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Glossary of Terms

acid deposition - also known as acid rain, is an environmental phenomenon caused by air pollutants, mainly nitrates (NOX) and sulfates (SOX) primarily from burning fossil fuels. Acid deposition is characterized by extremely high acidity which is particularly harmful to sensitive ecosystems.

aquatic ecological system - dynamic spatial assemblages of ecological communities (e.g. rivers, streams, and lakes) with similar geomorphological patterns tied together by ecological processes (e.g. hydrologic and nutrient regimes, access to floodplains) or environmental gradients (e.g. temperature, chemical and habitat volume), and form a cohesive, distinguishable unit on a hydrography map.

barrens - Tennessee's barrens ecosystems are typically mosaics of open canopy woodlands, or lacking trees altogether, with a dominance of perennial grasses and herbaceous species

bioaccumulation - the process by which organisms can take up contaminants more rapidly than their bodies can eliminate them.

biodiversity - the full range of natural variety and variability within and among living organisms, and the ecological and environmental complexes in which they occur. It encompasses multiple levels of organization, including genes, species, communities, and ecological systems or ecosystems.

bioenergy - a general term that encompasses both biofuel and biomass as sources of energy generation.

biofuels - biofuels, generally defined as liquid fuels derived from biological materials, can be made from plants, vegetable oils, forest products, or waste materials. The raw materials can be grown specifically for fuel purposes, or can be the residues or wastes of existing supply and consumption chains, such as agricultural residues or municipal garbage.

biomagnification - also known as bioamplification or biological magnification, is the sequence of processes in an ecosystem by which higher concentrations of a particular chemical, such as DDT or mercury, are reached in organisms higher up the food chain, generally through a series of prey-predator relationships.

biomass - solid organic materials produced in a renewable manner for energy generation. Two categories of biomass fuels, woody fuels and animal wastes, comprise the vast majority of available biomass fuels.

buffer - conservation buffers are small areas or strips of land in permanent vegetation, designed to slow water runoff, provide shelter and stabilize riparian or other habitat areas. Strategically placed buffer strips in the agricultural landscape can effectively mitigate the movement of sediment, nutrients, and pesticides within farm fields and from farm fields.

conservation action - any act taken to directly abate a stress or source of stress to a target species or habitat, or to prevent the future development of a stress upon a species or its habitat.

conservation goal - in conservation planning, the number and spatial distribution of on-the-ground occurrences of targeted species, natural communities, and ecological systems that are needed to adequately conserve the target in an ecoregion.

Conservation Opportunity Area - Priority areas for conservation, spatially depicted on the landscape, that offer the best opportunities and potential for conservation of species of greatest conservation need and their habitats.

dam - any structure that impounds water.

decline/declining - the historical or recent decrease of a conservation target through all or part of its range. Declining species exhibit significant, long-term decreases in habitat and/or numbers, are subject to a high degree of threat, or may have unique habitat or behavioral requirements that expose them to great risk.

diadromous - Fish that can live in and are migratory between fresh waters and salt waters.

disjunct - distributional range of a species or community which is found in an ecoregion a significant distance from its primary range in other disconnected ecoregions. Disjunct species have populations that are geographically isolated.

distribution pattern - the overall pattern of occurrence for a particular conservation target. In ecoregional planning, distribution patterns are often described in terms of the relative proportion of the target's natural range occurring within a given ecoregion (i.e. endemic, limited, disjunct, peripheral, and widespread).

dry bed retention dam - a dry detention basin temporarily detains and stores collected stormwater runoff for a period of time, releasing the stormwater slowly to reduce flooding and remove pollutants. It is referred to as "dry" because it dries out between rain events. Pollutants are removed by allowing particulates and solids to settle out from the water. Detention does not normally occur until the inflow rate exceeds the design outflow rate.

dry-mesic (forest) - Oak or oak-hickory forest type (typically), characterized by well-drained soils and episodic fire.

