Coastal and Estuarine Land Conservation Program Plan

For the State of Ohio

Prepared by: Ohio Department of Natural Resources,
Office of Coastal Management

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I. Introduction

Coastal areas are among the most developed in the Nation. Coastal counties, including those along the Great Lakes, are growing three times faster than counties elsewhere, adding more than 3,600 people a day to their populations. Coastal and marine waters support 28 million jobs and provide a tourism destination for 180 million Americans each year. The value of the ocean and coastal economy to the U.S. is over $115 billion each year (NOAA 2005-2010 Strategic Plan).

For these reasons and others, the Department of Commerce, Justice, and State Appropriations Act of 2002 (Public Law 107-77) directed the Secretary of Commerce to establish a Coastal and Estuarine Land Conservation Program (CELCP; "the Program") "for the purpose of protecting important coastal and estuarine areas that have significant conservation, recreation, ecological, historical or aesthetic values, or that are threatened by conversion from their natural or recreational state to other uses," giving priority to lands that have significant ecological value and can be effectively managed and protected. The CELCP program was re-authorized in March 2009 as part of the Omnibus Public Lands Management Act of 2009, which enacted some changes for the program.

Ohio's coastline consists of 312 miles of the Lake Erie shore (including the islands) and is associated with 11,649 square miles of the Lake Erie watershed within the state boundaries. Changes in land use over the last 200 years have drastically altered the landscape in Lake Erie's coastal watershed, with over 78% of the land converted from its original state. Conversion of the natural forests, wetlands and prairies to farmland and urban areas has helped Ohio to establish a thriving agricultural and industrial based economy. While this conversion has had negative impacts on Lake Erie's ecosystem, there are many significant coastal and estuarine environments remaining that function as critical habitats for a variety of plant and animal species, have important recreational and/or historical value, preserve aesthetic values, and preserve the quality of life for the citizens of Ohio.

Population trends for Ohio's Lake Erie watershed and coastal communities indicate continuation of urban growth and land conversion for residential and commercial uses. For instance: year 2000 census data indicate that although Ohio's nine coastal counties (Lucas, Wood, Ottawa, Sandusky, Erie, Lorain, Cuyahoga, Lake, and Ashtabula) make up only 7.6% of Ohio's total land area, more than 23% of Ohio's population lives in those counties (Wood County does not contain Lake Erie shoreline but does contain part of Ohio's Coastal Management Area). Nearly 70% of Ohio's Lake Erie watershed residents live in those same nine coastal counties (Lake Erie Quality Index 2004; U.S. Census 2000). In addition, the north central coastal counties of Ottawa, Erie, and Lorain attract between six and eight million visitors during the peak summer season.

According to a survey conducted for the State of the Lake: Lake Erie Quality Index (1998), a sample of the regular recreational users of Lake Erie ranked the availability of recreational access to Lake Erie as low. One of the significant impediments to providing adequate access to meet this demand is the fact that approximately 87% of the Lake Erie

shoreline is privately owned. Acquisition of additional coastal and estuarine lands through fee simple or conservation easement purchase as provided for in the CELCP would provide additional opportunities for public access to Lake Erie in Ohio. Protected lands are particularly important in proximity to population centers so that communities have access to natural resources.

Land use alterations continue to result in habitat loss and water quality impacts. It is critical that stewardship efforts be sustained so that improved habitat protection and restoration will increase the chances for survival of species and maintenance of other ecological values (State of the Great Lakes Report, 2003). Baseline environmental assessments have been established for open water habitats in Lake Erie and some of the larger streams in the watershed, but the impacts resulting from rapid land conversion along the coast will not be realized for several more years (State of the Lake Report, 2004). Therefore, strategic and effective land conservation is a timely issue for Ohio.

The State of Ohio has developed this Coastal and Estuarine Land Conservation Program Plan (CELCP Plan), in cooperation with state and local governments, non-governmental organizations, and interested citizens in order to participate in the national Program. The Ohio CELCP Plan provides an assessment of priority land conservation needs and guidance for nominating and selecting coastal and estuarine land conservation projects within the state. The CELCP Plan provides an opportunity to bring state and local governments together with non-governmental organizations and private landowners to achieve a common goal of resource conservation in Ohio.

The CELCP Plan will augment ongoing conservation and natural resource protection efforts of the Ohio Coastal Management Program and the Ohio Lake Erie Commission. The CELCP Plan will also enhance implementation of state and regional scale conservation measures underway in the Ohio coastal area such as: land acquisition priorities for the National Estuarine Research Reserve at Old Woman Creek estuary (administered by the Ohio Department of Natural Resources – Division of Wildlife), the Lake Erie Protection & Restoration Plan, the ODNR – Division of Wildlife's Strategic Plan, Wetland Habitat Tactical Plan and related focus area plans, the Lake Erie Lake-wide Management Plan (LaMP), and the recommendations of the Great Lakes Regional Collaboration.

The Program also provides a forum for cooperative efforts between governmental entities and the non-governmental organizations that have expertise in land conservation practices and have worked to protect thousands of acres of property along the Ohio Lake Erie coast and in the coastal watershed. These include The Trust for Public Land and The Nature Conservancy at the national and state level, along with many other state level non-governmental organizations.

II. Priorities for Coastal and Estuarine Land Conservation

A. Geographic Extent of Ohio's Coastal and Estuarine Areas

For the purposes of the Program, Ohio's "coastal and estuarine areas" are those areas within the state's coastal watershed boundary as described in NOAA's Coastal Zone Boundary Review (October 1992). The coastal watershed boundary is defined by the inland boundary of those 8-digit United States Geological Survey hydrologic cataloguing units that contain portions of watersheds along the coast that drain directly to Lake Erie, and by those cataloguing units that are located adjacent to the coast.

The Ohio CELCP Plan boundary is defined as the Lake Erie watershed within the state of Ohio (Appendix A, Figure 1). Ohio's Lake Erie watershed encompasses 11,649 sq. mi. in 35 of Ohio's 88 counties. Included within this area is the entire Coastal Management Area (Coastal Zone) as defined in the Ohio Coastal Management Program document, and all or nearly all of the land area within the nine counties (Lucas, Wood, Ottawa, Sandusky, Erie, Lorain, Cuyahoga, Lake, and Ashtabula) that stretch along the Lake Erie coastline and/or contain parts of the Coastal Management Area.

While the Ohio CELCP Plan priorities focus on and emphasize Lake Erie's coastal shoreline and estuarine lands, this broader boundary enables the state to solicit and evaluate other projects with potentially significant effects upon the quality of Lake Erie's coastal environment. Existence of unprotected coastal shoreline and estuarine lands of high ecological value is limited in Ohio, and this approach allows the state to pursue the goals of the Program even if coastal shoreline and estuarine lands are not directly available for acquisition.

B. Types of Lands and Waters or Values to be Protected

Conservation Needs and Values

The Lake Erie coast is a valued resource for the people of the State of Ohio and neighboring areas of the Great Lakes region. The natural beauty and vitality of the coast is what attracts so many people to the lake, not only to reside there but also to participate in the coastal economy through tourism and recreation opportunities. Important underlying conservation values include the promotion of the quality of life of people living in Ohio and the coastal economy.

Lands set aside for protection contribute to quality of life by providing open space for recreation and other natural amenities in or near developed areas, and serving as locations for educational opportunities about Lake Erie ecology and history. These lands can also provide economic opportunities such as ecotourism (in Ohio, birding along the Mississippi and Atlantic flyways) and other tourism activities. The exact economic value of ecosystem services is difficult to quantify, although the replacement costs of services

such as erosion prevention, flood prevention and/or mitigation, and water quality protection can be substantial. The coastal economy also benefits from improved quality of life in a general way, as when companies choose to locate in areas that employees prefer due to high quality of life factors. The positive impact of land conservation on the future quality of life and economy in the Lake Erie coastal area cannot be overstated, due to the pressures from development, the expected increases in coastal population, and the continuing shift of the area's economy away from manufacturing activity.

Based on these values, three general areas of conservation needs were identified: protection of environmental resources, protection and restoration of ecosystem functions, and the protection of cultural resources.

Protection of Environmental Resources. Items in this category were ranked as the highest conservation needs by participants in Ohio's CELCP Plan development process. This value reflects the focus of the federal Program on ecological quality. Along Ohio's Lake Erie coast, these resources include coastal wetlands, islands, beaches, swamp forests, riparian corridors, and the rare and endangered species associated with these freshwater and near-shore ecosystems. The Lake Erie coastline also provides resting and feeding habitat for migratory birds and butterflies along nationally and internationally significant flyways. Values that these resources provide to the public include the presence of abundant wildlife for observation, hunting, and fishing; aesthetics such as scenic views; improvement and maintenance of water quality by providing areas to filter runoff from intense land uses such as urban areas and agriculture; and the availability of recreational experiences such as boating, swimming, hiking, and camping.

Ecosystem Functions. One of the goals of the Ohio Coastal Management Program is to prevent impairment of coastal resources, including ecosystem functions. This includes many if not all of the conservation values embodied in the federal Program. Participants in Ohio's CELCP process identified a number of ecosystem functions that are conservation needs, such as providing corridors of protected lands (both upland and along river, stream, and coastal areas), buffers for critical habitat areas and existing protected lands, restoration of floodplain connectivity and function, prevention of siltation, and reduction of the need to dredge waterways. Providing restoration opportunities, establishing filtration buffers, and bringing lands with previously poor management practices back to a restored condition were considered important components of maintaining valuable ecosystem functions. Proper management also contributes to a decrease in the extent of undesirable invasive species, which can cause both ecological and economic damage if left unchecked.

Cultural Resources. In addition to the primary goal of protecting lands with high ecological value, the Program allows for the protection of lands with cultural significance such as recreational, historical, and aesthetic values. Protection of these cultural resources is a conservation need along the Lake Erie shoreline. In particular, the public greatly values opportunities for public access to the coastal and estuarine areas, whether or not the area is of high ecological quality. The Ohio Coastal Management Program recognizes

the value of public access as a beneficial use of the coast, as it improves quality of life and builds public support for protection of coastal resources.

The CELC Program Final Guidelines specify that only passive recreation opportunities may be considered within project areas, so that recreation does not conflict with the primary goal of ecological protection. Passive recreation is defined as recreation that does not require the construction of permanent facilities such as ball fields, buildings, docks, marinas, or paved tracks. Examples of suitable recreation opportunities in the Lake Erie watershed include trails, small sand or gravel boat launches without docks, unimproved picnic areas, and access to sand beaches. Hunting and fishing are also generally considered passive recreation within the plan.

Other cultural resources that can be protected along with ecological resources include historic and aesthetic features of the landscape. One example of this is the maintenance of rural character in agricultural areas. Rural character is an aesthetic based on historic and visual features and is often enhanced by the protection of historic structures, woodlot areas, and riparian corridors. Although agricultural lands would not be eligible for the Program, the open spaces associated with rural character encompass environmental resource and ecosystem function values in addition to the historic and aesthetic values. Archaeological and more recent historic sites often occur near areas of high ecological resource value. For example, American Indian archaeological sites often occur along stream banks. A well-known example of a coastal historical site in Ohio that protects a valued cultural resource is the Marblehead Lighthouse in Marblehead, Ohio. This site is not only a cultural resource, but also provides public access to the shoreline and protection for onsite ecological resources as well. Ohio's landscape also contains significant geological features of historic and scenic interest such as glacial grooves.

The aesthetic values to be protected include scenic views and viewsheds of coastal lands. A viewshed is similar in concept to a watershed, except that instead of the area where water flows, it is the area visible from a given point. Generally, views that are considered scenic consist of long views (perhaps a half mile or more on a clear day) with vegetation and water visible at varying distances. Views of vegetation and water over shorter distances also have some aesthetic value, although the attractiveness of a given scene is much more variable and relatively less at finer scales. Both types of views could also contain scenic cultural resources such as lighthouses. In Ohio, this type of scene would occur along the Lake Erie coastline (including to or from the lake), although another example might be a large river valley such as that of the Cuyahoga River in Cuyahoga County.

Benefits to Ohio's Old Woman Creek National Estuarine Research Reserve

The CELCP Act of 2009 requires that funding be provided through the program to benefit National Estuarine Research Reserves (NERRs). Ohio has one NERR at the Old Woman Creek (OWC) estuary in Huron, Ohio. The following discussion addresses questions that may arise in identifying projects that may provide benefits to the OWC NERR.

A potential obstacle for projects that directly benefit the OWC NERR is that proposed acquisitions identified in the OWC NERR Management Plan as buffer areas would not be competitive under CELCP as it has been historically implemented, since these areas are primarily agricultural in use. However, there may be some opportunities to purchase conservation easements on relatively undisturbed riparian corridors upstream of the estuary to directly benefit the NERR from an ecosystem management standpoint. The conservation of riparian corridors of interest is prioritized in the Draft 2010-2014 OWC Management Plan. This type of project would be a within-watershed project that Ohio would likely propose for NERR-specific funding under CELCP.

