

U.S. Fish & Wildlife Service

Wyandotte

National Wildlife Refuge

Comprehensive Conservation Plan and Environmental Assessment

Wyandotte National Wildlife Refuge Comprehensive Conservation Plan

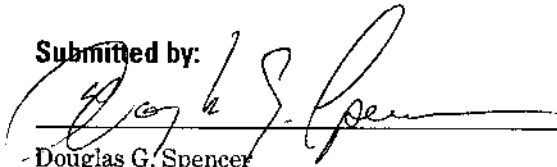


Wyandotte National Wildlife Refuge

Comprehensive Conservation Plan Approval

U.S. Fish and Wildlife Service, Region 3

Submitted by:

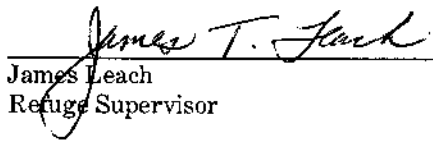


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Acknowledgments

Because it will serve as a guide to Refuge management for the next 15 years, public input into the Comprehensive Conservation Plan is vital. The Wyandotte National Wildlife Refuge staff and the planning team are grateful to all of the people who have contributed their time, expertise and ideas through open houses and written comments. All of your ideas have been valuable and will contribute to the success of this plan.

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Chapter 1: Introduction and Background

Introduction

“Detroit” brings to mind automobiles, industry, and the Motown sound. It does not bring to mind wildlife and nature. Detroit has the Red Wings, it does not have red-winged blackbirds. Detroit has the Tigers, it does not have tiger salamanders. Indeed, in our mind and in reality, most of what was natural in and around Detroit is gone. Yet within the concrete, steel, and groomed gardens of the Detroit metropolitan area exists Wyandotte National Wildlife Refuge. And, Wyandotte National Wildlife Refuge is contaminated.



What does this speck of 394 acres in the midst of 5 million people offer to wildlife?

We answer that question in this Comprehensive Conservation Plan. We describe the historical and current conditions of the area. We describe the creation of the Refuge. We describe our vision for its future.

Our view for the future of Wyandotte National Wildlife Refuge reflects our attitude and our faith in nature. One possible view would have been to look at what has been lost, wring our hands, and give up. Another possible view is to recognize what is left, value it, and work for its preservation. We have chosen the second view.

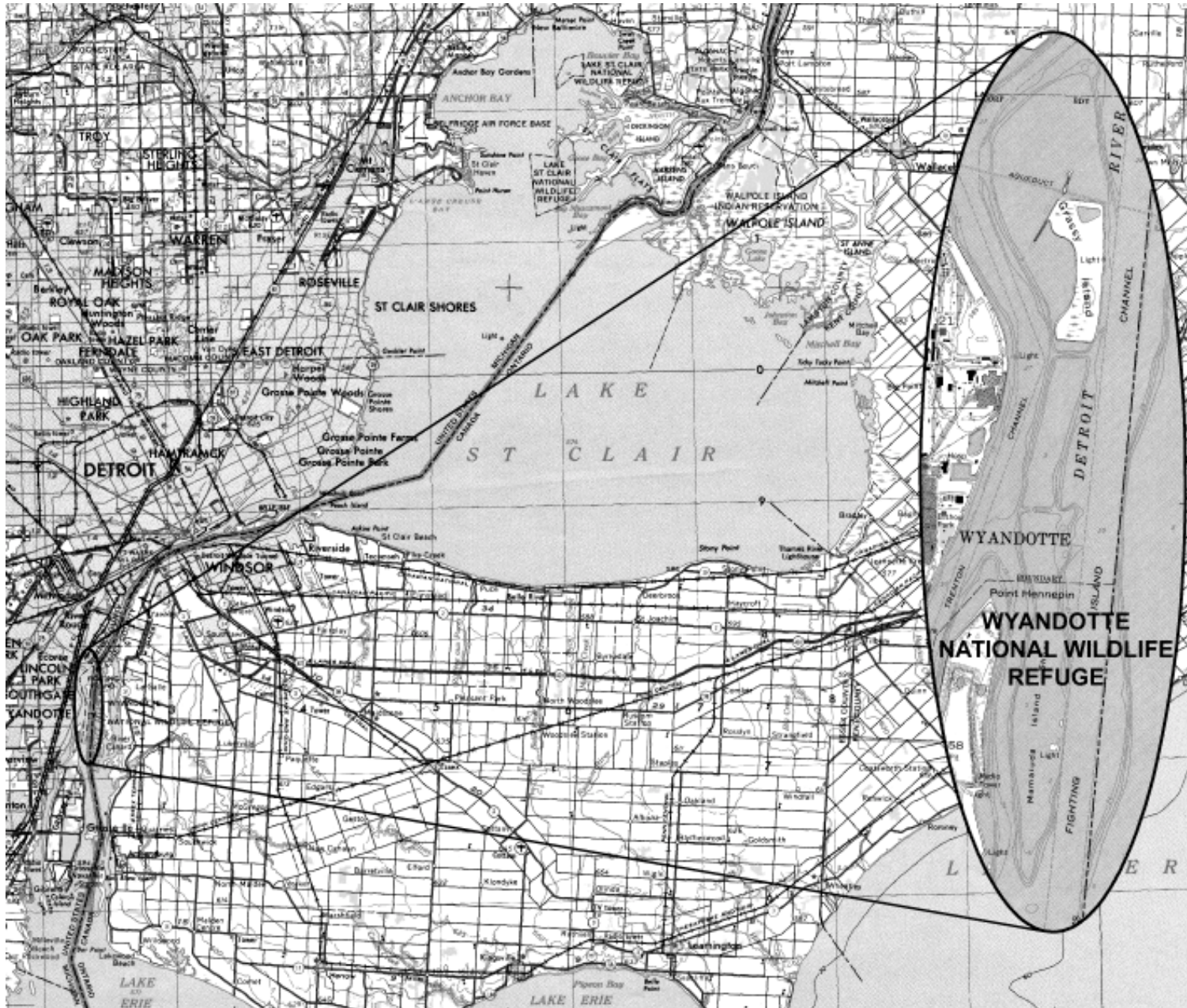
Our view is influenced by the recognition of wildlife's persistence. Despite almost complete conversion of the river bank to concrete and steel, despite elimination of more than 95 percent of the coastal wetlands, despite decades of industrial pollution, the lower Detroit River remains a globally significant area for congregating waterfowl, especially diving ducks.

We intend to make Wyandotte National Wildlife Refuge safer for wildlife. We intend to work with others beyond our boundaries to preserve and improve other areas in the ecosystem for wildlife. We intend to fulfill the purpose of Wyandotte National Wildlife Refuge “...as a refuge and breeding place for migratory birds and other wildlife...” (Public Law 87-119, 75 Stat. 243, 87th Congress, H.R. 1182, dated August 3, 1961). In this plan we describe our intended actions for the next 15 years.

Refuge Location

The Refuge is located in the Lower Detroit River, in the cities of Wyandotte and Ecorse in Wayne County, Michigan. When created, the Refuge consisted of two islands, Grassy and Mamajuda, and the shallow water shoals around the islands. Since the Refuge's creation, Mamajuda Island has decreased in size and is

Figure 1: Wyandotte National Wildlife Refuge



exposed only during low water levels. Both islands are located on a bar that lies between the Trenton and Fighting Island ship channels in the central part of the Detroit River. This bar extends from the mouth of the Ecorse River to the head of Grosse Ile, a distance of approximately 3.5 miles. It ranges from one-quarter to one-half mile in width and at present it is covered with 3 to 8 feet of water. At the present time, only 72 acres of Grassy Island are exposed. The 18.5-acre Mud Island and 71.5 acres of submerged aquatic shoals were added to the Refuge on June 14, 2001, bringing the entire Wyandotte National Wildlife Refuge to 394 acres in size.

Purpose Of and Need For the Plan

This Comprehensive Conservation Plan, or CCP, identifies the role the Refuge will play in supporting the mission of the National Wildlife Refuge System and provides guidance for Refuge management. The plan articulates management goals for the next 15 years and specifies objectives and strategies that will achieve those goals. Several legislative mandates within the National Wildlife Refuge System Improvement Act of 1997 have guided the development of this plan. These mandates include:

- Wildlife has first priority in the management of refuges.
- Wildlife-dependent recreation activities of hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation are the priority public uses of the National Wildlife Refuge System. These uses will be facilitated when they do not interfere with our ability to fulfill the Refuge's purposes or the mission of the National Wildlife Refuge System.
- Other uses of the Refuge will only be allowed when they are determined to be appropriate and compatible with the Refuge purposes and mission of the National Wildlife Refuge System.

This CCP will enhance the management of the Wyandotte National Wildlife Refuge by:

- Providing a clear statement of direction for future management of the Refuge.
- Giving Refuge neighbors, visitors, and the general public an understanding of the Service's management actions on and around the Refuge.
- Ensuring that the Refuge's management actions and programs are consistent with the mandates of the National Wildlife Refuge System.
- Ensuring that Refuge management is consistent with Federal, state and county plans.
- Establishing continuity in Refuge management.
- Providing a basis for the development of budget requests on the Refuge's operation, maintenance, and capital improvement needs.

The U.S. Fish and Wildlife Service

“Working with others to conserve, protect, and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people.”

Mission of the U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is the primary Federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people. Specific responsibilities include enforcing Federal wildlife laws, managing migratory bird populations, restoring nationally significant fisheries, administering the Endangered Species Act, and restoring wildlife habitat such as wetlands. The Service also manages the National Wildlife Refuge System.



The National Wildlife Refuge System

“To administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Mission of the National Wildlife Refuge System

Managing the National Wildlife Refuge System has evolved into a significant role for the Service. Founded in 1903 by President Theodore Roosevelt with the designation of Pelican Island as a refuge for brown pelicans, the National Wildlife Refuge System is the world’s largest collection of lands specifically managed for fish and wildlife. The System is a network of more than 500 national wildlife refuges encompassing more than 93 million acres of public land and water. The majority of these lands – 82 percent – is in Alaska, with approximately 16 million acres spread across other states and several island territories. Refuges provide habitat for more than 5,000 species of birds, mammals, fish, and insects. Like Pelican Island, many early national wildlife refuges were created for herons, egrets and other water birds. Others were set aside for large mammals such as elk and bison. Most refuges, however, have been created to protect migratory waterfowl. This is a result of the United States’ responsibilities under international treaties for migratory bird conservation as well as other legislation, such as the Migratory Bird Conservation Act of 1929. A map of the National Wildlife Refuge System shows refuges dotting the four major flyways that waterfowl follow from their northern nesting grounds to southern wintering areas (Figure 2).

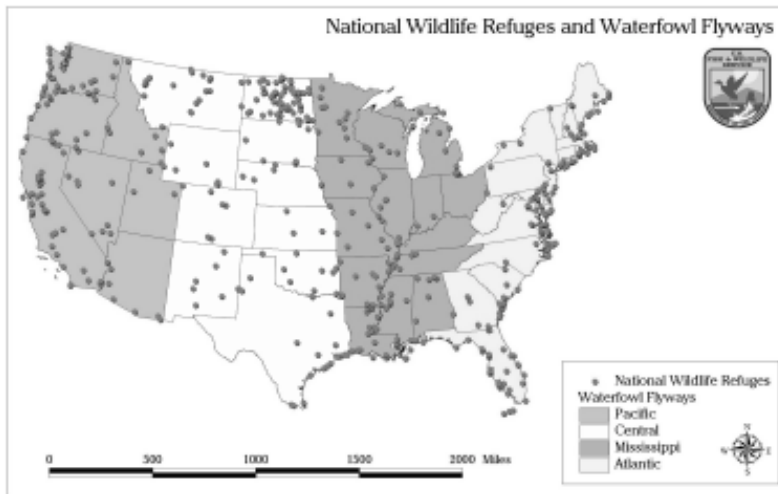


National wildlife refuges also play a vital role in preserving endangered and threatened species. Among the refuges that are well known for providing habitat for endangered species are Aransas National Wildlife Refuge in Texas, the winter home of the whooping crane; the Florida Panther Refuge, which protects one of the nation’s most endangered mammals; and the Hawaiian Islands Refuge, home of the Laysan duck, Hawaiian monk seal, and many other unique species.

Refuges also provide unique opportunities for people. When it is compatible with wildlife and habitat needs, refuges can be used for wildlife-dependent activities such as hunting, fishing, wildlife observation, photography, environmental education and environmental interpretation. Many refuges have visitor centers,

Wyandotte National Wildlife Refuge

Figure 2: National Wildlife Refuge System



wildlife trails, automobile tours, and environmental education programs. Nationwide, more than 30 million people visited national wildlife refuges in 1997.

The National Wildlife Refuge System Improvement Act of 1997 established many mandates aimed at making the management of national wildlife refuges more cohesive. The preparation of comprehensive conservation plans is one of those mandates. The legislation requires

the Secretary of the Interior to ensure that the mission of the National Wildlife Refuge System and purposes of the individual refuges are carried out. It also requires the Secretary to maintain the biological integrity, diversity, and environmental health of the Refuge System.

Existing Partnerships

Partnerships with other Federal agencies as well as tribal, state, and city governments and schools are an important element in refuge management. Other agencies can provide invaluable assistance in research and maintenance. Partnerships with private groups greatly enhance public investment in the refuge, building enthusiasm for its mission and support in funding issues.

In addition to the official partnerships that the U.S. Fish and Wildlife Service holds on a national level, Shiawassee National Wildlife Refuge staff work with the U.S. Environmental Protection Agency, the Biological Resources Division of the U.S. Geological Survey, and the Service's Fishery Resources Office in managing Wyandotte National Wildlife Refuge. We also are active participants in American Heritage River activities for the Detroit River.

Legal and Policy Guidance

In addition to the Refuge's establishing authority legislation and the National Wildlife Refuge System Improvement Act of 1997, several Federal laws, executive orders, and regulations govern its administration. The Refuge also operates under a Memorandum of Understanding between the Department of Interior and the U.S. Coast Guard for the management of navigational aids on the islands. See Appendix F for the authorizing legislation, memorandum of understanding, and a list of the guiding laws and orders.

Chapter 2: The Planning Process

Introduction

The planning process for this comprehensive conservation plan began in December 1997. Initially, members of the regional planning staff and Refuge staff identified a list of issues and concerns that were associated with the management of the Refuge. These preliminary issues and concerns were based on staff knowledge of the area and contacts with citizens in the community. Refuge staff and Service planners then asked Refuge neighbors, organizations, local government units, and interested citizens to share their thoughts at an open house.

In February 1999, the public was invited to an open house, which was held in the Wyandotte City Hall. Six people attended the open house. Service staff accepted oral and written comments at the open house and written comments were received after the open house. Three written comments were received.

Issues

Members of the public and staff raised a diverse range of issues. The issues are organized by themes—habitat, public use, resource protection—and discussed as follows.

Habitat Issues

Contamination issues on Grassy Island have prompted some people to suggest eliminating the island from the Refuge System. Other people suggest reviewing the remaining natural islands and coastal wetlands in the area for protection within the Refuge System.

