

---

# SECTION 3.1: HOW CHANGES OCCUR NATURALLY IN ECOSYSTEMS

**1. What is natural selection?**

The process that makes change possible in living things.

**2. Give an example of how natural selection works?**

The slimmer, streamlined shape of the open water stickleback is more efficient for escaping predators.

**3. What is adaptive radiation?**

The development of a number of new species from a common ancestor. The new species are adapted to inhabit different niches.

**4. Give an example of adaptive radiation.**

Cichlid fish of Lake Victoria in Tanzania. Finches of the Galapagos Islands.

**5. What is ecological succession?**

Changes that take place over time in the types of organisms that live in an area. There are two types of succession Primary and Secondary.

**6. What are the steps in primary succession**

Bare rock → Lichens grow on the rock → Lichens die → Moss grows → Organisms move in → Plants begin to grow → Tree seeds are transported by animals → trees grow.

**7. What is a mature community?**

A mature community is also known as a climax community. This community contains multiple biomes – biomes are constantly changing.

**8. What steps are involved in secondary succession?**

Secondary succession occurs as a result of a disturbance to an area that already has soil, and was once home to living organisms.

**9. What other disturbances can affect mature ecosystems?**

Flooding, drought, tsunami, fire and insect infestations

**10. How do each of these disturbances impact mature ecosystems?**

- Flood: Toxic chemicals are present in floods. Contains diseases harmful to humans. Causes climate change
- Drought: Can destroy habitats when water becomes scarce. Causes crop failure. Plants and animals die.
- Tsunami: Destroys plants and animals. Seriously disrupts habitats and food webs. Salt the tsunami drags up affects the composition of the soil.
- Insect Infestations: Beetles carry a fungus with them that destroys plant tissue and prevents the tree from using resin to sweep the beetle away.
- Fires: Cause damage to plants as they burn them however the burning allows the soil to become exposed and allow organisms to regrow.