

DEVELOPMENT of the OHIO COASTAL ATLAS

The Ohio Coastal Atlas effort was initiated in the spring of 2004 by the Ohio Department of Natural Resources (ODNR) Office of Coastal Management. The first atlas edition, printed in 2005, was developed from information, data sets and mapping readily available within ODNR and other sources. The first edition, regarded somewhat as a draft and vehicle to obtain additional data, was distributed in 2005 to a limited number of select organizations and individuals. Recipients were encouraged to make comments regarding the usefulness of the document and the availability of additional information for inclusion in the 2007 edition.

The 2007 Ohio Coastal Atlas integrates comments received from within ODNR, external sources and innovations suggested by Office of Coastal Management staff and our partners. While some changes are subtle, entire new sections have been added to help provide a more accurate and complete representation of Ohio's coastal resources. The Ohio Coastal Atlas is intended to serve as a reservoir of information that will help decision makers in their daily efforts and also provide valuable insight to individuals interested in Lake Erie and Ohio's coast.

It has been an exciting journey producing the Ohio Coastal Atlas. We hope as you read through the Atlas that you too will encounter a journey of discovery of the many wonderful resources in our Lake Erie coastal region. As before, we encourage you to contact the Office of Coastal Management with comments or questions on information presented and on additional ways to improve future editions and addendums.

Publication Editor.

For comment, please contact the ODNR Office of Coastal Management.

INTRODUCTION

Ohio's Lake Erie coast is exciting and diverse. One can stand on a high bluff on a windy day and watch powerful Lake Erie waves roll, or experience the beauty of a meadow, wetland or waterway teeming with countless birds, or feel the tug on the line of one of the many varieties of Lake Erie fish or simply watch the sunset gleaming off the lake.

The experiences are endless and our coastal region is an integral part of life for many Ohioans. It is essential that we are mindful of our relationship to the many natural resources of our coast as well as the cultural and economic resources that together contribute to the quality of life and economic vitality of the region. Many communities have recognized this and seek to take advantage of coastal resources as a way to bring new life and energy to their local economy.

Communities are creating waterfront parks and trails, businesses are relocating to former waterfront brownfields, and downtowns are progressively connecting activities to the coast as our rich Lake Erie heritage is rediscovered. Along with development, communities are recognizing the need and economic advantage of protecting open space, natural habitat and water quality.

The state of Ohio also recognizes the importance of managing its coastal resources and to that end established the Ohio Coastal Management Program. The program involves the coordinated efforts of various state agencies and local organizations. Through grants, technical assistance and education programs, the Office of Coastal Management provides assistance and support to state agencies, local governments, nonprofit organizations, educational institutions, businesses and individuals who share a vested interest in the Lake Erie region. In the effort to place vital information in their hands, the Office of Coastal Management, in partnership with many groups and organizations, created the 2007 Ohio Coastal Atlas.

The Atlas shares information through maps, text, graphics, pictures and contact sources, and provides a framework for recognizing relationships and interactions between natural resources and human actions. By understanding how the environment, human activity and economic factors interact, we can better ensure sound coastal stewardship. Perhaps with the concerted efforts of all that share a stake in our coastal region, we will be able to pass on to future generations a resource that will greatly enhance their quality of life and economic welfare.

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Covered bridge, Ashtabula County



Rocky River mouth, Cuyahoga County

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Index Map



Downtown Toledo, Lucas County



Downtown Sandusky, Erie County



Downtown Elyria, Lorain County



Downtown Cleveland, Cuyahoga County



Map 1 GIS data citation in Appendices

Index Map



Map 1 GIS data citation in Appendices

Index Map Locator Key Municipalities

MUNICIPALITY	GRID CODE	MUNICIPALITY	GRID CODE	MUNICIPALITY	GRID CODE	MUNICIPALITY	GRID CODE	MUNICIPALITY	GRID CODE
Akron	G4, H4	Conneaut	K1	Jerry City	A3	North Ridgeville	F3	Silver Lake	H4
Amherst	E3	Cortland	K3	Kelleys Island	D2	North Royalton	G3	Solon	H3
Andover	K2	Craig Beach	J4	Kent	H4	Northfield	H3	South Amherst	E3
Aquilla	J2	Creston	F4	Kipton	E3	Northwood	B2	South Euclid	H2
Arcadia	B4	Custar	A3	Kirtland	H2	Norton	G4	South Russell	H3
Ashtabula	K1	Cuyahoga Falls	G4, H4	Kirtland Hills	H2	Norwalk	D3	Spencer	F4
Attica	D4	Cygnets	A3	Lagrange	F3	Oak Harbor	C3	Stow	H4
Aurora	H3	Deshler	A4	Lakemore	H4	Oakwood	H3	Streetsboro	H3
Avon	F3	Doylestown	G4	Lakewood	G3	Oberlin	E3	Strongsville	G3
Avon Lake	F3	East Cleveland	G2	Limaville	J4	Olmsted Falls	F3	Struthers	K4
Bairdstown	A4	Eastlake	H2	Lindsey	C3	Orange	H3	Swanton	A2
Barberton	G4	Elmore	B3	Lodi	F4	Orangeville	K3	Sylvania	A2
Bay View	D3	Elyria	F3	Lorain	F3	Oregon	B2	Tallmadge	H4
Bay Village	F3	Euclid	G2, H2	Lordstown	J4	Orwell	J2	Tiffin	C4
Beachwood	H3	Fairlawn	G4	Lowellville	K4	Ottawa Hills	A2	Timberlake	H2
Bedford	H3	Fairport Harbor	H2	Luckey	B3	Painesville	H2	Toledo	B2
Bedford Heights	H3	Fairport Park	G3	Lyndhurst	H2	Parma	G3	Tontogany	A3
Bellevue	D3	Findlay	A4	Macedonia	H3	Parma Heights	G3	Twinsburg	H3
Bentleyville	H3	Fostoria	B4	Madison	J2	Pemberville	B3	Valley View	G3
Benton Ridge	A4	Fremont	C3	Mantua	H3	Peninsula	G3	Van Buren	A4
Berea	G3	Garfield Heights	G3	Maple Heights	G3	Pepper Pike	H3	Vanue	B4
Berkey	A2	Garrettsville	J3	Marblehead	D2	Perry	J2	Vermilion	E3
Berlin Heights	E3	Gates Mills	H2	Maumee	A2	Perrysburg	A2	Wadsworth	G4
Bettsville	C3	Geneva	J1	Mayfield	H2	Plymouth	D4	Waite Hill	H2
Bloomdale	B4	Geneva-on-the-Lake	J1	McComb	A4	Poland	K4	Wakeman	E3
Bloomville	C4	Genoa	B2	McDonald	K4	Port Clinton	C3	Walbridge	B2
Boston Heights	H3	Gibsonburg	B3	Medina	G4	Portage	A3	Walton Hills	G3
Bowling Green	A3	Girard	K4	Mentor	H2	Put-In-Bay	D2	Warren	K3
Bradner	B3	Gloria Glens Park	F4	Mentor-on-the-Lake	H2	Ravenna	H4	Waterville	A3
Brady Lake	H4	Grafton	F3	Metamora	A2	Rawson	A4	Wayne	B3
Bratenahl	G2	Grand Rapids	A3	Middleburg Heights	G3	Republic	C4	Wellington	E4
Brecksville	G3	Grand River	H2	Middlefield	J3	Richfield	G4	West Farmington	J3
Broadview Heights	G3	Green	H4	Milan	D3	Richmond Heights	H2	West Millgrove	B3
Brook Park	G3	Green Springs	C3	Millbury	B2	Rising Sun	B3	West Salem	F4
Brooklyn	G3	Greenwich	E4	Milton Center	A3	Rittman	G4	Westfield Center	F4
Brunswick	G3	Harbor View	B2	Mogadore	H4	Roaming Shores	K2	Westlake	F3
Burbank	F4	Hartsville	H4	Monroeville	D3	Rochester	E4	Weston	A3
Burgoon	B3	Haskins	A3	Munroe Falls	H4	Rock Creek	J2	Whitehouse	A2
Burton	J3	Helena	B3	New London	E4	Rocky Ridge	C2	Wickliffe	H2
Campbell	K4	Highland Heights	H2	New Middletown	K4	Rocky River	G3	Willard	D4
Canfield	K4	Hiram	J3	New Riegel	B4	Rossford	B2	Willoughby	H2
Castalia	D3	Holland	A2	New Washington	D4	Sandusky	D3	Willoughby Hills	H2
Chagrin Falls	H3	Hoytville	A4	Newton Falls	J4	Savannah	E4	Willowick	H2
Chardon	H2	Hubbard	K4	Niles	K4	Seven Hills	G3	Windham	J3
Chippewa Lake	F4	Hudson	H3	North Baltimore	A4	Seville	G4	Woodville	B3
Clay Center	B2	Hunting Valley	H3	North Fairfield	D4	Shaker Heights	G3	Yankee Lake	K3
Cleveland	G3	Huron	E3	North Kingsville	K1	Sheffield	F3	Youngstown	K4
Cleveland Heights	G3	Independence	G3	North Olmsted	F3	Sheffield Lake	F3		
Clyde	C3	Jefferson	K2	North Perry	J1	Shiloh	D4		

7.5-Minute Quadrangle Index Map



East Harbor State Park, Ottawa County



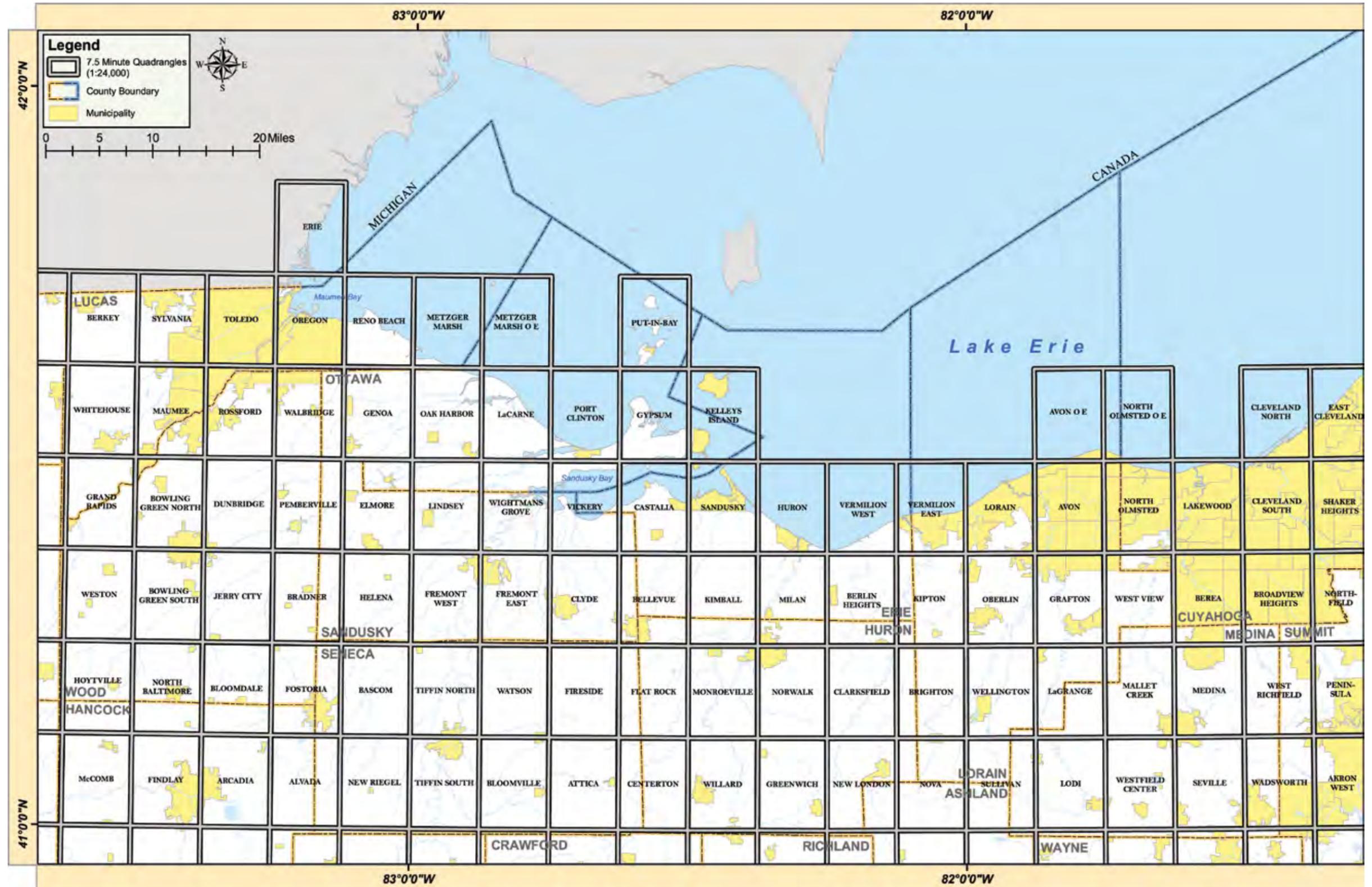
High bluff in Rocky River, Cuyahoga County



