.

10 May 2005, 1 female Kirtland's warbler, Fort De Soto Park, Florida. [139].

Pranty, B. 2007. Field observations: spring report: March–May 2007. *Florida Field Naturalist*. 35(4): 124–137.

10–12 May 2007, 1 female Kirtland's warbler photographed, Sebastian Inlet State Park, Florida. [124, 133].

Pranty, B. 2009. Field observations: spring report: March–May 2009. *Florida Field Naturalist*. 37(4): 155–168.

24 April 2009, 1 color-banded male Kirtland's warbler, Lori Wilson Park, Cocoa Beach, Brevard County, Florida. Accepted by Florida Ornithological Society Records Committee. The bird was banded in Oscoda County, Michigan in 2008. [164].

Preble, E.A. 1930. Birds of Hiawatha land. Nature Magazine. 15: 293–296, 334.

Discusses birds that migrate to the Upper Lake States and mentions the Kirtland's warbler. [294–295].

Pulcinella, N. 1994. Rare bird reports. Pennsylvania Birds. 8(2): 85.

14 May 1994, 1 singing male Kirtland's warbler, Little Cove, Warren Township, Franklin County, Pennsylvania.

Purdie, H.A. 1879. Another Kirtland's warbler (*Dendroica kirtlandi*). Bulletin of the Nuttall Ornithological Club. 4: 185–186.

16 May 1879, 1 female Kirtland's warbler specimen, Ann Arbor, Washtenaw County, Michigan. Second week in October 1841, 1 male Kirtland's warbler specimen, between Abaco, The Bahamas, and Cuba. 13 May 1851, 1 male Kirtland's warbler specimen, near Cleveland, Ohio. June 1860, 1 female Kirtland's warbler specimen, near Cleveland, Ohio. First week in May 1872, 1 male Kirtland's warbler specimen, Cincinnati, Hamilton County, Ohio. 15 May 1895, 1 female Kirtland's warbler specimen, Ann Arbor, Washtenaw County, Michigan. May 1878, 1 male and 1 female Kirtland's warbler specimens, Rockport, Cuyahoga County, Ohio. 9 January 1879, 1 female Kirtland's warbler specimen, Andros, The Bahamas.

Rademaker, K.; Rademaker, C. 2002. A recent record of the Kirtland's warbler in Florida. Florida Field Naturalist. 30(3): 94–96.

17 October 1999, 1 female Kirtland's warbler photographed feeding in low vegetation, Smyrna Dunes State Park, Volusia County, Florida.

Rapoza, B. 2009. Brian Rapoza's birding report. Tropical Audubon Bulletin.

1 Kirtland's warbler photographed at a park on Cocoa Beach, Florida.

Reinoehl, J. 1966. Michigan Bird Survey, spring 1996. Michigan Birds and Natural History. 3(4): 237–255.

18 May 1996, 1 Kirtland's warbler, Bay City State Park, Michigan. [251].

Reinoehl, J. 2003. Michigan Bird Survey: spring 2003 (March–May). Michigan Birds and Natural History. 10(3): 127–155.

23 May 2003, 1 Kirtland's warbler, Tawas Point State Park, Michigan. Reports from the breeding grounds were 1 on 8 May 2003 in Oscoda County, 2 or 3 in northwest Clare County, and Roscommon County. [149].

Reinoehl, J. 2004. Michigan Bird Survey: spring 2004. Michigan Birds and Natural History. 11(4): 185–207.

12 May 2004, 1 Kirtland's warbler, Huron County, Michigan. 21 May 2004, 1 Kirtland's warbler, Bay County, Michigan. [201].

Richards, I.M. 2008. Ontario Bird Records Committee report for 2007. Ontario Birds. 26(2): 82–106.

14 May 2007, 1 female Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 18 May 2007, 1 male Kirtland's warbler, Rondeau Provincial Park, Chatham-Kent County, Ontario, accepted by OBRC. [100–101].

Richards, I.M. 2009. Ontario Bird Records Committee report for 2008. Ontario Birds. 27(2): 58–79.

15 May 2008, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 9–14 May 2005, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC. Reports that "two males were present at the same time at Point Pelee National Park in May 2005, but for the majority of photos, the Committee was unable to assign them to a specific individual; thus one of the birds remains undocumented." [74].

Richmond, K. 1993. Kirtland's warbler at Chautauqua NWR, Mason County. Meadowlark. 2(2): 63–64.

9 October 1992, 1 female or immature Kirtland's warbler, Lake Chautauqua National Wildlife Refuge, Illinois.

Ridgway, R. 1884. Another Kirtland's warbler from Michigan. The Auk. 1: 389.

11 May 1883, 1 male Kirtland's warbler specimen, Battle Creek, Calhoun County, Michigan. The specimen was donated to the U.S. National Museum.

Ridgway, R. 1902. The birds of North and Middle America: a descriptive catalogue of the higher groups, genera, species, and subspecies of birds known to occur in North America, from the Arctic Lands to the Isthmus of Panama, the West Indies and other islands of the Caribbe. Washington, DC: Government Printing Office.

Provides detailed physical descriptions of spring adult male and female Kirtland's warblers. Also included is a bibliography of articles pertaining to Kirtland's warbler specimens published through 1900. Lists areas that Kirtland's specimens have been taken. [603–605].

Ridgway, R. 1914. Birdlife in Southern Illinois: I. Bird haven. Bird-Lore. 16(6): 409–420.

3 May 1908, 1 male Kirtland's warbler, Bird-Haven, Olney, Illinois. [418].

Ridout, R. 1993. The spring season: Ontario region. American Birds. 47: 408–412.

9 May 1993, 1 Kirtland's warbler, Point Pelee, Ontario. Ontario's earliest record. [409, 411].

Ridout, R. 1995. The spring season: Ontario region. National Audubon Society Field Notes. 49(3): 243–247.

10 May 1995, 1 Kirtland's warbler, Rondeau, Ontario. 21 May 1995, 1 Kirtland's warbler, Point Pelee, Ontario. [246].

Ridout, R. 1996a. The spring season: Ontario region. National Audubon Society Field Notes. 50(3): 273–277.

16 May 1996, 1 female Kirtland's warbler, Point Pelee, Ontario. 10 May 1996, 1 male Kirtland's warbler, Point Pelee, Ontario. [276].

Ridout, R. 1996b. The autumn migration: Ontario region. National Audubon Society Field Notes. 50(1): 44–49.

4 September 1995, 1 Kirtland's warbler, Long Point, Ontario. Long Point's first Kirtland's. [48].

Ridout, R. 1997. The spring migration: Ontario region. *Field Notes*. 51: 863–866.

13–14 May 1997, 1 Kirtland's warbler, Delaware, Ontario. 24 May 1997, 1 singing male Kirtland's warbler, near St. Williams, Long Point, Ontario. [866].

Ridout, R. 1998. The spring migration: Ontario region. *National Audubon Society Field Notes*. 52(3): 323–327.

15 May 1998, 1 Kirtland's warbler, Point Pelee, Ontario. [326].

Rives, W.C. 1890. A catalog of the birds of the Virginias. *Proceedings of the Newport Natural History Society*. 7: 1–100.

25 September 1887, 1 Kirtland's warbler specimen, Fort Myer, Virginia. One week after the 25 September 1887 bird, 1 Kirtland's warbler, Fort Myer, Virginia. [84].

Robbins, S.D., Jr. 1947. 1946 in review. *The Passenger Pigeon*. 9: 48–54.

23 May 1946, 1 Kirtland's warbler, Rhinelander, Wisconsin. States that one of the ornithological mysteries is why Kirtland's only nest in a few counties in Michigan when Wisconsin has similar habitat and climate [49, 52, 54].

Robbins, M.B.; Easterla, D.A. 1992. *Birds of Missouri: their distribution and abundance*. Columbia, MO: University of Missouri Press.

8 May 1885, 1 Kirtland's warbler specimen, St. Louis, Missouri. 30 September 1950, 1 Kirtland's warbler, Busch Wildlife Area, Missouri, foraging 3–4 m above the ground in a semi-open area. [291].

Robbins, S.D., Jr. [N.d.]. *Birds of Wisconsin*.

Includes a summary of Kirtland's warbler observations in Wisconsin.

Roberts, T.S. 1919. A review of the ornithology of Minnesota. *Research Publications of the University of Minnesota*. 8(2): 1–100.

13 May 1892, 1 male Kirtland's warbler specimen, Minneapolis, Minnesota. Specimen was deposited in the collection of Dr. H.M. Guilford. [25].

Roberts, T.S. 1932. *The birds of Minnesota*. Minneapolis: University of Minnesota Press.

Kirtland's warbler's status in Minnesota is considered very rare or accidental (volume 1). Volume 2 provides a brief overview of Kirtland's warbler range and life history and descriptions of breeding habitat, song, and field marks. Kirtland's is included on the Minnesota list from 1 male specimen, 13 May 1892, taken near Minneapolis. Details of the specimen are provided. The specimen was deposited at the University of Minnesota Museum. Also mentioned are 2 possible Kirtland's warbler sight records: 19 May 1921 and 27 August 1925, both in Frontenac, Minnesota. [1:65; 2:242–243].

Robertson, W.B., Jr. 1971. The fall migration: Florida region. *American Birds*. 25(1): 44–49.

20 August 1970, 1 Kirtland's warbler, Nassau Airport, The Bahamas. [48].

Robinson, J.C. 1990. *An annotated checklist of the birds of Tennessee*. Knoxville, TN: The University of Tennessee Press.

28 September 1956, 1 Kirtland's warbler, Greenville, Green County, Tennessee. Kirtland's are considered accidental in Tennessee.

Rosche, L. 1994. Noteworthy records. The Cleveland Bird Calendar. 90(2): 19–21.

15 May 1994, 1 female Kirtland's warbler, Chagrin River Park, Ohio. [21].

Rosche, L. 2004. Noteworthy records. The Cleveland Bird Calendar. 100(2): 25–28.

16 May 2004, 1 singing male Kirtland's warbler in pine trees, Gordon Park, Cleveland, Ohio. [27].

Roth, K. 2017. Indiana Bird Records Committee 2016 annual report. Indiana Audubon Quarterly. 95(4): 12–13.

10 May 2016, 1 Kirtland's warbler, Porter County, Indiana, accepted by Indiana Bird Records Committee (IBRC). 17 May 2016, 1 Kirtland's warbler, Lake County, Indiana, accepted by IBRC. [13].

Roth, K. 2019. Indiana Bird Records Committee 2018 annual report. Indiana Audubon Quarterly. 97(1): 18–19.

12 May 2018, 1 Kirtland's warbler, Elkhart County, Indiana, accepted by the Indiana Bird Records Committee. [19].

Roth, K. 2020. Indiana Bird Records Committee annual report 2019. Indiana Audubon Quarterly. 98(1): 22–24.

2019, 1 Kirtland's warbler, Porter County, Indiana, accepted by the Indiana Bird Records Committee (6700-KIWA-008-PORT2019). [24].

Roy, K.J. 2000. Ontario Bird Records Committee report for 1999. Ontario Birds. 18(2): 53–72.

9–10 June 1999, 1 male Kirtland's warbler photographed, Forrest, Lambton County, Ontario, accepted by Ontario Bird Records Committee. A photograph is included. [57, 66].

Roy, K.J. 2001. Ontario Bird Records Committee report for 2000. Ontario Birds. 19(2): 45–64.

21 May 2000, 1 male Kirtland's warbler photographed, Tobermory (Cape Hurd), Bruce County, Ontario. Accepted by Ontario Bird Records Committee. [61].

Roy, K.J. 2002. Ontario Bird Records Committee report for 2001. Ontario Birds. 20(2): 54–74.

13 May 2001, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario. Not accepted by Ontario Bird Records Committee (OBRC). 2 September 2001, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario. Not accepted by OBRC. [72–73].

Samuel, I.H. 1900. List of the rarer birds met with during the spring of 1900 in the immediate vicinity of Toronto. The Auk. 17: 391–392.

16 May 1900, 1 male Kirtland's warbler specimen, Toronto, Ontario. [391].

Sattler, G. 2002. Gleanings ... from the Net. The Virginia Society of Ornithology Newsletter. 48(1): 3.

2 September 2001, 1 Kirtland's warbler, Grundy, Buchanan County, Virginia.

Saunders, W.E. 1906. Birds new to Ontario. The Ottawa Naturalist. 19: 205–207.

16 May 1900, 1 male Kirtland's warbler specimen, on the island at Toronto, Ontario. [206].

Saunders, A.A. 1908. Some birds of central Alabama: a list of the birds observed from March 7 to June 9, in the portions of Coosa, Clay and Talladega Counties, Alabama. The Auk. 25: 413–424.

10 May 1908, 1 singing male Kirtland's warbler, Woodbine, Alabama. [416, 422].

Sayre, R. 1984. Creatures. Audubon Magazine.

Discusses how floodlit towers are a hazard to migrating birds, including the Kirtland's warbler.

Schantz, O.M. 1928. Birds of Illinois. Illinois Department of Conservation.

Kirtland's warbler is listed as a transient visitant for Illinois and the rarest warbler in the state. [102].

Schorger, A.W. 1931. The birds of Dane County, Wisconsin: annotated list of birds: part II. Transactions of the Wisconsin Academy of Sciences, Arts and Letters. 26: 1–60.

19 May 1917, 1 Kirtland's warbler, near Madison, Wisconsin. 21 May 1893, 1 Kirtland's warbler was wounded and escaped from their hands, Lake Koshkonong, Wisconsin. On the basis of these records, Kirtland's warbler appears on the hypothetical list. [59].

Schroder, H.H. 1923. Notes from Fort Pierce, Florida. Bird-Lore. 25: 122–123.

1 November 1918, 1 Kirtland's warbler in scrub palmettos, Fort Pierce, Florida. [122].

Schroeder, A.B.; DeBlaey, T.B. 1968. The birds of Ottawa County, Michigan. The Jack-Pine Warbler. 46(4): 98–130.

22 May 1938, 1 Kirtland's warbler, Macatawa Park, Holland, Ottawa County, Michigan. 10 May 1963, 1 Kirtland's warbler, Grand Haven, Ottawa County, Michigan. 11 May 1963, 1 Kirtland's warbler, near M-45, Grand Haven, Ottawa County, Michigan. 17 August 1963, 1 Kirtland's warbler, near Grand Haven, Ottawa County, Michigan. [114, 128].

Schulenberg, T.S. 1986. Fourth report of the Louisiana Ornithological Society Bird Records Committee. Louisiana Ornithological Society News. 113: 2–7.

21 September 1977, 1 Kirtland's warbler, Slidell, St. Tammany Parish, Louisiana, not accepted by the Louisiana Ornithological Society Bird Records Committee. [6].

Scott, F.R. 1980. The autumn migration: middle Atlantic Coast region. American Birds. 34: 147–149.

30 September 1979, 1 Kirtland's warbler, Anacostia, District of Columbia. [149].

Scott, F.R.; Cutler, D.A. 1965. The fall migration: middle Atlantic Coast region. Audubon Field Notes. 19(1): 21–24.

27 September 1964, 1 Kirtland's warbler, near Lewisville, Pennsylvania. [24].

Serafin, W. 1997. Kirtland's warbler in Chicago. Meadowlark. 6(2): 65–66.

13 September 1996, 1 color-banded immature male Kirtland's warbler, Montrose Harbor, Chicago, Illinois. The bird was banded on 15 August 1996 in Ogemaw County, Michigan. Photograph of the bird on page 65 and the back cover.

Shea, A.K. 1989. The spring season: 1989. The Passenger Pigeon. 51(4): 379–396.

21–22 May 1989, 1 Kirtland's warbler, Douglas County, Wisconsin. [392].

Sherman, J.W. 1917. Kirtland's warbler in Massachusetts. Records of Walks and Talks With Nature. 9: 8–9.

26 May 1916, 1 probable male Kirtland's warbler, Roslindale, Massachusetts. Reporter's credentials are vouched for by C.J. Maynard. A detailed description is provided.

Sherony, D. 2014. Kirtland's warblers and New York State. New York Birders. 43(4): 1, 9.

1 June 2014, 1 singing male Kirtland's warbler photographed, Hamlin Beach State Park, New York.
4 June 2014, 1 territorial singing male Kirtland's warbler photographed, Fort Drum, New York; the bird stayed for 2 weeks. Briefly mentions that there were 7 Kirtland's records prior to the 2 mentioned, but none included physical documentation such as sound recordings or photographs. Discusses 2 of these records with written details: 6 September 1952, 1 male Kirtland's warbler, Montezuma National Wildlife Refuge, New York, and 18 May 2010, 1 singing male Kirtland's warbler, Wilson, New York.

Skelton, C.E.; Kays, R.W. 1997. Kirtland's warbler in Tennessee. The Migrant. 68(2): 42–43.

13 May 1997, 1 male Kirtland's warbler, Eastern State Wildlife Management Area, Knoxville, Tennessee. The bird had a red color-band on each leg, and a white band on probably the right leg (insufficient for a positive identification).

Smith, J.H. 1998. The spring season: 1998. The Passenger Pigeon. 60(4): 321–347.

27–30 May 1998, 1 singing male Kirtland's warbler, Vilas County, Wisconsin. [324, 341].

Smith, H.M.; Palmer, W. Additions to the avifauna of Washington and vicinity. The Auk. 5: 147–148.

25 September 1887, 1 Kirtland's warbler specimen, Fort Myer, Virginia. One week after the 25 September 1887 warbler, 1 Kirtland's warbler, Fort Myer, Virginia. [148].

Smith, H.R.; Parmalee, P.W. 1955. A distributional checklist of the birds of Illinois. Illinois State Museum, Popular Science Series. 4: 1–62.

7 May 1894, 1 Kirtland's warbler specimen, Glen Ellyn, Illinois. 21 May 1899, 1 Kirtland's warbler, Chicago, Illinois. 25 May 1894, 1 Kirtland's warbler record, Winnebago County, Illinois. 2 September 1948, 2 male Kirtland's warblers, Loves Park, Winnebago County, Illinois. [49].

Southern, J. 2009. Briefs for the files. The Chat. 73(1): 10–32.

1 October 2008, 1 Kirtland's warbler, Hospital Fields, Transylvania County, North Carolina, fourth documented state record. [27].

Southern, J. 2011. Briefs for the files. The Chat. 75(1): 36–55.

27 September 2010, 1 Kirtland's warbler photographed, Cowan's Ford Wildlife Refuge, Mecklenburg County, North Carolina, fifth documented record for the state. [51].

Southern, J. 2017. Briefs for the files. The Chat. 81(1): 8–28.

28 September 2016, 1 immature Kirtland's warbler photographed, Ridge Junction Overlook, Blue Ridge Parkway, Yancey County, North Carolina, accepted by the North Carolina Bird Records

Committee, sixth documented record for North Carolina. 17 October 2016, 1 Kirtland's warbler, Camden, Kershaw County, South Carolina. [26].

Southern, J. 2018. Briefs for the files. The Chat. 82(1): 28–46.

3 October 2017, 1 first year Kirtland's warbler captured, banded, and photographed, banding station at Big Bald Mountain, border of Unicoi County, Tennessee and Yancey County, North Carolina, the first and only Kirtland's in 41 years of migration banding at Big Bald. Two photographs are included. [44–45].

Southern, J. 2019. Briefs for the files. The Chat. 83(1): 22–36.

2–5 October 2017, 1 Kirtland's warbler photographed, Duck Park Boardwalk, Dare County, North Carolina. Reportedly, the observers were not aware of the bird's rarity until they showed photographs to a birder a year later. 24 September–3 October 2018, immature Kirtland's warbler photographed, Blue Ridge Parkway near the entrance to Mt. Mitchell State Park, Buncombe and Yancey Counties, North Carolina. 4 October 2018, 1 Kirtland's warbler captured and banded, East Kiawah Island banding station, Charleston County, South Carolina. [35].

Southern, J. 2020a. Briefs for the files. The Chat. 84(1): 14–28.

24 September 2019, 1 Kirtland's warbler photographed, Flat Top Mountain, Buncombe County, North Carolina. 14–15 October 2019, 1 Kirtland's warbler photographed, Biltmore Estate, Buncombe County, North Carolina.

Southern, J. 2020b. Briefs for the files. The Chat. 84(2): 90–102.

13–14 May 2020, 1 singing male Kirtland's warbler, Meat Camp Creek Environmental Studies Area, Watauga County, North Carolina.

Spahn, R. 2017. Region 2—Genesee. The Kingbird. 64(4): 321–327.

1 June 2014, 1 singing male Kirtland's warbler recorded and photographed, Hamlin Beach State Park, Monroe County, New York. (See New York State Ornithological Association 2014 for photograph.) [323, 327].

Sprague, T. 1969. Birds of Prince Edward County. Bloomfield, ON: Prince Edward Region Conservation Authority.

19 May 1962, 1 Kirtland's warbler, Point Traverse, Ontario. 12 May 1964, 1 Kirtland's warbler, Cataraqui Cemetery, Kingston, Ontario. [166–167].

Sprunt, A., Jr. 1936. Some observations on the bird life of Cumberland Island, Georgia. The Oriole. 1(1): 1–6.

12 April 1902, 1 female Kirtland's warbler specimen, Cumberland Island, Georgia. 14 April 1903, 1 female Kirtland's warbler specimen, Cumberland Island, Georgia. 27 April 1904, 1 male Kirtland's warbler specimen, Cumberland Island, Georgia. [2–3].

Sprunt, A., Jr. 1954. Florida bird life. New York: Coward-McCann, Inc.

19 and 27 April 1897, 2 Kirtland's warblers, 1 of which was collected, West Juniper, Palm Beach County, Florida. 11 October 1915, 1 Kirtland's warbler, Chokoloskee, Lee County, Florida. 25 October 1915, 1 Kirtland's warbler, Princeton, Dade County, Florida. 1 November 1918, 1 Kirtland's warbler, Fort Pierce, St. Lucie County, Florida. 26 April 1934, 1 Kirtland's warbler, Gainesville, Alachua County, Florida. 26 November 1953, 1 Kirtland's warbler, near Pensacola,

Florida. Provides a description of physical characteristics and discusses range and status in Florida. [407–408].

Sprunt, A., Jr. 1963. Addendum to “Florida Bird Life” (Sprunt 1954). Charleston, SC.

13 October 1935, 1 Kirtland’s warbler taken, Anastasia Island, St. John’s County, Florida. [16].

Sprunt, A., Jr.; Chamberlain, E.B. 1931. Second supplement to Arthur T. Wayne’s “Birds of South Carolina.” Charleston Museum Contributions. 4: 1–37.

4 October 1910, 1 Kirtland’s warbler, Oakland Plantation, Christ Church Parish, Charleston County, South Carolina. [33].

Sprunt, A., Jr.; Chamberlain, E.B. 1949. South Carolina bird life. Burton, E.M., ed. Columbia, SC: University of South Carolina Press.

Describes Kirtland’s warbler physical characteristics, range, and status (rare transient) in South Carolina. Also lists the 6 South Carolina Kirtland’s records for the period 1886–1949. [467–468].

Sprunt, A., Jr.; Chamberlain, E.B. 1970. South Carolina bird life. Revised. Columbia, SC: University of South Carolina Press.

Describes Kirtland’s warbler physical characteristics, range, and status (rare transient) in South Carolina. Also lists the six South Carolina Kirtland’s records for the period 1886–1949. [467–468, 561].

Stejneger, L. 1899. The birds of Indiana. 1899. The American Naturalist. 33(385): 65–69.

Reviews “Birds of Indiana” (Butler 1897). The history of the Kirtland’s warbler is presented, and the possible locations of the unknown nesting grounds and migration route are discussed. [67–68].

Stevenson, H.M. 1959. The fall migration: Florida region. Audubon Field Notes. 13(1): 21–25.

21 September 1958, 1 Kirtland’s warbler, Miami, Florida. [24].

Stevenson, H.M. 1962. The fall migration: Florida region. Audubon Field Notes. 16(1): 21–25.

2–3 November 1961, 1 Kirtland’s warbler, West Palm Beach, Florida. [24].

Stevenson, H.M. 1987. A reconsideration of the Florida bird records of H.L. Ferguson and J.B. Ellis. Florida Field Naturalist. 15: 54–56.

11 October 1915, 1 Kirtland’s warbler, Chokoloskee, Collier County, Florida. The author considers this record to be possibly suspect. [55].

Stevenson, H.M.; Anderson, B.H. 1994. *Dendroica kirtlandii* (Baird): Kirtland’s warbler. In: The birdlife of Florida. Gainesville, FL: University Press of Florida: 565–567.

Provides Kirtland’s warbler occurrences for Florida and discusses migration, haunts and habitats, and problems of identification.

Stirrett, G.M. 1973. The spring birds of Point Pelee National Park, Ontario. Revised edition. Ottawa: National and Historic Parks Branch.

10 May 1953, 1 Kirtland’s warbler, Point Pelee, Ontario. 10 May 1959, 1 Kirtland’s warbler, Point Pelee, Ontario. 13 May 1961, 1 Kirtland’s warbler, Point Pelee, Ontario. [24].

Stone, A.E. 1986. Migration and wintering records of Kirtland's warbler: an annotated bibliography. Athens, GA.

Contains the most complete listing of spring and fall migration and winter records of the Kirtland's warbler up to and including 1986. Includes museum records.

Stone, W. 1898. *Dendroica kirtlandii* in Pennsylvania: a correction. *The Auk*. 15: 331.

Provides the reason for Kirtland's warbler omission from his 1894 book, "Birds of Eastern Pennsylvania and New Jersey," and states that Kirtland's warbler had not been recorded for Pennsylvania. States that Butler's (1897) citation of the Pennsylvania Kirtland's record in his book, "Birds of Indiana," was also based on incorrect information.

Stotz, D.F.; Johnson, D.B. 2003. The ninth report of the Illinois Ornithological Records Committee. *Meadowlark*. 12(2): 55–61.

7 May 1894, 1 male Kirtland's warbler specimen, Glen Ellyn, DuPage County, Illinois. Accepted by Illinois Ornithological Records Committee (1894.001). [58].

Studer, J.H. 1881. *Studer's popular ornithology: the birds of North America*. New York: Jacob H. Studer and Co.

May 1851, 1 Kirtland's warbler specimen, Cleveland, Ohio. 9 July 1860, 1 Kirtland's warbler specimen, near Cleveland, Ohio. 1 Kirtland's warbler specimen taken at sea between Abaco, The Bahamas, and Cuba. Considers Kirtland's warbler as one of the rarest of the North American species. [172, pl .114].

Svingen, P.H. 2020. Summer 2017: western Great Lakes. *North American Birds*. <https://wp.me/p8iY2g-9wl>.

Reports that about 30 singing male Kirtland's warblers were found during the tenth year of monitoring in Wisconsin with 30–40 young fledged in Adams County. [5].

Swick, N.A.; Campbell, S.; Cooper, S.W.; Lemons, J.; McCloy, M.; Piephoff, Z.T.; Shultz, S.P.; Southern, J.L.; Thompson, S.R.B. 2017. 2016 report of the North Carolina Bird Records Committee. *The Chat*. 81(1): 1–4.

28 September 2016, 1 sub-adult Kirtland's warbler photographed, Ridge Junction Overlook Blue Ridge Parkway, Yancey County, North Carolina, accepted by the North Carolina Bird Records Committee, sixth record for North Carolina. [3].

Swick, N.A.; Camburn, K.E.; Cooper, S.; Hansen, J.J.; Lemons, W.J.; Pippen, J.S.; Southern, J.L.; Thornton, A.K.; Van Epps, R.W. 2019. 2018 annual report of the North Carolina Bird Records Committee. *The Chat*. 83: 17–21.

25 September–2 October 2018, 1 subadult Kirtland's warbler photographed, Ridge Junction Overlook, Blue Ridge Parkway, Yancey and Buncombe Counties, North Carolina, accepted by the North Carolina Bird Records Committee (NCBRC), eighth record for North Carolina, all but 1 of which have been in the fall. 3 October 2017, 1 subadult Kirtland's warbler captured, banded, and photographed, banding station near the Appalachian Trail, Pisgah National Forest, Yancey County, North Carolina, accepted by the NCBRC, seventh record for North Carolina. [18, 20].

Swick, N.A.; [et al.]. 2020. 2019 annual report of the North Carolina Bird Records Committee. The Chat. 84: 78–80.

3–5 October 2017, 1 subadult Kirtland's warbler photographed, Duck Boardwalk, Dare County, North Carolina, accepted by the North Carolina Bird Records Committee, first coastal record for North Carolina.

Taylor, W. 1917. Kirtland's warbler in Madison, Wisconsin. The Auk 34: 343.

19 May 1917, 1 female Kirtland's warbler, Madison, Wisconsin.

Tessen, D. 1973. Field notes: the autumn season: August 16–November 30, 1972. The Passenger Pigeon. 35: 133–149.

5 October 1972, 1 Kirtland's warbler, Sheboygan County, Wisconsin. [146].

Tessen, D.D. 1992. The autumn migration: western Great Lakes region. American Birds. 46: 90–94.

1 September 1991, 1 Kirtland's warbler, St. Clair County, Michigan. [94].

Tessen, D.D. 1994. The autumn migration: western Great Lakes region. American Birds. 48(1): 111–113.

5 September 1993, 1 Kirtland's warbler, St. Clair County, Michigan. [113].

Test, L.A. 1939. The Amos W. Butler collection of birds. Indiana Audubon Society Yearbook. 17: 54–57.

Notes that the Amos W. Butler collection, housed at Purdue University, includes 2 Kirtland's warblers, 1 taken 1 May 1893, Wabash, Indiana; the other taken May 1895, near Wabash, Indiana. [56–57].

The Wheaton Club. 1966. Field reports 1965–1966 season. Wheaton Club Bulletin. 11: 47.

5 May 1966, 1 male Kirtland's warbler, Greenlawn Cemetery, Ohio. (See also Thomson 1966.)

Thomas, E.S. 1926. Notes on some central Ohio birds observed during 1925. The Wilson Bulletin. 38: 118–119.

11 September 1925, 1 Kirtland's warbler, along Alum Creek, near Columbus, Ohio. May 1917, 1 Kirtland's warbler, Indian Springs, north of Columbus, Ohio, present for several days. Other central Ohio Kirtland's warbler dates are given as: 20 May 1920; 17 May 1921; 23 May 1924 (2 individuals); and 24 May 1924 (different locality from 24 May 1924 birds). [119].

Thomson, T. 1966. Bird finding in central Ohio—part II. Wheaton Club Bulletin. 11: 6–7.

Spring 1966, 1 Kirtland's warbler, Greenlawn Cemetery, Franklin County, Ohio. The bird stayed for 5 days. [7].

Tinker, A.D. 1908. Notes on Kirtland's warbler at Ann Arbor, Mich. Bird-Lore. 10: 81–82.

13 May 1907, 1 Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan. 16 May 1907, 1 Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan.

Tinker, A.D. 1910. The birds of School Girls' Glen region, Ann Arbor, Michigan: a study in local ornithology. Michigan Geological and Biological Survey. 1: 35–66.

13 May 1907, 1 Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan. 16 May 1907, 1 Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan. [44, 61].

Todd, W.E.C. 1904. The birds of Erie and Presque Isle, Erie County, Pennsylvania. Annals of the Carnegie Museum. 2: 481–596.

Kirtland's warbler is considered as a species that should occur at Erie if anywhere in Pennsylvania. [584].

Trautman, B. 1940. The birds of Buckeye Lake, Ohio. Miscellaneous Publications No. 414. Ann Arbor, MI: University of Michigan, Museum of Zoology.

Lists Kirtland's warbler as a species that was likely present within historic time and should occur in the future. Mentions 6 individuals seen in central Ohio from 1922 to 1933. [148].

Trautman, M.B.; Trautman, M.A. 1968. Annotated list of the birds of Ohio. Ohio Journal of Science. 68(5): 257–332.

15 May 1909, 1 Kirtland's warbler specimen, Ottawa County, Ohio. 24 May 1954, 1 Kirtland's warbler specimen, Ottawa County, Ohio. Notes few recent sight records. [316].

Ulrey, A.B. 1893. On the occurrence of Kirtland's warbler (*Dendroica kirtlandii* Baird) in Indiana. Proceedings of the Indiana Academy of Science 1893: 224–225.

4 May 1893, 1 Kirtland's warbler, Wabash, Wabash County, Indiana. Speculates that Kirtland's warblers winter in Cuba and breed in the eastern United States.

Ulrey, A.B. 1896. Contributions to the biological survey of Wabash County. In: Waldo, C.A., ed. Proceedings of the Indiana Academy of Science 1895. Indianapolis, IN: Indiana Academy of Science: 147–148.

May 1895, 1 Kirtland's warbler specimen, Wabash, Indiana. [147].

Ulrey, A.B.; Wallace, W.O. 1886. Birds of Wabash County. In: Waldo, C.A., ed. Proceedings of the Indiana Academy of Science 1885. Indianapolis, IN: Indiana Academy of Science: 148–159.

4 May 1892, 1 Kirtland's warbler specimen, Wabash County, Indiana. 7 May 1895, 1 singing male Kirtland's warbler specimen, Wabash County, Indiana. [148, 157].

United States Fish and Wildlife Service. 1978. Kirtland's warbler presented to National Museum. Fish and Wildlife News. April.

A fall plumaged Kirtland's warbler that was the victim of a window strike in Cincinnati was donated by the Cincinnati Museum of Natural History to the National Museum.

Vanderschaegen, P.V. 1981. The birds of forest, Oneida and Vilas Counties, Wisconsin. The Passenger Pigeon. <https://images.library.wisc.edu/EcoNatRes/EFacs/PassPigeon/ppv43no03/reference/econatres.pp43n03.pvanderschaegen.pdf>.

May 1946, 1 male Kirtland's warbler, south of Rhinelander, Wisconsin. [82].

Van Tyne, J. 1938. Checklist of the birds of Michigan. Occasional Papers No. 379. University of Michigan, Museum of Zoology. Ann Arbor, MI: University of Michigan Press.

Lists the Michigan counties in which Kirtland's warbler is a summer resident. Notes 1 Kirtland's record north of the breeding range: 1885, 1 specimen, Spectacle Reef Lighthouse, northeast of Cheboygan. Considers Kirtland's a very rare transient south of the breeding area. [34].

Van Tyne, J. 1939. Kirtland's warbler at Kalamazoo, Michigan. The Auk. 56: 480–481.

15 May 1886, 1 female Kirtland's warbler specimen, Kalamazoo, Michigan. The specimen is in the collection of the University of Michigan Museum of Zoology. Provides details for previously incorrect reports of this specimen in Gibbs 1898, Wood 1904, and Barrows 1912.

Vasile, R.S.; Byre, V.J. 1989. The North American bird collection of the Chicago Academy of Sciences: views of the past, perspectives on the present. American Birds. 43(3): 431–434.

17 May 1894, 1 Kirtland's warbler specimen (CAS 17303), 15 miles west of Chicago, Illinois. [433].

Veit, R.R.; Paxton, R.O.; Rohrbacher, F. 2010. The spring migration: Hudson-Delaware Region. North American Birds. 64(3): 397–401.

15 May 2010. 1 Kirtland's warbler, Wilson, Niagara County, New York, first state record. [400].

Walker, C.F. 1928. The season of birds in central Ohio. Ohio State Museum Science Bulletin. 1(1): 9–23.

Lists 3 Kirtland's warbler dates for central Ohio: 24 May 1924, 11 September 1925, and 13 May 1927. [21].

Walkinshaw, L.H. 1971. Calhoun County wood warblers. The Jack-Pine Warbler. 49(3): 71–81.

11 May 1883, 1 male Kirtland's warbler specimen, Calhoun County, Michigan. The specimen was deposited in the collection of the University of Michigan Museum of Zoology. [77].

Wallace, G.J. 1946. Seasonal records of Michigan Birds ... fall. The Jack-Pine Warbler. 24: 23–37.

31 August 1945, 1 Kirtland's warbler, Imlay City, Lapeer County, Michigan. (Record was later deleted [Michigan Audubon Society 1954]).

Wallace, R. 1971. Interesting sightings at St. Marks Wildlife Refuge and elsewhere. The Florida Naturalist. 44(2): 63.

12 April 1970, 1 Kirtland's warbler, Gainesville, Florida.

Wamer, N. 1998. The fall migration: Florida region. Field Notes. 52(1): 49–51.

20 October 1997, 1 Kirtland's warbler, Vero Beach, Indian River County, Florida. [49, 51].

Warren, B.H. 1890. Report on the birds of Pennsylvania: with special reference to the food-habits, based on over four thousand stomach examinations. 2nd ed. Harrisburg, PA: E.K. Meyers, State Printer.

Describes Kirtland's warbler physical characteristics and habitat. Provides a (incorrect) record for Pennsylvania: 25 June 1885, 1 Kirtland's warbler specimen was shot and its family seen, Dublin Gap Springs, Pennsylvania. (See Stone 1898 for correction.) [270, 290, 291].

Washburn, F.L. 1889. Recent capture of Kirtland's warbler in Michigan, and other notes. *The Auk*. 6: 279–280.

Late April or early May 1888, 1 female Kirtland's warbler specimen, Ann Arbor, Washtenaw County, Michigan. (According to Wood 1904, the correct report should be 18 May 1888, 1 male Kirtland's warbler specimen, Ann Arbor.)

Watson, M. 2021. New bird for Maryland. *News from the 'hood: Newsletter of the Patuxent Bird Club of the Maryland Ornithological Society*. November–December: 9.

Documents the first potential Kirtland's warbler record for Maryland. The immature bird was seen and photographed from 4–10 October 2021 at Swann Park, Baltimore. Habitat details, previous Maryland reports, and a Kirtland's warbler life history summary are provided.

Watson, P. 2022. Kirtland's warbler—second record for Bermuda. *The Bermuda Audubon Society Newsletter*. 33(3):1–2.

30 September 2022, 1 Kirtland's warbler, Ferry Point Park, Bermuda. Bermuda's second record.

Wayne, A.T. 1904. Kirtland's warbler (*Dendroica kirtlandi*) on the coast of South Carolina. *The Auk*. 21: 83–84.

29 October 1903, 1 male Kirtland's warbler specimen, Mount Pleasant, South Carolina, third South Carolina record, and only the third United States fall record.

Wayne, A.T. 1910. *Birds of South Carolina*. Rea, P.M., ed. Charleston, SC: contributions from the Charleston Museum.

27 April 1886, 1 male Kirtland's warbler specimen, St. Helena Island, South Carolina. 11 October 1888, 1 female Kirtland's warbler specimen, Chester, South Carolina. 29 October 1903, 1 male Kirtland's warbler specimen, Mount Pleasant, South Carolina. Reviews other Atlantic states records and speculates about the migration route. [xviii, 167–169].

Wayne, A.T. 1911. A third autumnal record of Kirtland's warbler (*Dendroica kirtlandi*) for South Carolina. *The Auk*. 28: 116.

14 October 1910, 1 female Kirtland's warbler, Oakland Plantation, Christ Church Parish, South Carolina.

Weir, R.D. 1989. *Birds of the Kingston region*. Kingston, ON: Quarry Press.

12 May 1974 (actually 1964, see Sprague 1969), 1 Kirtland's warbler, Cataraqui Cemetery, Kingston, Ontario. 9 September 1981, 1 male Kirtland's warbler, Morton, Ontario. [396].

Weir, R.D. 1990. *The spring season: Ontario region*. *American Birds*. 44: 418–423.

20 May 1990, 1 Kirtland's warbler, upper Bruce Peninsula, Ontario. 31 May 1990, 1 Kirtland's warbler, Cobourg, Ontario. [422].

Weir, R.D. 2008. *Birds of the Kingston region*. 2nd ed. Kingston, ON: Kingston Field Naturalists.

12 May 1974 (actually 1964, see Sprague 1969), 1 Kirtland's warbler, Cataraqui Cemetery, Kingston, Ontario. 9 September 1981, 1 male Kirtland's warbler seen in the pines, Morton, Ontario. [346–347].

Weir, R.D.; Quilliam, H.R. 1980. Supplement to history of the birds of Kingston, Ontario. Kingston Field Naturalists.

12 May 1964, 1 Kirtland's warbler, Cataraqui Cemetery, Ontario. 19 May 1962, 1 Kirtland's warbler, Prince Edward Point, Ontario. [24].

Weisbecker, Z.R. 1987. Kirtland's warbler seen in Iredell County, N.C. The Chat. 51: 107–108.

29 August 1982, 1 male Kirtland's warbler, Allison's Woods, Iredell County, North Carolina.

Weston, F.M. 1965. A survey of the birdlife of Northwestern Florida. Bulletin no. 5. Tallahassee, FL: Tall Timbers Research Station.

26 November 1965, 1 Kirtland's warbler, northern edge of Pensacola, Florida. [113].

Wetmore, A. 1927. The migrations of birds. Cambridge, MA: Harvard University Press.

Notes that the Kirtland's warbler migrates from Michigan to The Bahamas. [207].

Whan, B. 2000. Spring 2000 overview and the reports. The Ohio Cardinal. 23: 93–116.

13 May 2000, 1 female Kirtland's warbler captured and banded, Navarre Marsh, Ohio. 17 May 2000, 1 female Kirtland's warbler, Magee Marsh Bird Trail, Ohio. [111].

Whan, B. 2001a. Recent actions of the Ohio Birds Records Committee. The Ohio Cardinal. 24(3): 161–163.

5–6 May 2001, 1 Kirtland's warbler, Paulding County, Ohio, accepted by the Ohio Bird Records Committee. [161].

Whan, B. 2001b. Spring 2001 overview and the reports. The Ohio Cardinal. 24(3): 117–145.

5–6 May 2001, 1 Kirtland's warbler, Antwerp, Paulding County, Ohio. 21 May 2001, 1 singing male Kirtland's warbler, Oak Openings, Ohio. 1996, 1 Kirtland's warbler, Oak Openings, Ohio. [139].

Whan, B. 2002. Spring 2002 reports. The Ohio Cardinal. 25(3): 108–129.

6 May 2002, 1 Kirtland's warbler, Metzger Marsh, Ohio. 10 May 2002, 1 Kirtland's warbler, Cedar Point, Ohio. 14 May 2002, 1 Kirtland's warbler, Kelleys Island, Ohio. 19 May 2002, 1 Kirtland's warbler, Shakers Lakes, Ohio. [124].

Whan, B. 2004a. Autumn 2004 overview and reports. The Ohio Cardinal. 28(1): 1–21.

25 September 2004, 1 female Kirtland's warbler, Lake County, Ohio. [17].

Whan, B. 2004b. Spring 2004 overview and reports. The Ohio Cardinal. 27(3): 93–114.

8 May 2004, 1 singing male Kirtland's warbler, Knox County, Ohio. 9 May 2004, 1 singing male Kirtland's warbler, Erie County, Ohio. 16 May 2004, 1 singing male Kirtland's warbler, Cuyahoga County, Ohio. [109].

Whan, B. 2005. Spring 2005 overview and reports. The Ohio Cardinal. 28(3): 89–115.

30 April 2005, 1 male Kirtland's warbler, Adams County, Ohio; date ties early arrival date for Ohio. 16 May 2005, 1 male Kirtland's warbler, Magee Marsh, Ohio. 25 May 2005, 1 female Kirtland's warbler, Magee Marsh, Ohio. All 3 records had documentation sent to the Ohio Bird Records Committee. [109].

Whan, B. 2018. We think we know Ohio's birds. The Ohio Cardinal. 41: 151.

Mentions that the National Museum of Natural History has a Kirtland's warbler (skin, skeleton, alcohol specimen) from Hamilton County, Ohio, taken on 27 September 1875 (#527827), and another (#800000) from Cleveland taken 4 May 1800.

Wharram, S.V. 1916. The May bird census for 1916: Austinburg, Ashtabula County, Ohio, May 21, 1916. The Wilson Bulletin. 28: 147.

21 May 1916, 1 Kirtland's warbler, Austinburg, Ashtabula County, Ohio.

Wheaton, J.M. 1860. Catalogue of the birds of Ohio. Ohio State Board of Agriculture. Annual Report 15: 359–380.

1851, 1 Kirtland's warbler specimen, Cleveland, Ohio. No date, 1 Kirtland's warbler specimen, Cleveland, Ohio. Kirtland's warbler is listed as a new species for Ohio. [364, 374].

Wheaton, J.M. 1874. The food of birds as related to agriculture. Ohio State Board of Agriculture Annual Report. 29: 561–578.

Lists Kirtland's warbler as exceedingly rare in spring in Ohio. [564].

Wheaton, J.M. 1879. Kirtland's warbler again in Ohio. Bulletin of the Nuttall Ornithological Club. 4: 58.

1878, 1 male and 1 female Kirtland's warbler specimens, Rockport, Cuyahoga County, Ohio. Both were captured within 2 miles of the type specimen location. Mentions a third unverified specimen taken in the vicinity.

Wheaton, J.M. 1882. Report of the geological survey of Ohio: Volume IV: zoology and botany: Part I zoology: Section II: report on the birds of Ohio. Columbus, OH: Nevins and Myers, State Printers.

Provides details on all known Kirtland's warbler specimens, a physical description, and a complete quotation of the Kirkpatrick 1860 article in Ohio Farmer. [263–265].

Whelan, M.E. 1952. A fall Kirtland's warbler observation. The Jack-Pine Warbler. 30: 25.

29 September 1951, 1 Kirtland's warbler, Muskegon, Muskegon County, Michigan.

Wickstrom, G. 1952. Seasonal records of Michigan birds, fall, 1951. The Jack-Pine Warbler. 30: 7–24.

29 September 1951, 1 Kirtland's warbler, Muskegon, Muskegon County, Michigan. [17].

Widmann, O. 1885. Note on the capture of *Coturniculus lecontei* and *Dendroeca kirtlandi* within the city limits of St. Louis, Mo. The Auk. 2: 381–382.

8 May 1885, 1 male Kirtland's warbler specimen, St. Louis, Missouri. [382].

Widmann, O. 1907. A preliminary catalogue of the birds of Missouri. Transactions of the Academy of Science of St. Louis. 17: 1–296.

8 May 1885, 1 male Kirtland's warbler specimen, River des Piers, St. Louis, Missouri. The specimen was deposited in the mounted birds collection at Washington University, St. Louis. [231].

Wilhelm, E.J., Jr. 1958. Birds of the St. Louis area. St. Louis, MO: St. Louis Audubon Society.

29 September 1950, 1 Kirtland's warbler, Weldon Springs. 4 May 1952, 1 Kirtland's warbler, Lake Park. 20 May 1945, 1 Kirtland's warbler, Chain of Rocks. [31].

Williams, A.B. 1940a. Autumn migration tables—1940. Bird Calendar of the Cleveland Bird Club. 36(4): 3–8.

8 September 1940, 1 Kirtland's warbler. [7].

Williams, A.B. 1940b. Noteworthy records. Bird Calendar of the Cleveland Bird Club. 36(4): 1.

8 September 1940, 1 Kirtland's warbler, Rocky River Reservation, Cuyahoga County, Ohio.

Williams, A.B. 1941a. Autumn migrant species. Bird Calendar of the Cleveland Bird Club. 37(4): 8–12.

5 October 1941, 2 Kirtland's warblers. [11].

Williams, A.B. 1941b. Comparative list of rarities. Bird Calendar of the Cleveland Bird Club. 37(4): 1–2.

Kirtland's warbler is listed for both 1940 and 1941. [2].

Williams, A.B. 1941c. Unusual autumn records. Bird Calendar of the Cleveland Bird Club. 37(4): 4–5.

5 October 1941, 2 Kirtland's warblers, Rocky River Valley, Cuyahoga County, Ohio. [4].

Williams, A.B. 1943a. Interesting or unusual records. Bird Calendar of the Cleveland Bird Club. 39(4): 3.

26 September 1943, 1 Kirtland's warbler, Rocky River Valley, Cuyahoga County, Ohio.

Williams, A.B. 1943b. Migrant and vagrant species. Bird Calendar of the Cleveland Bird Club. 39(4): 8–9.

26 September 1943, 1 Kirtland's warbler. [9].

Williams, A.B. 1943c. Migration timetable spring 1943. Bird Calendar of the Cleveland Bird Club. 39(2): 123–125.

18 May 1943, 1 Kirtland's warbler. [125].

Williams, A.B. 1943d. Noteworthy records. The Cleveland Bird Calendar. 39(2): 121–122.

18 May 1943, 1 Kirtland's warbler, Lakewood, Cuyahoga County, Ohio. [122].

Williams, A.B. 1943e. Spring arrivals and departures. Bird Calendar of the Cleveland Bird Club. 39(2): 117–121.

18 May 1943, 1 Kirtland's warbler. [120].

Williams, A.B. 1946a. Interesting or unusual records. The Cleveland Bird Calendar. 42(4): 3.

8 September 1946, 2 Kirtland's warblers, Rocky River Valley near Hilliard Bridge, Cuyahoga County, Ohio.

Williams, A.B. 1946b. Species occurrence records (within 30 miles of Cleveland Public Square): migrant and vagrant species. The Cleveland Bird Calendar. 42(4): 4–9.

8 September 1946, 2 Kirtland's warblers. [9].

Williams, B.; Ealding, W. 2015. 2014 annual report of the Virginia Avian Records Committee. The Raven. 86: 46–51.

13 August 2014 1 Kirtland's warbler, Albemarle County, Virginia. The record was not accepted by the Virginia Avian Records Committee. [51].

Wilson, G. 1922. Birds of Bowling Green, Kentucky. The Auk. 39: 233–243.

Between 1912 and 1921, Kirtland's warbler(s), Bowling Green, Kentucky. Kirtland's warbler is considered as being identified to the author's entire satisfaction, but no specimens were taken. [243].

Winters, W. 2015. Identifying areas of high risk for avian mortality by performing a least accumulated-cost analysis. The University of Southern California.

