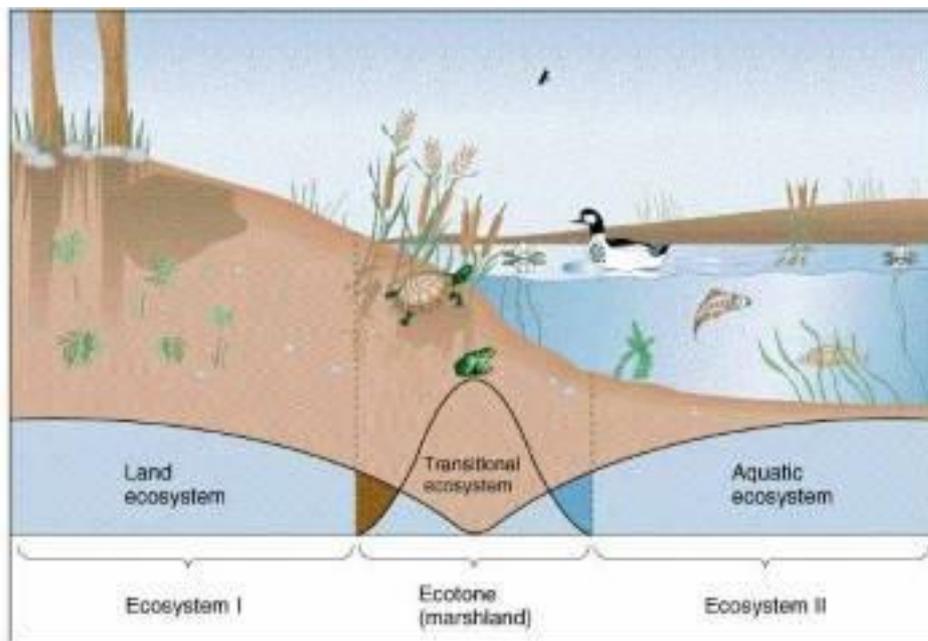


Ecotone

- An ecotone is a zone of junction or a transition area between two biomes [diverse ecosystems]. It is where two communities meet and integrate.
- For e.g. the mangrove forests represent an ecotone between marine and terrestrial ecosystem. Other examples are grassland (between forest and desert), estuary (between fresh water and salt water) and river bank or marsh land (between dry and wet).



Characteristics of Ecotone

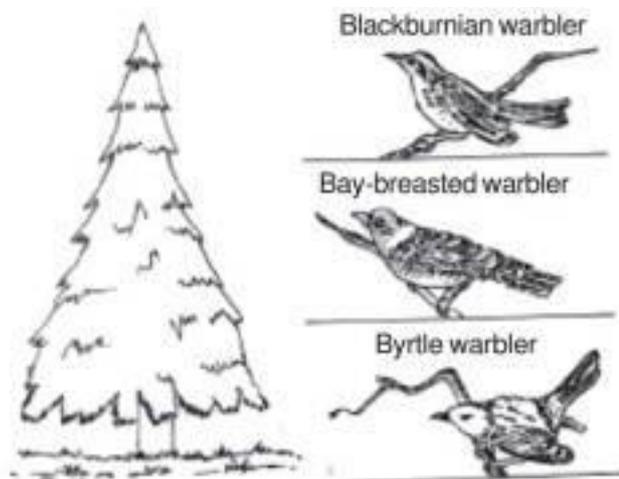
- It may be narrow (between grassland and forest) or wide (between forest and desert).
- As it is a zone of transition, it has conditions intermediate to the adjacent ecosystems. Hence it is a **zone of tension**.
- Usually, the number and the population density of the species of an outgoing community decreases as we move away from community or ecosystem.
- A well-developed ecotones contain some organisms which are **entirely different from that of the adjoining communities**.

Edge Effect – Edge Species

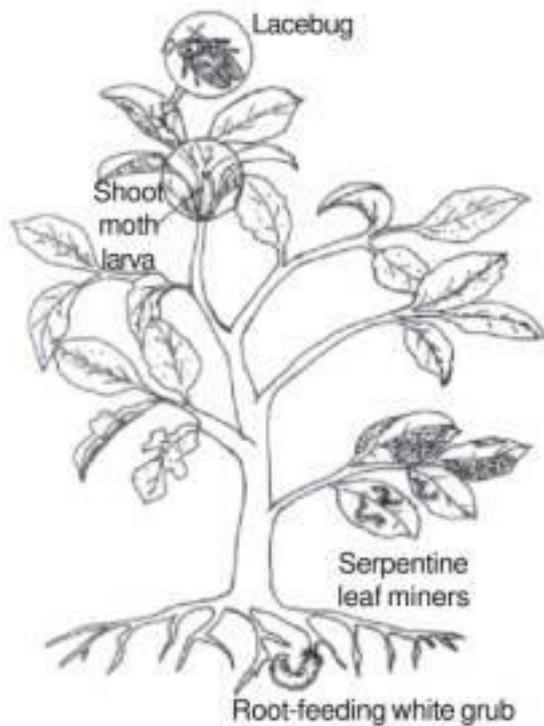
- In ecology, edge effects refer to the changes in population or community structures that occur at the boundary of two habitats (ecotone).
- Sometimes the number of species and **the population density of some of the species in the ecotone is much greater than either community. This is called edge effect.**
- The organisms which occur primarily or most abundantly in this zone are known as edge species.
- In the terrestrial ecosystems edge effect is especially applicable to birds. For example the density of birds is greater in the mixed habitat of the ecotone between the forest and the desert.

Ecological Niche

- Niche refers to the unique functional role and position of a species in its habitat or ecosystem.
- In nature, many species occupy the same habitat but they perform different functions.



The three species of warbler birds search for insects as food in the forest at different levels in the tree and so occupy different niches



Different species of insects feeding on different parts of the same plant

- The functional characteristics of a species in its habitat is referred to as “niche” in that common habitat.
- Habitat of a species is like its ‘address’ (i.e. where it lives) whereas niche can be thought of as its “profession” (i.e. activities and responses specific to the species).
- A niche is unique for a species while many species share the habitat. No two species in a habitat can have the same niche. This is because of the competition with one another until one is displaced.
- For example, a large number of different species of insects may be pests of the same plant but they can co-exist as they feed on different parts of the same plant.
- A species’ niche includes all of its interactions with the biotic and abiotic factors of its environment [habitat niche – where it lives, food niche – what it eats or decomposes & what species it competes with, reproductive niche – how and when it reproduces, physical & chemical niche – temperature, land shape, land slope, humidity & other requirement].
- An ecological niche describes how an organism or population responds to the distribution of resources and competitors (for example, by growing when resources are abundant, and when

predators, parasites and pathogens are scarce) and how it in turn alters those same factors (for example, limiting access to resources by other organisms, acting as a food source for predators and a consumer of prey).

Niche plays an important role in conservation of organisms. If we have to conserve species in its native habitat we should have knowledge about the niche requirements of the species and should ensure that all requirements of its niche are fulfilled.