ecological systems - ecological systems are dynamic assemblages of native plant and/or animal communities that 1) occur together on the landscape or in the water, 2) are tied together by similar ecological processes (e.g., fire, hydrology), underlying environmental features (e.g., soils, geology), or environmental gradients (e.g., elevation).

ecoregion - a relatively large geographic unit of land and water defined by the climate, vegetation, geology, and other ecological and environmental patterns.

element occurrence (EO) - a term originating from methodology of the Natural Heritage Program network that refers to species, natural communities, or other entities (e.g. migratory bird stopovers, ecological systems) of biodiversity that serve as both conservation targets and as units for organizing and tracking information.

endemic - distributional range of a species or community which primarily or only occurs in one specific area

eutrophication - the process by which a body of water acquires a high concentration of nutrients, especially phosphates and nitrates. These typically promote excessive growth of algae. As the algae die and decompose, high levels of organic matter and the decomposing organisms deplete the water of available oxygen, causing the death of other organisms, such as fish. Eutrophication may be a natural, slow-aging process for a water body, but human activity can greatly speed up or amplify the process.

global rank - a numeric assessment of a biological element's relative imperilment and conservation status across its range of distribution ranging from G1 (critically imperiled) to G5 (secure). Assigned by the Natural Heritage Programs, global ranks for species and natural communities are determined primarily by the number of occurrences or total area of coverage (communities only), modified by other factors such as condition, historic trend in distribution or condition, vulnerability, and threats.

Greatest Conservation Need - a designation determined by each state's fish and wildlife agency, which identifies the species and their associated habitats that are most at risk, threatened, or deserving of conservation action for other reasons.

green infrastructure - a strategically planned and managed network of natural lands, working landscapes, and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations.

habitat fragmentation - occurs when large ecosystems are separated into smaller pieces, separating and isolating groups of species and habitats from one another, which impacts breeding patterns and may lead to inbreeding.

headwaters - the source area where a river or stream begins in a landscape.

hibernacula - (single hibernaculum) location where a creature seeks shelter over the winter, such as bats using a cave.

incompatible management practices - incompatible practices modify habitat composition, type, and/or ecological processes in a way that is not compatible with the needs of target wildlife or plant species.

instream flow - the natural variations of water levels in rivers and streams, critical to the maintenance of biodiversity and other values, such as recreation, in aquatic ecosystems.

invasive exotic species - nonindigenous species which have been introduced either intentionally or accidentally into areas outside their natural range and that have the capacity to outcompete native species either reproductively or for natural resources.

karst - landscape formed from the dissolution of soluble rocks including limestone, dolomite and gypsum. Karst is characterized by sinkholes, caves, and underground drainage systems.

keystone species - species with an important role in ecosystem function, such as top carnivores.

limited - distributional range of a species or natural community which occurs in the ecoregion and within a few other adjacent ecoregions.

mesophytic (forest) - a forest that generally receives a moderate amount of moisture.

natural communities - terrestrial plant communities of definite floristic composition, uniform habitat conditions, and uniform physiognomy. Natural communities are defined by the finest level of classification, the "plant association" level of the National Vegetation Classification. Like ecological systems, natural plant communities are characterized by both a biotic and abiotic component.

natural process - processes in nature that play a vital role in ecosystem function by causing change or disturbance on a cyclical basis, such as flooding, fire, or plant succession. Habitat restoration can sometimes be achieved by incorporating natural processes into conservation designs.

occurrence - a spatially referenced location of a species or a location of a natural plant community or ecological system. Many occurrences are tracked by the various Natural Heritage Programs and are known as Element Occurrences. Occurrences may also be more loosely defined locations delineated through the definition/mapping or other spatial data or through the identification of areas by experts.

parcelization - generally refers to the division of ownerships that result in smaller holdings of land which, in turn, results in constrained management options and potentially adverse effects on ecosystem health and wildlife habitat. Parcelization is caused by subdividing large tracts into smaller forest tracts, ranchettes for residential use, or sale of large tracts to buyers who further subdivide the land.