Kirtland's warbler is one of the proof-of-concept case studies using a least accumulated-cost analysis to predict probability of use routes during migration by analyzing the presumed energetic cost of changing altitude (in response to topographic relief), traversing large bodies of water, and compensating for wind. The results of this study show that least accumulated-cost analyses may be a viable option to assist in determining preferred migration routes for migratory birds. Several migration maps are provided. [3, 4, 8–9, 12, 19, 21–24, 30, 39–41, 42, 43, 49–54, 57–61, 62, 63].

Wiseman, A.J. 1976. Banded Kirtland's warbler recovered at Cincinnati. Inland Bird Banding News. 48(5): 192–193.

27 September 1975, 1 banded male Kirtland's warbler window strike kill, Cincinnati, Ohio. The bird was banded as a nestling by Bruce Radabaugh on 2 July 1971, 4 miles southeast of Mio, Michigan. The bird was deposited in the Cincinnati Museum of Natural History.

Wood, J.C. 1908a. The Kirtland and pine warblers in Wayne Co., Michigan. The Auk. 28: 480.

30 May 1907, 1 Kirtland's warbler, Hamtramck Township, Wayne County, Michigan.

Wood, N.A. 1902. Capture of Kirtland's warbler at Ann Arbor, Michigan. The Auk. 19: 291.

14 May 1902, 1 female Kirtland's warbler specimen, Ann Arbor, Michigan.

Wood, N.A. 1903. Some rare Washtenaw County warblers. Bulletin of the Michigan Ornithological Club. 4: 81.

14 May 1902, 1 female Kirtland's warbler specimen, Washtenaw County, Michigan.

Wood, N.A. 1905. Kirtland's warbler. Bulletin of the Michigan Ornithological Club. 6: 21.

6 May 1905, 1 singing male Kirtland's warbler in a willow thicket, Ann Arbor, Michigan.

Wood, N.A. 1906. Twenty-five years of bird migration at Ann Arbor, Michigan. Michigan Academy of Science. 8: 151–156.

Provides the earliest Kirtland's warbler arrival date (6 May), average arrival date (14 May), and first arrival dates for the years 1875–1905 (5 May 1875, 16 May 1879, 18 May 1888, 14 May 1902) at Ann Arbor, Michigan. [156].

Wood, N.A. 1908b. Notes on the spring migration (1907) at Ann Arbor, Michigan. *The Auk*. 25(1): 10–15.

13 May 1907, 1 Kirtland's warbler, Ann Arbor, Michigan. 16 May 1907, 1 Kirtland's warbler, Ann Arbor, Michigan. [12].

Wood, N.A. 1912. Notes on Michigan birds. Report of the Michigan Academy of Science. 14: 159–162.

10 May 1911, 1 Kirtland's warbler, Ann Arbor, Michigan. [160].

Wood, N.A. 1951. The birds of Michigan. Miscellaneous Publications No. 75. Ann Arbor, MI: University of Michigan, Museum of Zoology.

15 May 1875, 1 female Kirtland's warbler, near Scio, Washtenaw County, Michigan. 16 May 1879, 1 female Kirtland's warbler, near Scio, Washtenaw County, Michigan. 11 May 1883, 1 male Kirtland's warbler, Battle Creek, Calhoun County, Michigan. 21 May 1885, 1 male Kirtland's warbler, Spectacle Reef Lighthouse, Mackinac County, Michigan. 15 May 1886, 1 female Kirtland's warbler, Kalamazoo County, Michigan. 18 May 1888, 1 male Kirtland's warbler, in the area of Ann Arbor, Washtenaw County, Michigan. 14 May 1902, 1 female Kirtland's warbler, in the area of Ann Arbor, Washtenaw County, Michigan. 6 May 1905, 1 male Kirtland's warbler, Ann Arbor, Washtenaw County, Michigan. 13 and 16 May 1907, 1 male Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. 10 May 1911, 1 Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. 21 May 1915, 1 Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. Early September 1915 and 1916, several Kirtland's warblers, near Luzerne, Oscoda County, Michigan. 9 May 1916, 1 male Kirtland's warbler, near Ann Arbor, Washtenaw County, Michigan. 9 September 1916, 1 male Kirtland's warbler, near Luzerne, Oscoda County, Michigan. 28 September 1919, 1 male Kirtland's warbler, 7 miles south of Houghton Lake Village, Roscommon County, Michigan. 21 May 1926, 1 female Kirtland's warbler, Fish Point, Tuscola County, Michigan. 1 September 1930, male Kirtland's warblers, southeast of Lovells, Crawford County, Michigan. 20 August 1933, male Kirtland's warblers, Red Oak, Oscoda County, Michigan. 26 August 1933, male Kirtland's warblers, southeast of Lovells, Oscoda County, Michigan. Deposition records are noted if known. [402–404].

Wood, N.A.; Tinker, A.D. 1934. Fifty years of bird migration in the Ann Arbor region of Michigan, 1880–1930. Occasional Papers of the Museum of Zoology Number 280. Ann Arbor, MI: University of Michigan Press.

Lists the following dates for Kirtland's warblers in the Ann Arbor, Washtenaw County, Michigan region: 6 May 1905, 13 May 1907, 10 May 1911, 21 May 1915, and 9 May 1916. No Kirtland's were found in the years 1917 to 1930. [44].

Woodford, J. 1959. Migrant Kirtland's warbler mist-netted. *Bird-Banding*. 30: 234.

10 May 1959, 1 male Kirtland's warbler banded, Point Pelee National Park, Ontario. Notes measurements, weight, and other Point Pelee Kirtland's warbler records.

Woodford, J. 1960. The Kirtland's warbler in Ontario: 1900–1959. Contributions [of the] Ontario Bird Banding Association. 1: 3–6.

Discusses 12 Ontario Kirtland's warbler records. Includes a distribution map of Kirtland's records.

Woodruff, F.M. 1907. The birds of the Chicago area. Chicago: Chicago Academy of Sciences.

7 May 1894, 1 Kirtland's warbler specimen, Du Page County, Illinois. 22 May 1899, 1 male Kirtland's warbler specimen, Morgan Park, Illinois. Discusses the breeding grounds and includes a quotation from Wood 1904. [165–168].

Wormington, A. 1985. Ontario Bird Records Committee report for 1984. Ontario Birds. 3(1): 2–17.

14–19 May 1979, 1 male Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC). 16 May 1974, 1 Kirtland's warbler, Toronto, Metropolitan Toronto, Ontario, accepted by OBRC. 8–13 June 1958, 1 territorial male Kirtland's warbler, McVicar, Bruce County, Ontario, accepted by OBRC. 15 May 1984, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. 16 May 1976, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. [12, 15, 16].

Wormington, A. 1987. Ontario Bird Records Committee report for 1986. Ontario Birds. 5(2): 42–63.

24 May 1959, 1 male Kirtland's warbler, Toronto, Metropolitan Toronto, Ontario, accepted by Ontario Bird Records Committee (OBRC). 16 May 1986, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. 14 May 1985, 1 Kirtland's warbler, Point Pelee National Park, Essex County, Ontario, not accepted by OBRC. [54, 59].

Wormington, A. 2009. The spring migration: Ontario. North American Birds. 63(3): 417–424.

9 May 2009, 1 Kirtland's warbler, Pelee Island, Ontario. 13 May 2009, 1 Kirtland's warbler, Point Pelee, Ontario. 15 May 2009, 1 Kirtland's warbler, Rondeau Provincial Park, Ontario. 17 May 2009, 1 Kirtland's warbler, Lake Manitoulin, Manitoulin County, Ontario. [422].

Wormington, A. 2010. The spring migration: Ontario. North American Birds. 64(3): 413–419.

7 May 2010, 1 record early Kirtland's warbler, Point Pelee, Ontario. 14 May 2010, 1 Kirtland's warbler, Point Pelee, Ontario. 22–23 May 2010, 1 Kirtland's warbler, Point Pelee, Ontario. 29 May 2010, 1 Kirtland's warbler, Courtright Ridge, Long Point, Ontario. [417].

Wormington, A. 2011a. The spring migration: Ontario. North American Birds. 65(3): 427–433.

2 May 2011, 1 Kirtland's warbler, Rondeau Provincial Park, Ontario. 10 May 2011, 1 Kirtland's warbler, seen flying southward off of Fish Point, Pelee Island, Ontario. 11 May 2011, 1 Kirtland's warbler, Long Point checklist area, Ontario. Nine Kirtland's warblers were found at Point Pelee in 2011 on the dates of 6, 8, 10, 11, 13, 13, 19, and 23 May. [431].

Wormington, A. 2012. Point Pelee Birds—annual summary for 2011.

The following Kirtland's warbler records are from Point Pelee National Park, Essex County, Ontario, in 2011: 6 May, 1 record early male, West Beach. 10 May, 1 female or first year male, The Dunes to Sleepy Hollow. 10 May, 1 female, White Pine Picnic Area. 11 May, 1, Concession Road E. 13 May, 1 female, Pioneer Beach. 19 May, 1, Pioneer Picnic Area. 23 May, 1 singing male, Sanctuary Picnic Area. Another male was reported 13 May in the northwest part of Hillman Marsh, Essex County, Ontario. [3, 9].

Wormington, A. 2013a. Point Pelee Birds—annual summary for 2012.

No Kirtland's warblers were reported at Point Pelee National Park for the first time since 2001. [1].

Wormington, A. 2013b. Spring migration: Ontario. North American Birds. 66(3): 471–478.

5 May 2012, 1 Kirtland's warbler, Stoney Creek, Hamilton County, Ontario. 26 May 2012, 1 Kirtland's warbler, Carden Alvar, Ontario. 21 May through at least 30 May 2012, 2 territorial singing male Kirtland's warblers, Petawawa Military Reserve, Renfrew County, Ontario. [476].

Wormington, A. 2014a. Point Pelee Birds—annual summary for 2013.

15 May 2013, 1 male Kirtland's warbler, Northwest Beach, Point Pelee National Park, Essex County, Ontario. 18 May 2013, 1 female Kirtland's warbler, West Beach, Point Pelee National Park, Essex County, Ontario, photograph included. [5].

Wormington, A. 2014b. Spring report Ontario. North American Birds. 67(4): 583–592.

15 May 2013, 1 Kirtland's warbler, Point Pelee National Park, Ontario. 16 May 2013, 1 Kirtland's warbler, Rondeau Provincial Park, Ontario. 18 May 2013, 1 Kirtland's warbler, Point Pelee National Park, Ontario. [589].

Wormington, A. 2015. Point Pelee Birds—annual summary for 2014.

Reports that no Kirtland's warblers were recorded at Point Pelee in 2014. [1].

Wormington, A.; Cranford, M.H. 2011b. Ontario Bird Records Committee report for 2010. Ontario Birds. 29(3): 106–148.

7 May 2010, 1 male Kirtland's warbler photographed, Hillman Marsh, Essex County, Ontario, accepted by Ontario Bird Records Committee (OBRC) (2010-045). 14 May 2010, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2010-046). 22–23 May 2010, 1 male Kirtland's warbler photographed, Point Pelee National Park, Essex County, Ontario, accepted by OBRC (2010-070), photograph included. Correction to the 1991 report: Kirtland's warbler (1991 at Leslie Street Spit), delete "adult" from the record. [128, 129, 142].

Wormington, A.; Curry, R.H. 1990. Ontario Bird Records Committee report for 1989. Ontario Birds. 8(1): 4–33.

14 August 1988, 1 Kirtland's warbler, Minaki, Kenora County, Ontario, accepted by Ontario Bird Records Committee. [4, 25].

Wright, R. 2007. Sightings. Winging It. 19(6): 12–13.

Early October 2007, 1 Kirtland's warbler, Wayne County, Ohio. [13].

Yoerger, Q. 2014. WSO Records Committee report: spring 2013. The Passenger Pigeon. 76(1): 149–158.

20 May 2013, 1 Kirtland's warbler, Peshtigo Harbor Wildlife Area, Marinette County, Wisconsin, not accepted by Wisconsin Society for Ornithology Records Committee (#2013-098). [157].

Yoerger, Q. 2015. WSO Records Committee report: spring 2014. The Passenger Pigeon. 77(1): 79–86.

8 May 2014, 1 Kirtland's warbler, Tuggle Parkway, Polk County, Wisconsin, not accepted by the Wisconsin Society for Ornithology Records Committee. [83].

Yoerger, Q. 2016. WSO Records Committee report: spring 2015. The Passenger Pigeon. 78(1): 129–135.

9 May 2015, 1 Kirtland's warbler, Bender Park, Milwaukee County, Wisconsin, accepted by Wisconsin Society for Ornithology Records Committee. [130–131].

Ziarno, J. 2004. Birds in the Saginaw Bay area: March 1, 2004 through May 31, 2004.

12 May 2004, 1 singing male Kirtland's warbler, Bayport area, Huron County, Michigan. 21 May 2004, 1 Kirtland's warbler, Hampton Township, Bay County, Michigan. [13].

Zimmerman, D.A.; Van Tyne, J. 1959. A distributional check-list of the birds of Michigan. Occasional Papers of the Museum of Zoology University of Michigan. 608: 1–63

Lists Michigan counties for which there are Kirtland's warbler breeding records and cites 3 additional records outside of the breeding range: 21 May 1926, 1 Kirtland's warbler specimen, Fish Point, Tuscola County, Michigan; 10 May 1955, 1 male Kirtland's warbler, Saginaw, Saginaw County, Michigan; and 21 May 1885, 1 female Kirtland's warbler specimen, Spectacle Reef Lighthouse, Mackinac County, Michigan. The Spectacle Reef Kirtland's warbler specimen was deposited in the collection of the University of Michigan Museum of Zoology. [48].



Male Kirtland's warbler having measurements taken by Joe Wunderle. This bird was captured 18 March 2003 on Eleuthera, The Bahamas. Courtesy photo by Dr. Ancilleno Davis.

II. DESCRIPTIONS AND PHYSICAL APPEARANCE

Alsop, F.J., III. 2002. Birds of Canada. Greenberg, R., ed. Singapore: Kyodo.

Gives a brief description of Kirtland's warbler plumage, song, behavior, and flight pattern. No specific Canadian information. [54].

Apgar, A.C. 1898. Birds of the United States east of the Rocky Mountains: a manual for the identification of species in hand or in the bush. New York: American Book Company.

Provides a brief physical description of the Kirtland's warbler and notes the general range. [87–88].

Arlton, A.V. 1949. Songs and other sounds of birds. Parkland, WA: The Author.

Briefly describes Kirtland's warbler plumage characteristics and song. [125].

Averill, C.K. 1920. Migration and physical proportions. A preliminary study. The Auk. 37: 572–579.

Refers briefly to Kirtland's warbler measurement data in support of the hypothesis that the "longest migrations in any group of similar birds are made by those with longer wings, smaller tails, and smaller bills and feet ..." [577].

Averill, C.K. 1922. A law governing the elevation of the nesting site. The Condor 24: 57–60.

Discusses the relationship between wing length and nest height in the genus *Dendroica*. Includes Kirtland's warbler data. [58].

Axtell, H.H. 1938. The song of Kirtland's warbler. Auk. 55: 481–491.

Provides a verbal description and hand-drawn graphs of a Kirtland's warbler song. (See also McCabe 1938.)

Baird, S.F. 1852. Description of a new species of *Sylvicola*. Annals of the Lyceum of Natural History of New York. 5: 217–218.

13 May 1851, 1 immature male Kirtland's warbler, near Cleveland, Cuyahoga County, Ohio. Presents the original description of the sub-adult male type specimen, including a detailed physical description, a record of its capture, and the dedication of its name: *Sylvicola kirtlandii* Baird. Includes color plate of the male.

Baird, S.F. 1858. Reports of explorations and surveys, to ascertain the most practicable and economical route for a railroad from the Mississippi River to the Pacific Ocean. Washington, DC: Beverly Tucker, Printer. Vol. 9.

Lists Kirtland's warbler in the key to *Dendroica*. Also provides a description of the type specimen. [266, 286].

Baird, S.F. 1859. Catalogue of North American birds chiefly in the Museum of the Smithsonian Institution. Washington, DC: Smithsonian Institution.

Dendroica kirtlandii Baird is listed as number 205 in the catalog. (Also cited as Smithsonian Miscellaneous Collections vol. 2, article 4.) [6].

Baird, S.F.; Brewer, T.M.; Ridgway, R. 1905. A history of North American Birds. Boston: Little, Brown, and Company. Vol. 1.

Provides a thorough physical description of the type specimen and mentions 2 other specimens and 1 sighting recorded through 1860. Includes color plate of male head. [1:221, 272, pl. 14].

Baird, S.F.; Cassin, J.; Lawrence, G.N. 1860. The birds of North America; the description of species based chiefly on the collections in the Museum of the Smithsonian Institution. Philadelphia: J.B. Lippincott and Company.

Revises and expands Baird 1858. Includes Kirtland's warbler in the key to the *Dendroica* and provides a description of the type specimen. [266, 286].

Berger, A.J. 1968a. Appendicular myology of Kirtland's warbler. The Auk. 85: 594–616.

Details the appendicular muscle structure of the Kirtland's warbler. Includes black-and-white drawings of wing and leg muscles.

Berger, A.J. 1968b. Behavior of hand-raised Kirtland's warblers. The Living Bird. 7: 103–116.

Includes notes on Kirtland's warbler feeding, preening, head scratching, bathing, and drinking, chasing, agonistic displays, call notes, and migratory restlessness. Also includes color plate of male feeding fledgling, black-and-white drawing of fledgling, and black-and-white photographs of preening and sleeping behaviors.

Blake, C.H. 1966. Warbler tail spots. Eastern Bird Banding Association News. 29: 54–55.

Notes that Kirtland's warbler has no special winter plumage. [54].

Blake, C.H. 1980. Warbler tail spots. North America Bird Bander. 5(3): 98–99.

Reprints Blake 1966 noting that Kirtland's warbler has no special winter plumage.

Bondesen, P. 1977. North American bird songs—a world of music. Klampenborg, Denmark: Scandinavian Science Press, Ltd.

Describes Kirtland's warbler song in detail and includes sonogram. Also notes times of singing and various perches used while singing. [16, 96–97].

Bull, J.; Farrand, J., Jr. 1977. The Audubon Society field guide to North American birds: eastern region. New York: Alfred A. Knopf.

Describes Kirtland's warbler range, voice, field marks, habitat, and nest. Includes a color photograph of bird, nest and young, and range map. [374, 689–690, 750, pl. 374].

Cassin, J. 1856. Illustrations of the birds of California, Texas, Oregon, British and Russian America. Philadelphia: J.B. Lippincott and Company.

Provides a description of the Kirtland's warbler based on the type specimen. Speculates that Kirtland's inhabit the more western regions of North America. Includes color plate of male (1862 edition identical to 1856 edition). [278–282, pl. XLVII].

Chapman, F.M. 1895. Handbook of birds of eastern North America. New York: D. Appleton and Company.

Provides a physical description of Kirtland's warbler, with notes on migration, and speculations concerning the nesting area. [362].

Chapman, F.M. 1903. Color key to North American birds. New York: Doubleday, Page and Company.

Provides a description of Kirtland's warbler plumage, song, and range. Includes a color illustration. [191].

Cory, C.B. 1899. The birds of eastern North America known to occur east of the ninetieth meridian: Part II: Land birds: Key to the families and species. Second. Boston: Bay State Publishing Co.

Lists Kirtland's warbler in the key to warblers with a brief description and mentions that little is known about its range. Also includes a black-and-white drawing of the bird. [284, 301, 381].

Cory, C.B. 1909. The birds of Illinois and Wisconsin. Chicago: Field Museum of Natural History.

7 May 1894, 1 Kirtland's warbler specimen, Glen Ellyn, DuPage County, Illinois. 25 May 1894, 1 Kirtland's warbler specimen, Winnebago County, Illinois. 22 May 1899, 1 male Kirtland's warbler specimen, Morgan Park, Chicago, Illinois. 1 Kirtland's warbler shot, but escaped (date unspecified), Lake Koshkonong, Wisconsin. July 1903, 15 young and old Kirtland's warbler specimens, nest, and eggs collected, Oscoda County, Michigan. 8 May 1885, 1 male Kirtland's warbler specimen, near St. Louis, Missouri. Includes a detailed physical description of spring male and female Kirtland's and a fall and winter description of immature birds. [659–661].

Coues, E. 1872. Key to North American birds containing a concise account of every species of living and fossil bird at present known from the continent north of the Mexican and United States boundary. Salem, MA: Salem Press.

Provides a physical description of the Kirtland's warbler. Mentions that they are very rare and only 2 or 3 specimens are known from Ohio and The Bahamas. [104].

Coues, E. 1873. A check list of North American birds. Salem, MA: Naturalist's Agency.

Kirtland's warbler is listed. [19].

Coues, E. 1878. Birds of the Colorado Valley. Washington, DC: U.S. Geological and Geographical Survey of the Territories.

Provides a bibliography of published Kirtland's warbler articles. Notes that 3 specimens had been taken in Ohio, 1 at sea between Cuba and The Bahamas, and 1 had been seen in Wisconsin. [249].

Coues, E. 1880. Description of the female *Dendroeca kirtlandi*. Bulletin of the Nuttall Ornithological Club. 5: 49–50.

16 May 1879, 1 female Kirtland's warbler specimen, Ann Arbor, Michigan. Provides a detailed description of plumage and measurements. The specimen was deposited in the U.S. National Museum.

Coues, E. 1882. The Coues check list of North American birds. 2nd ed. Boston: Estes and Lauriat.

Kirtland's warbler is listed. [38].

Coues, E. 1884. Key to North American birds. Containing a concise account of every species of living and fossil bird at present known from the continent north of the Mexican and United States boundary, inclusive of Greenland. 2nd ed. Boston, MA: Estes and Lauriat.

Provides a detailed physical description and measurements of male and female Kirtland's warblers. [306–307].

Coues, E. 1927. Key to North American birds. 5th ed. Boston: The Page Company. Vol. 1.

Provides a detailed description with measurements of male and female Kirtland's warblers. Notes 20 specimens from the United States and 55 from The Bahamas. Includes a black-and-white drawing of a male. [330–331].

Ehrlich, P.R.; Dobbin, D.S.; Wheye, D. 1998. Kirtland's warbler. In: The Birder's Handbook. New York, Simon and Schuster Inc.: 526.

Includes descriptions of Kirtland's warbler breeding habitat, eggs, nest, conservation, and diet.

Ewert, D. 1989. Individual variation in song of the Kirtland's warbler (*Dendroica kirtlandii*).

A total of 1,930 songs of 49 male Kirtland's warblers were recorded in 1989 to determine if individual male Kirtland's can be identified by sonograms. It was determined that about 18 percent could be identified by sonograms. Maps of recording locations and sonograms are included.

Ficken, M.S.; Ficken, R.W. 1962. The comparative ethology of the wood warblers: a review. Living Bird. 1: 103–122.

Kirtland's warbler is 1 of the species included in the discussion of tail wagging. [107–108].

Giebel, C.G. 1875. Thesaurus Ornithologiae. Leipzig: F.A. Brockhaus. Vol. 2.

Provides references to early descriptions of the Kirtland's warbler. [603].

Godfrey, W.E. 1966. The birds of Canada. Ottawa: National Museum of Canada.

Provides a detailed physical description and measurements of Kirtland's warbler. Considers Kirtland's as a rare migrant in Ontario with no evidence of breeding. Notes that they breed in Michigan and winter in The Bahamas. [339, pl. 56].

Goodman, S.M. 1982. Age and sexual morphological variation in the Kirtland's warbler (*Dendroica kirtlandii*). The Jack-Pine Warbler. 60(4): 144–147.

Quantifies morphological variation of 144 Kirtland's warbler study skins in the University of Michigan Museum of Zoology. A table with results is presented.

Gray, G.R. 1869. Handlist of genera and species of birds, distinguishing those contained in the British Museum: Part 1, Accipitres, Fissirostres, Tenuirostres, and Dentirostres. London: British Museum.

Kirtland's warbler is listed in the catalog as found in northern Ohio and The Bahamas and is a desired specimen by the museum. [241].

Gross, M.E. 1938. Bird that adopted Michigan. Nature Magazine. 31: 301–302, 309.

Details a trip to find the Kirtland's warbler. Briefly discusses song, nest, and tail-wagging habits. Includes black-and-white photographs of a bird and habitat.

Harrison, H.H. 1948. American birds in color. New York: W.H. Wise and Co., Inc.

Briefly describes Kirtland's warbler plumage. Includes black-and-white photograph of bird at nest. [324, 325].

Hausman, L.A. 1944. The illustrated encyclopedia of American birds. New York: Halcyon House.

Briefly describes Kirtland's warbler plumage and distribution. Includes a black-and-white drawing of a bird. [418].

Jones, L. 1900. Kirtland's warbler (*Dendroica kirtlandi*) at Oberlin, Ohio. The Wilson Bulletin. 12(3): 1–2.

7 and 9 May 1900, 1 singing male Kirtland's warbler specimen in an orchard, Oberlin, Ohio, just outside the city limits. The bird was seen and heard on both days and taken as a specimen on 9 May. The author thinks they were 2 different birds. 9 May 1900, 1 Kirtland's warbler song record, "South Woods," 1 mile south of Oberlin, Ohio. Also provides a detailed song description.

Jones, L. 1900. Warbler songs. The Wilson Bulletin. 12: 1–57.

Provides a description of the Kirtland's warbler song and speculates on the uncertain geographical range. [46].

Jordan, D.S. 1876. Manual of the vertebrates of the northern United States, including the district east of the Mississippi River, and north of North Carolina and Tennessee, exclusive of marine species. Chicago: Jansen, McClurg and Co.

Provides brief description of Kirtland's warbler range and physical characteristics and mentions they are known from Ohio and The Bahamas from 2 or 3 specimens. [66].

Jordan, D.S. 1929. Manual of vertebrate animals of the northeastern United States. 13th ed. New York: World Book.

Provides a brief description of Kirtland's warbler range and physical characteristics and a notes range. [354].

Lovette, I.J.; Pérez-Emán, J.L.; Sullivan, J.P.; Banks, R.C.; Fiorentino, I.; Córdoba-Córdoba, S.; Echeverry-Galvis, M.; [et al.]. 2010. A comprehensive multilocus phylogeny for the wood-warblers and a revised classification of the Parulidae (Aves). *Molecular Phylogenetics and Evolution*. 57(2): 753–770. <https://doi.org/10.1016/j.ympev.2010.07.018>.

Parsimony, maximum likelihood, and Bayesian methods were used to reconstruct relationships among all genera and nearly all wood-warbler species, based on a matrix of mitochondrial DNA (5,840 nucleotides) and nuclear DNA (6 loci, 4,602 nucleotides) characters. Provides a summary phylogenetic hypothesis that will be broadly applicable to investigations of historical biogeography, processes of diversification, and evolution of trait variation. Kirtland's warbler is put into the genus *Setophaga*. [755].

Martin, J.W. 1901. Kirkland's warbler. *The Petrel*. 1: 15.

Provides a description of male and female Kirtland's warblers and discusses known records.

Maynard, C.J. 1881. The birds of eastern North America with original descriptions of all the species which occur east of the Mississippi River between the Arctic Circle and the Gulf of Mexico with full notes upon their habits, etc. Newtonville, MA: C.J. Maynard and Co.

Provides a Kirtland's warbler physical description and notes the 5 specimens known through 1881. The author suspects that Kirtland's will prove to be common and will be found breeding in The Bahamas. Includes a color plate of a female. [508, pl. 17].

Maynard, C.J. 1896. The birds of eastern North America: with original descriptions of all the species which occur east of the Mississippi River, between the Arctic Circle and the Gulf of Mexico, with full notes upon their habits, etc. Revised. Newtonville, MA: C.J. Maynard & Co.

Provides an extremely detailed physical description of male and female Kirtland's warblers and discusses Maynard's encounters with the warbler in The Bahamas (26 records for Nassau, New Providence, and 1 record for Southern Bight, Andros, are included). Includes color plates of male and female. [592–596, pl. 17, pl. 21].

Maynard, C.J. 1899. American warblers. *Nature Study in Schools*. 1: 85–92.

Kirtland's warbler is included in the key to warblers. [91–92].

Maynard, C.J. 1916. A field ornithology of the birds of eastern North America. West Newton, MA: C.J. Maynard.

Describes Kirtland's warbler plumage, size, nest placement, song, migration habitat, and range. [446].

Maynard, C.J. 1918. Directory to the birds of eastern North America. West Newton, MA: C.J. Maynard.

Provides a brief plumage and song descriptions, and notes life history for *Agreocantor kirtlandi*, Kirtland's warbler. (Title page says 1907; actually, published in 1918 per author's note.) [243–244].

Moyer, L.B. 1908. Song of Kirtland's warbler. *Bird-lore* 10: 264.

16 May 1908, 1 singing male Kirtland's warbler, LaGrange, Illinois. Includes a description of the song.

Nichols, L.N. 1936. Kirtland's warbler. In: Pearson, T.G., ed. *Birds of America*. Part 30. Garden City, NY: Garden City Publishing Co.: 147–148.

Provides a description of Kirtland's warbler physical characteristics, nest and eggs, distribution, and a history of human interaction with the species.

Pearson, T.G.; Brimley, C.S., Brimley, H.H. 1919. *Birds of North Carolina*. North Carolina Geological and Economic Survey. Raleigh, NC: Edwards and Broughton Printing Co. Vol. 4

Kirtland's warbler is included in a key and in a list of warblers, in anticipation of its occurrence in North Carolina as a migrant. A brief description of male and female is included. [283, 298].

Peterson, R.T. 1980. *A field guide to the birds*. Boston, MA: Houghton Mifflin Company.

Describes Kirtland's warbler plumage, range, voice, and habitat. A range map is included. [234–235].

Pough, R.H. 1946. *Audubon bird guide: eastern land birds*. Garden City, NY: Doubleday and Company.

Describes Kirtland's warbler plumage, habits, voice, nest, and range. Includes a color plate of a male and female. [177, pl. 24].

Probst, J.R.; Donner, D.M.; Bozek, M.A. 2007. Continuous, age-related plumage variation in male Kirtland's warblers. *Journal of Field Ornithology*. 78(1): 100–108. <https://doi.org/10.1111/j.1557-9263.2006.00091.x>.

Discusses a method for field aging male Kirtland's warblers by plumage.

Pyle, P. 1997. *Identification guide to North American birds, part 1*. Bolinas, CA: Slate Creek Press.

Provides a guide for aging and sexing birds using measurements, molt, skull pneumatization, and feather patterns. Kirtland's warbler is included. Updates and expands Pyle et al. 1987. [486–487].

Pyle, P.; Howell, S.N.G.; Yunick, R.P.; DeSante, D. 1987. *Guide to North American passerines*. Bolinas, CA: Slate Creek Press.

Provides a guide for aging and sexing birds using measurements, molt, skull pneumatization, and feather patterns. Kirtland's warbler is included. [158–159].

Reed, C.A. 1909. *Bird guide. Part 2, land birds east of the Rockies: from parrots to bluebirds*. Worcester, MA: The Author.

Includes brief descriptions of Kirtland's warbler plumage, song, nest, and range. Includes a color illustration of the bird (1912 and 1916 versions identical). [164].

Ridgway, R. 1887. *A manual of North American birds*. Philadelphia, PA: J.B. Lippincott Company. <https://doi.org/10.5962/bhl.title.57050>.

Provides a key to North American birds that includes the Kirtland's warbler. Detailed descriptions of adult male, female, and first fall Kirtland's are included. [514].

Robbins, C.S.; Bruun, B.; Zim, H.S. 1966. Birds of North America. New York: Golden Press.

Includes color plate of a male Kirtland's warbler, sonogram, range map, and a physical description. [268–269].

Roberts, T.S. 1932. The birds of Minnesota. Minneapolis: University of Minnesota Press.

Kirtland's warbler's status in Minnesota is considered very rare or accidental (volume 1). Volume 2 provides a brief overview of Kirtland's warbler range and life history and descriptions of breeding habitat, song, and field marks. Kirtland's is included on the Minnesota list from 1 male specimen, 13 May 1892, taken near Minneapolis. Details of the specimen are provided. The specimen was deposited at the University of Minnesota Museum. Also mentioned are 2 possible Kirtland's warbler sight records: 19 May 1921 and 27 August 1925, both in Frontenac, Minnesota. [1:65, 2:242–243].

Sharpe, R.B. 1885. Catalogue of the passeriformes or perching birds in the collection of the British Museum. London: Order of the Trustees.

Includes a description of Kirtland's warbler physical characteristics and a list of published Kirtland's papers. [322–323].

Sundevall, C.J. 1869. Oefversigt Af Fogelslaegtet Dendroeca. In: Oefversigt Af Kongl. Vetenskaps-Akademiens, Forhandlingar. Stockholm: Tjugondesjette Argagen: 605–618.

Provides a Kirtland's warbler physical description, measurements, and notes on range. The article is in Latin. [617].

Taverner, P.A. 1919. Birds of eastern Canada. Ottawa: J. de Labroquerie Tache.

Describes Kirtland's warbler plumage, nesting, and distribution. Speculates that the Kirtland's population is limited by winter survival in The Bahamas. [198–199].

Taverner, P.A. 1934. Birds of Canada. 1st ed. Ottawa: J.O. Patenaude.

Describes Kirtland's warbler plumage, nesting, and distribution. Speculates that the Kirtland's population is limited by winter survival in The Bahamas. [358].

Taverner, P.A. 1939. Canadian land birds: a pocket field guide. Toronto: Musson Book Company.

Describes Kirtland's warbler plumage, nest, habitat, and range. [182].

Taverner, P.A. 1947. Birds of Canada. Revised. Toronto: Musson Book Company.

Describes Kirtland's warbler plumage, nesting, and distribution. Speculates that the Kirtland's population is limited by winter survival in The Bahamas. [358].

Van Tyne, J. 1947. Kirtland's warbler. In: Peterson, R.T., ed. A field guide to the birds. 2nd ed. Boston, MA: Houghton Mifflin Company: 148–149, pl. 49.

Describes Kirtland's warbler physical characteristics, range, voice, and habitat. Includes a color plate of a male.

Van Tyne, J. 1957. Kirtland's warbler, *Dendroica kirtlandii*. In: Griscom, L.; Suprunt, A., Jr., eds. The warblers of America. New York: Devin-Adair: 178–181.

Provides an overview of Kirtland's warbler life history, distribution, and a physical description. [Pl. 21].

Van Tyne, J. 1979. Kirtland's warbler, *Dendroica kirtlandii*. In: Griscom, L.; Sprunt, A., Jr., eds. *The warblers of America*. Garden City, NY: Doubleday: 131–133.

Describes Kirtland's warbler plumage, nesting behavior, voice, food habits, and range. Includes a color plate of a male and female, and a map of the breeding range.

Voous, K.H. 1977. List of recent holarctic bird species. *Passerines*. *Ibis*. 119: 376–406.

Kirtland's warbler in a different taxonomic order with the remainder of the Parulidae. [392].

White, T. 1996. Kirtland's versus yellow-throated warblers. *Birding*. 28: 269–270.

Discusses the problems of identifying Kirtland's warblers in The Bahamas, and describes possible confusion with magnolia warblers and the Bahamian race of the yellow-throated warbler.

White, T. 2011. The false Kirtland's: a cautionary tale. *Birding*. 43(6): 34–39.

Discusses the Bahama warbler and the confusion and misidentification with the Kirtland's warbler.

Wing, L.W. 1933. Summer warblers of the Crawford County, Michigan, uplands. *The Wilson Bulletin*. 45: 70–76.

Describes the Kirtland's warbler song and, briefly, the habitat. Speculates that the Kirtland's warbler is a very old species and is the most primitive member of the genus. [72–73].

Wood, N.A. 1916. 505: Kirtland's warbler. In: Maynard, C.J., ed. *A field ornithology of the birds of eastern North America*. West Newton, MA: C.J. Maynard: 1–505.

Provides descriptions of Kirtland's warbler plumage and migration habitat and notes range and behavior. [445].

Zuchold, E.A. 1854. Literarische Notizen. *Journal Fur Ornithologie*. 2: 353–355.

Notes Baird's (1852) description of the Kirtland's warbler type specimen. The article is in German. [354–355].



Top: Young jack pine occupied for the first time by Kirtland's warblers, taken 4 June 2006 in Oscoda County, Michigan. Courtesy photo by Michael Petrucha.

Bottom: Jack pine in Ogemaw County, Michigan, in the mid to late stage of occupancy by Kirtland's warblers, taken 9 June 2009. Pictured left to right are Carol Bocetti, Amanda Kelly, Tony Bocetti, Dottie Kelly, Julie Bocetti, and Kaitlyn Kelly. Courtesy photo by Carol Bocetti.

III. BREEDING HABITAT

Abramovsky, Z. 2003. The recovery of ecosystem processes after wildfire in Michigan jack pine forests. Michigan State University.

The recovery of soil nutrients in jack pine after fire was studied using a chronosequence of 11 stands spanning 72 years. Nitrogen mineralization spiked immediately after a fire, decreased to a minimum after 10–15 years, then increased to a steady state after about 40 years. Soil respiration rates declined immediately after a fire, increased after 10–15 years, then began to decline after 30 years. In jack pine, the accumulation of the forest floor regulates the recovery of nitrogen. All measured ecosystem processes returned to pre-fire levels within 40 years of a wildfire. Recommendations for future studies are included.

Abrams, M.D. 1982. Early plant succession on clearcut and burned jack pine sites in northern lower Michigan. Michigan State University.

Early plant succession was characterized on unburned clearcuts and burned sites of jack pine in northern Lower Michigan. Unburned clearcut sites rapidly converted to *Carex* meadows with low species diversity. Burned sites showed multiple successional patterns such as shrubs and early successional hardwoods, conversion to *Carex* meadows, and the establishment of jack pine. Plots were established on a 3-year-old jack pine clearcut prior to burning. Vegetation changes over 3 growing seasons were then recorded, and fire intensity was evaluated. Burned blocks compared to unburned blocks showed greater cover of grass, tree, and shrub species, lower cover of *Carex*, and a greater number of herbs. Higher fire intensity resulted in lower species diversity, lower total plant cover, increased survivability of blueberry compared to *Carex*, and lower frequency of grass species. Fertilization experiments showed that biomass of understory vegetation increased after fertilization and *Carex* showed an above average response. Comparisons showed that succession on each site is highly unique and the individualistic nature of each site, rather than age following disturbance, becomes the dominant aspect in understanding the successional relationships in these communities.

Abrams, M.D. 1984a. Uneven-aged jack pine in Michigan. Journal of Forestry. 82: 306–307.

Data was taken on jack pine sites in Crawford, Ogemaw, Oscoda, and Roscommon Counties. Ages were determined for the 20 largest diameter trees on each of 20 sites of trees 50 or more years old. The sites bore no evidence of burning. Plant cover and frequency were measured. The conclusion was that clearcutting and burning do not adequately regenerate jack pine in the study area and serve mainly as site preparation for planting.

Abrams, M.D. 1991. Post-fire revegetation of jack pine sites in Michigan: an example of successional complexities. In: Proceedings 17th annual Tall Timbers fire ecology conference. Tallahassee, FL: Tall Timbers Research Station: 197–209.

A study that investigates early plant succession following clearcutting and burning of jack pine in northern Lower Michigan. Thirty-nine species found on burned sites were not found on unburned clearcuts or in mature stands. Within 3–6 years following clearcutting, all unburned sites became dominated by *Carex* and had low species richness. Several burned sites also developed sedge meadows, but other burned sites did not. Only a small percentage of the surveyed sites had significant jack pine regeneration. Concludes that unless land managers devise a working system for natural regeneration, vast acreage will have to be planted or many clearcut and burned areas will convert to sedge meadows or hardwoods.

Abrams, M.D.; Dickmann, D.I. 1982. Early revegetation of clear-cut and burned jack pine sites in northern Lower Michigan. Canadian Journal of Botany. 60: 946–954.

Burned jack pine sites consistently showed greater species richness compared to unburned sites of the same age. Low species diversity on older unburned and certain burned sites was directly related to dominance by the sedge *Carex pensylvanica*.

Abrams, M.D.; Dickmann, D.I. 1983. Response of understory vegetation to fertilization on mature and clearcut jack pine sites in northern Lower Michigan. American Midland Naturalist. 110(1): 194–200.

A study was established on jack pine sites in northern Lower Michigan to investigate the effects of fertilization on the growth of understory vegetation after disturbance. Fertilization increased sedge and blueberry significantly. No species appeared to greatly suppress or exclude nearby species. Although sedge responded well to fertilizer, the study showed that its expansion following clearcutting and burning was in response to other factors such as increased space, light, soil temperatures, and available moisture, as well as increased nutrient availability.

Abrams, M.D.; Dickmann, D.I. 1984b. Floristic composition before and after prescribed fire on a jack pine clearcut site in northern Lower Michigan. *Canadian Journal of Forest Research*. 14: 746–749.

Plots were established and monitored for 3 years on a recent jack pine cut to characterize vegetation changes on burned and unburned blocks. Data were also recorded from an adjacent mature jack pine stand. Blueberry dominated the mature understory while sedge dominated the clearcut site. Two years after the fire, burned blocks were significantly different from unburned in total cover, cover of grass and sedge, and number of perennial forbs. Every species in the mature jack pine understory was present on either the unburned or burned clearcut plots.

Abrams, M.D.; Scott, M.L. 1989. Disturbance-mediated accelerated succession in two Michigan forest types. *Forest Science*. 35: 42–49.

Presents evidence that clearcutting and burning in some northern Lower Michigan jack pine sites result in succession to hardwoods.

Abrams, M.D.; Sprugel, D.G.; Dickmann, D.I. 1985. Multiple successional pathways on recently disturbed jack pine sites in Michigan. *Forest Ecology and Management*. 10: 31–48.

Jack pine communities in northern Lower Michigan recently disturbed by clearcutting or burning were studied over 3 growing seasons and were compared to undisturbed jack pine stands. Several pathways of early successional development are discussed. Concludes that the individualistic nature of each site, rather than age following disturbance, is the dominant aspect in understanding successional relationships in these communities.

Adams, S.I.; Donner, D.H. 2021. Opportunity areas for expanding Kirtland's warbler nesting habitat in Wisconsin and upper peninsula of Michigan. Res. Map NRS-12. Madison, WI: U.S. Department of Agriculture, Forest Service, Northern Research Station. <https://doi.org/10.2737/NRS-RMAP-12>.

Expanding Kirtland's warbler nesting habitat is a key element in continuing conservation actions outlined by the Kirtland's Warbler Conservation Team. Known characteristics of jack pine ecosystems suitable for Kirtland's warbler nesting habitat were used to map areas for opportunities to expand their nesting range across Wisconsin and Michigan's Upper Peninsula.

Albert, D.A. 1993. Use of landscape ecosystems for species inventory and conservation. *Endangered Species UPDATE*. 10(3–4): 20, 23–25.

Uses Kirtland's warbler as an example of the benefits of using the ecosystem management approach.

Allen, J.A. 1893. The geographical origin and distribution of North American birds, considered in relation to faunal areas of North America. *The Auk*. 10(2): 97–150.

Kirtland's warbler is listed under "humid province" (which is actually south of the breeding area; this paper was written before the breeding area was discovered). [133].

Anderson, S.H. 1979. Habitat structure, succession and bird communities. In: DeGraaf, R.M.; Evans, K.E., eds. *Management of north central and northeastern forests for non-game birds, workshop proceedings*. Minneapolis: North Central Forest Experiment Station: 9–21.

Notes that Kirtland's warbler depends on fire for periodically opening habitat. [18].

Anich, N.M. 2010. Monitoring the Kirtland's warbler population in Adams County, Wisconsin. *The Passenger Pigeon*. 72(2): 143–150.

A personal account documenting in detail the 2009 Kirtland's warbler field season in Adams County, Wisconsin. The first male was found 12 May and the first female on 19 May. In Adams County, 10 males, 10 females, and 10 nests were found. At least 6 of the nests were successful producing an estimated 23 young. Also reports that a nest in Marinette County fledged 3 young. The breeding habitat is described.

Anich, N.M.; Trick, J.A.; Grveles, K.M. 2011. Characteristics of a red pine plantation occupied by Kirtland's warblers in Wisconsin. *Wilson Journal of Ornithology*. 123(2): 199–205. <https://doi.org/10.1676/10-0571>.

A population of Kirtland's warblers nesting in a red pine plantation in Wisconsin was studied in 2008 and 2009. Red pine comprised 67 percent of trees, while oak (21 percent) and jack pine (12 percent) made up the rest. Ground cover and tree characteristics are discussed, as is nesting success.

Anonymous. [N.d.]. Management directions for designated critical habitat.

Defines the methods for protecting and improving designated critical nesting habitat for Kirtland's warblers, and for compliance with Section 7 of the Endangered Species Act.

Banks, W.G.; Sando, R.W.; Cooley, J.H.; Benzie, J.W. 1966. Study plan for prescribed burning study on a 500-acre operational burn (Kirtland's warbler habitat) at Mio, Michigan. St. Paul, MN: USDA Forest Service, North Central Experiment Station.

Objectives are to evaluate the effect of 6 combinations of weather conditions and firing techniques on fire intensity, and to evaluate the effect of the burn treatments and postburning seedbed treatments on the regeneration of jack pine.

Barnes, B.V. 1993. The landscape ecosystem approach and conservation of endangered spaces. *Endangered Species UPDATE*. 10(3–4): 13–19.

Discusses the landscape ecosystem approach using Kirtland's warbler as an example. Includes pictures of Kirtland's warbler habitat.

Barnes, B.V.; Bosio, M. 1986. Progress report—1986: analysis of the ecosystem structure and vegetation of the Mack Lake Burn: a framework for understanding the occurrence and behavior of Kirtland's warbler. *Ann Arbor, MI*.

Updates from the 1986 field season include the identification of 9 landscape ecosystem types. Openings and patchiness of jack pine regeneration were studied; the tree structure, composition, and density of jack pine seedlings were investigated; and the composition of ground cover was determined.

Barnes, B.V.; Theiss, C.; Zou, X. 1989a. Ecosystem structure and vegetation of the Mack Lake Burn: a framework for understanding the occurrence and behavior of Kirtland's warbler. *Ann Arbor, MI*.

Establishes a framework of landscape ecosystems for the Mack Lake Burn. Eleven landscape ecosystem types are identified and described. Occupancy of Kirtland's warbler by ecosystem type is given, and jack pine patterns are described.

Barnes, B.V.; Theiss, C.; Zou, X. 1989b. Landscape ecosystems of the Mack Lake Burn and their occupancy by the Kirtland's warbler. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 52–53.

Describes occupied Kirtland's warbler habitat in the Mack Lake Burn in terms of landscape ecosystems.

Barnes, B.V.; Zou, X. 1989c. Research report 1988–1989: patterns of Kirtland's warbler occurrence in landscape ecosystems of the Mack Lake Burn. Ann Arbor, MI.

Reports on the numbers of Kirtland's warblers occupying each physiographic type, the preferred specific characteristics of warbler habitat, and an assessment of the quality of warbler habitat in different ecosystem types at the Mack Lake Burn.

Bassow, S.L.; Frumhoff, P.C. 1997. The greenhouse challenge. Defenders.

Discusses the role of greenhouse gases in global warming and the effects they will have on ecosystems and biodiversity. Discusses the Botkin et al. 1991 analysis of the impact global warming could have on Kirtland's warblers. [55].

Bell, M. 2021. Brittle escaped prescribed fire facilitated learning analysis. Iosco County, MI: Huron-Manistee National Forest. April 2021. 56 p.

A declared wildfire outcome review utilizing the Facilitated Learning Analysis approach of the April 2021 Brittle Fire in Iosco County, Michigan, a prescribed fire that became a wildfire. This report covers the project location, environmental conditions, fire plans, what happened, chronology of events, and findings and lessons learned in detail.

Bennett, D.L. 1974. Emissions comparisons: prescribed burning vs. mechanical treatment.

Compares and details 7 emission types of prescribed fire and mechanical treatments. Provides a summary and concludes that neither treatment appears to violate the Michigan Air Quality Standards when used with good judgment.

Benzie, J.W. 1977. Manager's handbook for jack pine in the north central states. Gen. Tech. Rep. NC-32. St. Paul, MN: U.S. Dept. of Agriculture, Forest Service, North Central Forest Experiment Station.

Provides management objectives and silvicultural options for jack pine. Includes a key to silvicultural recommendations. Kirtland's warbler is mentioned. [2, 10, 15].

Berrang, P.; Saberniak, A. 2005. Jack pine seeding study: second year results.

Evaluates the effectiveness of direct seeding for jack pine regeneration. Direct seeding was only effective at 1 out of 6 sites.

Block, W.M.; Conner, L.M.; Brewer, P.A.; Ford, P.; Haufler, J.B.; Litt, A.; Masters, R.E.; Mitchell, L.R.; Park, J. 2016. Effects of prescribed fire on wildlife and wildlife habitat in selected ecosystems of North America. In: Block, W.M.; Conner, L.M., eds. The Wildlife Society Technical Review 16-01. Bethesda, MD: The Wildlife Society.

Discusses prescribed fire as a management tool. A section on jack pine and Kirtland's warbler is included. [20–21].

Bloom, R. 2003. Identification of potential Kirtland's warbler habitat in Ontario.

Summarizes activities carried out in 2003 relative to improving the understanding of the feasibility, impacts, and benefits of Kirtland's warbler recovery in Ontario. Soil and vegetation were assessed to identify tracts of potential habitat. Selected sites were inspected from air or ground to determine the extent of potential habitat. Maps provided.

Bocetti, C. 1993. Kirtland's warbler and the jack pine plains of Michigan. Endangered Species Technical Bulletin. 18(2): 15.

Gives a brief overview of the jack pine ecosystem including plants, animals, and habitat management.

Bocetti, C.I. 1994. Density, demography, and mating success of Kirtland's warblers in managed and natural habitats. The Ohio State University.