The following examples of projects are considered by the State of Ohio to have benefits to the OWC NERR, although it is acknowledged that NOAA has not yet determined whether lands in adjacent watersheds would be eligible as projects that provide benefits to NERRs. The Bratenahl Phase I CELCP project, which saw the conservation of a drowned stream mouth coastal wetland not unlike Old Woman Creek, benefits the OWC NERR by protecting a similar freshwater estuarine habitat that could serve as a reference or study site. Other such sites potentially benefitting the OWC NERR in this manner might be found at the mouths of the small coastal tributaries between the Huron and Vermilion River outlets. These small tributary watersheds have already been identified as Project Areas in Ohio's CELCP Plan.

The OWC NERR maintains a close working relationship with the Firelands Coastal Tributaries Watershed Program, which focuses not only on the Old Woman Creek watershed but also the other Lake Erie tributaries in the area in a cohesive manner. Acquisitions in those area watersheds, even if the controlling entity would not be the OWC NERR, would benefit the OWC NERR not only ecologically but also through the common outreach and stewardship activities of the watershed group and the Erie County Soil and Water Conservation District, as well as through the general inter-community social culture that exists among Huron, Huron Township, Perkins Township, and Sandusky.

Working Waterfronts in Ohio

The CELCP Act requires that states ensure that the CELCP acquisitions 'complement working waterfront needs.' Although the CELCP Act does not define working waterfronts, they are defined in the Keep America's Waterfronts Working Act of 2009 (H.R. 2548)[1] as water-dependent commercial activities, including commercial fishing, recreational fishing, tourism, aquaculture, boatbuilding, transportation, and many other water-dependent businesses. All of the listed activities occur to some degree in Ohio. In June 2009, the National Ocean Economics Program released a report containing detailed information about the ocean and coastal economies for the U.S. coastal states (State of the U.S. Ocean and Coastal Economies – 2009). According to this report, in 2004 (the latest year for which data were available), water-dependent tourism accounted for 66% of Ohio's "Ocean Economy" – that part of Ohio's Gross Domestic Product dependent on the

[1] Available online at http://thomas.loc.gov/cgi-bin/query/z?c111:h2548:.

waters and/or resources of Lake Erie. Other important sectors include Marine Transportation (18%) and Boat Building (8%), with the remaining 8% split between Offshore Minerals, Living Resources (e.g. fishing), and Marine Construction. Additionally, 88% of Ohio's Ocean Economy-related jobs were in coastal tourism and recreation.

Tourism is highly compatible with CELCP goals in Ohio, and the potential for this use at a project site is included in Ohio's project evaluation criteria. Properties suitable for marine transport or boat building activity (such as marinas and ports) will tend to be located in more urban areas, where properties will likely not be competitive for CELCP funding. Commercial fishing is still active in the state, but commercial fishing facilities in Ohio are also typically located in urban settings. However, significant spawning, nursery, and adult fish habitat exists just offshore for much of Ohio's coast (See Ohio Coastal Atlas, Chapter 7 for maps[2]). This habitat is critically important to maintaining fish stocks, not only for commercial fisheries but also for the more financially significant charter boat and recreational fishing industries. Thus, preserving shoreline properties in ecologically sensitive areas can contribute to this component of working waterfronts indirectly, particularly given the preference in the CELCP for shorelines that are not hardened. Hardening of the shore contributes to the loss of this fish habitat by promoting erosion of the component substrates.

For these reasons, it is highly unlikely that an otherwise eligible CELCP project would be incompatible with Ohio's working waterfronts. Ohio is committed to the support of water-dependent economic activity in the Coastal Management Area that contributes to the overall economy of the state.

Conversion Threats

These conservation needs are made all the more critical in the face of a number of threats of conversion due to human activities, both direct and indirect. The greatest direct threat to lands with conservation, recreational, ecological, historical and aesthetic value in Ohio is the conversion of land through residential and commercial development. This conversion is driven by the population pressure along the coast as described in the Introduction to this plan. The need for acquisition as a tool for the protection of resource lands in the face of this threat is urgent for three reasons: first, because the change is usually complete, destroying pre-existing values and functions; second, because of the speed with which the land is being converted, and third, because the change is essentially permanent. This threat tends to be greatest in areas near large metropolitan areas. For this reason, the state evaluation criteria will include a factor to evaluate each project based on its location relative to existing population centers.

Other land conversion threats that occur in Ohio's Lake Erie watershed include loss of wetlands through draining and filling practices (both legal and illegal), continued parcelization of large tracts of land into smaller ones (making the assembly of protected areas more difficult), reduction of forested areas, landfilling and dumping activities that

[2] Available online at http://www.Ohiodnr.com/Default.aspx?tabid=19820.

often occur in wetlands, road construction, removal of stream buffers, and resource extraction. Ecological and recreational values can also be compromised by activities that take place in or along waterways, such as channelization, installation of flood control structures, culverting, development of storm water conveyance, and shoreline armoring.

Human activities also result in some indirect land conversion threats. A prime example of this that presents a great challenge in Ohio is the proliferation of undesirable invasive species. Many areas of high ecological value, including lands already protected and lands that are not developed but not yet protected, are undergoing rapid conversion from native ecosystems to ecosystems affected or dominated by the undesirable species. Lands under protection can be actively managed to mitigate this threat, but unprotected lands are often severely damaged. Other indirect threats include bacterial contamination of beaches, industrial pollution, lack of use of best management practices in developed and agricultural areas, and soil compaction.

Acquisition Needs

Acquisition of coastal and estuarine lands of high conservation, recreation, ecological, historical, and aesthetic value can mitigate these conversion threats and maintain the ecological, functional, and cultural resources that are so important to the people of Ohio. In many areas, existing protected lands along the coast could be enhanced by the addition of adjacent or nearby lands of similar quality or potential for similar quality, if managed appropriately. For example, Ohio's western coastal marshes that are a remnant of the Black Swamp are protected in a patchy fashion along the shore of the western basin of Lake Erie. Acquisition of additional lands in the vicinity of these protected lands would add to the value of existing protected lands by providing buffers and larger patches of migratory bird habitat. In some areas, there is potential for lands to be acquired that will complement broader scale planning efforts and preserve the value of previously unprotected ecological communities, while also protecting and enhancing recreational opportunities. The Chagrin River watershed, located to the east of the city of Cleveland, provides one such example of extensive local planning for ecological and recreational use in a high population density area. Acquisition of these lands and others like them, as described in this Plan, will assist the State of Ohio in pursuing the goals of the Program, the goals of the Ohio Coastal Management Program, and supplement a number of other planning efforts both public and private.

C. Project Areas

For the purposes of the Program, "Project Areas" are defined as "discrete areas to be identified within Ohio's CELCP Plan that describe the state's priority areas for conservation based on national and state criteria, representing their values to be protected through the Program and areas threatened by conversion." Ohio's Project Areas are based on the types of lands and values discussed in the sections above on environmental resources, ecosystem functions, and cultural resources. Although quality of life factors

such as public access, educational, and economic opportunities are important to Ohio, these values are evaluated using the state project ranking criteria and are not called out geographically as Project Areas.

Table 1 lists the discrete Project Areas for Ohio, within the previously described geographical extent of the coastal area. Areas are not mutually exclusive; for example, a property might have both shoreline access and rare species present. The state ranking criteria provide points for each of these Project Areas, such that a property with multiple characteristics will score higher than a property that has only one of these attributes. Highest preference is given in the state scoring criteria for these project areas that exist in the Coastal Management Area, with second preference to these project areas where they exist in Ohio's nine coastal counties and third preference to project areas in the remainder of the Lake Erie watershed. Definitions for each Project Area listed in the table follow. The next section, II. D., lists and describes supporting plans incorporated by reference into the Ohio CELCP Plan that include additional details about lands within the Project Areas for which prior acquisition planning efforts have occurred.

Table 1. Geographic Locations of Ohio's CELCP Plan Project Areas
Lands with Significant Ecological Resources:
Lake Erie Islands
Coastal marshes/wetlands (lake level influenced)
Lake-influenced transitional shoreline habitat (upland and/or dry in low lake level conditions, inundated in high water; including but not limited to sand beaches)
Other wetlands: marsh, swamp forest, bog, fen, wet meadow
Properties containing rare habitats (e.g. alvars, prairies) and/or coastal rare species (e.g. state and/or federally listed animal and plant species)
Lands that serve as migratory species breeding and flyway habitats (including upland forests and vegetated corridors)
Lands with Significant Ecosystem Functions:
Shoreline properties (fronting on open lake)
Shoreline properties fronting on bays and embayments
Floodplains
Riparian corridors, including Scenic River Riparian Corridors
Lands in the watersheds of small (<60 mi^2) Lake Erie tributaries
Properties buffering or otherwise associated with existing protected lands
Lands with Significant Cultural Resources
Areas that protect aesthetic values (e.g. views to or from protected lands, including views from Lake Erie, scenic byways, and views that include rural character)
Historical sites (listed on or suitable for listing on state and/or national registers) and/or archaeological sites
Unique Geographic/Geological Features (e.g. ancient lake shore ridges, other glacial features, karst areas, caves)

Ohio's Coastal Management Area (see Figure 1 in Appendix A) is discussed in detail and formally designated in the Ohio Coastal Management Program document[3]. Best professional judgment and substantial public input were combined during the designation process to delineate the coastal area with the highest degree of connection to Lake Erie. The Coastal Management Area includes the Lake Erie Islands, coastal wetlands, and shoreline properties, and overlaps with all of the other categories of Project Areas to varying degrees. Lands within the Coastal Management Area with the highest ecological value have the highest state priority for protection since they are of greatest relevance to the Program goals and thus are the most likely to be competitive for federal funding.

However, Ohio's Coastal Management Area does not include all of the areas that have significant ecological, functional, or cultural resources beneficial to Lake Erie's coast as called out in Table 1. While some of these lands have been mapped by various agencies, sufficient data sets are not available at this time such that the state can confidently provide a comprehensive map of Project Areas based on these types for the purposes of the Program. Ohio has continued to develop spatial analysis tools for evaluating potential project areas, and will use those tools as additional data sets become available to further define and refine the Project Areas. The following descriptions are provided as a guide to determine whether a property containing these features could be considered a project area for the purposes of Ohio's CELCP Plan. Properties with a diversity and/or high quality of these types, particularly if they are also associated with plans as discussed in section II.D., will be more competitive for selection at the state level and for funding at the federal level.

Lands with Significant Ecological Resources

Lake Erie Islands. This includes all lands on islands in Ohio's Lake Erie waters. All of these islands are located entirely within the Coastal Management Area (See Figures 1 and 2 in Appendix A; for a detailed listing, see the Ohio Coastal Atlas, Chapter 2, pp. 31-32[4]). The islands present a special case for Ohio. Not only do the islands of the western basin provide habitat for the endemic, federally threatened and state endangered Lake Erie Water Snake (*Nerodia sipedon insularum*) and other state listed rare and endangered species, but they are also a critical migratory corridor across the lake. Lands on the islands, even marginal lands, are frequently observed to provide resting locations for the snakes and migrating individuals. The larger islands (including islands outside of the western basin) have year-round residents, although the islands' populations peak in the summer with people who live in seasonal housing. There is also an active local summer tourism economy, with ferry lines bringing in transient tourists. The islands have historic features that include historic battle sites, lighthouses, pre-settlement native petroglyphs, a confederate cemetery, early industries of European settlement times such as quarrying and grape growing, and even glacial geology thousands of years old. The combination of ecological and cultural resources, limited land area, and high demand for both private ownership and public access puts properties on the islands at a premium for protection.

[3] Available online at http://www.ohiodnr.com/LakeErie/OCMP_Document/tabid/9260/Default.aspx .
[4] Available online at http://www.ohiodnr.com/Default.aspx?tabid=19820.

Coastal Marshes/Wetlands. This includes wetlands that are adjacent to the lake, or riparian to tributary streams, that are influenced by lake level fluctuations. These wetlands provide habitat for both common and rare coastal species, resident and migratory, in addition to buffering changes in lake levels. All of these coastal marshes in Ohio are located within the Coastal Management Area. National Wetland Inventory[5] data may be used to determine the location of coastal marshes and wetlands. Professional wetlands delineations in lands outside of these mapped data will also be considered as Project Areas.