South Bass Island State Park, Ottawa County

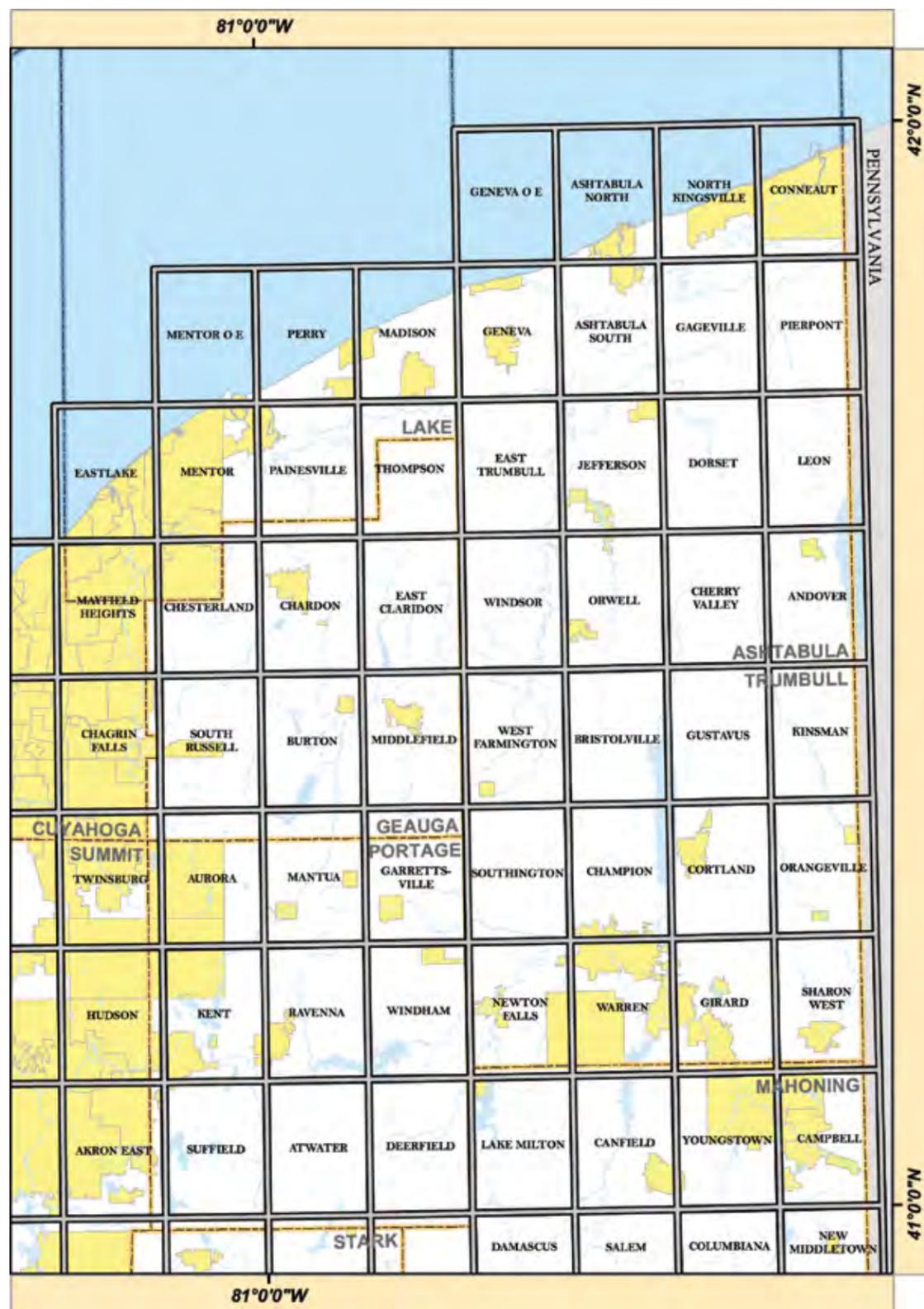


Lake Erie frozen at Marblehead Lighthouse State Park, Ottawa County



Map 2 GIS data citation in Appendices

7.5-Minute Quadrangle Index Map



Map 2 GIS data citation in Appendices

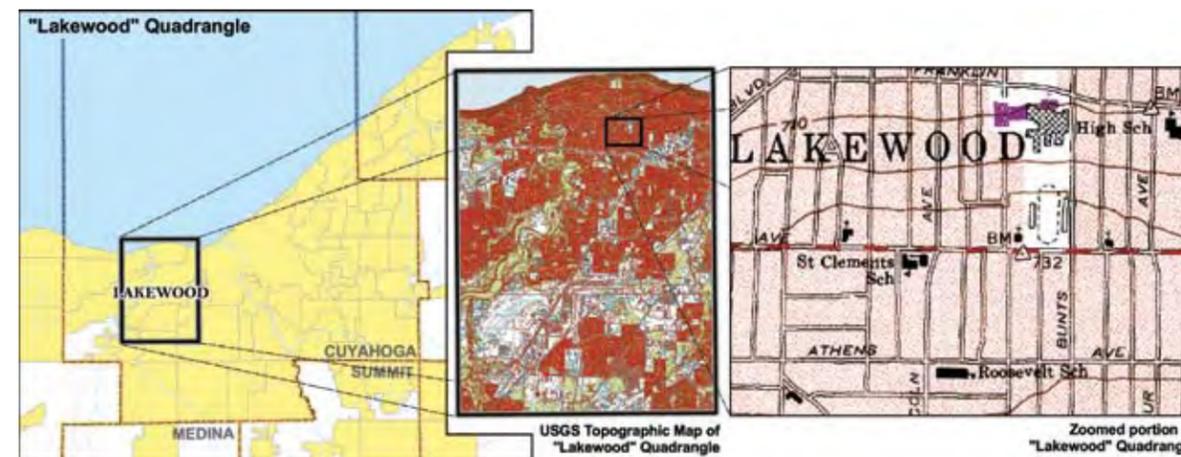
Topographic Quadrangle Maps

This index map illustrates 162 labeled 7.5-minute quadrangle grids located within Ohio's coastal region. The quadrangle index serves as an identification resource to locate corresponding topographic maps. In Ohio, there are 788, 7.5-minute quadrangles. Each one is uniquely named after a town or feature located within the geographic area it covers.

One quadrangle represents a geographic extent that is 7.5 minutes of latitude by 7.5 minutes of longitude. Although the angular dimensions are identical, Ohio's quadrangles encompass an area on the ground more vertical in proportion. Specifically, the distance between two lines of latitude, called longitudinal distance, equals approximately 8.7 miles; the distance between two lines of longitude, called latitudinal distance, equals roughly 6.5 miles (approximately 56 square miles total). These unequal lengths are due to Ohio's northerly geographic position on Earth. The area depicted on the index map is situated between 41 degrees and 42 degrees north latitude. Due to tapering lines of longitude, quadrangles which are closer to 42 degrees north latitude are narrower, and therefore contain slightly less land area, than quadrangles located farther south.

Topographic maps are two-dimensional maps that show three-dimensional relief and identify fixed point elevations, benchmarks, lakes, rivers, streams and vegetation cover. They also show political boundaries and cultural features such as roads, railroads, airport runways, buildings and quarries. Topographic maps are published by the U.S. Geological Survey (USGS) and cover most of the country. Ohio's topographic maps are produced in cooperation with state agencies, including the Ohio Department of Natural Resources and Ohio Department of Transportation.

To represent relief, topographic maps connect points of equal elevation with contour lines. Contour intervals on Ohio's 7.5-minute topographic maps range from 5 feet to 20 feet, depending on the flatness or steepness of the landscape. Areas where contour lines are close together represent steep terrain, vertical cliffs or river valleys. Areas with broad contour gaps



represent flat landscapes. Contour line elevations are labeled on every fifth line, which are known as index contours and are drawn thicker.

Benchmarks serve as reference points that identify precise vertical elevations above sea level at fixed locations. On the topographic map, benchmarks are symbolized by either the letters "BM," "x" or a triangle and are accompanied with the elevation number. Each benchmark is physically positioned on the ground with a round, brass plate set in concrete.

The 7.5-minute topographic maps are mapped at a scale of 1:24,000 where 1 inch on the map equals 24,000 inches (2,000 feet or .378 miles) on the ground. This map scale is considered to be 'large scale' because the geographic area is small allowing for greater detail. The USGS also produces topographic maps at smaller scales (larger geographic areas), including a 15-minute quadrangle series at 1:62,000 (out of print), a 60-minute quadrangle series at 1:100,000, and quadrangle maps at scales of 1:250,000 and 1:500,000.

The USGS began the topographic mapping program in 1902 with Ohio and ten other states. In 1918, Ohio became the first state with a complete 15-minute (1:62,000) map coverage. In the 1950s, as Ohio's businesses, industries, transportation networks, recreational opportunities and population expanded, the state recognized the need to update the topographic maps at a larger scale. In 1964, Ohio became the first state to complete a statewide coverage of 7.5-minute topographic quadrangles. The 7.5-minute quadrangle is the most popular and most widely used.

Digital Raster Graphics

A digital raster graphic (DRG) is a georeferenced, rectified image of a digitally scanned USGS topographic map. The georeferencing process establishes the relationship between the scanned image's coordinates and a known real-world coordinate system. All DRGs are georeferenced to fit the Universal Transverse Mercator (UTM) projection. This enables the utilization of DRGs in geographic information systems (GIS) computer applications.

Sources:

- ODNR Division of Geological Survey, "Ohio Topographic Maps," Educational Leaflet 16, 2000
- U.S. Geological Survey, "Standards for Digital Raster Graphics," 2001 www.usgs.com

Latitude and Longitude

Lines of latitude are imaginary lines around the Earth's surface parallel to the equator and provide angular measurements north and south of the equator. Latitude measurements range from 0 degrees at the equator to 90 degrees at the poles (90° N or 90° S). Lines of latitude do not converge.

Lines of longitude describe the location of a place on Earth east or west of a north-south line called the Prime Meridian which passes through the Royal Greenwich Observatory in Greenwich, England. Longitude is given as a measurement ranging from 0 degrees at the Prime Meridian to +180 degrees eastward and -180 degrees westward. Lines of longitude, also called meridians, taper as they converge at the north and south poles.

Lake Erie Region Timeline



Inscription Rock Photo by Pat Hayes

PRE-EUROPEAN

1200-1600 The prehistoric, Native-American drawings on Inscription Rock, located on Kelleys Island's southern shore, are believed to be created.

PRE-STATEHOOD

1669 French explorer Louis Joliet is the first European to discover Lake Erie; Erie was the last of the Great Lakes to be discovered.

1787 The Northwest Ordinance which is considered to be one of the most significant achievements of the Congress of the Confederation is passed. The Ordinance puts the world on notice not only that the land north of the Ohio River and east of the Mississippi will be settled but that it will eventually become part of the United States. Previously, development had temporarily been forbidden here.

1796 General Moses Cleaveland completes the first survey of Cleveland and the city is established as the first settlement in the Connecticut Western Reserve.

1797 Charles Parker, a surveyor with the Connecticut Land Company, builds a cabin on a marsh paving the way for other pioneers to establish this new land which will become the city of Mentor.

1799 The city of Conneaut is located on an old Native American trail, also used by early pioneers heading westward. Conneaut, on Pennsylvania's border, is Ohio's northern-most city.

EARLY STATEHOOD

1803 Ohio becomes the 17th state.

1803 The city of Ashtabula is founded along the "river of many fish" (the Ashtabula River).

1804 The city of Huron is founded by Jean Baptiste Flammond. The city along the Huron River is incorporated in 1835.

1807 The city of Lorain is founded at the mouth of the Black River.

1808 The city of Vermilion is founded and later incorporated in 1838.

1809 Marblehead Village is founded. Due to the abundant amounts of limestone quarried nearby, the village was once called Plasterbed.

1810 John Garrison and his family are credited with founding present-day Sandusky where the Wyandot Indians had an encampment as early as 1740. In 1816, Zalmon Wildman conferred upon the place the name Sandusky City. The city was incorporated in 1824.

1812 Fairport Harbor is founded. Originally called Grandon, a name derived from the Grand River, the town is incorporated by Ohio's third governor, Samuel Huntington, in 1836.



Battle of Lake Erie depiction
Photo from www.brign Niagara.com

1813 The Battle of Lake Erie is fought between nine United States Navy vessels commanded by Oliver Hazard Perry and a fleet of six British warships. Located in Lake Erie waters northwest of Put-in-Bay, the battle was resolutely won by the outnumbered Americans in three hours. The battle ultimately secured control of

Lake Erie and the Northwest Territory for the Americans during the War of 1812.

1813 Fort Meigs in Perrysburg is built along the Maumee River to defend Ohio against British attack. Fort Meigs stood as the largest wooden fortification in North America. It has since been rebuilt and the site is a state memorial and National Historic Landmark.

1822 The Marblehead Lighthouse in Marblehead is constructed. It stands as the oldest Great Lakes lighthouse in continuous operation.

1825 The primitive "corduroy" planked road linking Fremont and Perrysburg is completed. The Maumee and Western Reserve Road, as it was known, is the first road constructed through the former Great Black Swamp. The newly laid corridor frequently submerged into the muddy ground due to preexisting drainage conditions and damming effects caused by road placement. The 31-mile throughway, dubbed America's worst, takes weeks to travel. In 1938, it is paved with gravel and today the once treacherous course serves as the high-speed U.S. Highway 20.

1827 To straighten the shipping channel, the mouth of the Cuyahoga River is repositioned east creating Whiskey Island in Cleveland. The former mouth is filled in the 1920s.

1828 The town of Port Clinton on the Portage River is platted.



Canal boat

1832 The completion of the Ohio & Erie Canal connects Lake Erie with the Ohio River, via Cleveland, Akron, Coshocton, Chillicothe and Portsmouth. Use of the canal peaks in the 1840s. Construction and expansion of the railroad network into Ohio in the 1870s causes a steady decline in canal transport. A statewide flood in 1913 destroys a majority of the canal infrastructure and the manmade waterways never recover.

1833 Toledo is founded when the neighboring and competing towns of Port Lawrence and Vistula agree to set aside their differences and unite to take advantage of a proposed canal to bypass rapids on the Maumee River.