A comparative investigation of Kirtland's warbler density, mating success, and reproductive success in plantation and naturally regenerated habitat. The study was divided into three major parts: (1) a landscape scale evaluation of the density of singing males in all habitat types; (2) a local scale evaluation of habitat characteristics, mating success of males, and demography in wildfire areas and plantations; and (3) an investigation of nest placement patterns of females within and between established male territories. The landscape analysis revealed that the density of male Kirtland's in plantations was 0.21 per 40 acres per year over the life of the stand and the density in wildfire sites was 0.19 per year over the life of the stand, and harvested stands support 0.02 males per 40 acres over the life of the stand. Local-scale evaluation showed that plantations have more unmated males (28 percent vs. 8 percent) and fewer polygynous males (6 percent vs. 22 percent) than wildfire sites. Reproductive success per nest was very similar between habitats. Predation rates were lower in plantations, but not significantly. Females used plantations significantly less than wildfire areas. Plantations produced fewer young than wildfire areas, but plantations produce enough young to serve as a source. The local scale evaluation found that plantations had similar landscape features of wildfire habitat, but plantations had lower jack pine density, fewer openings, lower percent cover of ground vegetation species and woody debris, and higher percent cover of sedge compared to wildfire habitat. Management recommendations and suggestions for further research are provided.

Borie, L. 1981. Tragedy of the Mack Lake Fire. American Forests.

Chronicles the events of the 1980 Mack Lake Fire and the resulting effects to policy and the future use of fire in habitat management. Kirtland's warbler management is also discussed.

Botkin, D.B.; Woodby, D.A.; Nisbet, R.A. 1991. Kirtland's warbler habitats: a possible early indicator of climatic warming. Biological Conservation. 56(1): 63–78. [https://doi.org/10.1016/0006-3207\(91\)90089-R](https://doi.org/10.1016/0006-3207(91)90089-R).

Using a global climate model, the authors predict that due to climatic warming, jack pine forests in central Michigan may become unsuitable for Kirtland's warbler breeding habitat in 30–60 years.

Brown, H. 1999. Smokey and the myth of nature. Fire Management Notes. 59: 6–11.

Discusses fire, jack pine, and Kirtland's warblers. [6, 8–10].

Buck, T.M. 1989. Eastern upper peninsula Kirtland's warbler survey and habitat analysis.

Twenty sites were surveyed for Kirtland's in Schoolcraft County in Michigan's upper peninsula in 1988. No Kirtland's were found. Ten sites were evaluated and compared with warbler breeding habitat in the lower peninsula. Recommends that future surveys be conducted in the upper peninsula.

Buech, R.R. 1980. Vegetation of a Kirtland's warbler breeding area and 10 nest sites. The Jack-Pine Warbler. 58(2): 59–72.

Vegetation was sampled on 2 portions of the Muskrat Lake Kirtland's warbler breeding area in Crawford County, and the area surrounding 10 Kirtland's nests in Oscoda County. At Muskrat Lake, differences were found within the stand due to cultural history, which explained the differences in past warbler use. Data on nest canopy composition suggest that nest sites are not chosen in relation to a certain species, but due to the proportion of species in which they occur; and the growth form and density of ground cover may be more important. Data on all vegetation found are presented.

Burke, P. 2022. How creating a new habitat brought the endangered Kirtland's warbler back to Ontario. <https://canada.geiconsultants.com/how-creating-a-new-habitat-brought-the-endangered-kirtlands-warbler-back-to-ontario/>. 6 p.

Surveys for Kirtland's warblers in northern Ontario jack pine stands were unsuccessful. GIS tools were used to identify suitable sandy soils in southern Ontario. It was discovered that no suitable dry sand areas with pine-oak communities existed. A habitat team was formed to restore Kirtland's habitat in Simcoe County and 2 tracts were created in 2019, including ground cover. In 2022, there were 4 male Kirtland's warblers at 1 of the tracts.

Byelich, J. 1962. Kirtland's warbler management in Michigan.

Discusses the creation of 3 Kirtland's warbler management units on State of Michigan lands and provides a description of each.

Calkins, J. 1963. Mio, Michigan: strictly for the birds. American Forests. June.

Describes the clearcutting and reforestation of jack pine in the newly formed Huron National Forest Kirtland's Warbler Management Area.

Capen, D.E. 1979. Management of northeastern pine forests for nongame birds. In: DeGraaf, R.M.; Evans, K.E., eds. Management of north central and northeastern forests for nongame birds, workshop proceedings. Gen. Tech. Rep. NC-51. St. Paul, MN: USDA Forest Service North Central Experiment Station.

Discusses management of pine forests for nongame birds. Kirtland's warbler is used as an example. [90, 93–94, 101].

Cayford, J.H. 1970. The role of fire in the ecology and silviculture of jack pine. In: Proceedings 10th annual Tall Timbers fire ecology conference. Tall Timbers Research Station: 221–244.

The role of wildfire and prescribed burning in jack pine reproduction is discussed in detail. It is the author's belief that the role of prescribed burning in jack pine management will continue to be relatively minor and that most burning will continue to be undertaken at relatively low hazards with the primary objectives to reduce fire hazard and to prepare areas for further site preparation treatment.

Christensen, D. 2011. Kirtland's of golden sands. The Passenger Pigeon. 73(4): 405–407.

Discusses Kirtland's warblers found in Wisconsin and how the Plumb Creek Timber Company is working with state and federal governments to manage Kirtland's on their land. The 2011 nesting season and habitat is summarized. Describes some of the other species using the habitat and concludes that what is good for Kirtland's is good for their neighbors, including humans.

Cleland, D.T.; Crow, T.R.; Saunders, S.C.; Dickmann, D.I.; MacLean, A.L.; Jordan, J.K.; Watson, R.L.; Sloan, A.M.; Broszofsky, K.D. 2004. Characterizing historical and modern fire regimes in Michigan (USA): a landscape ecosystem approach. *Landscape Ecology*. 19(3): 311–325. <https://doi.org/10.1023/B:LAND.0000030437.29258.3c>.

The relationship of landscape ecosystems to fire regimes were studied in northern Lower Michigan. Changes in fire regimes were documented by comparing historical fire rotations in different landscape ecosystems to those occurring between 1985 and 2000. It was found that modern fire rotations were an order of magnitude longer than historical rotations. The magnitude of these changes has important implications for forest health and understanding of ecological processes in most of the fire rotation categories.

Cleland, D.T.; Hart, J.B. 1989. Use of the ecological classification system for delineating and managing Kirtland's warbler habitat. In: *At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium*. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 51.

Describes an ecological classification system using climate, geology, soils, and vegetation in classifying landscapes and developing management interpretations on the Huron-Manistee National Forest for Kirtland's warbler, among others.

Cohen, J.G. 2002. Natural community abstract for dry northern forest. Lansing, MI: Michigan Natural Features Inventory.

Provides a detailed description, overview, and maps of dry northern forests in Michigan, which includes Kirtland's warbler breeding habitat. [9].

Comer, P.J. 1996. Pine barrens community abstract. Lansing, MI: Michigan Natural Features Inventory.

Provides a map and overview of the pine barrens community in Michigan.

Conway, B.E.; Leefers, L.A.; McCullough, D.G. 1999. Yield and financial losses associated with a jack pine budworm outbreak in Michigan and the implications for management. *Canadian Journal of Forest Research*. 29(3): 382–392. <https://doi.org/10.1139/x99-003>.

Stand-level merchantable volume and financial losses from a jack pine budworm outbreak were quantified for 99 jack pine stands in the Hiawatha National Forest. Total merchantable volume loss was 19,500 cubic meters valued at \$289,800 for the 1,480 ha sample area.

Cooley, J.H. 1970. Site preparation for jack pine on Grayling sand.

Reports on the jack pine response to a prescribed fire in Oscoda County, Michigan, burned on 28 October 1966 after harvest in the winter of 1965–1966. After the fire in November, several strips were scarified and seeded. It was evident that the fire did not create an adequate seedbed in this fire. The field cultivator increased soil exposure, but its effectiveness was limited due to the strips' small size. Fire did not hinder seed viability, but the seed trees did not supply enough seed. Direct seeding after disking was effective. Pre-fire stand and weather conditions are included, as are results from seed and seedling studies.

Copenheaver, C.A.; Abrams, M.D. 2002. Post-European settlement forest changes in Oscoda and Ogemaw Counties, Michigan. *The Michigan Botanist*. 41: 147–163.

Witness trees from Ogemaw and Oscoda counties were used to identify presettlement forest composition in order to compare how different historical land uses altered early settlement and present-day forests. Presettlement forests in Ogemaw County consisted of 13 percent jack pine, while 42 percent of Oscoda County was covered by jack pine and was significantly associated

with sandy plains. Both counties were logged of white pine and valuable hardwoods in the late 1800s. In the early 1900s, farms were established on the cutover hardwood sites. Temporary use of these logged sites for agriculture prevented successful regeneration of hardwoods. Thus, following agricultural declines in the 1930s, jack pine seedlings invaded these abandoned farmlands. Other cutover sites experienced repeated slash fires, which also favored the invasion of the fire-adapted jack pine. In contrast, presettlement sites were not logged; however, these sites experienced fire suppression during the last 70 years and fire-intolerant early successional hardwoods have invaded these sites. The study demonstrated the strong influence of soils and topography on the distribution of presettlement vegetation in northern Lower Michigan, but post-settlement tree distribution has been more influenced by land use history.

Corace, R.G., III; Goebel, P.C. 2010a. Ecological forestry: integrating disturbance ecology patterns into silvicultural treatments. *The Wildlife Professional*. 4: 38–40. https://www.fws.gov/uploadedFiles/Corace_Goebel_eco_forestry_2013.pdf.

Provides suggestions based on landscape position, soils, natural disturbance regimes, and resulting patterns in composition and structure for making Kirtland's warbler habitat more ecologically diverse.

Corace, R.G., III; Goebel, P.C.; Hix, D.M.; Casselman, T.; Seefelt, N.E. 2009. Ecological forestry at National Wildlife Refuges: experiences from Seney National Wildlife Refuge and Kirtland's Warbler Wildlife Management Area, USA. *Forestry Chronicle*. 85(5): 695–701. <https://doi.org/10.5558/tfc85695-5>.

Discusses using ecological forestry and partnerships to restore mixed-pine forests in the eastern upper Michigan, mitigate the effects of beech-bark disease in northern hardwood forests, and promote more natural forest patterns for wildlife species of young jack pine forest ecosystems including the Kirtland's warbler.

Corace, R.G., III; Goebel, P.C.; McCormick, D.L. 2010b. Kirtland's warbler habitat management and multi-species bird conservation: considerations for planning and management across jack pine (*Pinus banksiana* Lamb.) habitat types. *Natural Areas Journal*. 30: 174–190. <https://doi.org/10.3375/043.030.0205>.

Examines how bird community structure differs among 3 distinct jack pine age classes, what functional groups are represented among those age classes, and what composes the relationships between bird communities and structure and composition of the habitat classes. Five indicator species were observed with young and Kirtland's warbler age classes, and 9 were found in the old age class. A functional group analysis indicated that stand structure was important for breeding species across all habitat types.

Corace, R.G., III; Korte, J.L.; Shartell, L.M.; Kashian, D.M. 2016. Upland sandpiper: a flagship for jack pine barrens restoration in the upper Midwest? *Ecological Restoration*. 34(1): 49–60. <https://doi.org/10.3368/er.34.1.49>.

Defines flagship species and shows how Kirtland's warblers have been a flagship species for jack pine-dominated ecosystems in Michigan. Provides examples of how upland sandpipers can do the same for jack pine barrens' restoration.

Corace, R.G., III; Seefelt, N.E.; Goebel, P.C.; Shaw, H.L. 2010c. Snag longevity and decay class development in a recent jack pine clearcut in Michigan. *Northern Journal of Applied Forestry*. 27(4): 125–131. <https://doi.org/10.1093/njaf/27.4.125>.

To better understand factors influencing the longevity of snags in jack pine plantations for Kirtland's warblers, 335 jack pine and oak snags were studied. It was found that snag

development will occur rapidly in recently clearcut jack pine stands, and higher densities of snags may need to be retained or created if management goals are to emulate more natural conditions.

Corace, R.G., III; Shartrell, L.M.; Schulte, L.A.; Brininger, W.L.; McDowell, M.K.D.; Kashian, D.M. 2012. An ecoregional context for forest management on National Wildlife Refuges of the upper Midwest, USA. *Environmental Management*. 49(2): 359–371. <https://doi.org/10.1007/s00267-011-9776-3>.

Multiple data sources were synthesized to describe land ownership patterns, land cover, landscape pattern, and changes in forest composition for 4 ecoregions and their associated refuges in the upper Midwest. The Kirtland's Warbler Wildlife Refuge is one of the refuges included.

Corace, R.G., III; Weiss, S.; Shartell, L. 2015. Fire-dependent ecosystems and wildlife: working toward a better understanding in the northern lake states. *The Wildlife Professional*. 9: 52–55.

Discusses how the Lake States Fire Science Consortium (LSFSC) will facilitate better stewardship and fill in information gaps of the land and wildlife of fire-dependent ecosystems and species in the northern lake states. Questions whether wildlife professionals in the LSFSC understand the importance of fire for wildlife.

Coulson, D. 2009. Habitat suitability model for Kirtland's warbler in the Great Lakes–St. Lawrence Forest of Ontario.

Provides a Kirtland's warbler species account and the preferred habitat ecosites in Canada.

Crick, J.; Rowse, L. 2022a. A forest manager's guide to forestry for Michigan birds. *American Bird Conservancy*. 52 p.

Forestry for Michigan Birds is a collaborative approach to help recover forest bird populations while maintaining forest ecosystem health and sustainable land use. This guide offers information to forest managers on why bird conservation should be part of the goals as a land or forest manager; may facilitate discussions between forest planners and landowners; and demonstrates how modified forest management practices can be used to benefit Michigan's priority bird species. Kirtland's warbler is one of the priority species. [19, 20–21, 30, 31, 43].

Crick, J.; Rowse, L. 2022b. A forest owner's guide to Forestry for Michigan birds. *American Bird Conservancy*. 28 p.

Forestry for Michigan Birds is a collaborative approach to help recover forest bird populations while maintaining forest ecosystem health and sustainable land use. This guide offers information to forest owners on why bird conservation should be part of the goals of a land or forest manager, may facilitate discussions between forest planners and landowners, and demonstrates how modified forest management practices can be used to benefit Michigan's priority bird species. Kirtland's warbler is one of the priority species. [13, 14–15, 16].

Cullinane, A.; Bridget, L. 2013. Influence of wildfire-induced residual stand structure on bird diversity patterns in jack pine ecosystems of northern Lower Michigan. *Central Michigan University*.

The biodiversity value of “stringers” (strips of unburned trees left over from a wildfire) from an avian perspective was examined by comparing bird assemblages found within stringers and the surrounding nonstringers. The objective was to answer two research questions: (1) Do stringers have unique bird communities relative to the surrounding habitat? and (2) How much of the variation in bird communities can be explained by variation in vegetation structure and

composition and time since disturbance? Differences in bird assemblages between stringers and nonstringers during the breeding season were found in recently disturbed sites, but not in the intermediate or mature sites. Differences in vegetation structure between stringers and nonstringers at the recently disturbed sites appear to be driving the differences in bird assemblages found within stringers and nonstringers. In the intermediate and mature sites, both the vegetation structure and the bird communities were similar in the stringer and nonstringer habitats. Concludes that stringers should be included in jack pine management silviculture plans to promote emulation of natural process and avian biodiversity.

Cullinane-Anthony, B.L.; Seefelt, N.E.; Corace, R.G., III; Kashian, D.M.; Gehring, T.M. 2014. Influence of residual forest patches on post-fire bird diversity patterns in jack pine-dominated ecosystems of northern Lower Michigan. *Forest Ecology and Management*. 331: 93–103. <https://doi.org/10.1016/j.foreco.2014.08.003>.

Examines the avian ecological value of stringers (patches of residual pre-fire forest) to determine if stringers have unique bird communities relative to the surrounding vegetation, and how much of the variation in bird communities can be explained by differences in vegetation structure and composition between stringers and nonstringers. Concludes stringers in jack pine ecosystems provide important structure for bird assemblages in the first few decades following fires, although their importance within a particular burned area diminishes as the recovering forest ages and as its structural similarity to the stringer increases.

Curry-Lindahl, K. 1972. *Let them live: a worldwide survey of animals threatened with extinction*. New York: William Morrow and Company.

Describes Kirtland's warbler management efforts and habitat requirements. [180].

Donner, D.M. 2007. *Spatiotemporal response of the male Kirtland's warbler population to changing landscape structure over 26 years*. University of Wisconsin–Madison.

Evaluates how changing landscape structure from forest management and wildfire disturbances influenced population size, growth, and spatial distribution of Kirtland's warblers within their restricted breeding range in northern Lower Michigan. From 1979 to 2004, the male population increased five-fold, while suitable habitat more than doubled on the landscape. The overall amount of suitable habitat and the relative area of wildfire-regenerated habitat were the most important factors explaining the population trend. Spatiotemporal distribution of males shifted across the landscape in response to the amount and location of wildfire habitat. Males shifted from wildfire to plantation.

Donner, D.M.; Brown, D.J.; Ribic, C.A.; Nelson, M.; Greco, T. 2018. Managing forest habitat for conservation-reliant species in a changing climate: the case of the endangered Kirtland's warbler. *Forest Ecology and Management*. 430: 265–279. <https://doi.org/10.1016/j.foreco.2018.08.026>.

Established Kirtland's warbler population-habitat relationships were applied to project potential impacts of changing environmental conditions to breeding habitat distribution, quality, and quantity in the near future. Results indicate the projected distribution of jack pine will contract approximately 75 percent throughout the Lake States region due to projected environmental conditions by 2099. However, conditions remain suitable for jack pine regeneration within their historical and current core breeding range in northern Lower Michigan and several satellite breeding areas.

Donner, D.M.; Probst, J.R. 2009. A Kirtland's warbler management at regional, landscape, and local scales (presentation abstract). In: 2009 Midwest jack pine symposium: 1–2.

Discusses Kirtland's warbler breeding habitat requirements as well as past and present habitat management on multiple scales. Plantation and wildfire generated habitat are compared.

Donner, D.M.; Probst, J.R.; Ribic, C.A. 2008. Influence of habitat amount, arrangement, and use on population trend estimates of male Kirtland's warblers. *Landscape Ecology*. 23(4): 467–480. <https://doi.org/10.1007/s10980-008-9208-9>.

Examines how male Kirtland's warbler population size and spatial dispersion were influenced by 26 years of forest management and wildfire disturbance. The male Kirtland's population increased from 205 in 1979 to 1,322 in 2004. The total amount of suitable habitat and the relative area of wildfire-regenerated habitat were the most important factors explaining the population trend. Suitable habitat increased 149 percent during that time period. The male population shifted temporally and spatially from wildfire to plantation.

Donner, D.M.; Ribic, C.A.; Probst, J.R. 2009. Male Kirtland's warblers' patch-level response to landscape structure during periods of varying population size and habitat amounts. *Forest Ecology and Management*. 258(7): 1093–1101. <https://doi.org/10.1016/j.foreco.2009.05.029>.

The response of male Kirtland's warblers to a 26-year changing patch and landscape structure was investigated. It was found that the average density of male Kirtland's warblers was related to a different combination of patch and landscape attributes, depending on the population level and habitat amounts available. The authors demonstrate how temporal increases in both regional population size and total habitat amounts coupled with changing local patch suitability due to succession affected the relationship between patch and landscape attributes to average male densities of Kirtland's warblers.

Donner, D.M.; Ribic, C.A.; Probst, J.R. 2010. Patch dynamics and the timing of colonization-abandonment events by male Kirtland's warblers in an early succession habitat. *Biological Conservation*. 143(5): 1159–1167. <https://doi.org/10.1016/j.biocon.2010.02.023>.

Twenty-six years of Kirtland's warbler population data taken during a habitat restoration program were used to examine the influence of patch attributes and the timing of patch colonization and abandonment. It was found that larger patches were typically colonized at a younger age and abandoned later than smaller patches. Isolated patches were generally colonized later and abandoned earlier. Plantations and wildfire areas were colonized at similar ages, but plantations were abandoned earlier than wildfire.

Douglass, D.W. 1951. Kirtland's warbler. *Michigan Conservation*. 20: 33.

Describes Kirtland's warbler habitat, plumage, and nests.

Douglass, D.W. 1952. Kirtland's warbler. In: Roberts, H.D.; Messner, C.J., eds. *Enjoying birds in Michigan*. Michigan Audubon Society: 4–5.

Reprints Douglass 1951 describing Kirtland's warbler habitat, plumage, and nests. Includes a map of breeding range.

Douglass, D.W. 1958. Kirtland's warbler. In: Spenser, H.H., ed. *Enjoying birds in Michigan*. Michigan Audubon Society: 4–5.

Updates Douglass 1951 and 1952. Includes a color plate of Kirtland's warbler male, female, and young.

Dow Chemical Company. 1964. Conservation chemical: Gelgard fire control polymer aids forest fire fighters. *Diamond*. 27(3): 21–23.

Documents the use of Gelgard fire control polymer during Operation Pop Cone, a fire set to create Kirtland's warbler habitat on U.S. Forest Service land.

Eliason, B. 1989. Kirtland's warbler: an assessment of the availability of potential habitat in Minnesota.

Provides variables and factors used in determining which stands in Minnesota may be suitable to the Kirtland's warbler and would be surveyed for Kirtland's in 1989. Historical warbler sightings in Minnesota are summarized.

Ewert, D. 2000. A tale of two habitats: fire and the Kirtland's warbler. Rx Fire Notes. 8(1): 2–4.

Outlines issues relating to managing fire-dependent habitat on both the breeding and wintering grounds for the Kirtland's warbler. Protection strategies on both the breeding and wintering grounds should focus on avoiding fragmentation, identifying the effects of logging practices, and fire management. Education and outreach are likely to be important activities in both areas. In Michigan, increased emphasis on public education and development in relationship to prescribed burning deserves special attention.

Eyre, F.H.; LeBarron, R.K. 1944. Management of jack pine in the Lake States. U.S. Department Agricultural Technical Bulletin No. 863.

Details the management of jack pine in the Lake States. Includes sections on jack pine use, distribution, role of fire and logging, reproduction, yield and rotation, increasing quality and yield, harvesting and renewal, and restoring deforested lands.

Fanelli, K.N.; Rothstein, D.E. 2017. Replacement of wildfire by whole-tree harvesting increases nitrification and nitrate movement in jack pine forest soils. Forest Ecology and Management. 402: 115–121.

Net nitrogen mineralization, nitrification, and nitrate movement in soils from young jack pine stands that had been regenerated by either stand-replacing wildfire or clearcut harvesting were compared. Net nitrogen mineralization was nearly 2 times higher in young stands of clearcut origin compared to stands of wildfire origin. Net nitrification was higher in clearcut-origin sites versus wildfire. Nearly 4 times more nitrate movement occurred in clearcut than wildfire stands. The results indicate that replacing wildfire with clearcut harvesting in jack pine promotes nitrification and nitrate movement and could lead to an increased loss of nitrogen and base cations and could also favor plant species with greater preference for nitrate as a nitrogen source.

Foreman, J. 1964. Pop cones for the birds.

Discusses the Operation Pop Cone Fire and provides a brief Kirtland's warbler life history.

Geffen, A.M. 1978. A birdwatcher's guide to the eastern United States. Woodbury: Barron's.

Describes areas in which Kirtland's warblers may be found breeding. [269, 270, 271–272].

Goebel, P.C.; McCormick, D.L.; Corace, R.G., III. 2007. Ecological assessment of the USDI Fish and Wildlife Service's Kirtland's Warbler Wildlife Management Area. Columbus, OH.

A multiscale ecological assessment of the Kirtland's Warbler Wildlife Management Area (KWWMA) was conducted in order to assess the efficacy of management actions aimed at meeting Kirtland's warbler habitat objectives. This assessment included: developing a GIS database of KWWMA stands; describing the range of variation in stands; describing the current composition and structure of stands; and examining breeding bird assemblages. Results show the KWWMA provides a diversity of habitat and may contribute significantly to avifaunal productivity and diversity.

Government of Canada. 2006. Description of residence for Kirtland's warbler (*Dendroica kirtlandii*) in Canada. Species at Risk Act Public Registry. Ottawa.

Describes the residence (nest and habitat) of Kirtland's warbler in Canada. Discusses the period of occupancy and provides a map of known occurrences.

Gross, J.; Grveles, K. 2010. Kirtland's warbler.

Provides overview of Kirtland's warbler life history and status in Wisconsin.

Grveles, K.M. 2009. A warble from the barrens. Wisconsin Natural Resources Magazine. April. Madison, WI, Wisconsin Department of Natural Resources.

Provides a life history of the Kirtland's warbler, focusing on Wisconsin. Also details Wisconsin's conservation strategy.

Hacker, J.J.; Marshall, P.E.; Erickson, A.W. 1983. A review of jack pine regeneration in the Lake States. East Lansing, MI: Michigan State University Agricultural Experiment Station. <http://hdl.handle.net/2027/uiug.30112019633657>.

Provides a review of many natural and artificial regeneration techniques for jack pine. The literature cited section provides almost 275 jack pine references. Kirtland's warbler is briefly mentioned. [1, 65, 66].

Handler, S.; Duveneck, M.J.; Iverson, L.; Peters, E.; Scheller, R.M.; Wythers, K.R.; Brandt, L.; [et al.]. 2014. Michigan forest ecosystem vulnerability assessment and synthesis: a report from the Northwoods Climate Change Response Framework Project. Gen. Tech. Rep. NRS-129. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. <https://www.fs.usda.gov/research/treesearch/45688>.

Discusses the effects of climate change on northern Michigan forests during the next 100 years. Kirtland's warbler is associated with savanna, upland shrub, young jack pine, forest opening, and large contiguous natural landscape habitats and features. Jack pines are tolerant of drought and disturbances and have a greater adaptive capability to climate change. Under future drier conditions, jack pine may move to areas currently wetter, but overall, low species diversity gives this forest type few alternatives if conditions shift beyond limits. [30, 49, 130].

Harwood, M. 1981. Kirtland's warbler—a born loser? Audubon. 83: 98–111.

Discusses and describes the 1980 Mack Lake Fire, forestry practices, life history, history, census, and steps taken to protect the Kirtland's warbler.

Haufler, J.B.; Baydack, R.K.; Campa, H., III; Kernohan, B.J.; Miller, C.; O'Neil, L.J.; Waits, L. 2002. Performance measures for ecosystem management and ecological sustainability. In: Healy, W.M., ed. Wildlife Society Technical Review 02-1. Bethesda, MD: The Wildlife Society.

Kirtland's warbler is used as an example of ecosystem management linkage at the species level. Kirtland's conservation and management is discussed and demonstrates how species management can contribute to larger ecosystem management efforts. [26–27].

Henderson, E.; Hoganson, H. 2021. Spatially explicit Kirtland's warbler habitat management scheduling in Michigan's Upper Peninsula. Forests. 12: 1065. <https://doi.org/10.3390/f12081065>.

This paper presents a spatially explicit Kirtland's warbler habitat management strategy on the Hiawatha National Forest in the Upper Peninsula of Michigan. Alternative management strategies are mapped and described in the context of implementing many desired conditions of the forest's

plan. Habitat levels, spatial arrangement, and financial tradeoffs are addressed. Results show there are potential benefits from using detailed computer-aided management scheduling tools to support the decisionmaking process.

Henderson, E.B. 2013. Kirtland's warbler on the Hiawatha National Forest: a spatial and temporal management problem. University of Minnesota.

A harvest scheduling model was applied on the Hiawatha National Forest to explore opportunities for habitat management. Three major model explorations are documented. First, a heuristic was developed to solve an intractable dynamic programming (DP) problem. Secondly, a pre-processing heuristic was developed to pare down the number of stand-level management options that must be included in the harvest scheduling model. Finally, the modeling system was applied to the problem to identify a management strategy and show financial and spatial tradeoffs of alternative management strategies. Results of the first exploration indicates that an optimal DP solution can be identified with the proposed heuristic with improved solution times. The second exploration showed substantial time savings from eliminating many Kirtland's warbler management options without compromising solution value. The third exploration determined a management strategy for where and when to generate habitat on the Hiawatha National Forest along with the associated spatial and financial tradeoffs.

Hoffman, R.; Abernathy, R. 1988. Summary of the Kirtland's warbler survey in Wisconsin—1988. Madison, WI.

Reports on the 1988 Kirtland's warbler survey in Wisconsin, where 8 males were found and 2 were netted and banded. A comparison between the habitat in Michigan and Wisconsin is made.

Horton, K.J. 1972. What happened to K.W.? Michigan Audubon Newsletter. 20(2): 4.

Discusses breeding habitat and cowbirds as possible explanations for the decline in Kirtland's warbler population size.

Houseman, G.R. 1998. Effects of various management practices in jack pine plantations on ground cover preferred by Kirtland's warblers. Illinois State University.

Kirtland's warblers prefer to nest in jack pine with high abundances of low shrubs such as *Vaccinium augustifolium* and other low shrubs, and avoids areas dominated by the sedge *Carex pensylvanica*. The effects of pre-harvest shade, prescribed burning, and planting delays were compared on ground cover response. The study found that high or low levels of pre-harvest shade had no effect on either *V. augustifolium* or *C. pensylvanica*. Planting delays of at least 3 years generally led to increased levels of *V. augustifolium* and reduced *C. pensylvanica*. There was some evidence that *C. pensylvanica* was reduced by prescribed burning on sites that were 10–18 years old. Only weak evidence was found for a negative correlation between the cover of *V. augustifolium* and *C. pensylvanica* on the study sites.

Houseman, G.R.; Anderson, R.C. 2002. Effects of jack pine plantation management on barrens flora and potential Kirtland's warbler nest habitat. Restoration Ecology. 10(1): 27–36. <https://doi.org/10.1046/j.1526-100X.2002.10103.x>.

Compares the effects of pre-harvest shade, prescribed burning, and planting delays on the cover of *Vaccinium augustifolium* and *Carex pensylvanica* and other species in burned and unburned areas of jack pine plantations for Kirtland's warbler habitat with the vegetation of the Mack Lake Burn, a naturally fire regenerated jack pine area. Provides recommendations for managers.

Hoving, C.L.; Lee, Y.M.; Badra, P.J. 2013. Changing climate, changing wildlife: a vulnerability assessment of 400 species of greatest conservation need and game species in Michigan. Wildlife Division Report No. 3564. Lansing, MI.

The vulnerability of 400 animal species to climate was assessed using the Climate Change Vulnerability Index. Kirtland's warbler is listed as presumed stable, meaning available evidence does not suggest that abundance and/or range within the geographical area assessed will change substantially by 2050. Actual range boundaries may change.

Huber, P.W.; Kintigh, K.; Sjogren, S. 2013. Kirtland's warbler habitat update.

Kirtland's warbler habitat acreage from the Huron-Manistee National Forest, Michigan Department of Natural Resources, and the Hiawatha National Forest was analyzed using Kirtland's Warbler Census data to update the acres used per warbler pair and duration of use. Concludes that management at current levels should be sufficient to maintain the Kirtland's population at 1,500 pairs.

Hutto, R.L.; Conway, C.J.; Saab, V.A.; Walters, J.R. 2008. What constitutes a natural fire regime? Insight from the ecology and distribution of coniferous forest birds in North America. Fire Ecology Special Issue. 4(2): 115–132.

Kirtland's warbler is one of the fire-dependent bird species used in determining what constitutes a natural fire regime. [115, 118, 121, 124, 126].

Jakubauskas, M. 1992. Modeling endangered bird species habitat with remote sensing and geographic information systems. In: ASPRS/ACSM '92 annual convention and exposition. Albuquerque, NM: 1–10.

Potential Kirtland's warbler habitat was assessed by classifying Landsat Thematic Mapper data and analyzed using geographic information systems. Results indicate this approach has promise for evaluation of potential habitat.

Jakubauskas, M.E.; Lulla, K.P.; Mausel, P.W. 1990. Assessment of vegetation change in a fire-altered forest landscape. Photogrammetric Engineering & Remote Sensing. 56(3): 371–377.

The differences in burn severity related to post-fire vegetative cover was studied in a pine forest in the Huron National Forest. The most change in vegetation occurred in areas of the most intense burns. Results indicate that vegetation change detection can be accomplished using postclassification comparison within the context of geographic information systems analysis.

Jeffers, R.M.; Jensen, R.A. 1980. Twenty-year results of the Lake States jack pine seed source study. Research Paper NC-181. St. Paul, MN: USDA Forest Service North Central Experiment Station.

Jack pine seed was collected from 29 natural stands in Minnesota, Wisconsin, and Michigan. Seedlings from those seeds were planted at 17 locations in the 3 states and 1 location in Ontario. Data on survival, total height, diameter, volume per tree, and volume per acre 20 years after planting is presented. Seed collection recommendations are provided, and a literature review was performed.

Kashian, D.M. 1998. Landscape ecosystems of northern Lower Michigan and the occurrence and management of the Kirtland's warbler. University of Michigan.

A multiscale, multifactor landscape ecosystem approach was used to determine the range and distinguishing characteristics of landform ecosystems supporting the Kirtland's warbler, as well as comparing the timing of initial warbler colonization and duration of occupancy. Microclimatically

warm and relatively fertile ecosystems were colonized earliest and had the shortest duration of occupancy. Cold, dry, and infertile ecosystems were colonized later but held warblers for the longest time. This influenced jack pine growth, which was a major factor influencing warbler colonization and occupancy duration. A checklist of attributes of landform-level ecosystems of long warbler occupancy is provided. The 1975 Bald Hill Burn was studied in detail.

Kashian, D.M.; Barnes, B.V. 2000. Landscape influence on the spatial and temporal distribution of the Kirtland's warbler at the Bald Hill Burn, northern Lower Michigan, U.S.A. Canadian Journal of Forest Research. 30(12): 1895–1904. <https://doi.org/10.1139/cjfr-30-12-1895>.

Discusses the landscape ecosystem approach used at the 1975 Bald Hill Burn to describe the spatial and temporal distribution of the Kirtland's warbler. Because of a warmer microclimate, jack pines in the high-elevation landform grew faster and were colonized first by the warbler. The trees in the cooler low-elevation landform grew more slowly and were colonized later. It was suggested that the presence of 2 adjacent landform-level ecosystems within a single area prolonged warbler occupancy.

Kashian, D.M.; Barnes, B.V.; Walker, W.S. 2003. Landscape ecosystems of northern Lower Michigan and the occurrence and management of the Kirtland's warbler. Forest Science. 49(1): 140–159.

An ecological, multifactor approach was used to determine the range and characteristics of landform-level ecosystems supporting Kirtland's warblers. Spatial and temporal patterns of warbler occupation among the 12 identified landforms were compared.

Kashian, D.M.; Corace, R.G., III; Shartell, L.M.; Donner, D.M.; Huber, P.W. 2012. Variability and persistence of post-fire biological legacies in jack pine-dominated ecosystems of northern Lower Michigan. Forest Ecology and Management. 263: 148–158. <https://doi.org/10.1016/j.foreco.2011.09.019>.

On the dry, flat jack pine-dominated ecosystems of the northern Lake States and eastern Canada, wildfire behavior often produces narrow, remnant strips of unburned trees ("stringers") that provide heterogeneity on a landscape historically shaped by stand-replacing wildfires. Describes the natural range of variability of stringer patterns and their persistence and change during the fire-free interval.

Kashian, D.M.; Sosin, J.R.; Huber, P.W.; Tucker, M.M.; Dombrowski, J. 2017. A neutral modeling approach for designing spatially heterogeneous jack pine plantations in northern Lower Michigan, USA. Landscape Ecology. 32(6): 1117–1131. <https://doi.org/10.1007/s10980-017-0514-y>.

Quantitative analysis and ArcMap GIS were used to develop neutral models to better emulate natural patterns in plantations for Kirtland's warblers. Concludes that while highly successful for Kirtland's warbler habitat, jack pine plantations do not emulate natural post-fire patterns.

Kepler, C.B.; Irvine, G.W.; DeCapita, M.E.; Weinrich, J. 1996. The conservation management of Kirtland's warbler *Dendroica kirtlandii*. Bird Conservation International. 6(1): 11–22. <https://doi.org/10.1017/S0959270900001271>.

Discusses past and present management of the Kirtland's warbler, as well as habitat use. Concludes that lack of optimal habitat in Michigan has been the warbler's major problem.

Kline, D. 1989. A manager's perspective. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 55–56.

Discusses difficulties and costs of Kirtland's warbler management from a land manager's viewpoint.

Korte, J.L. 2013. Landscape characteristics of upland sandpiper habitat in Michigan. Wayne State University.

A study of upland sandpiper habitat in Michigan. One of the conclusions is that comanagement of Kirtland's warbler and upland sandpiper appears achievable. [22, 23].

Kost, M.A.; Albert, D.A.; Cohen, J.G.; Slaughter, B.S.; Schillo, R.K.; Weber, C.R.; Chapman, K.A. 2007. Natural communities of Michigan: classification and description. Lansing, MI.

Kirtland's warbler is listed as a noteworthy animal and rare animal under dry sand prairie, pine barrens, and dry northern forest communities. [162, 163, 182, 210].

LaBumbard, H.H. 1975. Activities for Kirtland's warbler management on the Huron National Forest—FY 1975. Cadillac, MI.

Reports the Kirtland's warbler activities on the Huron National Forest in 1975. A total of 4,670 acres were closed to entry between 1 May and 15 August. Lists the Forest Service employees participating in the census. Jack pine stands on Grayling sand were identified, and a list of work to create potential nesting habitat is included. Provides activities planned for fiscal year 1976.

Lambrecht, S.C. 1996. The response of jack pine regeneration to post-fire salvage in northern Lower Michigan. University of Michigan.

Site quality between salvaged and unsalvaged areas of the May 1990 Stephan Bridge Fire was evaluated in 1995. Salvaging killed some of the seedlings and created a hot, open area that resulted in decreased coverage of tree and shrub species, leading to a loss of structural diversity. In spite of seedling mortality, the salvaged area met the minimum requirements of jack pine density for Kirtland's warbler breeding habitat. However, the loss of structural diversity may reduce the quality of the area for warbler activity.

Landis, L. 1972. Trouble for Michigan's bird of fire. Audubon. 74: 34–35.

Provides an overview of the Kirtland's warbler population and management efforts. Includes photographs of male, female, and nest and nestling.

Lantz, G. 2002. Michigan's discriminating troubadour. American Forests Winter 2002.

Provides an overview of Kirtland's warbler life history and focuses on breeding habitat.

Leahy, M.J.; Pregitzer, K.S. 2003. A comparison of presettlement and present-day forests in northeastern Lower Michigan. American Midland Naturalist. 149(1): 71–89.

General Land Office survey records of 1838–1846 were used to reconstruct the pre-European settlement vegetation in the Huron National Forest of northeastern Lower Michigan. These data were compared to current forest data. Today's forests have smaller trees and higher tree densities than forests in the presettlement era. Widespread logging, altered fire regimes, and other anthropogenic disturbances since European settlement have interacted with physical factors to produce today's forests.

Leefers, L.A.; Mwangi, A. 1989. Economics and the preservation of Kirtland's warbler. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 85–93.

Presents a method for estimating the efficiency of managing Kirtland's warbler habitat on state and federal land.

Lehman, D. 1986. Kirtland's warbler numbers stable; habitat work shows hope for upswing. DNR News. 2 July 1986.

Reports on the 1986 Kirtland's Warbler Census where 210 singing males were counted from 7 Michigan Counties. Also discusses several management units where warbler habitat is beginning to become suitable and other ongoing habitat work.

Lehner, A.B. 2017. Assessing growth, yield, and carbon dynamics in upper Great Lakes jack pine and hybrid poplar managed for biomass production. Michigan Technological University.

The creation of site index curves for hybrid poplar were established to assess the predicted yield at established plantations, or possibly within spatial models to assess production across the region. Research was also conducted to assess the efficacy of biomass creation within traditional timber production techniques by utilizing nonmerchantable material from jack pine plantations currently planted and utilized for breeding habitat by the Kirtland's warbler. The goal was to develop a set of management prescriptions that could incorporate other objectives while also providing Kirtland's habitat. The 4 management regimes tested were: (1) current management (clearcut at 50-year rotation); (2) long rotation with natural regeneration (clearcut at 60+-year rotation with no residue pickup); (3) short rotation (clearcut at 25-year rotation); and (4) a thinning scenario (2 thinning entries with final harvest at 60+-year rotation). The regimes were assessed on 3 categories: (1) breeding habitat creation; (2) greenhouse gas emissions; and (3) yield of timber products. Concludes that no single scenario achieves all objectives, so a land manager should select the desired objective(s) with creation of Kirtland's breeding habitat and choose accordingly.

Leopold, N.F., Jr. 1924. The Kirtland's warbler in its summer home. The Auk. 41(1): 44–58. <https://doi.org/10.2307/4074086>.

Describes, in detail, Leopold's journey from Chicago to northern Michigan in an attempt to find the Kirtland's warbler in 1922 and 1923. Included are detailed descriptions of song, behavior, nest and young, habitat, hand feeding of adult male and nestling, food, and cowbird parasitism. Included is a timeline of adults feeding young and photographs of adult male, nest, young, and eggs.

Line, L. 1972. Trouble for Michigan's bird of fire. Audubon. 74: 34–35.

Provides a history of Kirtland's warbler management efforts. Includes photographs of a male and a pair at nest with young.

Line, L. 2004. Clarion call. Audubon. May.

Discusses the changes that have occurred with Kirtland's warblers since the author's first article 40 years prior (Line 1964).

Lyon, L.J.; Huff, M.H.; Kapler Smith, J. 2000. Fire effects on fauna at landscape scales. In: Kapler Smith, J., ed. Wildland fire in ecosystems: effects of fire on fauna. Ogden, UT: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station: 43–49. <http://digitalcommons.unl.edu/jfspsynthesis/7>.

Uses Kirtland's warbler and jack pine ecology as an example of fire exclusion's effects at landscape scales. [48–49].

MacDougall, W. 2003. Endangered species on National Wildlife Refuges. Refuge Update.

Reports on the role of National Wildlife Refuges on endangered species recovery. Kirtland's warbler is the featured example.

Mahalak, W.J. 1980. Opposed wave pattern for Kirtland's warbler planting (effective for all planting from March 28, 1980 forward).

An updated planting plan to provide habitat for Kirtland's warblers and more merchantable trees. Provides diagrams.

Mang, M.T. 1979. Research needs for Kirtland's warbler nesting habitat management. Mio, MI.

Takes what is known and assumed of Kirtland's warbler nesting habitat, examines it, and poses questions. Designed to make known the many facets of nesting habitat management, expand upon how little is known, stimulate interest in finding answers, and provide catalysts to research. Provides questions pertaining to vegetation, soils, prescribed burning, and other silvicultural methods.

Marita, F.J.; Mann, W.K.; Godden, J.A.; Newlon, C.; Durdan, J. 1985. Review report: general management review of Huron-Manistee National Forests: May 6–17, 1985.

A review to evaluate the effectiveness of management and employees on the Huron-Manistee National Forest. Includes a section (D) on Kirtland's warbler management, which provides an overview of habitat and recovery objectives. Suggests that the Forest, with assistance of Recovery Team members, should designate a committee to explore options of basic research on warbler habitat, and should sponsor, within 1 year, a workshop/symposium for participating agencies to place in perspective the basic research needs of land management agencies. [15–16].

Marshall, E.; Haight, R.; Homans, F.R. 1998. Incorporating environmental uncertainty into species management decisions: Kirtland's warbler habitat management as a case study. Conservation Biology. 12(5): 975–985.

Presents a framework for expressing species management objectives that incorporates the inherent riskiness of species management strategies using Kirtland's warblers. The framework identifies 2 crucial parameters in the management objective: the population level that one would like to achieve and the minimum acceptable probability of attaining that population objective with a given management strategy. A stochastic simulation model for Kirtland's warblers was used using different management strategies.

Marshall, J.D. 1980. Factors affecting jack pine regeneration on the Sand Plains of northern Lower Michigan. Michigan State University.

Factors exercising greatest control over success of planting and natural regeneration of jack pine are identified. In partial cut areas, seedling numbers were positively related to understory vegetation and negatively related to overstory and soil fertility. Burned areas were negatively related to sedge cover and depth to soil mottling, and positively to bearberry cover, pre-fire stand density, and soil profile thickness. An average of 75 percent seedling survival was found with no differences found among site types. The jack pine ecosystem and ecology are discussed.

Matteson, S.; Kreitingner, K.; Bartlett, G.; Butcher, G.; Sample, D.; Will, T. 2009. Partners in Flight bird conservation plan for the boreal hardwood transition (Bird Conservation Region 12—U.S. Portion). Partners in Flight.

Kirtland's warbler is listed under forest priority bird populations, habitats, and species of regional importance. Gives a population estimate of 3,600 birds. Habitat priorities and population goals are mentioned. [2, 12, 14, 22, 23, 24, 26].

Mayfield, H. 1957a. Mapping standards: Kirtland's warbler habitat.

Establishes rules and standards to map Kirtland's warbler habitat.

Mayfield, H. 1957b. RE: Kirtland's warbler preserve.

Discusses the creation of permanent sites for Kirtland's warbler nesting habitat. Provides a description of preferred sites and management objectives.

Mayfield, H. 1962. Barrow's account of the Kirtland's warbler in 1920. The Jack-Pine Warbler. 40(1): 2–9.

Publishes excerpts from an oral paper that W.B. Barrows presented to the American Ornithologists' Union on 10 November 1920 in Washington, DC. The paper discusses his field trips to study the Kirtland's warbler on its breeding grounds, and it includes detailed information on habitat, behavior, and cowbird parasitism.

Mayfield, H. 1963. First preserve for a songbird ... milestone in conservation. The Florida Naturalist. 36(4): 113–115.

Reports on the dedication ceremony for the Kirtland's warbler preserves. Included is information on the discovery of the breeding area, habitat, and reason for the Kirtland's low population. Several photographs are included.

Mayfield, H. 1965a. In Kirtland's warbler country. In: Pettingill, S., Jr., ed. The bird watcher's America. New York: McGraw Hill: 406–414.

Provides a poetic description of the jack pine barrens and the birds found there.

Mayfield, H. 1975. Critical habitat.

Defines critical habitat for Kirtland's warbler as areas that are presently occupied by nesting pairs and areas that may be used at some future time. Lists the criteria for identifying critical habitat not currently occupied by Kirtland's warblers.

Mayfield, H.F. 1965b. A forest burns to save a bird. Animals. 7: 470–473.

Discusses Kirtland's warbler life history and management efforts. Includes a range map and several photographs of habitat, a nest, and a prescribed burn.

Mayfield, H.F. 1981. Great Lakes bird of fire. Biota Newsletter. 1(3): 2–3.

Discusses the role of fire in creating Kirtland's warbler habitat.

Mayfield, H.F. 1988. Where were Kirtland's warblers during the last Ice Age? The Wilson Bulletin. 100(4): 659–660.

By using pollen analysis, Mayfield theorizes that the Kirtland's warbler breeding range near the end of the Pleistocene may have been restricted to the sandy coastal plains of the south Atlantic states.

Mayfield, H.F. 1992. A burning paradox. Birder's World. 6(6): 44–48.

Discusses the importance of fire in maintaining natural habitats. Kirtland's warbler habitat is one of the examples provided. [44].

Mayfield, H.F. 1993. Kirtland's warblers benefit from large forest tracts. *Wilson Bulletin*. 105(2): 351–353.

Presents evidence suggesting that major increases in Kirtland's warbler populations have resulted from the sudden availability of very large tracts of suitable breeding habitat.

McCollum, C. 2019. Climate change and edaphic conditions: predicting future growth of a critical boreal tree species—jack pine (*Pinus banksiana*). University of Michigan.

This study investigates the relationships between climatic factors, tree growth, and edaphic conditions for predicting future tree growth for jack pine as a function of oscillating climate using tree core increments in 1 wet soil and 2 dry soil sites, near Grayling, Michigan. Tree growth was analyzed as a function of climate, age, and prior growth using a hierarchical Bayesian framework. Trees in the wet soils had the highest growth rates and individuals in all sites responded positively to increased spring temperature, while those in the wet site showed the highest response to increased summer precipitation. Results found that under predicted drier conditions, the growth response in the wet site was expected to decline by 33 percent, while those in the 2 drier sites were expected to decline by 2 and 19 percent, equalizing growth rates across all 3 sites. The decline in growth associated with drier summers will exceed any benefits resulting from warmer spring temperatures in the wet site. Sites near bogs and intermittent wetlands are currently associated with high growth performance. However, under the forecasted climate for the region, trees growing in these sites will likely lose their advantage.

McCormick, D.L. 2007. Bird usage among managed jack pine stands in the Kirtland's Warbler Wildlife Management Area.

In early summer 2006, bird surveys were conducted on U.S. Fish and Wildlife Service Kirtland's Warbler Wildlife Management Area (KWWMA) across 3 age classes. The methods and results are summarized and are intended to supplement a spreadsheet of survey data for use in developing a Comprehensive Conservation Plan for the KWWMA (see United States Fish and Wildlife Service 2009).

McCullough, D.G.; Katovich, S.; Heyd, R.L.; Weber, S. 1993. How to manage jack pine to reduce damage from jack pine budworm. USDA Forest Service.

Provides a jack pine budworm description, life cycle, and damage symptoms, along with management strategies and forest management recommendations.

McCumber, J.E. 1979. Timber management guide for the Huron-Manistee jack pine type.

Provides a jack pine regeneration silvicultural prescription key and sections on soils, life history, insects, diseases, regeneration methods, methods of site preparation, and stand diagnosis.

McGeen, D.S. 1989. A review of the predator-prey interactions versus habitat considerations for the Kirtland's warbler. In: *At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium*. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 70–84.

Discusses the Kirtland's warbler-brown-headed cowbird interaction as a predator-prey situation. The habitat-warbler-cowbird interaction was also examined. Concludes that while cowbird removal was successful, it did not result in an increase in the Kirtland's population, so habitat appears to be the main factor in determining warbler population numbers.

McNichols, Q.J. 1994. Management recommendations for a mature jack pine stand within a Kirtland's warbler management area. Harrisville.