Wetlands. This category includes marshes (other than coastal marshes), swamp forests, bogs, fens, and wet meadows. During the initial public input phase of the CELCP Plan development, wetlands consistently rated among the highest priorities for protection among participating stakeholders. Even when not hydrologically connected to Lake Erie, these lands have high potential for biological diversity and provide important supplementary habitat for animals (particularly migrating birds) that also use the coastal area. Therefore, these lands have a high state priority for protection, particularly if exclusively coastal lands are not available. National Wetland Inventory data (see previously referenced link) may be used to determine the location of coastal marshes and wetlands. Professional wetlands delineations in lands outside of these mapped data will also be considered as project areas.

Rare Habitats and Species. Rare habitats of dry upland areas along Ohio's Lake Erie coast may include, but are not limited to, alvars, prairies, and oak savanna sand barrens. Alvar habitats occur on rocky outcrops such as those found on some of the Lake Erie Islands and the Marblehead peninsula. Prairie communities are typified by tallgrass species with deep roots and other fire-adapted perennial herbaceous vegetation. Prairie remnants occur more commonly in the Midwestern plains states, but their occurrence in Ohio is rare due to wetter conditions that favor the growth of forests and also due to the preferential use of former prairie lands for farming and development. Oak savanna sand barrens consist of plants adapted to the extremely sandy soils, such as black oak (*Quercus velutina*), sand cherry (*Prunus pumila*) and wild lupine (*Lupinus perennis*). An example of this type is the Oak Openings, a globally rare ecosystem in the lower Maumee River watershed that is situated on ancient lake beaches and dunes associated with glacial stages of Lake Erie. Because these habitats are rare, they are not usually distinguished via remote sensing data at the state scale. However, field data may be used to indicate whether a property contains biological communities consistent with one or more of these rare upland habitats that are associated with current or relic coastal landscapes.

Coastal rare species in Ohio are defined as species listed on the federal and/or state endangered and threatened species list, that are present in coastal habitats. The list of known coastal rare species is provided in Appendix B. The listing is divided into species that are dependent on coastal habitats for continued existence in the state, and those that have been found in coastal habitats but may also be found in other parts of the state. To assist in protection efforts, data on the specific distribution of these species are available only on request to the Ohio Department of Natural Resources, Division of Natural Areas

[5] National Wetland Inventory data for Ohio are available from USFWS (http://www.fws.gov/wetlands/).

and Preserves (614-265-6453). As not every possible location has been surveyed, field data for a property may be used to indicate the presence of a listed species.

Migratory Species Habitat. Lake Erie presents a significant challenge to migratory species as they travel north and south across the North American continent due to the relatively large expanse of water that must be crossed. For this reason, migratory flyways are concentrated at the lake shore and tend to funnel across the lake at the islands in the western basin of the lake. Thus, the lake shore habitats that are suitable as a final rest stop on the route across the lake are critical for many species of birds, bats, and butterflies. This includes upland travel corridors that consist of perennial woody and/or herbaceous vegetation (e.g. forest or grassland) that provide food and cover[6]. The animals are not onsite year-round, but their populations require the presence of the habitat or open space. Depending on the species these lands may also include blocks of associated nesting and/or breeding habitats. Land use/land cover data that indicate perennial vegetation such as grasses and trees can be used to determine areas with these cover types. While remotely sensed data occasionally indicate general vegetation type (e.g. deciduous vs. evergreen), the overall habitat quality of a corridor/forested upland property should be verified with field data. For example, such data may include evidence of use by migratory species, size and age of trees, canopy cover, and species composition of the forest and/or herbaceous cover.

Lands with Significant Ecosystem Functions

Shoreline Properties. These properties include those parcels that front directly on the open Lake Erie. These lands have direct drainage to the lake and also provide accommodation of lake level changes due to fluctuating water levels and erosion effects. Parcel data from County Auditor offices can be used to determine if a particular parcel has frontage.

Shoreline Properties Fronting on Bays and Embayments. These properties have the same general ecosystem functions as listed above for shoreline properties on the open lake, but were identified in the public comments as being more critical for protection. Properties on bays (e.g. Sandusky Bay) and embayments (smaller involutions of the shoreline) are desirable for public access due to more sheltered locations that provide safer boat launching and other direct access opportunities. As above, parcel data from County Auditor offices can be used to determine if a particular parcel has frontage.

Floodplains. Floodplains have a critical ecosystem function in providing storage of flood waters during high water events. In addition to mitigating erosion and inundation that might occur in the absence of flood storage capacity, floodplains provide specialized habitats for some species of freshwater organisms and also for terrestrial organisms associated with nearshore and riparian ecosystems. The 100-year floodplain (as

[6] See the expanded discussion of migratory species habitat requirements and maps in Chapter 7. Habitat; in the Ohio Coastal Atlas online at http://www.Ohiodnr.com/Default.aspx?tabid=19820.

delineated on Federal Emergency Management Agency maps[7]) is important in determining flood prone areas for various regulatory and insurance purposes, and is therefore included in the project area for the Program.

Riparian Corridors. Riparian corridors are lands adjacent to water bodies that remain in a natural vegetated state, providing habitat and cover that facilitates wildlife movement and the maintenance of viable wildlife populations. While land cover data based on remote sensing can detect perennial or woody vegetation along water bodies, it is often difficult to determine whether it is of an appropriate type or quality to serve as a water quality buffer or habitat in the riparian corridor. For the purposes of determining which of these lands are suitable for project areas, land cover maps should be used as a starting point and be supplemented with field data that describes the ecological, recreational, or conservation value of the particular location.

This category includes Ohio's Scenic River riparian corridors. Ohio pioneered the river preservation movement in 1968 with the passage of the nation's first scenic rivers act. This legislation created a state program to protect Ohio's remaining high quality streams for future generations. The riparian corridors associated with the scenic rivers are dynamic, linear natural systems a few hundred feet wide and many miles long. The interface of terrestrial (land) and aquatic (water) ecosystems produces an abundance of diverse plant and animal communities. In Ohio, scenic rivers contribute to the quality of Lake Erie's coastal and estuarine areas by providing water quality buffers, fish spawning areas, and wildlife habitat corridors that extend inland from the coast.

The state Scenic Rivers program is very active, and additional river segments in Lake Erie sub-watersheds are in the process of being considered. It is the intent of Ohio's CELCP Plan that all Scenic River segments be included by reference as they are dedicated. River valleys on either side of the designated river reaches are included as part of the Ohio CELCP Project Areas, provided that these valley lands otherwise meet the goals of the Program. The river valley is defined as the area of direct drainage to the designated river reach, not including tributary drainage. Please see the Ohio Scenic Rivers website for the most up to date information at: http://www.Ohiodnr.com/tabid/985/Default.aspx.

The State of Ohio currently has 14 river systems included as components of the State Scenic Rivers Program. Seven of these river systems occur within the Lake Erie watershed (see Figure 2 in Appendix A).

> Sandusky State Scenic River. Designated reach: Harrison Smith Park in Upper Sandusky to Roger Young Memorial Park in Fremont (~65 miles). Flowing through some of the richest farm land in the midwest, the Sandusky Scenic River has many exposed dolomite and limestone outcroppings which add to its scenic qualities. The southern two-thirds is relatively flat, characterized by broken ridges ranging from 10 to 50 feet in height, representative of end moraines deposited by

[7] See the expanded discussion of floodplains in Chapter 12. Flood Hazards; in the Ohio Coastal Atlas online at http://www.Ohiodnr.com/Default.aspx?tabid=19820.

the glaciers. The northern one-third is flat to gently rolling and characterized by shorelines from ancient lakes formed as the glaciers receded. The Sandusky is the only stream in the state which is home to all six species of redhorse suckers including the state endangered river redhorse.

Grand State Wild and Scenic River. Designated sections include: from Harpersfield covered bridge downstream to the Norfolk and Western Railroad trestle south of Painesville (wild, 23 miles) and from the U.S. 322 bridge in Ashtabula County downstream to Harpersfield covered bridge (scenic, 33 miles). The Grand Wild and Scenic River represents one of the finest examples of a natural stream to be found anywhere in Ohio. The upper portion of the Grand River in Ashtabula County is designated scenic. The river is bordered in many areas by extensive swamp forests of elm, ash, maple, pine, pin oak and swamp white oak. The slow flow of this section of the river and the adjoining wetlands provide excellent habitat for a number of wildlife species, especially river otters. The lower section of the Grand River in Lake County is designated wild. Here, the river is characterized by steeply-incised valley walls of Chagrin Shale. A view of the river in this area is truly spectacular especially following spring and summer showers when waterfalls cascade over the steep shale bluffs.

Upper Cuyahoga State Scenic River. Designated reach: beginning at the Troy-Burton township line in Geauga County and continuing downstream to SR 14 in Portage County (25 miles). The topography of the Upper Cuyahoga watershed was shaped by the Illinoisan and Wisconsinan glaciers. Above Hiram Rapids, the topography is relatively flat, low and swampy. This extensive wetland provides excellent wildlife habitat and an abundant variety of wildflowers and plants. Willow, sycamore, elm, and button bush dominate the shoreline and flood plain. Below Hiram Rapids, the topography along the stream is somewhat hilly to steep in sections. The hillsides are dominated by beech-maple forests which include a variety of ash, oak and hickory.

Maumee State Scenic River. Designated reaches: the scenic section of the Maumee River originates at the Ohio-Indiana state line and extends to the U.S. 24 bridge, west of Defiance; the recreational section extends from the U.S. 24 bridge west of Defiance to the US 20/ S.R. 25 bridge at Perrysburg and Maumee (~96 miles). The scenic section is characterized by a broad meandering floodplain. Valley walls rise sharply in comparison to the surrounding terrain. The river banks support a healthy, forested corridor. In the recreational section the river greatly changes in character. Its floodplain widens and its channel doubles in size; the topographic relief is much less pronounced; and forest cover becomes sparse. The historic and cultural heritage of this section is of major state and national significance. For example, the river valley was the location of numerous battles of the French and Indian War and the War of 1812.

Chagrin State Scenic River. Designated reaches: the Woodiebrook Road bridge downstream to the confluence with the Aurora Branch of the Chagrin River in

Bentleyville, the Aurora Branch from S.R. 82 downstream to its confluence with the main stem of the Chagrin, the main stem from its confluence with the Aurora Branch downstream to US Rt. 6, and the East Branch from Heath Road Bridge downstream to its confluence with the main stem (~71 miles). The Chagrin River is located in northeastern Ohio. It is the only scenic river where the majority of its length is located within corporation limits (the Cleveland metropolitan area). The river valley offers a diversity of terrestrial and aquatic plant communities and wildlife. Recent surveys of aquatic and breeding birds have found more than 49 species of fish and 90 bird species living in the Chagrin River watershed.

Conneaut Creek State Wild and Scenic River. Designated reaches: the Wild designation (16.4 river miles) runs from the Ohio-PA line downstream to the Creek Road bridge crossing. The Scenic designation (5.3 river miles) runs from the Creek Road bridge to the Penn Central Railroad bridge crossing. The Conneaut Creek corridor possesses outstanding water quality, diverse habitats and intact riparian wooded corridors with minimal evidence of human impacts. It is one of the finest remaining examples of a natural stream in Ohio. The Conneaut Creek watershed is home to rare hemlock-hardwood forest and hemlock-hardwood swamp communities. Conneaut Creek supports exceptional wildlife populations including 78 fish species, 32 species of amphibians and reptiles and more than 30 state-listed plants.

Astabula State Scenic River. Designated reaches: mainstem from the confluence of the East Branch and West Branch of the Ashtabula River at river mile 27.54, downstream to the East 24th Street Bridge crossing at river mile 2.3, for a total distance of 25.24 miles. The East Branch of the Ashtabula River from Pennline Fen at river mile 12.0, downstream to the mouth of the East Branch at river mile 0.0, for a total distance of 12.0 miles. The West Branch of the Ashtabula River from the North Richmond Road (County Road 302) bridge crossing at river mile 9.05, downstream to the mouth of the West Branch at river mile 0.0, for a total distance of 9.05 miles. High-quality natural features include an outstanding wooded riparian corridor and diverse populations of wildlife and plants. The Ashtabula River watershed features a variety of plant communities including: Great Lakes hemlock-beech hardwood forest, Lake Plain swamp forest, mixed oak, rich shrub fen, emergent deep marsh and northern rich mesic forest. Nearly 40 rare plant species have been documented in the area surrounding the Ashtabula State Scenic River. The Ashtabula has a great rainbow trout (steelhead) fishery, with 4 river miles of public access in the Ashtabula Township Park (Indian Trails).

Estuaries and Small Lake Erie Tributaries. Functional estuaries are relatively rare in Ohio, as population centers have located near river and stream mouths and modified them substantially. Because of this rarity, lands fronting on estuaries have high priority for acquisition and protection. Estuaries are highly dynamic systems due to water level fluctuations from lake levels and the opening/closure of mouths from shifting sediments. Protecting the function of the estuaries therefore requires some protection of lands near

the mouth where water fluctuations occur. There is currently no existing mapping of remaining estuarine environments. However, estuarine environments may occur on some of the small (watershed area within 14-digit HUC of <60 mi^2) direct tributaries to Lake Erie.

