

# **Appendices**

# Appendices

## Glossary of Terms

**Algae** – Any of various chiefly aquatic, eukaryotic, photosynthetic organisms, ranging in size from single-celled forms to the giant kelp. Algae were once considered to be plants but are now classified separately because they lack true roots, stems, leaves and embryos.

**Alluvial Deposits** – Materials deposited via stream and river transport.

**Alluvial Soils** – Young soils that receive continuous additions of sediment during flooding. These soils are good for agriculture, but limited for other uses due to frequent flooding.

**Altricial** – Being hatched or born or having young that are hatched or born in a very immature and helpless condition so as to require care for some time.

**Alvar** – A horizontal exposure of nearly barren limestone or dolomite which was exposed by glaciers and kept open by a variety of environmental factors.\*\*\*\*

**Anticline** – An upward-curving (convex) fold in rock that resembles an arch. The central part contains the oldest section of rock.\*\*

**Aquifer** – A geologic formation that is water-bearing, and which transmits water from one point in the formation to another.\*

**Archipelago** – An island grouping or chain, i.e. the Bass Islands.

**Area of Concern** – One of 43 originally designated locations in the Great Lakes Basin where poor water quality has caused impairments to beneficial uses of the natural resource. Ohio's four Areas of Concern are the Lower Maumee, Black, Cuyahoga and Ashtabula rivers and harbors.

**Base Flow** – Streamflow coming from ground water seepage into a stream.\*\*

**Basin** – A depression in the Earth's surface that collects sediment or water.\*\*

**Bathymetry** – The measurement of water depths.\*

**Bay** – A recess in the shore or an inlet of water between two capes or headlands.\*

**Beach** – Areas of sand deposited along the coast by wave action.

**Beach Ridge** – Long, narrow features rising about 20 feet above the land surface, which were deposited along the high-energy shores of ancestral lakes.

**Bed** – A layer of sediment or sedimentary rock.\*\*

**Bedrock** – The solid rock that underlies gravel, soil, and other superficial material.\*

**Bluff** – A high, steep bank or cliff.\*

**Bog** – Peat-accumulating wetland which traps precipitation as the only water source. They typically have acidic soils and water and often contain Sphagnum mosses.

**Breaker Zone** – The zone within which waves approaching the coast begin breaking, typically in water depths between five and 10 meters, but sometimes in shallower water.

**Breakwall** – See *Seawall*.

**Breakwater** – A man-made structure protecting a shore area, harbor, anchorage or basin from waves.

**Bulkhead** – A structure or partition to retain or prevent sliding of the land. A secondary purpose is to protect the upland against damage from wave action.

**Buried Valley** – Ancestral stream channel filled and subsequently buried by glacial/alluvial sediments.

**Canal** – A manmade water channel built to transport people and goods.

**Centrarchid** – Small carnivorous freshwater percoid fishes of North America usually having a laterally compressed body and metallic luster: crappies; black bass; bluegills; pumpkinseed.

**Coast** – A strip of land of indefinite width that extends from the shoreline inland to the first major change in terrain features.\*

**Coastal Management** – A cooperative effort by agencies, political subdivisions and local groups to manage coastal resources, monitor activities that affect the resources, and foster the resources' sustainable use for the benefit of all citizens.

**Colluvium Soils** – Soils derived from material that has slumped or moved due to gravity and is present only at the base of slopes.

**County Seat** – A town or city that is the administrative center of its county.\*\*\*

**Crepuscular** – An animal most active at dusk and twilight when light levels are low. In aquatic environments this refers to fish active during these times and when waters have limited clarity.

**Deciduous Forest** – Areas dominated by trees greater than 16 feet tall that make up more than 20 percent of total vegetation cover. More than 75 percent of the tree species shed foliage in the fall.

**Depocenter** – The area of thickest deposition in a basin.#

**Detached Breakwater** – A breakwater without any visible connection to the shore.

**Detrital** – Loose material (as rock fragments or organic particles) that results directly from disintegration; a product of disintegration, destruction, or wearing away.<sup>a</sup>

**Dike** – Earth structures built along a sea, lake or river intended to protect low lands from flooding during high water.