Evaluates 7 types of jack pine regeneration for Kirtland's warbler habitat. Concludes clearcutting,

followed by scarification and direct seeding, provide the best balance between reforestation costs and the need to ensure regeneration of Kirtland's habitat.

Michigan Audubon Newsletter. Pop-cone party on docket. 1964. Michigan Audubon Newsletter. 12(2): 4.

Announces the planned burn of 400 acres in the Huron National Forest to renew Kirtland's warbler habitat areas.

Michigan Audubon Society. 1961. Proposed Kirtland's warbler management area. Michigan Audubon Newsletter. 9(5): 8.

Announces a resolution by the U.S. Forest Service in Cadillac, Michigan, to always keep parts of national forests in Michigan in ideal Kirtland's warbler breeding habitat. Michigan Audubon Society Board of Directors voted to donate \$100 each year for 5 years to assist with the habitat management.

Michigan Department of Natural Resources. 1974. State of Michigan Environmental Impact Statement for prescribed burning—class action.

Provides information in an attempt to clear up misunderstandings about prescribed burning. Outlines silvicultural, wildlife, forest fire prevention, Kirtland's warbler, and recreational objectives and how to achieve them. Probable environmental effects, and an evaluation of alternatives, are also provided.

Michigan Department of Natural Resources. 1979. Michigan state forests: Kirtland's warbler habitat management: scheduled 1979 management.

Provides an acreage breakdown of Kirtland's warbler habitat creation by management area and treatment type.

Michigan Department of Natural Resources. 1986. Warbler habitat work results in new hope. Natural Resources Register. August.

Mentions the 1986 Kirtland's Warbler Census, summarizes habitat work, and discusses creating new breeding areas. Briefly mentions the Kirtland's warbler recovery plan.

Michigan Department of Natural Resources. 2003. Jack pine ecosystem. State of Michigan.

Provides jack pine natural history, forest history, fire dependency, and habitat management. Includes a list of animals and plants of the jack pine ecosystem.

Michigan Department of Natural Resources. 2008. NLP MA 17: Michigan DNR—Northern Lower Peninsula Eco-Region: Kirtland's Warbler Management Area.

Provides a map of the Kirtland's warbler management area and describes the attributes, major cover types, and concepts of management.

Michigan Department of Natural Resources. 2012. Jack pine barrens management and Kirtland's warbler recovery. In: Michigan's wildlife action plan: state wildlife grants funding in action: project summaries 2005–2010, 13. Report No. 3532. Lansing, MI: Michigan Department of Natural Resources Wildlife Division.

Discusses management of jack pine barrens and several wildlife species, including Kirtland's warbler. Also provides accomplishments for 2006–2010.

Michigan Department of Natural Resources. 2016. Fire, jack pine and aspen—understanding a historic relationship. Showcasing the DNR. <https://content.govdelivery.com/accounts/MIDNR/bulletins/14ba6d3>.

Discusses the relationship between healthy forests and fire focusing on jack pine and aspen, 2 Michigan species that historically relied on fire for regeneration. Jack pine reproduction before European settlement is discussed as is current Kirtland's warbler habitat creation. Methods of aspen creation along with wildlife and commercial uses are presented.

Michigan Department of Natural Resources. 2022. Kirtland's warbler operational plan. Lansing, MI.

The purpose of this plan is to provide information and operational guidance to Department of Natural Resources (DNR) staff, conservation partners, and the public on how the DNR will manage state-administered lands for Kirtland's warbler. The plan includes detailed guidance on habitat management, land-use conflict minimization, and cooperation with other agencies to minimize the impact of cowbirds. It also provides a commitment from the DNR to continue to financially support the Kirtland's warbler program.

Michigan Department of Natural Resources; United States Fish and Wildlife Service. 1985. Management of the Kirtland's warbler.

Reports that the goal of providing an average of 1,550 acres of Kirtland's warbler habitat has not been met due to inadequate funding, and efforts are being made to arrive at an agreement with the military to maximize benefits to the Kirtland's warbler on military land. Provides a detailed background on Kirtland's warbler management, objectives, procedures, findings, and recommendations.

Michigan Wildlife Habitat Foundation. 2002. Kirtland's Warblers Choose Habitat foundation project. The Wildlife Volunteer.

Reports on the Kirtland's warbler habitat project on Trout Unlimited land. Also provides a life history of the bird and an overview of the census and cowbirds.

Monarch, E.A. 2014. Ground-flora composition and diversity of young and mature wildfire-regenerated jack pine forests. The Ohio State University.

The composition, structure, diversity, and spatial heterogeneity of ground-flora communities associated with wildfire-regenerated jack pine forest ecosystems in northern Lower Michigan were studied. Overall, the ground flora of young post-wildfire stands tend to be dominated by blueberry and sedges, while eastern teaberry and various mosses and lichens characterized the ground flora of the mature stands. On average, the mature stands had significantly higher species richness than younger stands.

Moore, R.L. 1990. Of berry pickers, shanty boys, and the jack pine bird: patterns of settlement and subsistence in Nineteenth Century Oscoda County. Western Michigan University.

The provisions of the Homestead Act of 1863 required a settlement pattern of dispersed single families on small tracts of land, which, in turn, affected the subsistence strategies available to the homesteaders. The interaction of federal land legislation with the ecosystem of southern Oscoda County resulted in marked spatial and temporal differences between the tracts that were homesteaded as opposed to those acquired for their timber. A sample population of quarter sections was analyzed in terms of the physical and biotic environments, date of entry, and use. The analysis confirmed that the timber lands were located on better land and had an earlier entry date than the homesteads. In turn, the small size and submarginal environment of the

homesteads greatly limited possible subsistence strategies. The aspects of Kirtland's warbler's nesting requirements that define the unique nature of the environment of the Grayling sand outwash plains are discussed. [4, 19–21, 29].

MSU Forestry Extension Team. 2014. Forest types of Michigan: jack pine. Michigan State University Extension.

Describes jack pine along with its distribution, ecology, and tree health issues. Also provides tips to landowners. Mentions that Kirtland's warbler is the premier species of the jack pine ecosystem. [2].

Mueller, W.P. 2013. Kirtland's warbler. In: Kreitinger, K.; Steele, Y.; Paulios, A., eds. The Wisconsin all-bird conservation plan, version 2.0. Wisconsin bird conservation initiative. Madison, WI: Wisconsin Department of Natural Resources. 4 p.

Provides information on Kirtland's warbler population trends and concerns, breeding, habitat, management, and research needs.

National Fire Protection Association. [N.d.]. Stephan Bridge Road Fire case study. Quincy, MA.

Describes the 1990 Stephan Bridge Fire near Grayling, Michigan. Discusses pre-fire conditions and provides home fire safety recommendations.

Nelson, M.D. 1992. Predicting Kirtland's warbler (*Dendroica kirtlandii*) habitat suitability on the breeding grounds, northern Lower Michigan. University of Minnesota.

Three models of breeding habitat suitability were tested for Kirtland's warbler. Two were based on stem density and 1 on tree canopy percent cover. Rate of warbler occupancy increased as stem density increased, up to 5,000–8,000 stem/ha. Management recommendations are provided including stocking of at least 2,000 stems/acre, and tree canopy cover of over 15 percent.

Nelson, M.D.; Buech, R.R. 1996. A test of 3 models of Kirtland's warbler habitat suitability. Wildlife Society Bulletin. 24(1): 89–97.

Three models of Kirtland's warbler habitat suitability were tested, and a jack pine canopy-cover model was recommended. Concludes that warbler habitat should contain low-, medium-, and high-class patches in juxtaposition.

Niemi, G.J.; Probst, J.R. 1990. Wildlife and fire in the Upper Midwest. In: Sweeney, J.M., ed. Management of dynamic ecosystems. Lafayette, IN: The Wildlife Society: 31–46.

Discusses the role of fire in the perpetuation of forests, prairies, and wetlands. Kirtland's warbler is one of several species used as an example.

Olah, A.M.; Ribic, C.A.; Grveles, K.; Warner, S.; Lopez, D.; Pidgeon, A.M. 2022. Kirtland's warbler breeding productivity and habitat use in red pine-dominated habitat in Wisconsin, USA. Avian Conservation and Ecology. 17(1): 3. <https://doi.org/10.5751/ACE-02009-170103>. 23 p.

Kirtland's warbler productivity and nest success were estimated, nest and fledgling success was monitored, and habitat use was characterized in Wisconsin red pine-dominated plantations from 2015–2017. Overall, reproductive success in the central Wisconsin breeding population that used red pine-dominated plantations was like that of Kirtland's warblers breeding in typical jack pine habitat in the range core. Trees were closer together and herbaceous vegetation was taller and denser within territories than at randomly located points outside of territories. Females selected

nest sites with deeper dead ground vegetation and live vegetation that was taller and denser than was available at randomly located points within male territories. Nest success was not strongly influenced by within-patch habitat factors. Concludes that young red pine-dominated habitat appears to approximate young jack pine in habitat quality for Kirtland's warblers, and this may provide managers some flexibility in habitat maintenance for this conservation-reliant species.

Palmgren, G.R. 1989. Growth of jack pine and northern pin oak in landscape ecosystems of northern Lower Michigan and occupancy by the Kirtland's warbler. University of Michigan.

Jack pine growth patterns, northern pin oak occurrence, and the species composition of jack pine–pin oak communities in relation to site conditions were studied to determine if the time of colonization and duration of occupancy of an area by Kirtland's warblers could be predicted. The study concludes that by using landscape ecosystems as the basis for Kirtland's conservation and management, reliable tree height predictions will allow managers to make accurate predictions of specific years of warbler occupancy and purposefully extend the duration of warbler occupancy in each management unit.

Peterson, R.T. 1948. Birds over America. New York: Dodd, Mead and Co.

Kirtland's warbler is used as an example in a discussion of limited habitats and small population sizes of various warblers. Also describes the author's several trips to locate the Kirtland's warbler. [182–183].

Petrucha, M. 2003. KIWA MAPS station summary 2000–2002.

A 3-year summary of a Monitoring Avian Productivity and Survivorship banding station located in mature jack pine from a 1946 fire in Ogemaw County, Michigan, which had 29 Kirtland's warblers on the 1961 census. In 3 years, 34 individual birds of 12 species were netted and banded. The breeding status of 34 avian species encountered is provided.

Petrucha, M.E. 2005. First record of Kirtland's warbler in Grand Traverse County. Michigan Birds and Natural History. 12(2): 46–48.

Describes details of the discovery of the first Kirtland's warbler in Grand Traverse County, Michigan, in June 2002, and the search for a female. The bird was in atypical habitat and a habitat description is provided. A male was also present in 2003 and 2004. A mate was never found in any year.

Polk, J. 2006. Kirtland's warbler. The Passenger Pigeon. 68(1): 73–74.

17–23 June 2005, 3–4 singing male Kirtland's warblers, Jackson County, Wisconsin. The birds were in a medium-short red pine-jack pine-oak mix near jack pines of the same height. Habitat, and the songs of 4 and plumage of 3 birds, are described.

Probst, J. 1980. Report to the Kirtland's warbler recovery team. St. Paul, MN.

The annual Kirtland's Warbler Census results were compared to habitat availability. Results suggest that the static warbler population may be related to habitat availability. Preliminary unrefined data show that the total Kirtland's warbler population divided by all occupied acreage is 2–3 males per 100 acres. The author recommends planting jack pine at 1,500 to 1,800 stems per acre until research on occupied plantations is initiated; performing fill-in planting on one of the study sites to increase stem density; and planting some sites with fewer or smaller openings than the present standard.

Probst, J. 1982. Kirtland's warbler research report. St. Paul, MN.

Provides Kirtland's warbler study updates. The annual census data for each of the major areas have been plotted for each year to generate curves that suggest general patterns of occupancy that have been extrapolated to predict future levels of occupancy. Habitat quality was evaluated through estimates of breeding densities of Kirtland's. Management alternatives for warbler habitat regeneration are summarized. Future research needs and a schedule of publications are provided.

Probst, J.R. 1980. 1980 KW progress report. St. Paul, MN.

Reports on 2 presentations made on Kirtland's warbler habitat at professional meetings in 1980. Copies of the abstracts and poster text are included. An overview of management options for regenerating warbler habitat is included, as is an update on 1980 vegetation field work. Plans for 1981 are provided.

Probst, J.R. 1983. Population limitation of the Kirtland's warbler on the breeding grounds.

Preliminary copy of paper on Kirtland's warbler habitat suitability. Describes primary and secondary characteristics of optimal breeding habitat. Also gives future population predictions.

Probst, J.R. 1986. A review of factors limiting the Kirtland's warbler on its breeding grounds. American Midland Naturalist. 116(1): 87–100. <https://doi.org/10.2307/2425940>.

Presents a review and synthesis of published and unpublished reports of Kirtland's warbler demography. Historical and recent trends, reproductive potential, mortality, fate of spring returns, annual recruitment, habitat limitations, and cowbird parasitism are all discussed. Research needs are presented and a habitat shortfall for 1986–1987 is predicted.

Probst, J.R. 1988. Kirtland's warbler breeding biology and habitat management. In: Hoekstra, T.W.; Capp, J., eds. Integrating forest management for wildlife and fish. Gen. Tech. Rep. NC-122. St. Paul, MN: USDA Forest Service, North Central Experiment Station: 28–35.

Four areas of Kirtland's warbler biology and habitat management were reviewed and discussed: (1) warbler habitat requirements; (2) warbler demography; (3) how geography of suitable habitat affects stand colonization and duration of occupancy; and (4) habitat management strategies.

Probst, J.R. 1991a. Kirtland's warbler: *Dendroica kirtlandii*. In: Brewer, R.; McPeck, G.A.; Adams, R.J., eds. The atlas of breeding birds of Michigan. East Lansing, MI: Michigan State University Press: 414–417. <https://www.unhcr.org/publications/manuals/4d9352319/unhcr-protection-training-manual-european-border-entry-officials-2-legal.html?query=excom> 1989.

Provides a description of breeding habitat, seasonal occurrence, status, and conservation of Kirtland's warbler. Includes maps of historic and current breeding distribution, as well as a drawing of a male and photo of a female on nest.

Probst, J.R.; Buech, R.R.; Rakstad, D.S. 1985. Wildlife management of the jack pine type in the Lake States. St. Paul, MN: USDA Forest Service, North Central Experiment Station.

Since all forest stands cannot be managed to benefit all species, choices must be made between prescriptions that benefit the most species or the most desirable. A simple, multispecies model is presented that divides wildlife into 4 importance classes, assigns an importance factor to each class, and further weighs each species by 1 of 4 abundance categories.

Probst, J.R.; Crow, T.R. 1991b. Integrating biological diversity and resource management. Journal of Forestry. February 1991: 12–17.

Kirtland's warbler is used as an example of the results of habitat loss. [15].

Probst, J.R.; Ennis, K.R. 1989. Multi-resource value of Kirtland's warbler habitat. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 69.

Reports on the value of Kirtland's warbler breeding habitat for consumptive and nonconsumptive uses and value to other wildlife species.

Probst, J.R.; Hayes, J.P. 1992. Pairing success of Kirtland's warblers in marginal vs. suitable habitat. The Auk. 104: 234–241.

Pairing success of male Kirtland's warblers in different quality of habitats was investigated to test the hypothesis that a lower proportion of pairing occurred in marginal habitat. Sixty percent of males in marginal habitat were paired compared to 95 percent in suitable habitat. It was estimated that overall, 85 percent of males are paired and that estimates of fall immatures were about 36 percent lower than uncorrected estimates.

Probst, J.R.; Weinrich, J. 1993. Relating Kirtland's warbler population to changing landscape composition and structure. Landscape Ecology. 8(4): 257–271.

Discusses the Kirtland's warbler population related to utilization of jack pine ecosystems resulting from 3 types of regeneration. Provides habitat and population projections to 1996.

Probst, J.R.; Wright, D.D. 2003. Fire and shade effects on ground cover structure in Kirtland's warbler habitat. American Midland Naturalist. 149(2): 320–334. [https://doi.org/10.1674/0003-0031\(2003\)149\[0320:FASEOG\]2.0.CO;2](https://doi.org/10.1674/0003-0031(2003)149[0320:FASEOG]2.0.CO;2).

The range of percent cover for dominant ground cover components was documented in burned and unburned Kirtland's warbler habitat. The influence of fire, shade-history, and succession were also investigated. Results suggest that fire shade-history and succession influence ground cover, but various components are affected differently by these factors. Suitable ground cover can be maintained without fire, but fire is still desirable as this is a historically fire-regulated system.

Radtko, R.; Byelich, J. 1963. Kirtland's warbler management. The Wilson Bulletin. 75(2): 208–215.

Reports on attempts by the Michigan Department of Conservation and the U.S. Forest Service to support Kirtland's warblers through the creation of special management areas and using land management practices. Sections on management objectives, management, management areas, controlled burning, silviculture, planting, cooperation, coordination, and cowbird control are discussed in detail.

Richard, T. 2010. CFB Petawawa Kirtland's warbler survey and monitoring programme summary report, 2006–2010.

Reports on Kirtland's warbler occurrence on Canadian Forces Base Petawawa from 2006–2010. During the summer of 2006, 3 males were observed. In 2007, 2 males and 1 female were observed with nesting confirmed. A pair fledging 4 young plus 2 single males were found in 2008. In 2009, 2 nesting pairs produced at least 3 fledglings. In 2010, 2 pairs and 1 single male were detected. One pair fledged 2 young, while the number of young fledged by the second pair was unknown. Breeding habitat is described, and birds were color-banded from 2006–2009.

Richard, T. 2014. Characteristics of the breeding habitat of endangered Kirtland's warblers on a Canadian military installation. Journal of Field Ornithology. 85(3): 301–309. <https://doi.org/10.1111/jfo.12069>.

Characteristics of occupied versus nonoccupied Kirtland's warbler habitat were compared. Occupied sites had greater percent cover of sweet blueberry, coral lichen, reindeer lichen, and wavy-leaved moss than unoccupied sites.

Richard, T.L. 2013. Characterization of Kirtland's warbler (*Setophaga kirtlandii*) habitat on a Canadian military installation. Royal Military College of Canada.

Suitable occupied Kirtland's warbler habitat characteristics were compared to sites not occupied at Canadian Forces Base Petawawa. Variables such as ground vegetation, tree species composition, stand age, percentage of canopy cover, and former and current military use were studied. Occupied warbler habitat had greater percent cover of low sweet blueberry, coral lichen, reindeer lichen, and wavy-leaved moss compared to unoccupied habitat. Areas occupied by Kirtland's were significantly younger with less canopy cover than unoccupied areas. Forest fires and jack pine planting and seeding seem to determine the presence of preferred habitat characteristics.

Rothstein, D.E. 2018. Effect of fertilization on growth and mortality of jack pine growing on poor, sandy soils in Michigan, USA: implications for sustainable management. *Forests*. 9(549): 1–13. <https://doi.org/10.3390/f9090549>.

A factorial fertilization experiment was carried out to better understand potential nutrient limitations to jack pine growth on excessively drained sandy soils in northern Lower Michigan. Nutrient budgets for jack pine management in northern Lower Michigan were constructed using existing data on atmospheric deposition, weathering, and harvest nutrient removals. No evidence was found that growth rates of young jack pine plantations on xeric sands are limited by availability of macronutrients. Findings suggest that whole tree harvesting may not be sustainable over multiple rotations.

Rothstein, D.E.; Bradford, J.; Corner, R.; Chumack, K.; Cook, M.; Razavy-Toosi, E. 2013. Effects of stand-replacing wildfire on ecosystem carbon pools in Lake States jack pine forests. *JFSP Research Project Reports*. 60: 1–16. <https://digitalcommons.unl.edu/jfspresearch/60>.

A well-studied fire chronosequence of jack pine forests in Michigan were studied, providing a unique opportunity to both determine the accuracy of chronosequence estimates of post-fire carbon (C) fluxes for this forest type, as well as clarify variability in rates of C loss and recovery following wildfire. Stable isotope analysis of deep soil C profiles was conducted to gain a better understanding of the response of mineral soil C to stand-replacing wildfire and used retrospective tree-ring analysis to identify potential changes in tree growth over the past 50 years. The results were integrated into a spatial modeling framework to estimate the effects of alternative management practices and changing disturbances regimes on landscape carbon balance. The results show that although the original chronofunction explains nearly 90 percent of the variation in aboveground biomass C, we were consistently overestimating the C gain by stands younger than approximately 40 years. Simulation modeling indicates that intensification of management, to increase Kirtland's warbler habitat and/or greater biomass energy production, clearly pushes this landscape outside of the range of natural variability for C storage.

Rothstein, D.E.; Spaulding, S.E. 2010. Replacement of wildfire by whole-tree harvesting in jack pine forests: effects on soil fertility and tree nutrition. *Forest Ecology and Management*. 260(7): 1164–1174. <https://doi.org/10.1016/j.foreco.2010.07.007>.

Describes the effects of whole-tree harvesting (WTH) vs. stand-replacing wildfire (WF) on soil carbon and nutrient availability, and nutrition and growth of the succeeding stand, in jack pine forests of northern Lower Michigan. Results suggest that soil nutrient levels following WTH fall within the natural range of variation produced by WF in these jack pine forests; however, comparison with a similar study on boreal jack pine suggests that latitudinal effects on O horizon nutrient capital may influence the degree to which WTH matches the effects of WF on soil nutrient availability.

Rothstein, D.E.; Yermakov, Z.; Buell, A.L. 2004. Loss and recovery of ecosystem carbon pools following stand-replacing wildfire in Michigan jack pine. Canadian Journal of Forest Research. 34: 1908–1918.

A 72-year chronosequence was used to study the loss and recovery of ecosystem carbon (C) pools after stand-replacing fire in Michigan jack pine. The amount of C stored aboveground and in the soil was quantified. Changes in total ecosystem C across the chronosequence conformed to predictions. Results show jack pine stands are net sinks for C across the chronosequence.

Sargent, M.; Carter, K.S., eds. 1999. Managing Michigan's wildlife: a landowner's guide. Lansing, MI: Michigan United Conservation Clubs.

Kirtland's warbler is used several times as an example in private land management. [9, 49, 57, 61, 62, 232, 244].

Schempf, P. 1976. Kirtland's warbler habitat indicators.

Kirtland's warbler habitat potential can be estimated by looking at associated plants and their growth characteristics (list included). Primary criteria for warbler habitat include a stand size of 200 acres or larger with a site index of 55 or less. A stand with numerous hardwoods indicates a stand will be unsuitable. Stands with an aggregate basal area of less than 20 square feet of hardwoods is suitable and areas with up to 33 square feet may be used.

Schneegas, E.R. 1975. National Forest nongame bird management. In: Smith, D.R., ed. Proceedings of the symposium on management of forest and range habitats for nongame birds. Gen. Tech. Rep. W01. Tucson, AZ: U.S. Department of Agriculture, Forest Service: 314–318.

Habitat management for the Kirtland's warbler is discussed. [315, 316].

Simard, A.J. 1981. The Mack Lake Fire. Fire Management Notes.

Provides a timeline and environmental conditions of the 1980 Mack Lake Fire, and lists the lessons learned.

Simard, A.J.; Blank, R.W. 1982. Fire history of a Michigan jack pine forest. Michigan Academician. 15(1): 59–71.

The 1980 Mack Lake Fire was used to develop a 160-year fire history of a present-day jack pine stand by taking cross-sections of red pines that were established in the 1820s and checking for fire scars. Results show there have been large scale fires every 27.5 years in the Mack Lake area.

Simard, A.J.; Haines, D.A.; Blank, R.W.; Frost, J.S. 1983. The Mack Lake Fire. Gen. Tech. Rep. NC-83. St. Paul, MN.

A comprehensive analysis and thorough review of the 1980 Mack Lake Fire near Mio, Michigan. Includes pre-fire conditions and post-fire vegetation response. Mentions Kirtland's warbler. [1, 29].

Sjogren, S. 1999. Hiawatha NF 1999 Kirtland's warbler program summary.

Describes available and potential Kirtland's warbler habitat on the Hiawatha National Forest. Reports that 14 male and 9 female Kirtland's warblers were found in Michigan's Upper Peninsula during the 1998 census; an additional 4 males and 4 females were found after the census.

Sjogren, S. 2003. A Kirtland's warbler assessment for the Hiawatha NF (with a specific example for the Raco Plains LTA).

Provides information on Kirtland's warbler populations and management on the Hiawatha National Forest; lists issues and opportunities for Kirtland's management; suggests how the Forest can support warbler recovery; meets Endangered Species Act requirements; and describes an example Kirtland's warbler management scenario for the Raco Land Type Association.

Sjogren, S. 2010. Technical guide: Kirtland's warbler habitat management: Hiawatha National Forest: January 2010. U.S. Department of Agriculture, Forest Service, Hiawatha National Forest.

Provides technical information needed to create and sustain Kirtland's warbler breeding habitat and meet Hiawatha Forest Plan goals, objectives, and guidelines.

Smith, E.; Prince, H. [N.d.]. Analysis of Kirtland's warbler breeding habitat in Ogemaw and Roscommon Counties, Michigan. East Lansing, MI.

Plots were examined by species, low shrub and herbaceous layer, and other ground cover. Transects were used to define tree cover by height and percent cover. Thirty-five genera of plants representing 19 families were identified. A description of the habitat and a list of plant species is provided.

Smith, E.L. 1979. Analysis of Kirtland's warbler breeding habitat in Ogemaw and Roscommon Counties, Michigan. Michigan State University.

Provides Kirtland's warbler breeding habitat descriptions in Ogemaw and Roscommon Counties. Comparisons were made between occupied and unoccupied areas on sites of comparable origin. These comparisons showed that both ground cover and tree components seem to be used as cues by warblers. The highest density of male Kirtland's occurs when the amount of tree cover and openings are close to equal and the interspersation ratio is high.

Society for Science. Fire spares warbler nest area. 1980. Science News. 117(20): 311.

Reports on the 1980 Mack Lake fire south of Mio, Michigan, that burned 25,000 acres, destroyed dozens of homes, and resulted in a human fatality. The fire burned 100 acres of occupiable Kirtland's warbler habitat.

Sorenson, D. 1979. Rough draft.

Discusses the negative perceptions of the public to prescribed burning, based on several "unknowns" in addition to an ever-growing list of current problems land managers must deal with when utilizing prescribed burns. The unknowns deal primarily with whether or not burning is necessary to provide optimum ground cover in Kirtland's warbler habitat. Other negative aspects that continue to come up are possible risks to lives and property, increasing costs of reforestation, and changing timber harvest techniques. States that there is a need for data that will help in making decisions on some of the problems previously stated.

Spaulding, S.E. 2008. Does clearcut harvesting emulate the effects of natural disturbance on the development of stand structure in *Pinus banksiana* forests of northern Lower Michigan? Michigan State University.

The structural development of jack pine stands in northern Lower Michigan was studied using 2 chronosequences after either clearcutting and replanting or stand-replacing wildfire. The variables quantified were aboveground biomass, stem density, snag density and volume, coarse woody debris, and forest floor mass and patchiness. Total aboveground biomass was similar between the 2 regeneration types. Snag density was greater in wildfire areas. Within-stand patchiness of live

stem density was much higher in the wildfire sites. Young wildfire sites had the most dead wood, with levels declining dramatically in the first 20 years and both regeneration types were the same after 40 years. Forest floor mass was very high in young plantations, but there was no difference in the 2 types at the 10-year mark. Attributes of both regeneration types were nearly identical after 20 years. Management implications are included.

Spaulding, S.E.; Rothstein, D.E. 2009. How well does Kirtland's warbler management emulate the effects of natural disturbance on stand structure in Michigan jack pine forests? *Forest Ecology and Management*. 258(11): 2609–2618. <https://doi.org/10.1016/j.foreco.2009.09.020>.

Young, intermediate, and mature stands of jack pine were compared that originated from fire and plantation to see if plantations emulate fire. The conclusion was that plantations showed greatly simplified habitat structure at the stand level. Leaving more snags was recommended.

Taylor, S. 1993. Practical ecosystem management for plants and animals. *Endangered Species UPDATE*. 10(3&4): 26–29.

Discusses ecosystem management using Kirtland's warbler habitat as an example. Includes a photo of a male.

Tilghman, N.G. 1978. Range determination and study of the Kirtland's warbler in Wisconsin. Madison, WI.

The Wisconsin Department of Natural Resources coordinated a search for Kirtland's warblers to determine if they were present and nesting. The Kirtland's range was determined and habitat was delineated. A survey was organized and conducted, and 2 unmated males were found in the Black River State Forest.

Tilghman, N.G. 1979. The search for the Kirtland's warbler in Wisconsin. *The Passenger Pigeon*. 41: 16–24.

Discusses a survey of jack pine stands in Wisconsin in May and June 1978. Notes that 2 unmated males maintained territories in Jackson County. Discusses both hypothetical reasons for their appearance and possibilities for the establishment of new colonies outside Michigan. Also includes maps of census areas.

Trautman, M.B. 1979. Experiences and thoughts relative to the Kirtland's warbler. *The Jack-Pine Warbler*. 57(3): 135–140.

The author discusses his personal experiences with Kirtland's warblers in Michigan from the mid-1920s through the mid-1930s, including population fluctuations, colony locations, habitat, behavior, song, nest and eggs, and other species using Kirtland's warbler habitat. Speculates about adverse effects of fall hurricanes on migrating warblers and correlates hurricane cycles with population fluctuations.

Tucker, M.M. 2019. Effects of disturbance on jack pine (*Pinus banksiana* Lamb.) dominated ecosystems in northern Lower Michigan: forest management, wildfires, and climate change. Wayne State University.

The effects of jack pine disturbance attributed to forest management were interpolated by using historical survey data to determine forest age structure prior to European settlement. A comparison of historical and current age distributions found that Kirtland's warbler habitat management has significantly altered the age structure resulting in younger, more homogenous stands. Natural structural variability has also been affected by management. Forest remnant "stringers" are common after fires but are often harvested for timber. This study discovered

that stringers affect post-fire landscape structure, plant community composition, and sapling age distributions. It is recommended that stringers be preserved or emulated in landscape management. LANDIS-II was used to model fire severity and jack pine barrens distributions under various future climate predictions. Models indicated that climate change caused increased fire severity and number but reduced the amount of barrens, which have already declined due to Kirtland's warbler habitat management. Large-scale losses of currently dominant species were also predicted. It is recommended that populated fire-prone areas need to adapt to future fire regimes due to climate change. This study provides context for applying historical data to future management decisions.

Tucker, M.M.; Corace, R.G., III; Cleland, D.T.; Kashian, D.M. 2016. Long-term effects of managing for an endangered songbird on the heterogeneity of a fire-prone landscape. Landscape Ecology. 31(10): 2445–2458. <https://doi.org/10.1007/s10980-016-0413-7>.

Pre-European settlement and current jack pine landscapes were compared to determine if current Kirtland's warbler management has altered the historic range of variability of the ecosystem. Concludes management has met Kirtland's warbler population objectives but has altered the temporal variability of the landscape's age structure. Pre-European settlement patterns of stand ages may provide a foundation for an ecosystem-based management plan for the region that supports both Kirtland's warbler and the ecosystems upon which they depend.

United States Fish and Wildlife Service. 1979. Kirtland's warbler habitat: Crawford, Oscoda, Clare, Kalkaska, and Ogemaw Counties, Michigan: an acquisition proposal presented to the Land Acquisition Review Committee.

A proposal by the U.S. Fish and Wildlife Service to acquire privately owned inholdings, which limit or restrict Kirtland's warbler habitat management on larger tracts already in public ownership. Includes estimated acquisition costs and location maps.

United States Fish and Wildlife Service. 1981. Habitat management key to Kirtland's warbler recovery. Endangered Species Technical Bulletin. 6(4): 6–7.

Provides an overview of the Kirtland's warbler life history and outlines key recovery needs, with habitat details.

United States Fish and Wildlife Service. 1983. FY 1983 budget: Appeals to Senate of House action.

An appeal to the Senate for more Kirtland's warbler habitat land acquisition funding after a denial by the House.

United States Fish and Wildlife Service. 1986. Mack Lake research discussion.

An outline intended to provide a starting point for a comprehensive discussion of needed research at the Mack Lake Burn. Defines the problem of the lack of knowledge of optimal Kirtland's warbler habitat and information needs. Provides objectives, various study level descriptions for information needed, and study methods for each level.

United States Forest Service. 1972. Wildlife habitat management: Kirtland's warbler habitat management program on the Huron National Forest in Michigan.

A plan that provides details on feasibility and desirability of managing and expanding Kirtland's warbler habitat for their survival, a description of current and proposed work, and time needed, costs, and personnel requirements.

United States Forest Service. 1986. Actions relative to the recommendations of the 1985 general management review of the Huron-Manistee National Forests: D. Kirtland's warbler management.

Details and accomplishments are provided on establishing a committee to explore options of accelerating research on Kirtland's warbler habitat and sponsoring a national workshop to determine research needs of land management agencies.

U.S. Department of Agriculture, Forest Service. 1979. Kirtland's warbler critical habitat in Michigan (federal ownership).

Legal descriptions of Forest Service Kirtland's warbler critical habitat.

U.S. Department of Agriculture, Forest Service. 1980. Fire analysis report: Mack Lake Fire: May 5–8, 1980. Mio, MI.

A detailed analysis of the Mack Lake Fire. Includes a summary report of the fire and evaluates the prescribed burning program and the capability of the Huron-Manistee National Forest to organize, mobilize, and act in the event of large wildfires. Assesses the fuel break program and provides recommendations.

U.S. Department of Agriculture, Forest Service. 1981. Interim report: Mack Lake Fire Area rehabilitation plans.

Summarizes the first summer's activities, including fire history, effects of the Mack Lake Fire on wildlife resources, effect on Mack Lake, salvage operations, natural regeneration, and future plans.

U.S. Department of Agriculture, Forest Service. 1994. Kirtland's warbler essential habitat planting.

Provides a description of Kirtland's warbler habitat planting on the Huron-Manistee National Forest, including objectives, concerns, and census results by regeneration type and location.

U.S. Department of Agriculture, Forest Service. 1997. Hiawatha National Forest: 1997 Kirtland's warbler management program.

Reports on 618 acres of Kirtland's warbler habitat created, 11 male and 4 female Kirtland's warblers found on the census, future habitat plans, 2 adult male Kirtland's color-banded on 23 June 1997, and 17 brown-headed cowbirds that were trapped.

U.S. Department of Agriculture, Forest Service. 2009. Ottawa National Forest fiscal year 2008 monitoring and evaluation report. Ironwood, MI.

The purpose is to determine and disclose whether resource management activities conducted on the Ottawa are meeting management direction and multiple use objectives described in the Forest Plan. Provides background on Kirtland's warblers on the Ottawa National Forest, status of habitat, a map of suitable habitat, and annual census efforts and results. [30–34].

U.S. Department of Agriculture, Forest Service, Hiawatha National Forest. 2004. Raco Plains ecosystem management environmental assessment. Sault Ste. Marie, MI.

A project proposal in the Raco Plains Landtype Association in Chippewa County, Michigan, to determine the best way to manage a jack pine ecosystem. This environmental assessment was prepared in order to examine the probable effects of the proposed activities, as well as to examine alternatives identified during the assessment process. The purpose for the project is detailed, and possible issues are discussed. Kirtland's warbler is one of the species featured. [8, 11, 15, 18, 20, 22, 25, 31, 32, 34, 41, 69, 71, 73, 75, 76, 89, 90, 93, 94, 95, 96, 97, 98, 100, 121, 127, 128, 130, 132].

U.S. Department of Agriculture, Forest Service, Huron National Forest. [N.d.]. Kirtland's warbler management area. Cadillac, MI: USDA Forest Service, Huron National Forest.

Discusses Kirtland's warbler management efforts. Includes a map of management areas.

Von Bargaen, J. 1969. Kirtland report. Michigan Audubon Newsletter. 17: 3.

Reports on Kirtland's warbler management efforts in 1968.

Van Dyke, F.; Harju, S.; Hindy, M.; Cannata, N.; Schnidt, E.; Hillman, E.; Sargent, A.; Keas, B. 2022. Comparative detection, density, and reproductive performance of Kirtland's warbler in jack and red pine. The Journal of Wildlife Management. <https://doi.org/10.1002/jwmg.22233>. 16 p.

From 2016–2018, density and detection probabilities in jack pine and red pine stands were estimated through repeated visits to a limited number of stands. Estimates of species detection probability indicated that ≥ 1 male Kirtland's warbler would be detected on most sites when any were present, but individual detection probabilities were less and varied by stand type, indicating that single visits to sites would underestimate numbers and that accurate estimation of detection probability was important for estimation of density in different stand types. Estimates of detection of Kirtland's warbler population size in jack pine versus red pine stands in the same areas and breeding seasons are provided. Concludes that Kirtland's could reproduce in red pine stands that are adjacent to jack pine and red pine could be interspersed in jack pine plantations. It is also suggested that the Kirtland's warbler census underestimates the number of singing males.

Walker, W.S. 1999. Landscape ecosystems of the Mack Lake Burn, northern Lower Michigan, and the occurrence of the Kirtland's warbler. The University of Michigan.

The objectives of this study were to identify, describe, and map the physiographic systems and landform-level ecosystems of the Mack Lake Burn; contrast the magnitudes of these landforms; and determine the spatial pattern and occupancy of the burn by the Kirtland's warbler from 1986–1997 in relation to these ecosystems and their components. Concludes that the landscape ecosystem approach can be usefully applied throughout the breeding range of the Kirtland's warbler to assist managers in determining management areas.

Walker, W.S.; Barnes, B.V.; Kashian, D.M. 2003. Landscape ecosystems of the Mack Lake Burn, northern Lower Michigan, and the occurrence of the Kirtland's warbler. Forest Science. 49(1): 119–139.

A multifactor landscape ecosystem approach was used to describe the spatial pattern of Kirtland's warbler occurrence over time. Concludes that the landscape ecosystem approach provides a sound framework for understanding patterns of Kirtland's warbler occurrence and for assisting identifying management areas.

Walkinshaw, L.H. 1932. With Kirtland's warbler among the jack pines. Bird-Lore. 34: 196–199.

Provides details on a trip to the Kirtland's warbler area of Michigan. Discusses nest, eggs, behavior, and habitat. Includes photographs of a male and habitat.

Walkinshaw, L.H. 1940. A Kirtland's warbler return. The Jack-Pine Warbler. 18: 91–92.

Provides details on a trip to the Kirtland's warbler area of Michigan. Discusses nest, eggs, behavior, and habitat. Includes photographs of a male and habitat.

Walkinshaw, L.H. 1977. An alternative view. Bird Watch. 5: 1–3.

Discusses the various factors affecting Kirtland's warbler population size.

Walkinshaw, L.H. 1985. Birds found in Michigan jack-pine burns: fifty-three years of observation. The Jack-Pine Warbler. 63(1): 24–35.

Provides information on other bird species observed from 1931–1984 in breeding habitat during Kirtland's warbler studies. Mentions having seen or found 338 Kirtland's nests.

Weinrich, J. 1979a. Current and projected estimate of Kirtland's warbler nesting habitat to 1989—state of Michigan and USFS proposed critical habitat.

Provides best estimates for acreage of occupiable-aged jack pine (and some red pine) stands for Kirtland's warblers by ownership. The estimates are: 1979: 17,804 acres; 1984: 22,212 acres; and 1989: 15,794 acres. Notes that in 1979, less than 60 percent of the occupiable-aged habitat was known to hold Kirtland's warblers, so the majority of the projected habitat will not be suitable for Kirtland's.

Weinrich, J. 1980a. Kirtland's warbler habitat availability—1961 and 1971.

Reports that there was 11,855 acres of occupiable-aged Kirtland's warbler habitat available in 1961, and 7,125 acres in 1971 on state-owned lands, a decrease of 40 percent. This decrease in habitat availability is similar to the decrease in the singing male census for the same years.

Weinrich, J. 1980b. Kirtland's warbler habitat use and warbler habitat regeneration schemes.

Provides information on habitat acreage and occupation by Kirtland's warblers for 3 wildfire areas. Also includes a list of methods of treatments for regenerating Kirtland's habitat with estimates of potential for creation of warbler habitat.

Weinrich, J. 1980c. Kirtland's warbler jack pine planting and seeding.

During the spring of 1980, the Wildlife Division planted 1,281,000 jack pines on 1,674 acres of Kirtland's warbler critical habitat. Aerial seeding of jack pine was accomplished on 598 acres. Costs of planting are included, and planting methods are discussed.

Weinrich, J.; Carlson, E. 1983. Habitat utilization of post-breeding Kirtland's warblers.

A pilot study to describe the habitat used by Kirtland's warblers during the post-breeding period. A total of 27 person days were spent in the field from 1 August to early September 1982. Kirtland's were located on 20 of the 27 days, most consistently in August. By September, the frequency of locating birds dropped. Both male and female adults, and immatures, were found within known breeding territories. In several areas, even through August, juveniles were found in association with adults.

Weinrich, J.; Sorenson, D.J. 1979b. Current and projected estimates of Kirtland's warbler nesting habitat.

Analysis of the stand data for the 78,000 acres of state-owned critical Kirtland's warbler breeding habitat shows there will be a decrease by almost 60 percent of available habitat in the next 10 years. Only about 7,000 acres of the 11,017 acres available in 1979 were utilized by Kirtland's, making the upcoming habitat shortage more severe. An analysis of the 53,000 acres of critical breeding habitat on National Forest land indicates an increase from 3,937 acres of occupiable habitat in 1979 to 5,926 acres in 1989. A statewide drop in occupiable habitat from 14,954 acres in 1979 to 10,544 acres is predicted by 1984. An immediate increase in habitat creation is

recommended. The number of acres of state-owned habitat by legal description for 1979, 1984, and 1989 are presented. The same information by management unit is presented for USDA Forest Service-owned lands.

Weiss, S.A. 2017. Social and ecological aspects of managing wildlife in fire-dependent forested ecosystems. The Ohio State University.

Presents 2 case studies, the perceptions of land managers providing habitat for red-cockaded woodpeckers, and snag development from 3 treatments in jack pine in Michigan. Girdled snags had the lowest levels of past insect activity, particularly midway up the bole where the tree was originally girdled. Topped snags were softer, or more easily penetrable, than the other 2 treatments and had the highest levels of past insect use. The prescribed fire treatment had the greatest number of potential cavities and the greatest number of foraging excavations. The models predicting foraging activity suggested that treatment type was the most influential variable, while the models for predicting potential cavities suggested a combination of past foraging activity and snag diameter were most influential. These results may help inform potential snag treatment options when managing for biological legacies within pine forests of the Great Lakes region.

Weiss, S.A.; Corace, R.G., III; Toman, E.L.; Herms, D.A.; Goebel, P.C. 2018. Wildlife implications across snag treatment types in jack pine stands of Upper Michigan. *Forest Ecology and Management*. 409: 407–416. <https://doi.org/10.1016/j.foreco.2017.10.013>.

The objectives were to characterize decay patterns in jack pine snags that had been killed by prescribed fire, topping, and girdling and determine the effects of these treatments on snag use by subcortical insects and primary cavity-nesting birds. Topped snags had the highest levels of past insect colonization, were softer, and had higher proportions of loose bark remaining on the boles. Trees killed by prescribed fire had the greatest number of foraging excavations and cavities. Girdled snags had the lowest evidence of past insect colonization and showed different levels of decay and insect use at different vertical positions on the snag. Findings suggest that different jack pine snag treatments result in unique decay trajectories that may influence snag use by an array of wildlife.

Weise, T.F. 1990. Kirtland's warbler (*Dendroica kirtlandii*): results of 1988–1990 surveys in the Upper Peninsula of Michigan. Lansing, MI: Michigan Department of Natural Resources.

Jack pine stands containing suitable Kirtland's warbler habitat were surveyed in Chippewa, Luce, and Marquette Counties in 1988–1990. No Kirtland's were found. Included are a table of recent Kirtland's records from outside the Northern Lower Peninsula and maps of townships surveyed. Compares Upper and Lower Peninsula jack pine and provides an abstract by Buck 1989. Eastern Upper Peninsula Kirtland's warbler survey and habitat analysis are given.

Wilson, R.L. 1989. Fire and fire effects—its impact on forest vegetation for Kirtland's warbler habitat. In: *At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium*. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 57–60.

Discusses the effect of fire on vegetation and soil in Kirtland's warbler breeding habitat.

Wisconsin Department of Natural Resources Bureau of Endangered Resources. 1988. Summary of the Kirtland's warbler survey in Wisconsin (1988).

Over 100 jack pine stands were surveyed in Wisconsin for Kirtland's warblers in 1988, resulting in 8 males located. Survey methods and habitat delineation techniques are given.

Wisconsin Department of Natural Resources Division of Forestry. 2012. Kirtland's warbler habitat in Wisconsin.

Provides an overview of Kirtland's warbler and habitat requirements and discusses jack pine in Wisconsin. It was found that potential Kirtland's warbler habitat is limited to specific areas of northern and central Wisconsin with nutrient poor grayling and related sands. There is currently approximately 327,750 total acres of jack pine forest in Wisconsin, and approximately 76,193 acres of young jack pine forest (< 20 years old) suitable to Kirtland's warbler. Total acreage of jack pine forest in Wisconsin has been declining since the 1960s. More than 50 percent of the jack pine forest in Wisconsin is in private ownership. More than 70 percent of young jack pine forests suitable to Kirtland's warbler are in private or county ownership. Also discusses data gaps and forest management.

Wood, N.A. 1904. Discovery of the breeding area of Kirtland's warbler. Bulletin of the Michigan Ornithological Club. 5: 1–13. <https://www.biodiversitylibrary.org/item/127712>.

Describes the discovery of the Kirtland's warbler type nest, the behavior and song of the adult, other bird life, and the botany of the breeding area. Also describes the discovery of the breeding area by Frothingham and Gale, and Wood's journey from Ann Arbor to northern Michigan. Provides data on 23 birds taken in Michigan and on 8 sight records. At least 16 of the specimens were deposited in the University of Michigan Museum of Zoology. Includes photographs of habitat, nest, and egg.

Woodby, D.A.; Botkin, D.B.; Nisbet, R.A. 1989. The potential decline of habitat for the Kirtland's warbler due to the "greenhouse" effect. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forests: 94.

Discusses the projected decline of jack pine stands in northern lower peninsula of Michigan due to global warming.

Wright, H.A.; Bailey, A.W. 1982. Kirtland's warbler. In: Fire ecology: United States and Southern Canada. New York: John Wiley & Sons: 55.

Provides an overview of Kirtland's warbler breeding habitat and forestry practices.

Yermakov, Z.; Rothstein, D.E. 2006. Changes in soil carbon and nitrogen cycling along a 72-year wildfire chronosequence in Michigan jack pine forests. *Oecologia*. 149: 690–700.

Changes in soil processes after wildfire in Michigan jack pine stands were investigated. The chronosequence of 11 stands spanning 72 years was used to characterize nitrogen mineralization, soil respiration, and patterns of soil nutrients. The study found that nitrogen availability in the sandy soils of these stands is limited by lack of organic matter, and wildfire may negatively affect this by consuming the main nutrient pool. The accumulation of surface organic matter appears to regulate nitrogen availability, highlighting the importance of the forest floor in driving disturbance dynamics.

Zimmerman, D.A. 1956. The jack pine association in the lower peninsula of Michigan: its structure and composition. University of Michigan.

This study describes structurally and floristically the jack pine plains of Michigan's lower peninsula and records the exact location of the plains. Data on stratification, coverage, consistency, and abundance were obtained from 150 plots. Includes descriptions of the 176 species of vascular plants found on the jack pine plains. Descriptions of jack pine and duration of growing season by county are provided. A comparison between past and present appearance of the jack pine plains is made. Also provides an extensive jack pine bibliography. Several maps and photographs are included.

Zou, X. 1988. Pattern of jack pine occurrence in ecosystems of Kirtland's warbler summer habitat at Mack Lake, northern Lower Michigan. The University of Michigan.

This study's objectives were to determine the pattern of jack pine occurrence in landscape ecosystem types of the 1980 Mack Lake Burn. The study examined the relationship of the pattern of jack pine distribution to the local landscape ecosystem types of the burn; the spatial occurrence of the singing and nesting Kirtland's warblers in 1986 and 1987; and the specific components (physiography, soil, and vegetation) of the local landscape ecosystem types and of the occupancy of the Kirtland's warbler. Concludes that Kirtland's prefer areas having a contiguous pattern of jack pine occurrence and avoid areas having a random pattern of pack pine occurrence.

Zou, X.; Theiss, C.; Barnes, B.V. 1992. Pattern of Kirtland's warbler occurrence in relation to the landscape structure of its summer habitat in northern Lower Michigan. *Landscape Ecology*. 6(4): 221–231.

A landscape ecosystem approach was used to study Kirtland's warbler habitat in the Mack Lake Burn, Oscoda County, Michigan. Low and high elevation landscape segments were identified, as well as 11 local ecosystem types. Concludes landscape structure appears to be an important factor in the occurrence of the warbler in its summer habitat.



Kirtland's warbler wintering habitat, Eleuthera, The Bahamas. USDA Forest Service photo.

IV. WINTER HABITAT

Brunner, A.R.; Cooper, N.W.; Marra, P.P. 2020. First known record of Kirtland's warbler (*Setophaga kirtlandii*) observed and captured in Jamaica. *The Wilson Journal of Ornithology*. 132: 746–749.

12 February 2019, 1 female Kirtland's warbler was observed, captured, and photographed, Font Hill Nature Reserve, Jamaica. This represents the first record of a Kirtland's for Jamaica. The bird spent at least 7 weeks at the study site. Numerous measurements and observations are provided. Habitat descriptions and photographs with comparisons are included for both the Jamaican and typical Bahamian wintering habitat.

Carey, E.; Wunderle, J.M., Jr.; Ewert, D.N. 2004. A research and training program for conservation of wintering Kirtland's warbler and associated species in The Bahamas: the first field season. *The Journal of Caribbean Ornithology*. 17: 81–85.