1835-1836 The Toledo War, also known as the Ohio-Michigan War, the Battle of Phillip's Crossing, the Ohio-Michigan Boundary War and the Michigan-Ohio War, is fought to settle the boundary between the state of Ohio and the Michigan Territory. The dispute centers over a 468 square mile strip of land including what is now the city of Toledo. Ohio had drawn counties and set up county governments in the strip which Michigan also claims. The gover-

nors of both the state and territory send militia forces to the area, but the Strip is covered with dense arborvitae swamps (part of the "Great Black Swamp"). The two militias get lost for weeks and never actually find each other, though at one point a Michigan deputy is stabbed while arresting an Ohio man in a tavern, no one else is seriously injured. The U.S. Congress agrees to grant Michigan statehood in 1836, but only if it relin-



Confederate Cemetery, Johnson's Island

quishes its claim to the disputed tract. In exchange, Michigan is granted the western two-thirds of the Upper Peninsula. While the "war" ended on Dec. 14, 1836, the boundary between Ohio and Michigan in Lake Erie is not finally resolved until a U.S. Supreme Court ruling in 1973.

LATE 19TH CENTURY

1862 Confederate captives are first imprisoned on Johnson's Island. More than 15,000 Confederate prisoners of war are incarcerated at the 40-acre island site near the mouth of Sandusky Bay through 1865.

Lake Erie Region Timeline

1865 Lands are set aside in Cleveland to be developed as recreation areas. In 1977, the city of Cleveland leases its four lakefront parks to the state of Ohio. The four parks become Cleveland Lakefront State Park in 1978. In 1982, the Euclid Beach area is added to the state park property. The Villa Angela area consists of two separate land purchases. The first 30 acres is bought by the city of Cleveland and turned over to the state in 1984. ODNR and the Cleveland Public Library purchase the remaining 13 acres in May 1991. While each area appears to be a separate park, they are administered through a single park office located at Gordon Park.

1870 The spanning white sand beach along Cedar Point's northern shore attracts its first paying guests. Bathers are transported to and from the mainland aboard Sandusky entrepreneur Louis Zistel's side-wheel steamer, the Young Reindeer. Upon arrival, men and women bathe in the lake, modestly separated by a screen.

1876 Charles Brush of Euclid invents the arc lamp. In 1879, Public Square is illuminated by Brush's lights boasting Cleveland as the first city to use the invention. Other worldly cities in Europe and the United States soon follow.

1887 The Lake Erie Island region produces more than one-third of Ohio's total grape yield and almost one-half of its wine product. Due to the stabilizing effect of Lake Erie, the Lake Erie Islands have a longer frost-free period than any

other area in Ohio. This unique climate characteristic allows for ample grape agriculture.

1889 The settlement known as East Rockport of Rockport Township is incorporated and becomes known as the hamlet of Lakewood. In 1911, Lakewood becomes a city.

1892 Cedar Point, today known worldwide for a diverse collection of record breaking roller coasters, builds its first roller coaster, the primitive 25-foot tall, 10 mile per hour, Switchback Railway.



1897 The Electric Lakeshore Railway connects Cleveland and Lorain.

1899 The first working model of the Hulett Automatic Ore Unloader is constructed at Conneaut Harbor in Conneaut. The massive machine developed by George H. Hulett, revolutionized iron ore shipping in the state. The design permitted quick cargo unloading times, enhanced quantities and increased efficiency. Additional machines are built in Ashtabula, Cleveland, Huron, Lorain and Toledo and are staples of Lake Erie shipping until 1992.

TURN OF THE CENTURY

1907 Dr. Lee DeForest makes the first ship-to-shore radio transmission at Put-in-Bay. DeForest transmits the annual I-LYA (Inter-Lake Yachting Association) Regatta race results.

1909 The Boundary Waters Treaty is signed by the United States and Canada. Recognizing that degradation of the Great Lakes by any state, province or nation can have widespread effects upon the lakes and coastal residents, the Treaty provides the principles and mechanisms to help resolve disputes and to prevent future ones, primarily those concerning water quantity and water quality along the boundary between Canada and the United States. The Treaty leads to the establishment of the International Joint Commission.

1910 Aviator Glenn Curtiss flies 65 miles across Lake Erie from Euclid Beach Amusement Park in Cleveland to Cedar Point Amusement Park in Sandusky, setting a world record for the longest flight over water.

1912 The township of Avon Lake is created from Avon Township. Rapid growth induced by the railroad leads to the formation of Avon Lake. In 1917 the township is incorporated and in 1960 Avon Lake becomes a city.

1915 Construction of the 352-foot tall Perry's Victory and International Peace Memorial, which began in 1912, is complete. The memorial, located on Put-in-Bay's South Bass Island, commemorates

Oliver Hazard Perry's "Battle of Lake Erie" victory over the British in 1813.

1917 Passage of the Flemming Act marks the first time coastal policies regarding the Lake Erie Public Trust are written in Ohio law. The Act enables the state and local governments to have better oversight to encourage the wise use of Lake Erie. Local communities began issuing Submerged Land Leases to littoral owners wishing to build in Lake Erie.

1919 The Hotel Victory on South Bass Island, America's largest hotel at the time, burns to the ground. The 625-guest room hotel had featured the first co-ed swimming pool. The remnants of the pool are still visible at South Bass Island State Park.

1924 Ohio's deadliest tornado, claiming 85 lives, hits the cities of Sandusky and Lorain. According to the Federal Emergency Management Agency, it ranks historically as the 22nd most deadly tornado to date in the United States.

1925 The largest bald eagle nest ever recorded topples to the ground in Vermilion after a storm. The two-ton, 35-year-old nest is measured at 8.5 feet in width and 12 feet in height.

1925 The bascule-style Ashtabula Harbor Lift Bridge (Bridge Street, State Route 531) opens in Ashtabula. The unique bridge is the only one of its kind in Ohio, and one of just five in the entire country.



1929 Electricity is brought to South Bass Island for the first time via underwater cables from Catawba.

1935 The Beach Erosion Board is created in the Department of Public Works to regulate the removal of minerals from the bed of Lake Erie. The Department of Public Works is later assumed by the Department of Administrative Services.

1940 The Charles Berry Bascule Bridge (Erie Avenue, U.S. Highway 6) is built over the Black River in Lorain. To this day, it is esteemed as the largest lift bridge in the United States and second largest in the world.

1942 Two seiche-related waves unexpectedly batter the Ohio shore between Bay Village and Conneaut. Madison-on-the-Lake receives the brunt of the waves. The first wave ranges between 4 and 20 feet, and the second, following 15 minutes later, is 6- to 8-feet high. The phenomenon kills seven people.

POST WORLD WAR II

1945 Fairport Harbor Maritime Museum opens in the attached keeper's quarters of the Old Fairport Main Light which was built in 1825 and targeted for demolition a century later. The museum is the first Great Lakes marine museum in the United States.

1947 East Harbor State Park opens.

1948 After an Ohio Supreme Court ruling, the state of Ohio assumes responsibility for issuing Submerged Land Leases for littoral owners wishing to build structures in Lake Erie.

1951 A total of 650 acres, which includes a strip of marshlands and sand beach three miles long, is purchased by the ODNR Division of Parks and Recreation. The purchase is made in collaboration with the ODNR Division of Wildlife, which purchases some marshlands behind the beach for the purpose of developing a public duck hunting area. A segment of the beach is opened for swimming in 1955. Today this area includes Crane Creek State Park, comprised of 79 acres of beach and marshlands, and the adjoining the 2,600-acre Magee Marsh Wildlife Area and the 4,683-acre Ottawa National Wildlife Refuge.

Lake Erie Region Timeline

1953 The Inland Seas Maritime Museum of the Great Lakes Historical Society is established in Vermilion.

1953 Headlands Beach State Park opens under the original name Painesville Beach State Park on land just west of Fairport Harbor's Grand River.

1955 Ohio begins requiring permits for the construction of shore erosion, wave and flood control structures along Ohio's coast as one of many early efforts to protect and manage Lake Erie. The permitting function is administered by ODNR's Division of Shore Erosion.

1955 The (James W. Shocknessey) Ohio Turnpike opens. This east-west oriented toll road, which precedes the modern Interstate freeway network, travels through northern Ohio. The majority of the Ohio Turnpike travels within the Lake Erie watershed. Today, the portion between Cleveland and Toledo is the busiest Interstate freeway segment in the state.



1961 The International Salt Company begins to mine rock salt from below the bed of Lake Erie in Cleveland. Today, two salt mines operate 2,000 feet under Lake Erie at Cleveland and Fairport Harbor producing millions of tons of salt annually.

1964 The formation of Geneva State Park begins with the purchase of Chestnut Grove. Acquisitions continue through 1972. The last parcels added are the cottage and campground areas.

1969 The Cuyahoga River in Cleveland catches fire, sparking the nation's attention, criticism and concern for environmental restoration of the nation's waterways. Previous fires on the river in 1949, 1951, 1952 and 1961, et al occurred under the national media radar. The 1969 event results in the formation of various pollution control initiatives and is ultimately an agent prompting the Clean Water Act, the Coastal Zone Management Act, the Great Lakes Water Quality Agreement and the formation of federal and state Environmental Protection Agencies.

ENVIRONMENTAL ERA

1972 The Coastal Zone Management Act is federally approved. The Act's goals are "(1) to preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation's coastal zone for this and succeeding generations; and (2) to encourage

and assist states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development" at the state level.

1973 Ohio Governor James Rhodes, by executive order, places the responsibility for developing a coastal management program with the Ohio Department of Natural Resources. Grants from the federal Office of Ocean and Coastal Resource Management help ODNR in this effort.

1975 Maumee Bay officially becomes a state park.

1978 Ohio is hit with the worst observed winter storm in state history. Hailed as the "Great Blizzard of 1978," the storm brings devastating 70 mph winds, creates 20-foot high snow drifts, causes record low barometric pressures and near zero temperatures. According to the crew of a stranded ore carrier locked in the Lake Erie ice near Sandusky, the winds were sustained at 85 mph with gusts up to 111 mph. The state's entire transportation network is forced to close, including all railroads, major airports and, for the first time, the Ohio Turnpike. The blizzard claims a reported 48 lives.



1979 Ohio purchases Sheldon Marsh in Erie County for a State Nature Preserve. The site, which includes one of Ohio's last remaining barrier beaches, was originally purchased in 1954 by Dean E. Sheldon Sr. Today the 465-acre site attracts more than 300 bird species.

1980 Old Woman Creek in Erie County is designated as the 7th National Estuarine Research Reserve (NERR) in the United States and the only NERR in the Great Lakes watershed. One of the few remaining freshwater type estuaries on Lake Erie, the state nature preserve near the southernmost point on the Great Lakes is excellent for viewing American water lotus beds and bald eagles.

1981 Ohio sport fishermen log more than 13-million hours fishing Lake Erie. More fish, approximately 25 million, are caught from Lake Erie annually for human consumption than all four other Great Lakes combined.

1986 A 5.0 magnitude earthquake rattles Lake County. The quake's epicenter was mere miles from the Perry nuclear power plant. Subsequently, numerous scientific studies follow.

1988 The first observations of the zebra mussel in the Western Basin are noted. Zebra mussels are an invasive species native to freshwater rivers and lakes of Eastern Europe and western Asia.

1988 The Ohio General Assembly unanimously approves the Ohio Coastal Management Law which allows the State to apply for federal approval of a coastal management program. ODNR is given the responsibility of administering Submerged Land Leases.

1995 The Rock and Roll Hall of Fame and Museum in Cleveland opens to the public. Designed by world-renowned architect I.M. Pei, the uniquely configured building stands at the water's edge and protrudes into the city's North Coast Harbor.

1997 Around 15,000 tons of contaminant-free rubble from the demolished Cleveland Municipal Stadium, former home of the Cleveland Browns and Cleveland Indians, is used to construct three artificial reefs offshore of Lakewood and Cleveland. The reefs attract 20- to 60-times more fish than non-reef areas.

1997 The Ohio Coastal Management Program is given federal approval by the U.S. Department of Commerce through the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management. During the 25-year process to gain federal approval, ODNR listened intently to the concerns and suggestions of Ohio residents and professional experts. Approval of the program brings more than \$2 million dollars to the state annually for its implementation.

1997 Ohio's Coastal Management Assistance Grant program, administered by the ODNR Division of Real Estate and Land Management, issues its first request for grant proposals.

1998 Recognized for shaping the nation's environmental, economic and cultural heritage, the Cuyahoga River is federally designated as one of 14 American Heritage Rivers. Other rivers to receive this designation include the Connecticut, Hudson, Potomac, Rio Grande and portions of the Mississippi.

Lake Erie Region Timeline



NEW MILLENNIUM

2000 Ohio Governor Bob Taft unveils the state's Lake Erie Protection and Restoration Plan.

2001 A portion of Middle Bass Island becomes Ohio's 74th state park after ODNR purchases 124 acres on the island. The park includes undeveloped natural areas featuring wetlands, woodlands, glacial grooves, and nearly a mile of Lake Erie shore, along with the shell of the Lonz Winery and the marina complex.

2001 In Ashtabula County, a sequence of about 40 shallow earthquakes dating back to 1987 is topped-off by a 4.5 magnitude quake. No prior earthquakes have ever been recorded in the county.

2001 The Ohio Coastal Management Program announces more than \$2 million in Great Lakes Coastal Restoration Grants to local governments. This funding is part of more than \$30 million in federal grants to Great Lakes states.

2002 Ohio purchases 10 acres adjacent to the Marblehead Lighthouse State Park with a \$2 million Great Lakes Coastal Restoration Grant. The original grounds of the park became Ohio's 73rd state park in October 1998. It is one of the state's most visited parks.

2002 ODNR creates the Office of Coastal Management to administer the federally approved Ohio Coastal Management Program. ODNR locates the new office in Sandusky to be able to better serve coastal constituents. The Office's creation also marks the first time in Ohio's history that the coastal authorizations for Shore Structure Permits and Submerged Land Leases are administered by the same office.