**Discharge** – The volume of water that passes a given location within a given period of time.\*\*

**Downcutting** – Erosion process which steepens the nearshore profile and allows larger waves to come closer to shore.

**Drainage Basin** – see *Watershed*.

**Dredging** – Periodic removal of accumulated bottom sediments from waterways to maintain adequate depth for shipping transport.

**Drift** – Glacially derived sediments.

**Dune** – A feature formed at the back of wide beaches where wind-blown sand accumulates beyond the reach of normal wave activity.

**Ecosystem** – The living organisms and the nonliving environment interacting in a given area, encompassing the relationships between biological, geochemical and geophysical systems.\*

**Earthquake** – A sudden motion in the Earth, as rock masses slide past each other in response to accumulated strain.

**Embayment** – An indentation in the shore forming an open bay.\*

**Endangered Species** – A species near the point of extinction heavily impacted by non-native invasive species, habitat loss, habitat fragmentation and human factors.

**End Moraine** – A long and narrow ridge feature, typically a rolling and bumpy land surface, composed primarily of till. They function as local drainage divides. See also *Moraine*.

**Epicenter** – The point on the Earth's surface located directly above the focus of an earthquake.\*\*

**Epilimnion** – When an anoxic zone forms in Lake Erie, this is the warm surface and upper layer, where warm water mixes with oxygen from the air, and supports abundant plant and animal life.

**Erosion** – The wearing away or carrying away of land or beach by waves or currents.\*

**Escarpment** – see *Bluff*.

**Esker** – An ice-contact feature, sinuous or serpentine in appearance, formed from flowing meltwater on and under the surface of a glacier. See also *Kame*.

**Estuary** – An area near a creek, stream or river mouth where lake water and tributary water meet and mix.

**Fallow** – Cropland, tilled or untilled, allowed to lie idle during the whole or greater part of the growing season.\*\*

**Fault** – A fracture in the Earth along which one side has moved in relation to the other. Sudden movements on faults cause earthquakes.\*\* See also *Earthquake*.

**Fen** – Peat-accumulating alkaline wetland with ground water as the dominant water source. Fens support a variety of specialized plant species including orchids, sedges and grasses. If the groundwater flow is diverted, a fen will become a bog. Once destroyed, it can take a fen 10,000 years to develop again.

**Ferry** – Specialized boat which transports people, goods and automobiles.

**Ferry Route** – A static line of travel between two or more destinations, or docks, in which ferry boats travel.

**Flood** – A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties. See complete definition in Flood Hazards Section.

**Flood, 100-Year** – The flood elevation that has a 1% chance of being equaled or exceeded in any particular year.

**Flood, 500-Year** – The flood elevation that has two-tenths of 1% chance of being equaled or exceeded in any particular year.

**Flood Hazard Zone** – A land area's risk of flooding, derived by looking at local and regional topography, land use, historic flood information and any other contributing factors.

**Flood Plain** – A strip of relatively flat and normally dry land alongside a stream, river, or lake that is covered by water during a flood.\*\*

**Floodplain Soils** – see *Alluvial Soils*.

**Flyway** – A specific air route taken by birds during migration.\*\*

**Foredune** – The larger and more mature dune lying between the incipient dune and the hinddune area. Foredune vegetation is characterized by grasses and shrubs. Foredunes provide an essential reserve of sand to meet erosion demand during storm conditions. During storm events, the foredune can be eroded back to produce a pronounced dune scarp.

**Glacial Deposit** – Materials from different origins, such as mixtures of clay, sand, gravel and boulders, that are transported by glacial ice sheet advance and left behind upon glacial retreat.

**Glacial Lake Clay** – Fine-grained sediment deposited by pro-glacial lakes that formed along the margin of the glacier as it receded from the Lake Erie basin. The sediment typically contains thin layers of silt.

**Glacier** – A large body of ice moving slowly down a slope of a valley or spreading outward on a land surface and surviving from year to year.\*

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**Glaciolacustrine** – Having to do with a glacial lake.

**Gravel** – All sedimentary particles larger than two millimeters in diameter. Gravel is subdivided into pebbles, cobbles, and boulders.\*\*

**Grassland** – An area dominated by herbaceous vegetation, such as prairies, meadows, fallow fields, clear-cuts with natural grasses and underdeveloped lands with naturally occurring grasses.