Outlines a plan to (1) increase knowledge of the winter biology and habitats of the Kirtland's warbler and other focal bird species in those habitats and (2) train Bahamians in the methods of field biology and natural resources management. Provides a summary of the first field season on Andros and Eleuthera.

Challinor, D., Jr. 1962. Recent sight record of Kirtland's warbler in The Bahamas. *The Wilson Bulletin*. 74(3): 290.

27 March 1957, 1 male Kirtland's warbler, Hog Island, The Bahamas. Includes notes on feeding behavior, habitat, and tail-wagging.

Cirino, E. 2019. Something to warble about. *Bird Calls*. Winter 2018–2019: 27–29.

An interview with David Ewert about Kirtland's warbler habitat and threats in The Bahamas.

Clench, M.H. 1978. Search ends: a Kirtland's at last. Audubon Society of Western Pennsylvania. Bulletin 42(10): 1, 8.

10 February 1978, 1 female Kirtland's warbler sight record, North Caicos, The Bahamas. The habitat and behavior of the bird are described, as is the search for the bird.

Currie, D.; Wunderle, J.; Ewert, D. 2003. The most elusive bird in The Bahamas? Getting to grips with wintering Kirtland's warblers. World Birdwatch. 25(4): 13–15.

Details the history of the Kirtland's warbler in The Bahamas and studies done in the past. Describes the work done with the Kirtland's Warbler Research and Training Project from October 2001 to 2003.

Currie, D.; Wunderle, J.M., Jr.; Ewert, D.N.; Anderson, M.R.; Davis, A.; Turner, J. 2005a. Habitat distribution of birds wintering in Central Andros, The Bahamas: implications for management. Caribbean Journal of Science. 41(1): 75–87.

February 2002, 1 Kirtland's warbler was found during point counts in central Andros, The Bahamas. The bird was found in tall coppice during playback of Kirtland's chips after time was up for a point count. The bird may have been drawn from low coppice 40 m away.

Currie, D.; Wunderle, J.M., Jr.; Ewert, D.N.; Davis, A.; McKenzie, Z. 2005b. Winter avian distribution and relative abundance in six terrestrial habitats on southern Eleuthera, The Bahamas. Caribbean Journal of Science. 41(1): 88–100.

One Kirtland's warbler was detected on a point count and at least 5 others were detected between points using playback on southern Eleuthera, The Bahamas, between 22 January to 10 March 2003. All were found in secondary vegetation. A total of 24 other Kirtland's warblers were found at 9 sites on southern Eleuthera, mostly in secondary habitat, between December 2002 and April 2003. The effect of disturbance and vegetation structure on bird assemblages is described.

Currie, D.; Wunderle, J.M., Jr.; Freid, E.; Ewert, D.N.; Lodge, D.J. 2019. Kirtland's warbler *Setophaga kirtlandii*. In: The natural history of The Bahamas: a field guide. Ithaca, NY: Cornell University Press: 374–375.

Provides Kirtland's warbler distribution and status for The Bahamas. Physical, habitat, vocalization, and tail-wagging descriptions are also given.

Ewert, D. 2000. A tale of two habitats: fire and the Kirtland's warbler. Rx Fire Notes. 8(1): 2–4.

Outlines issues relating to managing fire-dependent habitat on both the breeding and wintering grounds for the Kirtland's warbler. Protection strategies on both the breeding and wintering grounds should focus on avoiding fragmentation, identifying the effects of logging practices, and fire management. Education and outreach are likely to be important activities in both areas. In Michigan, increased emphasis on public education and development in relationship to prescribed burning deserves special attention.

Ewert, D. 2022. The Kirtland's warbler: a special Bahamas wintering bird. Eleutheran: The Newspaper. April/May: 30.

An article that focuses on the winter habitat and biology of Kirtland's warblers. Information on breeding habitat and migration is also briefly discussed.

Ewert, D.N.; Wunderle, J.M., Jr.; Carey, E. 2006. The Kirtland's warbler research and training project: past, present, and proposed future directions.

States the principal objectives as (1) obtain information on the habitat use and winter ecology

of the Kirtland's warbler and associated resident and migrant species and (2) train Bahamian students to increase conservation capacity in The Bahamas. A detailed project history is provided as well as sections on project research, building partnerships for Kirtland's conservation, future of the project, summary of the overall research strategy, and collaborators and their contributions, awards, and publications.

Faanes, C.A. 1986. Memorandum to Director, Patuxent Wildlife Research Center, Laurel, MD: summary of 1985–1986 winter field work on Kirtland's warbler winter ecology.

Provides a summary of Kirtland's warbler winter field work in The Bahamas, Turks and Caicos, Dominican Republic, and Haiti from 11 December 1985 to 28 March 1986. On Eleuthera, The Bahamas, a female Kirtland's was located on 11 December 1985 and a banded male, originally banded in the area in February 1985, was located 13 December 1985. Both were seen on numerous days, but no other dates are mentioned. Foraging observations ($n = 408$) were made of both birds, with 70 percent of foraging being on Lantana berries. The other 30 percent consisted of bark-gleaning, flycatching, leaf-scratching, and ground probing. Almost 97 percent of possible Kirtland's warbler habitat on Eleuthera was surveyed and a rudimentary classification system was developed. The fruit and flower production of Lantana was examined, and fruit was collected for caloric and nutrient content. Bird census plots were set up and 210 net-hours were spent trying to capture the female Kirtland's. The female was never captured but the male was caught 4 times. A female Kirtland's warbler was observed on 23 and 29 December 1985. Vegetation and bird census plots were established. Notes on weather, trips to other islands, and recommendations for future research are provided.

Fleming, G.M.; Wunderle, J.M., Jr.; Ewert, D.N. 2016. Diet preferences of goats in a subtropical dry forest and implications for habitat management. *Tropical Ecology*. 57(2): 279–297.

Diet preferences of domestic goats were evaluated in early-successional subtropical dry forest used in the winter by Kirtland's warbler. It was expected that goats would avoid *Lantana involucreta* and *Erithalis fruticosa*, two plants important to Kirtland's winter diet that occur in abundance in goat grazed areas. However, the plants were among the species with moderate to high palatability to goats. A strict avoidance by goats on these species is not a direct mechanism promoting their abundance in grazed areas. Grazing may still prove a viable means of managing existing Kirtland's habitat by delaying succession.

Fleming, G.M.; Wunderle, J.M., Jr.; Ewert, D.N.; O'Brien, J.J.; Helmer, E.H. 2015. Functional attributes of two subtropical shrubs and implications for the distribution and management of endangered bird habitat. *Journal of Plant Ecology*. 8(6): 578–592. <https://doi.org/10.1093/jpe/rtu036>.

The fruits of *Erithalis fruticosa* and *Lantana involucreta* are important in the winter diet of Kirtland's warblers. The disturbance ecology of the shrubs is poorly understood. Field experiments were performed to determine mechanisms favoring establishment, then compared with different anthropogenic disturbance regimes in order to identify those most likely to produce habitat used by Kirtland's. Areas of large-scale land clearing combined with subsequent goat grazing most often supported *E. fruticosa* and *L. involucreta*, while the shrubs were relatively rare in burned areas.

Franklin, J.; Steadman, D.W. 2013. The winter bird communities in pine woodland vs. broadleaf forest on Abaco, The Bahamas. *Caribbean Naturalist*. 3: 1–18.

The relative abundance of winter resident birds on Abaco, The Bahamas, was assessed by 115 point counts conducted during December and January 2007–2012. The structure and composition of the woody vegetation in Abaco's 2 widespread terrestrial habitats, Pineland and Coppice, were also analyzed. No Kirtland's warblers were found during the study but mentions 1 on Andros in 2002. [15].

Hagner, C. 2006. The secret life of the Kirtland's warbler. The Nature Conservancy.

Chronicles the work done by The Bahamas Kirtland's Warbler Research and Training Project.

Haney, J.; Christopher, D.S.L.; Walsh-McGehee, M. 1998. A quantitative analysis of winter distribution and habitats of Kirtland's warblers in The Bahamas. The Condor. 100(2): 201–217.

Compiles and analyzes 101 reports of 194 individual Kirtland's warblers from the Bahama Archipelago, 1841–1997. Concludes the majority of Kirtland's warblers winter in Caribbean pine habitat.

Helmer, E.H.; Ruzycki, T.S.; Wunderle, J.M., Jr.; Vigesser, S.; Ruefenacht, B.; Kwit, C.; Brandeis, T.J.; Ewert, D.N. 2010. Mapping tropical dry forest height, foliage height profiles, and disturbance type and age with a time series of cloud-cleared Landsat and ALI image mosaics to characterize avian habitat. Remote Sensing of Environment. 114: 2457–2473. <https://doi.org/10.1016/j.rse.2010.05.021>.

Tropical dry forest height, foliage height profiles, and forest disturbance type and age on Eleuthera, The Bahamas, were mapped. The variables were mapped in the context of avian habitat studies, particularly the winter habitat of Kirtland's warblers. Relationships between forest vertical structure, disturbance type, and counts of forage species important to the Kirtland's warbler are illustrated. Includes several maps and land cover data.

Hundley, M.H. 1967. Recent wintering records of the Kirtland's warbler. The Auk. 84: 425–426.

Discusses all Bahamian Kirtland's warbler records from 1870–1957. Provides details, dates, and locations for 1959–1966 sight record, noting vegetation types in which birds were seen. Mentions that on several occasions, an individual warbler would land on the lower section of a pine trunk and then work its way upward, circling the tree and probing beneath the bark similar to a brown creeper. After reaching the branched portion of the tree, the warbler would fly to the base of another tree and repeat the behavior. Notes that Harold Mayfield and other breeding ground experts had never seen this type of behavior in a Kirtland's. (This feeding behavior is common in the Bahamian race of the yellow-throated warbler, now called the Bahama warbler [White 1996, 1998].)

Isada, A.P. 2006. First sight record Kirtland's warbler (*Dendroica kirtlandii*) in Cuba. North American Birds. 60(3): 462–463.

8 November 2004, 1 Kirtland's warbler, Cayo Coco, Ciego de Avila Province, Cuba. Describes the habitat, location, and field marks.

Jones, T.M.; Akresh, M.E.; King, D.I. 2013. Recent sightings of Kirtland's warblers on San Salvador Island, The Bahamas. The Wilson Journal of Ornithology. 125(3): 637–642. <https://doi.org/10.1676/13-0071>.

24 January 2012, 1 after-second-year (ASY) female Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. 1 March 2012, 1 second-year (SY) male Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. 10 March 2012, ASY female Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. 22 December 2012, 1 hatching year female Kirtland's warbler captured in coastal scrub, San Salvador Island, The Bahamas. Also discusses 16 observations of at least 6 other Kirtland's warblers. The habitat is described, and a map is provided.

Lane, J. 1975. Kirtland's warbler in Mexico. American Birds. 29: 144.

11 November 1974, 1 male and 1 female or juvenile Kirtland's warblers, 20 miles south of Veracruz, Mexico. A habitat description of the sighting area is included.

Larkin, C.C. 2010. Effects of common disturbances on composition and succession in coppice plant communities on Eleuthera, The Bahamas: conservation implications. Miami University.

Plant species cover data were collected to investigate the effects of 3 common disturbances—fire, bulldozing, and bulldozing followed by goat grazing—on early-successional coppice communities on Eleuthera, The Bahamas. For each disturbance type, both the ground layer (< 0.5 m) and shrub layer (> 0.5 m) were sampled in 8 patches (> 1 ha) of varying age (1–28 yr) since disturbance. Results suggest that goats accelerate succession by quickly removing nonwoody ground cover and increase the representation of woody ground cover; these results also suggest that managed goat grazing delays plant succession by inhibiting growth of tree species and maintaining early-successional shrubs. These effects may lead to different coppice successional trajectories and may have important conservation implications for the Kirtland's warbler, whose wintering habitat consists of early-successional coppice rich in Lantana fruits. [9, 25].

Larkin, C.C.; Kwit, C.; Wunderle, J.M.; Helmer, E.H.; Stevens, M.H.H.; Roberts, M.T.K.; Ewert, D.N. 2012. Disturbance type and plant successional communities in Bahamian dry forests. Biotropica. 44(1): 10–18. <https://doi.org/10.1111/j.1744-7429.2011.00771.x>.

Plant species composition and cover data were collected on Eleuthera, The Bahamas, to investigate the effects of 3 types of disturbance (fire, clearing, and clearing followed by goat grazing on early-successional coppice). Overall, plant communities differed among disturbance types; several common species had significantly higher cover in the shrub layer of fire patches and cleared-and-grazed patches exhibited higher woody ground cover. Results suggest that goats may accelerate some aspects of succession and retard other aspects. These effects may lead to different successional trajectories and have important conservation implications.

Lee, D.S.; Walsh-McGehee, M.; Haney, J.C. 1997. A history, biology and re-evaluation of the Kirtland's warbler habitat in The Bahamas. Bahamas Journal of Science. 4: 19–29.

Provides an overview of the biology of wintering Kirtland's warblers and a historical summary in The Bahamas. Theorizes that the Caribbean pine community is a key component of winter habitat.

Maynard, C.J. 1896. The birds of eastern North America: with original descriptions of all the species which occur east of the Mississippi River, between the Arctic Circle and the Gulf of Mexico, with full notes upon their habits, etc. Revised. Newtonville, MA: C.J. Maynard & Co.

Provides an extremely detailed physical description of male and female Kirtland's warblers and discusses Maynard's encounters with the warbler in The Bahamas (26 records for Nassau, New Providence, and 1 record for Southern Bight, Andros, are included). Includes color plates of male and female. [592–596, pl. 17, pl. 21].

Mayfield, H.F. 1972. Winter habitat of Kirtland's warbler. The Wilson Bulletin. 84(3): 347–349.

Summarizes and discusses all that is known about Kirtland's warbler winter habitat and occurrences.

Mayfield, H.F. 1996. Kirtland's warblers in winter. Birding. 28(1): 34–39.

Provides a general background and history of the Kirtland's warbler in The Bahamas. Concludes that the preferred winter habitat consists of large areas of low, sparse vegetation and does not appear to be associated with Caribbean pine. Includes several photographs of winter habitat and has a map of migration.

Miller, A.C. 2007. Fire history of Caribbean pine (*Pinus caribaea* var. *bahamensis* [Griseb.] W.H. Barrett & Golfari) forests on Abaco Island, The Bahamas. University of Tennessee.

A study of Caribbean pine to: extend the current tree-ring chronology of Abaco Island further back in time; determine the years in which fire occurred on the island based on samples collected from West Pond and Split Pond; and statistically analyze the fire-scar data to better understand the historic fire regime. Discusses previous research and provides a detailed site description. A tree-ring chronology was developed back to 1935 and concludes that fire is a common ecosystem disturbance. Kirtland's warbler is briefly mentioned, mistakenly claiming Caribbean pine is the major wintering habitat in The Bahamas. [1, 19, 20].

Miller, K.V.; Conroy, M.J. 1990. Spot satellite imagery for mapping Kirtland's warbler wintering habitat in The Bahamas. Wildlife Society Bulletin. 18: 252–257.

The value of satellite imagery was evaluated for locating areas of Kirtland's warbler habitat in The Bahamas. Concludes that satellite imagery is useful in remote or poorly mapped areas and allows quantification of warbler habitat (*Lantana* sp.) for large areas.

Murphy, P. 1985. Quick takes. Bird Watcher's Digest. 7(5): 6.

Reports on Kirtland's warbler studies in the wintering grounds looking at distribution and habitat. Also mentions the 1985 Kirtland's Warbler Census where 217 singing males were counted.

Myers, R.; Wade, D.; Bergh, C. 2004. Fire management assessment of the Caribbean pine (*Pinus caribaea*) forest ecosystems on Andros and Abaco Islands, Bahamas. GFI Public. Arlington, VA: The Nature Conservancy. <https://www.fs.usda.gov/research/treesearch/21640>.

Provides information on Caribbean pine forest distribution, pine vegetation history, and other pyric vegetation. Includes observations of fire ecology, regimes, and impacts, as well as current conditions, invasive species, and land conservation. Provides current and previous recommendations and the next steps to take.

Radabaugh, B.E. 1972. Report on a field trip to the northern Bahama Islands from 7 February to 14 April 1972 on behalf of the National Audubon Society and the New York Zoological Society.

The purpose of the trip was to find Kirtland's warblers, survey and assess habitat changes, and determine what the warbler's requirements are in the winter and correlate these findings with habitat changes observed. No Kirtland's warblers were found. Discusses timber harvesting and farming and concludes the greatest alteration of habitat was to pine lands via pulpwood harvesting. Includes several photographs of timber harvesting and habitat.

Radabaugh, B.E. 1973. Report of a trip to some central and southern islands of the Commonwealth of The Bahamas in search of Kirtland's warblers from 5 January to 3 April 1973.

The principal purposes were to observe and assess recent habitat changes, to find Kirtland's warblers, and to correlate the Kirtland's warbler winter requirements. One male Kirtland's warbler was observed on 11, 12, and 22 March 1973, about 1 mile east of Brown, Crooked Island, The Bahamas. Details on behavior, feeding, territory shape and size, and habitat are provided. Other bird species observed are listed.

Radabaugh, B.E. 1974. Kirtland's warbler and its Bahama wintering grounds. The Wilson Bulletin. 86(1951): 374–383.

11, 12, and 22 March 1973, 1 male Kirtland's warbler, Crooked Island, The Bahamas. It was the only Kirtland's found in 800 hours of field work. The behavior and habitat of the warbler is described, and previous records and the environmental changes in the area are discussed.

Stolzenburg, W. 1997. Wings of the Americas. The Nature Conservancy.

Discusses the Wings of the Americas program. Kirtland's warbler is used as one of the examples, with a brief life history, and mentions upcoming work in The Bahamas. [22].

Sykes, P.W., Jr. 1989. Kirtland's warblers on their wintering grounds in the Bahama Archipelago: a preliminary report. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 28.

Gives results of surveys in 1985 and 1986 for Kirtland's warblers on 15 islands in the Bahama Archipelago where at least 6 individuals were found. Foraging behavior of 2 Kirtland's observed and habitat notes are provided. Concludes that Kirtland's favor second growth coppice 3–10 feet tall or virgin low scrub and that the factor or factors suppressing the population do not appear to be on the wintering grounds.

Sykes, P.W., Jr.; Clench, M.H. 1998. Winter habitat of Kirtland's warbler: an endangered nearctic/neotropical migrant. The Wilson Bulletin. 110(2): 244–261.

Presents habitats of Kirtland's warblers based on data from 29 specimens, 2 bandings, and 67 sightings of at least 1 individual on 13 islands in the Bahama Archipelago. Six broad habitats were used. The structure and floristic composition of the habitats are described. A table of plant species where warblers were observed foraging in and photographs of different habitats are included. Concludes that Kirtland's warblers use most of the upland habitats, with the exception of high coppice, with a shrub/scrub component.

Terborgh, J. 1974. Preservation of natural diversity: the problem of extinction prone species. BioScience. 24(12): 715–722.

The effects of wintering ground habitat destruction on bird population size are discussed. States that Kirtland's warblers winter on 2 pine islands, Abaco and Grand Bahama. Notes Abaco has been almost cleared of pine forests and while some natural habitat remains on Grand Bahama, it is being developed commercially. Concludes that the fate of the Kirtland's lies with commercial interests in The Bahamas. Calls for more research to determine the winter ranges of migrant species. [721].

Terborgh, J.W. 1980. The conservation status of neotropical migrants: present and future. In: Keast, A.; Morton, E.S., eds. Migrant birds in the neotropics: ecology, behavior, distribution and conservation. Proceedings of a symposia held at the National Zoological Park, Smithsonian Institution. Washington, DC: Smithsonian Institution Press: 21–30.

Kirtland's warbler is included in a discussion of deforestation of winter migratory bird habitats. [29].

The Bahamas Environment Science and Technology Commission. 2001. First national communication on climate change. Nassau, New Providence: Ministry of Agriculture and Fisheries. [https://www.best.gov.bs/Documents/FNC main doc.pdf](https://www.best.gov.bs/Documents/FNC%20main%20doc.pdf).

Discusses the economic, human, and environmental impacts of global warming in The Bahamas. Kirtland's warbler is mentioned in conjunction with pine forests. Recommendations are provided. [29, Annex 3].

Wolcott, D.M.; Donner, D.M.; Brown, D.J.; Ribic, C.A. 2018. Kirtland's warbler winter habitat changes across the Bahamian Archipelago in response to future climate-condition scenarios. Caribbean Naturalist. 49: 1–20. <https://www.fs.usda.gov/research/treesearch/56481>.

Future climate-change scenarios were assessed that might affect wintering habitat of Kirtland's

warbler on the Bahamian Archipelago. Models were used to project precipitation and temperature patterns across the archipelago over the winter period, from baseline average until the end of the century. Landcover-loss projections were made for open lands using 1- and 2-m sea-level-rise scenarios. Results indicate that the Bahamian islands used by Kirtland's warbler will become warmer and wetter during the winter months, except during March when central islands are predicted to go through a drying trend. It is predicted that the greatest habitat loss of coastal open land due to sea-level rise will occur on the northern, lower-elevation islands. Concludes that the north-central islands, which currently contain the majority of the wintering population, are likely the critical islands on which to focus climate-adaptation strategies.

Wunderle, J.M.; Bainton, A.; Dean, P.; Lodge, D.J. 2002. Kirtland's warbler observations: trip 1 (17–18 March 2002, Eleuthera, The Bahamas); additional observations of Kirtland's warblers trip 2 (3–6 April 2002).

Trip 1: 17 March 2002, 2 male and 2 female Kirtland's warblers, Madiera Road, Eleuthera, The Bahamas. 18 March 2002, 4 male Kirtland's warblers were captured and color-banded, 1 unknown Kirtland's warbler bounced off net, and 1 unknown observed, Madiera Road, Eleuthera, The Bahamas. Also provides a list of other bird species detected and a vegetation description. Trip 2: The Madiera Road, Eleuthera, The Bahamas, site was revisited to search for banded Kirtland's warblers, capture and band additional Kirtland's, obtain warbler foraging observations, measure vegetation characteristics, and obtain preliminary insect collections. The 4 previously banded Kirtland's were relocated. 4 April 2002, 1 male Kirtland's warbler captured and color-banded. 6 April 2002, 1 female Kirtland's warbler captured and color-banded. Two unbanded Kirtland's were observed, for a total of at least 8 individual Kirtland's present. Foraging observations and vegetation characteristics are provided.

Wunderle, J.M., Jr.; Currie, D.; Ewert, D.N. 2007. The potential role of hurricanes in the creation and maintenance of Kirtland's warbler winter habitat in the Bahamian Archipelago. In: Proceedings of the 11th symposium on the natural history of The Bahamas. San Salvador: Gerace Research Center: 121–129.

Elaborates on the importance of hurricanes as natural disturbance factors by reviewing the characteristics of hurricanes and their effects on vegetation, which have the potential to produce Kirtland's warbler habitat by creating or maintaining early successional patches of broadleaf vegetation. Hypothesizes that hurricanes occur with sufficient strength and frequency in The Bahamas to be an integral part of the natural disturbance regime responsible for setting back succession and producing Kirtland's warbler winter habitat.

Wunderle, J.M., Jr.; Currie, D.; Helmer, E.H.; Ewert, D.N.; White, J.D.; Ruzycki, T.S.; Parresol, B.; Kwit, C. 2010a. Kirtland's warblers in anthropogenically disturbed early-successional habitats on Eleuthera, The Bahamas. *The Condor*. 112(1): 123–137. <https://doi.org/10.1525/cond.2010.090134>.

Habitat was quantified at 153 Kirtland's warbler capture sites on Eleuthera, The Bahamas. Sites were low coppice 3–28 years old resulting from human disturbance. Canopies in capture sites were lower (mean 1.8 m) than in random plots (mean 2.7 m). Feeding observations were also reported, with fruit being consumed 69 percent of the time.

Wunderle, J.M., Jr.; Ewert, D. 2010b. The Kirtland's warbler research and training project. *The All-Bird Bulletin*.

The Kirtland's Warbler Research and Training Project was initiated by the USDA Forest Service's International Institute of Tropical Forestry and The Nature Conservancy in collaboration with The Bahamas National Trust and the College of The Bahamas. This was due to a general lack of winter biology knowledge. The Kirtland's warbler recovery plan ranks winter habitat and population

research as a high priority and recommends building The Bahamas conservation capacity. A summary of accomplishments is provided.

Wunderle, J.M., Jr.; Lebow, P.K.; White, J.D.; Currie, D.; Ewert, D.N. 2014. Sex and age differences in site fidelity, food resource tracking, and body condition of wintering Kirtland's warblers (*Setophaga kirtlandii*) in The Bahamas. Ornithological Monographs. Vol. 2014.

The study was conducted on Eleuthera, The Bahamas. Overwinter site persistence was low and variable among study sites. Site fidelity differed by sex (males > females) and age class (adults > juveniles). Measures of food resources were reliable positive predictors of site fidelity. Birds that shifted between study sites within a winter moved to sites with higher biomass of ripe fruit and ground arthropods. Late-winter rain had a positive effect on body mass, corroborating previous Kirtland's warbler studies that showed carryover effects on the breeding grounds and that survival in the following year was positively correlated with March rainfall in The Bahamas. Concludes that conservation efforts in the Bahamas archipelago should focus on protecting the least-drought-prone early-successional habitats and sites with favored fruit species.



Mike Petrucha, Carol Bocetti, and Doug Pavlovich comparing Kirtland's warbler census maps in Ogemaw County, Michigan, June 2005. Courtesy photo by Kaitlyn Kelly.

V. CENSUS AND MONITORING

Aird, P.L. 1979. The 1979 Kirtland's Warbler Census in Canada: report to the Kirtland's warbler recovery team meeting: June 27–28, 1979.

No Kirtland's warblers were found in Canada during the 1979 census. Recommends that research beyond the known Michigan range should be strongly supported.

Aird, P.L. 2018. Reflections on searching for and finding Kirtland's warbler in Ontario and Québec, 1976–2016. *Ontario Birds*. 36(2): 92–104.

Documents 40 years of Kirtland's warbler searches in Ontario and Québec during the breeding season by the author and colleagues.

Aird, P.L.; Hibbard, S.J. 1978. The search for Kirtland's warbler in Canada: a search kit. Toronto: Faculty of Forestry and Landscape Architecture, University of Toronto.

Provides guidance for observers in the 3 Canadian census efforts in 1978. Includes thorough descriptions of field marks, nest locality requirements, and search procedures.

American Birding Association. 1997. Update: Kirtland's warblers. *Winging It*. 9(9): 1, 7.

Reports on the 1997 Kirtland's Warbler Census where 728 singing males were found in Michigan, and 5 in Wisconsin, for a total of 733. Includes a graph of census results from 1951–1997.

Audubon. 1975. Update: Kirtland's warblers. Audubon. 77: 124.

Reports on the 1975 Kirtland's Warbler Census during which 179 males were counted. Possible limitations on Kirtland's population size are discussed.

Birder's World. 1998. Kirtland's comeback. Birder's World. December.

Reports that a record 805 singing males were counted on the 1998 Kirtland's Warbler Census.

Buck, T.M. 1989. Eastern upper peninsula Kirtland's warbler survey and habitat analysis.

Twenty sites were surveyed for Kirtland's in Schoolcraft County in Michigan's Upper Peninsula (UP) in 1988. No Kirtland's were found. Ten sites were evaluated and compared with warbler breeding habitat in the Lower Peninsula. Recommends that future surveys be conducted in the UP.

Bull, J. 2009. Kirtland's warbler population on the rise again. Flyway.

Reports 589 singing male Kirtland's warblers found on the U.S. Department of Agriculture, Forest Service census.

Burgoyne, G.E., Jr.; Burck, D.H. 1977. Kirtland's warbler census: 1977. Michigan Department of Natural Resources Surveys and Statistical Services Report No. 163.

Report of the 1977 Kirtland's warbler census, in which 218 males were counted in 6 Michigan counties. One male was found in Ontario. Includes tables of census data for 1951–1977 by county, colony, and land ownership.

Burgoyne, G.E., Jr.; Ryel, L.A. 1978. Kirtland's warbler numbers and colonies, 1977. The Jack-Pine Warbler. 56(4): 185–190.

Report of the 1977 Kirtland's Warbler Census where 218 singing males were counted in 6 Michigan counties and 1 was found in Ontario. Includes tables of census data for 1951–1977 by county and by colony size for 1976–1977.

Case, D.J.; Fitzmaurice, R.L. 1996. Singing a happy tune: Kirtland's warbler population is growing. Michigan Natural Resources Magazine.

Reports on the increase in the Kirtland's warbler population.

Chamberlain, D.; McKeating, G. 1978. The 1978 Kirtland's warbler survey in Ontario.

Reports the areas surveyed and describes suitable Kirtland's warbler habitat. Provides survey methods used to locate habitat and individuals in Ontario. The survey resulted in one record: 2 June 1978, 1 male at Camp Petawawa. Selected areas of Quebec were also surveyed, and a male was found 27 May 1978, north of Ottawa near the Gatineau River. The bird had been banded 4 years previously in Michigan as a nestling. Includes maps and recommendations for further surveys.

Dennis, B.; Munholland, P.L.; Scott, J.M. 1991. Estimation of growth and extinction parameters for endangered species. Ecological Monographs. 61: 115–143.

Statistical methods for estimating endangered species numbers relative to growth rates and extinction probabilities from time series data on the size of a single population were developed. Example analysis of data from several endangered species, including Kirtland's warbler, is provided. Results for Kirtland's warblers indicate long-term unfavorable prospects of survival of the species. [116, 131, 132, 133–134].

DeRubeis, A. 2015. The summer season: 2014. The Passenger Pigeon. 77:123–157.

Reports that the 2014 Kirtland's Warbler Census found 11 males in Adams County, 1 in Bayfield County, and 1 in Marinette County. Adams County had 7 females, 3 nests, and 8–10 fledglings. These totals are down from the 2013 numbers. [149].

DeRubeis, A. 2016. The summer season: 2015. The Passenger Pigeon. 78(2): 207–252.

During the 2015 Kirtland's Warbler Census, Wisconsin reported 19 males (14 in Adams County, 2 in Bayfield County, and 3 in Marinette County), with 2 more found outside the census period. At least 14 females were present in Adams County, and the 14 pairs had 13 successful nests (and 2 unsuccessful nests) that fledged 34–51 young. Marinette County had 1 female that successfully fledged 2 young between 28 and 30 July, the latest recorded fledging date in the state. The total number of adults and young Kirtland's in Wisconsin in the summer of 2015 was between 72 and 89 birds. The last observation date was on 1 July, where a female was seen carrying food in Marinette County. [208, 238].

Eliason, B. 1989a. Kirtland's warbler: results of 1989 survey work in Minnesota. St. Paul, MN: Minnesota Department of Natural Resources.

Details the methods and results of 1989 Kirtland's warbler survey work in Minnesota. No Kirtland's were found. Recommends that no additional survey work be conducted in Minnesota in the near future unless more birds are found in Wisconsin.

Eliason, B. 1989b. Kirtland's warbler: results of 1989 survey work in Minnesota. The Loon. 61: 165–170.

Details the methods and results of 1989 Kirtland's warbler survey work in Minnesota. No Kirtland's were found. Recommends that no additional survey work be conducted in Minnesota in the near future unless more birds are found in Wisconsin.

Grveles, K. 2009. The first annual census of the Kirtland's warbler (*Dendroica kirtlandii*) in Wisconsin. The Passenger Pigeon. 71(2): 123–130.

In 2008, Wisconsin documented at least 10 male Kirtland's warblers, and 9 were counted as the official census number. Wisconsin also confirmed 5 females and 5 nests in Adams County.

Hayden, T.J.; Tazik, D.J. 1993. Integrated natural resource monitoring on Army lands and its application to conservation of neotropical birds. In: Finch, D.M.; Stangel, P.W., eds. Status and management of neotropical migratory birds. Gen. Tech. Rep. RM-GTR-229. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. <https://doi.org/10.2737/RM-GTR-229>.

Discusses the U.S. Army's Land Condition Trend Analysis Program. Kirtland's warbler and Camp Grayling are mentioned. [258, 262].

Higman, P.J.; Cuthrell, D.L.; Monfils, M. 2005. Re-assessment of known occurrences and additional surveys for rare species at Camp Grayling Maneuver Training Center. Lansing, MI: Michigan Natural Features Inventory.

Surveys were conducted in 2004 at the Camp Grayling Maneuver Training Center to reassess the status of previously documented rare plant and animal occurrences and search for additional occurrences of these or other rare species. Kirtland's warblers were found at 3 sites totaling 2 pairs and 10 additional singing males. Another site with singing males was discovered during the Kirtland's Warbler Census. Several species abstracts are provided including Olson's (2002) abstract for Kirtland's warbler. [1, 3, 11, 15].

Hill, H.R. 1985. Situation report, Kirtland's warbler, 1985. Michigan Department of Natural Resources Wildlife Division Report No. 3006.

Report of the 1985 Kirtland's Warbler Census in which 216 males were found in 7 Michigan counties and 1 male in Ontario. Includes tables of number of males by county for 1961–1985 and by land ownership for 1976–1985.

Hoffman, R. 1989a. Summary of the Kirtland's warbler survey in Wisconsin—1989. Wisconsin Department of Natural Resources.

Reports on the 1989 Kirtland's warbler survey in Wisconsin, in which 2 males were found. Gives survey methods and locations for the 2 males.

Hoffman, R. 1989b. History of Kirtland's warbler found in Wisconsin. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 29–31.

Reports on the history and current (through 1988) status of Kirtland's warbler in Wisconsin. Describes Wisconsin's survey methods.

Hoffman, R.; Abernathy, R. 1988. Summary of the Kirtland's warbler survey in Wisconsin—1988. Madison, WI.

Reports on the 1988 Kirtland's warbler survey in Wisconsin, where 8 males were found and 2 were netted and banded. A comparison between the habitat in Michigan and Wisconsin is made.

Holmes, S.B.; Tuininga, K.; McIlwrick, K.A.; Carruthers, M.; Cobb, E. 2015. Using an integrated recording and sound analysis system to search for Kirtland's warbler (*Setophaga kirtlandii*) in Ontario. Canadian Field-Naturalist. 129(2): 115–120. <https://doi.org/10.22621/cfn.v129i2.1688>.

Automated sound recording devices and analysis software were used to search for Kirtland's warbler in northeastern Ontario. In 2012, surveys were conducted at 38 locations in Ontario. A Kirtland's warbler was detected at one location in the Sault Ste. Marie District on 6 June. It is concluded that the recording and analysis approach used is an effective method for detecting Kirtland's warbler, or other rare bird species, across extensive areas of their potential range.

Horton, K.J. 1971. Why so few? Kirtland warbler decline noted. The Michigan Audubon Newsletter. 19(5): 1–3.

Reports on the 1971 Kirtland's Warbler Census, during which 201 males were counted in 6 Michigan counties, and discusses the steps being taken to preserve the population. Includes black-and-white photographs of a bird at nest with cowbird young, and habitat.

Horton, K.J. 1972. Warbler's status confirmed. Michigan Audubon Newsletter. 20(4): 3.

Reports briefly on the 1972 Kirtland's Warbler Census where about 200 males were found. The majority of Kirtland's were found in Crawford, Oscoda, and Ogemaw Counties. Wexford County had 2 males and a record of young.

Horton, K.J. 1973. Downward trend reversed? Michigan Audubon Newsletter. 21(4): 1–2.

Reports briefly on the 1973 Kirtland's Warbler Census, during which 216 males were counted in 5 counties. Discusses results of the cowbird control program and requests restrictions on visits to the breeding grounds.

Horton, K.J. 1974a. Downward trend reversed for Kirtland's warbler? *Atlantic Naturalist*. 29: 28.

Provides excerpts from a brief report on the 1973 Kirtland's Warbler Census from Horton 1973.

Horton, K.J. 1974b. K.W. census disappointing. *The Michigan Audubon Newsletter*. 22(4): 1, 3.

Reports briefly on the 1974 Kirtland's Warbler Census, during which 167 males were counted in 5 counties—a drop of 23 percent from 1973. A history of the census is provided along with a discussion of cowbirds.

Horton, K.J. 1975. Final '75 warbler tally. *Michigan Audubon Newsletter*. 23(4): 7.

Reports briefly on the 1975 Kirtland's Warbler Census, during which 179 males were counted in 6 Michigan counties.

Horton, K.J. 1976. '76 census shows gain. *The Michigan Audubon Newsletter*. 24(3): 1.

Reports briefly on the 1976 Kirtland's Warbler Census, during which 199 males were counted.

Horton, K.J. 1977. Kirtland's Warbler Census shows 9.5 percent gain. *The Michigan Audubon Newsletter*. 25(4): 1–2.

Presents results of the 1977 Kirtland's Warbler Census by county where 219 singing males were recorded for 6 Michigan counties and Ontario. Briefly notes the history of the census and of management efforts.

Horton, K.J. 1978. The Kirtland's warblers. *The Michigan Audubon Newsletter*. 26(3): 1–2.

Reports on the 1978 Kirtland's Warbler Census by county, where 193 males were found in 6 Michigan counties. This is lower than the 1977 total of 218. Males were also found in Wisconsin, Ontario, and Quebec.

Horton, K.J. 1979a. Kirtland's warbler count up. *Michigan Audubon Newsletter*. 37(3): 6.

Reports on the 1979 Kirtland's Warbler Census, during which 210 males were counted in 6 counties.

Horton, K.J. 1979b. K.W. in the U.P.? *Michigan Audubon Newsletter*. 27(2): 4.

Requests volunteer Kirtland's warbler surveyors for the Upper Peninsula of Michigan.

Huber, P.W.; Petrucha, M.E. 2015. The 2014 Kirtland's Warbler Survey. *Michigan Birds and Natural History*. 22(2): 95–98.

Reports on the results from the 2014 singing male Kirtland's warbler counts on U.S. Department of Agriculture, Forest Service land in Michigan's Lower Peninsula, where a total of 802 were found. Counts were also done in Michigan's Upper Peninsula (32), Wisconsin (13), and Ontario (1). The Michigan Department of Natural Resources did not conduct a census on its lands in 2014.

Kelley, A.H. 1974. Michigan Bird Survey, summer 1974. *The Jack-Pine Warbler*. 52: 180–189.

Reports that the 1974 Kirtland's Warbler Census showed an alarming decrease in population size. [187].

Knudsen, R.D. 1999. Algoma Kirtland's warbler survey: preliminary report.

Jack pine in the Algoma District of Ontario was surveyed for Kirtland's warbler from 24 May 1999 to 12 July 1999 using male Kirtland's vocalization playback. No Kirtland's were found. Survey methodology is provided.

Lehman, D. 1986. Kirtland's warbler numbers stable; habitat work shows hope for upswing. DNR News. July 2.

Reports on the 1986 Kirtland's Warbler Census where 210 singing males were counted from 7 Michigan counties. Also discusses several management units where warbler habitat is beginning to become suitable and other ongoing habitat work.

Loewenstein, B. 1978. Decline of about 10 percent found in Kirtland's warbler. Michigan Department of Natural Resources News.

Reports that 197 males were found on the 1978 Kirtland's Warbler Census compared to 218 in 1977. A breakdown by county is provided, and reports that 2 Kirtland's were found in Wisconsin, 1 in Ontario, and 1 in Quebec.

Matteson, S.W. 1994. Conservation of endangered, threatened, and nongame birds in Wisconsin 1 July 1993–30 June 1994. The Passenger Pigeon. 56(4): 247–261.

No Kirtland's warblers were found in west-central Jackson County, Wisconsin, in June 1994 surveys. [259].

Mayfield, H. 1951. Census of Kirtland's warblers (singing males) June, 1951.

The results of the 1951 Kirtland's warbler census where 432 singing males were found in 8 counties. Provides Kirtland's background, census methods, results, and side results. Also gives counties that were searched, but no Kirtland's were found.

Mayfield, H. 1953. A census of the Kirtland's warbler. The Auk. 70: 17–20.

Reports on the first Kirtland's warbler census, which was conducted in June 1951 resulting in 432 males found in 8 Michigan counties. Counties that were systematically searched where no Kirtland's were found are listed. Included is an analysis of nesting habitat and a discussion of a colony nesting preference.

Mayfield, H. 1961. Kirtland's Warbler Census of 1961: instructions.

Instructions for the 1961 Kirtland's Warbler Census. Includes methods, organization, areas to be searched, and reporting results.

Mayfield, H. 1962. 1961 Decennial Census of the Kirtland's warbler. The Auk. 79: 173–182.

Report of the 1961 Kirtland's Warbler Census in which 502 males were counted in 12 Michigan counties. Also included are descriptions of the census methods, Kirtland's warbler habitat, population trends, and a comparison of 1951 and 1961 census data. Includes map of Michigan townships where Kirtland's warblers have been known to nest.

Mayfield, H.F. 1951. Cooperative study of the Kirtland's warbler, June 1951.

Documents the instructions for the 1951 census, with aims to determine the number of Kirtland's warblers in existence and to extend the knowledge of nesting requirements. Provides the present knowledge on habitat, areas to be examined, song, and density.

Mayfield, H.F. 1972. Third Decennial Census of Kirtland's Warbler. *The Auk*. 89: 263–268.

Reports the results of the 1971 Kirtland's Warbler Census where 201 males were counted in 7 Michigan counties. Census methods and a map of the breeding area are provided. Results from the 1951, 1961, and 1971 counts are compared, and probable causes of population decline are discussed.

Mayfield, H.F. 1973a. Census of Kirtland's warbler in 1972. *The Auk*. 90: 684–685.

Presents the results of the 1972 Kirtland's Warbler Census where 200 males were counted compared to 201 in 1971. Discusses the probable effects of cowbird parasitism on population size.

Mayfield, H.F. 1973b. Kirtland's Warbler Census, 1973. *American Birds*. 27(6): 950–952.

Presents the results of the 1973 Kirtland's Warbler Census where 216 males were located, up from 200 males in 1973. A discussion of the 1951, 1961, and 1971 censuses is included. Possible historic numbers of Kirtland's warblers and reasons for the current low population are examined.

Mayfield, H.F. 1974. What if we had not removed cowbirds?

Discusses what the Kirtland's warbler population might be without cowbird removal. The 1974 Kirtland's Warbler Census counted 167 singing males. Concludes that without cowbird control and using pre-1960 survival rates, the 1974 census would have been 128 singing males, and using 1972–1974 survival rates, the 1974 count would have been 21.

Mayfield, H.F. 1975. The numbers of Kirtland's warblers. *The Jack-Pine Warbler*. 53(2): 39–47.

A total of 167 singing male Kirtland's warblers were found on the 1974 census, down from 216 in 1973, and the lowest total ever. Discusses Kirtland's warbler population size from prehistoric times through the present, along with the effects of cowbird parasitism, survival on the wintering grounds, and problems on migration.

Mayfield, H.F. 1981. Problems in estimating population size through counts of singing males. *Studies in Avian Biology*. 6: 220–224.

Discusses problems with singing male counts of Kirtland's warblers and prairie warblers. Transect counts were conducted on 10 consecutive days on common species to test census efficiency. Concludes that some species cannot be counted effectively by brief listening periods; difficulties with each species can only be appraised through study of each; and people studying birds should direct attention to problems of censusing to be expected by others.

McWhirter, D.W. 1979. Michigan bird survey, summer 1979. *The Jack-Pine Warbler*. 57: 201–206.

Reports the results of the 1979 Kirtland's Warbler Census during which 201 singing males were found. [205].

Michigan Audubon Society. 1980. Kirtland's warbler count shows 15 percent gain. *Michigan Audubon Newsletter*. 28(3): 5.

Presents the results of the 1980 Kirtland's Warbler Census where 242 singing males in 6 Michigan counties were counted. Mentions locations of census counts outside of breeding areas from past years.

Michigan Department of Natural Resources. 1972. Kirtland's warblers hold steady; show good potential for future gains. Michigan Department of Natural Resources News Bulletin. 9 August 1972.

Reports about 200 Kirtland's warbler pairs on the 1972 Kirtland's Warbler Census, the cowbird program where about 2,000 cowbirds were removed and only 2 of 31 Kirtland's nests were parasitized. Photographers were requested to contact the Michigan Department of Natural Resources or Michigan Audubon Society to obtain pictures instead of disturbing warblers.

Michigan Department of Natural Resources. 1997. Near final: 1997 Kirtland's Warbler Census results. Lansing, MI.

Reports 728 singing male Kirtland's warblers in Michigan in 1997, with 19 being found in the Upper Peninsula. Also provides a breakdown of census numbers by habitat origin, and mentions Wisconsin had 5 singing males.

Michigan Department of Natural Resources. 1998. (Hopefully final): 1998 Kirtland's Warbler Census results. Lansing, MI.

The 1998 Kirtland's Warbler Census found 804 singing males in Michigan, with 790 in the Lower Peninsula and 14 in the Upper Peninsula. Wisconsin reported a single male. Results from 1995–1997 are also provided with a breakdown of birds by habitat origin.

Michigan Natural Areas Council. 1983. Rarity status updates. Michigan Natural Area News.

Reports that 213 singing males were counted on the 1983 Kirtland's Warbler Census.

Middleton, D.S. The summering warblers of Crawford County. The Jack-Pine Warbler. 39: 34–50.

Discusses the Kirtland's warbler population status in Crawford County through 1960. Includes a photograph of jack pine that is too old for nesting habitat. [43–45].

Parent, C.J.; Williams, D.M.; Porter, W.F. 2016. Developing a simulation study to optimize the sampling design for a Kirtland's warbler monitoring program.

A simulation study was developed to better understand tradeoffs between detection and survey effort of Kirtland's warbler. Concludes that results suggest the N-mixture framework will provide an effective means for monitoring Kirtland's (especially when populations are large). Concludes that existing protocol can be used to accomplish these surveys. There is need for basic information about detection and its associated covariates that could be obtained through a small pilot study.

Petrucha, M.E. 2014. The history of the Kirtland's Warbler Census. Michigan Birds and Natural History. 21(4): 301–306.

Provides a history of the Kirtland's Warbler Census from 1951–2014, including the census organizer, and any changes made in census dates and protocol.

Petrucha, M.E.; Carlson, E. 2006a. The Kirtland's warbler in 2005. Michigan Department of Natural Resources Wildlife Division Report No. 3461.

A total of 1,417 singing male Kirtland's warblers were counted in Michigan, with 1,399 in the Lower Peninsula and 18 in the Upper Peninsula. Wisconsin reported 3 males, for a North American total of 1,420.

Petrucha, M.E.; Carlson, E. 2006b. The 2005 Kirtland's Warbler Census. Michigan Birds and Natural History. 13: 53–59.

A total of 1,417 singing male Kirtland's warblers were counted in Michigan, with 1,399 in the Lower Peninsula and 18 in the Upper Peninsula. Wisconsin reported 3 males, for a North American total of 1,420.

Petrucha, M.E.; Carlson, E. 2007. The 2006 Kirtland's Warbler Census. Michigan Birds and Natural History. 14(1): 3–8.

A total of 1,479 singing male Kirtland's warblers were counted in Michigan, with 1,458 in the Lower Peninsula and 21 in the Upper Peninsula. Wisconsin reported 4 males and Ontario 3 for a North American total of 1,486.

Petrucha, M.E.; Carlson, E. 2008. The 2007 Kirtland's Warbler Census. Michigan Birds and Natural History. 15(1): 1–6.

A total of 1,697 singing male Kirtland's warblers were counted in Michigan, with 1,665 in the Lower Peninsula and 32 in the Upper Peninsula. Wisconsin reported 8 males and Ontario 2 for a North American total of 1,707.

Petrucha, M.E.; Carlson, E. 2009. The 2008 Kirtland's Warbler Census. Michigan Birds and Natural History. 16(1): 1–6.

A total of 1,697 singing male Kirtland's warblers were counted in Michigan, with 1,665 in the Lower Peninsula and 32 in the Upper Peninsula. Wisconsin reported 8 males and Ontario 2 for a North American total of 1,707.

Petrucha, M.E.; Carlson, E. 2010. The 2009 Kirtland's Warbler Census. Michigan Birds and Natural History. 17(1): 3–8.

A total of 1,792 singing male Kirtland's warblers were counted in Michigan, with 1,758 in the Lower Peninsula and 34 in the Upper Peninsula. Wisconsin reported 9 males and Ontario 3 for a North American total of 1,804.

Petrucha, M.E.; Carlson, E. 2011. The 2010 Kirtland's Warbler Census. Michigan Birds and Natural History. 18: 11–16.

A total of 1,747 singing male Kirtland's warblers were counted in Michigan, with 1,713 in the Lower Peninsula and 34 in the Upper Peninsula. Wisconsin reported 23 males and Ontario 3 for a North American total of 1,773.

Petrucha, M.E.; Kintigh, K. 2012. The 2011 Kirtland's Warbler Census. Michigan Birds and Natural History. 19(1): 31–36.

A total of 1,805 singing male Kirtland's warblers were counted in Michigan, with 1,770 in the Lower Peninsula and 35 in the Upper Peninsula. Wisconsin reported 21 males and Ontario 2 for a North American total of 1,828, a new record high.

Petrucha, M.E.; Kintigh, K. 2013. The 2012 Kirtland's Warbler Census. Michigan Birds and Natural History. 20(1): 3–9.

A total of 2,060 singing male Kirtland's warblers were counted in Michigan, with 2,022 in the Lower Peninsula and 38 in the Upper Peninsula. Wisconsin reported 23 males and Ontario 4 for a North American total of 2,087.

Petrucha, M.E.; Kintigh, K.; Fisher, K. 2014. The 2013 Kirtland's Warbler Census. Michigan Birds and Natural History. 21(1): 3–8.

A total of 2,004 singing male Kirtland's warblers were counted in Michigan, with 1,973 in the Lower Peninsula and 31 in the Upper Peninsula. Wisconsin reported 18 males and Ontario 3 for a North American total of 2,025.