Small tributaries to Lake Erie are in close proximity to the lake (generally entirely within 10 miles), and the streams are strongly lake level influenced since their flow volume is relatively low. These streams can serve an important ecological function as spawning and refuge areas for lake fish. Both of the two largest remaining naturally functioning estuary systems in Ohio are in this category (Old Woman Creek and Arcola Creek). Because the land areas in these watersheds are relatively small, development of these lands can have large effects on the in-stream conditions. Lands within these watersheds are therefore suitable for project areas provided that the properties otherwise meet the goals of the Program. Please see Figure 2 and the associated map legend table in Appendix A for a map and list of these watersheds.

Properties Associated with Existing Protected Lands. One priority of Ohio's CELCP Plan is to facilitate the ongoing efforts to protect ecologically significant areas in proximity to existing protected properties[8], which would create larger contiguous areas of coastal habitat and/or public access points. These existing protected lands have previously been identified for conservation efforts based on their unique habitats, location with regard to threat of conversion, and potential for recreational use and public access. Some of these existing protected lands have management plans that include land acquisition priorities, and some do not. Remaining unprotected properties directly adjacent to, having hydrological, upland, or riparian corridor connections with, or otherwise identified in a management plan as having significance for the existing protected land, are considered to be included within the Ohio CELCP Project Areas, provided that these properties otherwise meet the goals of the Program.

Lands with Significant Cultural Resources

Aesthetic Values. Most locations with aesthetic value on Lake Erie's coast occur within the Coastal Management Area, but some do not. In particular, bluff areas of various heights occur with increasing frequency as one travels eastward across Ohio's Lake Erie shore, providing increased potential for scenic views in Cuyahoga, Lake, and Ashtabula Counties. This could result in scenic views to or from Lake Erie on lands that are outside of the Coastal Management Area which is quite narrow in these counties, at least partly due to this topography. Broader scale viewsheds can be mapped using elevation models to determine how topography allows or limits the view. This mapping is performed as an analysis using a specific view, and therefore would be difficult to generate on a regional scale. However, once a property is identified, its scenic and viewshed characteristics can be determined.

[8] ODNR maintains two GIS-based listings of protected lands, one of ODNR-owned properties and one of properties under other public or private ownership, that includes lands protected primarily for their ecological or cultural significance. See: Chapter 4. Land Cover and Protected Lands; in the Ohio Coastal Atlas online at http://www.ohiodnr.com/Default.aspx?tabid=19820.

Historical and Archaeological Sites. Historical sites are defined as places listed on or suitable for listing on the Ohio Historic Inventory, Ohio National Heritage Area, Ohio Historic Landscape Survey, and/or the National Register of Historic Places[9]. There is one designated National Heritage Area in the Lake Erie watershed in Ohio, the Ohio & Erie National Heritage Canalway, portions of which are in the Coastal Management Area in downtown Cleveland. Also included in this category (and in these listings) are archaeological sites, particularly sites of pre-settlement native populations, which are frequently located near natural resource areas in Ohio's coastal area.

Not all of the areas with significant historical value are listed or mapped, but supporting documentation and/or photographs may be used to describe the historical value of a property.

Geological Features. In Ohio, these may include, but are not limited to, ancient lake shore ridges, other glacial features, karst areas, and caves. An example of a significant unique glacial feature in Ohio's coastal area suitable for inclusion as a project area would be glacial grooves and striations similar to the ones found on the Lake Erie Islands and Marblehead peninsula. Other geological features, including karst (areas with fractured limestone bedrock) and glacial features are mapped in the Ohio Coastal Atlas[10] from ODNR – Division of Geological Survey data sources.

D. Existing Plans Incorporated into Ohio's CELCP Plan

Prior to the development of the CELCP Plan, Ohio did not have a written land conservation plan that specifically included all potential coastal and estuarine resources. However, a number of useful planning efforts have been conducted at statewide, watershed, or intra-state regional scales that have identified priority areas for acquisition either for geographic areas within the state, or for specific types of lands across the state including the coastal area. These efforts do not provide comprehensive coverage of the Lake Erie watershed, but do provide supporting documentation for some of the lands identified as Project Areas in section II.C. above. As such, the plans listed in Table 3 are incorporated by reference into Ohio's CELCP Plan.

A number of other land conservation plans exist at local scales within the Lake Erie watershed. For example, Cuyahoga County has developed a Cuyahoga County Greenspace Plan that includes mapping of existing and potential trail networks, parks, and protected natural areas. The information in such plans may be valuable in determining the location and evaluation of suitable projects that may overlap with areas identified as Project Areas under the Ohio CELCP Plan. Although these local scale plans

[9] The National Register for Ohio is available online at http://ohsweb.ohiohistory.org/ohpo/nr/index.aspx; for information about the Ohio Historic Inventory, Ohio Heritage Areas, and Ohio Histric Landscape Survey, see http://www.ohiohistory.org/ and the discussion in section II.D. of this Plan.
[10] See: Chapter 10. Geology; in the Ohio Coastal Atlas online at http://www.ohiodnr.com/Default.aspx?tabid=19820.

have not been included in Ohio's CELCP Plan, use of these local plans as supporting documentation for potential projects is encouraged as part of the state project selection and evaluation process.

Table 3. Existing plans or data sources with lands included in Ohio's CELCP Plan Project Areas
Old Woman Creek NERR/NOAA and State Nature Preserve Management Plan for 2000-2005 (and update for 2006-2010)
Ohio Wetland Restoration and Mitigation Strategy Blueprint (1999)
State Endorsed Watershed Action Plans
ODNR – Division of Wildlife Wetland Habitat Tactical Plan and Wetland Focus Area Plans (Lake Erie Marshes and Grand River Lowlands)
Mentor Marsh Special Area Management Plan (2004)
Watershed Balanced Growth Plans
Remedial Action Plans
Conservation Blueprint for the Great Lakes (TNC)
Ohio Coastal Atlas
National Wetland Inventory Ohio Maps
Ohio Historic Inventory, Ohio National Heritage Areas, Ohio Historic Landscape Survey, and National Register of Historic Places

Old Woman Creek NERR/NOAA and State Nature Preserve Management Plan for 2000-2005 (and update for 2009-2013). One of the priorities of the Ohio CELCP Plan is to augment the land conservation efforts described in the ODNR – Division of Wildlife/Old Woman Creek National Estuarine Research Reserve Management Plan. The Old Woman Creek estuary is an example of a lake-influenced coastal marsh, one of the types of lands or habitat with the highest priority for protection in Ohio. Part of the Reserve and a large area of the watershed are located outside of Ohio's Coastal Management Area. This management plan specifies core and buffer areas within the NERR boundaries as well as habitat within the Old Woman Creek watershed that is critical to water quality protection of the stream, estuary, and near shore Lake Erie, and includes specific acquisition priorities for the Reserve that include Project Areas as discussed under 'Riparian corridors' in section II.C. Copies of the plan can be obtained by calling the reserve at 419-433-4601. The Old Woman Creek watershed is shown in Appendix A, Figure 3.

Ohio Wetland Restoration and Mitigation Strategy Blueprint (1999). This project resulted in a plan which identified priority areas throughout Ohio, including the Lake Erie area, for the development of wetland mitigation and restoration projects and identified high quality wetland areas statewide. Although mitigation projects are not eligible for CELCP funds, existing high quality wetlands or restoration areas not already in public ownership would be suitable Project Areas as described in section II.C under 'Wetlands'. This was a joint venture between the Ohio Department of Natural Resources and the Ohio

Environmental Protection Agency, and was funded by the USEPA. See the Blueprint for specific locations[11].

State Endorsed Watershed Action Plans. Watershed Action Plans in Ohio focus on water quality issues within local watersheds. These plans are developed by local watershed planning groups, and upon completion, the plan is endorsed in writing by the chiefs of the Ohio EPA Division of Surface Water and the ODNR Division of Soil & Water[12]. A state-endorsed watershed action plan is one that meets all criteria of Ohio's 1997 Guide to Developing Local Watershed Action Plans in Ohio (including the Appendix 8 Update, 2002) and the most recent U.S. EPA Section 319 Planning Guidance. A component of these plans is a strategy for improving water quality in the watershed, and part of that strategy may include recommending lands for acquisition. Typically these lands have buffer or riparian corridor functions that serve to filter runoff or maintain habitat quality in the stream corridors. Because maintenance and improvement of water quality in the coastal area was identified as a conservation need, and because the development of these plans is rigorous and subject to state review and endorsement, lands recommended for acquisition under these plans are appropriate to include as Project Areas under Ohio's CELCP Plan as consistent with 'Riparian corridors' and 'Wetlands' in section II.C. Watersheds covered by Watershed Action Plans in various stages of development are shown in Appendix A, Figure 3.

ODNR – Division of Wildlife Wetland Habitat Tactical Plan and Wetland Focus Area Plans. ODNR's Division of Wildlife has developed a Wetlands Habitat Tactical Plan with the goal of increasing the total wetland acreage in the state of Ohio. To support this initiative, Focus Area Plans have been developed that in part, identify priorities for acquisition of exceptional existing wetlands. Two of these Focus Areas are within the Lake Erie watershed: the Lake Erie Marshes Focus Area Plan and the Grand River Lowlands Focus Area Plan. The Lake Erie Marshes Focus Area consists of the remaining (primarily coastal) wetlands from within the Great Black Swamp that formerly extended to the southwest from Sandusky, Ohio to the Indiana border and as far north as Detroit, Michigan. The Grand River Lowlands Focus Area is a riparian forested wetland complex along the bottomlands of the Grand River on the east side of the state of Ohio in Ashtabula and Trumbull Counties. Lands recommended for acquisition under these plans are appropriate to include as Project Areas under Ohio's CELCP Plan as consistent with 'Wetlands' in section II.C. These two Focus Areas are shown in Appendix A, Figure 3.

Mentor Marsh Special Area Management Plan. Mentor Marsh is a 666 acre coastal marsh-swamp forest, the largest coastal marsh on Ohio's eastern Lake Erie shore. It was one of the first National Natural Landmark areas designated by the U.S. Department of the Interior in 1966. A Special Area Management Plan (SAMP) is a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth. Such plans contain detailed comprehensive statements of policies, standards and

[11] Available online at: http://www.Ohiodnr.com/Home/wetlands_main/wetlands/strategy/tabid/5635/Default.aspx.
[12] Endorsed and draft Watershed Action Plans are available online at: ftp://ftp.dnr.state.oh.us/Soil_&_Water_Conservation/WatershedActionPlans/

criteria to guide public and private uses of lands and waters as well as outlines of mechanisms for timely implementation in specific geographic areas within the coastal zone (Coastal Zone Management Act of 1972, 15 USCA § 1453(17)). The Mentor Marsh SAMP promotes wise management and usage of land and waters that have direct and significant impacts on the Mentor Marsh and nearby Lake Erie coastal areas[13]. Lands recommended for protection under this plan are included as Project Areas under Ohio's CELCP Plan as consistent with 'Coastal Marshes' and 'Wetlands' in section II.C. The Mentor Marsh SAMP area is shown in Appendix A, Figure 3.

Watershed Balanced Growth Plans. In 2000, the Ohio Lake Erie Commission (comprised of the Directors of the Ohio Environmental Protection Agency and the Ohio Departments of Development, Natural Resources, Health, Transportation, and Agriculture) released its Lake Erie Protection and Restoration Plan, which provides a comprehensive set of recommendations for the State of Ohio and its partners to improve the quality of Lake Erie. A revised Lake Erie Protection and Restoration Plan was released in 2008. One of the report's original recommendations called for the formation of a Balanced Growth Blue Ribbon Task Force. This Task Force set up the basic structure of the Balanced Growth Program, which provided a framework for the establishment of local Watershed Planning Partnerships comprised of local governments, planning agencies, nonprofit organizations, and other parties. These Watershed Planning Partnerships would designate Priority Conservation Areas and Priority Development Areas within their jurisdictions.

Under the Balanced Growth Program, Priority Conservation Areas are locally-designated areas targeted for protection and restoration that would include important ecological, recreational, heritage, agricultural, and public access areas that are consistent with the Project Areas listed in Table 1, section II.C. Thus, Priority Conservation Areas in local Watershed Balanced Growth Plans (except for areas established solely to protect agricultural lands) are also included as Project Areas under Ohio's CELCP Plan. Once Watershed Balanced Growth Plans have been endorsed, links to them will be available at http://balancedgrowth.ohio.gov/. Four watersheds have achieved state endorsed plans (Chagrin River, Swan Creek, Upper West Branch Rocky River, and Chippewa Creek). Three additional watershed planning partnerships are currently engaged in this planning process (Furnace Run and Brandywine Creek in the Cuyahoga River watershed, and Lake Erie Tributaries along the shore in eastern Lake County). These watersheds are shown in Appendix A, Figure 3.