prescribed fire - fire that is purposely lit under controlled conditions and guided by a burn plan to improve ecological health, reduce fuel loads that contribute to catastrophic fire, or achieve desired habitat conditions.

propagation - the breeding of plants or animals for reintroduction into suitable habitats as supplementation of existing populations or as a means of restoring locally extirpated populations.

problem - the combined concept of ecological stresses to a target and the sources of that stress to the target.

refugia - (single refugium) areas in which a population of organisms can survive through a period of unfavorable conditions.

rockhouse - a rockhouse is an area that typically has been eroded away by a stream under a large rock or bluff line. Common on the Cumberland Plateau, they are typically found in sandstone where the old stream meandered next to a rock bluff. .

sinkhole - a cavity in the ground, especially in limestone bedrock, caused by water erosion and providing a route for surface water to disappear underground.

source (of stress) - an extraneous factor, either human (i.e. activities, policies, land uses) or biological (e.g. non-native species), that infringes upon a conservation target in a way that results in stress.

species richness - the number of different species represented in an ecological community, landscape or region.

stress - something which impairs or degrades the size, condition, or landscape context of a conservation target, resulting in reduced viability.

split estate - in split estate situations, the surface rights and subsurface rights (such as the rights to develop minerals) for a piece of land are owned by different parties.

sprawl - low-density decentralized development at the fringes of a central city. It is characterized by a spreading out of development over a wide area with little or no connectivity to the contiguously developed area.

stream connectivity - streams, from headwaters to large rivers, provide pathways for the transport of a wide range of materials, energy and aquatic life. This transport moves upstream and downstream, between surface and groundwater, between channel and floodplain and in time, i.e. seasonal flooding or scouring.

stocking - relative to fish or other aquatic organisms, the practice of raising organisms in a hatchery and releasing them into appropriate lake, stream, or other aquatic habitat.

substrate embeddedness - the degree to which fine sediments surround coarse substrates on the surface of a streambed.

succession - the process of change in the species structure of an ecological community over time. Generally resulting in increasing structural complexity over time until a community becomes relatively stable or self-perpetuating in the absence of disturbance.

tailwater - waters located immediately downstream from a hydraulic structure, most often a dam.

target - specific components of biodiversity which serve as the focus of conservation, including the development and prioritization of conservation strategies. Conservation targets consist of ecological systems, natural communities, and species.

translocation - the capture, transport, and release or introduction of species, habitats or other ecological material from one location to another.

troglobite - an animal that cannot survive outside its cave environment.

troglophile - an animal able to live its entire life in a cave, but usually maintain some of their senses such as partial pigmentation and are usually only partially blind.

trogloxene - an animal that uses caves for shelter but does not complete its life cycle in them, for example bats.

umbrella species - a species or group of species, such as forest interior dwelling birds, whose habitat needs overlap those of other animals and plants.

viable/viability - the ability of a species to persist for many generations, or a natural community or ecological system to persist over some time period. An assessment of viability will often focus on the minimum area and number of occurrences and presence of natural processes necessary for persistence.

viewshed - the geographical area that is visible from a location. It includes all surrounding points that are in line-of-sight with that location and excludes points that are beyond the horizon or obstructed by terrain and other features (e.g., buildings, trees).

volant - able to fly or glide.

widespread - distributional range of a species or natural community which is typically found in the ecoregion, but common in many others also; the bulk of distribution may be elsewhere however.

vulnerability - the inability to withstand the effects of a hostile environment, generally measured by degree of exposure to hostile elements or change, inherent sensitivity to that exposure, and adaptive capacity to accommodate change.



Credits clockwise from top left: Lamprey on a Striped Shiner - Jeremy Monroe, Fisheries Illustrated; Streamside Salamander - Matthew Niemiller; Western Sandpiper - Chris Sloan; Bog Turtle - Jeffrey Basinger, Fisheries Illustrated; Upland Burrowing Crayfish - Carl Williams, TWRA; Little Brown Bats - Chris Ogle, TWRA