
13. GLOSSARY

A

- abiotic** Non living or derived from non-living processes; factor contributing to an environment that is of a non-living nature.
- ablation** All processes by which snow and ice are lost from a glacier, floating ice, or snow cover, including melting, evaporation (**sublimation**), wind erosion, and **calving**.
- AD** Used as a prefix or suffix to a date, denoting the number of years after the beginning of the Christian calendar (*Anno Domini*).
- adventitious roots** Roots growing laterally from the stem rather than from the main root.
- aerenchyma** Tissue with large, air-filled cavities between the cells that are present in the stems and roots of certain aquatic plants that enables adequate gaseous exchange below water.
- aerial** Growing or borne above the ground or water; of, for, or by means of aircraft (e.g. aerial photography).
- aggrading** The building up or filling in of sediment through deposition.
- allochthonous** Material generated outside of a particular habit, but brought into that habitat.
- alluvium** Sediment deposited by a stream or running water.
- anadromous** Said of fishes and other aquatic animals that migrate from the open sea or an open lake into a tributary stream for the purpose of spawning.
- anaerobic** Capable of growing (metabolizing) in the absence of molecular (free) oxygen, obtaining energy from the breakdown of glucose sugar; condition in which molecular oxygen is absent from the environment.
- anastomosing** Said of a stream, leaf veins, protozoan structures, or blood vessels that are interwoven, braided, or netlike with numerous interconnections.
- angiosperm** Any member of the plant division Magnoliophyta, in which the seeds are enclosed in an ovary; consists of **dicotyledon** and **monocotyledon** plants.
- annual** Said of a plant living only one year; having a yearly periodicity.

- anoxic** A lack of oxygen.
- anthropogenic** Developed by human beings; man-made.
- aqueous** Of, or pertaining to water.
- aquifer** A body of rock that is sufficiently **permeable** to conduct **groundwater** and to yield economically significant quantities of water to springs and wells.
- artifact** Anything made by man or showing signs of human use; generally applied to tools, implements, and other objects of human manufacture.
- atlatl** A Mexican term for a spear throwing device; a stick with a hook at one end that fits into a depression in the base of a spear and is used to lengthen the thrower's arm, thus adding leverage and speed.
- atlatl weights** Stone objects fastened to the throwing stick for added mass.
- autochthonous** Material generated within a particular habitat and retained therein.
- autotroph** An organism that can manufacture its own organic requirements from inorganic materials; autotrophs are either phototrophic, energy being derived from **photosynthesis** where chlorophyll is present, or chemotrophic, energy being derived from inorganic oxidation where chlorophyll is absent; **primary producer**.

B

- backshore** The upper or inner, usually dry and narrow, zone of the shore or beach, lying between the normal high-water line and the upper limit of shore-zone processes; it is acted upon by waves or covered by water only during exceptionally severe storms or an unusually high **wind tide**. The backshore is essentially horizontal or slopes landward, and is divided from the **foreshore** by the crest of the most lakeward **berm**.
- barrier beach** A narrow, elongated sand ridge rising slightly above the high-water line and extending parallel with the shore, but separated from it by a **lagoon** or marsh.
- bathymetry** The description of the depths of a body of water, usually a map of the bottom where water depths are expressed as contours.

BC Used as a prefix or suffix to a date, denoting the number of years before the beginning of the Christian calendar.

bed The ground upon which any body of water rests, or the land covered by the waters of a stream, lake, or ocean; the smallest formal unit in a sequence of layered rocks.

benthos The plants and animals that live associated with the bottom margin of lakes, rivers, wetlands, or seas.

berm A low, impermanent, horizontal or landward-sloping bench or narrow terrace on the **backshore** of a beach, formed by material thrown up and deposited by storm waves; it is generally bounded on one side or the other by a beach ridge or beach scarp.

biface An initial stage in the manufacture of a stone artifact, such as a **projectile point**, that has been shaped by flaking on both sides to create an intermediate stage known as a preform.

bifurcated Said of a **projectile point** with a forked (Y-shaped) or divided base.

biomass The total mass of organic material of a species, or community of species, per unit area or volume; term used to express population density or **standing crop**.

biome A major ecological region or community characterized by distinctive life forms (e.g. tundra biome).

biota All living organisms of an area; the flora and fauna considered as a unit.

biovolume Volume of biological material in a specific organism or in a sample of water, sediment, or organic matter.

blade A term used by archaeologists in two ways: (1) a fragment of stone removed from a parent **core** to be used in the manufacture of an **artifact** (“blade and core industry”) and (2) that portion of an artifact, usually a **projectile point** of knife, beyond the base.

blank A fragment of stone that has been worked roughly into shape, but which must further be chipped to form the intended **artifact**.

boreal forest The geographic region immediately south of the Arctic **tundra** that is characterized by conifer (evergreen) woodlands.

bottomlands Low-lying, level land, usually highly fertile; a grassy lowland formed by the deposition of **alluvium** along the margins of a **watercourse**; an alluvial plain or flood plain.

BP Used as a suffix, denoting “before the present;” sometimes written **YBP** for “years before the present.”