**Great Lakes, the** – Lakes Superior, Michigan, Huron, Erie and Ontario. The largest system of fresh surface water on Earth, containing roughly 6 quadrillion gallons of water or about 95 percent of the United States' fresh surface water and 18 percent of the world's freshwater supply.

**Groin** – Narrow structure built roughly perpendicular to the shore to reduce longshore currents and/or trap and retain littoral material.

**Ground Moraine** – A commonly flat feature composed of glacial till that was deposited by actively moving ice. See also *Moraine*.

**Ground Water** - (1) Water that flows or seeps downward and saturates soil or rock, supplying springs and wells. The upper surface of the saturated zone is called the water table. (2) Water stored underground in rock crevices and in the pores of geologic materials.\*\*

**Habitat** – The physical location or type of environment in which an organism or biological population resides or occurs.

**Harbor** – A natural or manmade protected area of water affording a place of safety for vessels.\*

**Headland** – Projections of land that stick out into a sea or lake, e.g. Mentor Headlands.\*\*

**Herbaceous** – Relating to, or having the

characteristics of an herb, having little or no woody tissue and persisting usually for a single growing season; or having the texture, color, or appearance of a leaf.

**Hinddunes** – Sand dunes located landward of the foredune and characterized by mature vegetation including trees and shrubs.

**Hydrology** – The science that deals with water on and beneath the Earth surface.\*\*

**Hypolimnion** – When an anoxic zone forms in Lake Erie, this is the bottom layer which is cold, has low to moderate oxygen, no sunlight or algae activity, and where decomposition by bacteria occurs.

**Ice Age** – Recurring periods of time in which massive glaciers advanced from Polar Regions in response to climatic conditions.

**Ice-Out** – Time when ice breaks up in lakes and rivers.

**Incipient dune** – The most lakeward and immature dune of the dune system, where vegetation is dominated by grasses. On an accreting coastline, the incipient dune will develop into a foredune.

**Interstate Highway** – A high-volume system of highways extending between and connecting major United States cities to transport people, goods and services.

**Interstitial** – A space that intervenes between things; especially one between closely spaced things or a gap or break in something generally continuous.

**Invasive Species** – An organism, such as zebra mussels, round goby fish or phragmites, which accumulate toxins through the food chain and transfers the toxins to other organisms.

**Irrigation** - The controlled application of water for agricultural purposes through manmade systems to supply water requirements not satisfied by rainfall.\*\*

**Island** - A land mass, especially one smaller than a continent, entirely surrounded by water.\*\*\*

**Jetty** – On open seacoasts, a structure extending into a body of water, which is designed to prevent shoaling of a channel by littoral materials and to direct and confine the stream or tidal flow. Jetties are built at the mouths of rivers or tidal inlets to help deepen and stabilize a channel.

**Kame** – An ice-contact feature, conical in shape, formed from flowing meltwater on and under the surface of a glacier. See also *Esker*.

**Karst** – A type of terrain, usually formed on carbonate rock (limestone and dolomite) where groundwater has solutionally- enlarged openings to form a subsurface drainage system.

**Kettle** – A steep-sided hole or depression, commonly without surface drainage, formed by the melting of a large detached block of stagnant ice that had been buried in the glacial drift.\*\*

**Lacustrine** – Pertaining to lake bed.

**Lacustrine Deposits** – Material deposits associated with ancestral lakebed stages.

**Lacustrine Sediments** – Sediments that have a high silt and clay content and therefore have slow permeability. These sediments are difficult to manage for agriculture because they are poorly or very poorly drained.

**Land Cover** – The natural surface of the landscape, including forest, water, and wetlands.

**Land Use** – Human usage of the landscape, such as residential, commercial, agricultural and industrial purposes.

**Lee** – A part or side sheltered or turned away from the wind or waves.\*

**Lighthouse** – A tall structure topped by a powerful light used as a beacon or signal to aid marine navigation.\*\*\*

**Limnology** – A discipline that concerns the study of inland waters (both saline and fresh), specifically lakes, ponds and rivers (both natural and manmade), including their biological, physical and chemical aspects.

**Lithology** – Composition of glacial deposits.

**Littoral** – Of or pertaining to a shore, especially a sea. Often used as a general term for the coastal zone influenced by wave action, or more specifically, the shore zone between the high and low water marks.

