

OHIO COASTAL MANAGEMENT PROGRAM ECOLOGICALLY SENSITIVE RESOURCES

Uses Subject to Management

- Activities involving the filling, dredging or alteration of wetlands and special aquatic sites.
- Activities affecting natural areas, nature preserves, wildlife habitat areas and areas of exceptional ecological significance.
- Activities threatening rare and endangered plant and animal species.
- Activities involving the introduction or propagation of exotic species.

Wetlands

Wetlands are considered a critical natural resource in Ohio because they serve many beneficial natural functions and are greatly diminished throughout the state relative to the original extent of wetlands in Ohio. The U.S. Fish and Wildlife Service's *Report to Congress, Wetlands Losses in the United States 1780s to 1980s* (Dahl, T.E., 1990), estimated Ohio's loss at 90 percent of an original 5 million acres. In pre-settlement times, nearly 300,000 acres of marshes spread from the Great Black Swamp of northwest Ohio eastward along Lake Erie. Conversion of Lake Erie marshes and coastal wetlands to other uses has continued. A Division of Wildlife (DOW) inventory showed a 45 percent decline in acreage from 1954 to the mid-1970s. Since that time, however, losses have been partially offset as a result of increased state and federal regulatory authority (Sections 401 and 404, CWA) and more aggressive acquisition and restoration efforts of recent years. Today, an estimated 33,000 acres of wetlands remain within the coastal management area.

The Ohio Wetlands Priority Conservation Plan published by ODNR in 1988 identified the following threats to remaining wetlands:

Agricultural drainage – Losses attributable to drainage improvement projects involve both direct conversion and incidental results of stream and drainage system modification. Thousands of acres of low-lying coastal marshes have been diked and drained for farming, although some are flooded in fall for waterfowl. Such areas are not irreversibly converted to nonwetland uses. In fact, some of these areas have reverted to marsh by landowner design or by the encroachment of higher lake levels.

Development – Ohio's lacustrine and adjacent palustrine wetlands are threatened by the construction of marinas and waterfront developments such as condominiums and resort communities. This is particularly critical in the Lake Erie region, where unprecedented development and economic growth is occurring because of the area's attractiveness for outdoor recreation and tourism and its quality of life amenities. It is extremely difficult to quantify such losses, because

many are piecemeal losses, partial habitat alterations and secondary and cumulative effects upon wetlands.

Mounting pressure exists to convert diked (and sometimes pumped) wetlands in cropland use to nonagricultural and nonwater dependent uses such as residential, recreational and resort development. This can represent an even greater threat to wetlands than agricultural use because such development is irreversible and is often adjacent, or in close proximity, to other marshland. Secondary and cumulative impacts of such development are serious concerns.

Nonpoint Source Pollution – The degradation of wetlands through nonpoint source pollution is more difficult to assess and manage. Ohio EPA and ODNR have developed the state's Nonpoint Source Assessment and Management Plan, which in 1988 identified hydrologic/habitat modification activities as the principal nonpoint source threat to wetlands in Ohio. Ohio's 1993 Statewide Comprehensive Outdoor Recreation Plan (SCORP) reaffirmed this.

Secondary impacts on off-site or "downstream" wetlands are a serious concern with respect to many large-scale earth disturbing developments and activities. Inadequate erosion control and stormwater runoff control measures can result in the downstream siltation of aquatic habitats including wetlands.

No comprehensive study has been conducted since 1989, and there is no concrete evidence to suggest that dramatic changes have occurred in either the nature or extent of these threats. One possible exception is that marina development has declined significantly since the late 1980s. However, as stated earlier, losses are being slowed by regulatory and other protective efforts, and a decline in the rate of loss is occurring. As of 1997, it is difficult to quantitatively assess this change in loss rate, but it is important to do so. The OCMP, through program administration funding, intends to improve tracking of individual and cumulative losses and restorations to assess and monitor the status and trends of coastal wetlands. The recently developed Ohio Wetlands Strategy includes a proposal for a biennial report to assess and summarize status and trends, including all enforcement actions.

The outlook for coastal wetlands reflects positive trends in statewide wetlands conservation. The Ohio EPA protects wetlands by including the term wetlands in the Ohio Water Quality Standards and Section 401 Regulations and Permit Procedures. The acquisition and protection of coastal area wetlands has been enhanced by increasing partnership projects for wetlands acquisition and restoration developed among public, private and independent agencies and organizations.

To aid wetlands regulation, monitoring and enforcement, acquisition and protection strategies, and other planning and management activities for wetlands conservation in Ohio, a statewide wetlands inventory has been developed. Managed by ODNR's Division of Wildlife (DOW), it is a remotely sensed inventory from satellite imagery. It has been designed to be used by resource managers, agricultural interests, local and regional agencies and other public and private interests for a wide variety of wetlands related purposes. The inventory has been completed for all nine coastal area counties and shows approximately 33,000 acres of wetlands within Ohio's coastal management

area. About one-half of that acreage is either publicly owned and managed or is owned and managed by hunting clubs and nonprofit conservation organizations, as follows:

<u>Ownership</u>	<u>Wetland Acreage</u>	<u>Total Acreage Owned</u>
<u>ODNR</u>		
Parks and Recreation	1,400	5,653
DNAP	1,200	1,849
DOW 4,500	6,762	
<u>USFWS (Ottawa NWR)</u>	5,350	8,316
<u>The Nature Conservancy</u>	133	770
<u>Hunting Clubs</u>	<u>4,300</u>	<u>8,000</u>
TOTAL	16,883	31,350

In 1993 and 1994, the DOW completed the Mallard Club and Pickerel Creek wetland restoration projects and broke ground on the Metzger Marsh restoration project. These projects will add nearly 2,400 acres of viable wetlands along the Lake Erie coast.