Remedial Action Plans. Ohio has four Areas of Concern (AOC) identified by the International Joint Commission: Ashtabula River, Cuyahoga River, Black River, and Maumee River. Each of these AOCs has an associated Remedial Action Plan that addresses goals and action items for recovery of the AOC. Although the Remedial Action Plans focus on contaminated sediment remediation near the mouths of the rivers, the plans also address general watershed restoration goals for upstream areas in each of these watersheds. Specific areas identified in the Remedial Action Plans and associated documents as acquisition priorities are included in Project Areas under Ohio's CELCP

[13] Available online at: www.Ohiodnr.com/coastal; click on Partners, page down to "Local", and then click on Marsh Area Regional Coalition.

Plan as consistent with ‘Riparian corridors’ and/or ‘Wetlands’ in section II.C.. For links to the Remedial Action Plans, see http://www.epa.gov/glnpo//aoc/index.html.

Conservation Blueprint for the Great Lakes. The Nature Conservancy, a national and international non-governmental organization that protects ecologically valuable lands, underwent a process of "Ecoregional Planning" to develop "portfolio" and "priority" sites within Ohio's portion of the Great Lakes Ecoregion (see Appendix A, Figure 4). These sites include a variety of wetlands as well as upland types of lands or habitats described in section II.C, such as forests and prairies. This Ecoregional Planning involved extensive stakeholder meetings, data collection, and ground truthing. Most of the participants were federal, state, and local agency personnel, university faculty, organizational experts, and knowledgeable area residents. The “portfolio” and “priority” sites identified in this plan for Ohio’s coastal area overlap to a large degree with areas identified in other plans, but are also specifically included as Project Areas in Ohio’s CELCP Plan to underscore the national and international ecological significance of these areas in Ohio.

Ohio Coastal Atlas. The Ohio Coastal Atlas suite of resources was developed by the ODNR – Office of Coastal Management to provide coastal decision makers, professionals, educators, interest groups and the general public with information about Lake Erie and its watershed. It is not a planning document, however it contains a wealth of information suitable for use in the planning process. The 240-page printed Second Edition is illustrated and explained with maps, text, figures and photographs featuring geographic resource data for the Lake Erie region's cultural, physical, biological and natural phenomena. To access the Atlas, go to www.Ohiodnr.com/coastal and click on Atlas & GIS.

National Wetland Inventory. The U.S. Fish and Wildlife Service is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. This geospatial information is used by Federal, State, and local agencies, academic institutions, and private industry for management, research, policy development, education and planning activities. These data can be used to determine the location of coastal marsh and wetland project areas. Digital data can be viewed and downloaded via the web at http://www.fws.gov/wetlands/.

Ohio Historic Inventory, Ohio National Heritage Areas, Ohio Historic Landscape Survey, and National Register of Historic Places. The Ohio Historic Inventory was developed to serve as an accurate and continuing record of the architectural and historic properties currently existing in the state. National Heritage Areas protect and promote the cultural, historical and natural assets of a region and play a vital role in maintaining both the physical character and the cultural legacy of the United States. The Ohio Historic Landscape Survey includes the historically significant designed landscapes of all landscape designers, both professional and amateur. The National Register of Historic Places is the official list of properties recognized by the federal government as worthy of preservation for their local, state, or national significance in American history, architecture, archaeology, engineering, or culture. These listings are maintained by the Historic Preservation Office of the Ohio Historic Society (http://www.ohiohistory.org/).

E. Management Effectiveness

In addition to the program goals of protecting lands of conservation, recreation, ecological, historic, and aesthetic value, the national criteria listed in the NOAA CELC Program Final Guidelines explicitly include management effectiveness as an important factor in determining lands most suitable for protection. The national criteria give priority to "lands which can be effectively managed and protected and that have significant ecological value; directly advance the goals, objectives, or implementation of the state's coastal management plan or program, NERR management plans approved under the CZMA, national objectives of the CZMA, or a regional or state watershed protection plan involving coastal states with approved coastal management plans; and is consistent with the state's approved coastal management program."

Although it is not a requirement for a Project Area in the State of Ohio to be covered under a land conservation or management plan developed by a public agency, private owner, or private land conservancy in order to be considered for funding, proposed projects that fit within such a land conservation plan, strategy, or initiative will be preferred. Identification of dedicated funding and staff, and the existence of a management plan or strategy for the project developed by, or in conjunction with, the public entity that will hold title under the Program, will help ensure that the long-term stewardship of the proposed project will be consistent with the Program guidelines.

III. State Process for Implementing the CELCP

A. Identification of State Lead Agency

The Ohio Department of Natural Resources, Office of Coastal Management (ODNR – OCM) has been designated as the lead agency responsible for implementing the Ohio CELCP Plan. This agency is responsible for implementing the Ohio Coastal Management Program, approved pursuant to the federal Coastal Zone Management Act (CZMA) of 1972, as amended.

B. Agencies Eligible to Hold Title to Property

NOAA may make financial assistance awards to designated recipients in eligible coastal states. In Ohio, this consists of the ODNR – OCM, as the designated CELCP lead agency. The designated recipient may in turn allocate grants or make sub-awards to other state agencies, local governments as defined at 15 CFR 24.3, or entities eligible for assistance under section 306A(e) of the CZMA (16 USCA § 1455a(e)) to carry out approved projects. NOAA can also make awards directly to the sub-recipient, after consultation with ODNR – OCM, in order to expedite completion of an approved project.

Local governments are defined by 15 CFR 24.3 as a county, municipality, city, town, township, local public authority (including any public and Indian housing agency under the U.S. Housing Act of 1937), school district, special district, intrastate district, council of governments (whether or not incorporated as a nonprofit corporation under State law), any other regional or interstate government entity, or any agency or instrumentality of a local government.

Section 306A (e) of the CZMA (16 USCA § 1455a(e)) includes area-wide agencies designated under section 204 of the Demonstration Cities and Metropolitan Development Act of 1966 (42 USCA § 3334), regional agencies, or interstate agencies.

Examples of specific agencies in Ohio eligible to hold title to property acquired through the Program under the NOAA guidelines include (but are not limited to):

- Ohio Department of Natural Resources
- Local Governments (as described above)
- State Colleges and Universities (a college or university would be required to demonstrate a conservation purpose for the property and that land conservation is consistent with their organization's mission)
- Park Districts (ORC Chapter 1545 and ORC Chapter 511)
- Regional Councils of Park Districts (ORC Chapter 167)
- Toledo Metropolitan Area Council of Governments (TMACOG)
- Northeast Ohio Areawide Coordinating Agency (NOACA)

C. State Nomination Process

The Ohio CELCP Plan includes the following elements of a project nomination and selection process:

Solicitation of Projects. Upon notification from NOAA that it is seeking proposals for land acquisition projects in a given year, Ohio's lead agency (ODNR – OCM) will notify and solicit project applications from qualified entities. Projects within the specific Project Areas designated in Section II will be given priority for Program funding.

Eligible applicants should submit proposals to Ohio's lead agency (ODNR – OCM). As specified in the NOAA CELC Program Final Guidelines, projects including several separate and distinct phases may be submitted in phases, but any succeeding phases must compete against other proposals in the year submitted.

State Review and Prioritization.

1. Proposal acceptance - Completed applications will undergo initial review by ODNR – OCM staff to determine whether a proposal is complete and eligible under the criteria identified in Section II of the CELC Program Final Guidelines and the annual Federal

Funding Opportunity notice. If the application is incomplete, ODNR – OCM may provide an opportunity for applicants to submit any information that is missing.

2. Proposal review and ranking - Proposals accepted for consideration will be reviewed by a committee designated by ODNR – OCM. The committee shall be drawn from a pool of potential reviewers and consist of five members as follows:

- One representative from ODNR – OCM
- One other representative from ODNR
- Three representatives from organizations other than ODNR (see below)

The three other members of the review committee shall be appointed from among the following categories or organizations, units of government, or agencies.

1. A county, municipal corporation, township, conservancy district, regional or joint district or unit of local government, or regional or joint political subdivision that is located within the Lake Erie watershed;

2. A conservation organization, an environmental advocacy organization, an organization with a primary interest in watershed protection and restoration, or the United States Natural Resources Conservation Service;

3. A city park system or metropolitan park system or a board of park commissioners from a county that is located within the Lake Erie watershed, a statewide parks and recreation organization, or the United States National Park Service.

For the ranking process, the committee will utilize a detailed scoring system for ranking proposals. This system will include specific, weighted criteria to be considered during the proposal review. These criteria will be based in part on Ohio's conservation needs as described in Section II-B, as well as the national criteria listed in the NOAA CELC Program Final Guidelines[14]. The state criteria will include the following components:

- Will the project protect ecological, conservation, recreational, aesthetic, and/or historic values consistent with those outlined in the national criteria and in Ohio's CELCP Plan? What is the coastal significance of the project? Is the project area in imminent threat of being converted from its current natural condition or recreational use?
- What is the overall management effectiveness of the project? Does the project fit within an existing conservation framework? Is there a dedicated source of funding and staff? Is the project area covered under an existing management plan that is consistent with the NOAA CELC Program Final Guidelines?
- Given a project that achieves Program goals and has suitable management effectiveness, to what extent does the project contribute to the coastal and state economy, and quality of life?

[14] Available online at http://www.coastalmanagement.noaa.gov/land/welcome.html.

Ohio's specific state criteria for evaluating and selecting projects for submittal to the federal funding selection process will be published separately from the CELCP Plan, concurrently with the state request for projects.

Once the allowable number of top projects (typically three) are selected and ranked in order of state priority by the committee, the selections are reviewed for approval by the Chief of ODNR – OCM. On approval, the application is then submitted to NOAA at the federal level for the three selected projects for the coming federal fiscal year budget cycle.

IV. Coordination and Public Involvement

In the early stages of formulating this CELCP Plan, the state's lead agency (ODNR – OCM) developed a project charter outlining the agency's strategy for developing Ohio's CELCP Plan. This charter included several components for incorporating input from other interested ODNR divisions, as well as interagency and public involvement at both the initial and draft plan stages. The charter included a plan for interagency coordination and stakeholder input as part of the development of the CELCP Plan. A Program web page was developed on the ODNR – OCM website to assist in providing information to interested stakeholders and members of the public (http://www.Ohiodnr.com/coastal/LakeErie/CELCP/tabid/9280/Default.aspx).

A. Interagency Coordination

1. ODNR Interdivisional Coordination

Each Division of ODNR with an interest in the plan development process identified a representative to participate in the initial planning process. The groups represented included:

- Office of Coastal Management
- Division of Natural Areas and Preserves
- Division of Forestry
- Division of Wildlife
- Division of Wildlife/staff from Old Woman Creek NERR
- Division of Water
- Division of Parks and Recreation
- Division of Geological Survey
- Division of Soil & Water Conservation
- Legislative Liaison

A meeting of ODNR participating agency representatives was held in September 2004. The project charter and process outline for developing Ohio's CELCP Plan was discussed. An initial discussion about priority land conservation needs in the Ohio Lake

Erie watershed was conducted, and ways to provide guidance for the nomination and selection process were also considered. Initial ideas about land conservation needs were used as a starting point for discussions held in later stakeholder/public meetings (discussed in next section). A number of members of this group, including representatives from the Divisions of Soil & Water Conservation, Wildlife, Geological Survey, and Forestry, and staff from Wildlife/Old Woman Creek NERR, attended at least one of the stakeholder meetings.

A second meeting of this group of ODNR representatives occurred on September 8, 2005 to review the draft plan prior to its release to NOAA and the public for initial review. Comments that were received at this meeting or in writing were reviewed and incorporated into the draft document.

2. Multi-state Coordination

Ohio has conducted discussions with Pennsylvania and Michigan, our two Lake Erie border states, regarding the possibility of multi-state coordination of CELCP projects. Pennsylvania's coastal border lands with Ohio are already in public ownership, so it appears that opportunities for joint projects would occur in the Lake Erie watershed outside of the Coastal Management Area. The border between Michigan and Ohio straddles remnant areas of the Great Black Swamp, a formerly very large wetland complex that still serves as a significant wildlife habitat and migratory bird corridor. This area may provide project possibilities beneficial to both Ohio and Michigan. ODNR – OCM intends to continue to explore opportunities for joint projects with both of our coastal border states in the future.

B. Public Involvement

In July, 2005, a series of four stakeholder/public meetings were conducted at various locations across the Lake Erie Watershed (see Table 4). These meetings were held to inform the stakeholders and the public about the CELCP, explain the proposed CELCP Plan process and outline, and obtain public input prior to the initial draft of the CELCP Plan for Ohio. Meeting agendas and presentations were essentially the same at all four meetings. Known stakeholders such as local government officials and non-governmental organizations were contacted by mail and invited to attend a meeting of their choice. This mailing included a fact sheet about the Program. A press release was also issued on June 30, 2005 to inform other stakeholders and members of the general public of the dates and locations of the meetings, along with Program information.