Petrucha, M.E.; Kintigh, K.; Humber, P. 2016. The 2015 Kirtland's Warbler Census. Michigan Birds and Natural History. 23(1–2): 19–24.

A total of 2,344 singing male Kirtland's warblers were counted in Michigan, with 2,307 in the Lower Peninsula and 37 in the Upper Peninsula. Wisconsin reported 19 males and Ontario 3 for a North American total of 2,366, the highest total ever recorded at the time.

Piccolo, K.A.; Neil, E.O.; Humber, P.W.; Sjogren, S.; Petrucha, M.E. 2017. The 2016 Kirtland's Warbler Survey. Michigan Birds and Natural History. 24(1): 40–46.

Summarizes the 2016 Kirtland's Warbler Survey efforts on the Huron-Manistee National Forest and in Michigan's Upper Peninsula. The Michigan Department of Natural Resources did not conduct survey activities in 2016. The Huron-Manistee found 1,074 singing male Kirtland's on its lands, an increase of 3 percent from 2015. In the Upper Peninsula, 53 males were counted in 2016, compared to 37 in 2015.

Pinkowski, B.C. 1978. Michigan Bird Survey, Summer 1978. The Jack-Pine Warbler. 56: 200–207.

Reports that 193 males were reported in Michigan, 1 in Quebec, 1 in Ontario, and 2 in Wisconsin on the 1978 Kirtland's Warbler Census. [206].

Probst, J. 1980. Report to the Kirtland's warbler recovery team. St. Paul, MN.

The annual Kirtland's Warbler Census results were compared to habitat availability. Results suggest that the static warbler population may be related to habitat availability. Preliminary unrefined data show that the total Kirtland's warbler population divided by all occupied acreage is 2–3 males per 100 acres. Recommends planting at 1,500 to 1,800 stems per acre until research on occupied plantations is initiated, fill-in planting on one site, and planting some habitat with fewer or smaller openings than the present standard.

Probst, J.R.; Donner, D.M.; Worland, M.; Weinrich, J.; Huber, P.; Ennis, K.R. 2005. Comparing census methods for the endangered Kirtland's warbler. Journal of Field Ornithology. 76(1): 50–60. <https://doi.org/10.1648/0273-8570-76.1.50>.

Compares the annual Kirtland's Warbler Census to an observation-based mapping method of individually sighted males. Concludes that the official census is a satisfactory relative index but should not be used as an absolute count.

Probst, J.R.; Weinrich, J. 1989. Predicting Kirtland's warbler populations by habitat conditions. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 61–62.

Future carrying capacity was estimated by applying past densities of male Kirtland's in suitable habitat. Using breeding habitat suitability, the authors estimate that the 1993 male Kirtland's warbler population will be between 300 and 430.

Probst, J.R.; Weinrich, J. 1993. Relating Kirtland's warbler population to changing landscape composition and structure. *Landscape Ecology*. 8(4): 257–271.

Discusses the Kirtland's warbler population related to utilization of jack pine ecosystems resulting from 3 types of regeneration. Provides habitat and population projections to 1996.

Richard, T. 2010. CFB Petawawa Kirtland's Warbler Survey and monitoring programme summary report, 2006–2010.

Reports on Kirtland's warbler occurrence on Canadian Forces Base Petawawa from 2006–2010. During the summer of 2006, 3 males were observed. In 2007, 2 males and 1 female were observed with nesting confirmed. A pair fledging 4 young plus 2 single males were found in 2008. In 2009, 2 nesting pairs produced at least 3 fledglings. In 2010, 2 pairs and 1 single male were detected. One pair fledged 2 young, while the number of young fledged by the second pair was unknown. Breeding habitat is described, and birds were color-banded from 2006–2009.

Ryel, L.A. 1975. 1975 census of Kirtland's warblers. Michigan Department of Natural Resources Surveys and Statistical Services report No. 144.

Reports on the 1975 Kirtland's Warbler Census, during which 179 males were counted in 6 Michigan counties. Includes a table of results by county for the 1951–1975 censuses, and of counts by land ownership for 1974 and 1975.

Ryel, L.A. 1976a. Michigan's bicentennial bird: the Kirtland's warbler in 1976. Michigan Department of Natural Resources Surveys and Statistical Services report No. 152.

Reports on the 1976 Kirtland's Warbler Census, during which 200 males were counted in 6 Michigan counties. Includes tables of census results for 1951–1976 and of singing male counts by land ownership for 1974–1976.

Ryel, L.A. 1976b. The 1975 Census of Kirtland's Warblers. The Jack-Pine Warbler. 54(1): 2–6.

Reports on the 1975 Kirtland's Warbler Census, during which 179 males were counted in 6 Michigan counties. Includes a table of results by county for the 1951–1975 censuses and of counts by land ownership for 1974 and 1975.

Ryel, L.A. 1978. Kirtland's warbler status, June 1978. Michigan Department of Natural Resources Surveys and Statistical Services report No. 167.

Reports on the 1978 Kirtland's warbler census, during which 193 males were counted in 6 Michigan counties. Males were also sighted in Wisconsin (2), Ontario (1), and Quebec (1). Includes tables of census data by county for 1951–1978 and of counts by land ownership for 1974–1978.

Ryel, L.A. 1979a. On the population dynamics of Kirtland's warbler. The Jack-Pine Warbler. 57(2): 76–83.

The intents of this paper were to document the history of a large Kirtland's warbler colony; hypothesize about the mechanisms that result in rapid population increases; hypothesize on the effect of variable sex ratios on population dynamics; and stimulate thought and provide an incentive for future research. Singing male surveys in an Ogemaw County colony showed an increase from 2 in 1957 to 114 in 1961. The 1971 count declined to 44 then to 5 in 1978. Warblers 2 years old and older tend to return to the same colony and 1-year-old birds tend to go to other colonies. It appears that increases in colony size result from recruitment of 1-year-old birds fledged in other colonies.

Ryel, L.A. 1979b. The Tenth Kirtland's Warbler Census, 1978. The Jack-Pine Warbler. 57(3): 141–147.

Reports on the 1978 Kirtland's Warbler Census, during which 193 males were counted in 6 Michigan counties. Males were also sighted in Wisconsin (2), Ontario (1), and Quebec (1). Includes tables of census data by county for 1951–1978 and of counts by land ownership for 1974–1978.

Ryel, L.A. 1979c. The 1979 inventory of Kirtland's warbler. Michigan Department of Natural Resources Surveys and Statistical Services report No. 180.

Reports on the 1979 Kirtland's Warbler Census, during which 210 males were counted in 6 Michigan counties and 1 male was reported in Wisconsin. Includes tables of census data by county for 1951–1979 and of counts by land ownership for 1974–1979.

Ryel, L.A. 1980a. Kirtland's warbler status, June 1979. The Jack-Pine Warbler. 58(1): 30–32.

Reports on the 1979 Kirtland's Warbler Census, during which 210 males were counted in 6 Michigan counties, and 1 male was reported in Wisconsin. Includes a table of census data by county for 1951–1979.

Ryel, L.A. 1980b. Results of the 1980 census of Kirtland's warblers. The Jack-Pine Warbler. 58(4): 142–145.

Presents the results of the 1980 Kirtland's Warbler Census where 242 singing males were found in 6 Michigan counties. Included is a table of census data by county for 1951–1980. A section on Kirtland's management efforts including the Mack Lake Fire is provided.

Ryel, L.A. 1980c. The 1980 Kirtland's Warbler Census. Michigan Department of Natural Resources Wildlife Division Report No. 2862.

Presents the results of the 1980 Kirtland's Warbler Census where 242 singing males were found in 6 Michigan counties. Included are tables of census data by county for 1951–1980, of counts by land ownership for 1974–1980, and of colony size for 1976–1980. A section on Kirtland's management efforts including the Mack Lake Fire is provided.

Ryel, L.A. 1981a. The Fourth Decennial Census of the Kirtland's Warbler, 1981. The Jack-Pine Warbler. 59(3): 93–95.

Reports on the results of the 1981 Kirtland's Warbler Census, with 232 males found in 6 Michigan counties. Included is a table for numbers by county for 1951–1981.

Ryel, L.A. 1981b. The 1981 Kirtland's Warbler Census. Michigan Department of Natural Resources Wildlife Division Report No. 2890.

Reports on the results of the 1981 Kirtland's Warbler Census, with 232 males found in 6 Michigan counties. Included are tables for numbers by county for 1951–1981, colony size for 1977–1981, and land ownership for 1975–1981.

Ryel, L.A. 1982a. The Kirtland's warbler in 1982. Michigan Department of Natural Resources Wildlife Division Report No. 2921.

Reports on the 1982 Kirtland's Warbler Census in which 207 males were found in 7 Michigan counties. Includes tables of males by county for 1951–1982, colony size from 1977–1982, and numbers by land ownership from 1975–1982. Discusses the first Kirtland's warbler found in Michigan's Upper Peninsula.

Ryel, L.A. 1982b. The Kirtland's warbler in 1982. The Jack-Pine Warbler. 60(4): 147–150.

Reports on the 1982 Kirtland's Warbler Census in which 207 males were found in 7 Michigan counties. Includes a table of males by county for 1951–1982. Discusses the first Kirtland's warbler found in Michigan's Upper Peninsula.

Ryel, L.A. 1983a. Status of the Kirtland's warbler, 1983. Michigan Department of Natural Resources Wildlife Division Report No. 2951.

A total of 215 singing male Kirtland's warblers were counted in 8 Michigan counties. No Kirtland's were found outside of Michigan. Includes tables of males by county for 1951–1983, colony size for 1977–1983, and land ownership for 1975–1983.

Ryel, L.A. 1983b. Status of the Kirtland's warbler, 1983. The Jack-Pine Warbler. 61(4): 95–98.

Reports on the 1983 Kirtland's warbler census in which 215 singing males were found in 8 Michigan counties. Includes a table of census results by county for 1951–1983.

Ryel, L.A. 1984a. Situation report, Kirtland's warbler, 1984. Michigan Department of Natural Resources Wildlife Division Report No. 2983.

Reports on the 1984 Kirtland's Warbler Census in which 215 singing males were found in 7 Michigan counties. Includes tables of males by county for 1951–1984, colony size from 1978–1984, and numbers by land ownership from 1975–1984.

Ryel, L.A. 1984b. Situation report, Kirtland's warbler, 1984. The Jack-Pine Warbler. 62(4): 103–105.

Reports on the 1984 Kirtland's Warbler Census in which 215 singing males were found in 7 Michigan counties. Included is a table of males by county for 1951–1984.

Sauer, J.R.; Niven, D.K.; Pardieck, K.L.; Ziolkowski, D.J.; Link, W.A. 2017. Expanding the North American Breeding Bird Survey analysis to include additional species and regions. Journal of Fish and Wildlife Management. 8(1): 154–172. <https://doi.org/10.3996/102015-JFWM-109>.

Breeding Bird Survey (BBS) data were analyzed for 122 species not routinely analyzed, including Kirtland's warbler. Concludes that Kirtland's are poorly monitored by the BBS.

Sayre, R. 1972. The Kirtland's warbler is holding its own... Audubon. 74: 116.

Reports briefly on the 1972 Kirtland's Warbler Census, during which 400 birds (200 pairs?) were reported, and discusses current management efforts.

Sayre, R. 1973. Michigan's Kirtland's warbler gained in numbers... Audubon. 75: 133.

Reports briefly on the 1973 Kirtland's Warbler Census, during which 216 males were counted in 5 Michigan counties, and on current management efforts.

Sayre, R. 1974. The Kirtland's warbler population took a precipitous plunge... Audubon. 76: 122.

Reports briefly on the 1974 Kirtland's Warbler Census, during which 167 pairs were counted, and briefly speculates on the causes of a population decrease.

Sayre, R. 1976. Kirtland's warbler gains. Audubon. 78: 130.

Reports briefly on the 1976 Kirtland's Warbler Census, during which 199 males were counted.

Schilke, P.R. 2011. Monitoring extracolony Kirtland's warblers in Wisconsin. The Passenger Pigeon. 73(1): 145–151.

Documents in detail the monitoring of Kirtland's warblers in Adams, Bayfield, Douglas, and Marinette Counties, Wisconsin, during June and July 2010. A total of 13 male and female warblers and 1 nest was found away from the main colony in Adams County. A table of birds by sex and site is included. A history of previous Kirtland's warbler monitoring in Wisconsin is provided. Included are photographs of a color-banded male and a nest site. The origins of Wisconsin's Kirtland's warblers, why nesting colonies like the main one in Adams County have failed to develop in other parts of the state, and why some territorial birds disappear are discussed.

Sjogren, S. 1999. Hiawatha NF 1999 Kirtland's warbler program summary.

Describes available and potential Kirtland's warbler habitat on the Hiawatha National Forest. Reports that 14 male and 9 female Kirtland's warblers were found in Michigan's Upper Peninsula during the 1998 census, and an additional 4 males and 4 females were found after the census.

Sjogren, S. 2003. Kirtland's Warbler Census of singing males: U.P.

Reports the results of the 2003 Michigan Upper Peninsula Kirtland's Warbler Census, where 14 males were found in 3 counties. Also reports 4 females located.

Svingen, P.H. 2004. The nesting season: western Great Lakes. North American Birds. 58: 531–34

Reports 1,341 singing male Kirtland's warblers found on the census including 9 in the Upper Peninsula of Michigan, the highest total since the census began. [532].

Svingen, P.H. 2008. The nesting season: western Great Lakes. North American Birds. 61(4): 588–590.

19 May 2007, 3 singing male Kirtland's warblers, Plum Creek Timber Company land, Wisconsin. A total of 8 males, 3 females, and 3 nests were found in Wisconsin. No evidence of Kirtland's nestlings was found. Cowbirds were raised by 2 pairs and the third nest was found empty. The Kirtland's Warbler Census reported 1,697 singing males in Michigan with 31 found in the Upper Peninsula, the highest total ever. [589].

Svingen, P.H. 2010. The nesting season: western Great Lakes. North American Birds. 64(4): 600–602..

Reports 7 or 8 successful Kirtland's warbler nests out of 11 in Wisconsin in 2009, fledging at least 26 young. A total of 1,795 Kirtland's warblers were found on the 2009 census in Michigan, with 30 in the Upper Peninsula. [601].

Svingen, P.H. 2011. The nesting season: western Great Lakes. North American Birds. 64(4): 595–597.

A total of 24 male and 13 female Kirtland's warblers in 5 Wisconsin counties fledged at least 12 young. The Kirtland's Warbler Census reported 1,733 singing males in Michigan. [596].

Svingen, P.H. 2012. The nesting season: western Great Lakes. North American Birds. 65(4): 633–635.

Wisconsin reported 22 male and 11 female Kirtland's warblers in 5 counties, fledging about 17 young from 11 nests. A record 1,805 singing males were counted on the Michigan census. [634].

Svingen, P.H. 2013. The nesting season: western Great Lakes. North American Birds. 66(4): 674–676.

Reports a record high 2,060 singing male Kirtland's warblers in Michigan on the 2012 census, up 14 percent from 1,804 in 2011. Wisconsin recorded 25 in 5 counties, including 20 males and 10 females in Adams County. [675].

Svingen, P.H. 2014. Nesting season: western Great Lakes. North American Birds. 67(4): 600–602.

Reports that 2,004 singing male Kirtland's warblers were found on the 2013 census, down from the 2,060 males found in 2012 but still the second highest total ever. In Wisconsin, 9 pairs produced 13 young in Adams County, Marinette County had a failed nesting attempt, and 1 Kirtland's was found in Douglas County. [601].

Tessen, D.D. 1977. The nesting season: western Great Lakes Region. American Birds. 31: 1142–1146.

Reports on the 1977 Kirtland's Warbler Census, during which 218 males were counted in 6 Michigan counties. This was a 9.5 percent increase in population size since the 1976 census. [1145].

Tilghman, N.G. 1978. Range determination and study of the Kirtland's warbler in Wisconsin. Madison, WI.

The Wisconsin Department of Natural Resources coordinated a search for Kirtland's warblers to determine if they were present and nesting. The Kirtland's range was determined and habitat delineated. A survey was organized and conducted, and 2 unmated males were found in the Black River State Forest.

Tilghman, N.G. 1979. The search for the Kirtland's warbler in Wisconsin. The Passenger Pigeon. 41: 16–24.

Discusses a survey of jack pine stands in Wisconsin in May and June 1978. Notes that 2 unmated males maintained territories in Jackson County. Discusses hypothetical reasons for their appearance and possibilities for the establishment of new colonies outside Michigan. Also includes maps of census areas.

Tuininga, K.; Coulson, D.; Aird, P. 2010. Searching and monitoring protocol for Kirtland's warbler in Canada. Kirtland's Warbler Recovery Team.

Protocol that has been prepared to assist recovery-related efforts to search for and monitor occurrences of Kirtland's warbler in Canada. The purpose is to provide standardization and documentation of efforts while at the same time ensuring minimal to no disturbance of Kirtland's warblers on established territories. The objectives are to determine the distribution of Kirtland's warbler in Canada; increase the knowledge of Kirtland's warbler breeding biology, behavior, and habitat use; identify important habitat features; and identify potential threats to the species and habitat.

U.S. Department of Agriculture, Forest Service. 1996. 1996 Hiawatha NF Kirtland's warbler summary.

A total of 14 male and 6 female Kirtland's warblers were located in 1996 in Michigan's Upper Peninsula. On 19 June 1996, 4 male and 1 female Kirtland's were color-banded. In the first year of Upper Peninsula cowbird trapping, 4 traps caught 360 cowbirds.

U.S. Department of Agriculture, Forest Service. 1998. Kirtland warbler survey: Munising Ranger District 1998.

On 10–12 and 15–18 June 1998, Kirtland's warbler searches were conducted at various locations in the Munising Ranger District, Michigan. No Kirtland's were located. A list of other bird species detected is provided.

Van Dyke, F.; Harju, S.; Hindy, M.; Cannata, N.; Schnidt, E.; Hillman, E.; Sargent, A.; Keas, B. 2022. Comparative detection, density, and reproductive performance of Kirtland's warbler in jack and red pine. *The Journal of Wildlife Management*. 86:e22233. <https://doi.org/10.1002/jwmg.22233>. 16 p.

From 2016–2018, density and detection probabilities in jack pine and red pine stands were estimated through repeated visits to a limited number of stands. Estimates of species detection probability indicated that ≥ 1 male Kirtland's warbler would be detected on most sites when any were present. However, individual detection probabilities were less and varied by stand type, indicating that single visits to sites would underestimate numbers and that accurate estimation of detection probability was important for estimation of density in different stand types. Estimates of detection of Kirtland's warbler population size in jack pine versus red pine stands in the same areas and breeding seasons are provided. Concludes that Kirtland's could reproduce in red pine stands that are adjacent to jack pine and red pine could be interspersed in jack pine plantations. It is also suggested that the Kirtland's warbler census underestimates the number of singing males.

Wallace, G.J.; Black, C.T. 1949. Seasonal records of Michigan birds, summer and fall, 1948. *The Jack-Pine Warbler*. 27: 13–29.

Provides general observations of the Kirtland's warbler population size in Kalkaska County, Michigan, with a decrease in one area and steady in another. [15, 17].

Weinrich, J. 1987a. The Kirtland's warbler in 1986. Michigan Department of Natural Resources Wildlife Division report No. 3065.

Report of the 1986 Kirtland's Warbler Census in which 210 males were found in 7 Michigan counties. Includes tables of males by county for 1961–1986 and by location for 1976–1986.

Weinrich, J. 1987b. The Kirtland's warbler in 1987. Michigan Department of Natural Resources Wildlife Division report No. 3074.

Report of the 1987 Kirtland's Warbler Census in which 167 males were found in 6 Michigan counties. Includes tables of males by county for 1961–1987 and by location for 1976–1987.

Weinrich, J. 1989a. The Kirtland's warbler in 1988. Michigan Department of Natural Resources Wildlife Division report No. 3093.

Report of the 1988 Kirtland's Warbler Census in which 207 males were found in 7 Michigan counties, plus 8 males found in Wisconsin. Includes tables of census results by county for 1951–1988 and by location for 1976–1988.

Weinrich, J. 1995a. The Kirtland's warbler in 1994. Michigan Department of Natural Resources Wildlife Division report No. 3222.

Report of the 1994 Kirtland's Warbler Census in which 633 males were found in 11 Michigan counties. Includes tables of males by county for 1951–1994 and by location for 1977–1994.

Weinrich, J. 1995b. The Kirtland's warbler in 1994. Michigan Birds and Natural History. 2(2): 77–83.

Report of the 1994 Kirtland's Warbler Census in which 633 males were found in 11 Michigan counties. Includes tables of males by county for 1951–1994 and by location for 1977–1994. (Slightly condensed version of Weinrich 1995a.)

Weinrich, J. 1996. The Kirtland's warbler in 1995. Michigan Department of Natural Resources Wildlife Division report No. 3243.

Report of the 1995 Kirtland's Warbler Census in which 765 males were found in 14 Michigan counties and 1 male in Wisconsin. Includes tables of males by county for 1951–1995 and location for 1977–1995.

Weinrich, J.A. 1989b. Status of the Kirtland's warbler, 1988. The Jack-Pine Warbler. 67(2): 69–72.

Report of the 1988 Kirtland's Warbler Census in which 207 males were found in 7 Michigan counties, plus 8 males found in Wisconsin. Includes tables of census results by county for 1951–1988 and by location 1976–1988. (Condensed version of Weinrich 1989a.)

Weinrich, J. 1990a. The Kirtland's warbler in 1989. Michigan Department of Natural Resources Wildlife Division report No. 3116.

Report of the 1989 Kirtland's Warbler Census in which 212 males were found in 7 Michigan counties and 2 males in Wisconsin. Includes tables of males by county for 1951–1989 and by location for 1976–1989.

Weinrich, J. 1990b. The Kirtland's warbler in 1990. Michigan Department of Natural Resources Wildlife Division report No. 3133.

Report of the 1990 Kirtland's Warbler Census in which 265 males were found in 7 Michigan counties and 1 each in Ontario and Wisconsin. Includes tables of males by county for 1951–1990 and by location for 1976–1990.

Weinrich, J. 1991. The Kirtland's warbler in 1991. Michigan Department of Natural Resources Wildlife Division report No. 3150.

Report of the 1991 Kirtland's Warbler Census in which 347 males were found in 6 Michigan counties and 1 male in Wisconsin. Includes tables of males by county for 1951–1991 and by location for 1976–1991.

Weinrich, J. 1993. The Kirtland's warbler in 1992. Michigan Department of Natural Resources Wildlife Division report No. 3180.

Report of the 1992 Kirtland's Warbler Census in which 397 males were found in 7 Michigan counties and 1 male in Wisconsin. Includes tables of males by county for 1951–1992 and by location for 1976–1992.

Weinrich, J. 1994. The Kirtland's warbler in 1993. Michigan Department of Natural Resources Wildlife Division report No. 3201.

Report of the 1993 Kirtland's Warbler Census in which 485 males were found in 9 Michigan counties. Includes tables of males by county for 1951–1993 and by location for 1976–1993.

Weinrich, J. 1995. Status of the Kirtland's warbler. Michigan Birds and Natural History. 3(3): 149–154.

Report of the 1995 Kirtland's Warbler Census in which 765 males were found in 14 Michigan counties and 1 male in Wisconsin. Includes tables of males by county for 1951–1995 and location for 1977–1995. (Slightly condensed version of Weinrich 1996.)

Weinrich, J. 1999. Singing male Kirtland's warblers 1999 census: July 14, 1999—final. Lansing, MI: Michigan Department of Natural Resources Wildlife Bureau.

Summary of the 1999 Kirtland's Warbler Census, which counted 885 males in 11 Lower Peninsula Counties, 19 males in 3 Upper Peninsula Counties, and 1 in Ontario, for a world total of 905. Totals for 1994–1998 are included.

Weinrich, J. 2001. Singing male Kirtland's warblers 2001 census: July 19, 2001—final. Lansing, MI: Michigan Department of Natural Resources Wildlife Bureau.

Summary of the 2001 Kirtland's Warbler Census, which counted 1,077 singing males in 9 Michigan Lower Peninsula counties and 8 males in 3 Upper Peninsula counties, for a total of 1,085. Totals for 1999 and 2000 are included.

Weinrich, J. 2002. Singing male Kirtland's warblers 2002 census: July 11, 2002—final? Lansing, MI: Michigan Department of Natural Resources Wildlife Bureau.

Summary of the 2002 Kirtland's Warbler Census that totaled 1,050 singing males, 1,044 in 11 Michigan Lower Peninsula counties, and 6 in 4 Upper Peninsula counties. Totals for 2000 and 2001 are included.

Weinrich, J.A. 1988a. Status of the Kirtland's warbler, 1986. The Jack-Pine Warbler. 66(3): 113–116.

Report of the 1986 Kirtland's Warbler Census in which 210 males were found in 7 Michigan counties. Includes tables of males by county for 1961–1986, and by location for 1976–1986. (Condensed version of Weinrich 1987b.)

Weinrich, J.A. 1988b. Status of the Kirtland's warbler, 1987. The Jack-Pine Warbler. 66(4): 155–158.

Report of the 1987 Kirtland's Warbler Census in which 167 males were found in 6 Michigan counties. Includes tables of males by county for 1961–1987 and location for 1976–1987. (Condensed version of Weinrich 1987a.)

Weise, T.F. 1987. Status of the Kirtland's warbler, 1985. The Jack-Pine Warbler. 65(1–2): 17–19.

Report of the 1985 Kirtland's Warbler Census in which 216 males were found in 7 Michigan counties and 1 male in Ontario. Includes tables of number of males by county for 1961–1985 and by land ownership for 1976–1985. (Condensed version of Hill 1985.)

Weise, T.F. 1990. Kirtland's warbler (*Dendroica kirtlandii*): results of 1988–1990 surveys in the Upper Peninsula of Michigan. Lansing, MI: Lansing: Michigan Department of Natural Resources Wildlife Division.

Jack pine stands containing suitable Kirtland's warbler habitat were surveyed in Chippewa, Luce, and Marquette Counties 1988–1990. No Kirtland's were found. Included are a table of recent Kirtland's records from outside the northern Lower Peninsula and maps of townships surveyed. Compares Upper and Lower Peninsula jack pine and provides an abstract by Buck 1989. Reports eastern Upper Peninsula Kirtland's warbler survey and habitat analysis.

Williams, D.M.; Parent, Chad J.; Porter, W.F. 2016. Evaluating survey sampling methods for a Kirtland's warbler monitoring program.

In an effort to devise a less labor-intensive alternative to the full Kirtland's warbler census, 2 sampling methods were evaluated (simple random and stratified random). Each method was evaluated at 8 levels of sampling effort (10–80 percent of total stands). Strata were based on 3 age classes of forest stands (less than 7 years, 7–15 years, and greater than 15 years). The simple random estimator was found to be unbiased, and the precision of the estimated population size increased with sample size. Stratified sampling improved precision, coverage, and detection of population declines, though improvements were only possible at 40 percent or larger sampling effort. Population estimates based on stratified sampling appeared to be slightly biased high.

Wisconsin Department of Natural Resources, Bureau of Endangered Resources. 1988. Summary of the Kirtland's warbler survey in Wisconsin (1988).

Over 100 jack pine stands were surveyed in Wisconsin for Kirtland's warblers in 1988, resulting in 8 males located. Survey methods and habitat delineation techniques are given.



Members of the “Implementation Team” who met before and after Kirtland’s Warbler Recovery Team meetings to initiate the process to form the Kirtland’s Warbler Conservation Team, taken at the 2011 Memorandum of Agreement signing ceremony. Left to right, Mark Vaniman, John Curry, Christie Deloria, Carol Bocetti, Chris Hoving, Phil Huber, Steve Sjogren, Dave Ewert, and Dave Case. Photo by William Rapai, used with permission.

VI. PLANS AND AGREEMENTS

Austen, M.; Pratt, R.; Bowman, I.; Cadman, M. 1993. National recovery plan for Kirtland’s warbler draft 2 (April 8, 1993). Toronto: The Endangered Species Recovery Fund.

Provides an introduction to the Kirtland’s warbler, background, and status evaluation. Also defines recovery goals and objectives, strategies, tasks, and justifications, along with an implementation schedule.

Austen, M.J.; Pratt, R.; Dewar, H.; Bowman, I.; Aird, P. 2000. National recovery plan for Kirtland’s warbler draft 2.

Gives the current distribution, habitat requirements, limiting factors, recovery goals, cost estimates, completed actions, and potential management impacts for Kirtland’s warbler. Also reports survey and research requirements, lands on which Kirtland’s warblers occur, and responsible organization.

Bocetti, C.; Probst, J.; Humber, P. 2001. Kirtland’s warbler essential habitat update.

Provides an update on the essential habitat numbers from the 1985 Kirtland’s warbler recovery plan (KWRP) based on recent research. The KWRP gives 30 acres/pair and 151,000 acres of essential habitat. The new numbers are 38 acres/pair and 190,000 acres of essential habitat needed.

Bureau of Sports Fisheries and Wildlife; Michigan Audubon Society. 1974. Cooperative agreement: Bureau of Sport Fisheries, and Wildlife and Michigan Audubon Society.

An agreement where Michigan Audubon will contribute \$800 towards hiring a Kirtland’s warbler tour guide and the Bureau of Sports Fisheries and Wildlife will contribute the remainder.

Byelich, J.; DeCapita, M.E.; Irvine, G.W.; Radtke, R.E.; Johnson, N.I.; Jones, W.R.; Mayfield, H.; Mahalak, W.J. 1985. Kirtland's warbler recovery plan. Twin Cities, MN: U.S. Fish and Wildlife Service.

Updates the 1976 Kirtland's warbler recovery plan (Byelich et al. 1976). Provides goals and objectives for the management of the Kirtland's warbler. Includes sections on past and present distribution, history of management, nesting habitat, wintering grounds and migration, the recovery plan, research needs, and a summary of the habitat management plan.

Byelich, J.; Irvine, W.; Johnson, N.; Jones, W.; Mayfield, H.; Radtke, R.; Shake, W. 1976. Kirtland's warbler recovery plan. Washington, DC: U.S. Fish and Wildlife Service.

Provides goals and objectives for the management of the Kirtland's warbler. Gives the past and present distribution, habitat requirements, limiting factors, and conservation efforts. Includes sections on nesting habitat management, migration and wintering conditions, and factors adversely affecting reproduction and survival.

DeCapita, M. 2006. Kirtland's warbler recovery plan revision.

Selected excerpts from the USFWS DRAFT recovery handbook sent to the Kirtland's warbler recovery team to provide guidelines for updating the recovery plan.

Environment and Climate Change Canada. 2016. Action plan for the Kirtland's warbler (*Setophaga kirtlandii*) in Canada. Species at Risk Act Action Plan Series. Ottawa: Environment and Climate Change Canada.

Outlines measures to maintain and, if possible, increase the size of the Kirtland's warbler breeding population in Canada.

Environment Canada. 2006a. Recovery strategy for the Kirtland's warbler (*Dendroica kirtlandii*) in Canada. Species at Risk Act Recovery Strategy Series. Ottawa: Environment Canada.

Details needs, plans, and actions to be taken to reverse the decline of Kirtland's warblers in Canada. Provides background information and occurrences of Kirtland's in Canada.

Environment Canada. 2006b. Recovery strategy for the Kirtland's warbler (*Dendroica kirtlandii*) in Canada (proposed). Species at Risk Act Recovery Strategy Series. Ottawa: Environment Canada.

Proposed recovery strategy for the Kirtland's warbler in Canada. Includes background, needs, threats, recovery goals and objectives, and critical habitat needs.

Environment Canada. 2014. Action plan for the Kirtland's warbler (*Setophaga kirtlandii*) in Canada (proposed). Species at Risk Act Action Plan Series. Ottawa: Environment Canada.

Outlines measures relevant to Ontario and Quebec based on objectives found in the recovery strategy for the Kirtland's warbler to maintain or increase the species.

Environnement Canada. 2006. Programme de rétablissement de la paruline de Kirtland (*Dendroica kirtlandii*) au Canada. Série de Programmes de Rétablissement de La Loi Sur Les Espèces En Péril. Ottawa: Environnement Canada.

French version of Environment Canada 2006.

Gale, C.; Tansy, M.; Corace, G.; Lindsay, G.; Casselman, T. 2003. Wildfire management plan: Kirtland's Warbler Wildlife Management Area final draft. U.S. Fish and Wildlife Service.

An operational guide for managing the Kirtland's Warbler Wildlife Management Area's wildland fire program. It defines levels of protection to ensure the safety of employees and protect resources while using prescribed fire.

Huber, P.W.; Caveney, S.; Erler, P.; Gates, J. 1996. Environmental assessment for Kirtland's warbler habitat management amendment: Huron-Manistee National Forests. USDA Forest Service, Huron-Manistee National Forest.

A proposal to amend the Huron-Manistee National Forests Plan to update with current research information and promote an ecosystem management approach to Kirtland's warbler habitat.

Huber, P.W.; Weinrich, J.A.; Carlson, E.S. 1999. Strategy for Kirtland's warbler habitat management.

A draft guide to Kirtland's warbler habitat management resulting from a review of past management practices, analysis of current habitat conditions, and findings from recent studies.

Huber, P.W.; Weinrich, J.A.; Carlson, E.S. 2001. Strategy for Kirtland's warbler habitat management.

A draft guide to Kirtland's warbler habitat management resulting from a review of past management practices, analysis of current habitat conditions, and findings from recent studies.

Huntington, G. 1989. Military cooperation in the Kirtland's warbler recovery effort. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 54.

Reports that a cooperative agreement between the Michigan National Guard and the Michigan Department of Natural Resources regarding Kirtland's warblers on National Guard land has been signed.

Irvine, G.W. 1971. Proposed interim plan for managing the Kirtland's warbler and its habitat within the Huron National Forest.

Draft of the U.S. Department of Agriculture, Forest Service's (FS) Kirtland's warbler management plan. Gives a history of Kirtland's warblers, reports what is currently being done to protect the species, and provides the FS plans for the future.

Irvine, G.W.; Radtke, R.E. 1974. Kirtland's warbler—an accelerated management program on the Huron-Manistee National Forest.

Suggests an action plan for the Kirtland's warbler due to a lack of adequate funding for the upcoming year. The plan includes an outline to carry out the following recovery activities: census, protection, cowbird control, habitat management, staffing, and costs.

Irvine, G.W.; Sorenson, D.J. 1979. Status report on Kirtland's warbler planning: Endangered Species Act of 1973 (PL. 93-205).

Details progress on the Huron-Manistee National Forest's work on complying with the Kirtland's warbler recovery plan. Includes an outline of the plan and maps of management areas.

Kost, M.A.; Higman, P.J.; Cuthrell, D.L.; Cooper, J.L. 2000. North Camp Grayling pine barrens management plan. East Lansing, MI: Michigan Natural Features Inventory. <https://mnfi.anr.msu.edu/reports/2000-02.pdf>.

A cooperative effort to restore a rare pine barrens ecosystem on North Camp Grayling. Provides a project and pine barrens overview. Includes a site overview, maps, site inventories, and a section on management. No Kirtland's warblers were present during surveys but have occurred in the past.

Leisen, J. 2017. Landscape stewardship plan for Michigan's jack pine ecosystem (Crawford and Oscoda Counties). Gaylord, MI.

This plan is intended to connect people and organizations to each other and jack pine ecosystem stewardship information, increasing interest, awareness, and participation in active land stewardship opportunities. Kirtland's warbler is featured predominately throughout the plan.

Michigan Audubon Society. 1961. Proposed Kirtland warbler management area. Michigan Audubon Newsletter. 9(5): 8.

Reports on a U.S. Department of Agriculture, Forest Service resolution to manage areas of Michigan national forests to maintain nesting grounds for Kirtland's warblers. Also notes that the Michigan Audubon Society will donate \$100 per year for 5 years for that management.

Michigan Audubon Society; U.S. Department of Agriculture, Forest Service. 1978. Michigan Audubon Society-Huron-Manistee National Forests cooperative agreement: Kirtland's warbler management program.

An agreement where Michigan Audubon Society will provide annual funding to the Forest Service for developing a Kirtland's warbler management plan, and for performing various facets of that plan.

Michigan Audubon Society; U.S. Department of Agriculture, Forest Service. 1991. Challenge cost-share agreement between the Michigan Audubon Society and USDA Forest Service, Huron-Manistee National Forests.

An agreement that the Forest Service will reimburse the Michigan Audubon Society for expenses incurred while working on the Kirtland's Warbler Census.

Michigan Department of Military Affairs. 1995a. Amendment to the cooperative agreement between Michigan Department of Military Affairs and Michigan Department of Natural Resources. Michigan Department of Military Affairs.

Makes the following amendment to the 1986 agreement: "The Military will allow the regeneration of any Kirtland's warbler habitat generated by the Stephan Bridge Fire of 1990. Any restriction of military training in this area will be at the discretion of the Military, based on training needs, regardless of occupation by warblers. If occupied by Kirtland's warbler the DNR [Michigan Department of Natural Resources] would not publish a closure order on, nor post any of the Camp Grayling lands burned by the Stephan Bridge Fire of 1990. The DNR will advise the Military of occupied territories in this area." The biological assessment is included.

Michigan Department of Military Affairs. [N.d.]. Policy statement. Michigan Department of Military Affairs.

States that the policy of the Department of Military Affairs (DMA) is to continue to cooperate with the Department of Natural Resources in the protection of the Kirtland's warbler. Concludes that the DMA can train National Guardsmen without endangering the Kirtland's warbler. Recommendations and a presentation outline are provided.

Michigan Department of Military Affairs; Michigan Department of Natural Resources. 1997. Amendment to the cooperative agreement between Michigan Department of Military Affairs and Michigan Department of Natural Resources.

Mutually agreed upon items are that the Military will allow the regeneration of any Kirtland's warbler habitat regenerated by the Stephan Bridge Fire of 1990 and the West Camp Burn Area.

Michigan Department of Military Affairs; U.S. Department of Agriculture, Forest Service. 1995b. Interagency agreement between the Department of Defense Military Affairs Michigan National Guard and the USDA Forest Service, Huron-Manistee National Forests.

An interagency agreement between the 2 parties to develop a computer-based, spatially explicit population model for the Kirtland's warbler for analysis of various management decisions on Camp Grayling and adjacent federal and state lands. Provides background, responsibilities, and costs.

Michigan Department of Natural Resources. [N.d.]a. Northern Lower Peninsula Regional State Forest management plan MA 17—Kirtland's warbler.

A very detailed plan for the 148,017-acre Kirtland's warbler management area. Includes several maps.

Michigan Department of Natural Resources; Michigan State University. 1979. Memorandum of understanding: Forest Management Division Michigan Department of Natural Resources and Forestry Department—Michigan State University: Jack Pine Regeneration.

An agreement between the parties where Michigan State University will conduct a literature review, develop jack pine reforestation criteria, and determine factors related to success and failures of jack pine regeneration.

Michigan Department of Natural Resources; United States Fish and Wildlife Service. 1978. Cooperative agreement for management of certain lands to benefit the Kirtland's warbler.

Defines the roles of the 2 parties in the management of Kirtland's warbler.

Michigan Department of Natural Resources; United States Fish and Wildlife Service. [N.d.] b. Memorandum of understanding.

Defines the roles of each party in the acquisition and management of Kirtland's warbler breeding habitat. Provides a synopsis of the Kirtland's warbler management plan.

Michigan Department of Natural Resources; United States Fish and Wildlife Service; United States Forest Service. 2015. Kirtland's warbler breeding range conservation plan.

Provides background on the jack pine ecosystem, Kirtland's warbler biology and ecology, and past breeding ground conservation efforts. Management goals, objectives, and actions are detailed, and habitat management guidance is provided. Cowbird management is also provided. A more complete and up-to-date version of the 2014 plan.

Michigan Department of Natural Resources; United States Fish and Wildlife Service; U.S. Department of Agriculture, Forest Service. 2014. Kirtland's warbler breeding range conservation plan.

Provides background on the jack pine ecosystem, Kirtland's warbler biology and ecology, and past breeding ground conservation efforts. Management goals, objectives, and actions are detailed, and habitat management guidance is provided. Cowbird management is also provided.

Michigan Department of Natural Resources; U.S. Department of Agriculture, Forest Service; United States Fish and Wildlife Service. 2001. Strategy for Kirtland's warbler habitat management.

Provides framework for developing essential Kirtland's warbler habitat, harvest and reforestation of jack pine, habitat and species protection, and land acquisition priorities.

Muladore, J.; Pendergrass, S.; Schillo, R. 2006. Conservation planning for the Grayling subdistrict of Michigan. University of Michigan.

A conservation plan for the rare terrestrial communities and organisms found within the Grayling subdistrict of the High Plains district of northern Lower Michigan. The plan was developed by integrating ecological, sociological, and managerial information to produce a specific set of conservation strategies for the region that will be used in future conservation efforts by The Nature Conservancy. Kirtland's warbler is one of the featured species. [9, 15, 18, 20, 21, 23, 24-25, 28, 30, 32, 36, 65, 66-67, 80, 81-82, 84, 111, 125, 129, 143, 146, 150].

Nelfert, C.R. 1970. Restriction on land use on Range 30 Complex. Lansing, MI: Michigan National Guard.

Announces an agreement made among the State Adjutant General, Michigan Department of Natural Resources, and Michigan Audubon Society to protect nesting habitat of Kirtland's warblers by restricting off-road use by tracked vehicles during the period 1 May to 15 July every year. Includes a map of the area.

Nixon, H.O. 1961. Draft summary Kirtland's warbler management area.

Draft of the U.S. Department of Agriculture, Forest Service management plan for the Kirtland's warbler management area. The plan objective is to establish and maintain an area for Kirtland's breeding habitat. The plan includes sections on nesting habitat and population, forest management, mortality, and other uses of the area.

Nixon, H.O.; Radtke, R.E.; Worthington, W.B. 1962. Management plan for the Kirtland's warbler management area: Lower Michigan National Forest.

U.S. Department of Agriculture, Forest Service management plan for the Kirtland's warbler management area. The plan objective is to establish and maintain an area for Kirtland's breeding habitat and protect nesting birds. The plan includes sections on Kirtland's history, biology, nesting habitat and population, forest management, wintering grounds and migration, project financing, and other uses of the area.

Olson, J.T. 1982. An economic analysis of the joint U.S. Forest Service, Michigan Department of Natural Resources Management Plan for lands designated as Kirtland's warbler critical habitat.

An analysis intended to provide a measure of the economic impact of the Kirtland's warbler management program. Includes the costs of habitat management, cowbird control, and timber values.

Ontario Ministry of Natural Resources and Forestry. 2016. Recovery strategy for the Kirtland's warbler (*Setophaga kirtlandii*) in Ontario. Peterborough, ON: Ontario Ministry of Natural Resources and Forestry.

Provides the recovery strategy (Environment Canada 2006) and action plan (Environment and Climate Change Canada 2016) for Kirtland's warbler in Ontario.

Parks Canada Agency. 2016. Multi-species action plan for Point Pelee National Park of Canada and Niagara National Historic Sites of Canada. Ottawa: Parks Canada Agency.

Details the measures to be taken to protect species at risk, including the Kirtland's warbler, for Point Pelee National Park and 3 National Historic Sites. [6, 28].

Perez, R.; Huntington, G. 1986. Cooperative agreement between Michigan Department of Natural Resources and Department of Military Affairs: implementation of a management plan for the Range 30 Complex (Tank Range).

Outlines a long-term solution to end or minimize conflicts between the military and Kirtland's warblers. The main objectives are: (1) the Military will discourage new regeneration of jack pine on the Tank Range west of Bald Hill Road; and (2) the Military will establish a Kirtland's Warbler Management Area on Military lands east of Bald Hill Road. Also provides a history of Kirtland's warbler breeding presence on Camp Grayling lands and conflicts.

Potter, B.A.; Soulliere, G.J.; Ewert, D.N.; Knutson, M.G.; Thogmartin, M.G.; Castrale, J.S.; Roell, M.J. 2007. Upper Mississippi River and Great Lakes region joint venture landbird habitat conservation strategy. Fort Snelling, MN: U.S. Fish and Wildlife Service.

The plan's objective is to establish explicit regional objectives and to enhance planning effectiveness by applying available survey data and new technological tools. Kirtland's warbler is mentioned multiple times, including a species account for habitat planning (81–82). [3, 4, 5, 10, 12, 13, 15, 16, 20, 23, 26, 34, 37, 81–82, 111, 116, 121].

Probst, J.R. 1978. Study plan: the breeding habitat requirements of the Kirtland's warbler. St. Paul, MN: USDA Forest Service, North Central Experiment Station.

Proposal for a study to aid land managers in efforts to expand Kirtland's warbler breeding habitat by evaluating the quality of occupied breeding areas and the suitability of unoccupied breeding grounds. Provides details on objectives, methods, time, and cost.

Tilghman, N.G. 1978. Tentative work plan for Kirtland's warbler project: Wisconsin Department of Natural Resources: January 30, 1978 to July 29, 1978. Wisconsin Department of Natural Resources.

A tentative Kirtland's warbler work plan for Wisconsin. Provides a timeline to complete tasks including information gathering, determining locations of soils similar to Grayling sand and jack pine stands, checking stand suitability, and conducting Kirtland's warbler surveys.

United States Fish and Wildlife Service. [N.d.]. Management directions for designated critical habitat.

Defines the methods for protecting and improving designated critical nesting habitat for Kirtland's warblers. Defines methods for compliance with Section 7 of the Endangered Species Act.

United States Fish and Wildlife Service. 1983. Kirtland's warbler ... land protection plan.

Details a plan to acquire private inholdings within existing Kirtland's warbler management areas. Provides maps and a priority acquisition list.

United States Fish and Wildlife Service. 1987. Habitat use, movements, and reproductive success of Kirtland's warbler at the Mack Lake Burn area, Oscoda County, Michigan. Patuxent Wildlife Research Center.

A study plan to: (1) determine the movement and dispersal of Kirtland's warblers from nearby areas to the Mack Lake Burn area (MLBA) and evaluate the rate and extent of colonization of

available habitat in the MLBA from adjacent areas; (2) determine site fidelity and reproductive success; (3) define characteristics of optimum nesting habitat; and (4) develop a description of optimum nesting habitat to be used by land managers.

United States Fish and Wildlife Service. 1990. Biological opinion for construction and operation of military training facilities at Camp Grayling, Michigan.

Biological opinion on the proposed construction and operation of a Multi-Purpose Range Complex and Assault Landing Strip, developing habitat parcels, and continuing training. Concludes that the proposed project is not likely to jeopardize the continued existence of Kirtland's warblers or result in the adverse modification of critical habitat.

United States Fish and Wildlife Service. 1994. Briefing statement: Kirtland's warbler recovery program. Twin Cities, MN: U.S. Fish and Wildlife Service.

Briefing statement prepared for Secretary Babbitt about the Kirtland's Warbler Recovery Team's efforts to improve public awareness and support for essential management. Provides the current status and future needs.

United States Fish and Wildlife Service. 1997. Biological opinion.

Biological opinion on the 1996 proposed amendment to the Camp Grayling Kirtland's warbler habitat management plan for the Range 30 Complex in Crawford County, Michigan, and for the proposed new plan for the West Camp area in Kalkaska County. Concludes that the action, as proposed, is not likely to jeopardize the continued existence of the Kirtland's warbler.

United States Fish and Wildlife Service. 2009a. Kirtland's Warbler National Wildlife Refuge: comprehensive conservation plan. U.S. Fish and Wildlife Service.

Articulates the management direction for Kirtland's warbler wildlife management area for the next 15 years. Provides background information, and details the planning process, environment, future management direction, and the plan's implementation.

United States Fish and Wildlife Service. 2009b. Kirtland's warbler wildlife management area, located throughout 8 counties in the northern Lower Peninsula of Michigan. Federal Register. 74(69): 16886–16888.

Notice of availability for public comment on the draft comprehensive conservation plan and environmental assessment. A detailed summary of the draft plan is provided.

United States Fish and Wildlife Service. 2009c. Kirtland's Warbler Wildlife Management Area: summary: draft comprehensive conservation plan and environmental assessment. Seney, MI.

Summary of the draft comprehensive conservation plan. The plan outlines how a refuge or management unit will fulfill its legal purpose. Contains two proposals: (1) consolidate land in the Kirtland's Warbler Wildlife Management Area through a land exchange with the Michigan Department of Natural Resources or U.S. Department of Agriculture, Forest Service; and (2) increase emphasis on ecological integrity, emulating natural patterns for a wide variety of species.

United States Fish and Wildlife Service. 2013. Habitat management plan for Kirtland's Warbler Wildlife Management Area (Michigan, 2013).

Outlines current and future management actions based on the current understanding of the natural world by using geographically relevant literature and data on the Kirtland's Warbler Management Area.

United States Fish and Wildlife Service. 2014. Protocol for incidental take permit and authorization Kirtland's warbler (*Setophago kirtlandii*). U.S. Fish and Wildlife Service.

Provides status, habitat, life history, and management protocol for authorized incidental take of Kirtland's warblers.

United States Fish and Wildlife Service. 2018. Draft post-delisting monitoring plan for the Kirtland's warbler. East Lansing, MI: U.S. Fish and Wildlife Service, Michigan Ecological Services Field Office.

Post-delisting monitoring (PDM) refers to activities undertaken to verify that a species delisted due to recovery remains secure from risk of extinction after the protections of the Endangered Species Act no longer apply. The Kirtland's warbler PDM includes monitoring 4 focus areas: (1) Kirtland's warbler breeding population; (2) measures to evaluate the efficacy of brown-headed cowbird management; (3) adequacy of breeding habitat regenerated annually; and (4) new information concerning the species' full life cycle. Lastly, the Kirtland's warbler PDM includes reporting results at the Kirtland's Warbler Conservation Team meetings for discussion and appropriate management actions or recommendations.

United States Fish and Wildlife Service. [N.d.]. U.S. Fish and Wildlife Service—spotlight species action plan. East Lansing, MI: U.S. Fish and Wildlife Service, East Lansing Field Office.

