

**PENNSYLVANIA IMPORTANT BIRD AREA #6
ERIE NATIONAL WILDLIFE REFUGE**

**Phase I Conservation Plan
(Prepared By: John Tautin; May 2004)**

Purpose of the Phase I Conservation Plan: This phase I conservation plan is a preliminary document to: 1) catalogue the natural resources and built environment for each Important Bird Area, 2) identify site boundaries, 3) document the criteria for which it was selected, 4) describe the birds and wildlife habitat which occur on the site with special reference to the species for which the site was selected as an IBA, 5) identify any conservation issues or threats to the site, and 6) provide recommendations for conservation actions to conserve or enhance habitat for bird populations, especially for those species for which the site was selected as an IBA. This Phase I Conservation Plan is intended to augment and expand the one-page site report contained in “A Guide to Critical Bird Habitat in Pennsylvania” (Crossley, 1999). The recommendations are presented from the perspective of bird and wildlife habitat conservation. It is acknowledged that not all the recommendations contained herein may be feasible or affordable. However, the plan is presented as an initial position from which to plan for and implement bird conservation on the site.

Site Name: Erie National Wildlife Refuge (Erie NWR)

Size: 8,777 acres (3,552 hectares)

Ownership:

US Fish and Wildlife Service, with privately owned in-holdings within the authorized Refuge boundary

County/Municipality:

Crawford (Randolph, Richmond, Rockdale and Wayne Townships)

Physiographic Provinces/Bird Conservation Region/Watersheds:

The site is within the Glaciated Pittsburgh Plateau Section of the Appalachian Plateau Province. The IBA is part of the Lower Great Lakes/St. Lawrence Plain Bird Conservation Region #13. The IBA is in the French Creek watershed. French Creek, Pennsylvania’s 2003 River of the Year, is renowned for the abundance and diversity of its aquatic resources. Muddy Creek, Woodcock Creek, and Lake (Sugar) Creek, all major tributaries of French Creek, flow through, or begin on Erie NWR.

Legislative Districts:

3rd Congressional District, U.S. Representative, Phil English (R) – Crawford County
50th Senatorial District, State Senator, Robert D. Robbins (R) – Crawford County

6th House District, State Representative, Teresa Forcier (R) – Randolph, Richmond, Rockdale and Wayne Townships

Stewardship Adoption Status:

Presque Isle Audubon Society has adopted the site through the “ARK” (Audubon Refuge Keeper) program and conducts volunteer activities, although more in an NWR context than an IBA context. The Conneaut Lake/French Creek Valley Conservancy’s charter covers the entire French Creek watershed, but the Conservancy has not had any projects associated with Erie NWR.

IBA Selection Criteria:

- (1a) The site regularly supports numerous waterfowl: ducks (SM*, FM-2500, Canada Goose (SM, FM-4500);
- (1b) The site regularly supports numerous shorebirds: (SM, FM-200);
- (1e) The site is recognized as having an exceptional concentration and diversity of birdlife with 112 nesting species and 237 total species of birds;
- (2) The IBA supports the federally threatened and state endangered Bald Eagle (B-3 pair), and state threatened Sedge Wren (B-1 pair);
- (3) The site supports species of special concern in Pennsylvania such as the Candidate-rare, Marsh Wren (B-13 pair), Candidate-at risk, Northern Harrier (B-2 pr), Candidate-rare, Pied-billed Grebe (B-23pr), and Candidate-rare, Common Snipe (B-6pairr);
- (4a) The site contains diverse wetlands covering an extensive area. Biologically rare/endangered habitats of the IBA, according to the Western Pennsylvania Conservancy, include a shrub fen, graminoid marsh, circumneutral shrub swamp, circumneutral broadleaf-conifer swamp, and medium gradient, clear-water creek;
- (5) Avian research and monitoring projects include banding and research on the Northern Saw-whet Owl migration, banding and research on the effects of hunting on the American Woodcock, a marsh bird monitoring project, and two grassland bird monitoring projects.

Note: Numbers indicate single season maximum documented in recent years.

* SM=spring migration; FM=fall migration; B=breeding; W=winter

Important Avian Habitats:

Forest land, shrub land, grassland and extensive wetlands, including unique ecological wetland communities such as a shrub fen, graminoid marsh, circumneutral shrub swamp and circumneutral broadleaf-conifer swamp.