C

calving The breaking away of a mass or block of ice from a glacier.

canopy The uppermost continuous **stratum** of **foliage** in forest vegetation formed by the **crowns** of trees; tallest trees of the canopy form the overstory.

carrion feeder Any organism that feeds on dead animals; necrophagous feeder.

celt A prehistoric stone implement shaped like a chisel or ax head.

ceramics A term used by archaeologists for **pottery** objects made of clay.

chert A hard, compact, microcrystalline sedimentary rock, consisting dominantly of interlocking quartz crystals; material frequently used by prehistoric Indians to manufacture **projectile points**.

chromosomes Threadlike linear strands of **DNA** and associated proteins in the nucleus of animal and plant cells that carries the genes and functions in the transmission of hereditary information.

clastic A rock or sediment composed of broken fragments of preexisting rock that has been cemented together by natural processes.

clay Individual mineral particles less than 0.002 mm in diameter.

CLEAR Acronym for Center for Lake Erie Area Research at The Ohio State University.

cleavage The property or tendency of a rock, mineral, or **soil** to split along predictable planes determined by the structure, texture, or crystal system of the material.

climax A stage in ecological development in which a community of organisms, especially plants, is stable and capable of perpetuating itself; climax community.

cloaca The common chamber into which the intestinal, urinary, and reproductive ducts open in lower vertebrates.

- COD (chemical oxygen demand)** The amount of oxygen used to break down the organic matter in samples using a strong chemical oxidant.
- collenchyma** Plant tissue in which the cell walls are thickened with cellulose, particularly at the corners, which provides support for stems and leaves.
- community** Any group of organisms comprising a number of different species that co-occur in the same **habitat** or area and interact through **trophic** and **spatial** relationships.
- component** An archaeological site, or any one of several cultures present at a site; a component generally has chronological and geographical connotations. The terms **focus** and **phase** have similar meanings.
- conchoidal** The shell-like shape of the fractured surface of stone **artifacts** made of **chert** or **flint**.
- concretion** A concentration or aggregation of chemical compounds and mineral matter (commonly calcium carbonate and iron oxides) in rock formations or soil forming grains or nodules of various sizes, shapes, hardness, and color, but usually subspherical to disk-shaped.
- conductivity (Specific Conductivity)** A measure of the ability of water to conduct an electrical current which is also a measure of the amount of ions dissolved in water. Specific Conductivity is conductivity adjusted to 25°C.
- cone-in-cone** A layering in **sedimentary rocks**, generally limestone, which resembles a series of cones (apex down) one inside another.
- conifer** Cone-bearing, mostly large, evergreen trees that often form forests.
- continental** Characteristic of the interior of a continent, well removed from the climatic influence of the oceans.
- cord-marked** Pottery decoration produced by impressing twisted cord on the surface of soft clay.
- core** A piece of stone from which **flakes**, **blades**, or **blanks** have been chipped away; artifacts shaped and modified from cores to serve as implements in their own right are called “core tools.”
- cork** An outer layer of tissue in the stems and roots of certain woody plants, made up of cells with thick walls impregnated with **suberin**, that are dead when mature and impervious to water and air.
- corm** A modified underground stem, found in some **monocotyledons**, which contains food reserves; often bulb-like in form, but has no fleshy scale leaves.
- cotyledon** A part of the plant embryo (seed) in the form of a specialized seed leaf that acts as a food storage organ and after germination functions as a true leaf.
- crown** The highest part or layer; typically said of the uppermost **foliage** of a tree.
- cumulonimbus clouds** Cumulus rain clouds with very dark, low, and often ragged bases, from which **precipitation** falls.
- cumulus clouds** Detached clouds, generally dense with sharp outlines that form rising mounds, domes, and towers which often resemble cauliflower and are brilliantly white where sunlit with dark, nearly horizontal bases.
- cuticle** In both plants and animals, a thin noncellular layer secreted by the **epidermis** which functions to prevent water loss, bacterial entry, admission of ultraviolet light, etc.

D

- debitage** Used by archaeologists to refer to waste material from the manufacture of artifacts (e.g. **chert** debitage).
- deciduous** Said of plants, particularly hardwood trees, that shed their leaves annually in autumn.
- decomposer** Any saprophytic organism, such as bacteria and fungi, that break down organic materials into simpler compounds and eventually into inorganic materials.
- dendritic** A pattern in streams or rivers where the stream (or river) and its tributaries resembles a branching tree.
- desiccation** A complete or nearly complete drying-out or drying-up, or a deprivation of moisture or of water not chemically combined; e.g. the loss of water from pore spaces of soil or sediment as a result of compaction.
- detritus** (1) A collective term for loose rock or mineral material mechanically weathered from older rocks and transported from its place of origin; (2) fragments of plants found in water or on the surface of **soil** (commonly fused together when soil is inundated by water).

diatactic The structure of a **varve** which shows a gradation in grain size from coarse below, up to fine above.

dicotyledon (dicot) Any **angiosperm** (flowering **vascular plant**) of the class Magnoliopsida; plants characterized by an embryo (seed) with two **cotyledons** (specialized seed leaves that act as food storage organs and after germination functions as leaves); comprises over 150,000 species of highly developed plants (e.g. buttercups, oaks, buckwheats, roses, peas, mints, and composites).

differential borrowing The selective incorporation of traits by virtue of contact between people.

differential erosion Erosion that occurs at irregular or varying rates, caused by the differences in the resistance or hardness of the surface materials; softer and weaker rocks are rapidly worn away, whereas harder and more resistant rocks remain to form ridges, hills, and **escarpments**.

differentiated Said of changes in cell, tissue, or organs during development that result in the appearance of a variety of structure and function found in the adult or other relatively stable phase of an organism's life history; increasing specialization of a cell as it approaches maturity.

diffusion (1) As a result of random movement of molecules, the dispersal of molecules from an area of higher concentration to an area of lower concentration; (2) the spread of a cultural trait from one area to another by means of contact between people.