Public Use Issues

There are outstanding questions at Wyandotte National Wildlife Refuge regarding the extent of public use that is appropriate for the Refuge. Some of the participants said that access for hunting and trail uses should be expanded; others said that a clear statement regarding hunting is needed. Contamination issues at Grassy Island create unique management decisions, including whether recreational use should be prohibited until contamination issues are resolved.

Resource Protection Issues

Grassy Island, the main island encompassed in Wyandotte National Wildlife Refuge, has significant contamination. The preliminary discussion of how to deal with the contamination on Grassy Island includes capping and sealing the island or removing all the fill down to the parent material. Participants suggested that wildlife should be discouraged from use of the island pending removal of contaminants from the reach of wildlife and human activity.

Chapter 3: The Refuge Environment

Geographic/Ecosystem Setting

The Great Lakes Basin Ecosystem

The U.S. Fish and Wildlife Service has implemented an ecosystem approach to fish and wildlife conservation. Under this approach the Service's goal is to contribute to the effective conservation of natural biological diversity through perpetuation of dynamic, healthy ecosystems by using an interdisciplinary, coordinated strategy to integrate the expertise and resources of all stakeholders.

Wyandotte National Wildlife Refuge lies within the Great Lakes Basin Ecosystem, a system shared with Canada and eight states. The ecosystem is made up of the world's largest freshwater body, which holds 18 percent of the world's supply



of freshwater, covers 95,000 square miles, has 9,000 miles of shoreline, over 5,000 tributaries, and a drainage basin of 288,000 square miles. A refuge land status map is included on page 9 and a map showing vegetation types follows on page 10.

Biological concerns within the ecosystem include the impact of exotic species, the precarious nature of the aquatic community structure, and contaminant levels. Various fish and wildlife activities, drinking water, recreation, hydropower production, industrial waste

supply, waste disposal, and commercial navigation affect the natural resources in the ecosystem. The basin contains critical breeding, feeding, and resting areas as well as migration corridors for waterfowl, colonial nesting birds, non-game birds, and many species of migratory birds.

Within the Great Lakes basin certain species have drawn special concern. Fish species of special interest include lake trout, lake sturgeon, lake whitefish, walleye, Pacific salmon, and landlocked Atlantic salmon and their forage. There is a concern for native mussels because they are being seriously impacted by zebra mussels and are in danger of extirpation from the Great Lakes Basin. Thirty-one species of migratory non-game birds of management concern to the Service are found in the Great Lakes ecosystem.

A recent survey of biological diversity in the basin identified 130 globally rare or endangered plant and animal species. The bald eagle, peregrine falcon, Kirtland's warbler, piping plover, Mitchell's satyr blue butterfly, Indiana bat, gray wolf, lake sturgeon, deepwater sculpin, and supnose shiner are some of the threatened, endangered, and candidate species that inhabit the Great Lakes ecosystem. The bald eagle and lake sturgeon have been observed at Wyandotte National Wildlife Refuge. The Great Lakes Basin Ecosystem is divided into seven focus areas. The Lower Detroit River focus area contains the Wyandotte National Wildlife Refuge. The Refuge is also within the St. Clair/Detroit River focus area identified by the Midwest Natural Resources Group, which consists of 14 Federal agency partners.

The Detroit River¹

The U.S. Environmental Protection Agency and Environment Canada have identified the Detroit River as a portion of the Great Lakes shoreline with significant concentrations of coastal wetlands and distinctive characteristics (U.S. Environmental Protection Agency and Environment Canada, 1999). In 1990, Region 3 designated the marshes associated with Lake Erie and the Detroit River as a wetland focus area within the *Regional Wetlands Concept Plan*.

The Detroit River consists of a 32-mile-long channel bordered by a poorly drained clay lake plain. The rapidly flowing river is underlain by limestone bedrock. Heavy industrial development dominates the shoreline. The River has 66 miles of Canadian shoreline, 79 miles of U.S. shoreline, five Canadian wetlands with 2,808 acres, and 16 U.S. wetlands with 3,415 acres. The wetlands are principally of two types: (1) channel-side (fringing) wetlands with mineral and organic soils and (2) submergent beds of vegetation with mineral soil, cobble, and limestone bedrock. The submergent beds, which once characterized large portions of the river, have been degraded, and the fringing emergent marsh has been almost completely destroyed. At one time extensive wild celery beds were important for diving ducks. After a decline in the beds from the 1950s to the 1970s, it appears that the beds are recovering and may be at the levels that existed in the 1950s.

The Detroit River wetlands provide spawning areas for 26 percent of the fish species in the Great Lakes and nursery areas for 20 percent of the species. Compared with other shoreline reaches in the Great Lakes, the Detroit River is above the 50th percentile for providing spawning and above the 75th percentile for nursery areas. One hundred species of breeding birds (approximately 50 percent of the breeding birds of Ontario) use the Detroit River wetlands along the Canadian shoreline. We expect equivalent bird use in the U. S. wetlands.

In their evaluation of the importance of the Detroit River wetlands, the EPA and Environment Canada noted that although the wetlands are important for a large number of plant and animal species, the number of rare species in coastal wetlands is very low. In valuing the various shoreline reaches, the agencies weighed the distribution, size, uniqueness, and quality of wetlands. They acknowledged the general perception that the Detroit River's large submergent vegetation beds provide important habitat for migrating waterfowl and nursery areas for fish. However, they identified the wetlands along the Detroit River as deserving high priority not only because they serve as important habitat for a large number of fish and bird species, but especially because there are so few wetlands remaining in the area.

Figure 3: Historic Spawning Areas



¹ Primary source material for this section is U.S. Environmental Protection Agency and Environment Canada, 1999.

Figure 4: Refuge Land Status Map

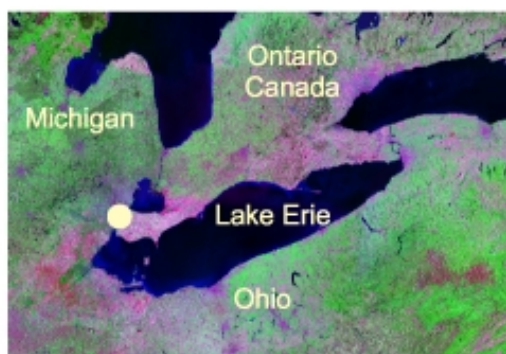
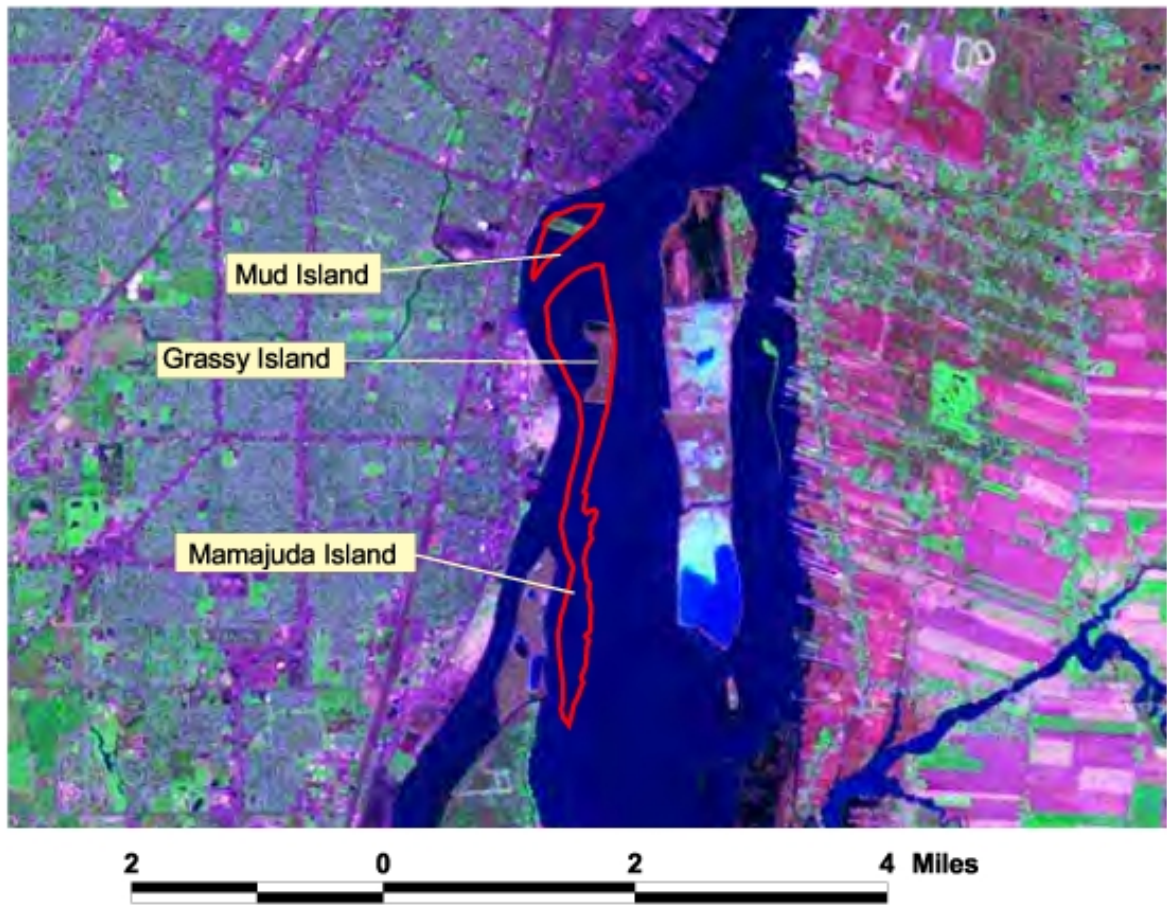
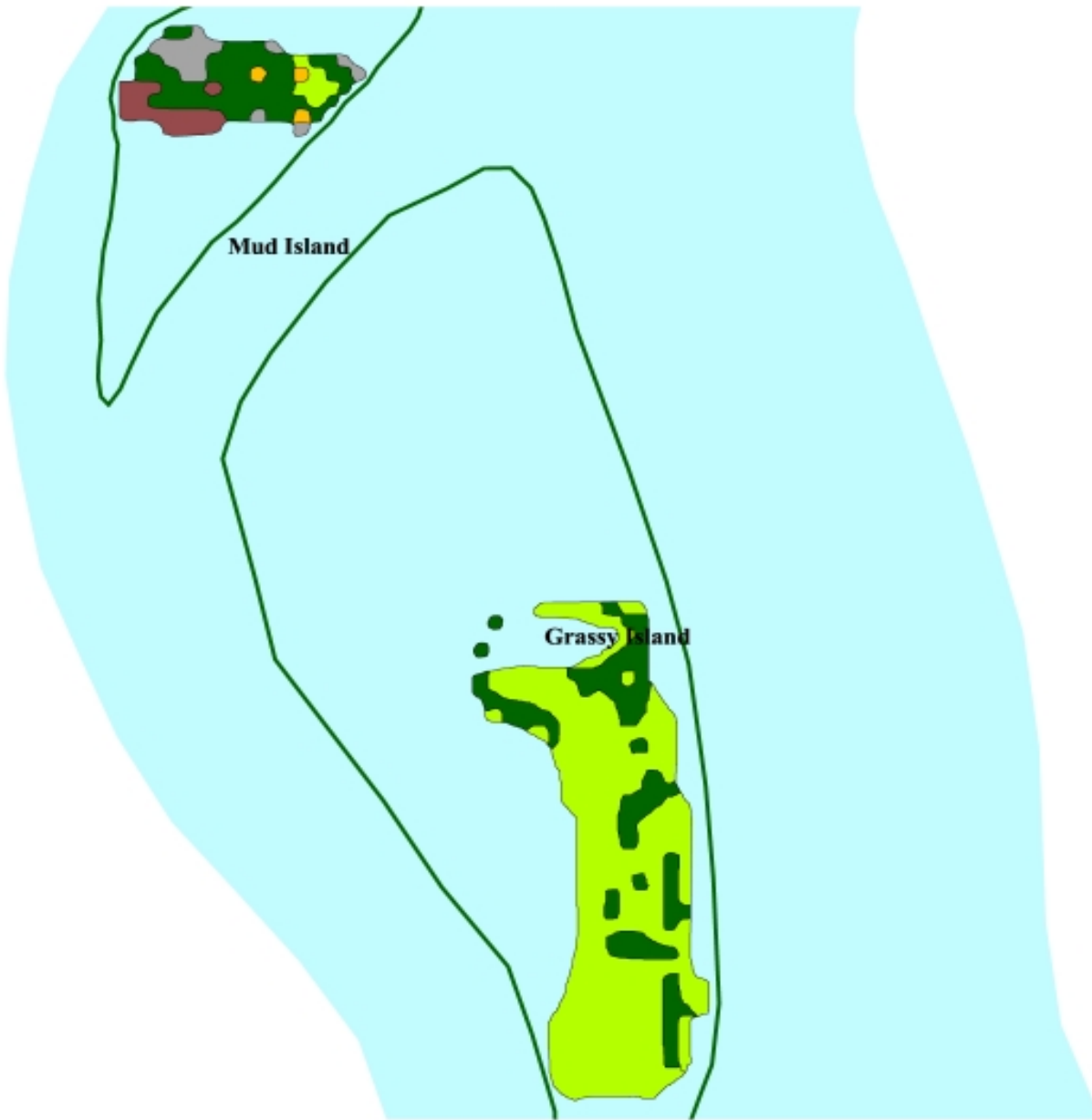


Figure 5: Vegetation Types



0.25 0 0.25 0.5 0.75 Miles

Land Cover Data Set	Grassy Island (Acres)	Mud Island (Acres)	
Developed (Non-residential)		3.4	The land cover for Mud and Grassy Islands was developed from the Michigan Land Cover Data Set produced by the Multi-resolution Land Characterization (MRLC) Consortium. The Michigan Land Cover Data Set is part of the National Land Cover Dataset which was compiled from Landsat satellite TM imagery (circa 1992) with a spatial resolution of 30 meters. The NLCD classification contains 21 different land cover categories with a spatial resolution of 30 meters
Deciduous Forest	15.8	11.0	
Urban Grasses		0.7	
Woody Wetland		3.6	
Emergent Herbaceous Wetland	55.0	1.4	

Challenges to wetlands along the Detroit River include:

- Wetland loss from dredging, filling, and urban and industrial development.
- Contamination by phosphates, heavy metals, oils, and PCBs, especially along the U.S. shoreline.
- Vulnerability to invasive exotic species of plants, fish, and invertebrates
- Many marshes are diked with accompanying problems of being isolated from the river.

Based on the Great Lakes Water Quality Agreement, the Government of Canada and the U.S. Environmental Protection Agency (1995) have listed concerns for the Detroit River. They report the following concerns: degradation of benthic populations; fish tumors and other deformities; restrictions on fish and wildlife consumption; beach closings due to bacteria in the water; restrictions on dredging; taste and odor in drinking water; degradation of aesthetics; and loss of fish and wildlife habitat.

The Detroit River has been designated a binational Area of Concern under the Great Lakes Water Quality Agreement. The U.S. Environmental Protection Agency has the lead on the Remedial Action Plan to restore and protect beneficial uses in the Area of Concern. U.S. Fish and Wildlife Service coordination and collaboration in the Remedial Action Plan process is important to address the restoration and protection of fish and wildlife habitat in the Detroit River.