Provides Kirtland's warbler species information, 5 factor threats analysis, goals, measures, strategic actions, tasks, roles, and additional funding analysis. Includes the 2010–2014 Kirtland's warbler action plan.

United States Fish and Wildlife Service; Kirtland's Warbler Recovery Team. 1975. Memorandum of understanding between the U.S. Fish and Wildlife Service and Kirtland's warbler recovery team.

An agreement where the U.S. Fish and Wildlife Service will provide \$900 per year in support of the Kirtland's warbler recovery team.

United States Fish and Wildlife Service; Michigan Audubon Society. 1979. Cooperative agreement: U.S. Fish and Wildlife Service and Audubon Society.

An agreement that the U.S. Fish and Wildlife Service will provide \$2,000 and the Michigan Audubon Society will provide \$1,000 for hiring a Kirtland's warbler tour guide.

United States Fish and Wildlife Service; Michigan Department of Natural Resources. 1982. Cooperative agreement between the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources.

Defines the roles of the parties in managing Kirtland's warblers.

United States Fish and Wildlife Service; Michigan Department of Natural Resources. 1991a. Cooperative agreement between the U.S. Fish and Wildlife Service, U.S. Department of the Interior, and the Department of Natural Resources, State of Michigan.

An agreement between the 2 parties for the purpose of cooperatively acquiring and managing Service-owned Kirtland's warbler habitat. Provides background, scope of work, and financial administration, and defines roles of each party.

United States Fish and Wildlife Service; Michigan Department of Natural Resources. 2015. Memorandum of agreement between the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources.

The purpose of this memorandum of agreement is to establish a process for managing funds transferred to the Michigan Department of Natural Resources from the Conservation Fund, which will help to address the long-term conservation needs of the Kirtland's warbler regarding brown-headed cowbird control. Roles and responsibilities of each party are outlined.

United States Fish and Wildlife Service; Michigan Department of Natural Resources and Environment; U.S. Department of Agriculture, Forest Service. 2010. Memorandum of understanding between the U.S. Fish and Wildlife Service, and the Michigan DNRE, and the USDA Forest Service.

A memorandum of understanding to document the cooperation among the parties to develop a Kirtland's warbler conservation plan. Explains the role of each party.

United States Fish and Wildlife Service; Michigan Department of Natural Resources; U.S. Department of Agriculture, Forest Service. 2011. Memorandum of understanding among the USDI, Fish and Wildlife Service, the Michigan Department of Natural Resources, and the USDA, Forest Service, Eastern Region (Lake States Forests in Michigan and Wisconsin).

A memorandum of understanding between the named agencies outlining their roles and responsibilities after the Kirtland's warbler is delisted under the Federal Endangered Species Act.

United States Fish and Wildlife Service; Michigan Department of Natural Resources; U.S. Department of Agriculture, Forest Service. 2016. Memorandum of understanding between the U.S. Fish and Wildlife Service, the Michigan Department of Natural Resources, and the United States Forest Service, Eastern Region (Lake States Forests in Michigan and Wisconsin).

The purpose of this memorandum of understanding is to document the cooperation between the parties to continue collaborative habitat management, brown-headed cowbird control, monitoring, research, and education to maintain a Kirtland's warbler population at or above 1,000 breeding pairs, regardless of the species' legal protection under the Endangered Species Act (ESA) in accordance that the provisions of the ESA, Migratory Bird Treaty Act, and the Michigan endangered species legislation in Part 365 of Public Act 451 of 1994 are implemented. This memorandum of understanding is expected to be a critical component supporting the eventual delisting of this species. An outline of each agency's roles and responsibilities is provided.

United States Fish and Wildlife Service; Michigan Department of Natural Resources; U.S. Department of Agriculture, Forest Service. 2021. Memorandum of understanding between the USDI, Fish and Wildlife Service, the Michigan Department of Natural Resources, and the USDA Forest Service Eastern Region (Lake States Forests in Michigan and Wisconsin).

This memorandum of understanding (MOU) replaces the 2016 MOU signed by the Forest Service, U.S. Fish and Wildlife Service, and Michigan DNR. The purpose of this MOU is to document the cooperation and define the duties between the parties to continue collaborative habitat management, brown-headed cowbird management, monitoring, research, and education to maintain a Kirtland's warbler population at or above 1,000 breeding pairs. Also provided is a summary of other MOUs related to Kirtland's warbler management.

United States Fish and Wildlife Service; U.S. Department of Agriculture, Forest Service. 1991b. Interagency agreement between the USDI-Fish and Wildlife Service and the USDA-Forest Service, Huron-Manistee National Forests.

Facilitates cooperation between the 2 parties in the conservation of the Kirtland's warbler, and

provides for the limited exchange of services, personnel, equipment, and funds. Defines the scope of work, what each party will provide, period of performance, and financial administration.

United States Forest Service. 1962. Cooperative agreement with Michigan Audubon Society.

Michigan Audubon Society agrees to provide \$100 per year to help support Kirtland's warbler management and to promote cooperation and support for the management of the species. The Forest Service will provide work plans to Michigan Audubon and keep them informed of accomplishments, status, condition, and needs of the project.

United States Forest Service. 1978. Michigan Audubon Society—Huron-Manistee National Forests cooperative agreement: Kirtland's warbler management program.

An agreement where Michigan Audubon Society (MAS) will encourage support for Kirtland's warbler management and protection programs and contribute funding to the U.S. Forest Service's Kirtland's Warbler Fund. The U.S. Forest Service will develop and maintain a Kirtland's warbler management plan, use MAS and other contributions for work outlined in the plan, give MAS credit for work done with their contributions, and provide a summary of work accomplishments.

United States Forest Service. 1980. Fire management action plan for accomplishing recommendations of the fire analysis and fatality reports, Mack Lake Fire, Huron-Manistee N.F.'s.

A plan that delineates what must be done, methods for accomplishment, personnel responsibilities, objectives, and target dates for implementing recommendations resulting from the 1980 Mack Lake Fire.

United States Forest Service. 1994. Challenge cost-share agreement between the Ohio State University Research Foundation and the USDA Forest Service, Huron-Manistee National Forests.

A cost-share agreement for Ohio State University to develop a computer-based simulation model for Kirtland's warbler.

United States Office of Endangered Species and International Activities. 1972. Draft recovery plan for the Kirtland's warbler.

Prime objective is to restore the Kirtland's warbler to nonendangered status by: providing adequate breeding habitat; providing cowbird control; protecting nesting warblers from disturbance; monitoring population; and identifying factors in wintering range that might threaten survival. Outlines what information is needed and what steps to take.

U.S. Department of Agriculture, Forest Service. 1964a. Prescribed burning unit plan for the Kirtland's Warbler Management Area. Cadillac, MI: U.S. Department of Agriculture, Forest Service, Huron-Manistee National Forests.

Details a plan to burn 480 acres of jack pine in the Mio District to create Kirtland's warbler habitat.

U.S. Department of Agriculture, Forest Service. 2005. Kirtland's warbler biological assessment. USDA Forest Service.

Provides Kirtland's warbler background information, biology and ecology, species status, factors essential to conservation and recovery, current conditions, resource protections, environmental consequences, determination of effects, and references.

U.S. Department of Agriculture, Forest Service. 2010a. Environmental assessment: Baraga Plains restoration project.

Displays the analysis of site-specific data and alternatives for the Baraga restoration project. The proposed activities were designed to move the project area toward, or maintain the area within, the desired conditions as outlined in the Ottawa National Forest Land and Resource Management Plan. Kirtland's warbler is one of the featured species. [3, 4–5, 10, 11, 17, 18, 23, 24, 29, 30–31, 32–33, 36–37, 42, 46, 87, 104, D-2, G-1].

U.S. Department of Agriculture, Forest Service. 2010b. Ottawa National Forest fiscal year 2009 monitoring and evaluation report. Ironwood, MI.

The purpose is to determine and disclose whether resource management activities conducted on the Ottawa are meeting management direction and multiple use objectives described in the Forest Plan. A short section on Kirtland's warbler on the Ottawa reports that in 2008, a lone male was seen and heard singing on several occasions, but no female could be found. In spring of 2009, however, 2 and perhaps 3 different males were repeatedly seen singing, including 2 with females apparently nesting. During 2009, the Ottawa first began participating in the rangewide Kirtland's warbler annual census. Future plans include continued involvement in the annual census, implementation of jack pine management designed to create high-quality Kirtland's habitat specifically on the Baraga Plains, and consultation with U.S. Fish and Wildlife Service regarding warbler management. [10, 41].

U.S. Department of Agriculture, Forest Service; Central Michigan University. 1964b. Cooperative agreement: Act of 6/30/14 38 Stat. 430.

An agreement between the Forest Service and Central Michigan University to conduct scientific research on the Kirtland's warbler nesting success and brown-headed cowbird control.

U.S. Department of Agriculture, Forest Service, Hiawatha National Forest. 2005a. Approved changes to forest-wide and management area direction: Kirtland's warbler: June 22, 2005. U.S. Department of Agriculture, Forest Service, Hiawatha National Forest.

Presents the management direction changes for Kirtland's warbler that will be incorporated into the Hiawatha National Forest's forest plan.

U.S. Department of Agriculture, Forest Service, Hiawatha National Forest. 2005b. Planning for a Kirtland's warbler management strategy for the Hiawatha NF 4/27–28/2005.

Defines the proposed changes for discussion to the Hiawatha National Forest's forest plan relevant to the Kirtland's warbler.

U.S. Department of Agriculture, Forest Service, Hiawatha National Forest. 2006. 2600 wildlife, fish and sensitive plant habitat management. In: 2006 forest plan: Hiawatha National Forest. U.S. Forest Service, Hiawatha National Forest: 1–7.

Provides goals, objectives, and guidelines for Kirtland's warbler habitat management on the Hiawatha National Forest. [19].

U.S. Department of Agriculture, Forest Service, Ottawa National Forest. 2006. Forestwide management direction. In: Forest Plan Ottawa National Forest. U.S. Department of Agriculture, Forest Service, Ottawa National Forest: 1–38.

Presents forestwide goals, objectives, standards, and guidelines. Kirtland's warbler habitat management is included. [9, 23, 30].

U.S. Department of Agriculture, Forest Service; Michigan Department of Conservation. 1963. Memorandum of understanding.

An agreement to cooperatively manage and protect the Kirtland's warbler.

U.S. Department of Agriculture, Forest Service; Michigan Department of Natural Resources. 1981. Management plan for Kirtland's warbler habitat.

A detailed plan to provide a sustained, even flow of suitable Kirtland's warbler nesting habitat for the future. The plan coordinates timber resource values with known nesting requirements. Includes a description of nesting habitat, habitat management history, and detailed maps. Provides objectives and detailed schedules.

U.S. Department of Agriculture, Forest Service; National Audubon Society. 1973. Memorandum of understanding.

The Forest Service agrees to reimburse the National Audubon Society up to \$1,000 for a field study of the wintering habitat of the Kirtland's warbler.



Top: 1984 Kirtland's Warbler Recovery Team. Standing left to right, Bill Irving, Dick Winters, Nels Johnson, and Bill Mahalak. Seated left to right, Robert Radtke, Wes Jones, John Byelich, and Harold Mayfield.

Middle: 2004 Kirtland's Warbler Recovery Team, taken at the summer 2004 Kirtland's Warbler Recovery Team meeting at Kirtland Community College, Roscommon, Michigan. Standing left to right: Rex Ennis, Carol Bocetti, Mike DeCapita, James Bielecki, Pat Lederle, Elaine Carlson, and Phil Huber. Kneeling: John Probst. Courtesy photo by Carol Bocetti.

Bottom: Inaugural Kirtland's Warbler Conservation Team, 31 March 2016, Camp Grayling, Michigan. Standing left to right: Keith Kintigh, Kim Grveles, Steve Sjogren, Jerry Rucker, and Dan Kennedy. Kneeling left to right: Christie Deloria-Sheffield, Sarah Fischer, Pat Ryan, Ken Tuininga, Sara Siekierski, Kim Piccolo, Katie Koch, Tim Greco, Carol Bocetti, Jill Scarzo, Abby Ertel, and Jeff Autenrieth. Courtesy photo by an anonymous photographer.

VII. CONSERVATION PROCESS THROUGH THE YEARS

Aird, P. 1989. Kirtland's warbler at the crossroads: extinction or survival. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 95–97.

Concluding remarks summarizing the 9–11 February 1989 Kirtland's warbler symposium.

Aird, P.L. 1978. The preservation of Canada's endangered species of fauna and flora: a research progress report.

Provides an update on research focused on the conservation of Canada's threatened species, including Kirtland's warbler.

American Bird Conservancy. 1997. Kirtland's warbler. Bird Calls. 1(2): 6–7.

Reports on the financial shortfalls of various agencies in Kirtland's warbler recovery efforts. Also reports on the 1997 Kirtland's Warbler Census.

American Bird Conservancy. 2020. Kirtland's warbler flies off the list. Bird Conservation.

Reports on the removal of the Kirtland's warbler from the federal Endangered Species List and efforts for future conservation.

American Ornithologists' Union. 1977. Report of the American Ornithologists' Union committee on conservation, 1976–1977. The Auk. 94(4): Supplement (1977): 1DD-19DD.

Discusses the measures taken by the Michigan Department of Natural Resources; U.S. Department of Agriculture, Forest Service; and Michigan Audubon Society to preserve the Kirtland's warbler before the Endangered Species Act of 1973. [14DD-15DD].

Anonymous. 1964. The Feds vs. the Kirtland's warbler. Women's Day. January: 7.

A popular article providing an overview of Kirtland's warbler life history and the U.S. Forest Service's efforts to establish a Kirtland's warbler preserve.

Anonymous. 2011. Historical list of Kirtland's warbler recovery team members.

A list of Kirtland's warbler recovery team members from 1975–2011 and their length of tenure.

Ashcraft, J.D. 1995. Making a comeback? Kirtland's warbler. Bird Watcher's Digest.

Discusses the recovery of the Kirtland's warbler and includes its life history.

Babbitt, B. 1994. The Mio model. Defenders.

Discusses the success of the Kirtland's warbler recovery, management, government and community involvement and cooperation, and how other endangered species programs could benefit from the Kirtland's model.

Bart, J. 1986. Update no. 1 on Ohio wildlife unit project on Kirtland's warblers. Columbus, OH.

Provides a schedule and priorities for the 1986 field season and details the study on development of reintroduction methods for the Kirtland's warbler.

Bean, M.J. 2005. The Endangered Species Act: success or failure?

Discusses whether the Endangered Species Act is a success or failure under Congress' original expectations. Kirtland's warbler is one of the examples used. Argues success is more than being delisted. [2–3, 4].

Bocetti, C. 1986. Progress report on Kirtland's warbler reintroduction study.

Summarizes the summer field work, including Nashville warbler captures, the construction of

the aviary at the Columbus Zoo, transport cages, Michigan holding pens, and the capture of a hatching year Kirtland's 3 miles away from the nearest breeding area.

Bocetti, C.I. 1989. Kirtland's warbler reintroduction study. In: At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 63–68.

Reports on the progress (June 1986–February 1988) of a Kirtland's warbler reintroduction technique study using the Nashville warbler as a surrogate.

Bocetti, C.I. 1991. Development of a reintroduction technique for the Kirtland's warbler (*Dendroica kirtlandii*). The Ohio State University.

A successful reintroduction technique was developed for Kirtland's warblers using Nashville warblers as surrogates. Hatching-year Nashville warblers were captured, transported to an aviary for the winter, and soft released in the spring. Detailed results of each pair of Nashville warblers are provided. A very accurate sexing technique for Nashville warblers was also developed.

Bocetti, C.I. 1993. Techniques for prolonged confinement and transport of small insectivorous passerines. Journal of Field Ornithology. 65(2): 232–236.

A new technique for prolonged confinement and transport of small birds was developed by combining a dark quiet environment, providing prompt provision of food and water, and reducing handling time. The transport technique was 100 percent successful. This was part of a reintroduction technique study for Kirtland's warblers.

Bocetti, C.I.; Goble, D.D.; Scott, J.M. 2012. Using conservation management agreements to secure postrecovery perpetuation of conservation-reliant species: the Kirtland's warbler as a case study. BioScience. 62(10): 874–879. <https://doi.org/10.1525/bio.2012.62.10.7>.

Defines conservation management agreements and describes how they may provide a mechanism to protect conservation-reliant species such as the Kirtland's warbler after delisting from the Endangered Species Act.

Brewer, R. 1978. Cross-fostering of a wood warbler: a technique study potentially applicable to Kirtland's warbler recovery efforts. Lansing, MI.

Clutches of yellow warbler eggs were substituted for clutches of chipping sparrow, field sparrow, and house wrens. The best success was found with chipping sparrows. The author concludes that fostering of Kirtland's warbler eggs by chipping sparrows could be used in recovery efforts to produce young Kirtland's in suitable areas where it does not nest.

Brewer, R. 1980. Is cross fostering a feasible management technique for Kirtland's warbler (*Dendroica kirtlandii*)? Lansing, MI.

Reports on the work of 1980, in which 64 eggs and 13 nestlings of yellow warblers were transferred to the nests of chipping sparrows. At least 11 birds made it to the pool of possible returns for the spring of 1981. Problems in using cross fostering as a management tool are discussed and possible solutions are given.

Brewer, R. 1981. Is cross fostering a feasible management technique for Kirtland's warbler? Lansing, MI.

Reports on the work of 1981, which was studying any returning yellow warblers cross fostered in chipping sparrow nests in 1980 and evaluates cross fostering as a management tool for Kirtland's warbler. Concludes that cross fostering would be useful.

Brewer, R.; Morris, K.R. 1984. Cross-fostering as a management tool for the Kirtland's warbler. *Journal of Wildlife Management*. 48(3): 1041–1045.

Yellow warbler eggs and nestlings were transferred into chipping sparrow nests at the same stage of development. Of the 64 eggs and 13 nestlings transferred in 1980, at least 11 reached the age to forage independently of parental feeding. One of these birds, a male, returned in 1981. Concludes that cross-fostering could be used to introduce Kirtland's warblers into unoccupied areas. Includes suggestions for further research and methods to improve success.

Bureau of Sport Fisheries and Wildlife, Fish and Wildlife Service, Department of the Interior. 1970. United States list of endangered fish and wildlife. *Federal Register*. 35(199): 16047–16048.

Kirtland's warbler is listed as endangered. [16047].

Burke, P. 2020. Recovery of Kirtland's warbler is conservation triumph. *OFO News*. 38(1): 8–9.

Discusses Kirtland's warbler recovery and delisting with a focus on Canada's present and future management efforts.

Carlson, E. 2012. Kirtland's warbler legacy project. In: *Department of Defense Legacy Resource Management Program*, ed. Kirtland's warbler: a success story of cooperative conservation on saving an endangered species: Legacy Project #10-119: March 26, 2012: 2–41.

A detailed overview of the legacy project is provided, along with a detailed summary based on selected items in the electronic archive and interviews. Includes sections on early work with Kirtland's warblers, the pre-Recovery Team Advisory Committee, and the Kirtland's Warbler Recovery Team; the recovery plan, the habitat management plan, managing fire, research contributions, Michigan National Guard; and involving the public, Kirtland's warblers everywhere, the winter range, and works in progress. Appendix A contains the interview questions and a summary of 8 interviews. Appendix B is a list of Kirtland's Warbler Recovery Team members from 1975–2012. Appendix C is a century of Kirtland's warbler highlights prepared by R.P. Moran.

Cleveland, K. 2021. Showcasing the DNR: charting a course for recovery—the Kirtland's warbler in Michigan. <https://content.govdelivery.com/accounts/MIDNR/bulletins/2ea67ca>. 7 p.

A summary of Kirtland's warbler recovery efforts, highlighting work done by the Michigan Department of Natural Resources. Also includes conservation measures needed for future maintenance of the Kirtland's warbler population.

Chamberlain, D. 1978. The status of the Kirtland's warbler (*Dendroica kirtlandii* (Baird)) in Canada.

Reviews Kirtland's warbler life history and population trends with a focus on Canada. Recommendations are to conduct a census of all high potential areas, develop a joint management program should the census data warrant it, and cooperate and liaise with the American Kirtland's warbler recovery team. Concludes that Kirtland's should be classified as endangered in Canada.

Cornell Lab of Ornithology; American Bird Conservancy; Manomet Center for Conservation Sciences; National Audubon Society; The Nature Conservancy; North American Bird Conservation Initiative; Partners in Flight; PRBO Conservation Science. 2007. Restoring North America's migratory birds: saving birds and habitat through cooperative conservation: report to the White House.

A report to the White House recommending actions by which the U.S. Government could help migratory birds and their habitats. Includes a short section on Kirtland's warbler.

COSEWIC [Committee on the Status of Endangered Wildlife in Canada]. 2000. COSEWIC assessment and update status report on the Kirtland's warbler *Dendroica kirtlandii* in Canada.

Provides background information on Kirtland's warblers and proposed Canadian status.

COSEWIC [Committee on the Status of Endangered Wildlife in Canada]. 2000. COSEWIC assessment summary.

A one-page summary of the reason for Kirtland's warbler designation and status history in Ontario.

COSEWIC [Committee on the Status of Endangered Wildlife in Canada]. 2008. COSEWIC assessment and update status report on the Kirtland's warbler *Dendroica kirtlandii* in Canada. Ottawa.

Provides Kirtland's warbler species information, distribution, habitat, biology, population, and limiting factors and threats.

COSEWIC [Committee on the Status of Endangered Wildlife in Canada]. 2008. Response statement—Kirtland's warbler. Ottawa: COSEWIC.

Outlines how the Minister of the Environment intends to respond to the COSEWIC status assessment of the Kirtland's warbler and gives the reasons for status designation by COSEWIC.

Curry-Lindahl, K. 1972. Let them live: a worldwide survey of animals threatened with extinction. New York: William Morrow and Company.

Describes Kirtland's warbler management efforts and habitat requirements. [180].

Deloria, C. 1997. Summary of recovery efforts: Kirtland's warbler 1996. East Lansing, MI.

Summarizes the Kirtland's warbler recovery efforts by the U.S. Fish and Wildlife Service; U.S. Department of Agriculture, Forest Service; Michigan Department of Natural Resources; and Michigan Audubon Society. Projects include habitat management, cowbird control, census, research, public awareness, and plans for 1997.

Elphick, C.S.; Reed, J.M.; Bonta, J.M. 2001. Correlates of population recovery goals in endangered birds. *Conservation Biology*. 15(5): 1285–1291.

The Kirtland's warbler recovery plan was one of the plans used in a study to determine whether there were simple predictors of recovery population size.

Ertel, A.; Koch, K.; Rapai, B. 2016. Launching the Kirtland's warbler conservation team! <https://huronpines.org/2016/08/29/kw-conservation-team-takes-flight/>.

Details the transition from the Kirtland's Warbler Recovery Team to the Kirtland's Warbler Conservation Team on 16 March 2016. Provides a brief summary of the first steering team meeting and plans for the near future.

Evans, D.M.; Che-Castaldo, J.P. Crouse, D.; Davis, F.W.; Epanchin-Niell, R.; Flather, C.H.; Frohlich, R.K.; [et al.]. Species recovery in the United States: increasing the effectiveness

of the Endangered Species Act. Issues in Ecology. 20: 1–28.

Kirtland's warbler and its breeding habitat are used as an example of a conservation reliant species. [11].

Fisher, J.; Simon, N.; Vincent, J. 1969. Wildlife in danger. New York: Viking Press.

Provides an overview of human interaction with Kirtland's warblers and management techniques. [313–314, pl. 333].

Floyd, T. 2012. The changing seasons: numerology. North American Birds. 66(4): 632–638.

Reports a record number of singing males (2,060) on the 2012 Kirtland's Warbler Census. Briefly discusses near extinction, brown-headed cowbirds, and habitat management. [637–638].

Goble, D.D.; Wiens, J.A.; Scott, J.M.; Male, T.D.; Hall, J.A. 2012. Conservation-reliant species. BioScience. 62(10): 869–873. <https://doi.org/10.1525/bio.2012.62.10.6>.

A species is conservation-reliant when the threats that it faces cannot be eliminated but only managed. Kirtland's warbler is used as an example of how a biologically and legally defensible postrecovery conservation management agreement can be developed and funded. Mentions that not only is the Kirtland's conservation-reliant, but so is the jack pine ecosystem. [871].

Graham, F., Jr. 1977. Endangered birds: tinkering for time. Audubon. 79: 137–141.

Reports on the Symposium on Management Techniques for Preserving Endangered Birds held in August 1977 at the University of Wisconsin. Included is a discussion of a paper by Mayfield. [139].

Horton, K.J. 1971. M.A.S. acts on warbler crisis. Michigan Audubon Newsletter. 19(6): 5.

Notes the establishment and the funding of a Kirtland's warbler advisory committee.

Horton, K.J. 1974. Kirtland's warbler committee meets. Michigan Audubon Newsletter. 22(5/6): 4.

Reports on the meeting of the Kirtland's warbler project committee. Expresses concern over the sharp Kirtland's warbler population decline in 1974. Also notes that the Endangered Species Act calls for the establishment of a recovery team and a recovery plan. Discusses effects of the energy crisis and of visitor problems on Kirtland's warbler recovery efforts. A black-and-white photograph of a bird is included.

Horton, K.J. 1975. Kirtland's warbler reports. Michigan Audubon Newsletter. 23(2): 5.

Reports on Kirtland's warbler management efforts including the naming of the Kirtland's warbler recovery team, the establishment of a fund drive, and the restriction of visitors to the breeding grounds.

Horton, K.J. 1976. J.P.W. shares in celebration. Michigan Audubon Newsletter. 24(3): 1, 7.

Notes the designation of the Kirtland's warbler as "Michigan's Bicentennial Bird" and reports on the progress of the Kirtland's warbler recovery plan.

Horton, K.J. 1978. K.W. recovery team meets. Michigan Audubon Newsletter. 24(6): 7.

Presents results of Kirtland's warbler management efforts for 1978.

International Council for Bird Preservation. 1964. Kirtland's warbler. IUCN Bulletin.

Reports that the U.S. Department of Agriculture, Forest Service set aside 4,010 acres in the Huron National Forest to set up the Kirtland's Warbler Management Area.

James, R.D. 1999. Update COSEWIC status report of the Kirtland's warbler *Dendroica kirtlandii* in Canada. Sunderland, ON.

Updates Kirtland's warbler census numbers, cowbird control, Canadian sightings, habitat, and proposed status from Chamberlain 1979.

Kirtland's Warbler Conservation Team. 2019. Kirtland's warbler business plan.

The objectives of this plan are to describe the: (1) conservation needs of the Kirtland's warbler; (2) priority actions needed to implement conservation work; (3) projected conservation outcomes from implementation; (4) projected budgets for conservation projects; (5) metrics to evaluate success of the Kirtland's warbler conservation program; and (6) projected uses of income from the projected corpus of endowment funds that would complement income derived from the dedicated Kirtland's warbler account of the Michigan Department of Natural Resources.

Kirtland's Warbler Recovery Team. 2002. Report to regional director to request modification to recovery goal.

A report requesting clarifications to the 1985 Kirtland's warbler recovery plan (Byelich et al. 1985) using the results of over 20 years of research, which is summarized. The report recommends updating the primary objective from "... reestablish a self-sustaining Kirtland's warbler population throughout its known range at a minimum level of 1,000 pairs" to "the primary objective is to establish and sustain a Kirtland's warbler population throughout its known range at a minimum level of 1,000 pairs using adaptive management techniques." Another update is a need for additional acreage of breeding habitat. The 1985 plan estimated a 15-year duration of occupancy requiring 150,000 acres of jack pine. Current research indicates a 10-year occupancy requiring 190,000 acres. It is also recommended that Kirtland's be reclassified to threatened when the population is sustained at or above 1,000 pairs for 5 years and removal from the endangered species list when mechanisms are in place to assure continuation of the required management to maintain the population at a minimum of 1,000 pairs in perpetuity. Provided are 7 commitments necessary to sustain population levels once the recovery goals are reached. The establishment of a Kirtland's warbler trust fund and an increase in research and education during the nonbreeding period are recommended.

Lousias, C. 1999. Summary of recovery efforts: Kirtland's warbler 1999. East Lansing, MI.

Summarizes the Kirtland's warbler recovery efforts by the: U.S. Fish and Wildlife Service; U.S. Department of Agriculture, Forest Service; Michigan Department of Natural Resources; and Michigan Audubon Society. Projects include habitat management, cowbird control, census, research, public awareness, and plans for 2000.

Mangold, L.; Richter, J. 1994. 1994 Kirtland's warbler summary. East Lansing, MI.

Summarizes the 1994 Kirtland's warbler recovery efforts by the: U.S. Fish and Wildlife Service; U.S. Department of Agriculture, Forest Service; Michigan Department of Natural Resources; and Michigan Audubon Society. Projects include habitat management, cowbird control, census, research, public awareness, and plans for 1995.

Mayfield, H. 1962. Report of the Kirtland's warbler preserve committee.

Reports on a management plan that was adopted for the Kirtland's warbler on the Huron National Forest totaling 4,010 acres in Oscoda County. Provides a brief summary of management plans.

Mayfield, H. 2000. History of Kirtland's warbler preserve efforts.

Documents the history of Kirtland's warbler recovery efforts, starting with the 1951 Kirtland's Warbler Census. The preserve proposal started in 1956, and a ceremony was held in 1963 to dedicate the new preserves. The next major step described was the Endangered Species Act. Mentions that after the Endangered Species Act, the history of recovery efforts is recorded in the recovery plans and Kirtland's Warbler Recovery Team meeting minutes.

Mayfield, H. [N.d.]. Kirtland's warbler.

Provides the management history and life history of the Kirtland's warbler.

Mayfield, H.F. 1963. Establishment of preserves for the Kirtland's warbler in the state and national forests of Michigan. *The Wilson Bulletin*. 75(2): 216–220.

Discusses possible reasons for small Kirtland's warbler population size, and reports the history of preserve establishment. Management plans for both state and national forests are provided. An aerial photo of a Kirtland's plantation is included.

McKeating, G.; Bowman, I. 1977. The Ontario endangered and threatened species program. *Ontario Fish and Wildlife Review*. 16(4): 3–25.

Attributes the decline in Kirtland's warbler population size to loss of habitat and cowbird parasitism. Mentions several Ontario records with specific data on one: June and July 1977, 1 male banded, near Pembroke, Ontario. Notes that Ontario Ministry of Natural Resources will conduct surveys to search for a breeding population. [3, 19–20].

Michigan Audubon Society. 1963. Kirtland's warbler preserve to be dedicated. *Michigan Audubon Newsletter*. 11(3): 3.

Announces the dedication of a managed area in the Huron National Forest; the first-time management has been extended to a song bird.

Michigan Department of Conservation. 1963. More lands dedicated for Kirtland's warbler. *Michigan Conservation*. 32: 16.

Notes the establishment of 11 square miles of state land and 4010 acres of federal land for Kirtland's warbler management areas. Provides a map of the areas.

Michigan Department of Natural Resources. 1974. Michigan's endangered and threatened species program.

Provides a general description of the program, program objections, and limitations on scope of program. Includes a copy of Public Act No. 203 (Michigan's Endangered Species Act) and recommended annotated lists of endangered, threatened, and rare species in Michigan. [1, 3, 13–15].

Michigan Department of Natural Resources. 1975. Annotated proposed list of endangered and threatened species plus rare or scarce species. Lansing, MI.

Kirtland's warbler is included as endangered. Provides a history of the species and a life history. [13–15].

Michigan Department of Natural Resources. 1977. Draft environmental assessment for management of the Kirtland's warbler.

The objective is to develop and implement a recovery plan to produce a breeding population of

1,000 pairs of Kirtland's warblers. Describes critical nesting habitat and environment. Provides environmental impacts, mitigating measures, and alternatives of the proposed actions.

Mooney, E.C. 1974. The perils of Kirtland's warbler. *Defenders of Wildlife*. 49: 494–496.

Discusses Kirtland's warbler population status and management efforts since 1951.

National Fish and Wildlife Foundation. [N.d.]. Initiative assessment: Kirtland's warbler.

An initiative that establishes a new paradigm for endangered species management that supports a partnership that helps manage Kirtland's warbler and the jack pine ecosystem after delisting. Summarizes Kirtland's natural history, threats (including climate change), conservation goals, and priority actions. Also defines impact metric, cost metric, risk metric, and cost ratio.

Nixon, G. 2007. One for the list. *On Nature*.

Discusses Kirtland's warbler occurrence and recovery in Canada.

Ontario Executive Council. 1977. Regulation to amend Ontario Regulation 33/77 made under the Endangered Species Act, 1971.

Adds Kirtland's warbler to Ontario's endangered species list.

Ontario Ministry of Natural Resources. 1977. Rare warbler added to endangered list. Ontario Ministry of Natural Resources.

Kirtland's warbler becomes the 13th species to be protected under Ontario's Endangered Species Act. Also discusses Kirtland's occurrences in Ontario and plans to look for breeding populations.

P., S.A. 1978. 1979 supplemental information on Kirtland's warbler management. USDA Forest Service, Huron-Manistee National Forest.

Provides information on the 1977 and 1978 Kirtland's Warbler Census, area closures, cowbird control, nesting habitat, and winter and migration.

Radtke, R.; Irvine, G.W.; Byelich, J.D. 1989. Kirtland's warbler management. In: *At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium*. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest: 8–11.

Discusses Kirtland's warbler habitat management on state and federal lands, protection and control efforts by the U.S. Fish and Wildlife Service, and cooperative federal, state, and private efforts to save the species.

Rapai, W. 2020. Kirtland's warblers remain conservation reliant. *Jack Pine Warbler*. 97(2): 2–3.

Defines conservation reliance and provides examples of how the Kirtland's warbler is conservation reliant and what needs to be done to keep it from becoming endangered again.

Richards, M. 2012. Synopsis. In: *Department of Defense Legacy Resource Management Program*, ed. Kirtland's warbler: a success story of cooperative conservation on saving an endangered species: Legacy Project # 10-119: March 26, 2012: 1.

The project's purpose is to interview early Kirtland's Warbler Recovery Team members and partners, to gather the papers, pictures, and videos that document the history of the team's recovery planning process, and to summarize and archive these items to share with the conservation community.

Richter, J. 1995. Kirtland's warbler: summary of recovery efforts: FY1995. East Lansing, MI.

Summarizes the Kirtland's warbler recovery efforts by the U.S. Fish and Wildlife Service; U.S. Department of Agriculture, Forest Service; Michigan Department of Natural Resources; and Michigan Audubon Society in 1995. Projects include habitat management, cowbird control, census, research, public awareness, and plans for 1996.

Rohlf, D.J.; Carroll, C.; Hartl, B. 2014. Conservation-reliant species: toward a biology-based definition. *BioScience*. 64(7): 601–611. <https://doi.org/10.1093/biosci/biu078>.

Kirtland's warbler is used as an example of a conservation-reliant species and the application of conservation reliance in decisionmaking. [604–610].

Scott, J.M.; Goble, D.D.; Haines, A.M.; Wiens, J.A.; Neel, M.C. 2010. Conservation-reliant species and the future of conservation. *Conservation Letters*. 3(2): 91–97. <https://doi.org/10.1111/j.1755-263X.2010.00096.x>.

All recovery plans for species listed as endangered or threatened under the Endangered Species Act were reviewed. Analysis indicates that 84 percent of the species listed under the Act are conservation-reliant. Kirtland's warbler is used as an example. [92].

Scott, J.M.; Goble, D.D.; Weins, J.A.; Wilcove, D.S.; Bean, M.; Male, T. 2005. Recovery of imperiled species under the Endangered Species Act: the need for a new approach. *Frontiers in Ecology and the Environment*. 3(7): 383–389.

Preventing delisted species from again being at risk of extinction may require continuing, species-specific management actions. We characterize such species as conservation-reliant. The authors propose the development of "recovery management agreements" with legally and biologically defensible contracts that would provide for continuing conservation management following delisting. The use of such formalized agreements will facilitate shared management responsibilities between federal wildlife agencies and other federal agencies, and with state, local, and tribal governments, as well as with private entities that have demonstrated the capability to meet the needs of conservation-reliant species.

Seal, U.S., ed. 1996. Kirtland's warbler (*Dendroca kirtlandii*) population and habitat viability assessment workshop report. Apple Valley, MN.

Results from a workshop where Kirtland's warbler experts integrated their research and expertise to project future populations with VORTEX, a computer population simulation modeling program. The model was set up to act like a population of Kirtland's warblers. The simulated population had the same life history parameters, such as clutch size and mortality rate, that were calculated for the real Kirtland's warbler population. The population was run through a gauntlet of risks, like increased cowbird parasitism, habitat destruction, and drought, for 50 years. Six recommendations are provided.

Shake, W.F. 1972. Summary of Kirtland's warbler management activities—1972.

Discusses the circumstances that led to the formation of the Kirtland's Warbler Advisory Board (KWAB) and lists the members. Summarizes the KWAB activities, cowbird trapping, and census through 1972. In December 1972, the Kirtland's Warbler Advisory Committee (KWAC) convened for its first meeting. The KWAC was established to collect views on Kirtland's warbler management from a wide range of interests to be considered by the KWAB.

Shapiro, A.E. 1980. Florida Game and Fresh Water Fish Commission participation schedule for the Kirtland's warbler recovery plan.

Details how the Florida Fish and Game Commission will implement a system for reporting and

verifying sightings of Kirtland's warblers during migration as outlined in the Kirtland's warbler recovery plan.

Smith, L.C. 1978. Kirtland's warbler protected in Ontario. Canadian Field-Naturalist. 92: 203.

Kirtland's warbler becomes the 13th species protected under Ontario's Endangered Species Act.

Smith, R.L. 1976. Ecological genesis of endangered species: the philosophy of preservation. Annual Review of Ecology and Systematics. 7: 33–55.

Discusses the concept of endangered species and delineates the history of preservation and management. Kirtland's warbler is referred to as a species that requires human intervention against cowbird parasitism and for the creation of adequate habitat. [36, 44].

Solomon, B.D. 1998. Impending recovery of Kirtland's warbler: case study in the effectiveness of the Endangered Species Act. Environmental Management. 22(1): 9–17.

Provides an overview of the Endangered Species Act and uses Kirtland's warbler as a case study for recovery. Habitat management, cowbird trapping, interagency cooperation, political culture, and local socioeconomic benefits are discussed.

Sparrowe, R.D.; Wight, H.M. 1975. Setting priorities for the Endangered Species Program. In: Transactions fortieth North American wildlife and natural resources conference. Washington, DC: Wildlife Management Institute: 142–156.

Kirtland's warbler is used as an example in scoring in the Endangered Species Program's prioritizing process.

The Friends of Algonquin Park. 2009. Big lessons from a returning(?) neighbour. The Raven. 50(2): 1–4.

Discusses Kirtland's warbler nesting at Canadian Forces Base Petawawa and the implications for conservation.

Trauger, D.L.; Bocetti, C.I. 1993. Kirtland's warbler recovery team effectively coordinates interagency research and management. Endangered Species Technical Bulletin. 18(2): 14, 16–17.

Provides a history of the Kirtland's warbler recovery team. Also discusses warbler management, research, and personnel involved.

Udall, S.L. 1967. Office of the Secretary: native fish and wildlife: endangered species. Federal Register. 32(48): 4001.

Kirtland's warbler is included on a list of native fish and wildlife that are threatened with extinction.

United States Committee on Rare and Endangered Wildlife Species. 1968. Rare and endangered fish and wildlife of the United States. Resource Publication 34(B-57). U.S. Bureau of Sport Fisheries and Wildlife.

Outlines Kirtland's warbler plumage, distribution, population status, and protective measures undertaken and proposed.

United States Department of the Interior. 1975. New efforts to save "bird of fire." Birding. 7: 125–126.

Discusses Kirtland's warbler management efforts of the U.S. Fish and Wildlife Service; the U.S.

Department of Agriculture, Forest Service; and the Michigan Department of Natural Resources. Announces the closure of nesting areas to the public.

United States Fish and Wildlife Service. 1969. Conservation of endangered species and other fish of wildlife. Federal Register. 35(106): 8491–8498.

Kirtland's warbler is included in a list of endangered foreign fish and wildlife being found in The Bahamas and United States. [8496].

United States Fish and Wildlife Service. 1976a. Endangered and threatened species recovery team and planning guidelines. U.S. Fish and Wildlife Service.

A guide for writing a recovery plan and for forming and operating a recovery team.

United States Fish and Wildlife Service. 1976b. Endangered and threatened wildlife and plants, republication of list of species. Federal Register. 41: 47180–47198.

Kirtland's warbler is included in a list of species endangered within their entire range. [47193].

United States Fish and Wildlife Service. 1976c. Guidelines to assist federal agencies in complying with Section 7 of the Endangered Species Act of 1973.

These guidelines were developed to assist federal agencies in meeting their responsibilities under Section 7 of the Endangered Species Act. Sections include scope, requirements, and working concepts, critical habitat determination, and consultation and assistance.

United States Fish and Wildlife Service. 1979. Section 7 consultation procedures.

The Endangered Species Act Amendments of 1978 generated the need for two sets of procedures for consultation with the U.S. Fish and Wildlife Service. Explanations are provided for (1) construction projects after enactment and (2) other projects and actions.

United States Fish and Wildlife Service. 1999. Kirtland's warbler: *Dendroica kirtlandii*. In: Multi-species recovery plan for Florida. U.S. Fish and Wildlife Service: 455–463.

Provides an overview of Kirtland's warbler life history and recovery goals. Defines south Florida's contribution to the Kirtland's warbler recovery plan as conducting surveys during migration.

United States Fish and Wildlife Service. 2012. Kirtland's warbler (*Dendroica kirtlandii*) 5 year review: summary and evaluation. East Lansing, MI.

Provides Kirtland's warbler recovery criteria and updated and detailed information on the full life cycle and habitat. A 5-factor threats analysis was done, and recommendations for future actions are given. Recommends downlisting from endangered to threatened.

United States Fish and Wildlife Service. 2018. Endangered and threatened wildlife and plants; removing the Kirtland's warbler from the federal list of endangered and threatened wildlife: proposed rule. Federal Register. 83(71): 15758–15780.

Proposal to remove the Kirtland's warbler from the federal list of endangered and threatened wildlife due to recovery. Provides the purpose and basis for the regulatory action, as well as a detailed life history.

United States Fish and Wildlife Service. 2019. Endangered and threatened wildlife and plants; removing the Kirtland's warbler from the federal list of endangered and threatened wildlife. Federal Register. 84(196): 54436–54463.

Effective 8 November 2019, Kirtland's warbler is removed from the federal endangered species list. Also provides an executive summary, previous federal actions, and species information such as taxonomy, breeding habitat, wintering habitat, migration and stopover habitat, diet and foraging, and demographics. A summary of recovery and recovery plan implementation is provided. Changes from the proposed rule are summarized, as are factors affecting the Kirtland's warbler, as well as comments and recommendations. Discusses effects of the rule and post-delisting monitoring.

United States Fish and Wildlife Service; United States Forest Service; Michigan Department of Natural Resources; Michigan Audubon Society. 1981. The Kirtland's warbler.

Provides an overview of the Kirtland's warbler population decline and recovery measures. Discusses cowbird parasitism, improved nesting success due to cowbird removal, and recovery hopes for the future.

United States Government. 1963. Reports of committees. Congressional Record—Senate August 17, 1966: 19766–19767.

Amendments from Mr. Magnuson from the Committee on Commerce on HR 9424, an act to provide for the conservation, protection, and propagation of native species of fish and wildlife, including migratory birds, that are threatened with extinction. Mr. Magnuson provides several reasons and examples, including the work done by the Michigan Department of Natural Resources and U.S. Forest Service on behalf of the Kirtland's warbler, on why this bill needs to be passed.

United States Government. 1973. Endangered Species Act of 1973.

An act to provide for the conservation of endangered and threatened species of fish, wildlife, and plants, and other purposes.

United States Government. 1988. Neotropical Migratory Bird Conservation Act.

Legislation to require the Secretary of the Interior to establish a program to provide assistance in the conservation of neotropical migratory birds.

United States Office of Endangered Species and International Activities. 1974. Guidelines for recovery plans and teams (for endangered and threatened species found in the United States).

Acts as a guide to forming a recovery team and writing a recovery plan. Defines the role of the regional director and team members. Provides a flow chart of recovery program organization.

U.S. Department of Agriculture, Forest Service. 1973. "...The fairest one of all." U.S. Forest Service, Eastern Region.

Discusses rare species management, including the Kirtland's warbler. [8–9].

U.S. Department of Agriculture, Forest Service, Huron-Manistee National Forests. 1989. At the crossroads—extinction or survival. Proceedings Kirtland's warbler symposium. Manistee, MI: USDA Forest Service, Huron-Manistee National Forest.

Contains papers presented at the symposium, along with the schedule of events.

Vincent, J.; Simon, N. 1966. Red data book, volume 2, aves. Lausanne, Switzerland: ICUN Survival Services Commission.

Outlines Kirtland's warbler population status and protective measures being taken. [2/261].

Wallace, G.J. 1969. Endangered and declining species of Michigan birds. The Jack-Pine Warbler. 47: 70–75.

Notes Kirtland's warbler as an endangered species. [75].

Ziswiler, V.; Bunnell, F.; Bunnell, P. 1967. Extinct and vanishing animals. Springer-Verlag, ed. Revised. New York.

Provides a brief description of Kirtland's warbler as an example of indirect extinction and discusses the Kirtland's Warbler Management Area as an example of the integrated management and utilization of resources. (English translation of Ziswiler, V. Bedrohte und Ausgerottete Tiere Springer-Verlag., Heidelber. Heidelberg Science Library vol. 2.) [33, 95–96].



Kirtland's Warbler Festival tour group, 3 June 2017, near Roscommon, Michigan. Tour was led by Jerry Weinrich (pointing, third from left in blue and black flannel coat) and Mike Petrucha (fifth from right in the back). Licensed photo by Marianne Kuzimski/MarsPics.

VIII. HUMAN DIMENSIONS

Aird, P. 2016. Reflections on the Kirtland's warbler Ontario and Québec 1976–2016: truth is a myth, fact is a fable until we learn the difference.

An anecdotal account of the author's research and field searches that led to finding the Kirtland's warbler in Ontario and Québec. Also includes historical background on the author's interest in the welfare of endangered species.

American Birding Association. 1994. Huron-Manistee Forests, Michigan. In: Birdfinding in forty national forests and grasslands. American Birding Association: 126–129.

Discusses bird finding on the Huron-Manistee National Forests focusing on Kirtland's warblers.

American Forest Foundation. 1964. Salute to a gay little songbird. American Tree Farmer and Forestry Digest.

Reports on the dedication of the Kirtland's warbler monument in Mio, Michigan.

Anonymous. 1964. Robin ... or Kirtland's warbler. Michigan Sportsman. May.

Discusses a proposal to make the Kirtland's warbler Michigan's state bird.

Austing, R. 1999. Mio, my. Wildbird. April.

Provides the life history of the Kirtland's warbler. The author also tells of his personal experiences with Kirtland's. Includes several photographs.

Baldwin, A.G. 1946. Kirtland's warbler and northern Michigan. Audubon Bulletin. 60: 5–8.

Reports on a trip to add Kirtland's warbler to the author's life list of birds. Includes a black-and-white drawing of the bird.

Barrows, W.B. 1904. Editorial. Bulletin of the Michigan Ornithological Club. 5: 70–71.

Condemns those who took Kirtland's warbler nest sets after the location of nesting colony was published. Praises the State Game Warden's action to revoke collecting permits.

Beamer, B. 2022. 2022 Michigan Audubon Kirtland's warbler tour season report.

A summary of the 28 May–30 June 2022 Kirtland's warbler tours by Michigan Audubon/Michigan Department of Natural Resources. A total of 613 participants came from 28 states; Washington, D.C.; Ontario; and England. An annotated list of all 67 bird species encountered during the tours is included, as is a tour site description, tour procedures, and other animals encountered. Guide comments and recommendations are provided.

Belitsky, C.; Belitsky, D.; Bourgeois, A. 1976. Kirtland's warbler management program: 1976 summary Grayling tours.

There were 797 participants from 30 states, 2 provinces, Great Brittan, and Puerto Rico, including a school group of 150. Provides a summary of the Kirtland's warbler tour season and suggestions for the future.

Berger, A.J. 1965. Studies of the Kirtland's warbler. Peacock. 2: 27–30.

Provides a summary of human research and interactions with the Kirtland's warbler, including an account of the author's own field and laboratory experiences with the bird.

Berger, A.J. 1968. Josselyn Van Tyne, a pioneer bird bander. Bird-Banding. 39: 214–226.

Describes Josselyn Van Tyne's bird banding experience, including his experience with Kirtland's warblers. [217, 218, 219–221, 223–224].

Bess, B.; Hagner, C. 2006. Cruel and inhumane. Nature Conservancy. Summer: 6, 8.

A letter to the editor from Bess regarding Hagner 2006. Bess objects to the use of transmitters and the handling of Kirtland's warblers. A response by Hagner addressing Bess's concerns and the importance of the research is included.

Bocetti, C.I. 2011. Remarks at MOU signing May 2011, Kirtland Community College, Roscommon, MI.

Transcript of Carol Bocetti's speech at the Kirtland's Warbler Memorandum of Understanding signing among the U.S. Fish and Wildlife Service; Michigan Department of Natural Resources; and U.S. Department of Agriculture, Forest Service.

Bradburn, R.A. 1975. The president's page. The Jack-Pine Warbler. 53: 37.

Announces the establishment of a Michigan Audubon Society Kirtland's warbler fund to be used for preservation efforts.

Brigham, E.M., Jr. 1941. Norman A. Wood. The Jack-Pine Warbler. 21: 103–108.

Provides an obituary of Norman Wood, with excerpts from his report on the type nest.

Buchheister, C.W. 1963. To save a single songbird. Audubon.