**Littoral Drift** – See *Littoral Transport*.

**Littoral Transport** – The movement of beach material in the littoral zone by waves and currents including movement parallel and perpendicular to the shore.

**Loess** – Wind blown silts.

**Magnitude** – A measure of the total amount of energy released by an earthquake.\*\*

**Marsh** – Wetland that is almost always flooded and is characterized by a mixture of cattails, reeds and other aquatic vegetation.

**Meltwater** – Water from melted snow or ice.

**Migrate** – To move from one region and/or climate to another for feeding and/or breeding.\*\*\*

**Migratory Birds** – Birds that move regularly or occasionally from one region and/or climate to another.\*\*\*

**Moraine** – A hill-like pile of rubble located on or deposited by a glacier.\*\* See also *End Moraine* and *Ground Moraine*.

**Mouth** – The place where a stream discharges to a larger stream or lake.\*\*

**Mud** – An unconsolidated sediment consisting of clay and/or silt, together with material of other dimensions (such as sand), mixed with water, without connotation as to composition. The consistency may range from semi-fluid to soft and plastic.

**Muddy Sand** – An unconsolidated sediment containing 50-90 percent sand and having a ratio of silt to clay between 1:2 and 2:1 (Folk, 1954, p. 349).<sup>a</sup>

**Nearshore** – In beach terminology an indefinite zone extending seaward from the shoreline well beyond the breaker zone.

**Nearshore Substrates** – Materials, such as sand, clay, till and rock located lakeward of the shore.

**Nearshore Zone** – The area extending lakeward an indefinite but generally short distance from the shoreline; specifically said of the indefinite zone extending from the low-water shoreline well beyond the breaker zone, defining the area of nearshore currents. Nearshore is sometimes defined as extending across the area of longshore bars. Depths are generally less than 5 fathoms (10 meters).<sup>a</sup>

**Non-point Source Pollution** – Water contamination that originates from a broad area and enters the water resource diffusely over a large area.\*\*

**Nuisance Species** – Undesirable and/or disruptive plants and animals.

**Oligotrophic** – Describing a lake or river with low productivity, deficient in plant nutrients, rich in oxygen throughout its depth and with good water clarity.

**Organic Soils** – Soils that are very poorly drained and have significant limitations for all management practices. Composed of various amounts of organic material such as decayed leaves.

**Oscillation** – A periodic motion backward and forward.\*

**Outcrop** – Areas of exposed bedrock.

**Outwash Deposits** – Materials, primarily sand and gravel, forming from glacial meltwater.

**Ovoviviparous** – Method of animal reproduction in which fertilized eggs develop within the female and the embryo gains no nutritional substances from the female. It occurs in some invertebrates, fishes, and reptiles.

**Passerine** – Of or relating to the largest order (Passeriformes) of birds which includes more than half of all birds and consists chiefly of altricial songbirds of perching habits

**Peat** – Partially carbonized vegetative matter, usually mosses, found in bogs and used as fertilizer and fuel.\*\*\*

**Perennial Stream** – A stream that runs continuously throughout the year.\*\*

**Permeability** – The ability of material to allow the passage of a liquid, such as water through rocks. Permeable materials, such as gravel and sand, allow water to move quickly through them; unpermeable material, such as clay, do not allow water to flow freely.\*\*

**Peninsula** – An elongated body of land nearly surrounded by water and connected to a larger body of land.\*

**pH** – A measure of the acidity (less than 7) or alkalinity (greater than 7) of a solution; a pH of 7 is considered neutral.\*\*

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**Photosynthesis** – The process that converts energy in sunlight to chemical forms of energy that can be used by biological systems, or the creation of complex organic molecules (simple carbohydrate sugars) by plants and algae from the energy supplied by light. Photosynthesis also releases oxygen into the water as a by-product of the process.

**Piscivorous Fish** – A fish that feeds on fish.

**Precipitation** – The deposit on the earth of mist, rain, snow, sleet and hail and also the quantity of water deposited.

**Primary Lithology** – see *Lithology*.

**Point** – The extreme outer end of any land area protruding into the water\*, i.e. Avon Point, Locust Point, Cedar Point.

