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Species Interaction

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Habitat and Niche

- A habitat is the home of the animals or an organism lives.
- Niche: An organism role in the ecosystem.
- No two species can exact same niche, because they do not exact same thing.
- It gets the food, water, shelter and space to live in



Ecological equivalent: species occupy similar niches and live in different geographical regions.



Camouflage

- **Camouflage** is protective coloration in which an animal resembles its background.







Species interaction

- Predator/Prey
- Parasitism
- Commensalism
- Mutualism

Prey – predation

- It is any interaction between two organisms in which one organism (predator) and consumes all or part of the other (prey)



Herbivorous prey predation



An herbivore grazing on a plant is another example of predation.



Figure 4: A carnivorous pitcher plant.

A carnivorous pitcher plant that preys upon insects by luring them into the elongated tube where the insects get trapped, die and are then digested.

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Predation as Herbivory



Figure 5: Sharp thorns on the branch of a tree, used as anti-herbivory defense.

Symbiosis

- **Symbiosis** is an intimate relationship between different species in which at least one species depends upon the relationship to survive.

TYPES OF SYMBIOSIS

- **Mutualism:** Both partners benefit from the relationship (+, +)
- **Commensalism:** One partner benefits from the relationship; the other partner is not affected (+, 0)
- **Parasitism:** One partner benefits from the relationship; the other partner is harmed (+, -)

Mutualism



(a) Acacia tree and ants (genus *Pseudomyrmex*)

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- Acacia ants live in acacia trees.
- The tree provides big hollow thorns as a home for the ants.
- The tree also provides food for the ants in yellow swellings on the leaves (red oval).

- The ants also clear an area around the tree of competing vegetation.
- Without the ants, the acacia tree cannot compete with other trees.



(b) Area cleared by ants at the base of an acacia tree

Flowers and their Pollinators (examples: Bees and hummingbirds gather nectar and spread pollen)



Examples of Mutualism

- The oxpecker is a bird that has a mutualistic relationship with a rhino or a zebra.
- Ocean: Zooxanthellae are photosynthetic algae that lives inside the corals tissues.

Commensalism

Cattle Egret

- The cattle egrets eat insects that are flushed as the big herbivores move around.
- The herbivores get no benefit or harm from the egrets



Orchids Growing on Branches of Trees

- Orchids belong to a family of flowering plants that form a commensal relationship with the trees.
- It is a well-known epiphytic plant that grows on the branches or trunks of other trees.
- Orchids are usually found in dense tropical forests. They form their base of attachment on the branches of trees,
- and benefit by getting adequate sunlight and nutrition that flows down the branches.
- The orchids do not grow to a large size, and thus the host tree is not harmed in any way.



Epiphytic bromeliads that grow on the limbs of large tropical rainforest trees.

These benefit by occupying space on the limb receiving rain and sunlight, but do not harm the tree.



Parasitism

- An organism that lives at the expense of another (host), which it does not usually kill.” *Usually smaller than host.*



Ticks



Fleas



Tomato Hornworm with Wasp Eggs



Tape worm



Mosquito on humans

Thank You