American Heritage River

The Detroit River was designated as an American Heritage River in 1998. The American Heritage Rivers Initiative is a Federal effort to support the local community's goals for the river by cutting red tape and providing focused Federal support. It is a locally driven program. In Detroit, the private and municipal sectors are the primary forces within the steering committee. Late in 1999, a Federal contact was named for the river and stakeholders held their first major event.

Migratory Bird Conservation Initiatives

Nongame Bird Conservation Initiatives

Nationally and internationally, several nongame bird initiatives have been developed in recent years. Wyandotte National Wildlife Refuge will strive to implement the conservation strategies they outline to the extent possible and practical.

Partners In Flight (PIF) deals primarily with landbirds and has developed Bird Conservation Plans for numerous physiographic areas across the U. S. (see <http://www.partnersinflight.org>). These plans include priority species lists, associated habitats, and management strategies. Wyandotte National Wildlife Refuge lies within Partners in Flight Physiographic Area No. 16, Upper Great Lakes Plain. Species priorities for this area can be found at <http://www.cbobirds.org/pif/physios/16.html>.

The U. S. Shorebird Conservation Plan (see <http://www.manomet.org/USSCP.htm>) and the North American Waterbird Conservation Plan (see <http://www.nacwcp.org>) have regional components that identify priority species and conservation strategies, mostly focused around habitat, that will address the needs of these groups of birds.

All migratory bird conservation programs will be integrated under the umbrella of the North American Bird Conservation Initiative (NABCI). This is a continental effort to have all bird initiatives operate under common Bird Conservation Regions and to consider the conservation objectives of all birds together to optimize the effectiveness of management strategies (see <http://www.dodpif.org/nabci/index.htm>). The goal of NABCI is to facilitate the delivery of the full spectrum of bird conservation through regionally-based, biologically-driven, landscape-oriented partnerships.

North American Waterfowl Management Plan

The North American Waterfowl Management Plan (NAWMP), signed in 1986, outlines a broad framework for waterfowl management strategies and conservation efforts in the United States, Canada, and Mexico. The goal of the NAWMP is to restore waterfowl populations to historic levels. The NAWMP is designed to reach its objectives through key joint venture areas, species joint ventures, and state implementation plans within these joint ventures.

The entire State of Michigan is within the Upper Mississippi River and Great Lakes Region Joint Venture. Areas within Michigan have substantial use by waterfowl during migration, particularly the coastal waters and marshes of Saginaw Bay, the Lake St. Clair and Erie complex, and the eastern Upper Peninsula along the St. Mary's River and northern Lake Huron. However, emphasis for Michigan in the Joint Venture is waterfowl reproduction and the maintenance of healthy populations of other resident wetland wildlife.

Greatest potential to increase Michigan wetland wildlife populations exists on relatively productive lake plain landscapes where agricultural practices have eliminated or significantly altered wetlands and associated uplands. The Michigan implementation strategy emphasizes waterfowl reproduction and does not include migration habitat objectives (1998).

Region 3 Fish & Wildlife Resource Conservation Priorities

The Government Performance and Results Act (GPRA) required the U.S. Fish and Wildlife Service to identify its most important functions and to direct its limited fiscal resources toward those functions. From 1997 to 1999 within Region 3 (Figure 6), a group looked at how best to identify the most important functions of the Service within the region. The group recognized that the Service has a complex array of responsibilities specified by treaties, laws, executive orders, and judicial opinions that dwarf the agency's budget.

Figure 6: USFWS Region 3



The group recognized that at least two approaches are possible in identifying conservation priorities – habitats and species. The group chose to focus on species because (1) species represent biological and genetic resources that cannot be replaced; (2) a focus on species conservation requires a concurrent focus on habitat; and (3) by focusing on species assemblages and identifying areas where ecological needs come together the Service can select the few key places where limited efforts will have the greatest impact. Representatives of the migratory bird, endangered species, and fisheries programs in Region 3 identified the species that require the utmost attention given our current level of knowledge. Representatives prioritized the species based on biological status (endangered or threatened, for example), rare or declining levels, recreational or economic value, or “nuisance” level. The group pointed out that species not on the prioritized list are important too. But, when faced with the needs of several species, the Service should emphasize the species on the priority list.

We have considered the American Heritage River Initiative, the ecosystem context, state-listed species, and the regional resource conservation priorities as we wrote this comprehensive conservation plan.

Refuge Resources, Cultural Values and Uses²

History of the Refuge

Grassy Island appears as a 6-acre marshy area on 1796 maps of the Detroit River. At that time, the river bottom around the island sloped gradually off on all sides into deeper channels. The area was called “Ile Marecageuse” on the 1796 map and “Grassy Island” on later maps. An 1873 fisheries report contains a line drawing of the “Grassy Island Pond Fishery” for spawning whitefish. The drawing depicts a large seine being drawn in by horse-drawn windlasses and several sheds on the island. The fishery employed 30 men, working night and day, September to November and produced 45,000 adult whitefish per spawning season.



Photo courtesy of NOAA
National Marine
Fisheries Service

An executive order in 1843 reserved the islands for lighthouse purposes, and navigation lights have been on the islands for years. In 1955, Grassy Island was under the jurisdiction of the U.S. Treasury Department, which had reserved it for installation of navigation aids by the U.S. Coast Guard. In September 1959, the U.S. Army Corps of Engineers (ACOE) began diking a 300-acre area around Grassy Island for disposal of polluted dredge spoils from the Rouge River. In October 1959, at a meeting between the ACOE, the U.S. Bureau of Sport Fisheries and Wildlife, and the Michigan Department of Conservation, Congressman John D. Dingell negotiated an agreement that the ACOE could continue construction of the Grassy Island Confined Disposal Facility (CDF).

In January 1960, Mr. Dingell introduced legislation to designate Grassy Island and surrounding shoals as a national wildlife refuge because wild celery (*Vallisneria americana*) was abundant and widely distributed near Grassy

² Unless specifically noted, Manny’s 1999 summary is the source for the material in this section.

Island, and wild celery is the preferred food of diving ducks, such as canvasbacks, redheads, and scaup. The area was known to attract thousands of diving ducks during their fall and spring migration. In July 1960, the Department of Interior agreed that if it received jurisdiction over the Grassy Island area, it would not object to the ACOE's continued use of a 72-acre CDF for dredge spoils from the Rouge River. The act to create the Wyandotte National Wildlife Refuge became law on August 3, 1961. The Refuge included Grassy Island and surrounding shoals out to a water depth of 6 feet and an area of about 300 acres extending downstream to the Mamajuda Light near Point Hennepin. The Refuge is administered by the Shiawassee National Wildlife Refuge near Saginaw, Michigan.

General

Wyandotte National Wildlife Refuge was originally a marshy, low-lying area of emergent and submersed vegetation that might be classified today as a Great Lakes coastal marsh. On an 1815 map, such marshes were contiguous along both sides of the entire 32-mile length of the Detroit River. By 1982, shoreline development had reduced the marshes to less than 3 percent of its original area along the Michigan side of the river. Today, only remnants of that marsh, such as Humbug Marsh and portions of Stony Island and Gibraltar Bay at the southern end of Grosse Ile, remain in Michigan waters of the river. These remnants contain stands of bottomland hardwoods, glacial lakeplain prairie, coastal plain pond communities, and a variety of wetland types. Such coastal marshes are used as spawning, nursery, feeding, migration, overwintering, and habitat by many of the 47 species of fish that spawn in the lower Detroit River, including northern pike, muskellunge, largemouth and smallmouth bass, walleye, and possibly lake sturgeon. More than 17 species of birds of prey, or raptors, use coastal marshes as feeding and resting habitat, including eagles, hawks, owls, and falcons. In addition, coastal marshes are used by 48 species of non-raptors that migrate through the Detroit River area each year, including waterfowl, loons, herons, egrets, terns, and neotropical songbirds.

Comparison of Detroit River maps drawn in 1815 and 1982 reveals that:

- More than 97 percent of wetlands in Michigan waters have disappeared under shoreline modifications.
- Ninety percent of the remnant wetlands in the Detroit River are found downstream of Grassy Island.
- About 40 percent of these remnant wetlands are in Humbug Marsh and on small, undeveloped islands forming the "Conservation Crescent" around the southern tip of Grosse Ile.

Because wetland habitats are essential to a high diversity of fish and wildlife species at various stages of their life cycle, such Great Lakes coastal marshes have been classified as globally unique and significant in biological diversity by The Nature Conservancy.

Vegetation

At least 20 species of submersed aquatic macrophytes occur in the Detroit River: wild celery (*Vallisneria americana*), water stargrass (*Heteranthera dubia*), waterweed (*Elodea canadensis*), Eurasian watermilfoil (*Myriophyllum spicatum*), bushy pondweed (*Najas flexilis*) and redhead grass (*Potamogeton richardsonii*) predominate in the vicinity of Grassy Island.

Wyandotte National Wildlife Refuge

Shallow water habitat, gradually sloping off into deeper waters, exists only on the west side of Grassy Island in a small 20-acre bay. Historically, wild celery was abundant and widely distributed near Grassy Island and in the Detroit River system. The extent of wild celery was measured in the 1950s, 1980s, and again in 1996-97. There was a 72 percent decline in wild celery from the 1950s to the 1980s. Now, wild celery has rebounded and is at or exceeds the levels of the 1950s. The increase in wild celery is attributed to increased water clarity in Lake St. Clair and the Detroit River. The increased water clarity is attributed primarily to filtration of the water by zebra mussels (Manny, 2000).

Terrestrial plants on Grassy Island include giant reed grass (*Phragmites communis*), cattails (*Typha spp.*), as well as aspen, cottonwood, willow, wild cherry and box elder trees that provide little suitable habitat for animals. Wildlife use of small ponds on Grassy Island has not been fully characterized.

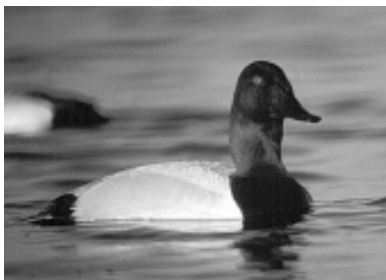
The quality of existing habitats for production of fish and wildlife is low on Grassy Island, due to the monotypic dominance of giant reed grass and exposure to dredged sediments. The quality of habitat on the shoals surrounding Grassy Island is medium, due to contamination of river bottom sediments. The condition of historic fish spawning grounds on the Refuge is unknown.

Approximately 75 percent of Mud Island is forested with more than 20 years growth of deciduous hardwood trees, dominated by red maple, silver maple, white ash, cottonwood and willow. Its surrounding shoals are, on average, 2 feet in depth and support aquatic species such as wild celery.

Fish and Wildlife

Waterfowl

Canvasbacks, common mergansers, and redheads are regularly present in significant numbers along the lower Detroit River during the late fall and winter. A series of waterfowl surveys were conducted by the Michigan Department of Natural Resources in the 1950s. The count-estimates in Table 1 are for an 18-mile segment of the Detroit River from the Ambassador Bridge to the mouth. The Refuge islands and shoals are located in the central part of this segment.



In recent years the Department of Natural Resources has conducted an aerial count of canvasback/diving ducks along the Detroit River in November. The results of the survey are depicted in Table 2.

The Lower Detroit River is designated as an Important Bird Area that is globally significant as a site for congregating waterfowl (<http://www.bsc-eoc.org/iba/site.cfm?siteID=ON047&lang=en>). On average, more than 8,261 Canvasback (greater than 1 percent of the estimated North American population), and 7,000 common mergansers (greater than 1 percent of the estimated North American population) are recorded each year during the annual Christmas Bird Count centered on Rockwood, Michigan. The population of redheads counted in 1997 was 9,011. Other waterfowl species commonly observed on the river include: greater scaup, lesser scaup, common goldeneye, and bufflehead.

During the November counts conducted by the Department of Natural Resources, few waterfowl are seen in the area around the Refuge. In the fall there

Table 1. Count-estimates from Aerial Surveys of Waterfowl for 18-mile Segment of the Detroit River from the Ambassador Bridge to the Mouth. (Miller, 1961)

Year	Winter	Spring	Pre-season	Fall Mid-season	Post-season
1950	23,400	14,000	12,200	7,700	73,500
1951	28,000	21,900	5,300	56,000	63,500
1952	15,100	21,400	5,000	90,200	91,000
1953	45,000	41,400	4,400	30,000	95,000
1954	44,300	55,000	7,000	293,000	54,000
1955	48,400	70,100	4,500	217,000	24,500
1956	19,900	25,300	6,500	43,700	38,500
1957	51,300	41,600	4,850	17,500	41,050
1958	37,300	*	*	29,700	*
1959	86,400	*	*	7,550	*
1960	38,260	*	*	5,470	*
1961	10,300	*	*	*	*

* Census discontinued

appears to be more waterfowl activity in the south end of the River, south of Grosse Ile. In the fall the birds may be moved from the area because of hunting pressure and other activity. However, there is a good deal of hunting activity and success at the Canard River Refuge, which is across the river from the Wyandotte National Wildlife Refuge. In the winter, the waterfowl seem to spread out more widely along the Detroit River. If waterfowl are seen near the Refuge, they are observed in the small bay west of Grassy Island. Over one recent winter, large rafts of canvasbacks were seen in the bay (Manny, 2000). Heavy river current discourages waterfowl use around other parts of the Refuge (Kafkas, 1999).

On Mud Island, extensive beds of aquatic vegetation, particularly wild celery, historically attracted large concentrations of divers, primarily canvasback and scaup. However, in the past 100 years discharges from industrial plants and municipal sewage effluent along with the effects of large, deep draft vessels have degraded the lower Detroit River ecosystem, thus resulting in the substantial decline of these preferred foods. Remnants of the once vast rafts of migratory waterfowl can still be found in the aquatic vegetative beds surrounding Mud Island.

Fish

Lake sturgeon once spawned on the rocky bottom in swift currents just north-east of Grassy Island, one of seven historic spawning areas in the Detroit River. This fish is listed as “threatened” by 19 of the 20 states in its original range, and by seven of the eight Great Lakes states, including Michigan. Recent, incidental catches of genetically unique, juvenile lake sturgeon in Lake Erie near the Detroit River suggest that sturgeon are reproducing again in the Detroit River. More than 10 million walleye, white bass, steelhead, and salmon migrate through the Detroit River each year and attract many sport fishers to the Refuge.

Table 2: November Waterfowl Survey Results for the Lower Detroit River and Northern Portion of Lake Erie (Kafcas, 2000).

Year	Canvasback	Scaup	Bufflehead	Merganser	Goldeneye	Redhead	Total
1995	11,150	8,000	*	275	*	1,500	20,925
1996	400	675	50	400	75	*	1,600
1997	11,250	14,450	20	50	50	400	26,220
1998	750	10,000	150	515	50	800	12,265
1999	600	16,200	20	560	20	100	17,500

* Not Reported

Other Species

Bald eagles, a federally-listed endangered species, have nested recently near Grassy Island. Pheasant, swallow, red-wing blackbird, gulls, terns, Canada geese, woodcock, wood duck, loon, kingfisher, and many species of shorebirds inhabit the Refuge.