Table 4: Dates and Locations of Stakeholder/Public Meetings.

Date	***Location***
Tuesday, July 12, 2005	Wood County Extension in Bowling Green
Thursday, July 14, 2005	Lorain County Visitors Bureau in Amherst
Thursday, July 21, 2005	Mentor Beach Park Pavilion in Mentor
Tuesday, July 26, 2005	Ottawa County Court House in Port Clinton

A diverse group of organizations and interested persons attended the stakeholder/public meetings, including representatives from state and federal agencies, elected officials, counties, regional planning agencies, local governments, non-governmental organizations, and interested private citizens (Table 5).

Table 5: List of organizations or persons represented at July, 2005 CELCP Plan stakeholder/public meetings.	
ODNR – Office of Coastal Management	TMACOG
ODNR – Forestry	City of Avon Lake
ODNR – Geological Survey	Bay Township (Ottawa County)
ODNR – Division of Soil and Water Cons.	City of Conneaut
ODNR – Wildlife	City of Eastlake
ODNR – Wildlife/Old Woman Creek NERR	Village of Fairport Harbor
Ohio EPA	Huron Township (Erie County)
Coastal Resources Advisory Committee	City of Lakewood
The Ohio State University / Sea Grant	City of Lorain
State House Representative Robert Latta	City of Mentor
Office of U.S. Senator George V. Voinovich	North Perry Village
Office of Congressman Dennis Kucinich	City of Port Clinton
USDA – Farm Services Agency	Village of Put-in-Bay
US Fish & Wildlife Service	City of Vermilion
Ashtabula County – Planning Commission	Audubon Ohio
Erie County	Black Swamp Conservancy – Lake Erie Islands Chapter
Lorain County – Community Development	Buckeye Trail Association
Lake County – Stormwater Management Dept.	Chagrin River Land Conservancy
Ottawa County Commissioners	Firelands Land Conservancy
Ottawa County – Regional Planning	Grand River Partners, Inc.
Cuyahoga County – Soil & Water Cons. Dist.	Kelleys Island Audubon Club
Erie County Soil & Water Cons. Dist.	Mentor Marsh Board
Lake County – Soil & Water Cons. Dist.	The Nature Conservancy
Ottawa/Sandusky Soil & Water Cons. Dist.	Ohio Lakefront Group
Cleveland Metroparks	Portage River Basin Committee
Lake Metroparks	Sandusky River Watershed Coalition
Private Citizens	The Trust for Public Land

The draft of Ohio's CELCP Plan was released on November 1, 2005, with a formal public comment period scheduled for November 1, 2005 – December 16, 2005. Additional stakeholder/public meetings were held on November 15 and 18, 2005 to provide opportunities for interested parties to comment on the draft Ohio CELCP Plan. The November 15, 2005 meeting was held at the Ottawa County Visitor's Bureau in Port Clinton, and the November 18, 2005 meeting was held at the Cleveland Metroparks CanalWay Center in Cuyahoga Heights. In addition to the meetings, written comments were also accepted during the formal public comment period. Organizations or persons who provided written comments or attended the public meetings are listed in Table 6.

Table 6: List of organizations or persons providing comments on draft plan and/or represented at November, 2005 CELCP Plan stakeholder/public meetings.	
ODNR – Office of Coastal Management	City of Mentor
ODNR – Wildlife	City of Port Clinton
ODNR – Wildlife/Old Woman Creek NERR	Cairo Sportsman's Club
Cuyahoga County – Soil & Water Cons. Dist.	Ohio Coastal Resource Management Project
Eastlake Port Authority	Friends of Arcola Creek, Inc.
Erie Metroparks	West Creek Preservation Committee
The Snyder Group	The Trust for Public Land
Fairport Marine Museum	The Nature Conservancy

V. Certification of Consistency and Plan Approval

The Ohio Coastal and Estuarine Land Conservation Program Plan was prepared by the lead state agency, the Ohio Department of Natural Resources, Office of Coastal Management, which is responsible for administering the federal consistency provision of the Coastal Zone Management Act. The Office of Coastal Management has determined that Ohio's CELCP Plan is consistent with the enforceable policies of the Ohio Coastal Management Program.

The Ohio CELCP Plan is hereby approved by the ODNR Office of Coastal Management.

John Watkins, P.E., Chief

4/29/10
Date

VI. References/Literature Cited

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Wildlife that are Considered Endangered, Threatened, Species of Concern, Special Interest, Extirpated, or Extinct in Ohio. 2009. ODNR – Division of Wildlife. Publication 356 (R0109).

Appendix A: Figures 1-4

- FIGURE 1:
  Ohio Lake Erie Watershed and Designated Coastal Management Area Boundary

- FIGURE 2:
  Geographic Locations of Selected Lands including State Scenic Rivers

