

Virginia's Monitoring Goals and Programs: An Eastern State Perspective

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Abstract — Unlike the federal ownership patterns of the western United States, the eastern states are still largely in the hands of the private landowner. As a result, the implementation of the Partners in Flight program in the East will depend a great deal on the motivation and dedication of individual states. Monitoring programs in particular are in a position to benefit from the relationships that state agencies maintain with private landowners and non-governmental organizations, as well as their federal counterparts. The activities of Virginia's Department of Game and Inland Fisheries serve as an example of one state's approach to implementing the monitoring objectives of Partners in Flight.

Virginia is unique in many respects. By virtue of its east-west orientation it enjoys a geography that incorporates five different physiographic regions: coastal plain, piedmont plateau, blue ridge province, ridge and valley province, and the Appalachian plateaus province. For its size, it has the greatest diversity of living forms of any temperate area (Woodward and Hoffman 1991). Virginia's latitude coincides with the southern boundary for many boreal species expanding southward, and also the northern boundary for many austral species expanding northward. As such, its avifauna consists of 390 recorded species, 209 of which are documented breeders in the state (Kain 1987).

Among forest dwelling birds, some 60 species in Virginia are neotropical migrants and over half of these species have shown declines since 1980 (S. Droege, pers. comm.) Unfortunately, there is a paucity of trend data, demographic data, and habitat modification data from which to understand the causative elements of these species' declines. At three independent long-term monitoring stations in or near Virginia, results showed increasing, declining, and stable populations respectively, of neotropical migrants all during roughly the same time periods (Byrd and Johnston 1991). Factors that were not adequately monitored however were habitat changes and other man-induced disturbances at a landscape level. Despite this lack

of direct knowledge of human impacts, it is widely accepted that the declines in neotropical migratory bird species are associated primarily with the effects of human activity.

Prior to 1992, Virginians censused approximately 45 Breeding Bird Survey (BBS) routes each year. However, given the clumped nature of randomly distributed routes, there were many gaps across the state that received no survey coverage. And prior to the implementation of the Neotropical Migratory Bird Conservation Program (Partners in Flight), there were several routes that were not run each year due to lack of interest or to time constraints. Therefore much of the BBS data generated in Virginia lacks completeness or consistency of coverage. However, for data that was available, results have shown declines in a large percentage of neotropical migrants since 1980. Unfortunately, it is also known that many neotropical migrant species are not sampled adequately by roadside point counts, a problem that is characteristic of species that are endemic to unique habitat types or those that inhabit inaccessible areas like forest interiors.

In addition to the BBS routes, a Breeding Bird Atlas project was conducted in the state for the five year period 1985-1989 inclusive. This effort generated long needed information on much of the avifauna of the state including the breeding distribution of many neotropical migrants. A project publication is still pending.

And finally, in terms of pre-Partners in Flight activities, there has been a long-term mist netting operation ongoing on the Eastern Shore of Virginia near the southern tip of the Delmarva peninsula. This banding station has been in operation since 1963, and is operated during the fall migration period.

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With the inception of the Partners in Flight Program there was generated an opportunity for state agencies to take a lead role in implementing the objectives of a multi-national endeavor. Through academic contractors, volunteer conservation groups, and daily interaction with other resource agencies as well as local citizens, state agencies are in an ideal position to organize local, statewide, or even regional efforts toward a common goal.

As the regulatory wildlife resource agency in Virginia, the Department of Game and Inland Fisheries (DGIF) serves as the lead agency for the Partners in Flight effort. Virginia shares the status with both Maryland and West Virginia of being a border state represented in both the Southeast and Northeast Associations of Fish and Wildlife Agencies. As such, DGIF is active in both regional working groups of Partners in Flight. Although we are just now becoming active participants, DGIF has subscribed to the methodology adopted in the Southeast whereby multi-state programs will be coordinated regionally according to physiographic province. This technique will no doubt prove effective in making use of local expertise and in partitioning regional effects in bird population fluctuations. Among the products of the Southeast working group are lists of breeding species and their priority ranking scores within each physiographic area, in addition to a list of monitoring needs to be addressed by all participants.

As regards the Northeast, DGIF was fortunate to be involved in a four-state migration corridor study in 1991 that was sponsored by The Nature Conservancy. With National Oceanic and Atmospheric Administration (NOAA) and National Fish and Wildlife Foundation funding, Virginia's Division of Natural Heritage lead the state's efforts in monitoring fall migrant movements down the Atlantic coast from Cape May, New Jersey to Cape Charles, Virginia. Data was collected on locations and habitats selected by migrants for resting and foraging to better understand the critical characteristics of this migratory pathway. Of central importance to this effort, was the fact that data collected was to be used in helping to evaluate future land planning decisions along this four-state coastal corridor. This project also made use of over 100 birding volunteers in Virginia alone, a milestone effort for citizen involvement in a field project.

This year, with additional NOAA funding, the Virginia Game Department joined forces with the Division of Natural Heritage and the College of William and Mary to refine the previous study for specific application along the southern tip of the Delmarva Peninsula on Virginia's Eastern Shore. Paid observers are monitoring habitat patches throughout the study area to record migrant bird use in terms of species diversity, abundance, and distribution relative to patch characteristics and location. The county planning office is an active supporter of the study, which should provide a useful guide to land planning as it relates to migratory bird habitat conservation.

As the Partners in Flight program has taken shape, it seems that monitoring programs have been the biggest benefactor of the early organizational efforts. As a result DGIF has sought to refine its needs with respect to monitoring programs and to target resources toward the most essential data. A hierarchy of goals was established whose objectives we felt would accommodate the needs of our agency and our cooperators as well as complement the national objectives.