2003 Forty million Americans throughout the eastern seaboard and Great Lakes Region as well as 10 million Canadians lose power in the largest North American blackout in history. About 2.9 million people in the greater Cleveland metropolitan area and 310,000 in Toledo are

affected. Financially, combined estimated losses total \$6 billion.

2004 The Geneva State Park Lodge and Conference Center opens in Geneva-on-the-Lake.

2004 In April, Ohio finalizes the purchase of 589 acres of the 677-acre (87 percent) North Bass Island for \$17.4 million in state and federal funds. ODNR divisions of Wildlife, Parks and Recreation and Natural Areas and Preserves now jointly manage the property for low-impact recreation, including hunting, fishing, hiking, primitive camping, birding and nature study. Grape production, a key part of the island's heritage since the mid-1800s, continues on approximately 85 acres remaining under lease to Sandusky-based Firelands Vineyards.

2005 The Lake Erie Coastal Trail is dedicated in the city of Ashtabula as



Geneva State Park Lodge



Ohio's 21st Scenic Byway. The more than 200-mile byway links Conneaut and Toledo, with scenic destinations such as coastal state parks and preserves, lighthouses, bridges, the Oak Openings, Rock and Roll Hall of Fame, Great Lakes Science Center, President Garfield's Home, Cedar Point and Fort Meigs.

2005 A 21-mile stretch of the Conneaut Creek in Ashtabula County is designated a State Wild and Scenic River.

Perry's Victory & International Peace Memorial

On Sept. 10, 1813, Commodore Oliver Hazard Perry defeated and captured a British squadron of warships in the Battle of Lake Erie near the South Bass Island village of Put-in-Bay. The battle, fought during the War of 1812, secured control of Lake Erie for the United States and enabled General William Henry Harrison to conduct a successful invasion of Western Upper Canada. Harrison subsequently defeated the British and Indians at the Thames River on Oct. 5, 1813.

The dual victories of Lake Erie and the Thames provided an important morale boost to the young country and gave the United States a much stronger bargaining position at the peace talks. The Treaty of Ghent, signed on Christmas Eve 1814, ended the War of 1812. Later, in 1817 the United States signed the Rush-Bagot Agreement with Great Britain, a document that has resulted in peaceful relations between the United States and Canada since the War of 1812.

To commemorate the American naval triumph and instill the lessons of international peace by arbitration and disarmament, Perry's Victory & International Peace Memorial was constructed between 1912 and 1915 by a commission of nine states and the federal government. On June 2, 1936, the memorial was established as a unit of the National Park Service by a presidential proclamation of Franklin D. Roosevelt.



The 352-foot tall granite Doric column is the third-highest memorial in the United States. Only the Washington Monument and St. Louis Gateway Arch are taller. Perry's 317-foot observation deck is the highest in the National Park Service. The diameter of the column at the base is 45 feet, while the diameter of the interior is a constant 27 ^{1/2} feet. A total of 2,340 granite blocks comprise the 78 courses of the column, and the estimated weight of the monument is 18,400 tons. Six officers, three British and three American, who had been killed in the battle for Lake Erie are buried in a crypt in the floor of the rotunda of the monument. An 11-ton bronze urn, or lantern, tops the memorial.

State of Ohio



Ohio state flag



Cardinal: State bird



Large white trillium: State wildflower



White-tailed deer: State animal



including the state name itself, which is derived from a word meaning “great river.”

The first accounts of European influence on the Ohio land occurred in the 18th century when the French began establishing a fur trade and trading posts in the region. The French and Indian War, which pitted France against Great Britain in 1754, resulted in the French ceding Ohio, and all of its North American control (except some islands in the Caribbean and Saint-Pierre and Miquelon) to the British.

The State of Ohio contains the edge of the Appalachian Mountains in the southeast and vast plains in the west. The Ohio River marks the state’s southern and southeastern border. A line bisecting Lake Erie represents Ohio’s northern border. The Buckeye State is bordered by Indiana to the west, Michigan to the northwest, Pennsylvania to the east, West Virginia to the southeast, Kentucky to the southwest and the Canadian province of Ontario to the north along the International Border bisecting Lake Erie. Ohio’s maximum width is 220 miles, as is its length. In total land area, Ohio is 40,948 square miles (26,206,720 acres) with an additional 3,875 square miles (2,480,000 acres) of water.

Prior to statehood and preceding European settlement, Ohio was home to numerous Native American tribes, including the Delaware, Erie, Iroquois, Miami, Ottawa, Shawnee and Wyandot. Native American history remains prominent with many Ohio place names,

The American victory over the British in the Revolutionary War (1775-1783) forced Britain to relinquish Ohio and all lands west to the Mississippi River to the Americans. All of the land west of Pennsylvania and northwest of the Ohio River was part of a government region known as the Northwest Territory, the first American region to prohibit slavery. In 1787, the Continental Congress passed the Northwest Ordinance which set forth the qualifications for the 260,000 square miles within the territory to be divided and admitted to the Union as states. On March 1, 1803, Ohio was the first state to form from the territory as the 17th state to join the Union. Other states formed in the territory include Indiana, Illinois, Michigan, Wisconsin and a portion of Minnesota.

As population increased throughout the state, Ohio was divided into the present 88 counties, eight of which

border Lake Erie and/or Sandusky Bay including Lucas, Ottawa, Sandusky, Erie, Lorain, Cuyahoga, Lake and Ashtabula. Although landlocked, Wood County is considered a coastal county throughout this atlas since a portion of it along the Maumee River lies within the designated Coastal Management Area.

As of 2003, the U.S. Census Bureau estimated Ohio’s population to be 11,435,798 people or roughly 3.7 percent of the total U.S. population (290,809,777 people). There are 279 people per square land mile in Ohio. Columbus, the state capital, is Ohio’s most populated city with an estimated 711,470 residents. Cleveland is Ohio’s largest coastal city with an estimated 478,403 residents.

Many famous Americans are native to Ohio, including eight U.S. presidents – William Henry Harrison, Ulysses S. Grant, Rutherford B. Hayes, James A. Garfield, Benjamin Harrison, William McKinley, William Howard Taft and Warren G. Harding. Inventors Thomas Edison, Harvey Firestone and the Wright Brothers; astronauts Neil Armstrong, John Glenn and Jim Lovell; athletes Jesse Owens, LeBron James, Jack Nicklaus and Cy Young; actors Clark Gable, Bob Hope, Doris Day, Halle Berry and Drew Carey; entertainer Annie Oakley, feminist Gloria Steinem, General George Custer and the first female U.S. doctor Elizabeth Blackwell, all hailed from the Buckeye State. Ohio is home of the National Inventors Hall of Fame (Akron), the Pro Football Hall of Fame (Canton), the Rock and Roll Hall of Fame (Cleveland) and the National Aviation Hall of Fame (Dayton).

Ohio’s natural setting and diverse



Ohio Buckeye: State tree

climate, which can vary greatly from north to south, provide habitat for wildlife and plants of great diversity. Historically manufacturing has held a prominent role in the state’s economy. However, food and agriculture is Ohio’s top industry with 44 percent of Ohio considered prime farmland. This is defined by the U.S. Department of Agriculture as land that is available for and has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. In this \$73 billion per year industry, Ohio grows more than 200 crops ranging from top producers corn and soybeans to poinsettias, the state’s number one floriculture crop according to the Ohio Department of Agriculture. Countless recreation and tourism opportunities also exist throughout the state ranging from traditional parks and playgrounds, to nationally recognized birding areas, abundant fishing grounds and professional sports teams. In 2004, Ohio tourism was estimated to be a

\$30.7 billion industry, as reported in direct sales according to the Ohio Division of Travel and Tourism. A major tourism attraction throughout the state is the natural resources, with state parks alone hosting about 55 million visitor occasions each year.

Ohio’s 74 state parks are part of the 590,000 acres owned and managed by the Ohio Department of Natural Resources. The land also consists of 20 state forests, 127 state nature preserves and 120 wildlife areas. The department also has jurisdiction over more than 120,000 acres of inland waters; 7,000 miles of streams; 481 miles of the Ohio River; and 2.25 million acres of Lake Erie. Additionally, nature and history lovers can enjoy the National Park Service’s 33,000-acre Cuyahoga Valley National Park and numerous other historic sites, parks and preserves owned by private and non-profit agencies.

Throughout Ohio, there is so much to discover. The remainder of this chapter will focus on the history, demographics and various other statistics of the nine coastal counties.

For more information:
State of Ohio www.ohio.gov

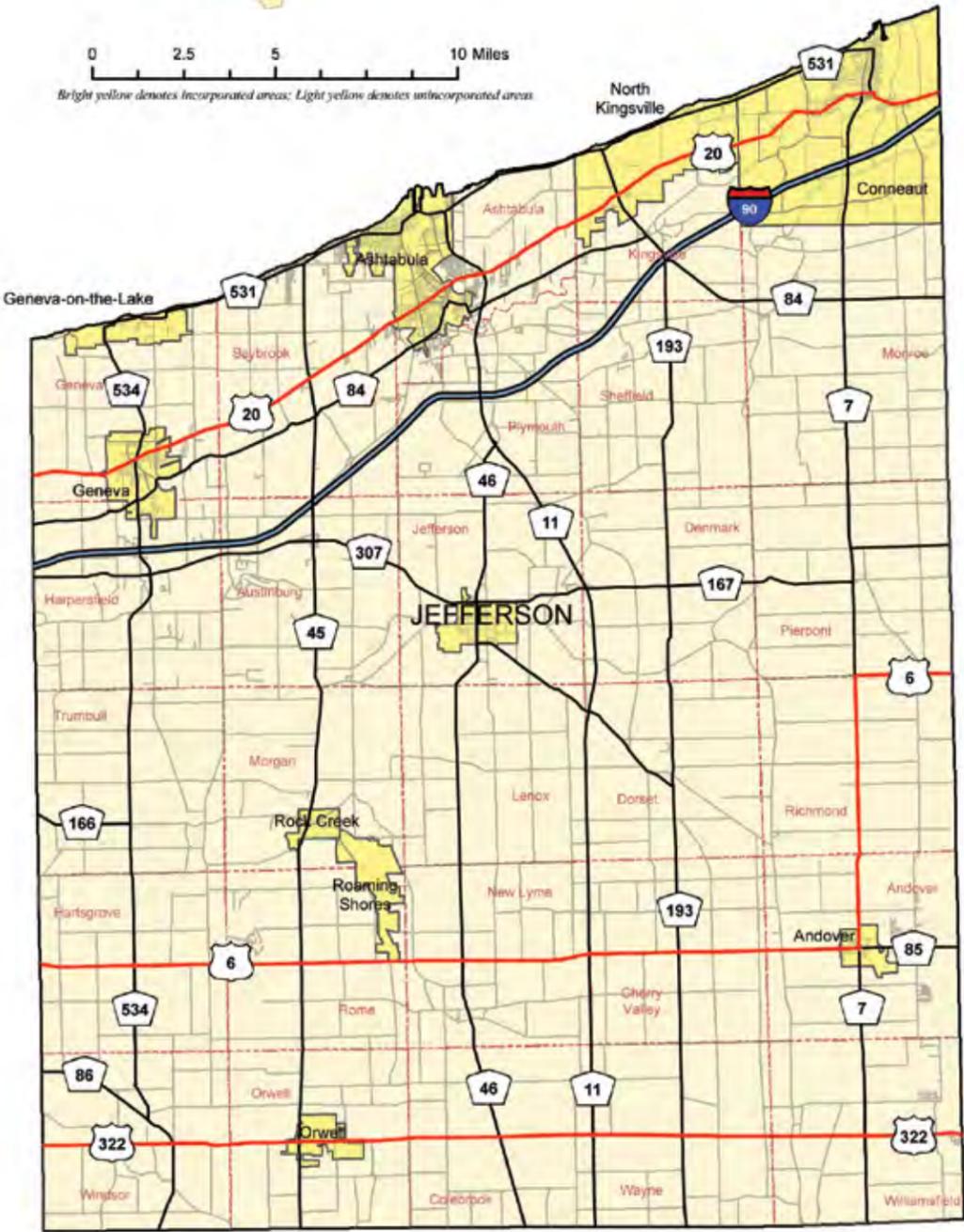
Designation	Symbol/Emblem	Adopted
Animal	White-tailed Deer	1988
Beverage	Tomato Juice	1965
Bird	Cardinal	1933
Flag	see top right	1902
Flower	Scarlet Carnation	1904
Gemstone	Ohio Flint	1965
Great Seal	see bottom right	1967
Insect	Ladybug	1975
Invertebrate Fossil	Isotelus	1985
Reptile	Black Racer Snake	1995
Rock Song	"Hang On Sloop"	1985
Song	"Beautiful Ohio"	1969
Tree	Ohio Buckeye	1953
Wild Flower	Large White Trillium	1987




Ashtabula County



0 2.5 5 10 Miles
Bright yellow denotes incorporated areas; Light yellow denotes unincorporated areas



Conneaut Township Park, Conneaut



Ashtabula Harbor, city of Ashtabula



Geneva State Park, Geneva-on-the-Lake

County Facts:

Established – June 7, 1807
 2000 Population – 102,728
 2004 Population – 103,152
 2010 Projection – 104,970
 Land Area and Rank – 702.7 square miles, 1 of 88
 County Seat – Village of Jefferson
 Named for Native American word meaning “river of many fish”

Largest Populations (2000 Census and 2004 Estimate):

1. Ashtabula	20,962	20,353
2. Conneaut	12,485	12,693
3. Geneva	6,595	6,495
4. Ashtabula Township UB	6,371	6,300
5. Saybrook Township UB	5,957	5,910
6. Geneva Township UB	3,814	3,809
7. Jefferson Village	3,572	3,522
8. North Kingsville Village	2,658	2,641
9. Harpersfield Township	2,603	2,640
10. Monroe Township	2,268	2,365

(UB=Unincorporated Balance)

Land Cover (in acres):