- FIGURE 3:
  Watershed Planning Areas

- FIGURE 4:
  Ohio Lake Erie Watershed Conservation Portfolio

Figure 1: Ohio Lake Erie Watershed

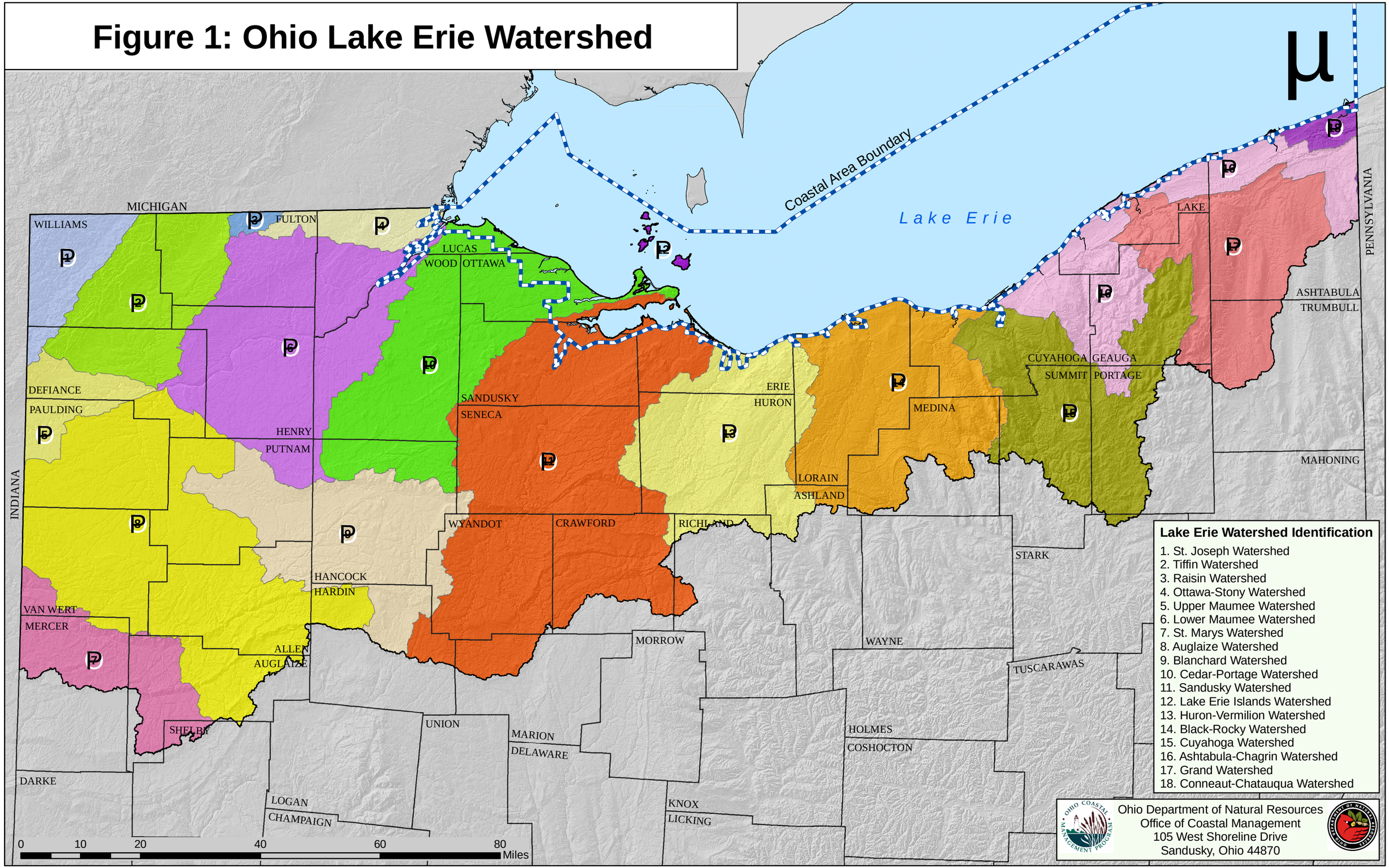


Figure 2: Geographic Locations of Selected Lands

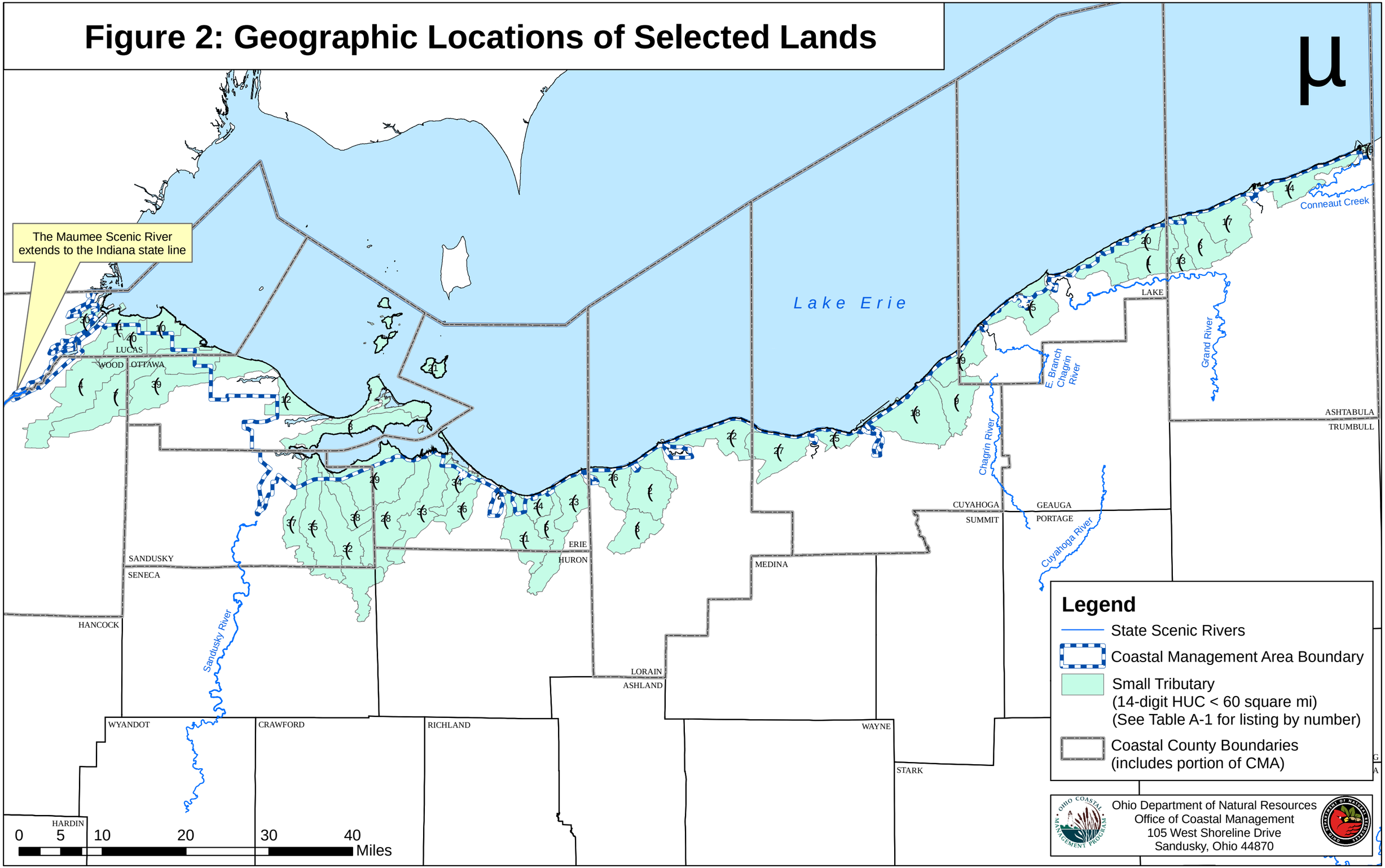
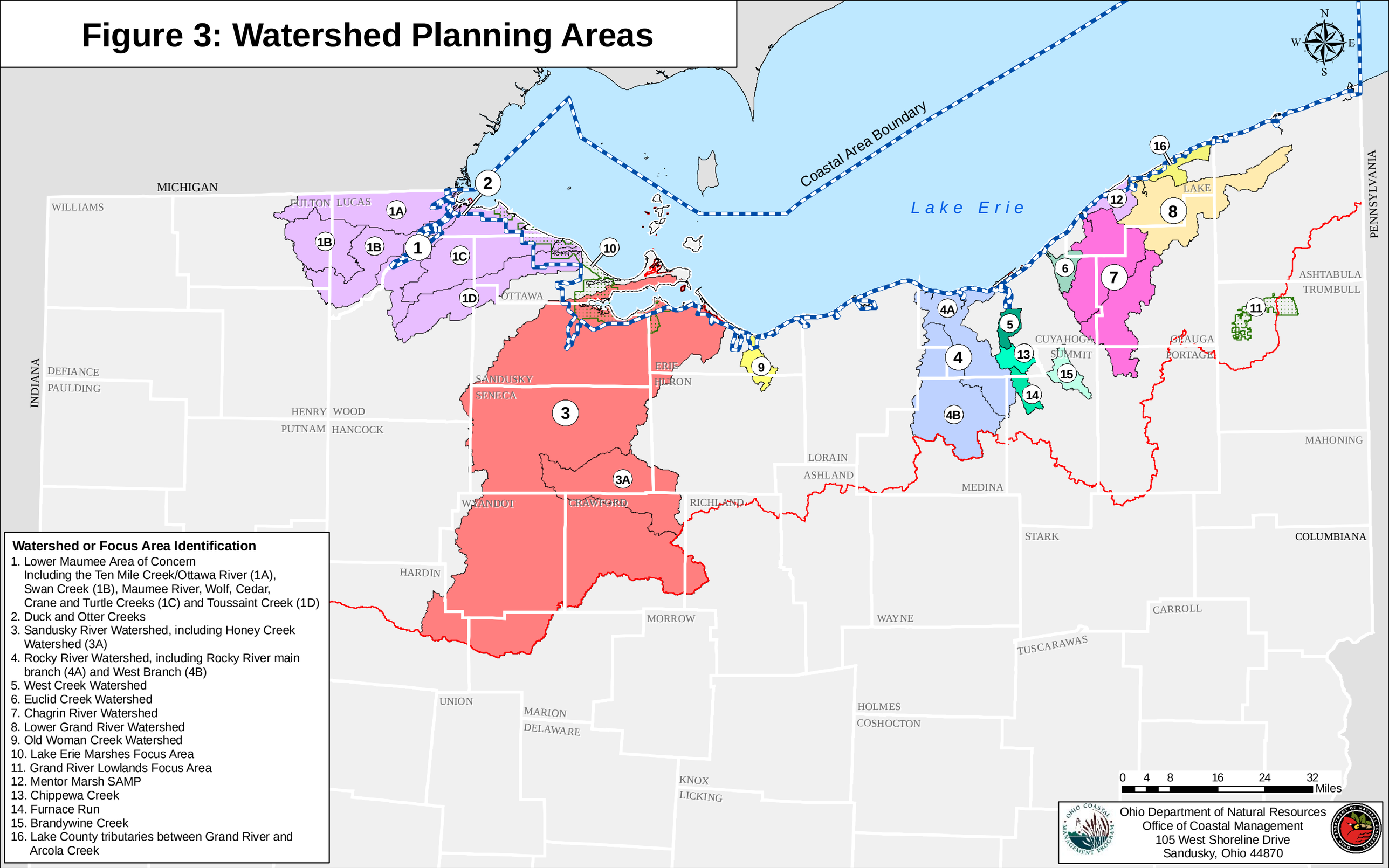


Table A-1: Legend for Figure 2 identifying small Lake Erie tributary watersheds.

Label	Watershed Name	Area (Sq. Mi.)
1	Arcola Creek	23.38
2	Beaver Creek below Squires Schramm Ditch to Lake Erie	25.50
3	Beaver Creek headwaters to below Squires Schramm Ditch	19.47
4	Cedar Creek including Reno Side Cut and Ward Canal plus Lk. Erie drainage between Reno Side Cut and Crane Cr.	58.35
5	Chappel Creek	23.94
6	Cowles Creek	20.57
7	Crane Creek (includes Henry Cr.)	55.47
8	Drainage to north side of Sandusky Bay including Johnson Island	25.20
9	Euclid Creek	23.23
10	Lake Erie Drainage between Berger Ditch and Reno Side Cut	15.65
11	Lake Erie Drainage between Maumee R. and Berger Ditch	17.81
12	Lake Erie Drainage downstream of Toussaint Cr. to Marblehead [except Portage R.]	29.99
13	Lake Erie drainage east of Arcola Cr. and west of Cowles Cr.	12.06
14	Lake Erie drainage east of Ashtabula R. and west of Conneaut Cr.	23.85
15	Lake Erie drainage east of Chagrin R. and west of Grand R. (includes Mentor Marsh)	28.61
16	Lake Erie drainage east of Conneaut R.	1.52
17	Lake Erie drainage east of Cowles Cr. and west of Ashtabula R.	29.19
18	Lake Erie drainage east of Cuyahoga R. and west of Euclid Cr.	46.04
19	Lake Erie drainage east of Euclid Cr. and west of Chagrin R.	21.11
20	Lake Erie drainage east of Grand R. and west of Arcola Cr.	29.70
21	Lake Erie islands adjacent to Ottawa and Erie Counties (North, Middle, & South Bass Islands and Kelleys Island, etc.)	9.03
22	Lake Erie Tribs. east of Black R. and west of Porter Cr.	26.42
23	Lake Erie Tribs. east of Chappel Cr. to west of Vermilion R.	19.77
24	Lake Erie Tribs. east of Huron R. and west of Chappel Cr. [except Old Woman Cr.]	12.92
25	Lake Erie Tribs. east of Rocky R. and west of Cuyahoga R.	9.26
26	Lake Erie Tribs. east of Vermilion R. and west of Black R. [except Beaver Cr.]	26.48
27	Lake Erie Tribs. including Porter Cr. to west of Rocky R.	28.44
28	Mills Creek	42.47
29	Minor tributaries draining to south side Sandusky Bay	44.06
30	Mud Creek & other minor Lake Erie drainage	7.14
31	Old Woman Creek	26.54
32	Pickerel Creek (including incidental Sandusky Bay drainage)	47.22
33	Pipe Creek (including incidental drainage to Bay and Lake Erie)	32.81
34	Plum Brook and Hemming Ditch (including incidental drainage to Lake Erie)	15.13
35	Raccoon Creek (including incidental Sandusky Bay drainage)	35.83
36	Sawmill Creek	13.86
37	South Creek	21.55
38	Strong Creek (including incidental Sandusky Bay drainage)	15.17
39	Turtle Creek plus Lk. Erie drainage between Crane Cr. and Toussaint Cr.	41.53
40	Wolf Ditch and Berger Ditch	15.91

Figure 3: Watershed Planning Areas

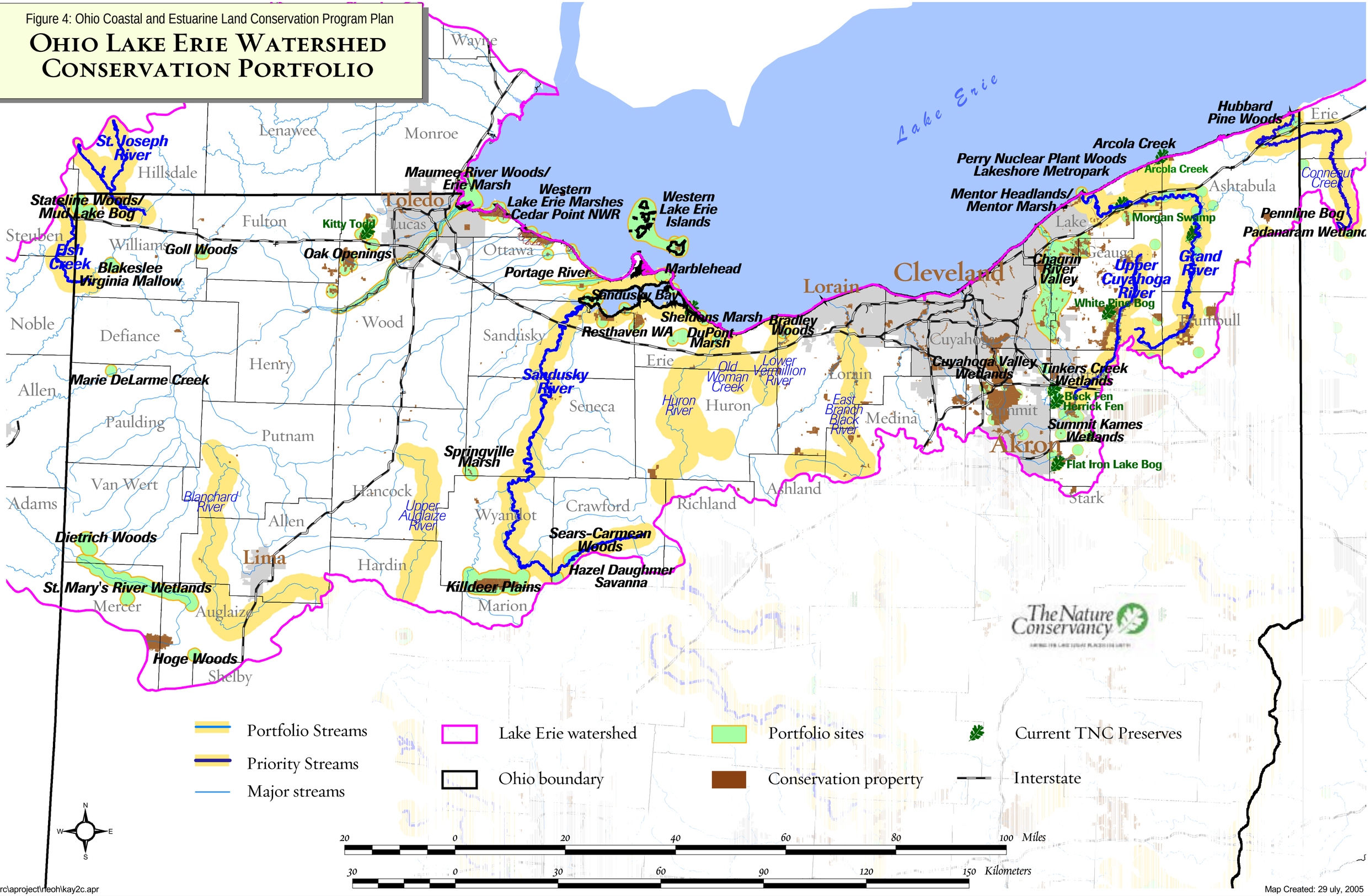


Watershed or Focus Area Identification

1. Lower Maumee Area of Concern Including the Ten Mile Creek/Ottawa River (1A), Swan Creek (1B), Maumee River, Wolf, Cedar, Crane and Turtle Creeks (1C) and Toussaint Creek (1D)
2. Duck and Otter Creeks
3. Sandusky River Watershed, including Honey Creek Watershed (3A)
4. Rocky River Watershed, including Rocky River main branch (4A) and West Branch (4B)
5. West Creek Watershed
6. Euclid Creek Watershed
7. Chagrin River Watershed
8. Lower Grand River Watershed
9. Old Woman Creek Watershed
10. Lake Erie Marshes Focus Area
11. Grand River Lowlands Focus Area
12. Mentor Marsh SAMP
13. Chippewa Creek
14. Furnace Run
15. Brandywine Creek
16. Lake County tributaries between Grand River and Arcola Creek

Figure 4: Ohio Coastal and Estuarine Land Conservation Program Plan

Ohio Lake Erie Watershed Conservation Portfolio



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Appendix B: Coastal Species Tables

Appendix B: Listed Species of the Ohio Coastal Management Area

as determined by data stored in the Ohio Natural Heritage Database

Table B-1. Listed plant species considered dependent upon coastal habitat for continual existence in Ohio. List prepared by Tom Arbour in consultation with DNAP botanist Rick Gardner and Natural Heritage Program Manager Greg Schneider.

