

## **Birds surveyed at Pennsylvania parks**

Large tracts of public land, such as national parks, have become more isolated because of increased development and urbanization, changing land uses, and habitat fragmentation within the eastern United States. These tracts of land are valuable for the long-term maintenance of biological diversity and the functional integrity of ecosystems. Therefore, the National Park Service has determined the need for in-depth inventorying and monitoring of animals and plants within national parks and historic sites in Pennsylvania. The Park Service, in conjunction with Pennsylvania State University, is conducting a comprehensive inventory program for birds at Allegheny Portage Railroad National Historic Site, Eisenhower National Historic Site, Gettysburg National Military Park, Hopewell Furnace National Historic Site, Johnstown Flood National Memorial, and Valley Forge National Historical Park.

The objectives of this research project are to obtain a comprehensive inventory data set on birds at the parks and to develop guidelines for establishing a long-term sampling plan to monitor birds at

the parks. To meet these objectives, two years of bird surveys are being conducted at the parks using standard methodology. Bird surveys will be based on special needs, taxonomic groups of interest, habitats, and the infrastructure of each park. Ultimately, guidelines for establishing long-term sampling plans to monitor birds based on these inventories will be developed. Selecting protocols to survey birds, establishing permanent sampling points, and collecting data on bird populations will lay the groundwork for developing a long-term sampling plan to monitor birds at the parks.

Researchers completed breeding season and fall-migratory bird surveys between 25 May and 10 October 1999 (table 1), and also conducted inventories of winter bird communities at the six parks. Researchers also recorded a total of 15 species during the breeding season and 14 species during fall migration that have been identified as birds of management concern by the National Audubon Society and the U.S. Fish and Wildlife Service (table 2). Bird inventories for the research project will continue to





be conducted during all seasons through spring of 2001. Information on bird communities obtained from the research and guidelines for continuing the bird inventories will be valuable for monitoring bird populations and for sampling specific taxonomic or functional groups of birds within units of the national park system in Pennsylvania in the future.

**Table 2.**

**Bird species of management concern identified during the 1999 breeding and fall seasons at Allegheny Portage Railroad National Historic Site (ALPO), Eisenhower National Historic Site (EISE), Gettysburg National Military Park (GETT), Hopewell Furnace National Historic Site (HOFU), Johnstown Flood National Memorial (JOFL), and Valley Forge National Historical Park (VAFO)**

| <i><b>Bird Species</b></i>               | <i><b>Breeding Season</b></i> | <i><b>Fall Migration</b></i> |
|------------------------------------------|-------------------------------|------------------------------|
| Black-throated blue warbler <sup>1</sup> | ALPO                          | ALPO, GETT, HOFU, VAFO       |
| Blue-winged warbler <sup>2</sup>         | GETT, VAFO                    | — —                          |
| Canada warbler <sup>1</sup>              | — —                           | ALPO                         |
| Cerulean warbler <sup>1,2</sup>          | — —                           | HOFU                         |
| Chestnut-sided warbler <sup>2</sup>      | ALPO, JOFL                    | ALPO, EISE                   |
| Eastern meadowlark <sup>2</sup>          | EISE, GETT, JOFL, VAFO        | EISE, GETT, VAFO             |
| Field sparrow <sup>1,2</sup>             | All parks                     | ALPO, EISE, GETT, JOFL, VAFO |
| Grasshopper sparrow <sup>2</sup>         | EISE, GETT, VAFO              | GETT                         |
| Kentucky warbler <sup>1</sup>            | VAFO                          | — —                          |
| Loggerhead shrike <sup>2,3</sup>         | EISE                          | — —                          |
| Louisiana waterthrush <sup>1,2</sup>     | ALPO, HOFU, VAFO              | — —                          |
| Northern flicker <sup>2</sup>            | All parks                     | ALPO, EISE, GETT, JOFL, VAFO |
| Prairie warbler <sup>1</sup>             | GETT                          | GETT, VAFO                   |
| Red-headed woodpecker <sup>2</sup>       | EISE, GETT, HOFU              | EISE, GETT                   |
| Red-shouldered hawk <sup>2</sup>         | — —                           | EISE, JOFL                   |
| Veery <sup>2</sup>                       | HOFU, VAFO                    | ALPO, EISE                   |
| Wood thrush <sup>1,2</sup>               | All parks                     | ALPO, GETT, HOFU, JOFL, VAFO |
| Worm-eating warbler <sup>1,2</sup>       | EISE, HOFU, VAFO              | HOFU, VAFO                   |

<sup>1</sup> Listed on the 1999 State Watchlist for Pennsylvania by the National Audubon Society.

<sup>2</sup> Listed as a species of management concern in the Migratory Nongame Birds of Management Concern for 1995 released by the United States Fish and Wildlife Service.

<sup>3</sup> Listed as state endangered by the Pennsylvania Game Commission.