Total	453,813.9
Urban (open impervious surfaces)	7,289.5
Agriculture/Open Urban Areas	173,837.3
Shrub/Scrub	33,885.3
Wooded	202,710.0
Open Water	4,228.7
Non-Forested Areas	31,815.9
Barren	47.3

Taxes:

Taxable value of real property	\$1,394,043,420
Residential	\$911,003,930
Agricultural	\$217,495,530
Industrial	\$67,163,310
Commercial	\$194,537,930

Mineral	\$3,842,720
Ohio income tax liability	\$41,794,606
Average per return	\$926.77

Coastal Management Area (in acres):

Total	416,916.37
Mainland	5,293.25
Island	0
Water	411,623.13

Coastal Municipalities/Townships:

- Ashtabula
- Ashtabula Township
- Conneaut
- Geneva Township
- Geneva-on-the-Lake
- North Kingsville Village
- Saybrook Township

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.
 Total 30.0

Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.
 Total 4.9

Miles of Scenic Rivers:

Approximation obtained using GIS.
 Total 62.75
 Grand River 41.75
 Conneaut Creek 21.00

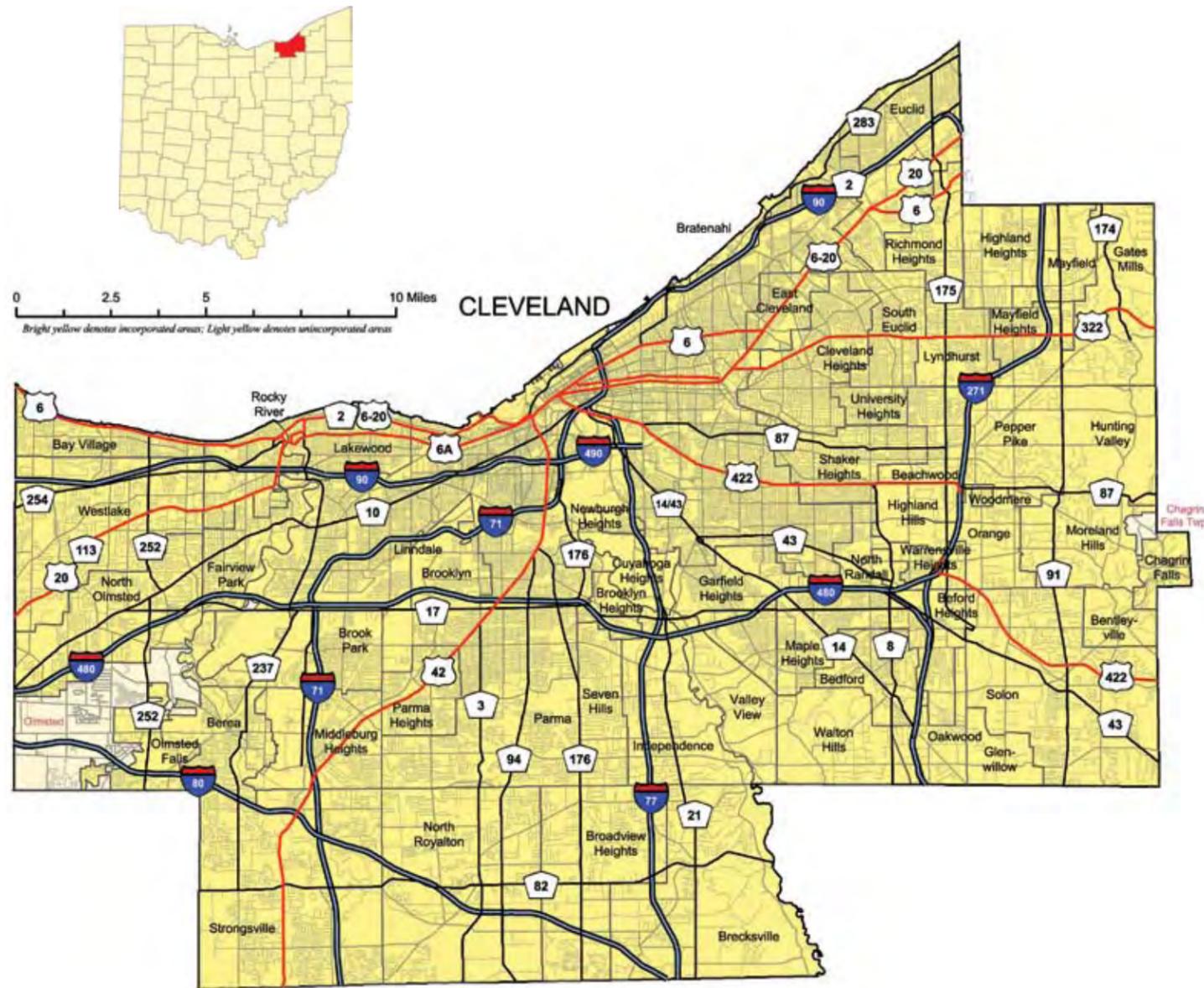
Islands:

None

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)
 Registered Boats 5,097 7th of 9

Cuyahoga County



County Facts:

Established – June 7, 1807
 2000 Population – 1,393,845
 2004 Population – 1,351,009
 2010 Projection – 1,332,544
 Land Area and Rank – 458.3 square miles, 40 of 88
 County Seat – City of Cleveland
 Named for Native American word meaning “crooked river”

Largest Populations (2000 Census and 2004 Estimate):

1. Cleveland	478,403	458,684
2. Parma	85,655	82,672
3. Lakewood	56,646	53,971
4. Euclid	52,717	50,398
5. Cleveland Heights	49,958	48,643
6. Strongsville	43,858	44,315
7. North Olmsted	34,113	33,105
8. Westlake	31,719	31,535
9. Garfield Heights	30,734	29,445
10. North Royalton	28,648	29,497

Land Cover (in acres):

Total	293,371.9
Urban (open impervious surfaces)	103,140.7
Agriculture/Open Urban Areas	50,170.1
Shrub/Scrub	8,996.5
Wooded	125,917.3
Open Water	385.0
Non-Forested Areas	4,494.8
Barren	267.3

Taxes:

Taxable value of real property	\$26,831,378,540
Residential	\$19,178,387,880
Agricultural	\$8,537,600
Industrial	\$1,280,452,640
Commercial	\$6,363,695,940
Mineral	\$304,480
Ohio income tax liability	\$1,008,489,798
Average per return	\$1,671.34

Coastal Management Area (in acres):

Total	521,086.16
Mainland	5,831.29
Island	0
Water	515,254.88

Coastal Municipalities/Townships:

Bay Village, City of
 Bratenahl Village
 Cleveland
 Euclid
 Lakewood
 Rocky River

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.

Total-	35.2
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Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.

Total	6.2
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Miles of Scenic Rivers:

Approximation obtained using GIS.

Total	18.18
Chagrin River	14.52
Aurora Branch Chagrin River	2.37

Islands:

None

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)

Registered Boats	25,617	1st of 9
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Downtown Cleveland



Rock and Roll Hall of Fame and Museum, Cleveland

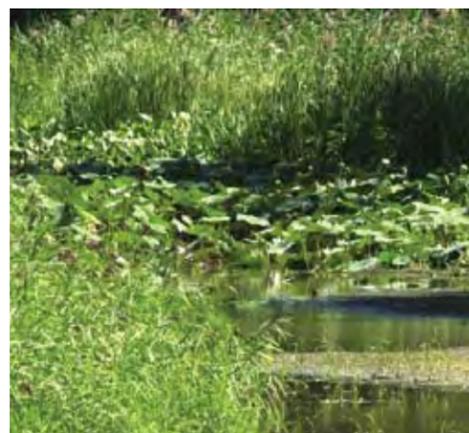


Mouth of the Rocky River, Lakewood

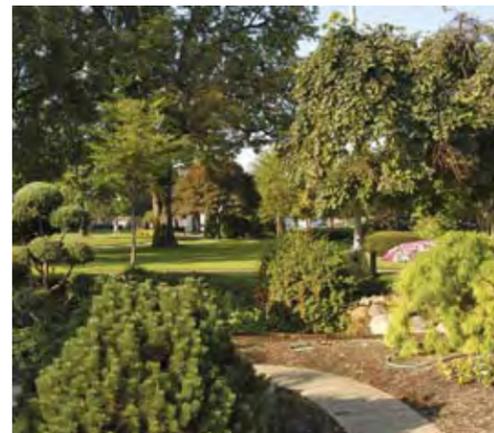
Erie County



Inland Seas Maritime Museum, Vermilion



Old Woman Creek State Nature Preserve



Downtown Sandusky

County Facts:

Established – March 16, 1838
 2000 Population – 79,551
 2004 Population – 78,992
 2010 Projection – 81,424
 Land Area and Rank – 254.5 square miles, 87 of 88
 County Seat – City of Sandusky
 Named for Erie Native American Tribe

Largest Populations (2000 Census and 2004 Estimate):

1. Sandusky	27,844	26,977
2. Perkins Township	12,578	12,691
3. Huron	7,958	7,692
4. Vermilion	4,937	4,843
5. Margaretta Township UB	4,662	4,653
6. Vermilion Township UB	4,638	4,736
7. Berlin Township UB	3,017	3,023
8. Milan Township UB	2,661	2,698
9. Huron Township UB	2,572	3,004
10. Florence Township UB	2,500	2,537

(UB=Unincorporated Balance)

Land Cover (in acres):

Total	162,490.3
Urban (open impervious surfaces)	9,763.0
Agriculture/Open Urban Areas	114,049.6
Shrub/Scrub	436.5
Wooded	29,350.3
Open Water	2,076.6
Non-Forested Areas	5,678.9
Barren	1,135.4

Taxes:

Taxable value of real property	\$1,660,964,560
Residential	\$1,265,766,520
Agricultural	\$61,322,370
Industrial	\$47,596,680
Commercial	\$286,259,610
Mineral	\$19,380
Ohio income tax liability	\$54,913,550
Average per return	\$1,447.91

Coastal Management Area (in acres):

Total	256,396.69
Mainland	16,841.69
Island	2,813.99
Water	236,741.00

Coastal Municipalities/Townships:

Bay View Village
 Berlin Township
 Huron
 Huron Township
 Kelleys Island Village
 Margaretta Township
 Sandusky
 Vermilion
 Vermilion Township

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.
 Total 56.3

Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.
 Total 6.8

Miles of Scenic Rivers:

Approximation obtained using GIS.
 Total 0

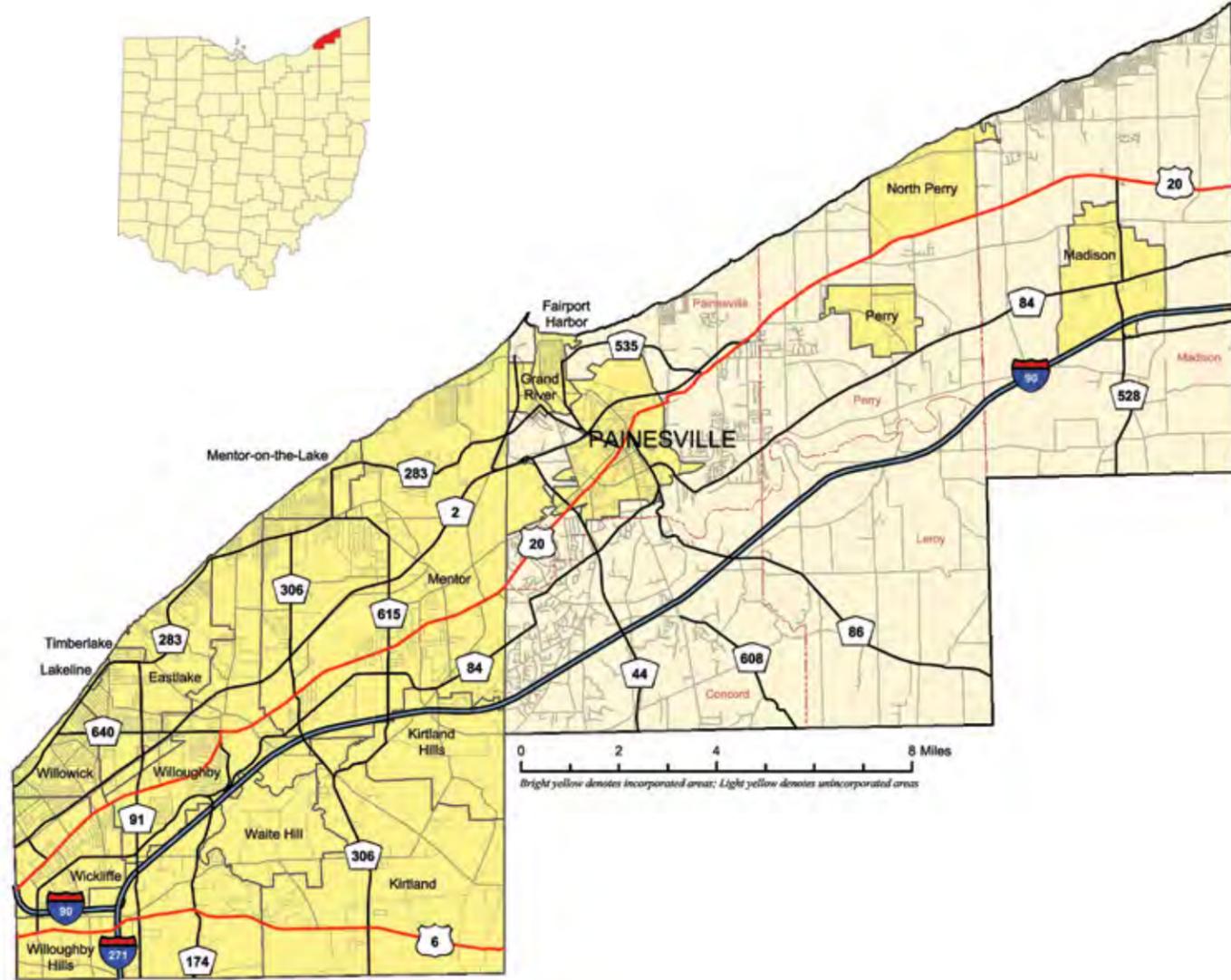
Islands:

Kelleys Island

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)
 Registered Boats 6,035 6th of 9

Lake County



County Facts:

Established – March 6, 1840
 2000 Population – 227,511
 2004 Population – 232,061
 2010 Projection – 233,889
 Land Area and Rank – 228.2 square miles, 88 of 88
 County Seat – City of Painesville
 Named for Lake Erie

Largest Populations (2000 Census and 2004 Estimate):

1. Mentor	50,278	51,332
2. Willoughby	22,621	22,493
3. Eastlake	20,255	19,901
4. Painesville	17,503	17,559
5. Madison Township UB	15,494	16,495
6. Concord Township	15,282	16,138
7. Painesville Township UB	15,037	15,422
8. Willowick	14,361	14,175
9. Wickliffe	13,484	13,355
10. Willoughby Hills	8,595	8,524

(UB=Unincorporated Balance)

Land Cover (in acres):

Total	147,662.8
Urban (open impervious surfaces)	16,143.7
Agriculture/Open Urban Areas	33,855.3
Shrub/Scrub	4,674.9
Wooded	84,822.0
Open Water	317.7
Non-Forested Areas	7,743.0
Barren	106.1

Taxes:

Taxable value of real property	\$5,376,093,930
Residential	\$4,107,247,250
Agricultural	\$77,264,450
Industrial	\$331,071,300
Commercial	\$860,291,990
Mineral	\$218,940
Ohio income tax liability	\$168,813,082
Average per return	\$1,488.43

Coastal Management Area (in acres):

Total	484,904.44
Mainland	9,082.78
Island	0
Water	475,821.66

Coastal Municipalities/Townships:

- Eastlake
- Fairport Harbor Village
- Lakeline Village
- Mentor
- Mentor-on-the-Lake
- Painesville Township
- Timberlake Village
- Willoughby
- Willowick

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.

Total	32.4
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Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.

Total	5.8
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Miles of Scenic Rivers:

Approximation obtained using GIS.

Total	32.93
Grand River	18.12
East Branch Chagrin River	12.44
Chagrin River	2.37

Islands:

None

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)

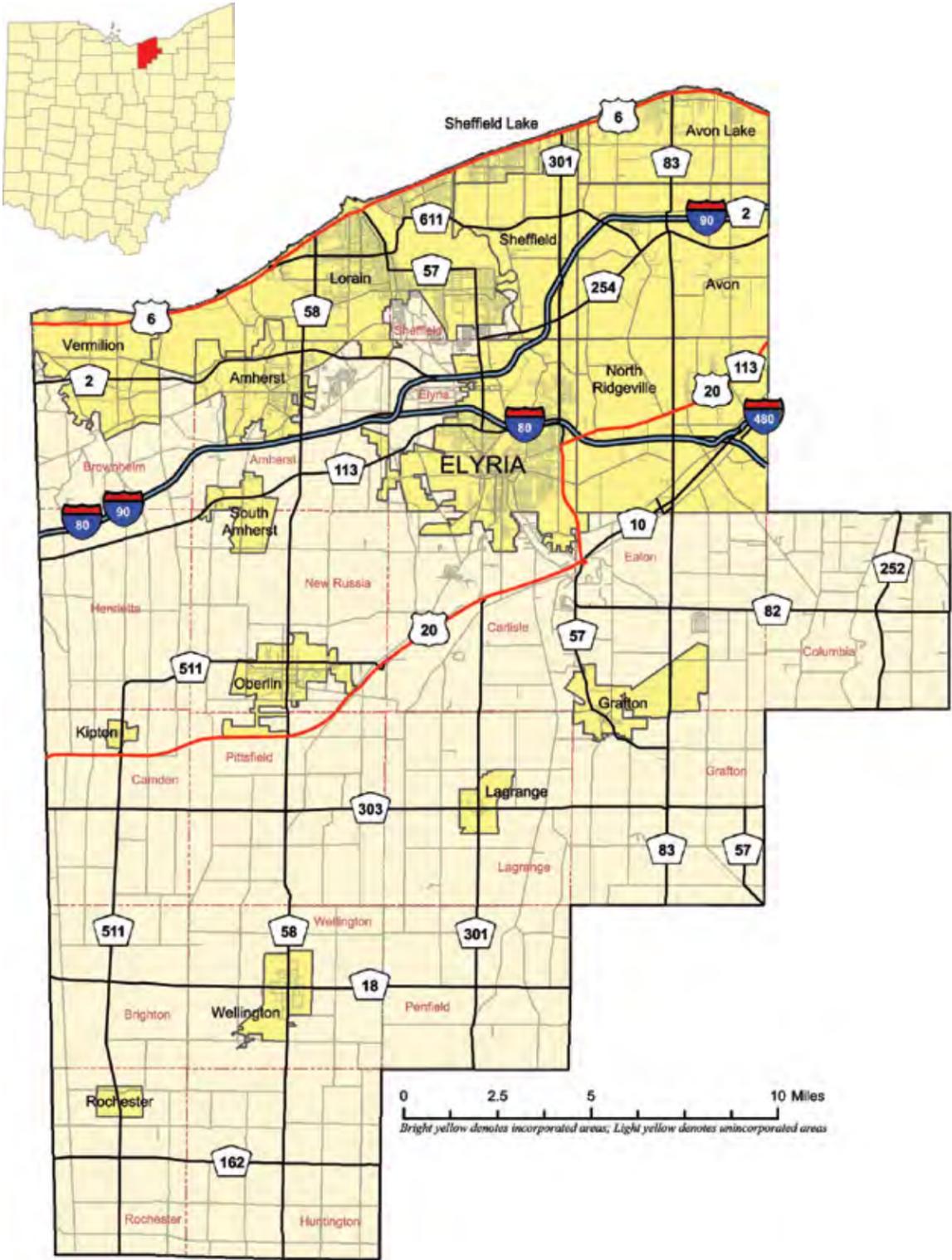
Registered Boats	8,924	4th of 9
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Headlands Dunes State Nature Preserve James A. Garfield National Historic Site, Mentor

Fairport Harbor Maritime Museum, Fairport Harbor

Lorain County



Lorain Harbor Lighthouse, City of Lorain



Ely Square, Downtown Elyria



Cascade Park, Elyria

County Facts:

Established – December 26, 1822
 2000 Population – 284,664
 2004 Population – 294,324
 2010 Projection – 290,839
 Land Area and Rank – 492.6 square miles, 29 of 88
 County Seat – City of Elyria
 Named for French Province of Lorraine

Largest Populations (2000 Census and 2004 Estimate):

1. Lorain	68,652	67,915
2. Elyria	55,953	56,175
3. North Ridgeville	22,338	25,204
4. Avon Lake	18,145	20,233
5. Amherst	11,797	11,805
6. Avon	11,446	14,880
7. Sheffield Lake	9,371	9,171
8. Oberlin	8,195	8,248
9. Carlisle Township	7,339	7,252
10. Columbia Township	6,912	7,005

Land Cover (in acres):

Total	315,862.3
Urban (open impervious surfaces)	23,577.1
Agriculture/Open Urban Areas	195,026.7
Shrub/Scrub	975.9
Wooded	87,945.6
Open Water	2,208.2
Non-Forested Areas	5,925.0
Barren	203.9

Taxes:

Taxable value of real property	\$5,155,880,200
Residential	\$4,135,620,250
Agricultural	\$101,367,980
Industrial	\$204,732,540
Commercial	\$714,071,050

Mineral	\$88,380
Ohio income tax liability	\$190,418,496
Average per return	\$1,413.45

Coastal Management Area (in acres):

Total	289,377.04
Mainland	4,377.17
Island	0
Water	284,694.65

Coastal Municipalities/Townships:

- Avon Lake
- Lorain
- Sheffield Lake
- Vermilion

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.

Total	23.3
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Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.

Total	2.3
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Miles of Scenic Rivers:

Approximation obtained using GIS.

Total	0
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Islands:

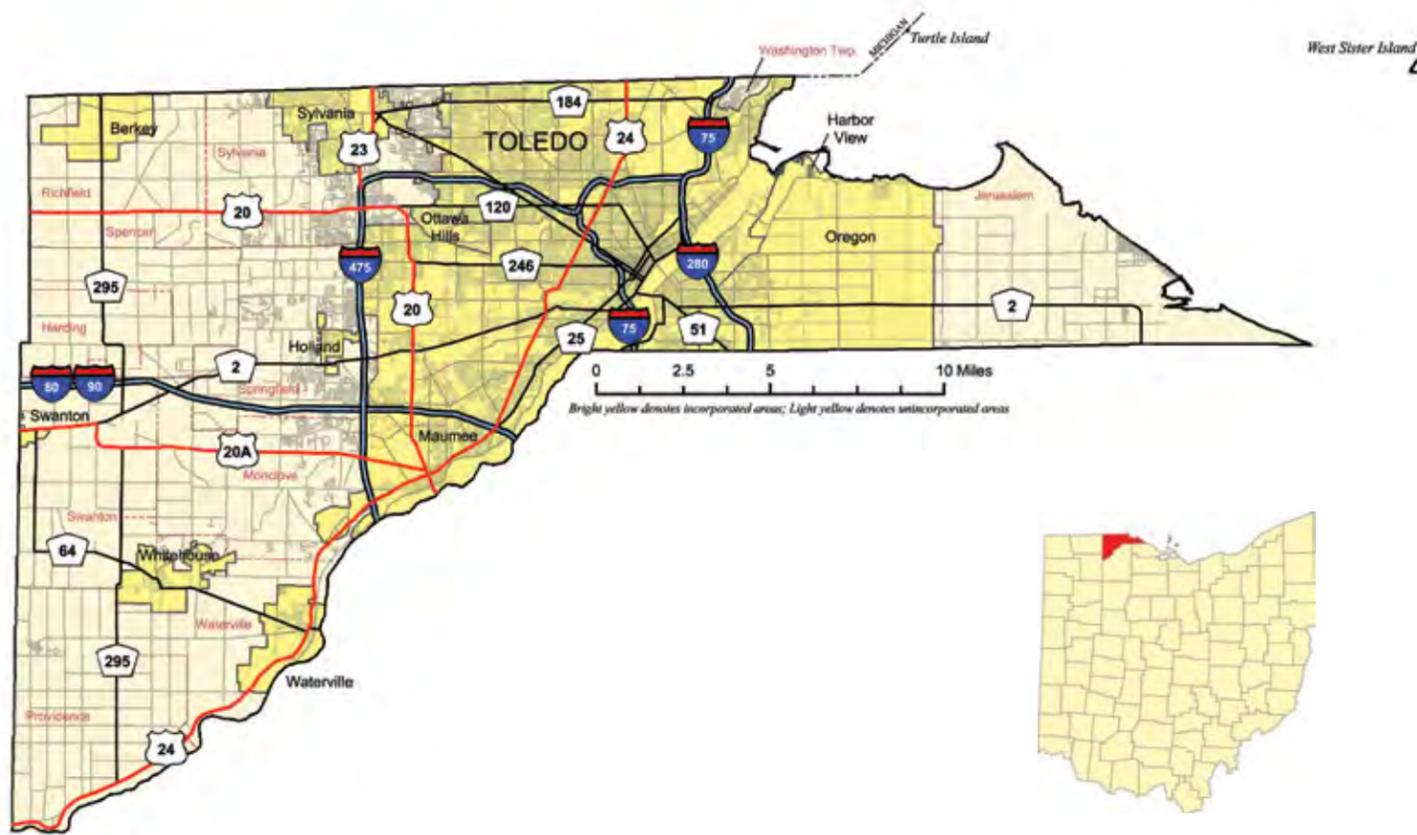
None

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)

Registered Boats	10,279	3rd of 9
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Lucas County



County Facts:

Established – June 20, 1835
 2000 Population – 455,054
 2004 Population – 450,632
 2010 Projection – 444,873
 Land Area and Rank – 340.4 square miles, 85 of 88
 County Seat – City of Toledo
 Named for Robert Lucas, Ohio Governor 1832-1836

Largest Populations (2000 Census and 2004 Estimate):

1. Toledo	313,619	304,973
2. Sylvania Township UB	25,583	25,924
3. Springfield Township UB	22,817	23,258
4. Oregon	19,355	19,269
5. Sylvania	18,670	18,905
6. Maumee	15,237	14,472
7. Monclova Township	6,767	7,252
8. Waterville Village	4,828	5,146
9. Ottawa Hills Village	4,564	4,586
10. Providence Township	3,454	4,070

(UB=Unincorporated Balance)

Land Cover (in acres):

Total	221,980.3
Urban (open impervious surfaces)	39,247.1
Agriculture/Open Urban Areas	120,024.3
Shrub/Scrub	2,852.8
Wooded	45,547.6
Open Water	4,937.8
Non-Forested Areas	8,689.9
Barren	680.8

Taxes:

Taxable value of real property	\$7,431,417,190
Residential	\$5,568,704,340
Agricultural	\$71,606,490
Industrial	\$246,649,010
Commercial	\$1,544,457,350
Mineral	\$0
Ohio income tax liability	\$295,945,764
Average per return	\$1,496.29

Coastal Management Area (in acres):

Total	187,195.57
Mainland	27,713.95
Island	76.98
Water	159,404.64

Coastal Municipalities/Townships:

Jerusalem Township
 Oregon
 Toledo

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.
 Total 25.1

Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.
 Total 5.1

Miles of Scenic Rivers:

Approximation obtained using GIS.
 Total 17.95
 Maumee River 17.95 (Shared border with Wood County)