DNA A nucleic acid that carries the genetic information in the cell and is capable of self-replication and synthesis of **RNA**; consists of two long chains of nucleotides twisted into a double helix and joined by hydrogen bonds between the complementary bases adenine and thymine or cytosine and guanine; sequence of nucleotides determines individual hereditary characteristics; deoxyribonucleic acid.

dolomite A **sedimentary rock** primarily consisting of calcium and magnesium carbonate.

downdraft A strong downward current of air.

dune A hill or ridge of wind-blown sand.

E

ecological niche The concept of the space occupied by a species, which includes both the physical space as well as the functional role of the species.

ecology The study of the interrelationships between living organisms and their environment.

ecosystem A **community** of organisms and their physical environment interacting as a unit.

ecotone The boundary or transition zone between adjacent communities or **biomes**.

emersed Said of a plant that rises above its substrate, such as an aquatic emergent plant.

entire margin (or entire leaf) Said of a leaf with a continuous smooth margin, not lobed or dentated (toothed).

eolian Said of features formed by wind action.

epidermal Pertaining to the outer layer of tissue; skin.

epidermis In plants, the tissue, usually one cell thick, that surrounds young roots, stems, and leaves; **epidermal** stem and leaf cells secrete a **cuticle**; epidermis of older roots and stems is often replaced by **cork** tissue.

epipelon The name given to organisms living on soft, fine-grained sediment.

erratic A rock fragment carried by glacial ice, or by floating ice and deposited at some distance from the outcrop from which it was derived (sizes range from pebbles to house-size blocks).

escarpment A long, more or less continuous cliff or relatively steep slope facing in one direction, breaking the continuity of the land by separating two levels of gently sloping surfaces, and produced by erosion or faulting.

estuarine Pertaining to, produced by, formed in, or inhabiting an **estuary**.

estuary The widened, commonly funnel-shaped, drowned mouth of a stream valley where stream water comes into contact with waters of a large, receiving body of water, such as the sea or a large lake, and where the effects of lunar tides or **wind tides** are evident as these tides meet the current of the stream.

F

facultative Capable of functioning under varying environmental conditions; organism that assumes a particular mode of life, but is not restricted to that condition.

fast ice Any lake ice that forms along and remains attached to the coast.

festooned Ornamented with a carved or molded design, representing a chain or strip hanging loosely between two points.

fishery The fish population or stocks of a specific geographic region or body of water which are often subdivided into various **taxonomic**, **trophic**, or utilization categories.

flake A small, loose, flattened mass produced by chipping stones in the process of manufacturing **artifacts**; stone tools produced by chipping flakes from a **core** are called “flake tools.”

flint A hard, homogeneous, **siliceous**, **sedimentary rock** considered to be a dark-gray or black variety of **chert**; artifacts made of this rock are smoother and show more perfect **conchoidal** fractures than chert.

floodplain Nearly level land, consisting of stream sediment (**alluvium**), that borders a stream and is subject to periodic flooding.

focus In archaeology, a group of **components** that have similar traits, indicating a relationship.

foliage Collectively, the leaves of a plant.

forb Any broad-leaved, **herbaceous plant**, other than a grass, especially one growing in a field, prairie, or meadow.

foreshore The lower or outer, gradually lakeward-sloping zone of the shore or beach, lying between the crest of the most lakeward **berm** of the **backshore** and the normal low-water line; it is the portion of the beach normally washed by waves.

fossil The remains of a once living organism preserved in the rock strata.

fossil record The remains of organisms or traces of their existence, such as mastodon carcasses preserved in a bog or casts of marine shells in limestone, that form a history of the development of life from its origin on Earth. The record is incomplete, due to the comparative rarity with which fossils are formed, but provides evidence of

evolution having taken place, particularly where long series of a particular form can be traced over an extended time period.

freshwater An aquatic environment such as streams and lakes, where there is comparatively little dissolved mineral matter and which results directly from **precipitation** (rain and snow), as opposed to salt water of the oceans and seas.

friable Said of a rock, mineral, or **soil** that crumbles naturally or is easily broken, pulverized, or reduced to powder.

frustule The hard, silica-containing wall of a diatom.

fungus (pl. **fungi**) A plant-like organism that may be unicellular or made up of tubular filaments and lacks chlorophyll; they live entirely as **saprophytes** or parasites.

fyke net A long bag-shaped net held open with hoops used to catch fish.

G

gall An abnormal swelling or growth of plant tissue caused by insects, mites, microorganisms, fungi, or external injury.

gamete A reproductive cell having the **haploid** number of **chromosomes**, especially a mature sperm or egg capable of fusing with a gamete of the opposite sex to produce the fertilized egg.

gas exchange The transfer of gases between an organism and the environment. In **respiration** oxygen is taken into an animal or plant and carbon dioxide is given out. In **photosynthesis** carbon dioxide is required by plants and oxygen is given off. In plants, and some lower animals, gas exchange takes place by **diffusion**, while in higher animals special respiratory surfaces have developed.

gene A hereditary unit that occupies a specific location on **chromosomes** and determines a particular characteristic in an organism: genes exist in a number of different forms and can undergo mutation.

geochemistry The study of the distribution and amounts of the chemical elements in minerals, ores, rocks, **soils**, water, and the atmosphere, and the study of the circulation of the elements in nature, on the basis of the properties of their atoms and ions.

