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Restoring Pine Barrens for Avian Conservation

in Michigan's Upper Peninsula

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At first glance, many visitors to Michigan's Upper Peninsula (U.P.) see a fairly uniform forested region. Although northern hardwood forests comprised of sugar maple (*Acer saccharum*), American basswood (*Tilia americana*), yellow birch (*Betula alleghaniensis*) and eastern hemlock (*Tsuga canadensis*) predominate, the U.P. is in fact a mosaic of forest cover types interspersed by water bodies and open lands (e.g., pine barrens, open wetlands, alvars [see *SER News* August 2000], and agricultural lands). Because of this exceptional structural and compositional diversity, the U.P. is inhabited by more species of breeding birds (>185) than practically any other region in the eastern United States. To maintain this regional avian diversity — and to provide habitat for open land birds and other biota as well as provide recreational opportunities such as blueberry (*Vaccinium* spp.) picking, camping, hiking and inspired nighttime views of celestial bodies — rare ecosystems like pine barrens must be maintained and, in many cases, restored.

Male Kirtland's warbler. Photo courtesy Cindy Lynne.

continued page 14

Message from the Executive Director *Steve Gatewood*

I have been amazed at the number and diversity of restoration projects going on in my adopted home place - the Sonoran Desert and Sky Islands ecoregion of the North American southwest. From efforts to recreate a section of riparian habitat associated with an urban river in downtown Tucson, to farmland and mine reclamation, through removal of unnecessary roads on private ranch land, and even wilderness rehabilitation by removing invasive alien plant species that alter natural fire regimes, all manner of organizations and individuals are engaged in healing the wounds inflicted on Nature by society. No matter what they are called and where along the restoration continuum they may fall, these projects have three basic components necessary for moving from idea to action:

An idea of what has been lost — the past
A vision for what can be — the future
A constituency of people willing to make it happen — the present

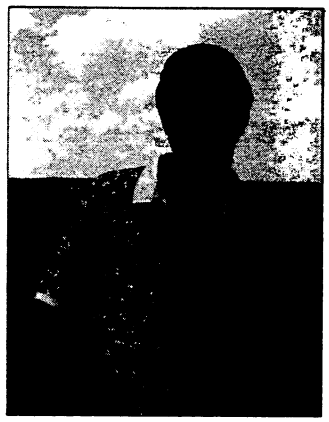
I am sure that most regions of the world also have at least a few projects ongoing that are tailored to their local conditions.

So what role should an organization like SER play, if any, in the hundreds and potentially thousands of projects worldwide that people are engaged in at any particular time? Many would say none - let them do their thing. Others might say do all you can. I think that we are developing a couple of great ways to get started collecting and disseminating information that could potentially help these and future projects.

The first, the Restoration Expertise Directory, is now up and running. Initially funded by the US federal government through the Plant Conservation Alliance, a majority of this database of expertise is now up on the web. While concentrated on North American based experts, we have recently received additional funding from Chevron to add key international contacts. Over time, this should become a great global resource for finding out who knows what about which region.

The second is the Project Profiles form available over the web or from the SER office. The brain child of former board members Andy Clewell and John Rieger, this allows people associated with a project to provide a brief description of their work for inclusion in a database. While not yet searchable, our plan is to also get it up on the web when we get enough entries and have the resources to design a query mechanism. Again, these projects can be a resource for what has worked and what hasn't.

Both of these are available through our web page at **www.ser.org** but you have to go there and fill them out! As more and more information becomes available and is made accessible to others, we move closer and closer to a viable global restoration network. After all, as an organization we can't really do much about what has been lost locally or a vision for the future, but we can and should be involved in building the constituency needed to take action.



SER Headquarters

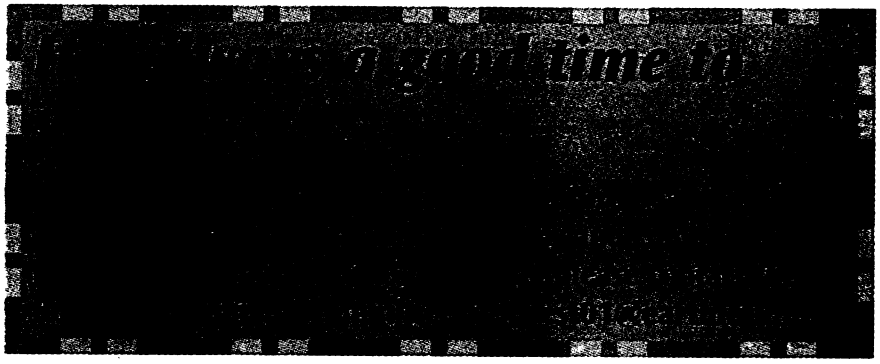
1955 W. Grant Road #150
Tucson, AZ 85745 USA
520.622.5485 voice
520.622.5491 fax
info@ser.org

Executive Director:
Steve Gatewood
steveg@ser.org

Business Manager:
Michael Monyak
michaelm@ser.org

Membership & Conference:
Jane Cripps
riojbc@ser.org

Outreach & Education:
Julie St. John
julie@ser.org



Working Groups & Committees

AWARDS **Andrew Burris** / Burris Reclamation Consultants / 995 North 4th Street, Platteville WI 53818 USA / v 608.348.3203 **andrew.burris@avistainc.com**