**Port** – A place where shipping vessels may discharge and/or receive cargo.\*

**Pothole** – Coastal related soil terminology referring to a freshwater depression in the land.

**Rare Species** – see *Endangered Species*.

**Rebound** – The subsequent rise of the Earth's surface after glacial weight is removed from it.

**Recharge** – Water from precipitation added into aquifer pores.

**Reef** – Rocky outcrop that rises to or near the water's surface.

**Relief** – Differences in elevation of different points in a region.\*\*

**Remedial Action Plans** – Plans created by Great Lakes states and provincial groups to restore Areas of Concern. The Ohio EPA is the lead state agency for the development and implementation of Ohio's four Remedial Action Plans.

**Remote Sensing** – The use of satellite imagery to provide pictures of the Earth.

**Residuum Soils** – Soils that form directly from bedrock material that is naturally present, i.e. limestone, shale and siltstone.

**Revetment** – A facing of stone, concrete, or other material built to protect an embankment or shore structure against erosion by wave action or currents. (2) A retaining wall.

**Rock** – An aggregate of one or more minerals.<sup>a</sup>

**Sand** – A detrital rock fragment or mineral particle smaller than a granule and larger than a coarse silt grain, having a diameter in the range of 1/16 to 2 mm (0.0028-0.08 in), or a size between that at the lower limit of visibility of an individual particle with the unaided eye and that of the head of a small wooden match.<sup>a</sup>

**Sand Dune** – see *Dune*.

**Sandy Mud** – An unconsolidated sediment containing 10-50 percent sand and the remainder having a ratio of silt to clay between 1:2 and 2:1 (Folk, 1954, p. 349).<sup>a</sup>

**Scour** – Removal of underwater material by waves and currents, especially at the base or toe of a shore structure.

**Seawall** – (1) A structure, often concrete or stone, built along a portion of a coast to prevent erosion and other damage by wave action. Often it retains earth against its shoreward face. (2) A structure separating land and water areas built to alleviate the risk of flooding by the sea. Generally shore-parallel. A seawall is typically more massive and capable of resisting greater wave forces than a bulkhead.

**Sediment** – Loose, uncemented pieces of rock or minerals.\*\*

**Sedimentary Rock** – Rocks formed from pre-existing rocks or pieces of once-living organisms. They form from deposits that accumulate on the Earth's surface. Sedimentary rocks often have distinctive

layering or bedding.\*\*

**Seiche** – An extreme form of lake oscillation which occurs due to rapid changes in winds and barometric pressure.

**Seasonal Dock** – Boating dockage facility available for lease.

**Shipwreck** – Shipping accident, brought on by unfavorable weather conditions, collisions, crew mistakes or by other factors, causing a vessel to sink.

**Shoal** – (1) (*noun*) A detached area of any material except rock or coral. The shallow depths over it are a danger to surface navigation; (2) (*verb*) To become shallow gradually; (3) To cause to become shallow; (4) To proceed from a greater to a lesser depth of water.

**Shoaling** – Decrease in water depth. The transformation of wave profiles as they move toward the shore.

**Shore** – The narrow strip of land in immediate contact with the sea or lake, including the zone between high and low water lines. A shore of unconsolidated material is usually called a beach. The term is also used in the general sense to mean the coastal area (i.e., to live at the shore).

**Shorebird** – A diverse avian group that includes sandpipers, plovers, snipes and stilts which generally have smaller bodies, long thin legs and no webbing on their feet. They are highly migratory, traveling over great distances. Migration paths determined by geography and wind. Found in intertidal mudflats, salt marshes, and estuaries.\*\*

**Shoreline** – The intersection of a specified plane of water with the shore or beach (i.e., the high water shoreline would be the intersection of the plane of mean high water with the shore or beach.) The line delineating the shoreline on the National Oceanic Service nautical charts and

surveys approximates the mean high water line (United States).

**Silt** – Sediment particles with a grain size between 0.004mm and 0.062mm, i.e. coarser than clay particles but finer than sand.