geological time scale A chronological listing of geologic time periods, generally with the oldest period at the bottom of the list (see diagram for Ohio geologic time scale on page 13-7).

germ cell An egg or sperm cell.

glaciolacustrine The suspended material brought by meltwater streams flowing into lakes bordering glaciers.

gleization A process in saturated soils which involves the reduction of iron yielding **concretions** and a **mottled** appearance or removal of iron by leaching.

gleyed Said of a soil that has undergone **gleization** which is manifested by neutral gray, bluish, or greenish colors throughout the **soil matrix** or in mottles (spots or streaks) among other soil colors.

gravel Unconsolidated, natural accumulation of rounded rock fragments larger than **sand** (>2.0 mm in diameter).

greenhouse effect The warming of the Earth's atmosphere because it is transparent to incoming sunlight and opaque to heat radiated from Earth; opacity is increased by added amounts of carbon dioxide, water vapor, methane, and dust in the atmosphere.

groundwater Subsurface water that is below the **water table** (within the **zone of saturation**), including underground streams.

gust A rapid, brief increase in the strength of the wind relative to the mean strength during a specific period of time.

H

habitat The local environment occupied by an organism.

hail Hard pellets of ice of various sizes and shapes, more or less transparent, which fall from **cumulonimbus clouds** and are often associated with **thunderstorms**.

haploid Having the same number of sets of **chromosomes** as a **germ cell** or half as many as a **somatic cell**.

hardpan A general term for a relatively hard, **impervious**, and often clayey layer of soil lying at or just below the surface produced by the compaction or cementation of soil particles by organic matter, silica, iron oxides, or calcium carbonate.

hearth The floor of a fireplace, located inside or outside a dwelling, generally paved or lined with stone.

herbaceous plant Any green vascular plant of low stature whose stem does not become woody, either annual or grows from a perennial root or **rhizome**.

horizon A layer of **soil**, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes; the major horizons in descending order: O, A, B, C, and R.

humus The generally dark, relatively stable, part of the organic matter in soil, so well decomposed that the original sources can not be identified.

hydric soil A soil that is saturated, flooded, or ponded long enough during the growing season to develop **anaerobic** conditions in the upper part.

hydrophyte Plant, usually a **macrophyte**, that grows in water or on a **substrate** that is at least periodically deficient in oxygen as a result of excessive water content.

hypertrophy Excessive growth or development of an organ or tissue; term also applied to lakes with excessive nutrients.

Hypsithermal A postglacial interval of time (8,000 to 6,000 **YBP**) when the world's annual temperature was several degrees warmer than at present; also known as the Climatic Optimum or Thermal Maximum.

hypsographic curve A cumulative-frequency profile representing the statistical distribution of the relative areas of the Earth's surface (land and lakefloor) at various elevations above, or depths below, a given datum plane, e.g. lake level.

I

IGLD International Great Lakes Datum (IGLD 1985); reference plane used by American and Canadian agencies for measuring water levels in the Great Lakes, zero elevation equivalent to mean water level in the Gulf of St. Lawrence at Rimouski, Quebec, 1985.

impervious Said of rock, sediment, or **soil** that is incapable of transmitting a fluid; impermeable.

in situ In place; in archaeology, biology and geology, a term to indicate that an artifact, organism, or object is in the place in which it was originally deposited or lived.

Years before present, in millions of years	Eras and duration in years	Periods and duration in years	Area of outcrop in Ohio and principal rock types	
1.6	CENOZOIC 66+ million	QUATERNARY 1.5-2 million	northwestern 2/3 of Ohio— unconsolidated sand, gravel, clay	
		TERTIARY 62.5 million		
66.4	MESOZOIC 179 million	CRETACEOUS 78 million	NOT PRESENT IN OHIO	
144		JURASSIC 64 million		
208		TRIASSIC 37 million		
245		PERMIAN 41 million		southeastern Ohio—shale, sandstone, coal, clay, limestone
286	PALEOZOIC 325 million	PENNSYLVANIAN 34 million	eastern Ohio—shale, sandstone, coal, clay, limestone	
320		MISSISSIPPIAN 40 million	east-central, northeastern, and northwestern- most Ohio—shale, sandstone, limestone	
360		DEVONIAN 48 million	central, northeastern, and northwestern Ohio—shale, limestone	
408		SILURIAN 30 million	western Ohio—dolomite, limestone, shale	
438		ORDOVICIAN 67 million	southwestern Ohio—shale, limestone	
505		CAMBRIAN 65 million	NOT EXPOSED IN OHIO	Cambrian sandstones, shales, and carbonates and Precambrian sedimentary, igneous, and metamorphic rocks present in subsurface
570		PRECAMBRIAN 3,400 million		

Geologic Time Scale for the rocks exposed in Ohio (from Feldmann and Hackathorn 1966).

interstices Openings or spaces in rock or **soil**, particularly spaces between solid particles.

isostatic rebound The upward adjustment of the Earth's crust to reestablish equilibrium following an unloading of glacial ice that had previously depressed the land surface.

J

joint A fracture or parting in a rock, without displacement; joints often occur as a parallel series of fractures.

JTU Jackson Turbidity Unit; see **turbidity**.

K

kame A low mound, knob, hummock, or short irregular ridge, composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier.

kame terrace A terracelike ridge consisting of stratified sand and gravel formed as a deposit between a melting glacier and a higher valley wall.

Kjeldahl A chemical method used to determine the quantity of organic and ammonia nitrogen in a water or sediment sample.

krummholz The gnarled, twisted, and supine growth form of trees exposed to continuous strong, often cold winds.