Coyote, gray fox, whitetail deer, raccoon, woodchuck, and muskrat have either been seen or identified by signs they left on Grassy Island. A few years ago, a family of river otter was seen near the lower Detroit River. Beaver have recently returned to nearby Livingston, Oakland, and Washtenaw counties.

Two state-listed threatened species have been associated with Grassy Island. The spotted turtle was recorded in the Michigan Natural Features Inventory in 1997. The common tern was recorded in 1977.

Mud Island supports small mammals including rabbits, voles and mice; herptiles such as garter snakes, northern water snakes, turtles, frogs and toads; and avian species including waterfowl, passerine, wading birds and raptors. Occasionally, an eagle can be seen perched on the island and on one occasion a grey fox was observed on the ice adjacent to Mud Island.

Contaminants

In 1960, the ACOE transformed Grassy Island into an 72-acre Confined Disposal Facility (CDF) consisting of two cells surrounded by dikes. Dredged material was hydraulically pumped as a slurry into the receiving cells and allowed to settle. The resulting water was discharged back into the river via an overflow weir.

Because the Grassy Island CDF preceded Public Law 91-611 (1970), which initiated the Great Lakes-wide CDF program, it lacks the confinement technology employed in later CDF designs. The CDF (the first one built by the ACOE in the Great Lakes) was constructed without liners and caps and with sand and clay dikes unprotected by riprap. The original dikes were raised in the 1960s and the capacity further expanded in 1971. The Detroit District of the ACOE operated and maintained the CDF until it was filled in 1982. In 1985 and 1986, the ACOE repaired and reinforced the dikes adjacent to the navigation channel with filter cloth and riprap to prevent their failure from riverine and navigational forces. Both cells remain uncapped and polluted sediments are exposed over much of the CDF.

The Grassy Island CDF contains no impermeable liner or cap and ponds on it are above river level. Therefore, the potential for leakage of contaminants from the Grassy Island CDF is being evaluated. Pathways for contaminant movement include leakage under the dike and exposure to dredge spoils at the island's surface. The risk to biological resources posed by exposure to contaminants in the river and on the island needs to be assessed, as well.

Most of the 1.9-million-cubic-yard design capacity of the CDF has been used. However, each cell of the CDF contains a small open water pond that attracts waterfowl. Most of the CDF supports a mixture of emergent, scrub-shrub, and forested wetland types, which also attracts a variety of wildlife. The CDF dikes also have attracted a small breeding colony of common terns (*Sterno hirundo*).

In 1987 Beyer and Stafford surveyed nine CDFs throughout the Great Lakes. They found that soils within the vegetated portions of the Grassy Island CDF contained some of the highest levels of PCBs, mercury, and other heavy metals. They also found levels of chlordane, and eight PAH compounds that exceeded criteria for exposure by direct contact. Polychlorinated biphenyls (PCBs) and DDT levels in the flesh of waterfowl and woodcock on the island exceeded USFDA Tolerance Levels. Earthworms associated with this soil showed positive bioaccumulation of several of the heavy metals.

In 1987, the U.S. Fish and Wildlife Service's East Lansing Field Office began to identify and quantify contaminants in the sediments of the two small ponds. They also quantified contaminant residues in birds using all habitats on Grassy Island.

In 1994, the U.S. Department of Interior selected Grassy Island as a demonstration site for hazardous materials management. The goal of the initiative is to demonstrate the ability of Interior bureaus to work together to develop remedial action plans and to field test innovative technologies for cleanup of Interior lands. The objectives are to address concerns about land use requirements, trust responsibilities, environmental protection, and natural resource management, while achieving cleanup goals more rapidly and at less cost than current methods.

In 1997, the U.S. Geological Survey's (USGS) Biological Resources Division investigated contamination of surficial soils on Grassy Island and of wild celery tubers growing on shoals surrounding the island. In the same year the USGS's Water Resources Division and the U.S. Fish and Wildlife Service investigated groundwater movements around the island and contaminants in subterranean soils and water. These studies showed that contamination exists in the surficial soils on the island, there is little contamination of the wild celery tubers, and there is a low level of contaminants in the sediments outside the CDF.

With the designation of the Detroit River as an American Heritage River, the remediation of the contaminants found on Grassy Island could be used as a model to encourage others to remediate contaminated sites found throughout the Detroit River area, including Canada.

Public Use

The demands for recreational use on Wyandotte NWR have been high. There have been proposals to install an Olympic Rowing Course (1963) and a city-

sponsored (Wyandotte) recreational area (1963-1999) on the Refuge. The authorizing legislation for the Refuge permits the Service to cooperate with the City of Wyandotte in providing recreation that is consistent with the primary purpose of the Refuge (See Appendix F). Due to the contaminant issue affecting habitat and wildlife and the potential for a contaminant issue to affect human beings, recreation on the island is not a high priority at this time.

Until 1973, the Refuge was closed to boating, fishing and hunting. The original intent for the Refuge was to provide a sanctuary for waterfowl. The sanctuary was to protect the wild celery beds surrounding the islands from propeller damage and provide a resting and feeding area to waterfowl, which otherwise would be moved out of the celery beds through hunting pressure. Service staff would place buoys out to the 6-foot contour line of the Refuge boundary to warn boaters, anglers, and hunters that the area was off limits to recreational use.

In 1973, the Service decided to discontinue the placement of buoys. Maintenance was a leading factor in this decision. The buoys were put out from September to late November, and many were moved by ice and ultimately lost. The cost of replacing buoys and the staff time needed to place them was deemed to be greater than the benefit received. The Service did receive complaints from waterfowl hunters that the buoys were removed and waterfowl weren't provided the protection that the Refuge was established for, but the Service felt the maintenance of the buoys were too expensive to fund. The Service also felt that because Grassy Island and its shoals were annexed by the City of Wyandotte and the City had an ordinance prohibiting hunting, the no hunting ordinance could be enforced by the City. The City, however, has not routinely enforced the ordinance. Hunting does occur in the sheltered bay on the west side of the island. The hunting may be causing some disturbance to the wildlife and habitat.

Due to the concerns of contaminants found on Grassy Island, no public use is allowed on the island.

Cultural Resources³

Responding to the requirement in the law that comprehensive conservation plans will include "the archaeological and cultural values of the planning unit;" the Service contracted for a cultural resources overview study of Shiawassee National Wildlife Refuge and the refuges it administers.

Wyandotte National Wildlife Refuge has one reported site, an abandoned lighthouse. Grassy Island is a "made island with no apparent cultural time depth. Mamajuda Island contains an abandoned lighthouse in ruins. Documentary evidence exists for small scale Indian and Western sites, and the island could have prehistoric sites, but no one has looked.

³This section of the CCP derives mostly from the draft report, "Overview Study of Archaeological and Cultural Values on Shiawassee, Michigan Islands, and Wyandotte National Wildlife Refuges in Saginaw, Charlevoix, Alpena, and Wayne Counties, Michigan," by James A. Robertson and others, Commonwealth Cultural Resources Group, Inc., dated May 1999.

As of June 10, 1999, Wayne County had 339 properties on the National Register of Historic Places. These properties, however, are not indicative of sites that may be on the two islands.

The overview study identified a number of research questions. These questions should be considered in future investigations, including identification-inventory surveys.

The overview study identified Indian tribes, historical societies and museums, and other potentially interested parties that should be consulted in the search for and evaluation of cultural properties on the refuges. No evidence exists for the removal of human remains from the Refuge. Early in the planning stage for every undertaking (as defined in 36 CFR Part 800), the Refuge Manager will notify the Regional Historic Preservation Officer so that qualified analysis and evaluation can be completed and consultation initiated as necessary.

In a further refinement of this CCP and to fulfill requirements of Section 14 of the Archaeological Resources Protection Act and Section 110(a)(2) of the National Historic Preservation Act, we expect to write a cultural resources step-down plan for surveying the Refuge to identify archeological resources and for a preservation program.

Special Topics

Coast Guard Memorandum of Understanding

In 1964, the U.S. Coast Guard raised some questions about its rights and privileges on Grassy Island and Mamajuda Island to erect and maintain navigational aids. In a memorandum of understanding, the Service and the U.S. Coast Guard agreed that the Coast Guard has the right and privilege to operate, maintain, and relocate aids to navigation on Grassy and Mamajuda islands, including the right of ingress and egress for servicing the aids (See Appendix F). The Coast Guard has been maintaining and replacing navigational aids on the Refuge throughout the years.

Land Acquisition

In 1994, the Service began to develop Preliminary Project Proposals (PPP) to acquire lands to preserve, restore and manage nationally significant fish and wildlife habitat within the Lake St. Clair/Detroit River system. These waters and lands would have been additions to the Wyandotte National Wildlife Refuge. Two proposals were written. First, we proposed a transfer of the abandoned Nike Site on Grosse Ile from the U.S. EPA to the Service. Second, we proposed the acquisition of certain coastal wetlands found throughout the connecting channel from Lake Huron to Lake Erie. The second proposal included Calf, Round, Stony, Humbug, Sugar, Fox, and Powder islands; Humbug Marsh and associated uplands; and Point Hennepin, which is the former BASF Corporation property. After a Regional Office review, the Service decided not to pursue the proposals for two reasons. First, we wanted a more thorough evaluation of all lands in the area to facilitate a system approach to our goals. Second, because of higher priority projects, including additions to Shiawassee National Wildlife Refuge, the proposals could not be developed with available staff.

Mud Island Addition

On January 5, 2001, then USFWS Director Jamie Rappaport Clark approved the expansion of Wyandotte National Wildlife Refuge to include Mud Island, an approximately 18.5-acre island with 71.5 acres of submerged aquatic shoals. Mud Island is located northeast of Wyandotte National Wildlife Refuge near the City of Ecorse, Michigan, in the lower Detroit River system. The island and surrounding shoals were donated to the Service by the National Steel Corporation on June 14, 2001. The Regional Director also signed a categorical exclusion exempting the refuge expansion from documentation normally required under the National Environmental Policy Act.

Mud Island is undeveloped and almost entirely forested with more than 20 years growth of deciduous hardwood, primarily maple, ash and cottonwood. The surrounding shoals are, on average, 2 feet in depth and support aquatic species such as wild celery, a significant food source for some species of duck. A survey of the island did not reveal any evidence of contaminants on the island.

Restoration of the island will contribute toward the Service's ecosystem goals by preserving valuable aquatic shoals for the benefit of migratory waterfowl, particularly diving ducks, and it will provide potential spawning habitat for lake sturgeon.

Detroit River International Wildlife Refuge Proposal

In March 2001, Rep. John Dingell (Michigan District 16) introduced a bill that would establish the Detroit River International Wildlife Refuge. If the bill (H.R. 1230) is approved, Wyandotte National Wildlife Refuge would become part of the new international wildlife refuge.

The Planning Team is pressing forward with the preparation of a comprehensive conservation plan for Wyandotte National Wildlife Refuge pending a decision on the creation of an international refuge. We believe that it is worthwhile to complete this planning process. It is hard to estimate how long it might take Congress to act on H.R. 1230 and, if it is ultimately approved, it will take at least a year to complete the necessary interagency coordination that will help define specifics of the expanded refuge. A process to formally evaluate the expansion of the existing refuge boundaries and the revision of the CCP can then begin. Completing the comprehensive conservation plan now will provide direction for the Refuge for as long as it exists in its present form, and in the future it will contribute direction to planning efforts for an international wildlife refuge.

Wilderness Review

The Refuge does not meet the criteria for Wilderness, because:

- Human influence is substantially noticeable.
- There is not opportunity for solitude.
- We can not restore the wilderness character through appropriate management.
- It does not contain features of unusual scientific, educational, scenic, or historical value.

Chapter 4: Refuge Management

Current Refuge Programs

Understanding the contaminants on Grassy Island and protecting the island are currently the primary management activities. The Refuge is posted with refuge boundary signs and an identification sign. Public use of the islands is prohibited. Visits for scientific and educational purposes are allowed by permit only.

Refuge staff visit the Refuge three or four times a year. The purpose of the visits is to be sure the signs are in place, to observe the general conditions on Grassy Island, to clean up litter and debris, and to aid partners in contamination studies. In fulfilling partnership responsibilities, the refuge manager also attends several meetings a year dealing with contaminant cleanup, resource protection, and the American Heritage River Initiative.

The Refuge is the site of active work by the USGS and EPA in evaluating contaminants and exploring alternatives of dealing with them.



Planned Refuge Programs

We recognize that we face major challenges in providing for wildlife in the Detroit River—the Refuge land base is contaminated and development has altered most of the natural system. We ask ourselves, “Can we make a significant difference in this ecosystem? Are our efforts worthwhile?”

We think the answer is “yes” to these questions. At a minimum, we have an obligation to see that the contamination on Grassy Island is contained. Our intent is to find a remedy for the contamination. We envision sealing in the contaminated spoils with an impermeable layer of material.

But beyond the minimum, we expect to restructure the island to benefit wildlife. We do not yet know the engineering requirements for successful containment. That must await further study. Our intent, though, is to work within engineering constraints and to structure the final design in a way that will best benefit wildlife. We expect that nearly all of the vegetation on the island will be removed as part of any sealing process. So, we expect to be starting with a clean slate.

We also do not know how safe the island will be for public use after the contaminants are contained. If the risks are low, we will evaluate whether or not hunting, fishing, wildlife observation, photography, interpretation, and environmental education can be facilitated on the island.

For that part of the Refuge that includes the waters around and downstream of Grassy Island, we intend to learn about the waterfowl use of the area. We know that the Lower Detroit River is important for waterfowl, but we do not know

how big a role the Refuge plays in this importance. We intend to find out. With a better idea of the role the Refuge plays in providing for waterfowl, we will be better able to judge how we should allocate our money and time within the refuges that we manage.

While we are learning about the use, we will more aggressively protect the area for waterfowl. Part of the protection for waterfowl will be increased information dissemination and enforcement of the no hunting regulation during the waterfowl season.

We think that fishing from boats in the waters of the Refuge is compatible with the purposes of the Refuge and in the spirit of facilitating priority uses as specified in the Refuge System Improvement Act of 1997. We intend to amend the Refuge regulations to permit fishing from boats in the Detroit River within the Refuge boundaries.

We intend to allow others to lead any efforts to monitor and restore the lake sturgeon spawning area within the Refuge. We will participate as partners and support the work of others with lake sturgeon.

While we are working intensely with Grassy Island, our intent is to work with others to preserve the remaining lands in the area for wildlife. By preserving coastal marshes and areas of submerged plant beds, we will benefit migrating and wintering waterfowl and spawning and juvenile fish along this international border. Working with the Service's Great Lakes Ecosystem Team and other partners, we will assess and protect the lands in the St. Clair River/Lake St. Clair/Detroit River corridor.

Climate Change Impacts

The U.S. Department of the Interior issued an order in January 2001 requiring federal agencies under its direction that have land management responsibilities to consider potential climate change impacts as part of long-range planning endeavors.

In relation to comprehensive conservation planning for national wildlife refuges, carbon sequestration constitutes the primary climate-related impact to be considered in planning. The U.S. Department of Energy's "*Carbon Sequestration Research and Development*" (U.S. DOE, 1999) defines carbon sequestration as "...the capture and secure storage of carbon that would otherwise be emitted to or remain in the atmosphere."