**Sinkhole** – A depression in the surface commonly found in karst landscapes.\*\* See also karst.

**Soil** – All loose, unconsolidated earth and organic materials above bedrock that support plant growth.\*\*

**Spit** – A narrow point of land extending into a body of water.\*\*\*

**Stevedore** – One who is employed in the loading or unloading of ships.\*\*\*

**Stratum** – A sheet-like mass of sedimentary rock or earth of one kind lying between beds of other kinds (plural: *strata*)

**Stripper Well** – A well producing less than 10 barrels of oil per day.

**Subsidence** – The dropping of land surface as a result of ground water being pumped. Cracks and fissures can appear in the land. Subsidence is virtually an irreversible process.\*\*

**Substrate** – An ecologic term for the substance or base on which or in which an organism lives or grows, or the surface to which an organism is attached. (<sup>a</sup>, p. 637)

**Swamp** – Wetland dominated by trees and shrubs, with standing water, limited drainage and often neutral or slightly acidic soils.

**Syncline** – A downward-curving dip in rock that configures into a trough.

**Thermal stratification** – Layering of lake water into distinctive warm and cool regions which is caused by numerous factors including the natural heating of the water.

**Thermocline** – The region in a thermally

stratified body of water which separates warmer oxygen-rich surface water from cold oxygen-poor deep water and in which temperature decreases rapidly with depth. (Source: Merriam-Webster Online)

**Thin Upland** – Areas of thin glacial drift overlying and mimicking the topography of the underlying bedrock.

**Till** – Dominantly unsorted and unstratified drift, generally unconsolidated, deposited directly by and underneath a glacier without subsequent reworking by meltwater, and consisting of a heterogenous mixture of clay, silt, sand, gravel, and boulders ranging widely in size and shape.<sup>a</sup>

**Toe** – Lowest part of a sea and portside breakwater slope, generally forming the transition to the seabed.

**Topography** – The landscape or terrain and elevation of the land.

**Transient Dock** – Boating dockage facility intended for short stays, typically less than 10 nights.

**Udorthent** – Soil type that has been disturbed.

**Unconsolidated** – In referring to sediment grains, loose, separate or unattached to one another.

**Unconsolidated Deposits** – Lacustrine deposits and alluvial deposits.

**Unconsolidated Shore** – Areas of unconsolidated material such as silt, sand or gravel that is subject to inundation and redistribution due to action of water. Usually lacking vegetation except for pioneering plants that become established during brief periods when growing conditions are favorable. Characteristic land cover features include beaches, sand bars and flats.

**Valley Soils** – Composed of glacial till, soils which occur in valleys. These soils generally drain better than glacial till on

till plains due to the relief.

**Water Depth** – Distance between the seabed and the still water level.

**Water Level** – Elevation of still water level relative to some datum.

**Watershed** – An area of land that water drains through on its way to a common waterbody such as a stream, river, pond, lake or ocean.

**Wave Height** – The vertical distance between the crest (highest part of a wave) and the preceding trough (lowest part of a wave).

**Wetland** – Area dominated by saturated soils and often standing water.

**Wharf** – A structure built on the shore of a harbor, river or canal so that vessels may lie alongside to receive and discharge cargo and passengers.

**Wind Set-Up** – Day-to-day lake oscillation caused by winds that push water on shore. Associated with major lake storms and may last for hours to days.

**Wintering** – To feed or find food during the winter.

**Yield** – Mass per unit time per unit area.

## CITATIONS:

<sup>a</sup> Adapted from American Geological Institute, Julia A. Jackson, ed., 1997, Glossary of Geology: Alexandria, Virginia, 769 p.

\* U.S. Army Corps of Engineers. 2002. Coastal Engineering Manual. Engineer Manual 1110-2-1100, U.S. Army Corps of Engineers, Washington, D.C. (in 6 volumes).