Several thousand acres of former wetlands in the coastal region exist in productive or marginally productive agricultural status. Some of these areas have high potential for restoration and management as habitat for migratory waterfowl, other wetland-dependent fish and wildlife, and rare species of plants and animals. Ohio is situated in the Lower Great Lakes-St. Lawrence River Joint Venture region of the North American Waterfowl Management Plan (NAWMP) developed by agreement between Canada and the United States in 1986. Lake Erie Marshes is a focus area of the NAWMP in which thousands of acres of coastal area wetlands are being protected, restored and enhanced through the cooperative efforts of the U.S. Fish and Wildlife Service, Division of Wildlife and other public, private and independent organizations. More than 650 acres of privately owned previously drained coastal area wetlands have been restored through DOW cost-sharing projects with farmers and other landowners. Restoration projects within NAWMP focus areas and joint venture boundaries receive the highest priority.

Diking of many coastal wetlands is essential for their survival, because it is usually the only means of protecting wetlands whose landward advance during periods of high lake levels is restricted by inland development. Maintenance and reconstruction of dikes is a continual, expensive and necessary task, especially during periods of high water. In addition to units of the Ottawa National Wildlife Refuge and several state wildlife areas, privately owned diked marshes are an important component of Ohio's coastal wetland resource base. Diked marshes require expensive maintenance and carefully planned water level management and other controls to maintain fish and wildlife habitat values and overall productivity. Many benefits important to the general public interest are realized by the active management of these wetlands.

Natural Areas and Endangered Species

Early explorers of the Lake Erie region described vast areas of wetlands, upland hardwood forests and miles of sandy beaches. Development proceeded quickly until very little of the shore had escaped human impact. Efforts to protect the remnants started late and have met with only limited success in recent years due to high land costs, limited funds and conflicting ideas on appropriate land use. Presently, Ohio's coastal area has within its boundary six designated state nature preserves: Mentor Marsh, Headlands Dunes, DuPont Marsh, Lakeside Daisy and Sheldon Marsh, which are managed by ODNR's Division of Natural Areas and Preserves, as well as Old Woman Creek, managed by ODNR's Division of Wildlife. The Nature Conservancy and the Cleveland Museum of Natural History are also involved in acquisition and/or management of several natural areas in the coastal area.

In addition to protecting large, undisturbed sites, it is also important to consider the ecological diversity – the plants, animals and physical features that make up the coastal landscape. The loss of even a few species due to habitat alteration and other environmental disturbances can impair the ecosystem's function and harm recreation, water supply, commercial fish production and overall ecosystem stability. The loss of predator fish species in Lake Erie with subsequent overabundance of other species is a good example. ODNR's Division of Natural Areas and Preserves (DNAP), maintains the state's Natural Heritage Database, which is a repository of information on Ohio's rare plant and animal species and unique natural features.

Continued protection of remaining natural coastal areas and elements of diversity requires an increased understanding of intricate ecosystem relationships and the system's susceptibility to disturbance. More importantly, a firm public commitment and capital improvement funding are needed to preserve such areas in the coastal area.

Exotic Species

The introduction of exotic species, or nonindigenous flora and fauna, to the coastal area environment has been documented since settlement of the region. Since the 1800s, 139 nonindigenous species, mostly plants, have become established in the Great Lakes. Thirteen have substantially affected the region's ecosystem, economically as well as ecologically. Three examples illustrate this problem in Lake Erie:

1. Zebra mussels (*Dreissena polymorpha*) were almost unheard of in the Lake Erie coastal area until 1989. But by the end of the year, zebra mussels had colonized nearly everywhere in Lake Erie. Zebra mussels are being reported from other sites in all of the Great Lakes and are spreading beyond the Great Lakes to other lakes and rivers. Zebra mussels originated from the Caspian region of western Russia and spread throughout Europe with the construction of canals and increased shipping. Their invasion into the Great Lakes appears to have occurred due to the discharge of freshwater ballast by one or more transoceanic ships. Zebra mussel infestation in water intake structures for

power plants and municipal water treatment plants causes significant reductions in pumping capabilities. Recreation is affected due to extensive deposits of zebra mussel shells on Lake Erie beaches. Cooling water inlets on boat engines can become clogged. Ecological and human health impacts are possible because the filter feeding zebra mussels can rapidly accumulate organic pollutants within their tissues. This may have implications for human consumption of fish and waterfowl. Clearer water resulting from the mussels' cleansing ability may cause rapid aquatic weed growth and declining zooplankton levels, thus further disrupting the food chain. Zebra mussel pollutant uptake and food chain relationships are currently being studied.

2. Purple loosestrife (*Lythrum salicaria*) has become a major pest in Lake Erie coastal area marshes. This is a significant problem for protecting and managing many wetland areas that provide important resting and feeding areas for migratory waterfowl and habitat for other marsh-dependent fish and wildlife species. This plant invades marshes and grows in profusion, creating a monoculture habitat to the detriment of wildlife and other plants and plant communities. Purple loosestrife is only one example of problems with nonindigenous flora. However, many habitats and plant associations suffer from the presence of weed species. Protecting the integrity of natural areas and nature preserves can require intensive management to maintain desired natural conditions.

3. The common carp (*Cyprinus carpio*) is another problem species. Carp were apparently introduced into Ohio waters in the Cincinnati area and around Fremont in the Lake Erie coastal area in the late 1800s. Carp are often present in great numbers and may contribute to turbidity problems, adversely affecting the germination and growth of aquatic plants and interfering with the spawning success of other species of fish.

Through the coastal management program, ODNR will be increasing the state's efforts, working with other Great Lakes states and public and private interests to develop, adopt and enforce policies that will help prevent the invasion and spread of exotic species.