The land is a tremendous force in carbon sequestration. Terrestrial biomes of all sorts – grasslands, forests, wetlands, tundra, perpetual ice and desert – are effective both in preventing carbon emission and acting as a biological "scrubber" of atmospheric carbon monoxide. The Department of Energy report's conclusions noted that ecosystem protection is important to carbon sequestration and may reduce or prevent loss of carbon currently stored in the terrestrial biosphere.

Preserving natural habitat for wildlife is the heart of any long-range plan for national wildlife refuges. The actions proposed in this comprehensive conserva-

tion plan would preserve or restore land and water, and would thus enhance carbon sequestration. This in turn contributes positively to efforts to mitigate human-induced global climate changes.

Our Vision for the Refuge

The Wyandotte National Wildlife Refuge will be a model for natural and restored systems management, featuring unique coastal marshes, shoals, islands, and terrestrial habitats historically found throughout the connecting channel between Lake Huron and Lake Erie. The Refuge will provide for waterfowl and a rich natural biological diversity. Through effective management and partnering, the Refuge will provide outstanding public use opportunities for present and future generations.

Refuge Goals, Objectives and Strategies

Introduction

This section contains the primary strategies that will define the management direction for the Refuge for the next 15 years (1999-2014). This direction is based on the Refuge System mission, the National Wildlife Refuge System Improvement Act of 1997, the purposes for which the Refuge was established, goals defined for the Great Lakes/Big Rivers Region, as well as agency policies and directives. Congress established Wyandotte National Wildlife Refuge in Public Law 87-119, 75 Stat. 243, 87th Congress, H.R. 1182, dated August 3, 1961 ...”to be maintained as a refuge and breeding place for migratory birds and other wildlife...”.

The goals that follow are general statements of what we want to accomplish in the next 15 years.

The objectives are specific statements of what will be accomplished to help achieve a goal. Objectives describe the who, what, when, where and why of what is to be accomplished. The “when” follows each objective. Strategies listed under each objective specify the activities that will be pursued to realize an objective. The strategies may be refined or amended as specific tasks are completed or new research and information come to light.

In the numbering scheme that follows, the first number represents the number of the goal. The second number represents an objective within that goal. The third number represents a strategy within an objective. Thus, 3.2.1 represents the first strategy for the second objective within the third goal. This numbering scheme is used to index Refuge Operating Needs Projects in Appendix C and personnel needs in Chapter 5.

Goal 1: Contaminant Containment

Remediation of contaminants in the soil and water of Grassy Island

- 1.1 Objective: A clean, safe habitat for wildlife and people within EPA standards on Grassy Island by 2007.

Strategies:

- 1.1.1 Facilitate engineering and feasibility studies for a containment plan through contract, cooperative agreement, or similar device with plan completion by 2003.
- 1.1.2 Ensure that the containment plan includes (1) a detailed landscape plan that will specify desirable habitats and (2) a public use plan that will specify how public use, if feasible, will be facilitated.

Discussion: Because the technical details of containment, possible habitats, and public use are closely interdependent, it is not realistic to specify what habitats are possible and what species these habitats will benefit. The containment plan will necessarily be developed through an iterative design and evaluation cycle. Ideally, the island habitat will be designed to benefit species on the Region 3 Resource Conservation Priority list.

- 1.1.3 Coordinate with EPA and State of Michigan on containment and remediation in and around Grassy Island and protection of existing habitat of value.

Goal 2: Habitat and Wildlife Populations

Understand the importance of the Refuge to waterfowl.

Discussion: Waterfowl use of the Refuge is certainly influenced by availability of food and human disturbance. We intend to measure how much food is available to waterfowl and to minimize their disturbance by hunters. With some control of the human disturbance and the measurement of waterfowl use and food, we should be able to determine the relative importance of the Refuge to waterfowl in the context of the Lower Detroit River.

- 2.1 Objective: Know the waterfowl use of the Refuge by species by 2003.

Strategies:

- 2.1.1 Conduct weekly waterfowl counts from mid-November through March for at least 3 years using volunteer(s).
- 2.1.2 Request that special note be made of the Refuge during the State's waterfowl count.
- 2.1.3 If technically feasible, install an observation camera linked to a recorder and the Internet to regularly observe duck numbers and disturbance.

2.2 Objective: Know the availability of waterfowl food on the Refuge by 2003.

Strategy:

2.2.1 In partnership with universities and other governmental agencies, annually measure the abundance of wild celery and zebra mussels within the Refuge during the years of the waterfowl counts in objective 2.1.

2.3 Objective: No disturbance of waterfowl on the Refuge by hunters.

Strategies:

2.3.1 Distribute information about the prohibition of hunting in press releases, notices at launch facilities, and flyers at sporting goods stores.

2.3.2 Make a minimum of two law enforcement visits to the Refuge during the waterfowl hunting season.

2.3.3 The person counting waterfowl will record and report any disturbance observed during waterfowl counts.

2.3.4 If a camera is installed, monitor the area regularly to observe and quantify disturbance.

Goal 3: Lake Sturgeon

Restoration of lake sturgeon spawning area within the Refuge.

3.1 Objective: Meet the Refuge partnership responsibilities to the Fishery Resource Office in lake sturgeon work.

Discussion: We expect the U.S. Fish and Wildlife Service Fishery Resources Office to take the lead within this goal. Our role will be to support and facilitate their activities. In order to provide support, we plan to devote a portion of the time of a part-time biological technician with fisheries experience to duties at the Refuge. The biological technician will also have duties at Shiawassee and Michigan Islands national wildlife refuges.

Strategy:

3.1.1 Hire a biological technician with fisheries experience to work part-time.

Goal 4: Protection of Additional Lands

Protect islands and coastal wetlands within the Lake Huron/Lake Erie corridor for migratory and wintering waterfowl, migratory songbirds, and for spawning and nursery areas for fish along an international boundary.

4.1 Objective: By 2002, help the Great Lakes Ecosystem Team identify Great Lakes islands and coastal wetlands that should be protected in the Lake Huron/Lake Erie corridor.

Discussion: Because so little of the original, natural habitat remains, we will work with partners to protect all lands in the corridor that contribute to the Service's mission. The biodiversity that can be supported through protection includes habitat for waterfowl migration, spawning and nursery habitat for fish, and rare coastal prairie habitat types that include rare plant species (Chow-Fraser and Albert, 1998).

Strategies:

- 4.1.1 Maintain membership and actively participate in the Great Lakes Islands Committee of the ecosystem team.
- 4.1.2 Provide staff time and facilities as available to input relevant data into a GIS system.
- 4.1.3 Develop a Preliminary Project Proposal to acquire lands located in the St. Clair River/Lake St. Clair/Detroit River system, including the islands, marshes, and uplands that will benefit migratory and wintering waterfowl, migratory songbirds, rare species, and for spawning and nursery areas for fish along an international boundary.

Chapter 5: Plan Implementation

Personnel Needs

Currently the staff of Shiawassee National Wildlife Refuge consists of 10 positions: two refuge operations specialists and a refuge manager, an administrative technician, a wildlife biologist, a biological science technician, two park rangers, an engineering equipment operator, and a tractor operator.

To achieve the objectives of this plan, an additional part-time fishery technician is needed. The fishery technician will also work at Shiawassee and Michigan Islands national wildlife refuges. Law enforcement support will come from the Shiawassee staff and Service special agents.

Funding

Support for Wyandotte National Wildlife Refuge has not been specifically identified in past budgets. Rather, the operation and maintenance support has been drawn from the budget of Shiawassee National Wildlife Refuge.

Last year Shiawassee staff committed about \$8,000 and 18 staff days to visits and meetings related to Wyandotte National Wildlife Refuge. In addition, last year Shiawassee staff purchased a boat, trailer, and supplies for \$40,000 in support of their management of Michigan Islands and Wyandotte national wildlife refuges. The operations costs are expected to increase slightly in the next 3 years with more visits for law enforcement and support of fisheries work and coordination associated with the contamination work.

The cost of containing the contaminants on Grassy Island is expected to far exceed any routine refuge funding request. The work will require special appropriations.

Step-down Management Plans

In support of this plan, a habitat management practices plan and public use plan will be drafted as part of the containment feasibility study. An inventory and monitoring of populations plan will be written to detail the monitoring specified in objectives 2.1 and 2.2. A cultural resources plan step-down plan will be written.

Monitoring and Evaluation

Monitoring is critical to successful implementation of this plan. Monitoring is necessary to evaluate the progress toward objectives and to determine if conditions are changing.

Accomplishment of the objectives described in this CCP will be evaluated as part of normal Service procedures of station visits and supervisory evaluations. The public will be informed about the activities of the Refuge staff through an “Annual Report” that will be mailed to all persons on the Refuge mailing list, published on the Refuge’s website, and its availability will be announced through news releases to the media. The annual report will be published each year in February.

Plan Amendment and Revision

The Plan and its objectives will be examined at least every 5 years to determine if any modifications are necessary to meet the changing conditions. The plan will be evaluated after the contaminants on Grassy Island are contained.

Partnership Opportunities

In addition to the official partnerships that the U.S. Fish and Wildlife Service holds on a national level, Shiawassee National Wildlife Refuge staff work with the U.S. Environmental Protection Agency, the Biological Resources Division of the U.S. Geological Survey, and the Service’s Fishery Resources Office in managing Wyandotte National Wildlife Refuge. We also are active participants in American Heritage River activities for the Detroit River.

Partnerships are a key element in Refuge management, and we will seek to develop partnerships with additional public and private groups as opportunities arise.

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Appendix A: Environmental Assessment

Finding of No Significant Impact

Environmental Assessment and Comprehensive Conservation Plan for the Wyandotte National Wildlife Refuge, Michigan

An Environmental Assessment (EA) has been prepared to identify management strategies to meet the conservation goals of Wyandotte National Wildlife Refuge. The EA examined the environmental consequences that management alternatives could have on the quality of the physical, biological, and human environment, as required by the National Environmental Policy Act of 1969 (NEPA). The EA presented and evaluated three alternatives for managing fish, wildlife, and plant habitats and visitor use on the Wyandotte Refuge for the next 15 years.

Alternative A. No Action (Current Management). The No Action alternative described existing, or status quo, refuge management practices. Studies of habitat would occur only if they were initiated by others. Public use would be prohibited. The contamination of Grassy Island would be addressed by others. Our resource protection would be limited to boundary posting. Protection of additional lands would originate with others.

Alternative B. Implement the Comprehensive Conservation Plan. Under this alternative the Service would inventory and monitor the fish and wildlife use of the Refuge. Public use activities would continue to be prohibited until contamination on Grassy Island is remediated. The Service would seek to identify additional lands for protection.

Alternative C. Transfer to Other Government Entity. Under this alternative the lands and waters of the Refuge would be transferred to another government entity after remediation of the contaminants on Grassy Island. The Service would maintain its presence as a cooperating partner. The Refuge staff would participate in identifying additional lands through an ecosystem team representative. Congressional action would be required to implement this alternative.

The alternative selected for implementation is *Alternative B*. Under this alternative we protect the area for waterfowl and better document its importance to waterfowl. Fishing from boats is compatible with the purposes of the Refuge and will be allowed. We will coordinate with the U.S. Environmental Protection Agency in remediation of contaminants on Grassy Island and restructure the island to benefit wildlife. We will work with partners to assess and protect additional lands in the St. Clair River/ Lake St. Clair/ Detroit River corridor.

For reasons presented above and below, and based on an evaluation of the information contained in the Environmental Assessment, we have determined that the action of adopting Alternative B as the management alternative for the Wyandotte Refuge CCP is not a major federal action which would significantly affect the quality of the human environment, within the meaning of Section 102 (2)(c) of the National Environmental Policy Act of 1969.

Additional Reasons:

1. Future management actions will have a neutral or positive impact on the local economy.
2. A cultural resource inventory completed prior to this CCP included recommendations for the protection of cultural, archaeological and historical resources.
3. This action will not have an adverse impact on threatened or endangered species.
4. The action will not disproportionately place an adverse environmental, economic, social, or health impacts on minority or low-income populations.

Supporting References:

Environmental Assessment
Comprehensive Conservation Plan

ACTING  9/29/01
Regional Director Date
Marvin E. Moriarty



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Appendix A: Environmental Assessment

Environmental Assessment for the Wyandotte National Wildlife Refuge Comprehensive Conservation Plan

April 2000

Abstract

The U.S. Fish and Wildlife Service is proposing implementation of the Comprehensive Conservation Plan (CCP) for the Wyandotte National Wildlife Refuge (Refuge) in Wayne County of Michigan. This Environmental Assessment considers the biological, environmental, and socioeconomic effects that implementing the CCP will have on the most significant issues and concerns identified during the planning process.

The purpose of the Plan is to:

- Provide a clear statement of direction for future management of the Refuge.
- Give Refuge neighbors, visitors, and the general public an understanding of the Service's management actions on and around the Refuge.
- Ensure that the Refuge's management actions and programs are consistent with the mandates of the National Wildlife Refuge System.
- Ensure that Refuge management is consistent with Federal, state and county plans.
- Establish continuity in Refuge management.
- Provide a basis for the development of budget requests on the refuge's operation, maintenance, and capital improvement needs.

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I. Purpose and Need for the Proposed Action

Purpose: The proposed comprehensive conservation plan identifies a specific course of action to gain basic information necessary for management of Wyandotte National Wildlife Refuge. The plan further outlines the steps that will be taken to remediate for the contamination that exists on Grassy Island, a part of the Refuge.

Need: Shiawassee National Wildlife Refuge staff have the responsibility of managing the Wyandotte National Wildlife Refuge for specific purposes outlined in law and to fulfill the mission of the National Wildlife Refuge System. However, basic information about the contamination and biological resources on the islands that is necessary for effective management is lacking. In addition, the National Wildlife Refuge System Improvement Act of 1997 mandates that all national wildlife refuges will be managed in accordance with an approved CCP.

Decision Framework

The Regional Director for the Great Lakes-Big Rivers Region of the U. S. Fish and Wildlife Service will use the Environmental Assessment to select one of three alternatives and determine whether the alternative selected will have significant environmental impacts requiring preparation of an environmental impact statement. Specifically, analysis and findings described in the CCP and in this EA will help the Regional Director decide whether to continue with current management at the Refuge (No Action) or whether to adopt the actions described in the Wyandotte National Wildlife Refuge Comprehensive Conservation Plan.

It is recommended that the reader refer to the Comprehensive Conservation Plan for Wyandotte National Wildlife Refuge when reviewing this Environmental Assessment.

A Comprehensive Conservation Plan is needed to address current management issues and propose a plan of action which the Fish and Wildlife Service and its partners can use to achieve the future vision for the Refuge.

Description of the Proposed Action

The proposed action is to adopt and implement the Comprehensive Conservation Plan for Wyandotte National Wildlife Refuge. The CCP will serve as a management tool to be used by Refuge staff and its partners in guiding the habitat management and public use activities on the Refuge. The document will guide management decisions and activities on the Refuge over the next 15 years. U. S. Fish and Wildlife Service staff and interested citizens contributed to the development of the CCP.

Authority, Legal Compliance, and Compatibility

Wyandotte National Wildlife Refuge was established by an Act of Congress - Public Law 87-119, 75 Stat. 243, 87th Congress, H.R. 1182, dated August 3, 1961 ...”to be maintained as a refuge and breeding place for migratory birds and other wildlife...”.