\*\* USGS

\*\*\*www.dictionary.com

\*\*\*\*www.ohiodnr.com/dna

# www/glossary.oilfield.slb.com

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## Acronyms

AGI	American Geological Institute	NASA	National Aeronautics and Space Administration
AHRI	American Heritage River Initiative	NERR	National Estuarine Research Reserve
AOC	Area of Concern	NFIP	National Flood Insurance Program
APC	Area of Particular Concern	NOAA	National Oceanic and Atmospheric Administration
APR	Area for Preservation and Restoration	NOACA	Northeast Ohio Area-wide Coordinating Agency
BCI	Bureau of Criminal Investigation	NP	Nature Preserve
BOD	Biological Oxygen Demand	NPDES	National Pollutant Discharge Elimination System
CBRA	Coastal Barrier Resources Act	NPIAS	National Plan of Integrated Airport Systems
CBRS	Coastal Barrier Resources System	NPS	Nonpoint Source (Pollution)
C-CAP	Coastal Change Analysis Program	NRCS	National Resource Conservation Service
CDF	Confined Disposal Facility	NS	Norfolk Southern
CELCP	Coastal and Estuarine Land Conservation Program	NWR	National Wildlife Refuge
CLEERTEC	Cuyahoga/Lake Erie Environmental Restoration Technology Enterprise Center	OCM	Office of Coastal Management (ODNR)
CMA	Coastal Management Area	ODNR	Ohio Department of Natural Resources
CNPCPP	Coastal Nonpoint Pollution Control Program Plan	ODOD	Ohio Department of Development
CRWP	Chagrin River Watershed Partners, Inc.	ODOT	Ohio Department of Transportation
CSC	Coastal Services Center (NOAA)	ODTT	Ohio Division of Travel and Tourism
CZMP	Coastal Zone Management Program	Ohio EPA	Ohio Environmental Protection Agency
DEM	Digital Elevation Model	OhioSeis	Ohio Seismic Network
DO	Dissolved Oxygen	OPAs	Other Protected Areas
DRG	Digital Raster Graphic	ORC	Ohio Revised Code
ECPB	Eastern Corn Belt Plains	PUCO	Public Utilities Commission of Ohio
EOLP	Erie/Ontario Drift and Lake Plain	RAP	Remedial Action Plan
EPA	Environmental Protection Agency	REALM	Division of Real Estate and Land Management (ODNR)
ESRI	Environmental Systems Research Institute, Inc.	RTA	Greater Cleveland Regional Transit Authority
EWA	Energy and Water Appropriations	SF	State Forest
FAA	Federal Aviation Administration	SLSDC	Saint Lawrence Seaway Development Corporation
FEMA	Federal Emergency Management Agency	SLSMC	Saint Lawrence Seaway Management Corporation
FIRMS	Flood Insurance Rate Maps	SMA	Special Management Area
GIS	Geographic Information Systems	SNP	State Nature Preserve
GPM	Gallons Per Minute	SP	State Park
GPS	Global Positioning System	SWA	State Wildlife Area
GWPP	Ground Water Pollution Potential	TMACOG	Toledo Metropolitan Area Council of Governments
HUC	Hydrologic Unit Code	TMDL	Total Maximum Daily Load
IBA	Important Bird Area	TNC	The Nature Conservancy
IJC	International Joint Commission	UB	Unincorporated Balance
I-LYA	Inter-Lake Yachting Association	USCG	United States Coast Guard
kA	One Thousand Years Before Present	USACE	United States Army Corp of Engineers
KIL&T	Kelley Island Lime & Transport Company	USEPA	United States Environmental Protection Agency
LaMP	Lake-wide Management Plan	USFWS	United States Fish and Wildlife Service
LORAN	Long Range Navigation	USGS	United States Geological Survey
LULC	Land Use/Land Cover	WA	Wildlife Area
MAST	Maritime Archaeological Survey Team	WWTP	Wastewater Treatment Plant

## GIS Data Sources

A. 7.5-Minute Quadrangle Lines – Ohio Department of Transportation, 2005 Map 2	ODNR Office of Coastal Management, 2004 Maps 6, 13	AA. Glacial Geology – ODNR Division of Geological Survey, 1999, 2004 Map 47
B. 100-Year Flood Areas – ODNR Division of Water, 2001 Map 54	O. Coastal Resource Barrier System – ODNR Division of Real Estate and Land Management, 1992 Map 54	AB. Glacial Till Soils - Derived from SSURGO soils data; ODNR Division of Soil and Water Conservation and Natural Resource Conservation Service, various dates per county Map 35
C. 500-Year Flood Areas (Other Flood Hazards) – ODNR Division of Water, 2001 Map 54	P. Cuyahoga County Orthophotography – Cuyahoga County, 2002 Maps 27, 62	AC. Golf Courses – ODNR Division of Real Estate and Land Management, 2003 Map 14
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