General Site Description:

Erie NWR was established in 1959 amid a mixture of forests, wetlands, farms and rural residential land in central Crawford County. Erie NWR consists of two separate divisions. Located near Guys Mills, The Sugar Lake Division is the larger (5,206 acres, 2,107 hectares) and more heavily managed division. It lies in a narrow valley that includes the hydrologic divide between Lake Creek, which becomes Sugar Creek, and Woodcock Creek. Both are major tributaries of French Creek. The Seneca Division,

located several miles east of Cambridge Springs, and ten miles north of the Sugar Lake Division, is situated in a forested valley with wetlands associated with low-gradient, meandering Muddy Creek and Dead Creek. Muddy Creek is a major tributary of French Creek. Their confluence is at the western-most edge of the Seneca Division. Together the two Erie NWR Divisions have a wide range of forest, grassland, and wetland habitats, including a critically endangered scrub fern. These habitats are home to numerous vertebrate and invertebrate species that are threatened, endangered otherwise of special concern. Being a NWR, Erie's location, natural resources, and recreational opportunities are well publicized, however, its location away from major population centers makes for modest public use.

Erie NWR contains high-quality forest, shrub lands, grasslands and wetlands critical to maintaining the abundance and diversity of birds found on this IBA. Habitats on Erie NWR have been well documented and mapped. From Kline (1998):

“Twenty-two (22) Natural Heritage Areas are identified in the inventory [Erie National Wildlife Refuge Natural Heritage Inventory]. These areas consist of rare and biologically significant ecosystems, natural communities, and special species and their habitats. Also recognized by the inventory are areas dedicated to the protection of biotic resources via a commitment to hands-off management. The Natural Heritage Areas are summarized below and in Appendix II.

*Plant and animal species of import on a global and/or state-wide basis occur in various habitats within the Refuge's two Divisions. Nineteen (19) special plant and animal species habitats are identified in the inventory. Each of the species that inhabit these sites are of state significance. Two of the animal species, clubshell (*Pleurobema clava*) and bald eagle (*Haliaeetus leucocephalus*), and one of the plant species, drooping bluegrass (*Poa languida*) are also of significance from a global perspective.*

Four natural communities of biological significance are identified in the inventory. Excellent quality graminoid marsh, circumneutral shrub swamp, and medium gradient clearwater creek natural communities occur on the Refuge's Sugar Lake Division. Excellent quality examples of these natural communities are rare or uncommon in the state. The graminoid marsh is also of importance on a regional basis, as graminoid marshes of the size and quality found on the Refuge are rare in the French Creek drainage basin. In the Seneca Division is a shrub fen. Shrub fens are a natural community of global and state significance. This natural community is classified as imperiled or vary rare on a global basis and critically imperiled in Pennsylvania.

An ecosystem of biotic import exists in the Lake Creek stream valley within the Sugar Lake Division. The ecosystem is recognized due to its size, quality, diversity, and ecological viability. The primarily aquatic ecosystem contains a mosaic of natural communities – a graminoid marsh, circumneutral shrub swamp, a low gradient clearwater creek, beaver ponds, a maturing northern hardwood forest, and scattered areas of circumneutral broadleaf-conifer swamp.”

Erie NWR contains over 2,500 acres (1,012 hectares) of good quality, diverse wetlands that consist of beaver floodings, marshes, swamps, creeks, wet meadows, and man-made impoundments. The Refuge qualified as an IBA primarily because of its importance to wetland associated species such as waterfowl, shorebirds, and the Bald Eagle. Thus, relative to birds, wetland habitat is the most critical habitat on the Erie NWR IBA. One might also extend the argument to plants. For example, Mohawk Run Fen, which is a 5 acre (2 hectare) special wetland, contains at least four plant species of special concern.

Although wetlands may be the most critical avian habitat on Erie NWR, it should be noted that the surrounding shrub communities, the upland hardwood forests, and the managed grasslands are also important and contribute greatly to the abundance and diversity of birds on Erie NWR IBA.

Summary of Birds:

The diversity, quality and size of habitats on Erie NWR, especially the wetlands, are reflected in the diversity of birds. A total of 237 species of birds has been recorded, and 112 breed there. Most North American families of birds are represented.

Erie NWR is an important migratory stopover for waterfowl. Up to 2,500 ducks, including American Black Ducks, use the Refuge during spring and fall migration. Black Ducks are a BCR 13 High Priority Bird. Despite much concern and attention from state, provincial and federal wildlife agencies in eastern North America, including the American Black Duck Joint Venture under the North American Waterfowl Management Plan, Black Duck populations remain well below objectives (USFWS 1998). In addition to migrants, Erie NWR hosts significant numbers of breeding ducks, particularly Wood Ducks, a BCR 13 High Priority Bird, (100+ pairs), and Hooded Mergansers. The Refuge operates a next box program that augments production from natural cavities.

In addition to resident Canada Geese, up to 4,500 migratory Canada Geese use the Refuge during spring and fall migration. Flocks from the Southern James Bay Population and the Atlantic Population occur. Both are BCR 13 High Priority species. Both Populations are stable, but well below population objectives (USFWS 1998). Small numbers of Tundra Swans also use the Refuge during spring migration.