Mud Island was added to the Refuge in January 2001 using the authority to accept donations of real property contained in the Fish and Wildlife Act of 1956 (16 U.S.C. 742f).

Authority delegated by Congress, Federal regulations/guidelines, and executive orders guide the operation and the management of the Refuge and provide the framework for the Fish and Wildlife Service’s proposed action. See Appendix F of the Comprehensive Conservation Plan for summary of these laws and orders.

Scoping of the Issues

Scoping is the process of identifying opportunities and issues related to a proposed action. The Fish and Wildlife Service publicly announced that it was preparing a plan for the Wyandotte National Wildlife Refuge in December 1998. For detail on the scoping activities see Chapter 2, “Planning Process,” of the Comprehensive Conservation Plan.

Issues and Concerns

Through scoping, the Service identified issues and concerns related to management of the Refuge. These “scoping” issues have been considered in the CCP decision-making process and several have been directly integrated into the Comprehensive Conservation Plan.

This Environmental Assessment informs the public of the impact the proposed action (implementing the CCP) will have on each of the three major issue categories. All issues are described in the CCP and many of the goals and strategies contained in the CCP relate to one or more of the issue categories. The issues raised fall under the general categories of habitat, public use and resource protection and are described as follows:

Habitat Issues

Contamination issues on Grassy Island have prompted some people to suggest eliminating the island from the Refuge System. Other people suggest reviewing the remaining natural islands and coastal wetlands in the area for protection within the Refuge System.

Public Use Issues

There are outstanding questions at Wyandotte National Wildlife Refuge regarding the extent of public use that is appropriate for the Refuge. Some of the participants said that access for hunting and trail uses should be expanded; others said that a clear statement regarding hunting is needed. Contamination issues at Grassy Island create unique management decisions, including whether recreational use should be prohibited until contamination issues are resolved.

Resource Protection Issues

Grassy Island, the main island encompassed in Wyandotte National Wildlife Refuge, has significant contamination. The preliminary discussion of how to deal with the contamination on Grassy Island includes capping and sealing the island or removing all the fill down to the parent material. Participants suggested that wildlife should be discouraged from use of the island pending removal of contaminants from the reach of wildlife and human activity.

II. Description of Alternatives

This section describes three alternatives considered by the U.S. Fish and Wildlife Service and detailed in this Environmental Assessment:

Alternative 1 – No Action Alternative

Alternative 2 – Implement the Wyandotte National Wildlife Refuge Comprehensive Conservation Plan (Preferred Action)

Alternative 3 – Transfer To Other Governmental Entities.

Alternative 1: No Action

This alternative reflects the status quo, essentially allowing current conditions and trends of management, public use, and land use to continue. No substantial increases in funds or staff would occur. The Service would not carry out many of the recommendations in the CCP. The contamination of Grassy Island would be addressed by others. Public use opportunities, facilities, and access would continue to be prohibited.

Alternative 2: Implement the Refuge Comprehensive Conservation Plan (Preferred Alternative)

Under this alternative the Fish and Wildlife Service will implement the 15-year CCP and establish an overall management direction consistent with the goals, objectives, and strategies contained in Chapter 4 of the CCP.

The U.S. Fish and Wildlife Service will inventory and monitor the fish and wildlife use of the Refuge to understand what exists on the islands and the ecological value of the islands. Public use opportunities, facilities, and access would continue to be prohibited until contamination on Grassy Island is remediated. The Service will seek to identify additional lands for protection in the Lake Huron to Lake Erie corridor under this alternative.

Alternative 3: Transfer to Other Government Entities

This alternative proposes to transfer the lands and waters of the Refuge to other governmental entities. After remediation of the contaminants on Grassy Island, transfer of the Refuge's lands and waters would be offered to the City of Wyandotte and the State of Michigan. The Service would maintain its presence in the conservation objectives of the area as a cooperating partner, not as a land manager. The Refuge staff would participate in identifying additional lands for protection through participation in the Great Lakes Ecosystem Team and its committees. Congressional action would be required to implement this alternative.

Table 1: Comparison of Alternatives (By the Year 2014)

Issues and Concerns	Alternative 1 No Action	Alternative 2 Implement CCP (Preferred Alt.)	Alternative 3 Transfer to Other Govt. Entity
<i>1.Habitat</i>	Habitat and wildlife studied only if actions are initiated by others.	Funding and partnerships are actively sought to identify the richness and distribution of animals and plants by 2007. Surveys to identify threatened and endangered plant species will be conducted within 5 years.	Same as Alt. 1.
<i>2.Public Use</i>	Public use is prohibited.	Public use is prohibited until contamination on Grassy Island is remediated. A public use plan is part of the remediation plan.	Public use is prescribed by other government entities after contamination on Grassy Island is remediated.
<i>3.Resource Protection</i>	Visit each island once a year and refurbish boundary posting. Protection of additional lands originates with the Great Lakes Basin Ecosystem Team.	Continue boundary posting of islands, increase identification signs, law enforcement personnel visit the islands twice per year. Protection of additional islands originates with the Great Lakes Basin Ecosystem Team.	Protection of additional lands originates with the Great Lakes Basin Ecosystem Team.

Another Alternative Considered But Not Further Developed

An additional alternative was considered, but eliminated from further study. We considered reconstruction of the islands and enhancement of the associated marshes through major engineering projects. We concluded that major construction was not feasible. It would be necessary to complete a major environmental and engineering study prior to implementing such a reconstruction. We concluded that the costs of studies and construction would not be justified for the expected, but limited, wildlife benefits.

III. Affected Environment

Wyandotte National Wildlife Refuge lies within the Great Lakes Basin Ecosystem, a system shared with Canada and eight states. The ecosystem is made up of the world’s largest freshwater body, which holds 18 percent of the world’s supply of freshwater, covers 95,000 square miles, has 9,000 miles of shoreline, over 5,000 tributaries, and a drainage basin of 288,000 square miles. Within the Great Lakes basin certain species have drawn special concern. Fish species of concern include lake trout, lake sturgeon, lake whitefish, walleye, Pacific salmon, and landlocked Atlantic salmon and their forage. There is concern about native mussel species that are being seriously impacted by zebra mussels. Thirty-one species of migratory non-game birds of management concern to the Service are found in the Great Lakes ecosystem.

The Detroit River consists of a 32-mile-long channel bordered by a poorly drained clay lake plain. The River has 66 miles of Canadian shoreline, 79 miles of U.S. shoreline, five Canadian wetlands with 2,808 acres, and 16 U.S. wetlands with 3,415 acres. The Detroit River wetlands provide spawning areas for 26 percent of the fish species in the Great Lakes and nursery areas for 20 percent of the species. Compared with other shoreline reaches in the Great Lakes, the Detroit River is above the 50th percentile for providing spawning and above the 75th percentile for nursery areas. One hundred species of breeding birds (approximately 50 percent of the breeding birds of Ontario) use the Detroit River wetlands along the Canadian shoreline.

In their evaluation of the importance of the Detroit River wetlands, the U.S. Environmental Protection Agency (EPA) and Environment Canada acknowledged that the general perception is that the Detroit River's large submergent vegetation beds provide important habitat for migrating waterfowl and nursery areas for fish. However, they identified the wetlands along the Detroit River as deserving high priority not only because they serve as important habitat for a large number of fish and birds species, but especially because there are so few wetlands remaining in the area.

A more detailed description of the affected environment can be found in Chapter 3 of the Comprehensive Conservation Plan.

Listed Species

Bald eagles, a federally-listed endangered species, have nested near Grassy Island and occur in the Mud Island area. Northern riffleshell, a federally-listed endangered mussel, may occur on the shoals surrounding Mud Island.

Two state-listed threatened species have been associated with Grassy Island. The spotted turtle was recorded in the Michigan Natural Features Inventory in 1997, and the common tern was recorded in 1977.

Lake sturgeon once spawned on the rocky bottom in swift currents just north-east of Grassy Island. Today the fish is listed as "threatened" by 19 of the 20 states in its original range and by seven of the eight Great Lakes states, including Michigan.

Because of the location and type of activities proposed in the comprehensive conservation plan, the plan will have "no effect" on federally listed threatened or endangered species or their critical habitat.

Cultural Resources

The Service contracted with a private consultant for the preparation of a Cultural Resource Overview Study of archeological and historic resources in and around Wyandotte National Wildlife Refuge. The findings and recommendations of the study have been integrated into the CCP to reduce potential impacts and assure compliance with the National Historic Preservation Act.

According to the study, southeast Michigan, including Wayne County and western Ontario, were occupied throughout prehistory from the Paleoindian through Late Woodland periods. As of June 10, 1999, Wayne County had 339 properties

on the National Register of Historic Places. These properties, however, are not indicative of sites that may be on the islands.

How Grassy Island and Mamajuba Island relate to prehistoric settlement and occupation of the mainland is unknown. No archaeological sites are recorded on the two islands, nor on any of the islands in the Detroit River with similar environmental characteristics and size (Overview Study of Archaeological and Cultural Values on Shiawassee, Michigan Islands and Wyandotte National Wildlife Refuges in Saginaw, Charlevoix, Alpena and Wayne Counties, Michigan, 1999).

If Native American groups used the islands at all during the historic period, the groups using them could have included the Ottawa, Huron, Wyandot and Ojibwa. The City of Wyandotte gets its name from the Maguagua Reservation of the Wyandot, which was located nearby, and the only historical reference to either Grassy or Mamajuda islands is that Mamajuda Island was named for an Indian woman who camped there during the fishing season sometime prior to 1807.

The cultural resources overview suggests that seasonal fishing encampments would likely have occurred in concert with prehistoric occupation of the mainland, but since these occupations would have been brief and seasonal, the potential for historic archaeological sites is low.

Euro-American use of the islands would appear to be limited. An 1876 atlas indicates that fisheries operated on both Grassy Island and Mamajuda Island.

There are no previously recorded archaeological resources on either Grassy or Mamajuda islands. Thirteen previously recorded archaeological sites are located within 2 miles of Grassy and Wyandotte islands, including a single prehistoric occupation of undetermined age and function; a nineteenth century Native American Village; the Maguagua Reservation; five nineteenth century residences; and three nineteenth century cemeteries.

There are no previously recorded historical above-ground resources on either Grassy Island or Mamajuda Island. There is an abandoned lighthouse on Mamajuda Island, however its historical significance is undetermined, according to the 1999 overview of cultural resources.

IV. Environmental Consequences

This section evaluates the impacts that the three alternatives will have on the three issues that were identified in the CCP. Alternative 1, “No Action”, is the No Action alternative where the current level of land management, public use, staffing, outreach, and other Refuge activities are projected into the foreseeable future. Alternative 2, “Action Alternative” focuses on anticipated environmental impacts or changes when the Comprehensive Conservation Plan is fully implemented (by the year 2014). Refer to Chapter 4 of the CCP for specific objectives and strategies. Alternative 3, “Transfer,” proposes to divest the land and waters from Service administration and the transfer of rights to other governmental units.

For the purpose of this analysis, five issues are discussed separately for each alternative and one issue that is common to all three alternatives is discussed.

Issues Common to All Alternatives

Environmental Justice

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill Clinton on February 11, 1994, to focus Federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed Federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in Federal programs substantially affecting human health and the environment, and to provide minority and low-income communities access to public information and participation in matters relating to human health or the environment.

None of the proposed management alternatives disproportionately place an adverse environmental, economic, social, or health impacts on minority or low-income populations.

Alternative 1 – No Action

1. Habitat

Under the “No Action” alternative, habitat on the islands is studied only if the work is initiated by others. While there are no direct negative effects on habitat under this alternative, a lack of knowledge about what exists on the islands may lead to impacts through neglect. Significant plant species may exist and either be inadequately protected or inadvertently impacted because of lack of knowledge.

2. Public Use

Public use of Wyandotte National Wildlife Refuge is prohibited. Some illegal entry occurs incidental to people being in the area to boat, hunt, or fish. Negative effects by human use to wildlife, plants, and their habitats are negligible in this alternative. Effects of contamination on visitors is small in this alternative.

3. Resource Protection

Although the islands within Wyandotte National Wildlife Refuge are managed for wildlife and plants, the status of other islands and coastal wetlands within the Great Lakes is largely unknown. The Great Lakes Basin Ecosystem Team has begun a review of all islands and coastal areas for the need and potential for protection for wildlife. Under this alternative, the Refuge will await the evaluation and recommendation of the team and suggestions for its role in further protection of additional lands. Expansion of invasive species, such as phragmites, will be monitored through observation of yearly visits to the islands.

Any additional information about the wildlife on the islands comes from anecdotal observations or work initiated by others. There are no immediate, direct negative effects on wildlife and plants on the islands, but the presence and possible importance of contamination effects on wildlife remains unknown.

4. Listed Species

The presence and possible importance of contamination effects would also be unknown in terms of impacts on listed species. There would not be immediate impacts to species like the bald eagle, but opportunities to determine the presence of lake sturgeon and northern riffleshell, and possibly to improve habitat for these species, would await the outcome of the Great Lakes Basin Ecosystem Team's review of islands and coastal areas.

5. Cultural Resources

There are no previously recorded archaeological resources on either Grassy Island or Mamajuda Island, nor are there previously recorded historical above-ground resources on either island. An abandoned lighthouse of unknown historical significance is located on Mamajuda Island. If cultural values exist on the islands, the impacts of Alternative 1 would be negligible. Sites and artifacts would be neither disturbed nor identified. Federal laws pertaining to the preservation of archaeological and historic sites would be followed if archeological or historic sites were located.

Alternative 2 – Implement the Comprehensive Conservation Plan (Preferred Alternative)

1. Habitat

The habitat on the islands will be studied by contractors and university researchers. There are no direct negative effects on habitat under this alternative. Significant plant species will be identified under this alternative, if present.

2. Public Use

Under the preferred alternative, the public will continue to be prohibited from the area until the contamination of Grassy Island is resolved. Provisions in the public use plan will detail how information, regulations, and enforcement will be used to protect the islands' resources from any increase in public use.

3. Resource Protection

The Great Lakes Basin Ecosystem Team has begun a review of all islands and coastal areas for the need and potential for protection for wildlife. Under this alternative, Refuge staff will actively participate and support the activities of the ecosystem team. The Refuge will implement the recommendations of the team. Expansion of invasive species, such as phragmites, will be monitored through structured inventorying and monitoring activities. Any expansion of invasive plants or disappearance of plant communities will be quantified and mapped using Geographical Information System (GIS).

Monitoring and inventorying of wildlife is aggressively pursued under the preferred alternative. The additional information about the wildlife on the islands will come from funded work done by contractors, government scientists, and university researchers. There are no direct negative effects on wildlife and plants on the islands under this alternative. The importance of the islands to wildlife will be established, and the increased knowledge will lead to better management and protection of wildlife and their habitat.

4. Listed Species

Inventorying and monitoring fish, wildlife and habitat would have a positive impact on the Refuge's ability to recognize the listed species that may be using the Refuge and manage for those species. Remediating contamination on Grassy Island would improve habitat for wildlife.