Islands:

Grassy Island (manmade, dredge disposal)
 Turtle Island (shared with Michigan)
 West Sister Island

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)
 Registered Boats 14,358 2nd of 9



Maumee Bay State Park, Oregon



Toledo Harbor Lighthouse



COSI, Downtown Toledo

Ottawa County



County Facts:

Established – March 6, 1840
 2000 Population – 40,985
 2004 Population – 41,407
 2010 Projection – 40,795
 Land Area and Rank – 255.1 square miles, 86 of 88
 County Seat – City of Port Clinton
 Named for Native American word meaning “trader”

Largest Populations (2000 Census and 2004 Estimate):

1. Port Clinton	6,391	6,329
2. Danbury Township UB	3,869	3,776
3. Allen Township UB	3,297	3,363
4. Catawba Island Township	3,157	3,146
5. Clay Township UB	2,888	2,708
6. Oak Harbor Village	2,841	2,828
7. Salem Township UB	2,676	2,781
8. Benton Township UB	2,232	2,416
9. Genoa Village	2,230	2,348
10. Carroll Township	1,931	1,989

(UB=Unincorporated Balance)

Land Cover (in acres):

Total	170,608.7
Urban (open impervious surfaces)	8,596.5
Agriculture/Open Urban Areas	124,845.1
Shrub/Scrub	556.3
Wooded	17,636.7
Open Water	7,098.4
Non-Forested Areas	10,230.0
Barren	1,645.7

Taxes:

Taxable value of real property	\$1,254,334,380
Residential	\$967,194,670
Agricultural	\$59,357,360
Industrial	\$65,865,670
Commercial	\$161,916,680
Mineral	\$0
Ohio income tax liability	\$28,777,783
Average per return	\$1,371.42

Coastal Management Area (in acres):

Total	285,483.20
Mainland	78,493.58
Island	3,289.18
Water	203,700.45

Coastal Municipalities/Townships:

- Bay Township
- Carroll Township
- Catawba Island Township
- Danbury Township
- Erie Township
- Marblehead Village
- Portage Township
- Port Clinton
- Put-in-Bay Township
- Put-in-Bay Village
- Salem Township

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.

Total	95.4
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Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.

Total	7.6
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Miles of Scenic Rivers:

Approximation obtained using GIS.

Total	0
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Islands:

- Ballast Island
- Gibraltar Island
- Green Island
- Johnson’s Island
- Middle Bass Island
- Mouse Island
- North Bass Island
- Rattlesnake Island
- South Bass Island
- Sugar Island

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)

Registered Boats	6,048	5th of 9
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Marblehead Lighthouse

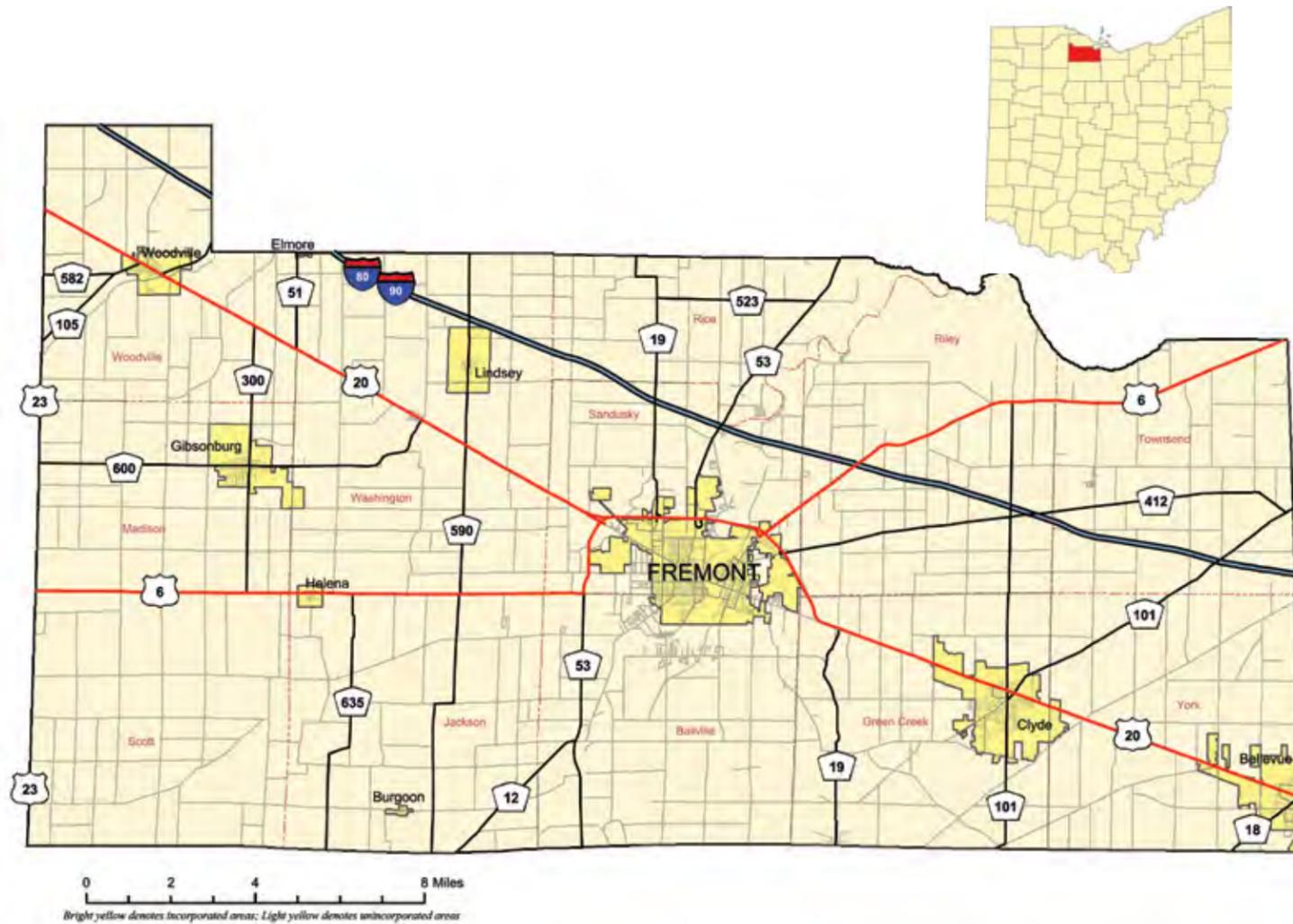


Put-in-Bay Harbor



South Bass Island (largest in view), Gibraltar Island (seen in harbor)

Sandusky County



County Facts:

Established – April 1, 1820
 2000 Population – 61,792
 2004 Population – 61,948
 2010 Projection – 59,941
 Land Area and Rank – 409.2 square miles, 66 of 88
 County Seat – City of Fremont
 Named for Native American word meaning “cold water”

Largest Populations (2000 Census and 2004 Estimate):

1. Fremont	17,375	17,181
2. Ballville Township	6,395	6,465
3. Clyde	6,064	6,101
4. Bellevue	4,352	4,290
5. Sandusky Township	4,087	4,021
6. Green Creek Township UB	3,467	3,594
7. York Township	2,512	2,508
8. Gibsonburg Village	2,506	2,472
9. Woodville Village	1,977	2,000
10. Washington Township UB	1,769	1,812

(UB=Unincorporated Balance)

Land Cover (in acres):

Total	263,711.7
Urban (open impervious surfaces)	7,038.8
Agriculture/Open Urban Areas	220,747.3
Shrub/Scrub	1,011.1
Wooded	25,488.2
Open Water	2,110.4
Non-Forested Areas	5,710.0
Barren	1,605

Taxes:

Taxable value of real property	\$913,394,610
Residential	\$659,378,340
Agricultural	\$85,046,970
Industrial	\$56,246,660
Commercial	\$112,697,790
Mineral	\$24,850
Ohio income tax liability	\$32,165,607
Average per return	\$1,059.09

Coastal Management Area (in acres):

Total	23,683.47
Mainland	20,215.88
Island	0
Water	3,467.59

Coastal Municipalities/Townships:

Rice Township
 Riley Township
 Townsend Township

Miles of Coastline:

Approximation obtained by digitizing shoreline from Y2001-2003 orthophotography at 1:2,000 scale.

Total	14.3
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Miles of Publicly Accessible Coastline:

Approximation obtained using GIS and fieldwork.

Total	2.8
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Miles of Scenic Rivers:

Approximation obtained using GIS.

Total	9.84
Sandusky River	9.84

Islands:

None

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)

Registered Boats	3,020	9th of 9
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Sandusky County Courthouse, Fremont



Rutherford B. Hayes Presidential Center



Pickerel Creek State Wildlife Area

Wood County



Maumee State Scenic River Fort Meigs State Memorial, Perrysburg Weir Rapids Wildlife Access (Maumee River)

Wood County does not border Lake Erie, Maumee Bay or Sandusky Bay. Portions of Wood County along the Maumee River are included within the Coastal Management Area. Therefore Wood County is considered a coastal county throughout the atlas.

County Facts:

Established – April 1, 1820
 2000 Population – 121,065
 2004 Population – 123,278
 2010 Projection – 127,019
 Land Area and Rank – 617.4 square miles, 7 of 88
 County Seat – City of Bowling Green
 Named for Colonel E.E. Wood, War of 1812

Largest Populations (2000 Census and 2004 Estimate):

1. Bowling Green	29,636	29,454
2. Perrysburg	16,945	16,947
3. Perrysburg Township	13,613	13,613
4. Lake Township UB	6,643	6,185
5. Rossford	6,406	6,387
6. Northwood	5,471	5,493
7. North Baltimore Village	3,361	3,341
8. Troy Township UB	3,357	3,491
9. Walbridge Village	2,546	3,094
10. Middleton Township UB	1,960	2,111

(UB=Unincorporated Balance)

Land Cover (in acres):

Total	397,969.1
Urban (open impervious surfaces)	9,148.9
Agriculture/Open Urban Areas	357,750.1
Shrub/Scrub	950.9
Wooded	22,128.1
Open Water	2,090.2
Non-Forested Areas	5,430.1
Barren	480.8

Taxes:

Taxable value of real property	\$2,164,447,880
Residential	\$1,544,300,600
Agricultural	\$105,869,400
Industrial	\$134,076,010
Commercial	\$380,196,270
Mineral	\$5,600
Ohio income tax liability	\$94,368,288
Average per return	\$1,688.40

Coastal Management Area (in acres):

Total	3,017.92
Mainland	3,017.92
Island	0
Water	0

Coastal Municipalities/Townships:

None

Miles of Coastline:

Total	0
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Miles of Publicly Accessible Coastline:

Total	0
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Miles of Scenic Rivers:

Approximation obtained using GIS.

Total	17.95
Maumee River	17.95 (Shared border with Lucas County)

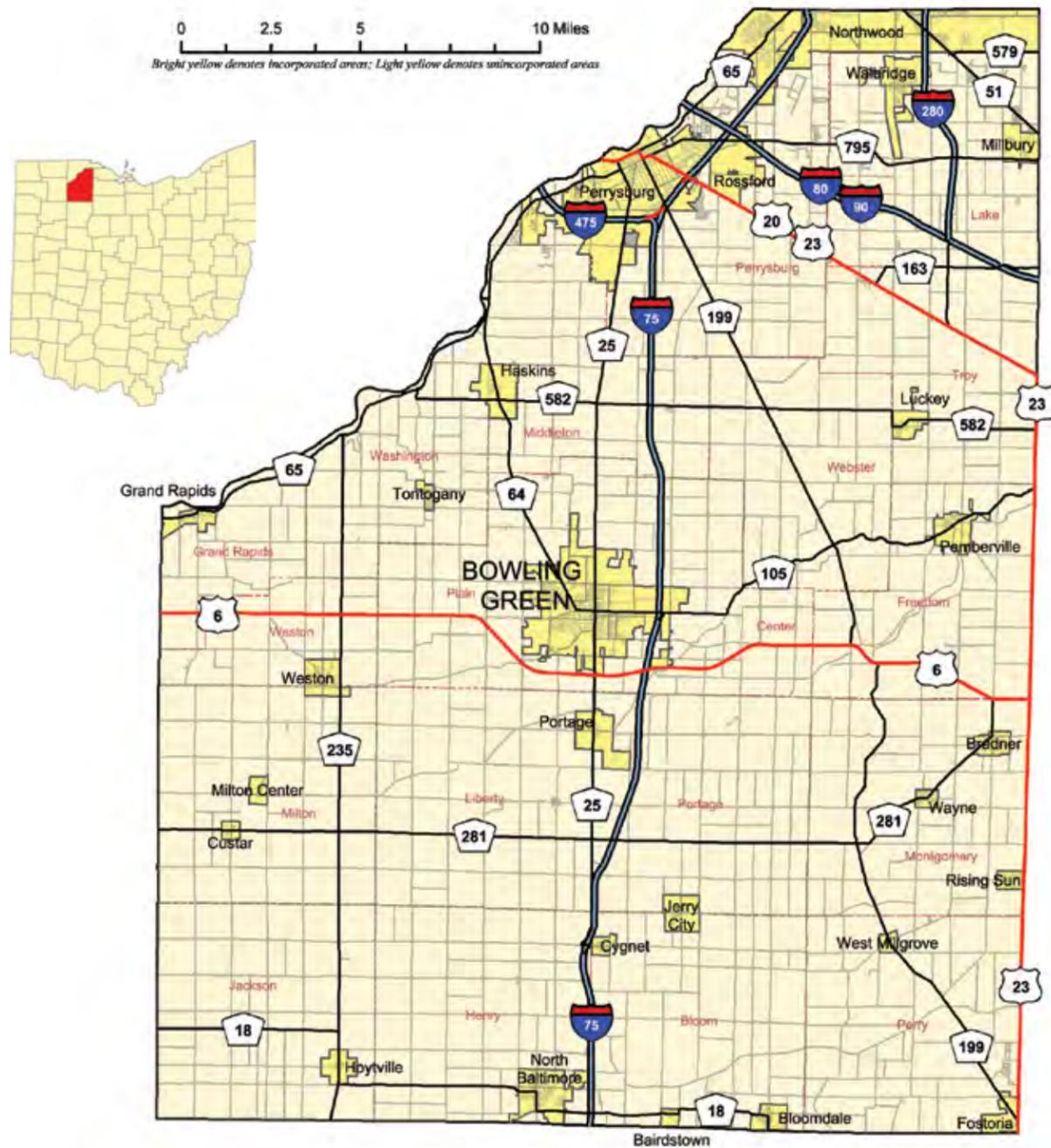
Islands:

None

Boating and Coastal County Rank:

Registered boat total from ODNR Division of Watercraft (2004)

Registered Boats	5,085	8th of 9
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County Profile Data Sources (for all 9 county profiles)
 Sources: County Facts, Population Data, Land Use and Tax Breakdowns – Ohio Department of Development; Office of Strategic Research, 2005
 Shoreline, Public Access, Scenic River and CMA Statistics – ODNR Office of Coastal Management, 2004 and 2005

Map 3 GIS data citation in Appendices (all county profiles)

Population Density and Distribution



Black River Landing, Lorain



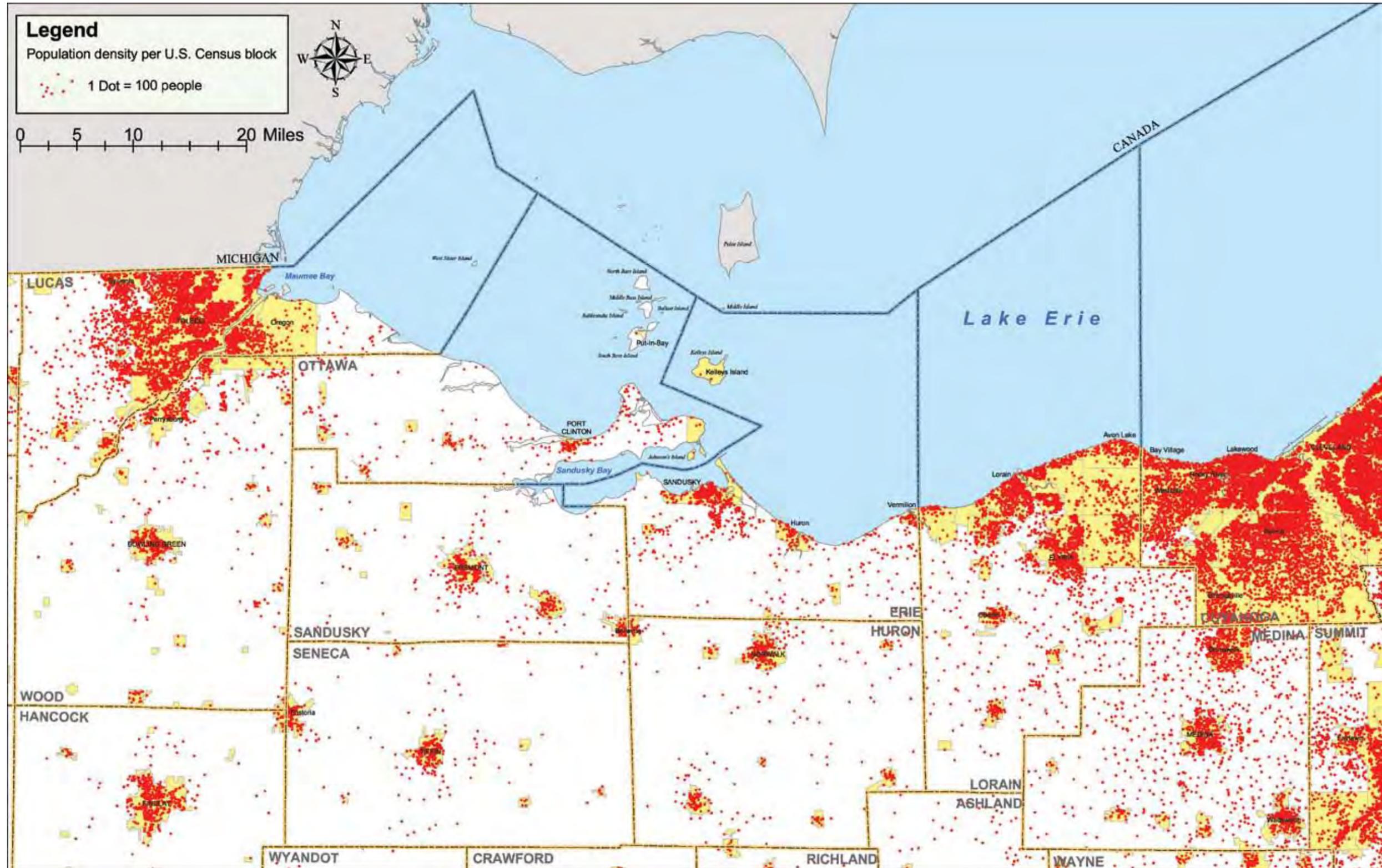
Established neighborhood, Huron



Apartment complex, The Flats, Cleveland

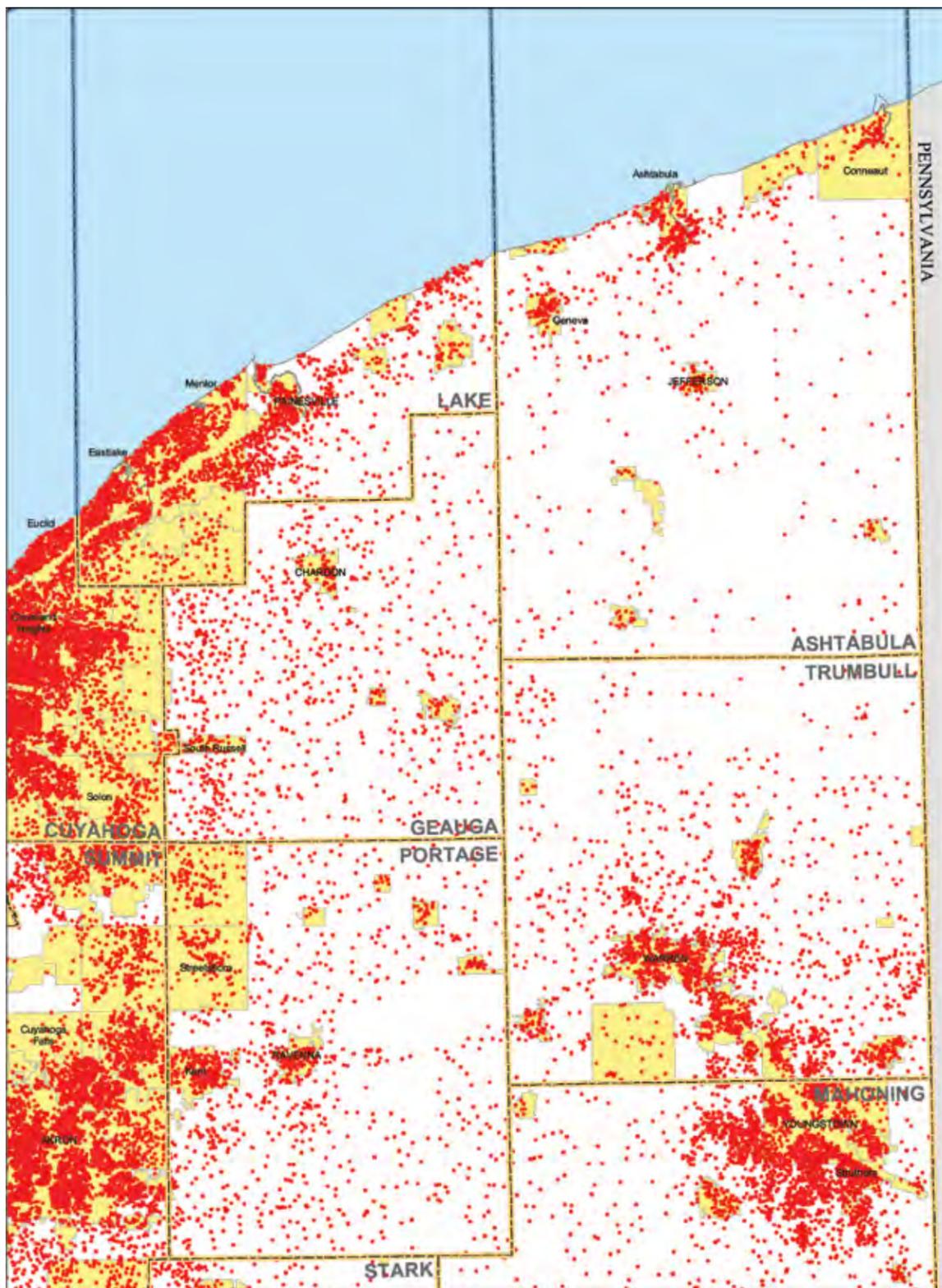


Condominium complex, Marblehead



Map 4 GIS data citation in Appendices

Population Density and Distribution



Map 4 GIS data citation in Appendices

Coastal Population Density and Distribution

This dot density map illustrates the population distribution of northern Ohio. Each dot represents 100 people per U.S. Census block (block boundaries are not shown). For example, if census block 'x' has a population of 200, then two dots are placed within that block. Using this mapping method, the map reader is able to visualize population patterns and trends.

Urban centers and rural locations can be easily deciphered. Large areas composed of widespread and densely overlapping red points represent heavily populated urban and suburban centers. In contrast, areas with a minimal dispersion of red points correspond to rural locations.

On this map, four prominent urban areas are defined by the closely concentrated red dots. From west to east, such populated areas include greater Toledo, the expansive Cleveland metropolitan region, greater Akron and Youngstown. In rural counties, the red groupings typically represent county seats and other small population concentrations. County seat population centers can best be seen in the southwestern portion of this map, exemplified by Norwalk (Huron County), Fremont (Sandusky County), Tiffin (Seneca County) and Findlay (Hancock County).

In addition to depicting urban and rural distribution, this map also shows population trends. These trends along the Lake Erie coast, particularly in Lorain, Cuyahoga and Lake counties between the cities of Lorain and Mentor are very well defined. Sparser extensions of this tri-county trend can be delineated in both western and eastern directions. West of Lorain, urban patterns along the coast are well defined in two predominantly

rural counties, Erie and Ottawa.

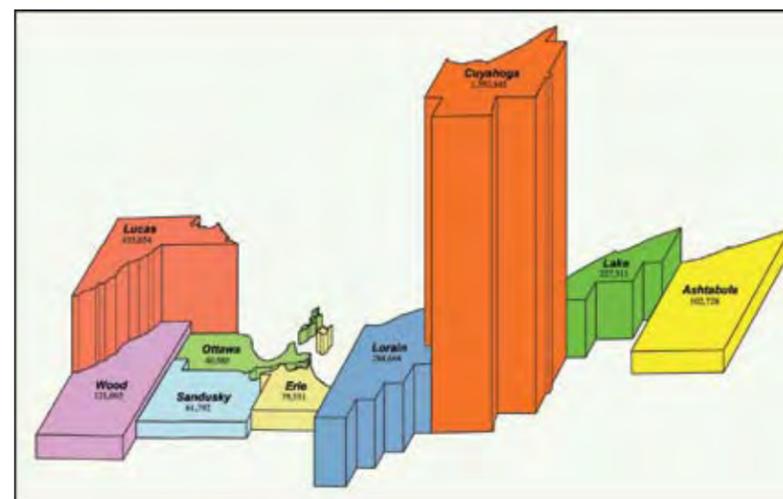
The population density in the cities of Vermilion, Huron, Sandusky and Port Clinton is easily detectable, as are smaller areas in between. To the east, another population string can be seen bridging Mentor with Ashtabula and eastward into Conneaut.

Coastal County Population

According to the U.S. Census Bureau (2000), the combined population of Ohio's coastal counties (Wood County included) was 2,767,195 people, amounting to nearly one-quarter of the state's total population.

Cuyahoga County with a population of 1,393,845 people, accounts for more than half of the coastal counties' combined total. The second largest population is Lucas County with 455,054 people. Feeling the effects of sprawl, Lorain and Lake counties, which flank Cuyahoga County to the west and east, have populations of 284,664 and 227,511, respectively. Wood County has 121,065 people. Ashtabula County, Ohio's largest in square mileage, has 102,728 people. The three remaining coastal counties Erie, Sandusky and Ottawa, have populations of 79,551; 61,792 and 40,985 people, respectively.

COASTAL COUNTY POPULATION COMPARISON



Coastal City and Village Populations (2000)

Cleveland	478,403
Toledo	313,619
Lorain	68,652
Lakewood	56,646
Euclid	52,717
Mentor	50,278
Sandusky	27,844
Willoughby	22,621
Ashtabula	20,962
Rocky River	20,735
Eastlake	20,255
Oregon	19,355
Avon Lake	18,145
Bay Village	16,087
Willowick	14,361
Conneaut	12,485
Vermilion	10,927
Sheffield Lake	9,371
Mentor-on-the-Lake	8,127
Huron	7,958
Port Clinton	6,391
Fairport Harbor	3,180
North Kingsville	2,658
Geneva-on-the-Lake	1,545
Bratenahl	1,337
North Perry	838
Timberlake	775
Marblehead	762
Bay View	692
Kelleys Island	367
Lakeline	165
Put-In-Bay	128

For more information:

U.S. Census Bureau
 Detroit Regional Office
 1395 Brewery Park Boulevard
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 Fax: 313-259-5045
 TDD: 313-259-5169
 E-mail: detroit.regional.office@census.gov
 Web: www.census.gov