L

lacuna An air space or cavity in the stems of certain plants.

lacustrine Pertaining to, produced by, formed in, or inhabiting a lake.

lagoon A shallow stretch of lake water near or communicating with the lake and partly or completely separated from it by a low, narrow, elongated strip of land, such as a **barrier beach**, sandbar, or spit.

lanceolate Lance-shaped, tapering from a rounded base toward an apex; said of a narrow, tapering **projectile point**.

larva (pl. **larvae**) The newly hatched, earliest stage of any of various animals capable of acquiring its own nourishment, that undergoes metamorphosis, differing markedly in form and appearance from the adult.

lead Any fracture, water opening, or long narrow strip of lake water through ice (especially **pack ice**) which is navigable by surface vessels.

lenticel A small pore found on the surface of stems and roots in higher plants; lenticels usually arise below a **stoma** of the original **epidermis**, where loose packing tissue (**cork**) becomes waterproofed with a fatty substance (**suberin**), leaving large intercellular spaces for gas exchange.

lichen A biological association composed of an alga and a fungus; because of low nutrient requirements, lichens can colonize barren environments (e.g. bare rock) and as such are significant **pioneer species** in **succession**.

lignified stem A cellulose plant stem impregnated with **lignin**, resulting in the formation of wood.

lignin A complex, non-carbohydrate polymer found in the cell walls of woody plants, which functions to provide stiffening to the cell and bark fibers; since lignin forms an impermeable barrier, the cells are dead.

limestone A **sedimentary rock** primarily consisting of calcium carbonate.

limnetic Pertaining to organisms inhabiting open waters of lakes; said of conditions in the open waters of lakes and inland seas.

limnology The science that deals with life in inland waters and all factors which influence it; the study of lakes and streams.

lithic Rock; objects or artifacts made of stone.

lithification The conversion of a newly deposited, unconsolidated sediment into a coherent, solid rock, involving processes such as cementation, compaction, **desiccation**, and crystallization; conversion may occur concurrent with, soon after, or long after deposition.

lithology Study of the description of rocks.

Little Ice Age A cool climatic interval following the warm **Medieval** period (16th to 18th centuries AD).

loam A rich, **permeable soil** composed of a **friable** mixture of relatively equal proportions of **sand**, **silt**, and **clay** as well as organic matter (**humus**); specifically, sand (23-52%), silt (28-50%), and clay (7-27%).

LWD Low Water Datum; datum plane used for National Oceanic and Atmospheric Administration navigational charts of Lake Erie; equivalent to 173.49 m (569.2 feet) above International Great Lakes Datum (IGLD 1985) or 173.80 m (570.2 feet) above Mean Sea Level (MLS 1929).

M

macrophyte Any plant that can be readily observed without the aid of optical magnification, including all vascular plants and large algae (macroalgae).

magnetite An iron oxide mineral that forms **sand** sized particles in the beaches along the Lake Erie shoreline.

mano A Spanish term for an **artifact** used in the hand for grinding grain, seeds, or rock material on stone slabs (**metate**) to obtain a meal or pigment.

Medieval Relating or belonging to the Middle Ages (period in European history between antiquity and the Renaissance, often dated from **AD** 500 to 1500).

metate A Mexican term for slabs of stone on which grain was placed to grind by a **mano**.

midden A deposit of refuse material; often called a kitchen midden.

mitigation Any action which reduces or eliminates adverse effects which would result from a proposed action (e.g. highway construction); mitigation may include project redesign or relocation, data recovery and documentation, etc.

MLS Mean Sea Level; datum plane used for U.S. Geological Survey topographic maps, mean tide level at New York City, 1929.

monocotyledon (monocot) Any **angiosperm** (flowering **vascular plant**) of the class Liliopsida; plants characterized by an embryo (seed) with a single **cotyledon** (specialized seed leaf that acts as a food storage organ and after germination functions as a leaf); comprises over 75,000 of plants (e.g. grasses, sedges, rushes, lilies, irises, and orchids).

moraine A mound, ridge, or other distinct accumulation of unsorted, unstratified glacial drift, predominantly **till**, deposited chiefly by direct action of glacial ice, in a variety of topographic landforms that are largely independent of control by the surface on which the drift lies.

morph Form, as in the “red morph” when referring to a color variant in a group of plants or animals.

morphological Pertaining to the shape, form, and general appearance of an organism or geological feature.

mottled Said of a **soil** or rock that is irregularly marked with spots of different colors that vary in size, indicating in soils, poor drainage and lack of aeration.

multi-component site An archaeological site showing evidence (**artifacts**) of occupation by more than one culture, each with distinct chronological and geographical connotations; site with artifacts from multiple time periods.

N

nannoplankton Small plankton that generally pass through a standard plankton net (10 to 50µm).

Neoglaciation Modest readvances of mountain and polar glaciers following the **Hypsithermal** interval and during the **Little Ice Age** interval of the late Holocene epoch.

netsinker A stone weight that is used to sink the bottom edge of a fishing net.

neuston Community of plants and animals living associated with the water’s surface; epineuston live on the surface film and hyponeuston live at the underside of it.

NOAA Acronym for National Oceanic and Atmospheric Administration within the United States Department of Commerce.

nomadic Said of a group of people who have no fixed home and move according to the seasons from place to place in search of food, water, and grazing land.

NTU Nephelometric Turbidity Units; see **turbidity**.

O

obligate Essential or necessary; unable to exist in any other environment, state, or relationship.