5. Cultural Resources

If cultural resources exist on Grassy, Mamajuda and Mud islands, inventorying and monitoring wildlife would likely neither benefit nor harm them. The islands would continue to be managed for wildlife first, which would mean that little disruption of the land and possible artifacts would occur. Federal laws pertaining to the preservation of archaeological and historic sites would be followed.

Alternative 3 – Transfer to Other Governmental Entities

1. Habitat

Under this alternative, wildlife habitat would not likely be the primary consideration in management of Grassy Island. Under city administration, landscaping for aesthetics and scenic views would likely have precedence. Management of aquatic habitats would likely not occur and possible spawning habitat may be lost.

2. Public Use

Under this alternative, after the contamination is remediated, public use would increase under city administration. Developments would likely include boat landings, nature trails, restrooms, and picnicking facilities. Hunting would continue to be prohibited.

3. Resource Protection

The Refuge staff will actively participate and support the activities of the Ecosystem team, similar to Alternative 2. Under this alternative, Refuge staff will conduct very little monitoring of wildlife and habitat on Grassy Island. Monitoring and inventorying activities on the shoals of Grassy Island and Mud Island will be similar to Alternative 2.

4. Listed Species

Transfer of Wyandotte National Wildlife Refuge to a governmental entity other than the U.S. Fish & Wildlife Service would diminish the focus on wildlife and wildlife habitat, which would negatively impact listed species as well as other wildlife using the Refuge. If lake sturgeon and northern riffleshell occur within Refuge waters, landscaping and public use could seriously degrade shoals and waters currently within the Refuge. Bald eagles nesting near Grassy Island and using the Mud Island area may be pushed out by greater numbers of and proximity to human beings.

5. Cultural Resources

If archaeological or historical above-ground resources are discovered on the islands of Wyandotte National Wildlife Refuge, development focused on human use could negatively impact those resources. Artifacts or sites could be disturbed or even destroyed by the construction of trails or scenic viewing areas. Federal laws pertaining to the preservation of archaeological and historic sites would be followed.

Table 2: Summary of Potential Environmental Consequences

Issue	Alternative 1 (No Action)	Alternative 2 Implement the CCP (Preferred Alternative)	Alternative 3 (Transfer to Other Government Entity)
<i>Habitat</i>	Habitat would only be studied if initiated by others. Lack of knowledge of what exists on the islands could lead to impacts through neglect.	Habitat would be studied by contractors and researchers. Significant plant species, if they exist, would be identified.	Wildlife habitat would likely not be the primary consideration. Management of aquatic habitats would likely not occur and possible spawning habitat would be lost.
<i>Public Use</i>	Public use would be prohibited. Negative impacts by humans would be negligible, and the effects of contamination on visitors would be small.	A public use plan would be developed to determine how island resources would be protected from any increase in public use.	After Grassy Island contamination is remediated, public use would increase under city administration. Developments would likely include boat landings, nature trails, restrooms and picnicking facilities. Hunting would continue to be prohibited.
<i>Resource Protection</i>	There would be no immediate negative impacts on wildlife and plants. The Refuge would wait for Ecosystem Team recommendations on wildlife needs and protection. The presence and possible effects of contamination on wildlife would be unknown, which could be a negative effect in the long-term.	There would be no direct negative effects on wildlife and plants. Monitoring and inventory of wildlife would be aggressively pursued. The importance of the islands to wildlife would be established through work by contractors, government scientists and researchers. Increased knowledge would lead to better management and protection of wildlife and habitat. Ecosystem Team recommendations would be followed.	There would be no direct negative impacts on wildlife and plants. Refuge staff would participate in and support Ecosystem Team activities. Staff would conduct little monitoring and inventorying on Grassy Island; monitoring and inventorying on the shoals of Grassy and Mud islands would be similar to Alt. 2.
<i>Listed Species</i>	Listed species would be negatively impacted by waiting for the outcome of an Ecosystem Team study of Detroit River islands species and their needs.	Aggressive inventorying and monitoring would generate information on the presence of listed species and their habitat needs.	Listed species would be negatively impacted by the transfer to an agency that did not manage the islands with 'wildlife first' as the guiding priority. Proximity to human beings may cause bald eagles using Mud Island and Grassy Island to leave the area.
<i>Cultural Resources</i>	If archaeological or historic sites exist on the islands, impacts would be negligible. Sites and artifacts would be neither disturbed nor identified.	Increased human presence on the islands for inventory or monitoring purposes could result in damage to historic sites or archaeological artifacts, however damage would be mitigated by the identification of sites and future preservation of artifacts.	Human-oriented development and recreational activities would negatively impact cultural resources, if sites exist.
<i>Environmental Justice</i>	No adverse impacts would occur.	No adverse impacts would occur.	No adverse impacts would occur.

V. List of Preparers

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Appendix B: Glossary

Appendix B: Glossary

<i>Alternative</i>	A Set of objectives and strategies needed to achieve refuge goals and the desired future condition.
<i>Biological Diversity</i>	The variety of life forms and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.
<i>Compatible Use</i>	A wildlife-dependent recreational use, or any other use on a refuge that will not materially interfere with or detract from the fulfillment of the mission of the Service or the purposes of the refuge.
<i>Comprehensive Conservation Plan</i>	A document that describes the desired future conditions of the refuge, and specifies management actions to achieve refuge goals and the mission of the National Wildlife Refuge System.
<i>Ecosystem</i>	A dynamic and interrelated complex of plant and animal communities and their associated non-living environment.
<i>Ecosystem Approach</i>	A strategy or plan to protect and restore the natural function, structure, and species composition of an ecosystem, recognizing that all components are interrelated.
<i>Ecosystem Management</i>	Management of an ecosystem that includes all ecological, social and economic components that make up the whole of the system.
<i>Endangered Species</i>	Any species of plant or animal defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range, and published in the <u>Federal Register</u> .
<i>Environmental Assessment</i>	A systematic analysis to determine if proposed actions would result in a significant effect on the quality of the environment.
<i>Goals</i>	Descriptive statements of desired future conditions.

<i>Issue</i>	Any unsettled matter that requires a management decision. For example, a resource management problem, concern, a threat to natural resources, a conflict in uses, or in the presence of an undesirable resource condition.
<i>National Wildlife Refuge System</i>	All lands, waters, and interests therein administered by the U.S. Fish and Wildlife Service as wildlife refuges, wildlife ranges, wildlife management areas, waterfowl production areas, and other areas for the protection and conservation of fish, wildlife and plant resources.
<i>Objectives</i>	Actions to be accomplished to achieve a desired outcome.
<i>Preferred Alternative</i>	The Service's selected alternative identified in the Draft Comprehensive Conservation Plan.
<i>Scoping</i>	A process for determining the scope of issues to be addressed by a comprehensive conservation plan and for identifying the significant issues. Involved in the scoping process are federal, state and local agencies; private organizations; and individuals.
<i>Species</i>	A distinctive kind of plant or animal having distinguishable characteristics, and that can interbreed and produce young. A category of biological classification.
<i>Strategies</i>	A general approach or specific actions to achieve objectives.
<i>Wildlife-dependent Recreational Use</i>	A use of refuge that involves hunting, fishing, wildlife observation and photography, or environmental education and interpretation, as identified in the National Wildlife Refuge System Improvement Act of 1997.
<i>Threatened Species</i>	Those plant or animal species likely to become endangered species throughout all of or a significant portion of their range within the foreseeable future. A plant or animal identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.
<i>Vegetation</i>	Plants in general, or the sum total of the plant life in an area.
<i>Vegetation Type</i>	A category of land based on potential or existing dominant plant species of a particular area.
<i>Watershed</i>	The entire land area that collects and drains water into a stream or stream system.

<i>Wetland</i>	Areas such as lakes, marshes, and streams that are inundated by surface or ground water for a long enough period of time each year to support, and that do support under natural conditions, plants and animals that require saturated or seasonally saturated soils.
<i>Wildlife Diversity</i>	A measure of the number of wildlife species in an area and their relative abundance.

Appendix C: RONS and MMS Lists

Refuge Operating Needs System (RONS)

RONS Project No.	Strategy No.	Project Description	First Year Need	Recurring Annual Need
97006		Investigate extent of contaminants and effects of those contaminants on fish, wildlife and habitat.	\$94,000	\$29,000

Appendix D: Compatibility Determinations

COMPATIBILITY DETERMINATION

Use: Fishing

Refuge Name: Wyandotte National Wildlife Refuge

Establishing and Acquisition Authority(ies):

Wyandotte National Wildlife Refuge was established by an act of Congress-Public Law 87-119, 75 Stat. 243, 87th Congress, H.R. 1182, dated August 3, 1961.

Refuge Purpose(s): Wyandotte National Wildlife Refuge was established, "...to be maintained as a refuge and breeding place for migratory birds and other wildlife."

National Wildlife Refuge System Mission: The National Wildlife Refuge System Mission is to administer a national network of lands and water for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resource habitats within the United States for the benefit of present and future generations of Americans.

Description Of Use:

What is the use? Fishing

Where is the use conducted? Currently, fishing occurs throughout the Detroit River area, including waters surrounding the Refuge islands. Established boat launches along the Detroit River provides access to the waters of the Refuge.

When is the use conducted? The use occurs throughout the year in accordance with State regulations.

How is the use conducted? Fishing has occurred on the water within the Refuge boundary since it was established. Fishing occurs from boats that are anchored, drifting, or trolling.

Availability of Resources: No resources are dedicated to managing fishing at the Refuge. On-site management is accomplished in conjunction with other general management activities and visits. Enforcement of regulations is accomplished in partnership with the Michigan Department of Natural Resources. The use will not require a significant increase in additional maintenance or enforcement staff expenditures or equipment.

Anticipated Impacts Of The Use: Fishing has shown no assessable environmental impact to the Refuge, its habitats, or wildlife species. Concerns primarily center around the possibility of impacting threatened and other sensitive non-target species through excessive disturbance and boating impacts on submergent growth of wild celery (*Vallisneria sp.*). Disturbance to wildlife is limited to occasional disturbance such as raising or flushing non-target species (waterfowl) and the harvest of fish species open to recreational fishing. Harvests are regulated to take only surplus specimens, thus assuring viable, healthy populations within management and habitat guidelines.

Public Review And Comment: This compatibility determination was part of the Draft Wyandotte National Wildlife Refuge Comprehensive Conservation Plan and Environmental Assessment, which was announced in the Federal Register and available for public comment for 30 days.

Determination (Check one below):

Use is Not Compatible

Use is Compatible With the Following Stipulations

Stipulations Necessary To Ensure Compatibility: To ensure compatibility with National Wildlife Refuge System and Wyandotte NWR goals and objectives, fishing can only occur under the following stipulations:

1. All fishing is conducted under state laws from boats.
2. If necessary, the Refuge may place further restrictions on fishing activities to ensure compliance with all applicable laws, regulations, and policies.

Justification:

Fishing will be conducted with the Refuge's purpose, habitat management requirements, and goals as the guiding principles. All fishing activities will follow applicable state laws, except where the Refuge administers further restrictions to ensure compatibility with the Refuge's primary mission and the safety of visitors. Allowing fishing does not alter the Refuge's ability to meet habitat goals.

Fishing is a priority public use listed in the National Wildlife Refuge System Improvement Act. By facilitating this use on the Refuge, we will increase visitors' knowledge and appreciation of fish and wildlife, which will lead to increased public stewardship of fish and wildlife and their habitats at the Refuge and in general. Increased public stewardship will support and complement the Service's actions in achieving the Refuge's purposes and the mission of the National Wildlife Refuge System.

Signature: Refuge Manager: s/Douglas G. Spencer September 21, 2001
Refuge Manager Date

Concurrence: Refuge Chief: s/Nita M. Fuller September 29, 2001
Regional Chief Date
National Wildlife Refuge System

Mandatory 10- or 15-year Re-evaluation Date: 2016

Appendix E: Species List

Appendix E: Species List

We have not compiled a systematic list of species on the Refuge. See the *Vegetation* and *Fish and Wildlife* sections in Chapter 3 for a discussion of what is known about species on the Refuge.

Appendix F: Guiding Laws and Orders

Appendix F: Compliance Requirements

Transcription of Memorandum of Understanding between Department of Interior and United States Coast Guard:

WHEREAS, under date of 13 November 1843, the President of the United States of America did execute an Executive Order wherein the islands known as Grassy and Mamajuda (also known as Mammajuda or Mammy Juda) situated in the Detroit River, Wayne County, Michigan, were reserved from the Public Domain for lighthouse purposes and,

WHEREAS, the Congress of the United States on 3 August 1961 did enact Public Law 87-119 wherein Grassy and Mamajuda Islands were established and designated as the Wyandotte National Wildlife Refuge, to be administered by the Secretary of the Interior in accordance with laws and regulations relating to national wildlife refuges and,

WHEREAS, the Commandant of the United States Coast Guard has accomplished the administrative transfer of Grassy and Mamajuda Islands to the Department of the Interior, Bureau of Sport Fisheries and Wildlife, pursuant to Public Law 87-119 and,

WHEREAS, the United States Coast Guard has a continuous need for the lighted aids to navigation presently located on the two Islands and designated the Grassy Island Light (LL 821), the Grassy Island North Channel Range Front and Rear Lights (LL 847 and LL 849), the Mamajuda Light (LL 817), THEREFORE,

IT IS MUTUALLY UNDERSTOOD AND AGREED THAT, the United States Coast Guard shall:

- (a) have the right and privilege in perpetuity to operate and maintain aids to navigation on Grassy and Mamajuda Islands,
- (b) have the right and privilege of ingress and egress for purposes incident to the servicing and maintaining of the aids to navigation, and
- (c) have the right and privilege to relocate the aids to navigation as changing marine traffic patterns in the Detroit River dictate.

IT IS FURTHER UNDERSTOOD AND AGREED THAT, the Director, Bureau of Sport Fisheries and Wildlife, Department of the Interior, shall ensure full protection of the United States Coast Guard's interests in its aids to navigation in any permit, license, or lease for use of any part of, or all, of Grassy and Mamajuda Islands by other Federal agencies, by State, municipal, or local governments, or by private individuals or concerns.

Signed July 31, 1964 by Bureau of Sport Fisheries and Wildlife and August 18, 1964 by United States Coast Guard.

Compliance Requirements

Rivers and Harbor Act (1899) (33 U.S.C. 403): Section 10 of this Act requires the authorization by the U.S. Army Corps of Engineers prior to any work in, on, over, or under a navigable water of the United States.

Antiquities Act (1906): Authorizes the scientific investigation of antiquities on Federal land and provides penalties for unauthorized removal of objects taken or collected without a permit.

Migratory Bird Treaty Act (1918): Designates the protection of migratory birds as a Federal responsibility. This Act enables the setting of seasons, and other regulations including the closing of areas, Federal or non-Federal, to the hunting of migratory birds.

Migratory Bird Conservation Act (1929): Establishes procedures for acquisition by purchase, rental, or gift of areas approved by the Migratory Bird Conservation Commission.

Fish and Wildlife Coordination Act (1934), as amended: Requires that the Fish and Wildlife Service and State fish and wildlife agencies be consulted whenever water is to be impounded, diverted or modified under a Federal permit or license. The Service and State agency recommend measures to prevent the loss of biological resources, or to mitigate or compensate for the damage. The project proponent must take biological resource values into account and adopt justifiable protection measures to obtain maximum overall project benefits. A 1958 amendment added provisions to recognize the vital contribution of wildlife resources to the Nation and to require equal consideration and coordination of wildlife conservation with other water resources development programs. It also authorized the Secretary of Interior to provide public fishing areas and accept donations of lands and funds.

