

U.S. FISH AND WILDLIFE SERVICE - SPOTLIGHT SPECIES ACTION PLAN

Common Name: Piping Plover, Great Lakes Population

Scientific Name: *Charadrius melodus*

Lead Region: Region 3 (Midwest Region)

Lead Field Office: East Lansing, Michigan

Species Information:

Status: Endangered

Recovery Priority Number: 2C

Recovery Plan: Piping Plover (*Charadrius melodus*) Great Lakes Recovery Plan, September 2003.

Most Recent 5-year Review: September 2009

Threats: Major threats to the Great Lake piping population, which currently numbers only 71 breeding pairs, include habitat degradation, predation, and human disturbance. Costly labor-intensive management to minimize the effects of these continuing threats, as specified in recovery plan tasks, are implemented every year by a network of dedicated governmental and private partners. Funding to support continuation of these activities, however, has not been secured beyond 2010.

Emerging potential threats include disease, wind turbine generators and, potentially, climate change. A recent outbreak of Type E botulism in the Northern Lake Michigan basin resulted in several piping plover mortalities. Future outbreaks in areas that support concentrations of breeding piping plovers could substantially impact survival rates and population abundance. Piping plover populations in the Great Lakes are inherently vulnerable to even small declines in their most sensitive vital rates--survival of adults and fledged juveniles. Therefore, sustaining and recovering the population, also requires maintenance and protection of habitat in their migration and wintering range, where the species spends more than two-thirds of its life cycle.

Five factor analysis:

A. *Present or threatened destruction, modification or curtailment of habitat or range:* Shoreline development continues as the leading cause of habitat destruction in the Great Lakes.

B. Overutilization for commercial, recreational, scientific or educational purposes: Threats posed by commercial, recreational, scientific, or educational purposes remain low or nonexistent.

C. Disease or predation: Predation remains a major threat to the Great Lakes population, while disease has recently emerged as a new potential threat.

D. Inadequacy of existing regulatory mechanisms: Existing regulatory protections are currently insufficient to eliminate all threats to the population in the Great Lakes.

E. Other natural or manmade factors affecting the species' continued existence: Most of the natural and manmade threats outlined in the recovery plan, including human disturbance and small population size, continue to threaten the piping plover's long term viability. Two new threats, wind power development and climate change, have emerged as threats.

Goal: To maintain or improve the status of the Great Lake population of the piping plover. With additional cooperation from other regions of the Service (5, 6, 2 and 4), threats to the Great Lakes, as well as the Atlantic and Northern Great Plains populations, can also be reduced in their non-breeding range.

Measures:

- Increase population abundance
- Reduce the threats of human disturbance and predators
- Initiate long-term agreements for habitat protection and management

Strategic Action:

1. Survey, protect and monitor each piping plover breeding area with a goal of maintaining or increasing population levels, while sustaining wild reproductive success rates at 1.5 or more fledged chicks per adult pair.

Tasks:

- Conduct surveys of known and potential breeding areas to identify nest locations; implement protective measures to limit predation of nests (exclosures) and human disturbance (psychological fencing); and monitor each nest site to determine success.
- Conduct landowner contact and outreach to shoreline property owners and beach users to increase support of piping plover conservation.
- Seek assistance from the developing Great Lakes Landscape Conservation Cooperative for biological planning and conservation design.

Responsible parties: U.S. Fish and Wildlife Service, National Park Service, USDA Forest Service, Michigan Department of Natural Resources, Illinois Department of Natural

Resources, and the Wisconsin Department of Natural Resources. Other partners such as the Nature Conservancy, the Audubon Society, Upper Lake Superior Land Conservancy, Presque Isle State Park and Great Lakes Tribes may also participate.

Estimated costs: Approximate costs for these actions are \$150,000 per year. Actual amounts may vary depending on the number of breeding pairs identified and their locations. Volunteers also contribute to this effort, but the level of contribution varies annually.

Strategic Action:

2. Develop and implement an adaptive approach to predator management in an effort to sustain adult survival rates of 75% or greater.

Tasks:

- Develop a framework for decision making related to predator management in the Great Lakes.
- Initiate predator control measures, as appropriate, at select sites in Michigan and Wisconsin.
- Develop appropriate approaches to address the increasing threat of predation of piping plovers by predatory birds.

Responsible parties: U.S. Fish and Wildlife Service, USDA Wildlife Services, National Park Service, USDA Forest Service, Michigan Department of Natural Resources, Illinois Department of Natural Resources and the Wisconsin Department of Natural Resources.

Estimated costs: Approximately \$100,000 in the initial year, followed by an allocation of approximately \$15,000 annually to support efforts conducted by USDA Wildlife Services in Michigan and Wisconsin.