ODNR Acronym for Ohio Department of Natural Resources.

OEPA Acronym for Ohio Environmental Protection Agency.

omnivore An organism feeding on both animals and plants.

open water (1) A relatively large area of freely navigable water in an ice-filled region, specifically water in which the concentration of floating ice is less than 10%; (2) lake water that remains unfrozen or uncovered by ice during the winter (3) lake water that is free of emergent vegetation and dense masses of submerged vegetation at shallow depths.

opposed rim The rim of a pottery vessel that is characterized by a contrasting or counterbalanced design.

ossuary A container or receptacle, such as an urn or a vault, for holding the bones of the dead.

P

pack ice Any area of lake ice (other than **fast ice**) composed of a heterogeneous mixture of ice of varying sizes and ages and formed by the jamming or crushing together of pieces of floating ice.

pagan Said of a people who adhere to a religion that does not acknowledge the God of Judaism, Christianity, or Islam; heathen.

papilla (pl. **papillae**) A small, nipple-like eminence or projection from the surface of a structure, sometimes containing sensory apparatus.

PAR (Photosynthetic Active Radiation) A measurement of the wavelengths of light that can be used in photosynthesis.

parent material The disintegrated and partly weathered bedrock or other geologic material from which a **soil** has formed.

pathology The study of the nature of disease and its causes, processes, development, and consequences; anatomic or functional manifestations of a disease.

perennial Said of a plant that persists for several years with a period of growth each year.

permeable Said of a porous rock, sediment, or soil that has the capacity for easily transmitting a fluid.

phase In archaeology, remains or artifacts of what is presumed to be a single people at a given period in their history.

photic zone That portion of a lake where light intensity is sufficient to accommodate plant growth (typically $\geq 1\%$ of surface light).

photomicrograph A picture taken through a microscope, frequently through an electron or a scanning electron microscope.

photosynthesis The process that takes place within certain cells of green plants by which simple sugars are manufactured from carbon dioxide, water, and mineral nutrients with the aid of chlorophyll in the presence of light.

phreatic divide An underground feature that separates one basin of **groundwater** flow from another.

phylogenetic Relating to or based on evolutionary development of a plant or animal.

pioneer species Plant or animal that colonizes a previously uninhabited site (e.g. a **lichen** on a rock).

pistil The flask-shaped, female reproductive organ of a flower, consisting of a stalk (style) that connects an enlarged base where seeds are produced (ovary) to a pollen-receiving tip (stigma).

pistillate flower A flower that contains only female reproductive organs.

pleuston Aquatic organism that lives suspended at the water surface by their own buoyancy, normally positioned partly in the water and partly in the air.

plowzone The portion of the **soil** that is disturbed (mixed) by agricultural practices, usually extending to a depth of 0.2 to 0.5 m and roughly corresponding to the O and A soil **horizons**.

pollen A grain (male spore) produced in higher plants by the **stamen**'s anther.

population All individuals of one species occupying a defined area and usually isolated to some degree from other similar groups.

post mold The remains, or discoloration of the **soil**, left after the decay of a wooden post that was placed in the ground to form a defensive structure or support a dwelling.

pottery Ware, such as vessels, vases, pots, bowls, or plates, shaped from moist clay and hardened or dried by heat, generally fired (baked) in a kiln.

polynya Any nonlinear opening enclosed in ice, especially a large expanse of water other than a **lead**, surrounded by lake or sea ice, but not large enough to be called **open water**; commonly found off the mouth of a large river.

precipitation In meteorology, any **aqueous** deposit, in liquid or solid form, derived from the atmosphere.

primary producer An organism capable of manufacturing its own food from inorganic raw materials; **autotroph**.

primary production The production of organic material from inorganic sources by an **autotroph**; rate of photosynthetic carbon fixation by plants and bacteria.

production In **limnology**, the growth of organisms in a body of water expressed in amount of growth per unit time per unit area or volume of the body of water.

productivity (productive) In **limnology**, a general term for the organic fertility of a body of water; relative capacity of a body of water to produce organisms or a particular organism.

projectile point The point of any weapon such as an arrow, lance, or spear.

promontory A high ridge of land or rock, generally jutting out into a body of water or overlooking a lowland; a headland.

propagation Multiplication or increase in the **population** of an organism, as by natural reproduction.

Q

quadrat A delimited area for sampling flora or fauna; usually taken randomly and typically consisting of a 1-m square frame.

quarry Open workings in the Earth's surface, usually for the extraction of stone.

Quaternary The second period of the Cenozoic Era, following the Tertiary. This period began about 2 million years ago and extends to the present; it consists of two grossly unequal epochs: the Pleistocene (ice age), up to 8,000 years ago, and the Holocene since that time.

R

radiocarbon dating (carbon-14 dating) A method of determining an age in years by measuring the concentration of carbon-14 (radioactive isotope) remaining in a sample of a formerly living organism which is based on the assumption that assimilation of carbon-14 abruptly ceases on the death of the organism. Carbon-14 has a half life of about 5650 years, thus the method is most useful in determining ages in the range of 500 to 70,000 years.

relief The elevations or general unevenness of the land surface; more strictly, the vertical difference in elevation between the hilltops and valleys of a given region.

respiration A process by which **gas exchange**, oxygen and carbon dioxide, takes place between an organism and the surrounding environment.

rhizome An underground plant stem that generally lies horizontally and that is often enlarged in order to store food.

rill A very small brook, trickling stream of water, or the small channel made by the stream.

riverine Pertaining to, produced by, formed in, or inhabiting a river.