BOARD DEVELOPMENT **Kellie Westervelt** *(board)*

CONFERENCE **Steve Windhager** *(board)*

EDUCATION **Karen Rodriguez** *(board)*

ELECTRONIC SYSTEMS **Jerry Dion** *(board)*

INDIGENOUS PEOPLES' RESTORATION NETWORK **Dennis Martinez** / POB 495, Douglas City CA 96024 USA / v 530.623.5056 / messages: 530.629.3311 **tab@pcweb.net**

MEMBERSHIP **George Gann** *(board)*

PUBLICATIONS **John Rieger** / John Rieger & Associates / 3802 Rosecrans Street, Suite 373 / San Diego CA 92110 USA / v&f 619.263.2712 **mfpjrieger@home.com**

SCIENCE & POLICY **Keith Winterhalder** / Laurentian University, Department of Biology, Sudbury ON P3E 2C6 CANADA / v 705.674.7905 / f 705.675.4859 **wintergreen@sympatico.ca**

WEBSITE MANAGEMENT **Ian Perkins** / Ian Perkins Consulting Services / POB 134, Annandale NSW 2038 AUSTRALIA / v 61.2.9572.8288 / f 61.2.9566.2062 **ipcs@bigpond.net.au**

Restoring pine barrens for avian conservation continued from page 1

Historical evidence indicates that prior to European settlement the region's pine barrens were large, relatively open, xeric tracts with clusters of jack pine (*Pinus banksiana*) and red pine (*Pinus resinosa*) of varying density scattered throughout. Common shrubs and herbaceous plants included cherry (*Prunus* spp.), *Amelanchier* spp., sweet fern (*Comptonia peregrina*), and bluestem (*Andropogon* spp.). Fire, both anthropogenic and other, and biotic factors like jack pine budworm (*Choristoneura pinus*) acted as the primary disturbance mechanisms that maintained these ecosystems and created the diverse pattern of thickly forested conifer stands scattered among openings.

Although never comprising more than 1-3% of the pre-European U.P., the amount and quality of regional pine barrens have declined considerably during the last century. Two major factors have contributed to the degradation of this native ecosystem: fire suppression and widespread conversion into jack pine and red pine plantations. Instead of providing examples of complex landscape structure, many historic pine barrens are now homogenous, forested fiber farms with no recent fire history. Without a doubt, the demands placed upon historic barrens to produce timber have in turn resulted in the degradation of habitat for obligate floral and faunal species.

The loss of landscape structural diversity in U.P. pine barrens directly influences regional populations of many bird species. Since many birds have relatively high habitat specificity, the presence of particular species acts as an indicator of pine barren condition. Whereas conifer plantations provide food and shelter for relatively few species, pine barrens with ecological integrity offer habitat for a wide variety of birds, many of which are either officially listed or of conservation priority. Species that utilize scattered mature live conifers or dead snags in pine barrens include Red crossbill (*Loxia curvirostra*), Black-backed woodpecker (*Picoides arcticus*) and Olive-sided flycatcher (*Nuttallornis borealis*). In the younger conifer stand and more open areas of pine barrens, many openland (grassland and shrubland) birds of conservation concern breed. Although much regarding the biogeography and ecology of these species in yet unknown, historic pine barrens that retain landscape structure may in fact prove vital in restoring regional populations of these species. For instance, pine barrens that burned in the 1980s now provide breeding habitat for the Federally Endangered Kirtland's warbler (*Dendroica kirtlandii*). Many of these same stands are also inhabited by Spruce grouse (*Canachites canadensis*) and Palm warbler (*Dendroica palmarum*), while in the more open portions of these landscapes one may find Sharp-tailed grouse (*Tympanuchus phasianellus*), Upland sandpiper (*Bartramia longicauda*) and Clay-colored sparrow (*Spizella pallida*).

To maintain and restore regional pine barren ecosystems, planners, managers and the general public must take a broad view of the regional landscape and promote more ecologically sustainable land use practices. Large-scale, uneven-aged timber harvesting and prescribed fire are two ways in which managers may promote pine barren restoration. Because these sites are primarily owned by federal, state or local government agencies, public involvement in the planning process is critical. To this end, a sub-regional, multi-agency *Openland Conservation Strategy* that includes pine barrens has been drafted. However, more work is needed, both in terms of region-wide assessments and evaluations, pine barren disturbance ecology, and public outreach to achieve the goal of extensive barren conservation and restoration. Pine barrens can be managed in a way that commodity production and ecological integrity co-exist. Freeing ourselves from the mental rut that timber yields on historic pine barren landscapes must be maximized is the first step.

Greg Corace is a PhD Candidate in Conservation Biology at the School of Forestry & Wood Products at Michigan Technological University. His research concerns the biogeography, ecology and applied conservation biology of openland birds in Michigan's Upper Peninsula. For more information, contact Greg at rgcorace@mtu.edu.

Left photo:Kirkland's warbler habitat in Baraga Plains courtesy Greg Corace. Kirkland's warbler distribution map courtesy Steve Sjogren. Bottom photo: Restoration cutting courtesy Greg Corace.