Praises efforts of the Michigan Audubon Society; Michigan Conservation Department; and U.S. Department of Agriculture, Forest Service for preserving Kirtland's warbler breeding areas and for designing management systems.

Bull, J. 1977. 1977 Kirtland's warbler tour season—evaluation and suggestions.

Provides suggestions for future Kirtland's warbler tours.

Butler, P. 1975. Tanks gain access to warblers' area. Bird Observer. 3(4): 119.

Reports that the Michigan National Guard has won permission to access 1,000 acres of Kirtland's warbler habitat in the tank range at Camp Grayling. Tanks will be permitted to use 9 miles of boundary roads and 8 miles of interior roads and trails. Grayling businesses had protested the tank ban because it deprived them of an estimated 1 million dollars' worth of summer business.

Carlson, E. 2012. Kirtland's warbler legacy project. In: Department of Defense Legacy Resource Management Program, ed. Kirtland's warbler: a success story of cooperative conservation on saving an endangered species: Legacy Project #10-119: March 26, 2012: 2–41.

A detailed overview of the Legacy project is provided, along with a detailed summary based on selected items in the electronic archive and interviews. Includes sections on early work with Kirtland's warblers, the pre-Recovery Team Advisory Committee, the Kirtland's Warbler Recovery Team, the recovery plan, the habitat management plan, managing fire, research contributions, Michigan National Guard, involving the public, Kirtland's warblers everywhere, the winter range, and works in progress. Appendix A contains the interview questions and a summary of 8 interviews. Appendix B is a list of Kirtland's Warbler Recovery Team members from 1975–2012. Appendix C is a century of Kirtland's warbler highlights prepared by R.P. Moran.

Case, D.J. 1991. Making communications work for Kirtland's warbler conservation: a recommended information and education program for the Kirtland's warbler.

Assesses current Kirtland's warbler information and education efforts and provides recommendations on future efforts.

Christy, B.H. 1936. Kirtland marginalia. The Cardinal. 4(4): 77–89.

Provides a biography of Dr. J.P. Kirtland, focusing on his contributions to the natural history of Ohio. Describes the taking of the Kirtland's warbler type specimen. [89].

Cliff, E.P. 1963. The Kirtland's Warbler Management Area, Huron National Forest.

Remarks by Edward P. Cliff, Chief of the U.S. Forest Service at the dedication of the Kirtland's Warbler Management Area in Mio, Michigan, on 1 June 1963.

Curtis, G.M. 1941. Jared Potter Kirtland, M.D. Ohio State Medical Journal. 37: 971–977.

A biography of Dr. J.P. Kirtland including a brief mention of Kirtland's warbler. [976].

D.J. Case and Associates. 1993. Jack pine wildlife viewing tour: dedicated to Kirtland's warbler conservation: an interpretive proposal. Mishawaka, IN.

Summarizes the work in developing the Jack Pine Wildlife Viewing Tour and provides the vision and details for making the tour a reality. Provides the next steps for developing the tour, goals, audiences, guidelines, and tour designs. Includes tour routes, site descriptions, cost summary, and completion timetable.

D.J. Case and Associates. [N.d.]. Auto tour interpretive signs.

Kirtland's Warbler Auto Tour interpretive sign layouts.

D.J. Case and Associates. [N.d.]. Making communications work for Kirtland's warbler conservation: maintaining the course for success: an evaluation of the 1991 Kirtland's warbler information and education plan and recommendations for future action. Mishawaka, IN.

Evaluates the progress, effectiveness, and direction of the Kirtland's Warbler Recovery Team's information and education efforts and provides recommendations for future actions.

Dall, W.H. 1915. Spencer Fullerton Baird: a biography. Philadelphia: J.B. Lippincott Company.

Baird notes in a letter that he spent a day with Dr. J.P. Kirtland, where he received an undescribed species of bird. [264].

Donner, D.M. 2008. Book review: the Kirtland's warbler: the story of a bird's fight against extinction and the people who saved it. The Auk. 120: 393–394.

Presents a thorough review of Rapai 2012. Concludes that although the book is written for a lay person, there are enough historical accounts and information to be useful to a professional and will make good reading in a graduate seminar on endangered species, policy, and human dimensions. The story about the influence of the bird on communities in 2 countries and the careers of many is fascinating. Mentions the only thing missing is the long-term contributions of Dr. John Probst.

Dunn, A.B. 1998. Warblers worth saving. Michigan Out-of-Doors. April.

Gives an overview of the Kirtland's warbler life history and provides information on tours to see the bird. Laments that some people have expressed reservations about spending so much time and money on the Kirtland's, and that considering the fact that it is unique to Michigan and could become a symbol of the state's natural wonders makes it worth saving.

Ewert, D. 1997. Synopsis of Michigan trip, June 22–30, 1997.

Summary of a tour to northern Michigan with a group of Bahamians. The purpose was to develop working relationships between those working on Kirtland's warblers in Michigan and The Bahamas; provide as many opportunities as possible to see and hear Kirtland's warblers; observe ecosystem management practices and ecotourism/educational programs; and observe how organizations cooperate to protect Kirtland's warblers.

Ewert, D. 2021. Kirtland's Warbler Management Area, Michigan. Bird Conservation. Spring: 22–23.

The Kirtland's Warbler Management Area's landforms and vegetation are described, along with the birds and other associated wildlife. Kirtland's warbler tour information is given along with the best time to visit the area to view wildlife.

Faver, B. 1987. Annie Rivers Faver. The Chat. 51: 16–18.

Memorializes Annie Rivers Faver, amateur ornithologist, who found 3 Kirtland's warblers in her yard.

Fitzmaurice, R. 1997. Keeping Kirtland's. Wild Outdoor World. 1(3): 44–48.

Kirtland's warbler life history in a youth version.

Gabrielson, I.N. 1963. Kirtland's warbler sanctuary dedication.

Transcription of the speech by the president of the Wildlife Management Institute, Ira N. Gabrielson, at the dedication of the U.S. Forest Service's Kirtland's warbler sanctuary at Mio, Michigan.

Gifford, G.E., Jr. 1972. Dr. Jared Kirtland and his warbler. *New England Journal of Medicine*. 287: 909–911.

A biography of Dr. Kirtland focusing on his natural history accomplishments, including the discovery of the Kirtland's warbler type specimen.

Gifford, G.E., Jr. 1975. The Kirtland of warbler fame. *Birding*. 7: 121–125.

Kirtland's warbler is mentioned among natural history accomplishments in a biography of Dr. J.P. Kirtland. [121, 125].

Graboske, D. 1998. Are warblers worth it. *Michigan Out-of-Doors*. September.

Responds to Dunn 1998. Graboske feels jack pine and Kirtland's warblers are not a wise use of resource dollars.

Gruson, E.S. 1972. Words for birds: a lexicon of North American birds with biographical notes. New York: Quadrangle Books.

Notes the roots of *Dendroica* and provides a brief biography of Dr. J.P. Kirtland. [237, 241].

Halbeisen, R. 1980. Kirtland's warbler tour season—summary and recommendations.

In 1980, 584 participants attended the Mio Kirtland's warbler tours, compared to 496 in 1979. Provides a guide and recommendations for the following year's naturalist.

Halbeisen, R. 1981. Summary of the 1981 Kirtland's warbler tour season.

In 1981, 448 participants from 26 states, 3 provinces, and England attended the and the U.S. Department of Agriculture, Forest Service Kirtland's warbler tours out of Mio. Provides a breakdown by state/province.

Hanson, D. 1977. In one of its few winning battles. *Audubon Bulletin*. 77: 135.

Reports that the Michigan National Guard was forced to delay tank maneuvers during the warbler mating season. Notes adverse local response to the ban because guardsmen bring business to the Grayling area.

Hess, B. 1992. Kirtland's warbler information-education steering committee progress report.

Recommended actions are: (1) conduct "by invitation" tours for local community leaders, business leaders, individuals, and organizations that have expressed concerns for habitat management techniques used on public land; (2) pay overtime or compensatory time for agency personnel to communicate with target audiences; (3) develop informational flyers; (4) develop a fire protection information campaign; (5) implement a media relations campaign; (6) develop materials for use in schools; (7) develop an interpretive hiking and auto trails; and (8) develop a Kirtland's warbler update newsletter.

Hoffman, R. 2008. Lessons from the seasons: summer 2007. *The Passenger Pigeon*. 70(2): 201–203.

Documents the discovery of the first Wisconsin Kirtland's warbler nests. The history of sightings in Wisconsin is discussed. Cowbird control and habitat requirements are also mentioned. Provides guidelines for ethical birding in Kirtland's warbler habitat.

Horton, K.J. 1972a. Kirtland project response. *Michigan Audubon Newsletter*. 20(1): 7.

Reports on contributions to the Kirtland's warbler fund.

Horton, K.J. 1972b. Project response grows. *Michigan Audubon Newsletter*. 20(22): 4.

Reports on financial donations to the Kirtland's Warbler Project.

Horton, K.J. 1974. New interpretive center for Kirtland's warbler. *Michigan Audubon Newsletter*. 22(3): 2.

Describes the establishment of a central area for Kirtland's warbler tour visitors and for tour coordination.

Horton, K.J. 1975a. A successful K.W. summer? *Michigan Audubon Newsletter*. 32(4): 7.

Notes Kirtland's warbler nesting success for the 1975 breeding season and land use difficulties with the Michigan National Guard.

Horton, K.J. 1975b. Warblers and dollars. *The Michigan Audubon Newsletter*. 23: 1.

In response to a complaint of a Grayling, Michigan, merchant, the author explains that birders do bring tourist money to Grayling, but because they are not dressed in uniforms, they may not be visible. He stresses, however, that the intrinsic value of the Kirtland's warbler is more than financial.

Horton, K.J. 1976a. Kirtland's warbler in '76. *The Michigan Audubon Newsletter*. 24(2): 4.

Announces restrictions and guided tour schedules for the 1976 Kirtland's warbler nesting season.

Horton, K.J. 1976b. Kirtland's warbler day. *Michigan Audubon Newsletter*. 34(3): 2.

Notes that Kirtland's Warbler Day was held 13 May 1976 at Kirtland Community College, Roscommon, Michigan.

Horton, K.J. 1977. K.W. fund needs gifts. *Michigan Audubon Newsletter*. 25(2): 5.

Calls for donations to support the Kirtland's warbler tour guide service and for cowbird control.

Horton, K.J. 1978. Warbler census, tours set. *Michigan Audubon Newsletter*. 26(2): 4.

Provides the Kirtland's Warbler Census dates and announces restrictions and tour arrangements for the 1978 season.

Jones, L. 1904. Publications received: discovery of the breeding area of Kirtland's warbler. *The Wilson Bulletin*. 16: 63–64.

Reviews Wood 1904. Jones hopes that "collectors will respect the rights of these birds to life, liberty and the pursuit of happiness instead of rushing in and causing their extermination."

Jones, L. 1904. Publications received: the migration route of Kirtland's warbler. The Wilson Bulletin. 16: 64.

Reviews and summarizes Adams 1904.

Kirtland's Warbler Implementation Team. 2010. Developing a Kirtland's warbler memorandum of agreement: September 24, 2010 briefing document.

Provides milestones for Kirtland's warbler conservation action, Implementation Team, and a draft memorandum of agreement outline.

Kirtland's Warbler Interpretive Team. 1995a. Jack pine wildlife viewing tour: dedicated to Kirtland's warbler conservation: an interpretive proposal. March.

Reports on the Jack Pine Viewing Tour ribbon cutting in 1994 and identifies work to be done in 1995 and 1996 to complete the tour. Provides the next steps for developing the tour, goals, audiences, guidelines, and designs. Includes tour routes, site descriptions, a cost summary, and a completion timetable.

Kirtland's Warbler Interpretive Team. 1995b. Progress report: jack pine wildlife viewing tour: dedicated to Kirtland's warbler conservation. March.

Summarizes the accomplishments of the Jack Pine Viewing Tour from the June 1994 opening to March 1995, including goals, signs, brochure, site enhancements, and tour promotion.

Kirtland's Warbler Interpretive Team. 1998. Jack pine wildlife viewing tour: dedicated to Kirtland's warbler conservation. Final report submitted to the National Fish and Wildlife Foundation.

Reports that the Jack Pine Wildlife Viewing Tour opened in June of 1994 and provides some background on the development of the tour and highlights the accomplishments of the partnership effort from the beginning through 1998.

Kirtland's Warbler Recovery Team Information and Education Committee. 1993. KW Notes.

Provides updates on Kirtland's warbler tours, information and education, census, cowbird control, habitat management, research, and the upcoming Kirtland's Warbler Recovery Team meeting.

Kirtland's Warbler Recovery Team Information and Education Committee. 1995. KW notes: a summary of Kirtland's warbler recovery efforts. KW Notes.

Provides updates on Kirtland's warbler tours, information and education, census, cowbird control, habitat management, research, and the upcoming Kirtland's Warbler Recovery Team meeting.

Kirtland's Warbler Recovery Team Information and Education Committee. 1996. KW notes: a summary of Kirtland's warbler recovery efforts. KW Notes.

Provides updates on Kirtland's warbler tours, information and education, census, cowbird control, habitat management, research, and the upcoming Kirtland's Warbler Recovery Team meeting.

Kiska, T. 2004. Kirtland's warbler festival 2004. Roscommon.

Provides the results of 115 surveys obtained from Kirtland's Warbler Festival attendees. Some of the information gathered was gender, geography, tour attendance, reason for attending, and how attendees heard about the festival.

Kotz, C.D. 1980. 1980 Kirtland's warbler naturalist report.

Reports on the 1980 Kirtland's warbler tour. Attendance was 491 participants from 27 states; Washington, DC; England; Wales; and Canada.

Line, L.D. 1965. Bird of fire. Michigan Conservation. 34: 12–16.

Provides account of Frothingham and Gale's trip where they discovered summering Kirtland's warblers. Gives account of Wood's trip to find the first Kirtland's nest. A Kirtland's warbler history is also included.

Loewe, G. 1976. Robin versus the Kirtland's warbler. Goldeneye. 15: 1–6.

Details the efforts to have Kirtland's warbler declared Michigan's official state bird. Also provides a history of human interaction with the species.

Mannix, L. 1953. Wilson Ornithological Club annual meeting. Cleveland Bird Calendar. 49(2): 6.

Reports on a trip made during the meeting to see Kirtland's warblers with J. Van Tyne and H. Mayfield. Several singing males were seen and heard, and a female on a nest was observed.

Mansfield, D. 2010. Let us help you find North America's rarest song bird ... the Kirtland's warbler. Kirtland's warbler tour pamphlet.

Provides contact information for the various Kirtland's warbler tours and a brief overview of Kirtland's warbler life history and the Kirtland's Warbler Wildlife Festival.

Mayfield, H. 1957. In memoriam: Josselyn Van Tyne. The Auk. 74: 322–332.

Chronicles Josselyn Van Tyne's life and accomplishments. Includes a bibliography of Van Tyne's publications, which include several papers on Kirtland's warblers.

Mayfield, H. 1963. First preserve for a songbird ... milestone in conservation. The Florida Naturalist. 36(4): 113–115.

Reports on the dedication ceremony for the Kirtland's warbler preserves. Included is information on the discovery of the breeding area, habitat, and reason for the Kirtland's low population. Several photographs are included.

Mayfield, H. 1964. Public ceremonies recognize Kirtland's warbler in Michigan. The Jack-Pine Warbler. 42(2): 249–250.

Reports on two public ceremonies in Mio, Michigan. On 1 June 1963 was the dedication of the Kirtland's warbler management areas on state and federal forests. On 27 July 1963 was the unveiling of the Kirtland's warbler monument. The importance of public awareness is discussed.

Mayfield, H. 1965. Jared Potter Kirtland: pioneer ornithologist of Ohio. Columbus, OH: Ohio Historical Society.

A detailed account of the taking of the Kirtland's warbler type specimen is included in a biography of Jared P. Kirtland. [3–4].

Mayfield, H.F. 1965. Reliving the discovery of the first Kirtland's warbler nest.

Transcript of Mayfield's remarks at the 4 July 1965 bronze marker dedication commemorating the discovery of the first Kirtland's warbler nest.

Mayfield, H.F. 1979. James A. Parmalee: eyewitness to Kirtland's warbler discovery in Michigan. *The Jack-Pine Warbler*. 57(3): 133–134.

Discusses the role that James Parmalee played as a guide for Earl H. Frothingham, Thomas Gale, and Norman A. Wood on their trips during which the breeding area of the Kirtland's warbler was discovered. It is mentioned that Parmalee also collected the Kirtland's warbler egg type set.

Mayfield, H.F. 2001. Introducing Jared Potter Kirtland. *The Ohio Cardinal*. 24(4): 189–190.

Provides a brief overview of Jared P. Kirtland's background and mentions him sending a strange warbler found 13 May 1851 in an orchard on his farm to Spencer F. Baird at the Smithsonian Institution.

McCabe, T.T. 1938. Recent literature: the song of Kirtland's warbler. *Bird-Banding*. 9: 214–215.

Provides a review of Axtel 1938, calling it a very important ornithological paper.

Mensing, C. 2004. Bird watchers flock to Michigan. *Endangered Species Bulletin*. 29(2): 18–19.

Describes the Kirtland's warbler tours, slide presentation, surveys, and a brief overview of Kirtland's natural history and the cowbird removal program.

Mertz, L. 2009. For the birds. *Wayne State Alumni*.

An interview with Dan Kashian on Kirtland's warbler habitat.

Messner, C.J.; Messner, H.W. 1948. Where to find some of Michigan's uncommon birds. *The Jack-Pine Warbler*. 26: 3–15.

Describes areas in Michigan where Kirtland's warblers could be seen. [7, 9].

Michigan Audubon Society. 1980a. "Bird of fire"—a new song. *Michigan Audubon Newsletter*. 28(5): 4.

Announces the composition of a song "Bird of Fire." All proceeds from for-profit performances will benefit the Kirtland's warbler fund.

Michigan Audubon Society. 1980b. K.W. tours schedule. *Michigan Audubon Newsletter*. 28(2): 6.

Calls for donations to the Kirtland's warbler fund and provides warbler tour information.

Michigan Audubon Society. 1980c. The great bird election. *Michigan Audubon Newsletter*. 28(3): 1, 3.

Offers an explanation on why the Kirtland's warbler was not a popular choice for state bird in 1929.

Michigan Audubon Society. 1980d. The Kirtland's warbler needs your help. *Michigan Audubon Newsletter*. 28(2): 6.

Requests donations for the Kirtland's warbler fund.

Michigan Audubon Society. 1980e. 1980 warbler search. *Michigan Audubon Newsletter*. 28(2): 6.

Requests volunteers for the Kirtland's Warbler Census efforts and information on sightings.

Michigan Audubon Society. 1925. Jack-pine warbler sanctuary. Michigan Audubon Society. Quarterly Newsletter 3. (3): 5.

Makes note of Mr. and Mrs. W.E. Hastings' and Professor and Mrs. N.A. Wood's survey of areas for a jack pine warbler sanctuary.

Michigan Audubon Society; U.S. Department of Agriculture, Forest Service; United States Fish and Wildlife Service; Michigan Department of Natural Resources. 1988. A bird of fire: Kirtland's warbler.

Provides a history and life history of the Kirtland's warbler, including laws and the recovery plan.

Michigan Department of Natural Resources. 2007. Harold Mayfield: 1911–2007. The Spotting Scope. 13(1): 5.

Harold Mayfield obituary. Includes the accomplishments he made towards Kirtland's warbler recovery.

Michigan Department of Natural Resources; Michigan Audubon Society; U.S. Department of Agriculture, Forest Service; United States Fish and Wildlife Service. 1992. Michigan's bird of the jack pine: Kirtland's warbler.

Provides a history and life history of the Kirtland's warbler, including laws and the Kirtland's warbler recovery plan.

Michigan National Guard. 1964. Tanks rumble, birds grumble Kirtland: warbler in big danger. The Michigan Minuteman. 18(2): 1–2.

Reports on tanks performing maneuvers in occupied Kirtland's warbler nesting habitat on National Guard land.

Middleton, D.S. 1966a. Michigan's world famous warbler. Cranbrook Institute of Science Newsletter. 35(8): 98–100.

Comments on a mounted group of Kirtland's warblers in habitat donated by Nathan F. Leopold. The group consists of a male, female, nest, and 4 young collected in June 1923, in Iosco County, Michigan. Includes a photograph of the display.

Middleton, D.S. 1966b. Michigan's world famous warbler. The Jack-Pine Warbler. 74: 54–56.

Reprints Middleton 1966a, which discusses a group of Kirtland's warblers donated by Nathan F. Leopold. The group consists of a male, female, nest, and 4 young collected in June 1923, in Iosco County, Michigan.

Moore, L. 2019. Bringing a bird back from the brink of extinction. Forestry. <https://www.usda.gov/media/blog/2019/11/13/bringing-bird-back-brink-extinction>.

Reports on Phil Huber receiving the Lloyd W. Swift, Sr. Award for his dedication, commitment, and leadership in the recovery of the Kirtland's warbler.

Munson, D. 1982. Summary of the 1982 Kirtland's tour season.

Reports that 333 visitors from 23 states and 5 countries attended the Forest Service Kirtland's warbler tours out of Mio.

Munson, D. 1983. Summary of the 1983 Kirtland's tour season. Mio, MI.

Reports that 456 visitors from 21 states and Ontario attended the Forest Service Kirtland's warbler tours out of Mio, with a 99 percent success rate.

Myer, M.G. 2012. Characterizing the decision process of land managers when managing for endangered species of fire dependent ecosystems: the case of the Kirtland's warbler (*Setophaga kirtlandii* Baird). The Ohio State University.

Twenty-five management personnel from federal and state government agencies and other stakeholders involved in Kirtland's warbler recovery efforts were interviewed where they were asked questions pertaining to Kirtland's warbler, the jack pine ecosystem, and habitat management. Results were then coded to determine the legal, psychological, and social factors influencing management decisions. Results show legal mandates and policies were the largest factor influencing management. Risk aversion was also important in affecting management decisions. Collaboration and information exchange were also central to management decisions. Desired management strategies were also identified along with obstacles to their achievement. Recommendations to overcome these obstacles include: broadening the stakeholders involved in the management, including specialists of varying backgrounds; using alternative management demonstration sites for learning and public education; the use of a structured decisionmaking process to accurately assess management alternatives and their tradeoffs; the inclusion of more researchers in the management decisions; and drawing on further social science research to develop an informed understanding of the decision process and public stakeholders.

National Wildlife Federation. 1995. Welcome back warblers. Ranger Rick. June.

A version of Kirtland's warbler life history for kids.

Nesbitt, S.A. 1993. In memoriam: Lawrence H. Walkinshaw, 1904–1993. Florida Field Naturalist. 21(3): 85.

Lawrence H. Walkinshaw obituary describing his contributions to bird biology, including Kirtland's warbler.

O'Brien, K. 2021. Bird hero: Katie O'Brien. Bird Conservation. Summer/Fall: 33.

Katie O'Brien describes her work for the U.S. Fish and Wildlife Service helping to build partnerships key to saving North America's scarcest songbirds, including the Kirtland's warbler.

Parham, G. 2019. Partners celebrate successful recovery of beloved songbird. U.S. Fish and Wildlife Service.

Reports on the ceremony announcing the removal of the Kirtland's warbler from the Endangered Species List.

Pawar, Y. 2022. One Eleuthera Foundation: break the status quo. The Tribune. 30 December. <http://www.tribune242.com/news/2022/dec/30/one-eleuthera-foundation-break-status-quo/>.

A summary of One Eleuthera Foundation's accomplishments for 2022. One accomplishment discussed was an ongoing partnership with the Bahamas National Trust and American Bird Conservancy to provide workshops, local guide training, and research on bird species, most notably the Kirtland's warbler. [4].

Petit, D.R.; Lynch, J.F.; Hutto, R.L.; Blake, J.G.; Waide, R.B. 1993. Management and conservation of migratory landbirds overwintering in the neotropics. In: Finch, D.M.; Stangel, P.W., eds. Status and management of neotropical migratory birds. Gen. Tech.

Rep. RM-GTR-229. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 70–92. <https://doi.org/10.2737/RM-GTR-229>.

Kirtland's warbler is mentioned as a species that is likely to be overlooked in broad multinational attempts to develop parks and reserves due to its extremely limited winter range. [82].

Petrucha, M. 2020a. Kirtland's warbler GeoTrail update. Newsletter of Gahagan Nature Preserve, Inc. 39: 2.

Provides an update on the Kirtland's Warbler GeoTrail (KWGT), which launched on 6 June 2020 with over 100 people attending the launch event. People came from all over Michigan, 7 came from Ohio, and 1 traveled all the way from Houston, Texas, to earn a KWGT geocoin. Out of the initial 100 geocoins, 99 were earned the first day and the last was earned the next day. Reports that nearly 200 individual geocachers have done at least 1 of the geocaches.

Petrucha, M. 2020b. Kirtland's warbler GeoTrail. Newsletter of Gahagan Nature Preserve, Inc. 39: 4.

Describes the Kirtland's Warbler GeoTrail, a series of 25 Kirtland's warbler themed geocaches designed to raise awareness and engagement of Kirtland's warblers to a new audience. Geocaching is also explained.

Petrucha, M. 2021a. Warbler festival goes virtual. Newsletter of Gahagan Nature Preserve, Inc. 40: 5.

Announces that the 2021 Kirtland's Warbler Festival will be virtual and where to go for more details.

Petrucha, M. 2021b. Kirtland's warbler GeoTrail. Newsletter of Gahagan Nature Preserve, Inc. 40: 6.

Provides a summary for 2020 on the Kirtland's Warbler GeoTrail (KWGT) where the 25 KWGT geocaches were found 3,555 times on 122 different days by 298 individual geocachers and was completed 129 times.

Petrucha, M. 2022. The Kirtland's warbler festival is back! Newsletter of Gahagan Nature Preserve, Inc. 42: 5.

Announces that the 2022 Kirtland's Warbler Weekend would be returning with in-person programming and events partnering with local chamber of commerce events. Presenters and titles are given along with information on where to find more details.

Pettingill, O.S., Jr. 1977. A guide to bird finding east of the Mississippi. 2nd ed. New York: Oxford University Press.

Provides directions for finding Kirtland's warblers in breeding localities. [291, 306–307].

Porter, E. 1972. Birds of North America: a personal selection. New York: Dutton.

The author mentions his first view of a Kirtland's warbler. A photograph of a male Kirtland's at a nest with young is included. [60, 70].

Radabaugh, B.E. 1965. Permanent marker placed at site of type nest of Kirtland's warbler. The Jack-Pine Warbler. 43(4): 154–155.

Reports on the dedication ceremony of a permanent marker commemorating the discovery of the Kirtland's warbler type nest. The ceremony was attended by 30–35 people. Included is the wording on the marker and photographs of the ceremony. (See Mayfield 1965 for a transcript of Mayfield's remarks at the ceremony.)

Rapai, W. 2012. The Kirtland's warbler: the story of a bird's fight against extinction and the people who saved it. Ann Arbor, MI: University of Michigan Press.

Tells the story of Kirtland's warbler history, management, research, and recovery through personal accounts of the people involved.

Rapai, W. 2022. 10 reasons why the Kirtland's warbler should be Michigan's state bird. Kirtland's Warbler Alliance. 2 p.

Provides reasons and details on why Kirtland's warbler should be Michigan's state bird.

Richter, J.M.; DeCapita, M.E. 1995 control of brown-headed cowbirds on Kirtland's warbler nesting areas of northern Michigan. East Lansing, MI.

A total of 5,855 brown-headed cowbirds (3,070 male, 2,782 female, 3 juvenile) were removed from Kirtland's warbler breeding habitat in 1995. The Kirtland's warbler tours were attended by 724 people from 39 states, 3 Canadian provinces, and 6 other countries. A summary of nontarget birds captured is presented. Reports that 765 singing male Kirtland's warblers were counted on the 1995 census.

Roads, K.M. 1912. Why birds are so named. The Wilson Bulletin. 24: 130–142.

Quotes Spencer F. Baird's dedication "named in honor of Dr. J.P. Kirtland, of Cleveland, Ohio, who first discovered it at Cleveland in 1851." [136].

Roth, F. 1891. List of North American Birds not contained in the Museum of the University of Michigan. Ann Arbor, MI: The Courier Office, Printers.

A list of birds desired to be acquired by the University of Michigan Museum. Kirtland's warbler is listed as number 79.

Ryel, L.A. 1978. How to see a Kirtland's warbler. Birding. 10(2): 53–58.

Describes Kirtland's warbler habitat and population status and explains tour system and regulations. Includes a map of breeding range.

Ryel, L.A. 1984. How to see a Kirtland's warbler. Lansing, MI: Michigan Department of Natural Resources.

Provides details on how to see a Kirtland's warbler including tour descriptions, how to get there, where to stay, and other birds found in Kirtland's warbler habitat. Describes Kirtland's warbler breeding habitat, describes population status, and includes a map of historical breeding range.

Saunders, W.E. 1941. Kirtland's warbler (*Dendroica kirtlandi*). Canadian Field-Naturalist. 55: 16.

Reports on a trip from London, Ontario, to Mio, Michigan, to see Kirtland's warblers on the nesting grounds.

Schorger, A.W. 1957. The contributions of Josselyn Van Tyne to the Wilson Ornithological Society. *The Wilson Bulletin*. 69(4): 314–316.

Obituary of Josselyn Van Tyne, including details of his accomplishments and dedication to ornithology, especially with the Wilson Ornithological Society and Kirtland's warbler.

Sjogren, S.J.; Huber, P.W.; Kashian, D.M. 2015. Burt Barnes's influence on forest management in Michigan. *The Michigan Botanist*. 54: 42–45.

Provides an overview of Burt Barnes's career and his influence on Michigan's forest management practices. Suggests his longest-lasting influence was on the approach to Kirtland's warbler habitat management and summarizes his involvement. Two of Burt's former students, who are also Forest Service wildlife biologists, provide personal accounts of experiences. [43–45].

Slater, R. 1993. This bird stops tanks. *Presque Isle Electric Cooperative*.

Describes an encounter with a Kirtland's warbler chick and provides a summary of the Kirtland's life history.

Smith, J. 2007. One persnickety bird. *Traverse Magazine*. April.

Popular article on the life history of Kirtland's warbler, including current projects and efforts.

Smithe, G. 1936. Kirtlandia. *The Jack-Pine Warbler*. 14: 3–9.

A biography of Dr. Jared P. Kirtland is provided as part of an effort to change the common name from Kirtland's warbler to jack pine warbler.

Solomon, B.D. 1998. Public support for endangered species recovery: an exploratory study of the Kirtland's warbler. *Human Dimensions of Wildlife*. 3(3): 62–74.

Discusses the results of a mail survey of 290 residents near the breeding area, with 123 surveys returned as valid. The results show that awareness and knowledge of the plight of the Kirtland's warbler is high, and broad support for the warbler was found. Also discusses management implications.

Sorenson, D. 1979. Rough draft.

Discusses the negative perceptions of the public to prescribed burning, based on several "unknowns" in addition to an ever-growing list of current problems that land managers must deal with when utilizing prescribed burns. The unknowns deal primarily with whether or not burning is necessary to provide optimum ground cover in Kirtland's warbler habitat. Other negative aspects that continue to come up are possible risks to lives and property, increasing costs of reforestation, and changing timber harvest techniques. States that there is a need for data that will help in making decisions on some of the problems previously stated.

State of Michigan. 1975. House Concurrent Resolution No. 220. *Journal of the House*. 72: 1865–1866.

A concurrent resolution designating the Kirtland's warbler as the official state bird replacing the robin.

State of Michigan. 1979. House concurrent resolution no. 220.

A concurrent resolution designating the Kirtland's warbler as Michigan's official bicentennial bird.

State of Michigan. 2014. Senate Resolution No. 191. Journal of the Senate. No. 74: 1890.

A resolution to congratulate the Kirtland's Warbler Recovery Team for their service and commitment to the conservation of the jack pine and Kirtland's warbler.

Stevens, O.A. 1936. The first descriptions of North American birds. The Wilson Bulletin. 48: 203–215.

Kirtland's warbler is listed among the birds described by Spencer F. Baird. [214].

Stewart, P.L. 1976. Of warriors and warblers. Army. September.

Discusses the agreement between the Michigan Departments of Natural Resources and Military Affairs over the Kirtland's warbler on Camp Grayling.

Storer, R.W. 1957. Josselyn Van Tyne. Ibis. 99: 509–510.

Josselyn Van Tyne obituary mentioning his work with Kirtland's warblers.

Storer, R.W. 1973. Special Michigan birds. In: Enjoying birds in Michigan. 3rd ed. Lansing, MI: Michigan Audubon Society: 143–145.

Discusses human interaction with the Kirtland's warbler, management efforts, censuses, and cowbird parasitism. [44–45].

Symonette, E. 2020. Edrin Symonette. Bird Conservation.

A mini autobiography for Edrin Symonette, a Bahamian goat and sheep farmer, who has partnered for years with researchers on managing land for both livestock and Kirtland's warblers.

Teale, E.W. 1950. The bird that baffled a continent. Natural History. 59: 172–177.

An account of the author's trip to find the Kirtland's warbler. Includes several photographs of Kirtland's, food, and nest sites.

Teggelaar, M.G. 1993. Leisure and lifestyle: guest column. On the Town. June.

Chronicles a trip to Point Pelee, Ontario, describing birders' outfits and gear, and their behavior when a Kirtland's warbler arrives.

Throne, W.J. 1981. Annual report: 1980 brown-headed cowbird control program in Kirtland's warbler nesting range, Michigan. East Lansing, MI.

A total of 2,967 cowbirds (1,538 male, 1,429 female) were removed from Kirtland's warbler breeding habitat in 1980. Included are summaries of other species captured and the effect of cowbird trapping on warbler production. The Kirtland's warbler tours out of Grayling were attended by 491 people from 27 states and 3 foreign countries.

Titus, H. 1966. Warbler of the jack pines. Field and Stream. 71: 51, 120–123, 125.

Discusses human interaction with the Kirtland's warbler.

Townsend, C.H. 1927. Old times with the birds: autobiographical: with two portraits. The Condor. 29(5): 224–232.

Contains personal recollections of the author that include mention of the capture of Kirtland's warblers in The Bahamas while on the (U.S. Fish Commission Steamer) Albatross in 1886. [227].

Tramer, E.J. 2007. In memoriam: Harold F. Mayfield, 1911–2007. *The Auk*. 124: 153–155.

Provides an overview of Harold Mayfield's life, highlighting the 92 publications in the field of personnel management as well as his contributions to ornithology, including the "Mayfield Method" of determining nest success, the life history of the Kirtland's warbler, and the breeding biology of the red phalarope. Also mentions his many awards.

United States Department of Agriculture. 1972. Protecting endangered wildlife: protecting endangered birds. *USDA Employee Newsletter*. 31(20): 1–2.

The article provides updates on several endangered birds including Kirtland's warblers. It is noted that the Forest Service has set aside 4,010 acres in the Huron National Forest as a special Kirtland's warbler management area for perpetuation of the species. Habitat management techniques are described. [1].

United States Environmental Protection Agency. 1991. Endangered species facts: Kirtland's warbler. Washington, DC: Endangered Species Protection Program.

Describes the Kirtland's warbler, how it is threatened, what is being done to prevent extinction, and where additional information can be obtained.

United States Fish and Wildlife Service. 1975a. The 1974 cowbird trapping program on the Kirtland's warbler nesting area.

A total of 4,075 cowbirds (2,195 male, 1,717 female, 163 juvenile) were removed from Kirtland's warbler nesting areas. A total of 846 cowbirds (242 male, 261 female, 343 juvenile) were banded, and 54 cowbirds (47 male, 7 female) banded in 1973 were recovered. Includes a map of banded cowbird movements and a table of other species banded. Tours to see Kirtland's warblers were attended by 250 people.

United States Fish and Wildlife Service. 1975b. The 1975 cowbird program on the Kirtland's warbler breeding ground.

A total of 3,650 cowbirds (2,026 male, 1,463 female, 161 juvenile) were removed from Kirtland's warbler breeding areas. An additional 531 cowbirds (215 male, 231 female, 85 juvenile) were banded and 18 cowbirds (13 male, 5 female) were equipped with radio transmitters to obtain data on movements and activity areas. A summary of cowbird recaptures and movements is given. Movement maps of radio-equipped birds are provided. Includes tables and figures of cowbirds removed and banded, movements, and other species banded. Guided tours from Grayling and Mio were attended by 1,386 people from 34 states, 3 Canadian provinces, Australia, Japan, and Sweden.

United States Fish and Wildlife Service. 1977. Annual report: brown-headed cowbird control program in Kirtland's warbler nesting range, Michigan. Lansing, MI.

A total of 4,299 cowbirds (2,193 male, 1,994 female, 112 juvenile) were removed from Kirtland's warbler breeding habitat in 1976, and 550 (249 male, 291 female, 10 juvenile) were banded and released. A summary of removal and banding is provided. Twelve adult cowbirds (6 male, 6 female) were equipped with radio transmitters, and a summary is provided including movements. A table of other species captured is included. Kirtland's warbler tours were attended by 647 people from 30 states, Canada, Great Britain, and Puerto Rico.

United States Fish and Wildlife Service. 1981. Annual report: 1981: control of brown-headed cowbirds in the northern Michigan nesting range of the Kirtland's warbler. East Lansing, MI.

A total of 2,856 cowbirds (1,770 male, 1,085 female, 1 juvenile) were removed from Kirtland's warbler breeding habitat. Blue jays and other species captured are discussed, and a summary of

the effect of cowbird control on the Kirtland's warbler is included. The Kirtland's warbler guided tours were attended by 609 participants from 24 states, 3 foreign countries, and Puerto Rico.

United States Fish and Wildlife Service. 1983. Annual report: 1982 control of brown-headed cowbirds in the northern Michigan nesting range of the Kirtland's warbler. East Lansing, MI.

A total of 2,499 cowbirds (1,568 male, 893 female, 38 juvenile) were removed from Kirtland's warbler habitat. A list of other species captured is provided. Guided tours to see Kirtland's warblers were attended by 623 participants from 32 states, Washington, DC, and 3 foreign countries.

United States Fish and Wildlife Service. 1998. Kirtland's warbler: *Dendroica kirtlandii*. U.S. Fish and Wildlife Service.

Kirtland's warbler fact sheet briefly presenting its history, life history, management, and recovery program.

United States Fish and Wildlife Service. 2001. USFWS Kirtland's warbler tour results 2001 and brown-headed cowbird control results 2001.

Reports 662 Kirtland's warbler tour participants from 36 states and 5 foreign countries. Fifty-two other avian species were seen during the tours. Tour results from 1974–2001, and the 2001 brown-headed cowbird removal, are provided. Preliminary results from the 2001 cowbird trapping season are presented, with approximately 3,900 cowbirds being removed.

United States Fish and Wildlife Service. 2003. 2003 Kirtland's warbler tour survey results.

Presents the results of a Kirtland's warbler tour survey consisting of 5 questions to primarily gain insight on tour impact on the local economy. In 2003, 716 participants from 40 states, 5 Canadian provinces, and 4 other foreign countries attended 92 tours. A breakdown of participants by home location is included.

United States Fish and Wildlife Service. 2012. Kirtland's warbler *Setophaga kirtlandii*. U.S. Fish and Wildlife Service.

Kirtland's warbler fact sheet providing a life history and recovery overview.

United States Fish and Wildlife Service. 2019a. Kirtland's warbler: delisting the “bird of fire.”

Provides a summary of Kirtland's warbler life history, early conservation efforts, Endangered Species Act listing and Kirtland's Warbler Recovery Team, breeding habitat management and other species benefits, cowbird management, migration, wintering habitat, population recovery, Kirtland's warbler conservation team, delisting, and post-delisting monitoring plan.

United States Fish and Wildlife Service. 2019b. Questions and answers about Kirtland's warbler recovery. East Lansing, MI: U.S. Fish and Wildlife Service, Michigan Ecological Services Field Office.

Provides 13 questions and answers about various aspects of the Kirtland's warbler.

United States Forest Service, Mio Ranger District, Huron-Manistee National Forests. [N.d.]. Birds in the Kirtland's warbler area.

A checklist of birds found in Kirtland's warbler breeding areas. A list of other birding spots in the area is included.

United States Forest Service; Michigan Department of Natural Resources; United States Fish and Wildlife Service; Michigan Audubon Society. 1993. Your neighbor, the Kirtland's warbler.

A pamphlet providing answers to many questions about Kirtland's warbler life history and habitat.

United States Government. 1963a. Rare Kirtland's warbler selects Michigan forest for summer vacation: extension of remarks of Hon. Elford A. Cederberg. Congressional Record—Appendix. June 19, 1963: A3922–A3924.

A transcription of remarks given by Representative Cederberg to the House of Representatives regarding the dedication of the Kirtland's Warbler Management Area on the Huron National Forest. Included are the remarks given by Edward P. Cliff, Chief of U.S. Forest Service at the dedication.

United States Government. 1963b. Reports of committees. Congressional Record—Senate. August 17, 1966: 19766–19767.

Amendments from Mr. Magnuson from the Committee on Commerce on HR 9424, an act to provide for the conservation, protection, and propagation of native species of fish and wildlife, including migratory birds, that are threatened with extinction. Mr. Magnuson provides several reasons and examples, including the work done by the Michigan Department of Natural Resources and U.S. Forest Service on behalf of the Kirtland's warbler, on why this bill needs to be passed.

United States Government. 2008. Senate Resolution 520—Designating May 16, 2008, as Endangered Species Day. Congressional Record. 154(61): S3162–S3163.

A U.S. Senate Resolution to make May 16, 2008, Endangered Species Day. Successful Kirtland's warbler recovery efforts are one of the examples provided for establishing Endangered Species Day.

U.S. Department of Agriculture, Forest Service, Huron National Forest. [N.d.]. The Kirtland's warbler: a bird of fire. Cadillac, MI: USDA Forest Service.

Provides an overview of Kirtland's warbler life history, population, habitat, regulations, and cowbirds. Included are several photographs and a nesting range map.

U.S. Department of Agriculture, Forest Service. 1977. Summary of Kirtland's warbler tour season 1977. Mio, MI.

Reports that the Mio Ranger District hosted 1,180 visitors in 1977 on the Kirtland's warbler tours. Participants were from 27 U.S. states, 2 Canadian provinces, and 5 other countries. A breakdown of participants by day is provided.

U.S. Department of Agriculture, Forest Service, Huron National Forest; United States Fish and Wildlife Service; Michigan Department of Natural Resources. 1975. A bird of fire: Kirtland's warbler. U.S. Government Printing Office.

Provides an overview of Kirtland's warbler life history, population, habitat, regulations, and cowbirds. Several photographs are included.

U.S. Department of Agriculture, Forest Service; United States Fish and Wildlife Service; Michigan Department of Natural Resources. 1980. A bird of fire: Kirtland's warbler. U.S. Government Printing Office.

Provides an overview of Kirtland's warbler life history, population, habitat, regulations, and cowbirds. Included are several photographs and a nesting range map. (Updated version of U.S. Department of Agriculture, Forest Service et al. 1975.)

U.S. Department of Agriculture, Forest Service; United States Fish and Wildlife Service; Michigan Department of Natural Resources; Michigan Audubon Society. 1992. Working together to save a special bird ... managing the forest for Kirtland's warbler. U.S. Department of Agriculture, Forest Service.

Fact sheet on Kirtland's warbler breeding habitat and habitat management.

Van Tyne, J. 1944. Norman Asa Wood. *The Auk*. 61: 179–180.

Norman Wood's obituary with details on his contributions to ornithology, including Kirtland's warblers, and mammalogy.

Vosburgh, J. 1964. The warblers and the tanks. *Audubon Magazine*. 66: 351.

Discusses the conflict of interest between the National Guard maneuver dates during the Kirtland's warbler nesting season. In 1961, tanks moved through nesting areas during the breeding season. After consultation between Army officials and Michigan biologists, the area was declared off-limits from 1 May through mid-July for the next 10 years.

Waite, F.C. 1930. Jared Potter Kirtland, physician, teacher, horticulturist, and eminent naturalist. *Ohio Journal of Science*. 30(3): 153–168.

Provides an in-depth biography of Dr. Kirtland and mentions a warbler was named after him. [163].

Wallace, G.E. 2020. Bradley Watson. *Bird Conservation*.

A mini biography of Bradley Watson from the Bahamas National Trust including his work with Kirtland's warblers and other endemic species.

Watts, A. 2020. Forest management brings the Kirtland's warbler back from the brink of extinction. *The Forestry Source*. 25(4): 1, 14.

Several people involved with Kirtland's warbler recovery and future management are interviewed, covering topics such as the Recovery and Conservation Teams, research into habitat requirements, population sustainability, and past, current, and future habitat management. Describes jack pine marketability and the Kirtland's life cycle, original listing under the Endangered Species Act, recovery, and eventual removal from the list.

Whorton, C.E.; Gifford, G.E., Jr. 1973. Kirtland's warbler and Nathan Leopold. *New England Journal of Medicine*. 288: 109–110.

Letters to the editor concerning Nathan Leopold and his contributions both to ornithology, including Kirtland's warblers, and to medicine. (In response to Gifford, Jr. 1972.)

Wisconsin Department of Natural Resources. 2017. Kirtland's warbler (*Setophaga kirtlandii*) species guidance. Madison, WI: Wisconsin Department of Natural Resources, Bureau of Natural Heritage Conservation.

Provides a summary of Kirtland's warbler description, life history, distribution, threats, climate change impacts, and survey and management guidelines.

Zimmerman, D.R. 1975a. Panic in the pines. *Audubon*. 77: 88–111.

Discusses the researchers who studied Kirtland's warblers, life history, and management. Speculates on reasons causing low numbers of Kirtland's.

Zimmerman, D.R. 1975b. The quest of the warbler. In: To save a bird in peril. New York: Coward, McCann and Geoghegan, Inc.: 183–208.

Discusses the researchers who studied Kirtland's warblers, life history, and management. Speculates on reasons causing low numbers of Kirtland's.

U.S. Standard and Metric Equivalents

U.S. Standard Equivalents

When you know:	Multiply by:	To find:
Millimeters (mm)	0.0394	Inches
Centimeters (cm)	0.394	Inches
Meters (m)	3.28	Feet
Square kilometers (km ²)	0.386	Square miles
Kilograms (kg)	2.205	Pounds
Kilograms (kg)	0.0011	Tons

Metric Equivalents

When you know:	Multiply by:	To find:
Inches (in)	2.54	Centimeters
Feet (ft)	0.305	Meters
Square miles (mi ²)	2.59	Square kilometers
Cubic ft (ft ³)	0.0283	Cubic meters
Tons (ton)	907	Kilograms
Tons per acre	2.24	Tonnes or megagrams per hectare
British thermal units (BTU)	1,050	Joules

Common and Scientific Names in This Publication

Common name	Scientific or Latin name
agaves	<i>Agave</i> sp.
alders	<i>Alnus</i> sp.
ants	Hymenoptera
Bahama warbler	<i>Setophaga flavescens</i>
bearberry	<i>Arctostaphylos uva-ursi</i>
beetles	Coleoptera
black torch	<i>Erithalis frutcosa</i>
blue jay	<i>Cyanocitta cristata</i>
brown creeper	<i>Certhia americana</i>
brown-headed cowbird	<i>Molothrus ater</i>
butterflies	Lepidoptera
buttonsage	<i>Lantana involucrata</i>
Caribbean pine	<i>Pinus caribaea</i>
chipping sparrow	<i>Spizella passerina</i>
common yellowthroat	<i>Geothlypis trichas</i>
coral lichen	<i>Cladina stellaris</i>
domestic goats	<i>Capra aegagrus hircus</i>
eastern teaberry	<i>Gaultheria procumbens</i>
field sparrow	<i>Spizella pusilla</i>
gumbo limbo	<i>Bursera simaruba</i>
hawthorns	<i>Crataegus</i> sp.
hazels	<i>Corylus</i> sp.
hybrid poplars	<i>Populus</i> sp.
Ipswich sparrow	<i>Passerculus sandwichensis</i>
jack pine	<i>Pinus banksiana</i>
jack pine budworm	<i>Choristoneura pinus</i>
Kirtland's warbler	<i>Setophaga kirtlandii</i>
lantana berries	<i>Lantana</i> sp.
Leconte's sparrow	<i>Coturniculus lecontei</i>
locust	<i>Gleditsia triacanthos</i>
lowbush blueberry	<i>Vaccinium augustifolium</i>
magnolia warbler	<i>Setophaga magnolia</i>
moths	Lepidoptera
Nashville warbler	<i>Leiostyris alpestris</i>

Common name	Scientific or Latin name
nuthatches	<i>Sitta</i> sp.
Pennsylvania sedge	<i>Carex pensylvanica</i>
pin oak	<i>Quercus palustris</i>
pine siskin	<i>Spinus pinus</i>
plums	<i>Prunus</i> sp.
raccoon	<i>Procyon lotor</i>
red phalarope	<i>Phalaropus fulicarius</i>
red pine	<i>Pinus resinosa</i>
red-cockaded woodpecker	<i>Leuconotopicus borealis</i>
red-winged blackbird	<i>Agelaius phoeniceus</i>
reindeer lichen	<i>Cladoniaa rangiferina</i>
scrub palmetto	<i>Sabal etonia</i>
sedge	<i>Carex penslvanica</i>
skunk	Mephitidae
song sparrow	<i>Melospiza melodia</i>
spittlebugs	Homoptera
Sprague's pipit	<i>Anthus spragueii</i>
tamarack	<i>Larix laricina</i>
upland sandpiper	<i>Bartramia longicauda</i>
wavy-leaved moss	<i>Dicranum polysetum</i>
white pine	<i>Quercus alba</i>
willows	<i>Salix</i> sp.
wood warblers	Parulidae
yellow warbler	<i>Setophaga petechia</i>
yellow-rumped warbler	<i>Setophaga coronata</i>
yellow-throated warbler (Bahamian race)	<i>Setophaga dominica flavescens</i>

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