RNA A constituent of all living cells, consisting of a long, usually single-stranded chain of alternating phosphate and ribose units with the bases adenine, guanine, cytosine, and uracil bonded to the ribose; structure and base sequence of RNA are determinants of protein synthesis and transmission of genetic information; ribonucleic acid.

S

saltate Sediment movement in streams where the particles move in short quick jumps instead of long gradual steady movements.

sand Individual rock or mineral fragments (particles) ranging in size 0.05 to 2.0 mm in diameter.

sandstone A **sedimentary rock** that originally formed from sand-sized particles.

saprophyte Any organism, especially fungi or bacteria, that grows on and derives its nourishment from dead or decaying organic matter; **decomposer**.

scraper A stone **artifact** used in the scraping of hides or soft materials; term is often modified by a prefix indicating the shape of the artifact (e.g. spurred end scraper and "humped-backed" scraper).

sedimentary rocks Bedrock formed from the deposition of mineral particles that have settled out of water.

seed beads Small, generally white, glass beads that were often sewn on clothing or other fabric items as decoration.

seiche The free oscillation of water resulting from either wind activity or barometric pressure differences on major water bodies.

SEM Acronym for scanning electron microscope.

serrated Possessing a notched or saw-tooth edge.

serrulate Bearing fine notches or minute teeth.

shale A **sedimentary rock** that originally formed from clay, silt or mud.

sherd A fragment of a clay vessel; potsherd.

shoots The part of a vascular plant above the ground, consisting of stem and leaves.

siliceous Said of rocks containing abundant silica (chemically resistant dioxide of silicon, SiO₂).

silt Individual mineral particles that range in size from 0.002 to 0.05 mm in diameter.

SNP Acronym for State Nature Preserve. A component of the Division of Natural Areas and Preserves, **ODNR**.

soil A natural, material on the Earth's surface that supports plants and that has properties resulting from the integrated effect of climate and living matter acting on geologic **parent material**, as conditioned by **relief** over a period of time.

soil aggregates Numerous soil particles held together in a single mass or cluster; natural soil aggregates, such as crumbs, blocks, or prisms, are known as peds, whereas, aggregates produced by tillage or logging are called clods.

soil consistence The feel and ease with which a lump of soil can be hand crushed, including descriptive forms such as loose (falls apart, noncoherent), friable (crumbles, crushes easily), firm (resistant, crushes with moderate pressure), plastic (deforms readily, forms rolls), sticky (adheres to other material when wet), hard (difficult to break when dry), soft (readily breaks into grains or powder when dry), and cemented (hard and brittle when wet or dry).

soil matrix The natural soil material of both mineral and organic matter; matrix color refers to the predominant color of a particular soil horizon.

soil profile A vertical section of soil through all of its **horizons** and extending into the **parent material**.

soil structure The arrangement of the individual soil particles into clusters that are separated from adjoining aggregates and have properties that are unlike those of non-aggregated particles, including structural forms such as platy (laminated), prismatic

(vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), granular (small clusters), massive (particles adhering without any regular **cleavage**, as in **hardpan**), and structureless (single grains, as in **dune sand**).

soil texture The relative proportions of **sand**, **silt**, and **clay** particles in a mass of soil.

solum The upper part of the **soil profile**, above the **parent material**, in which the processes of soil formation are active and generally consists of the A and B **horizons** (true soil); living roots of plants and burrowing animals are largely confined to this part of the soil.

somatic cell Any cell of a plant or an animal other than a **germ cell**; body cell.

spatial Pertaining to, involving, or having space; relating to a particular area.

specific heat The ratio of the quantity of heat required to raise the temperature of a given mass of a substance through a given range, to the heat required to raise the temperature of an equal mass of water through the same temperature range (approximately the heat required to raise the temperature of 1 cubic centimeter (cc) of a substance 1° C).

spermatophore A structure produced in the **cloaca** of a male consisting of a capsule or compact mass of **spermatozoa** extruded by certain invertebrates and primitive vertebrates and directly transferred to the reproductive parts of the female.

spermatozoa A sperm cell; the mature fertilizing **gamete** of a male organism, usually consisting of a round or cylindrical nucleated cell, a short neck, and a thin, motile tail.

stalk The stem of a leaf or flower.

stamen The male organ of a flower, consisting of a slender stalk (filament) and a knob-like, pollen-bearing tip (anther).

standing crop The total mass of organisms comprising all or part of a **population**, or other specified group, within a given area, measured as volume, mass, or energy (calories); **Biomass**.

stemmed Said of a **projectile point** that possesses an indented shank.

stoma (pl. **stomata**) An opening in the epidermis of leaves, and some stems, that enables **gas exchange**.

stratified Said of a lake or a sedimentary deposit that possesses horizontally formed layers.

stratum (pl. **strata**) A layer; in geology, a tabular or sheetlike layer of sedimentary rock; **bed**.

suberin A complex of fatty substances present in the walls of **cork** tissue which makes the tissue waterproof and resistant to decay.

sublimation The process by which a solid substance vaporizes without passing through a liquid stage.

subsistence economy An economic system (activities in which humans acquire food and satisfy other wants) in which a family or small band engages in both the production and limited processing required for local consumption without the benefit of trade or exchange with other groups.

subsoil The soil B **horizon**; roughly the part of the **solum** below the **plowzone**, where dark materials leached from the A horizon accumulate.

substrate The substance or base on which an organism lives and grows, or the surface to which a fixed organism is attached (e.g. soil, rock, water, leaf tissue, etc.).

succession In ecology, the gradual and orderly process of **ecosystem** development brought about by progressive changes in **community** composition leading to a stable **climax community** in a particular geographic region.

swamp forest Wet spongy ground, saturated or intermittently inundated by standing water, typically dominated by **woody plants**, but without a significant accumulation of surface peat.