To capitalize on this early emphasis on monitoring, the Department of Game and Inland Fisheries held two regional meetings to organize cooperators. These meetings were extremely successful enabling the recruitment of personnel and property from both National Forests in the state, three National Park Service properties, two National Wildlife Refuges, and two military bases. The Virginia Society of Ornithology (VSO) with its 25 chapters and over 1000 members volunteered its services, as did interested members of the academic community and other state resource agency personnel.

Our first objective was an effort to fill in the gaps across sections of the state that had not received adequate monitoring coverage, putting an initial emphasis on adding new BBS routes. Toward that end, Game Department staff coordinated the layout of 20 additional routes across the state. This effort was facilitated by the interest of the federal landholders in the state who saw BBS routes as a viable long term monitoring tool to aid in evaluating future landuse decisions. As a result, fourteen of the new routes were located on federal lands and they initially served to provide baseline information on the presence and distribution of neotropical migrants and other species of concern. In a departure from standard BBS methodology, the newly established routes were not randomly distributed, but rather were placed within target habitat areas. Target areas in this case were grasslands or large tracts of mature forest, with an emphasis on deciduous forests. The rationale behind this effort stemmed from an attempt to more effectively monitor species that were typically under-sampled on randomized, non-habitat specific routes. This procedure was agreed to by all cooperators and sanctioned by the BBS office in Laurel, Maryland.

Our second thrust in implementing new monitoring programs was directed at customizing specific programs for a particular land area or habitat type. The principal strategy for this effort was the establishment of mini-BBS routes or off-road routes. There was particular interest in this program from many of the landowner cooperators who wished to establish a monitoring program on specific tracts of land that was entirely under their management control. This was especially true of some of the National Forest Service properties and the National Wildlife Refuges. Although there was substantial interest, this program was only partially implemented this year due to a lack of qualified personnel to assist with the establishment of the routes and the associated surveys. This was not recognized as a setback however, in

view of the information that was generated by the national monitoring committee this summer regarding recommended survey techniques for off-road routes. More attention can now be devoted to getting this program in place next year with a standardized methodology that should ensure data compatibility with other studies.

Apart from addressing the needs of our federal cooperators, an additional pilot project that was brought on line made use of canoes to establish monitoring routes along narrow coastal rivers. This effort was undertaken by DGIF staff to evaluate methodologies for establishing long term surveys to monitor trends in species associated with riverine forests. These forests represent one of the few habitat types that are relatively free from disturbance in the coastal plain. Once again the need for this type of project was generated by the paucity of trend information in Virginia on species that are associated with mature deciduous forests and forested wetlands. A total of six 30-stop routes were run on three coastal rivers generating the first data ever on species presence and distribution in these areas. Additional survey methodologies will be attempted next summer to refine a technique best suited for data collection by canoe.

One other ancillary project that has been modified to fill in additional information gaps is called the Rare Bird Monitoring Program. This effort seeks to involve interested citizens and local birders to help in locating and monitoring species of concern. Originally started as a threatened and endangered species monitoring effort, this project makes principal use of post-Atlas birders who locate, map, and monitor the nesting success of priority species. With the interest in the Partners in Flight program, this effort has grown to include data collection efforts on many of the neotropical migrants experiencing declines in the state. The program has served another vital purpose in terms of creating an additional opportunity for public involvement in a high profile program like Partners in Flight, and in fostering a valuable rapport between private citizens and government agencies.

Our third monitoring emphasis was targeted at facilitating the management decisions of our staff land managers by providing them with monitoring information from properties that were under their control. DGIF owns 30 wildlife management areas (WMAs) comprising some 180,000 acres. These areas are managed primarily for game species and to a lesser extent for timber production. As a result of the Partners in Flight initiative, we contracted out a breeding bird survey to be done on each WMA, making use of a standardized methodology that could be repeated on an annual basis. Our initial goal was to provide each WMA manager with a list of neotropical migrants and the habitats in which they occurred on that particular WMA. Over time however, we intend to continue these surveys and monitor changes in bird populations relative to habitat changes as

initiated by the land manager. Through this approach we make our land managers a part of the neotropical program by first cultivating their interest with a list of migrants pertinent to their area. Then we establish a program to monitor these birds thereby providing the managers with a "yardstick" to measure the benefits or impacts to these species based on their management strategies. Ultimately, we hope that our wildlife management areas can serve as a model for our land managers to better understand the demands of managing habitat for a broader spectrum of wildlife.

Finally, there is an aspect of monitoring programs that can serve a useful function apart from just providing data. For most studies, monitoring is thought of as a means to an end; the end usually being some type of trend information. However, in view of the magnitude and momentum of the Neotropical Migratory Bird Conservation Program, the Department of Game and Inland Fisheries decided to dedicate some of its efforts to promoting monitoring as a product in itself, an educational product. Our first client was a statewide coordinator for the Girl Scouts. As part of an educational program we introduced the Girl Scouts to a project in which they would monitor two or three target species each year at summer camp. We have selected several vocally distinct species such as wood thrushes and ovenbirds, and are encouraging Girl Scouts to identify and map singing males during the course of their summer camp stay. We anticipate bringing the Boy Scouts on board next summer to participate in a similar effort.

Apart from the local information these efforts can generate, we believe that the future success of the Partners in Flight program will rest largely on the degree to which it can interest and involve the general public. Large scale conservation decisions will invariably involve large scale political decisions. So as a public wildlife resource agency, we believe that an informed and involved public will ultimately be the most instrumental tool in bringing about successful wildlife conservation.

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