

Monitoring Goals and Programs of the Bureau of Land Management

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Abstract — In 1991, the Bureau of Land Management wrote its *Nongame Migratory Bird Habitat Conservation Plan* to guide implementation of *Partners In Flight* objectives on 270 million acres of public land in the U.S. Inventory and monitoring of neotropical migrants are the most important program goals because few bird data are available over large expanses of sparsely populated western lands. Nongame bird activities will mesh nicely with ongoing initiatives such as the Riparian-Wetlands, Watchable Wildlife, and Ecosystem Management. Impediments to success are the remoteness of many important habitats and the shortage of skilled birders in those areas.

The Bureau of Land Management (BLM) manages over 270 million acres of public land in the 11 western states and Alaska. Under the Bureau's *Fish and Wildlife 2000* initiative, the *Nongame Migratory Bird Habitat Conservation Plan* was written in 1991 as a strategy for future management of nongame birds on these lands. Focal species include not only those of consensus in *Partners In Flight* but also most other nongame species that either breed or winter on BLM-administered lands. Separate strategic plans for Raptors, Waterfowl, and Upland Game Birds address habitat management for those groups.

NONGAME MIGRATORY BIRD HABITAT CONSERVATION PLAN GOALS

Goals in six general categories of action structure the Nongame Bird Strategy Plan: 1) Inventory and Monitoring, 2) Habitat Management, 3) Research and Studies, 4) Training, Education, Outreach and Communication, 5) Domestic Partnerships, and 6) International Partnerships.

Positioning *Inventory and Monitoring* as the first goal reflects its importance. *Partners In Flight* was engendered by concern over species' population trends in the eastern United States where there are relatively many amateur birders and ornithologists. However, over much of the West, there are few long-term monitoring data for most nongame species, largely a consequence of a sparse human population. Additionally, the

condition of habitats on public lands traditionally has been evaluated from a livestock or big game perspective, for example, and condition as breeding habitat for neotropical migrants has been considered only in a few special cases. Thus, both bird and habitat monitoring are widely needed.

Baseline Nongame Bird and Habitat Inventories

The first of four major objectives under the monitoring goal is to *Develop and implement standardized baseline inventories of nongame birds and their habitats*. "Inventory" simply means a collection of basic data on what species are present in certain habitats during different periods of the year. Current nongame bird inventory data are inadequate in most geographic areas. The numbers of species involved, the difficulty in identifying them and the lack of time for field biologists to devote to only this one aspect of multiple use management contribute to this undersampling situation. Where special management areas are in place, such as the Birds of Prey Area in Idaho and the San Pedro Riparian National Conservation Area in southern Arizona, nongame bird inventories are complete.

The Bureau intends to rely on recommendations of the *Partners In Flight* Monitoring Working Group for bird monitoring techniques that will be used to establish formal, systematic baseline inventories. In many areas, inventories may be more casual, consisting of observations, for example, of volunteer birders who may spend time in the field during the breeding season on a less predictable basis. Following the *Partners In Flight* lead, emphasis will be placed on neotropical migrant land birds and species that are declining.

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A priority list of species will greatly aid the effectiveness of any inventory where experts are not available. It should be possible to train field personnel to identify general habitat requirements, field marks and, most importantly, vocalizations of a limited number of species of particular concern. Although this type of inventory is less valuable from the standpoint of ecosystem management and conservation of biodiversity, it may be a practical alternative that is much better than nothing at all.

For habitats, existing vegetation inventory data must be evaluated for applicability to nongame bird management. It seems likely that these data will be useful and that it will not be necessary to go back to the field for expensive, time consuming, large-scale data gathering. Fortunately, the Bureau's ongoing *Riparian-Wetlands Initiative* has focused attention for years on assessing species composition, structure, condition, and potential of riparian vegetation. This will provide a platform for assessment of the most critical nongame bird habitat in the arid West. Refinements in vegetation evaluation undoubtedly will be necessary as we focus more clearly on particular species or problems in the near future.