T

taxon (pl. **taxa**) A named group of organisms of any rank (i.e. species, genera, family, order, class, phylum, or division).

taxonomic Relating to the theory and practice of classifying plants and animals.

temper Sand, grit, plant fibers, and other materials mixed with the clay of a vessel to prevent it from cracking during drying process.

temperate Characterized by moderate temperatures, weather, or climate; neither hot nor cold.

thunderstorm Sudden electrical discharges in the atmosphere, manifested by lightning flashes and sharp rumbling sounds; normally associated with **cumulonimbus clouds**, heavy rainfall, and less frequently **hail**.

till Unsorted and unstratified drift, generally unconsolidated, deposited directly by and under a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, and boulders ranging widely in size and shape.

tool-impressed Said of pottery with decoration produced by impressing a stone tool onto the surface of the soft clay.

topsoil The soil A **horizon**; roughly the upper part of the **solum** within the **plowzone**.

trade beads Glass beads manufactured in Europe during 16th to 18th centuries that were used as barter items for trade with native North American peoples.

transpiration Expulsion of excess water vapor from the inside of a leaf to the outside atmosphere, generally through evaporation at the leaf surface, via **stomata** and **lenticels**.

trophic Pertaining to an organism's stage or level of nutrition in a food chain.

tundra A treeless area between the icecap and the **boreal forest** tree line of Arctic regions, having a permanently frozen subsoil and supporting low-growing vegetation such as **lichens**, mosses, grasses, and stunted shrubs.

turbidity A measure of particles suspended in the water; measured as Jackson Turbidity Units (**JTU**) or Nephelometric Turbidity Units (**NTU**) depending on the apparatus used (1 JTU=1 NTU).

tussock A raised clump of grasses or sedges growing in a wetland.

U

unconformity A substantial gap in the geologic record of rocks caused by uplifting or erosion.

understory The foliage layer lying beneath and shaded by the main **canopy** of a forest, mainly seedlings, shrubs, and herbs; sometimes distinguished from the groundstory or lowest layer of vegetation (i.e. ground cover) in a stratified woodland or forest community.

undifferentiated Said of indifferent cells, tissues, or structures which show a lack of specialization; simple; homogeneous.

univorous Feeding on only one type of food.

unstemmed Said of a **projectile point** that lacks an indented shank.

updraft An upward current of air.

USACE Acronym for United States Army Corps of Engineers.

USEPA Acronym for United States Environmental Protection Agency.

V

varve A sequence of layers deposited by a glacier meltwater stream. Each varve consists of a coarse light colored summer layer grading into a thin fine dark winter layer.

vascular Said of vessels which conduct fluid (e.g. blood in mammals and water in plants).

vascular bundles A structure in **vascular plants** that runs up through the roots, into the stems, and out into the leaves, and whose function is transport of water and dissolved organic solutes within a plant.

vascular plant A plant with a well-developed conductive system and structural differentiation; the majority of visible terrestrial plants are vascular.

vermillion A bright red mercuric sulfide used as a pigment.

W

water table The upper surface of unconfined groundwater (atmospheric pressure); top of the **zone of saturation** where it meets the **zone of aeration**.

watercourse A natural, well-defined channel produced a definite flow of water.

watershed The region drained by a particular stream system; area contributing water to a stream, lake, or other body of water; drainage basin or catchment.

wetland Lands where saturation with water determines the nature of soil development and the types of plant and animal communities living in the soil and on its surface; environment transitional between terrestrial and aquatic systems where the water table is at or near the surface of the soil or is covered by shallow water; characterized by the presence of **hydrophytes** and **hydric soils**.

wigwam An Indian dwelling of the Great Lakes region commonly having an arched or conical framework of poles overlaid with bark, hides, or rush mats.

wind set-up The vertical difference in water level between the leeward and windward sides of a body of water, caused by the force of wind on the water surface; also measured as the rise from the still-water level on the leeward side of the body of water.

wind tide Vertical rise of the still-water level on the leeward side of a body of water, caused by the force of wind on the surface of the water.

windrow An accumulation of material formed naturally by the wind (e.g. pile of ice at the shoreline).

woody plant A **perennial** plant having a secondarily thickened **lignified stem**.

X

xeric A habitat characterized by a low supply of moisture and the organisms that exist in such a habitat.

xylem A woody plant tissue that is **vascular** in function, enabling transport of water with dissolved minerals within a plant, usually upward.

xylem vessel An empty tube formed from longitudinal fusion of cells with strong walls, whose function is transport of water for **transpiration**; vessels are aggregated into **xylem** tissue within the **vascular bundles** of **angiosperms**.

Y

YBP Used as a suffix, denoting, "years before the present."

yield The amount of organic matter (plant and animal) produced by a body of water, either naturally or under management.

Z

zone of aeration An underground zone, containing air under atmospheric pressure, extending down from the land surface to the **water table**.

zone of saturation An underground zone, below the **water table**, in which all of the **interstices** are filled with water under pressure greater than that of the atmosphere.

zooplankton A collective name for minute planktonic animals, such as microcrustacean, rotifers, and protozoans, that float in the water.