Erie NWR is also an important migratory stopover for shorebirds, and up to 200 individuals can be found during migration periods. The American Woodcock, another BCR 13 High Priority Bird, and a species in long-term decline (USFWS 2003), breeds on the Refuge. Portions of the Refuge are maintained in early successional stages to benefit American Woodcock and other species. Common Snipe (BCR 13 High Priority Bird) are found during migration, and during the breeding season (6 pair).

Two pairs of Bald Eagles (federally-listed threatened, Pennsylvania endangered) nest on the Sugar Lake Division, and another pair nests on the Seneca Division.

Several species of special concern in Pennsylvania nest on Erie NWR (Bald Eagle, Sedge Wren, Northern Harrier, Pied-billed Grebe, Common Snipe, Marsh Wren). Numerous

others occur at times (American Bittern, Great Egret, Peregrine Falcon, Black Tern, Common Tern, Short-eared Owl, Osprey, Upland Sandpiper, Yellow-bellied Flycatcher, Black-crowned Night-heron, Green-winged Teal, Northern Goshawk, American Coot, Swainson's Thrush, Prothonotary Warbler, Long-eared Owl, Saw-whet Owl).

In addition to the above species that qualify Erie NWR as an IBA, the Refuge supports abundant populations of many species of neotropical migrants. Especially notable are the shrub community species such as Yellow Warbler, Common Yellowthroat, Alder Flycatcher and Willow Flycatcher. The Refuge's managed grasslands support populations of Bobolinks, and Field, Vesper, Savannah and Henslow's Sparrows. A small Great-Blue Heron rookery has started on the Seneca Division.

Avian Monitoring Efforts:

Recently, Erie NWR was a study site for the USGS research project, Effect of hunting on survival and habitat use by American Woodcock (*Scolopax minor*) on breeding and migration areas. <http://www.pwrc.usgs.gov/research/sis2002/sispwrcpage38.html> A Saw-whet Owl survey with banding was conducted on Erie NWR as part of Project OwlNet <http://www.projectowl.net.org/index.html>.

Currently (2004) three USFWS monitoring projects are in operation at Erie NWR. Each employs a well-designed, detailed protocol, and two incorporate procedures for estimating detection probability, a perennial statistical issue. Contract ornithologists currently conduct these projects for the Refuge.

- 1) Grassland Breeding Bird Use of Managed Grasslands on National Wildlife Refuges within Region 5 - This intense, double-observer survey is conducted in June on managed grasslands on the Sugar Lake Division.
- 2) Grassland Breeding Bird Survey – This more general point-count survey is conducted four times from late May to mid July at 27 points on the Sugar Lake and Seneca Divisions.
- 3) Marsh Bird Call-back Survey – Thirty-seven (37) points on the Sugar Lake and Seneca Divisions are surveyed three times from early May through mid-July. Rails, Common Moorhen, and Pie-billed Grebe are the primary species sought.

Education/Recreation/Ecotourism Activities and Opportunities:

Environmental education and interpretation is a priority wildlife use at Erie NWR. The Refuge has a visitor's center with small auditorium. Displays can be viewed, and informational brochures are available. Groups and organizations can arrange to view slide shows or movies, go on management tours, or have outdoor classrooms held. Teacher workshops are offered. Refuge staff also participates in off-site activities and events that promote awareness and appreciation of birds. Erie NWR is also a showcase for management activities designed to develop, maintain or enhance wildlife habitat. Examples include the development of moist-soil areas, the planting of native warm-

season grasses for grassland birds, and the maintenance of shrub communities the benefit American Woodcock.

A number of wildlife-compatible recreational activities occur on Erie NWR, including hunting, fishing, bird-watching, wildlife photography, hiking and cross-country skiing. Trails and wildlife viewing areas have been developed. The Refuge publishes a checklist for bird watchers. Areas where recreational activities may not be compatible with wildlife (e.g., Bald Eagle nesting area) are closed to public entry.

Erie NWR is promoted locally and regionally as tourist and recreational destination.

Management/Conservation Issues and Opportunities:

Invasive plant species are presently the greatest threat to the Erie NWR IBA. Although no single species has overwhelmed the landscape at Erie NWR, the number and variety of invasive plants collectively represent a serious threat. Reed Canary Grass, Narrow-leaf Cat-tail and Multi-flora Rose affect the most acreage. Common Reed, Purple Loosestrife, and Eurasian Water-milfoil pose a specific threat to the wetlands of Erie NWR, and Autumn Olive, Japanese Knotweed, Garlic Mustard and the bush honeysuckles affect upland habitats.

