

Biological Species

A group of **interbreeding natural** population that **do not** (usually) successfully **mate** or **reproduce** with **other such groups** (which occupy a specific niche)

Asexual Species

Fragmentation - Starfish An arm is removed, and grows into a new Starfish. Where the arm that was removed, a new arm will regrow on the old body.

Budding - Yeast Buds come off of their organisms which, are genetically identical to them.

When relatives mate

Two different, yet closely relating species mate	Horse + Donkey = Mules (mostly infertile)	Russet-backed Thrush + Oliv-backed Thrush (fertile offspring)
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Cohesion Species

Small group of cohesive individuals that share intrinsic cohesive mechanisms.

Genetic cohesive mechanisms Gene flow and stabilising selection function to maintain species integrity

Cohesion Species (cont)

Ecological cohesive mechanisms Abundance, demographic stability, strengths of interactions with other species

Potential for genetic and/or demographic exchangeability. Downplays hybridisation (i.e. what separates species)

Ecological Species

Lineages that **occupy** and **adaptive zone** **different** in some way from that of any other lineage **within** its range, and which **evolves separately** from all other lineages **outside** its range

Common ancestor but now diverged **Ecological competition** within its **own species**

Adapting to individual niches

Recognition Species

Recognise each other for the purpose of **mating and reproduction** Linked to **features** used to recognise mates

White peacock Females would not recognise him as the same species. They may not mate with him.

The Western meadowlark and Eastern meadowlark Look very similar but have a different song. They do not breed as their distinct song prevents them from recognising each other.

The sixth mass extinction

Earth appears to be undergoing a **6th mass extinction** Extinction is occurring **faster** than **"background extinction"** (which occurs between the mass extinction events)

1 species extinct per 1 million species **each year** Rate of between 10-10,000 times faster than background extinction

Recent data

<i>Lower estimate</i>	200-2000 species a year
<i>Upper estimate</i>	10,000-100,000 species a year

Extinction comes after

Decrease in population size	Decrease in population distribution
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Hard to know..

We don't know how many species exist

Impossible to estimate >Take **samples** and extrapolate up >Look at **patterns** in identification rates >Look at **ratio** - such as 1:6 vascular plants to fungi

Bias towards species >Charismatic >Larger >Common species

Least known or described >Fungi >Viruses >Bacteria

1.5 million catalogued so far 100k well known

Estimated to be 3-10 million species **globally**

Anthropogenic causes

Anthropogenic hazards are **hazards** caused by **human action** or **inaction**. They are contrasted with natural hazards. Anthropogenic hazards may adversely affect humans, other organisms, biomes, and ecosystems.

land development is altering the landscape in any number of ways such as:
Changing landforms from a natural or semi-natural state for a purpose such as agriculture or housing
Subdividing real estate

overexploitation the action or fact of making excessive use of a resource.

Species translocations and introductions Translocation: The intentional capture and release of animals to the wild to establish, reestablish, or augment a population.

pollution the presence in or introduction into the environment of a substance which has harmful or poisonous effects.



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