Scientific Name	Common Name	Ohio Status	Federal Status
Acer pensylvanicum	Striped Maple	E	
Ammophila breviligulata	American Beach Grass	T	
Arabis drummondii	Drummond's Rock Cress	E	
Arctostaphylos uva-ursi	Bearberry	X	
Artemisia campestris	Beach Wormwood	T	
Cakile edentula	Inland Sea Rocket	P	
Campanula rotundifolia	Harebell	T	
Carex aquatilis	Leafy Tussock Sedge	P	
Carex garberi	Garber's Sedge	E	
Ceanothus herbaceus	Prairie Redroot	X	
Cyperus schweinitzii	Schweinitz' Umbrella-sedge	T	
Eleocharis geniculata	Caribbean Spike-rush	E	
Eleocharis ovata	Ovate Spike-rush	E	
Euphorbia polygonifolia	Seaside Spurge	P	
Hudsonia tomentosa	Beach-heather	X	
Juncus alpinus	Alpine Rush	P	
Lathyrus japonicus	Inland Beach Pea	T	
Nuphar variegata	Bullhead-lily	E	
Oenothera oakesiana	Oakes' Evening-primrose	P	
Packera paupercula	Balsam Squaw-weed	T	
Panicum philadelphicum	Philadelphia Panic Grass	E	
Phragmites australis ssp. americanus	American Reed Grass	T	
Platanthera leucophaea	Prairie Fringed Orchid	T	FT
Potentilla arguta	Tall Cinquefoil	E	
Potentilla paradoxa	Bushy Cinquefoil	T	
Sagittaria cuneata	Wapato	T	
Sagittaria rigida	Deer's-tongue Arrowhead	P	
Schizachyrium littorale	Coastal Little Bluestem	E	
Schoenoplectus americanus	Olney's Three-square	E	
Sisyrinchium montanum	Northern Blue-eyed-grass	T	
Sisyrinchium mucronatum	Narrow-leaved Blue-eyed-grass	E	
Tetraneuris herbacea	Lakeside Daisy	E	FT
Toxicodendron rydbergii	Northern Poison-ivy	E	
Triplasis purpurea	Purple Sand Grass	P	
Viola nephrophylla	Northern Bog Violet	E	

E= Endangered
T= Threatened
P= Potentially Threatened
SC= Species of Concern
SI= Special Interest
N= Not listed by State of Ohio
FE= Federally Endangered
FT= Federally Threatened
X= Extirpated

Table B-2. Additional listed plant species occuring in Ohio's Coastal Management Area.
List prepared by Tom Arbour in consultation with DNAP botanist Rick Gardner and Natural Heritage Program Manager Greg Schneider.

Scientific Name	Common Name	Ohio Status	Federal Status
Acorus americanus	American Sweet-flag	P	
Anemone cylindrica	Prairie Thimbleweed	T	
Arabis divaricarpa	Limestone Rock Cress	E	
Arabis hirsuta var. adpressipilis	Southern Hairy Rock Cress	P	
Arabis lyrata	Lyre-leaved Rock Cress	T	
Astragalus canadensis	Canada Milk-vetch	T	
Calamintha arkansana	Limestone Savory	T	
Callitriche verna	Vernal Water-starwort	T	
Carex albolutescens	Pale Straw Sedge	T	
Carex appalachica	Appalachian Sedge	N	
Carex atherodes	Wheat Sedge	P	
Carex aurea	Golden-fruited Sedge	T	
Carex bebbii	Bebb's Sedge	P	
Carex bicknellii	Bicknell's Sedge	T	
Carex brevior	Tufted Fescue Sedge	T	
Carex cephaloidea	Thin-leaved Sedge	T	
Carex flava	Yellow Sedge	P	
Carex lasiocarpa	Slender Sedge	P	
Carex limosa	Mud Sedge	E	
Carex mesochorea	Midland Sedge	T	
Carex pallescens	Pale Sedge	T	
Carex pseudocyperus	Northern Bearded Sedge	E	
Carex retroflexa	Reflexed Sedge	P	
Carex sprengelii	Sprengel's Sedge	T	
Carex viridula	Little Green Sedge	P	
Castanea dentata	American Chestnut	P	
Chenopodium leptophyllum	Slender Goosefoot	X	
Corallorhiza maculata	Spotted Coral-root	P	
Cornus rugosa	Round-leaved Dogwood	P	
Corydalis sempervirens	Rock-harlequin	P	
Cuscuta coryli	Hazel Dodder	X	
Cyperus diandrus	Low Umbrella-sedge	P	
Descurainia pinnata	Tansy Mustard	P	
Draba reptans	Carolina Whitlow-grass	T	
Eleocharis compressa	Flat-stemmed Spike-rush	T	
Elymus trachycaulus	Bearded Wheat Grass	T	
Equisetum variegatum	Variegated Scouring-rush	E	
Euthamia remota	Great Lakes Goldenrod	T	
Gentianopsis procera	Small Fringed Gentian	P	
Hedeoma hispida	Rough Pennyroyal	P	
Hedyotis nigricans	Narrow-leaved Summer Bluets	P	
Helianthemum bicknellii	Plains Frostweed	T	
Hieracium umbellatum	Canada Hawkweed	T	
Iris brevicaulis	Leafy Blue Flag	T	
Juncus balticus	Baltic Rush	P	
Lilium philadelphicum	Wood Lily	E	
Lipocarpha micrantha	Dwarf Bulrush	T	
Melampyrum lineare	Cow-wheat	T	
Minuartia michauxii	Rock Sandwort	P	
Moehringia lateriflora	Grove Sandwort	P	
Monarda punctata	Dotted Horsemint	E	

Myriophyllum heterophyllum	Two-leaved Water-milfoil	E
Myriophyllum sibiricum	American Water-milfoil	T
Oenothera parviflora	Small-flowered Evening-primrose	P
Panicum tuckermanii	Tuckerman's Panic Grass	T
Persicaria robustior	Coarse Smartweed	P
Physalis virginiana	Virginia Ground-cherry	P
Populus balsamifera	Balsam Poplar	E
Potamogeton natans	Floating Pondweed	P
Potamogeton richardsonii	Richardson's Pondweed	P
Potamogeton zosteriformis	Flat-stemmed Pondweed	P
Ranunculus fascicularis	Early Buttercup	P
Rosa blanda	Smooth Rose	T
Sagittaria montevidensis	Southern Wapato	P
Salix myricoides	Blue-leaved Willow	P
Schoenoplectus purshianus	Pursh's Bulrush	P
Schoenoplectus smithii	Smith's Bulrush	E
Shepherdia canadensis	Canada Buffalo-berry	P
Sphenopholis obtusata var. obtusata	Prairie Wedge Grass	T
Spiranthes magnicamporum	Great Plains Ladies'-tresses	P
Stuckenia filiformis	Filiform Pondweed	X
Symphyotrichum drummondii	Drummond's Aster	T
Triglochin palustris	Marsh Arrow-grass	P
Ulmus thomasii	Rock Elm	T
Vitis labrusca	Northern Fox Grape	N
Zizania aquatica	Wild Rice	T

E= Endangered
T= Threatened
P= Potentially Threatened
SC= Species of Concern
SI= Special Interest
N= Not listed by State of Ohio
FE= Federally Endangered
FT= Federally Threatened
X= Extirpated

Table B-3. Listed animal species considered dependent upon coastal habitat for continual existence in Ohio.
Compiled by Tom Arbour, July 21, 2009 using information from the Ohio Natural Heritage Database.
Note: Occurrences of record indicate breeding populations only, not migratory occurrences.

Scientific Name	Common Name	Category	Ohio Status	Federal Status
Cicindela hirticollis hirticollis	A Tiger Beetle	Invertebrate Animal	T	
Ligumia nasuta	Eastern Pondmussel	Invertebrate Animal	E	
Acipenser fulvescens	Lake Sturgeon	Vertebrate Animal	E	FT
Anas clypeata	Northern Shoveler	Vertebrate Animal	SI	
Anas crecca	Green-winged Teal	Vertebrate Animal	SI	
Anas strepera	Gadwall	Vertebrate Animal	SI	
Aythya americana	Redhead	Vertebrate Animal	SI	
Bubulcus ibis	Cattle Egret	Vertebrate Animal	E	
Casmerodius albus	Great Egret	Vertebrate Animal	SC	
Catostomus catostomus	Longnose Sucker	Vertebrate Animal	E	
Chlidonias niger	Black Tern	Vertebrate Animal	E	
Coregonus artedi	Cisco	Vertebrate Animal	E	
Coregonus clupeaformis	Lake Whitefish	Vertebrate Animal	SC	
Egretta thula	Snowy Egret	Vertebrate Animal	E	
Elaphe vulpina gloydi	Eastern Fox Snake	Vertebrate Animal	SC	
Emydoidea blandingii	Blanding's Turtle	Vertebrate Animal	SC	
Nerodia sipedon insularum	Lake Erie Water Snake	Vertebrate Animal	E	
Oxyura jamaicensis	Ruddy Duck	Vertebrate Animal	SI	
Sterna hirundo	Common Tern	Vertebrate Animal	E	

E= Endangered
T= Threatened
P= Potentially Threatened
SC= Species of Concern
SI= Special Interest
N= Not listed by State of Ohio
FE= Federally Endangered
FT= Federally Threatened
X= Extirpated

Table B-4. Additional listed invertebrate and vertebrate animal species occuring in Ohio's Coastal Management Area.
Compiled by Tom Arbour, July 21, 2009 using information from the Ohio Natural Heritage Database.
Note: Occurrences of record indicate breeding populations only, not migratory occurences.

Scientific Name	Common Name	Category	Ohio Status	Federal Status
Aeshna canadensis	Canada Darner	Invertebrate Animal	E	
Cyclonaias tuberculata	Purple Wartyback	Invertebrate Animal	SC	
Enallagma ebrium	Marsh Bluet	Invertebrate Animal	T	
Epioblasma torulosa rangiana	Northern Riffleshell	Invertebrate Animal	E	
Epioblasma triquetra	Snuffbox	Invertebrate Animal	E	
Lampsilis ovata	Pocketbook	Invertebrate Animal	E	
Ligumia recta	Black Sandshell	Invertebrate Animal	T	
Nannothemis bella	Elfin Skimmer	Invertebrate Animal	E	
Obliquaria reflexa	Threehorn Wartyback	Invertebrate Animal	T	
Truncilla donaciformis	Fawnsfoot	Invertebrate Animal	T	
Truncilla truncata	Deertoe	Invertebrate Animal	SC	
Uniomerus tetralasmus	Pondhorn	Invertebrate Animal	T	
Villosa fabalis	Rayed Bean	Invertebrate Animal	E	
Ammocrypta pellucida	Eastern Sand Darter	Vertebrate Animal	SC	
Bartramia longicauda	Upland Sandpiper	Vertebrate Animal	T	
Botaurus lentiginosus	American Bittern	Vertebrate Animal	E	
Cistothorus platensis	Sedge Wren	Vertebrate Animal	SC	
Clemmys guttata	Spotted Turtle	Vertebrate Animal	T	
Clonophis kirtlandii	Kirtland's Snake	Vertebrate Animal	T	
Esox masquinongy	Muskellunge	Vertebrate Animal	SC	
Falco peregrinus	Peregrine Falcon	Vertebrate Animal	T	
Fundulus diaphanus menona	Western Banded Killifish	Vertebrate Animal	E	
Haliaeetus leucocephalus	Bald Eagle	Vertebrate Animal	T	
Hemidactylium scutatum	Four-toed Salamander	Vertebrate Animal	SC	
Ixobrychus exilis	Least Bittern	Vertebrate Animal	T	
Lepisosteus oculatus	Spotted Gar	Vertebrate Animal	E	
Lota lota	Burbot	Vertebrate Animal	SC	
Moxostoma carinatum	River Redhorse	Vertebrate Animal	SC	
Moxostoma valenciennesi	Greater Redhorse	Vertebrate Animal	T	
Mustela erminea	Ermine	Vertebrate Animal	SC	
Notropis heterolepis	Blacknose Shiner	Vertebrate Animal	E	
Nycticorax nycticorax	Black-crowned Night-heron	Vertebrate Animal	T	
Opsopoeodus emiliae	Pugnose Minnow	Vertebrate Animal	E	
Percina copelandi	Channel Darter	Vertebrate Animal	T	
Porzana carolina	Sora Rail	Vertebrate Animal	SC	
Rallus elegans	King Rail	Vertebrate Animal	E	
Rallus limicola	Virginia Rail	Vertebrate Animal	SC	
Rhinichthys cataractae	Longnose Dace	Vertebrate Animal	SC	
Sistrurus catenatus	Eastern Massasauga	Vertebrate Animal	E	
Sturnella neglecta	Western Meadowlark	Vertebrate Animal	SI	
Taxidea taxus	Badger	Vertebrate Animal	SC	

E= Endangered
T= Threatened
P= Potentially Threatened
SC= Species of Concern
SI= Special Interest
N= Not listed by State of Ohio
FE= Federally Endangered
FT= Federally Threatened
X= Extirpated