Strategic Action:

3. Implement a population augmentation strategy that includes salvage captive rearing.

Tasks:

- Continue current salvage captive rearing efforts to augment fledging success rates in the Great Lakes, while continuing to evaluate the impact of the program on recovery.
- Examine alternative approaches to address collections of late-season eggs and the use of addled eggs for genetic or contaminant analysis.

Responsible parties: U.S. Fish and Wildlife Service, the University of Minnesota, the Detroit Zoological Society and other AZA associated zoos.

Estimated costs: Approximately \$35,000 per year to provide supplies and equipment, as well as to support labor and expenses for the participation of zoo staff who maintain the

captive rearing facility in Michigan. Currently staff time for most zoo keepers are paid for by the participating zoo. Supplemental funds to cover labor costs may be needed in the future. Funding to cover analytical cost is estimated at \$20,000 per year.

Strategic Action:

4. Conduct vital research on population demographics, genetics and the impact of predators on survival rates.

Tasks:

- Continue banding program aimed at banding all chicks and adults in the population.
- Complete demographic data analysis and update population models to determine extinction risk.
- Collect egg, feather and other tissue samples as available for genetic analysis.
- Initiate a study of predator-prey relationships involving piping plovers and predatory birds such as merlins.

Responsible parties: U.S. Fish and Wildlife Service and the University of Minnesota. Other universities may participate in the future.

Estimated costs: Approximate costs for the proposed research are \$75,000.

Strategic Action:

5. Initiate a process of developing long-term agreements with agencies and landowners for piping plover habitat protection and management.

Tasks:

- Develop a proto-type agreement to assure long-term protection of Great Lakes piping plovers and their habitat at an important site(s) in Michigan or Wisconsin.
- Complete work initiated by the Michigan Department of Natural Resources to identify and develop a pilot management plan for coastal areas containing multiple rare, threatened or endangered species.

Responsible parties: U.S. Fish and Wildlife Service, National Park Service, USDA Forest Service, Michigan Department of Natural Resources, Illinois Department of Natural Resources and the Wisconsin Department of Natural Resources. Other partners such as The Nature Conservancy, the Audubon Society, and Upper Lake Superior Land Conservancy may also participate

Estimated costs: Projected costs for this action over the life of the plan are approximately \$20,000.

Role of other ESA programs

Section 6 grants have been an integral source of funding of the piping plover recovery program in Michigan, and more recently Wisconsin. Continued allocation of section 6 funds will be important to sustain current efforts.

Consultation with other Federal agencies under section 7 of the action also provides the opportunity to reduce threats, such as those associated with shoreline development and navigational improvements. Field Offices, particularly those in Michigan, Illinois and Wisconsin, regularly consulted with other agencies on such actions.

Role of other FWS programs

The Service's refuge program is currently involved in piping plover recovery. Staff from the Seney National Wildlife Refuge have assisted in breeding area protection at Whitefish Point in Michigan and have supported survey, monitoring and protection efforts at other locations in the Upper Peninsula of Michigan. Continued participation in the recovery program is strongly encouraged.

The Migratory Bird Program has identified piping plovers as a high priority species in their Upper Mississippi and Great Lakes Region Joint Venture Shorebird Habitat Conservation Strategy. Implementation of various components of the Strategy could compliment current recovery program activities.

The Fisheries Resource Office in Ashland, Wisconsin has also supported efforts in the Apostle Islands National Lakeshore, and their continued assistance would aid in local recovery efforts.

Additional funding analysis

As indicated, funds to support the measures indicated above have not been identified. A portion of funding needs through the ESA section 6 program will be available in 2010, but no other funding sources have been secured.

In addition to what is needed to complete the currently identified measures on the breeding grounds, additional funds are needed to help address threats to piping plovers throughout their migration and wintering range. The recently completed 2009 5-year review identifies progress towards long-term maintenance of wintering habitat sufficient to support all three breeding populations (Atlantic Coast recovery plan delisting criterion 5, Great Lakes recovery plan delisting criterion 3, Northern Great Plains recovery plan recovery criterion B) as a high priority. This can be attained by:

- Developing a comprehensive conservation plan for piping plovers in the U.S. portion of their coastal migration and wintering range that briefly summarizes important information about biology, habitat use, and threats and outlines the tasks needed to conserve the species in this portion of its life cycle. Preliminary cost estimate - \$75,000
- Conduct a study to refine understanding of factors that determine use of wintering habitats with emphasis on understanding their effects on piping plover fitness. Preliminary cost estimate - \$125,000 per year for 4 years