Long-term Monitoring

Our second objective is to *Develop and implement a monitoring scheme to determine long-term changes of nongame bird populations and habitat and their responses to management activities and to natural phenomena such as fire and flood.* The ultimate objective will be to understand the biological cause-effect relationships between bird populations and vegetative changes. The latter are caused not only by conscious management actions but also by natural phenomena such as wildfires, floods, disease outbreaks, and invasion by exotic plants.

Long-term monitoring methodology for birds will follow the recommendations of the Monitoring Working Group as far as possible. We intend to participate fully in existing systems such as the Breeding Bird Survey and will explore the possibility of creating new routes where necessary.

As in the inventory stage, the challenge will be to get qualified birders on the ground year after year to collect population data. Remoteness of potentially important areas and the narrow window available for monitoring breeding birds will be an impediment. Further prioritization following inventory should allow us to focus on a smaller set of species and geographic locations. This is essential to reliable data collection.

Habitat monitoring techniques already in place in the Bureau should be sufficient to provide data linking bird populations and plants. The interdisciplinary nature of our Riparian-Wetlands Initiative has specialists from a variety of resource programs, e.g., wildlife, range and water quality, involved in vegetation monitoring. If cause-effect relationships emerge that are not being properly followed, new techniques can be readily put into place.

Coordination and Communication With Partners

Third, the Bureau intends to *Coordinate with other land managers to ensure that inventory and monitoring schemes are compatible and completed in all necessary areas.* Through good communication with the many *Partners In Flight* cooperators, particularly the U.S. Forest Service and U.S. Fish and Wildlife Service in the West, we will strive to conduct efficient inventories and monitoring by sharing information on species, similar habitat types and geographic areas. Participation in the West Working Group and in state working groups will be critical to this end.

Data Base and Geographic Information System

Our final major objective is to *Develop and implement an automated data base with Geographic Information System (GIS) capability.* Unlike many of our partners in this conservation program, BLM has a mandate for multiple use management. Thus, we must manage a forbidding amount of information on a huge array of resources and their uses. From the data perspective, one benefit of this mandate is that information useful to nongame bird conservation may have already been collected and analyzed for entirely different purposes. The use of satellite imagery to study landscape-level vegetation for fire management is an example. Ultimately, a GIS system may be the only way to make large amounts of information useful in land use planning and in daily management activities.

In a related effort, the Information Resources Management branch of the Bureau is standardizing data elements for automated data base systems. This has been accomplished with full involvement of other agencies and groups who manage natural resource data. Hopefully, this will lead to a steady improvement in the ability of diverse organizations to exchange data.

SELECTED EXAMPLES OF NEOTROPICAL MIGRANT MONITORING

San Pedro Riparian National Conservation Area

Selected examples of ongoing neotropical migrant monitoring in BLM are highlighted by the San Pedro Riparian National Conservation Area in Arizona's Safford District (see Krueper 1992). The San Pedro story shows what can be accomplished when various resource programs, e.g., wildlife, lands, range, archaeology and recreation, work together with management support toward a common goal.

Over 45,000 acres of riparian habitat along the San Pedro River in southeastern Arizona were acquired in 1986. This is a 40-mile long north-south corridor with headwaters in Mexico. A 15-year grazing moratorium was initiated to allow vegetation

to recover while line transects were established in 21 different plant communities. Transects were then read for 60 continuous months.

To date, 379 species of birds have been recorded in the area including 210 species of neotropical migrants. Preliminary data analysis show avian densities reaching 50 individuals/ha during spring migration and 38 individuals/ha during the breeding season. In response to the improved vegetation under rest from grazing, understory specialists such as the yellow-breasted chat (*Icteria virens*), common yellowthroat (*Geothlypis trichas*) and song sparrow (*Melospiza melodia*) have significantly increased. Yellow warbler (*Dendroica petechia*) and western wood-pewee (*Contopus sordidulus*) populations have increased 400 percent while summer tanager populations have doubled. Given the probable lags in species' responses to habitat changes (Wiens et al. 1986), further increases are likely.

