UNIVERSITY OF LEEDS

Glossary

Ecology and Wildlife Conservation

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A

Abundance

- Abundance is the number of organisms of a particular species.

Annotation

- Annotation, in relation to bioacoustics, involves highlighting areas of the sound files, with notes about what makes the sound.

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B

Bioacoustics

- Bioacoustics is the area of science that is interested in the sounds produced by living organisms.

Biodiversity

- Biodiversity is a broad term used to describe the range of organisms present in a location. Often, biodiversity is expressed as the number of species in an area but it can also be used to describe the variety in other levels of organisation, such as genes or ecosystems.

Biological organisation

- When we talk about "biological organisation", we mean the different scales at which life on earth is structured: atoms to biospheres.

Bird strike

- A bird strike occurs when a bird is killed by flying into an obstacle, such as a wind turbine, building, or aeroplane.

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C

Climate change

- Climate change is the ongoing pattern of change in atmospheric conditions, generally seen in warming temperatures and a greater frequency of extreme events (droughts, floods, storms) over the past 100 years. Climate change has been attributed to increases in concentrations of greenhouse gases in the atmosphere resulting from human activity

Community

- A community contains many different populations that occur in the same habitat.

Coral bleaching

- Coral bleaching occurs when the coral expel their zooxanthellae that gives them their colour, causing the coral to turn white.

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D

Deforestation

- Deforestation is the removal of trees (often in large numbers) from the environment

Dinoflagellates

- Dinoflagellates are single-celled organisms that possess two "flagella" (whip-like projections that are used for movement). They are common in marine and freshwater ecosystems, where they can occur in large numbers and can produce toxins that are harmful to humans. Dinoflagellates are also one of the two groups of organisms that, along with polyps, make up coral.

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Ecological network

- An ecological network is a way of describing communities of organisms based on their interactions. Within the network, each species is a point (or "vertex", in network jargon) and each interaction is a line (or "edge") between two points. Mathematical descriptions of ecological networks have shed a great deal of light on how species interact through these complex sets of interactions.

Economic argument

- The economic argument for conservation suggests that humans should protect the natural world because of the services and benefits nature provides. For example, pollinators help our crops to produce fruit and trees clean pollutants from the air.

Economic value

- Sometimes we can calculate the value of an organism, population, community, or ecosystem, based on the services that it provides. For example, we can calculate the value of all the world's animal-pollinated crops at USD$235-577 billion. Since we would not have those crops without pollinators, we assign that economic value to the pollinators.

Ecosystem

- An ecosystem is the interactions of organisms, populations, and communities with their physical environment.

Ecosystem services

- Ecosystem services are those benefits that people gain from the natural world. They are usually broken into four categories: supporting (e.g. pollination, soil), provisioning (e.g. food, water), regulating (e.g. air purification, carbon capture) and cultural (e.g. recreation, art).

Endangered species

- A species that is at risk of going extinct.

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F

FIT Count

- Flower-insect timed (FIT) counts involve sitting and watching pollinators as they visit certain species of plants. This is a standardised form of pollinator monitoring that allows us to compare results across many researchers and citizen scientists. See also focal floral observations.

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Foraging locations

- Locations where organisms go to feed.

Fossil fuels

- Fuels such as oil, coal and gas that were formed in the geological past from biological material

Functional diversity

- The diversity of processes that organisms perform within an ecosystem.

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G

GPS data logger

- A GPS data logger that uses satellites to record where animals travel. Modern GPS loggers can record locations to within a few metres on clear days.

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Intrinsic value

- The intrinsic value, sometimes called the "existence value", of an organism is the value of that organism that is derived purely from the organism itself, rather than because it has economic or social value to people. It is argued that organisms have an innate worth regardless of whether or not humans can use them for a purpose..

Invasive species

- An invasive species is one that can replace native species and disrupt communities. They can also bring parasites and diseases that harm local species.

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Machine learning

- The computational approach that teaches machines to solve problems. In the case of bioacoustics, this involves machines learning to differentiate the sounds that different animals make.

Metabarcoding

- Metabarcoding involves taking a sample of genetic material, analysing it in a laboratory to look for a small number of genes that are found in most organisms. The small variations in those genes are almost unique to different species (like a barcode is to a product in a shop) and so by comparing variations in that code against genetic codes in a database we can try to identify which species it came from.

Moral obligation

- The moral argument for conservation suggests that humans should protect the natural world because it is a good thing to do, and because we are the cause of its decline.

Mutualistic symbioses

- Mutualistic symbiosis is a relationship between two or more organisms that live in the same place and gain a mutual benefit from interacting with each other.

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O

Organ

- An organ consists of groups of tissues that perform a specific function.

Organism

- An organism is an individual living organism.

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P

Pan traps

- Traps used to catch pollinating insects. The traps themselves are brightly coloured bowls (usually white, blue and yellow) that are filled with water and a small amount of detergent. The animals mistake the traps for flowers and fall into them and then they can be collected later.

Pollution

- A substance or chemical that, when released into the environment, causes damage. Exceptions to this are thermal pollution, where increases in temperature (such as from a power station discharge) result in environmental damage.

Polyp

- A polyp is part of the life cycle of a range of species including the jellyfish, anemones and corals. In corals, the polyps secrete calcium carbonate that forms the physical structure of coral reefs. While some coral polyps can catch passing animals with stinging tentacles (like jellyfish), most obtain their energy from photosynthetic microorganisms called dinoflagellates that live within their tissues.

Population

- A population is a group of organisms of the same species found within a habitat.

Pressure logger

- A pressure logger records pressure in air or water. Since pressure decreases with increasing altitude, researchers can use pressure to calculate the height of an animal above the ground.

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R

Renewable energy

- Energy that is produced from sources that are not depleted when used, such as solar power and wind.

Resilience

- Resilience is how long it takes an ecosystem to recover after a disturbance.

Resistance

- Resistance is how well an ecosystem resists the stressors that are put on it.

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Specialist species

- Specialist species are those that rely on one or a small range of resources (e.g. habitats, food) or environmental conditions (e.g. temperature, precipitation).

Species richness

- Species richness is the number of different species present in an area. .

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T

Taxonomic

- Taxonomy is the branch of science that deals with classifying phenomena, including species. "Taxonomic diversity" is the diversity of different classes of organisms (often species).

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Zooxanthellae

- Coral comprise two organisms that work together for mutual benefit. The Zooxanthellae are a group of single-celled microorganisms called the dinoflagellates that live within coral polyps and provide them with nutrients through photosynthesis.

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