Two invasive animals, the Common Carp and Bullfrog, are well-established on Erie NWR, but appear not to have affected birdlife adversely. The Zebra mussel, now found in the French Creek watershed, poses an uncertain threat, particularly for the Seneca Division.

In view of the large amount of wetlands and wetland associated birds at Erie NWR, the potential degradation of water quality in the areas immediately adjacent to Erie NWR, and in the broader French Creek Watershed, poses a perennial threat to this IBA. Although the human population density in the vicinity of the Refuge is low, and negative impacts from farming are minimal, the potential for increased nutrient runoff and sedimentation exists. Also, any increase in acid precipitation could degrade the quality of wetlands on Erie NWR.

A relatively large, private in holding penetrates deeply into the Seneca Division of the Refuge. Although activities on this in holding are minimal and currently do not represent a threat to the integrity and quality of the Refuge, the future impacts of this property are uncertain.

While not particular to Erie NWR, global warming could negatively impact the wetlands and wetland associated birds on the Refuge. Increased temperatures have the potential to evaporate water from the wetland habitats making it difficult for aquatic birds to nest and feed. If precipitation were to increase, surface runoff would increase, bringing more pollution into the wetlands and intensifying eutrophication. Although the research indicates that climate change for the northeastern United States is not to be as severe as predicted elsewhere, but it should be noted that altered management techniques may be necessary to maintain the quality of wetlands on this IBA.

No controversial management or conservation issues currently are associated with Erie NWR. The potential exists, however, for philosophical issues regarding habitat management practices. The Refuge actively manages (manipulates) habitats to benefit certain birds, e.g., establishing and maintaining warm season grasses for grassland birds. Some would argue that passively allowing fields and shrub lands to revert naturally to climax forests is more appropriate in an eastern deciduous biome, especially since forest fragmentation and loss pose serious threats to interior forest species.

Good opportunities to promote avian conservation exist at Erie NWR. The Refuge has outstanding bird habitats, particularly wetlands, and it is in public ownership. It has a conservation mission, well-established partnerships, excellent information and education capabilities, and the authority and technical capability to manage habitat.

Conservation Actions: *The following conservation actions describe current and ongoing efforts by the U.S. Fish and Wildlife Service and private landowners and other conservation partners:*

- Survey and control of invasive plant species
- Maintaining nest boxes for Wood Ducks, Blue Birds and other species
- Conducting research and monitoring of several species and groups of birds
- Maintaining closed areas around Bald Eagle nests
- Managing wetland and upland habitats for birds
- Conducting educational programs

The following conservation actions described are proposed recommendations for consideration by the U.S. Fish and Wildlife Service, private landowners and other interested organizations, agencies and groups for the maintenance, improvement and enhancement of habitats for birds, especially to optimize habitat value for IBA target species as well as for the promotion of bird conservation through educational outreach:

- Increase efforts to control invasive plant species; invasive plants are currently the most serious threat to avian habitats at Erie NWR;
- Conserve/recover species that are state or federally listed as threatened, endangered, or of special concern;
- Maintain the diversity of avian habitats at Erie NWR;
- Acquire or otherwise protect critical habitats that currently are unprotected within the authorized boundaries of the Refuge;
- Monitor water quality on the Refuge and in the surrounding watersheds;
- Expand avian inventory and monitoring programs;
- Expand educational programs to increase public awareness and appreciation of birds and the IBA program by making Erie NWR a showcase IBA in northwestern PA.

Institutional Partners and Key Contacts:

- Conneaut Lake/French Creek Valley Conservancy (CL/FCVC) Virginia Crowe– 814-337-4321
- Crawford Conservation District (CCD), Lynn Sandieson – 814-724-1793
- French Creek Project (FCP), Brian Hill - 814-332-2946
- The Nature Conservancy (TNC), Darran Crabtree – 814-332-2946
- Pennsylvania Game Commission (PGC), John Dunn – 717-776-7337
- Pennsylvania Fish and Boat Commission (PFBC), Keith Edwards – 814-336-2426
- Pennsylvania Department of Environmental Protection (PA DEP): Tony Talak – 814-336-2426
- Presque Isle Audubon Society (PIAS), Joan Howlett – 814-734-1765
- US Fish and Wildlife Service (US FWS), Jeffrey Haas - 814-789-3585
- Western Pennsylvania Conservancy (WPC), Todd Sampsell – 814-739-9991

References:

Kline, N. L. 1995. Erie National Wildlife Refuge Natural Heritage Inventory – Executive Summary. W. PA Conservancy. Pittsburgh, PA. 11p.

USFWS. 1998. Expanding the Vision: 1998 Update- North American Waterfowl Management Plan. USFWS. Wash. D.C. 32 p.

USFWS. 2003. American Woodcock Population Status. Div. Mig. Bird. Mgmt. Wash. D.C. 22p