Strategic Action	Listing Factor(s)	Tasks	Priority	Implementing Party	2010			2011			2012			2013			2014		
					Resource Needed	Resource Secured	Resource Request	Resource Needed	Resource Secured	Resource Request	Resource Needed	Resource Secured	Resource Request	Resource Needed	Resource Secured	Resource Request	Resource Needed	Resource Secured	Resource Request
Survey, protect and monitor each piping plover breeding area with a goal of maintaining or increasing population levels, while sustaining wild reproductive success rates at 1.5 or more fledged chicks per adult pair.	All	Conduct surveys of known and potential breeding areas to identify nest locations; implement protective measures to limit predation of nests (exclosures) and human disturbance (psychological fencing); and monitor each nest site to determine success	1	USFWS, US Forest Service, National Park Service, MI DNR, WI DNR, IL DNR, U of Minnesota, NGO's	\$130,000	\$35,000	\$50,000	\$130,000	\$0.	\$130,000	\$130,000	\$0.	\$130,000	\$130,000	\$0	\$130,000	\$130,000	\$0	\$130,000
		Conduct landowner contact and outreach to shoreline property owners and beach users to increase support of piping plover conservation.	7	USFWS, MI DNR, IL DNR, WI DNR, U of Minnesota	\$10,000	\$0	\$10,000.	\$10,000.	\$0.	\$10,000.	\$10,000.	\$0.	\$10,000	\$10,000	\$0	\$10,000	\$10,000	\$0	\$10,000
		Coordinate survey and nest protection activities among federal, state and local partners	2	USFWS, U of Minnesota	\$5,000	\$5,000	\$5,000	\$5000	\$0	\$5,000	\$5,000	\$0	\$5,000	\$5000	\$0	\$5,000	\$5000	\$0	\$5,000
Develop and implement an adaptive approach to predator management in an effort to sustain adult survival rates of 75% or greater.	C	Develop a framework for decision making related to predator management in the Great Lakes.	5	USFWS, USDA Wildlife Services, Forest Service, National Park Service, MI DNR, U of Minnesota	\$15,000	\$0	\$15,000	\$5,000	\$0	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		Initiate predator control measures, as appropriate, at select sites in Michigan and Wisconsin.	4	USFWS, USDA Wildlife Services, Forest Service, National Park Service, WI DNR, MI DNR, U of Minnesota	\$10,000	\$6,000	\$4,000	\$15,000	\$0	\$15,000	\$15,000	\$0	\$15,000	\$15,000	\$0	\$15,000	\$15,000	\$0	\$15,000
		Develop appropriate approaches to address the increasing threat of predation of piping plovers by predatory birds.	10	USFWS, USDA Wildlife Services	\$20,000	\$0	\$20,000	\$0	\$0	\$0	\$0	\$0.	\$0	\$0	\$0	\$0	\$0	\$	\$0
Implement a population augmentation strategy that includes salvage captive rearing.	A, C	Continue current salvage captive rearing efforts to augment fledging success rates in the Great Lakes.	3	USFWS, Zoos, U of Minnesota	\$30,000	\$5,000	\$25,000	\$30,000	\$0	\$30,000	\$30,000	\$0	\$30,000	\$30,000	\$0	\$30,000	\$30,000	\$0	\$30,000
		Examine alternative approaches to address collections of late-season eggs and the use of addled eggs for genetic or contaminant analysis.	14	USFWS, Zoos, U of Minnesota	\$10,000	\$0	\$5,000	\$5,000	\$0	\$5,000	\$5,000	\$0	\$5,000	\$5,000	\$0	\$5,000	\$5,000	\$0	\$5,000
Conduct vital research on population demographics, genetics and the impact of predators on survival rates.	A, C, E	Continue banding program to support population modeling and viability analysis	6	University of Minnesota	\$4,000	\$4,000	\$0	\$4,000	\$0	\$4,000	\$4,000	\$0	\$4,000	\$4,000	\$0	\$4,000	\$4,000	\$0	\$4,000
		Complete demographic data analysis and update population models to determine extinction risk.	9	University of Minnesota	\$20,000	0	\$20,000	\$10,000	\$0	\$10,000	\$5,000	\$	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0
		Conduct genetic research on population diversity	12	University of Minnesota, USGS	\$35,000	0	\$35,000	\$5,000	\$0	\$5,000	\$5,000	\$0	\$5,000	\$5,000	\$0	\$5,000	\$5,000	\$0	\$5,000
		Initiate a study of predator-prey relationships involving piping plovers and predatory birds such as merlins	13	University of Minnesota, USDA Wildlife Services, USFWS	\$15,000	0	\$15,000	\$5,000	\$0	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Initiate a process of developing long-term agreements with agencies and landowners for piping plover habitat protection and management	A	Develop a proto-type agreement to assure long-term protection of Great Lakes piping plovers and their habitat at an important site(s) in Michigan or Wisconsin.	8	USFWS, MI DNR, IL DNR, WI DNR	\$15,000	\$0	\$15,000	\$10,000	\$0	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		Complete work on a task begun by the Michigan Department of Natural Resources to identify and develop a pilot management plan for coastal areas containing multiple rare, threatened or endangered species	11	USFWS, MI DNR, IL DNR, WI DNR	\$5,000	0	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$	\$0	\$0