Migratory Bird Hunting and Conservation Stamp Act (1934): Authorized the opening of part of a refuge to waterfowl hunting.

Historic Sites, Buildings and Antiquities Act (1935), as amended: Declares it a national policy to preserve historic sites and objects of national significance, including those located on refuges. Provides procedures for designation, acquisition, administration, and protection of such sites.

Refuge Revenue Sharing Act (1935), as amended: Requires revenue sharing provisions to all fee-title ownerships that are administered solely or primarily by the Secretary through the Service.

Bald and Golden Eagle Protection Act, 1940

Transfer of Certain Real Property for Wildlife Conservation Purposes Act (1948): Provides that upon a determination by the Administrator of the General Services Administration, real property no longer needed by a Federal agency can be transferred without reimbursement to the Secretary of Interior if the land has particular value for migratory birds, or to a State agency for other wildlife conservation purposes.

Federal Records Act (1950): Directs the preservation of evidence of the government's organization, functions, policies, decisions, operations, and activities, as well as basic historical and other information.

Fish and Wildlife Act (1956): Established a comprehensive national fish and wildlife policy and broadened the authority for acquisition and development of refuges.

Refuge Recreation Act (1962): Allows the use of refuges for recreation when such uses are compatible with the refuge's primary purposes and when sufficient funds are available to manage the uses.

Wilderness Act (1964), as amended: Directed the Secretary of Interior, within 10 years, to review every roadless area of 5,000 or more acres and every roadless island (regardless of size) within National Wildlife Refuge and National Park Systems and to recommend to the President the suitability of each such area or island for inclusion in the National Wilderness Preservation System, with final decisions made by Congress. The Secretary of Agriculture was directed to study and recommend suitable areas in the National Forest System.

Land and Water Conservation Fund Act (1965): Uses the receipts from the sale of surplus Federal land, outer continental shelf oil and gas sales, and other sources for land acquisition under several authorities.

National Wildlife Refuge System Administration Act (1966), as amended by the National Wildlife Refuge System Improvement Act (1997) 16 U.S.C. 668dd668ee. (Refuge Administration Act): Defines the National Wildlife Refuge System and authorizes the Secretary to permit any use of a refuge provided such use is compatible with the major purposes for which the refuge was established. The Refuge Improvement Act clearly defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation and photography, or environmental education and interpretation); establishes a formal process for determining compatibility; established the responsibilities of the Secretary of Interior for managing and protecting the System; and requires a Comprehensive Conservation Plan for each refuge by the year 2012. This Act amended portions of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966.

National Historic Preservation Act (1966), as amended: Establishes as policy that the Federal Government is to provide leadership in the preservation of the nation's prehistoric and historic resources.

Architectural Barriers Act (1968): Requires federally owned, leased, or funded buildings and facilities to be accessible to persons with disabilities.

National Environmental Policy Act (1969): Requires the disclosure of the environmental impacts of any major Federal action significantly affecting the quality of the human environment.

Uniform Relocation and Assistance and Real Property Acquisition Policies Act (1970), as amended: Provides for uniform and equitable treatment of persons who sell their homes, businesses, or farms to the Service. The Act requires that any purchase offer be no less than the fair market value of the property.

Clean Air Act, 1970

Endangered Species Act (1973): Requires all Federal agencies to carry out programs for the conservation of endangered and threatened species.

Rehabilitation Act (1973): Requires programmatic accessibility in addition to physical accessibility for all facilities and programs funded by the Federal government to ensure that anybody can participate in any program.

Archaeological and Historic Preservation Act (1974): Directs the preservation of historic and archaeological data in Federal construction projects.

Fishery (Magnuson) Conservation and Management Act, 1976

Clean Water Act (1977): Requires consultation with the Corps of Engineers (404 permits) for major wetland modifications.

Surface Mining Control and Reclamation Act (1977) as amended (Public Law 95-87) (SMCRA): Regulates surface mining activities and reclamation of coal-mined lands. Further regulates the coal industry by designating certain areas as unsuitable for coal mining operations.

Executive Order 11988 (1977): Each Federal agency shall provide leadership and take action to reduce the risk of flood loss and minimize the impact of floods on human safety, and preserve the natural and beneficial values served by the floodplains.

Executive Order 11990: Executive Order 11990 directs Federal agencies to (1) minimize destruction, loss, or degradation of wetlands and (2) preserve and enhance the natural and beneficial values of wetlands when a practical alternative exists.

Executive Order 12372 (Intergovernmental Review of Federal Programs): Directs the Service to send copies of the Environmental Assessment to State Planning Agencies for review.

Executive Order 11644, Use of Off-Road Vehicles on Public Land

Executive Order 12962, Recreational Fisheries

Executive Order 13084, Consultation/Coordination with Tribal Governments

Executive Order 11987, Exotic Organisms

American Indian Religious Freedom Act (1978): Directs agencies to consult with native traditional religious leaders to determine appropriate policy changes necessary to protect and preserve Native American religious cultural rights and practices.

Fish and Wildlife Improvement Act (1978): Improves the administration of fish and wildlife programs and amends several earlier laws including the Refuge Recreation Act, the National Wildlife Refuge System Administration Act, and the Fish and Wildlife Act of 1956. It authorizes the Secretary to accept gifts and bequests of real and personal property on behalf of the United States. It also

Wyandotte National Wildlife Refuge

authorizes the use of volunteers on Service projects and appropriations to carry out a volunteer program.

Archaeological Resources Protection Act (1979), as amended: Protects materials of archaeological interest from unauthorized removal or destruction and requires Federal managers to develop plans and schedules to locate archaeological resources.

Federal Farmland Protection Policy Act (1981), as amended: Minimizes the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.

Emergency Wetlands Resources Act (1986): Promotes the conservation of migratory waterfowl and offsets or prevents the serious loss of wetlands by the acquisition of wetlands and other essential habitats.

Federal Noxious Weed Act (1990): Requires the use of integrated management systems to control or contain undesirable plant species, and an interdisciplinary approach with the cooperation of other Federal and State agencies.

Native American Graves Protection and Repatriation Act (1990): Requires Federal agencies and museums to inventory, determine ownership of, and repatriate cultural items under their control or possession.

Americans With Disabilities Act (1992): Prohibits discrimination in public accommodations and services.

Executive Order 12898 (1994): Establishes environmental justice as a Federal government priority and directs all Federal agencies to make environmental justice part of their mission. Environmental justice calls for fair distribution of environmental hazards.

Executive Order 12996 Management and General Public Use of the National Wildlife Refuge System (1996): Defines the mission, purpose, and priority public uses of the National Wildlife Refuge System. It also presents four principles to guide management of the System.

Executive Order 13007 Indian Sacred Sites (1996): Directs Federal land management agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and where appropriate, maintain the confidentiality of sacred sites.

National Wildlife Refuge System Improvement Act (1997): Considered the “Organic Act of the National Wildlife Refuge System. Defines the mission of the System, designates priority wildlife-dependent public uses, and calls for comprehensive refuge planning.

National Wildlife Refuge System Volunteer and Community Partnership Enhancement Act (1998): Amends the Fish and Wildlife Act of 1956 to promote volunteer programs and community partnerships for the benefit of national wildlife refuges, and for other purposes.

National Trails System Act: Assigns responsibility to the Secretary of Interior and thus the Service to protect the historic and recreational values of congressionally designated National Historic Trail sites.

Appendix G: Bibliography

Appendix G: Bibliography

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Miller, H.J. 1961. Waterfowl populations in vicinity of Grassy and Mammy Juda Islands, Detroit River. Memo to Grassy Island, Wayne County File dated February 10, 1961. Michigan Department of Natural Resources.

Robertson, James A., Kent C. Taylor, Michael J. Hambacher, William A. Lovis, and G. William Monaghan. 1999. Overview study of archaeological and cultural values on Shiawassee, Michigan Islands, and Wyandotte National Wildlife Refuges in Saginaw, Charlevoix, Alpena, and Wayne Counties, Michigan. Prepared for U.S. Fish and Wildlife Service under contract number 301818M494. Two volumes.

Upper Mississippi River and Great Lakes Region Joint Venture Management Board. 1998. North American Waterfowl Management Plan: Upper Mississippi River and Great Lakes Region Joint Venture Implementation Plan Update. 58 pp. plus appendices.

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U.S. Fish and Wildlife Service, Region 3. November 1990. Regional Wetlands Concept Plan: Emergency Wetlands Resources Act. 13 pages + tables.

U.S. Fish and Wildlife Service, Region 3. January 1999. Fish & Wildlife Resource Conservation Priorities. 25 pp.

Appendix H: Mailing List

Appendix H: Mailing List

Federal Officials

U.S. Senator Debbie Stabenow
U.S. Senator Carl Levin
U.S. Representative John Dingell
U.S. Representative James Barcia
U.S. Representative David Bonior
U.S. Representative Sander Levin
U.S. Representative John Conyers
U.S. Representative Carolyn Kilpatrick

Federal Agencies

John Hartig, River Navigator for the Greater Detroit American Heritage River
Coast Guard
USDA/Natural Resource Conservation Service
USDI/Fish and Wildlife Service, Albuquerque, New Mexico; Anchorage, Alaska;
Atlanta, Georgia; Denver, Colorado; Fort Snelling, Minnesota; Hadley, Massachu-
setts; Portland, Oregon; Washington, D.C.
USDI/East Lansing Private Lands Office; East Lansing Field Office; Alpena
Fishery Resources Office; Ann Arbor Law Enforcement Field Office; Great
Lakes Science Center, Biological Resources Division, USGS
USEPA, Great Lakes National Program Office, Chicago, Illinois

State Officials

Governor John Engler
Senator Michael Goschka
Representative Michael Hanley
Representative Jim Howell

State Agencies

K.L. Cool, Michigan Department of Natural Resources,
Director Russell Harding, Michigan Department of Environmental Quality
Pte. Moullee State Game Area
Ernie Kafcas
State Historic Preservation Officer, Lansing, Michigan

City/County/Local Governments

Mayor, City of Wyandotte, Michigan
Mayor, City of Ecorse, Michigan
Superintendent of Parks, City of Wyandotte, Wyandotte, Michigan
Chairman, Wayne County Board of Commissioners

Libraries

Detroit Public Library
Hoyt Public Library
Bacon Memorial District Library

Organizations

The Nature Conservancy
National Audubon Society
Conservation Fund
Michigan United Conservation Clubs
Wildlife Management Institute
Ducks Unlimited
Michigan Duck Hunters Association
Great Lakes Commission
Wildlife Management Institute
PEER Refuge Keeper
The Wilderness Society, Washington, D.C.
National Wildlife Federation, Ann Arbor, Michigan
The Conservation Fund, Arlington, Virginia

Media

Detroit News
Detroit Free Press
Saginaw News
Ecorse News-Herald
Wyandotte News-Herald
Michigan Radio News
Detroit Public Television
WJR-AM 760
WKBD, UPN 50
WWJ Newsradio 950

Individuals

Individuals who participated in open houses or focus groups or who requested to be on the mailing list.

Appendix I: List of Preparers

List of Preparers

Douglas G. Spencer, *Refuge Manager, Shiawassee National Wildlife Refuge*

Mr. Spencer provided overall direction, supervision, and coordination with agencies and the public. He assisted in writing and editing.

John H. Schomaker, *Refuge Planning Specialist, Region 3*

Mr. Schomaker provided coordination and served as co-author.

Edward P. DeVries, *Primary Refuge Operations Specialist, Shiawassee National Wildlife Refuge*

Mr. DeVries assisted in overall direction, supervision, writing and editing.

John Dobrovolny, *Regional Historian, Region 3*

Mr. Dobrovolny is the primary author of cultural resource sections.

Jane Hodgins, *Technical Writer/Editor, Region 3*

Ms. Hodgins served as primary editor.

Mary Mitchell, *Regional GIS Coordinator*

Ms. Mitchell prepared maps for the comprehensive conservation plan.

Appendix J: Summary and Disposition of Public Comments Received on the Draft CCP

Appendix J: Summary and Disposition of Public Comments on Draft Comprehensive Conservation Plan

The Detroit Audubon Society, Gibraltar City Council, and U.S. Environmental Protection Agency submitted comments related to the Draft Comprehensive Conservation Plan.

We considered the comments as we prepared the final Comprehensive Conservation Plan. The following paragraphs describe the comments and our response.

The Detroit Audubon Society recommended that the plan include activities to enhance the existing nesting habitat and create new habitat for Common Terns. The Society had questions about how the remediation of Grassy Island might help Common Terns. The Society urged us to go beyond surveys of invading plant species and implement control of them. Lastly, the Society urged us to evaluate additional areas of the Detroit River corridor for protection. We think the points about the Common Terns and the concern about the invading plant species are good. We will make sure that these points are considered in the planning and remediation of Grassy Island. We anticipate evaluating additional areas along the River when Congress establishes the Detroit River International Wildlife Refuge.

The Gibraltar City Council submitted a letter of concern about hunting on lands in an expanded refuge along the Lower Detroit River. The Council cited the prohibition of hunting on Wyandotte NWR and council members are concerned that this prohibition will be generalized to an expanded refuge.

The legislation that established Wyandotte National Wildlife Refuge, which included Grassy and Mamajuda Islands and associated aquatic shoals, specified that closing the Refuge to hunting was allowed by the Act. When the Refuge was established the concern was that hunting would move waterfowl out of the area and into Lake Erie. The Refuge was to act as a sanctuary to waterfowl, so hunters would have an opportunity to take waterfowl on other areas of the river. The Service will comply with the original intent and not allow hunting on or around Grassy Island. Mud Island was not in the original legislation. Hunting on or around this island will be assessed after meeting with representatives from local sporting clubs, Michigan Department of Natural Resources and the City of Ecorse.

If the Detroit River International Wildlife Refuge is established, Wyandotte National Wildlife Refuge will be absorbed into the new refuge and the new legislation will guide the Service on public use. When the new refuge is established, hunting and other public uses will be planned for the new refuge and hunting on what is now called Wyandotte National Wildlife Refuge will be re-evaluated. However, the concern for the safety of public use on Grassy Island will remain until the contaminant issue is resolved. No public use will be allowed on Grassy Island until the island's habitat is restored and deemed safe for wildlife and the public.

The U.S. Environmental Protection Agency (USEPA) requested that we acknowledge the designation of the Detroit River as an Area of Concern under the Great Lakes Water Quality Agreement. The Agency also suggested that it

would be beneficial if we summarize the type of remedial work that is proposed for Grassy Island. And, the Agency recommended that we acknowledge the importance of the coordination and collaboration between the Service and USEPA in the activities in the Detroit River. We have added a paragraph in the CCP that documents the designation of the River as an Area of Concern. We have not summarized a description of the remedial work. The East Lansing Ecological Services Field Office has the lead in the remediation planning of Grassy Island. It is too early in the planning effort to know or summarize the remediation. We appreciate the importance of coordinating our efforts with USEPA and have acknowledged this importance in strategy 1.1.3 of the CCP.