Responses of vegetation and then of birds to improved management is not particularly surprising. But the unequivocal demonstration of these responses is extremely important. For it shows that we can directly and rather quickly improve critical riparian habitats in arid landscapes, increase neotropical migrant populations and enrich biological diversity if we want to.

Marys River

In Nevada's Elko District, another important riparian area has been put under special management. In May 1991, an exchange was completed that increased the total stream miles on BLM-administered land from 31.6 miles to 86.2 miles and increased total acreage by 46,969 acres in the Marys River drainage. This includes 8,600 acres of wet meadows, 60 springs and 6,700 acre-feet of water rights.

The primary objective of the acquisition and management plan is to restore Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) habitat and allow for eventual delisting of the subspecies. However, vegetation monitoring will be useful for all riparian resources. Bird monitoring will be carried out by the Nevada Department of wildlife. The Marys River project provides a significant opportunity in the Great Basin to better understand neotropical migrant responses to vegetation changes.

Montana Riparian Association Vegetation Classification

In Montana, the Montana Riparian Association, a coalition of agencies, groups and academic institutions, has cooperated to evaluate and classify over 1000 miles of riparian habitat. Seral stage, potential vegetative community,

responses to grazing and management recommendations are among the many subjects considered (Hansen 1991, Hansen et al. 1991).

A pilot study in 1992 investigated how to link breeding bird community composition to the defined habitat types. Long-term monitoring of selected sites is planned with the objective of refining our ability to predict both vegetative and avian responses to management actions.

Snake River Birds of Prey Area

Biologists in the Snake River Birds of Prey Area in the Boise District in southwestern Idaho have monitored nest productivity and populations of several species of raptors since as early as 1970. Northern harriers (*Circus cyaneus*), red-tailed hawks (*Buteo jamaicensis*), ferruginous hawks (*B. regalis*), golden eagles (*Aquila chrysaetos*), American kestrels (*Falco sparverius*), prairie falcons (*F. mexicanus*), burrowing owls (*Athene cunicularia*) and short-eared owls (*Asio flammeus*) have been studied while other aspects of their ecology, e.g., prey populations, have been explored (e.g., Steenhof 1991). This research has led to a number of specific management recommendations for raptors and the vegetative communities that support their prey base.

The value of research at the Birds of Prey Area has led to an extension of their responsibilities through creation of the Raptor Research and Technical Assistance Center (RRTAC) in conjunction with Boise State University, University of Idaho, Idaho State University, U.S. Fish and Wildlife Service, Idaho Department of Fish and Game and the Peregrine Fund. RRTAC expertise is available to help with research, monitoring or other aspects of raptor management on BLM lands.

Although livestock grazing is ubiquitous in the western U.S., few data are available on the effects of grazing on neotropical migrants of shrubsteppe habitats (see Bock et al., this volume). Monitoring of shrubsteppe birds in areas of different management and different degrees of fragmentation also has been initiated in the Birds of Prey Area (Rotenberry and Knick 1991). Similar monitoring to evaluate islands of shrubsteppe habitat in an agricultural landscape is being established in Washington state. Although fragmentation and area sensitivity have been popular and valuable lines of investigation in forested landscapes, nothing is known about their relation to bird populations in shrubsteppe.

CONCLUSIONS

The Bureau has several initiatives where monitoring of neotropical migrants will be an important component, particularly Riparian-Wetlands, Bring Back the Natives (fish), Watchable Wildlife and Ecosystem Management. Emergence of *Partners In Flight* is especially timely and has been well

received by BLM personnel. However, it is unrealistic to expect instant and widespread implementation of management for neotropical migrants. The very initiatives that have focused attention on the critical conservation issues of our time have placed additional workloads on field biologists who, on the average, each have about 1,000,000 acres of public land to manage and about 12 cents per acre to accomplish needed work. This situation demonstrates the necessity of establishing species, habitat and geographic priorities and, most importantly, cooperating with our partners at every possible turn.

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