

## Session Five

Last session we got to know more about Wild Flowers & Plants, identifying different types and learning about their importance. This week we are going to look in more depth at:

### *Ecosystems*



**Location:** Garden or Playing Field, Park or Glen, Coast or Plantation

**What you need:**

- Print the booklet OR use some scrap paper and copy out our activities
- Camera and/or colouring pencils

**Aims:**

- Be able to identify different ecosystems
- Know the make up of an ecosystem

**What we will cover:**

- Types of ecosystem
- What's in an ecosystem
- Threats to ecosystems

**Ranger Work:**

- Ecosystem ID
- Producers, Consumers, Decomposers
- Macro & Micro ecosystems

## Types of Ecosystem

An ecosystem is made up of all of the living and non-living things in an area. This includes all of the plants, animals, and other living things that make up the communities of life in an area. An ecosystem also includes non-living materials, for example, water, rocks, soil, and sand.

**There are three types of ecosystem:**

**Aquatic** – Rivers, Lakes, Ponds, Oceans, Swamps, Bogs and Seas

**Terrestrial** – this is anywhere away from water, such as Grasslands, Forests, Deserts, Moorland

**Artificial** – anywhere that is man-made, for example, Crop Land, Reservoirs, Gardens, Aquariums, Parks or Plantations

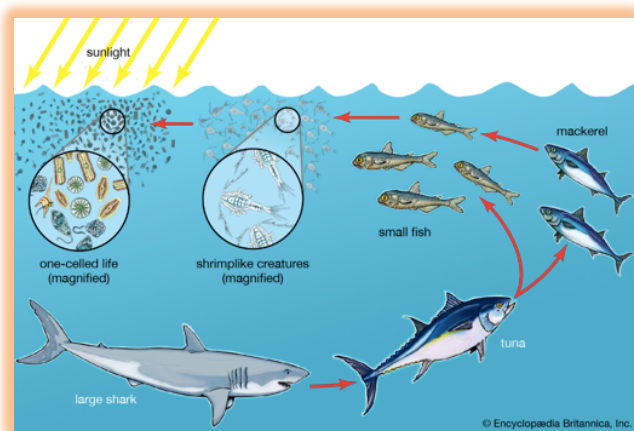
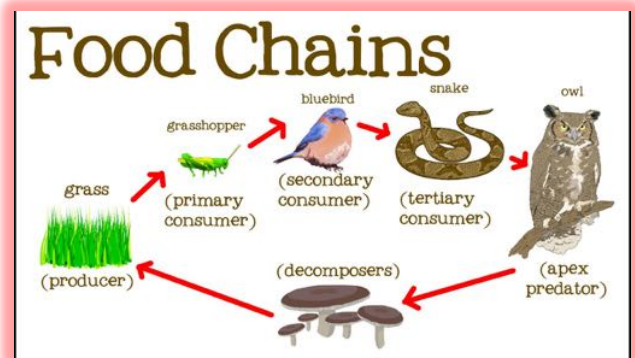
**Can you think of any examples of these three types of ecosystems in and around the Isle of Man? Can you Mark on the map where they are and label them?**



## Ecosystems are made up of two parts; Living and Non-living

An ecosystem usually contains many different kinds of life. A grassland, for example, is an ecosystem that contains more than just grass. It includes other plants, mammals, insects, earthworms, and many tiny living things in the soil.

Each living thing in an ecosystem has a role to play—as a producer, a consumer, or a decomposer. Green plants are producers. They make their own food through a process called photosynthesis. Animals, including humans, are consumers. They eat, or consume, plants or other animals. Bacteria and other living things that cause decay are decomposers.

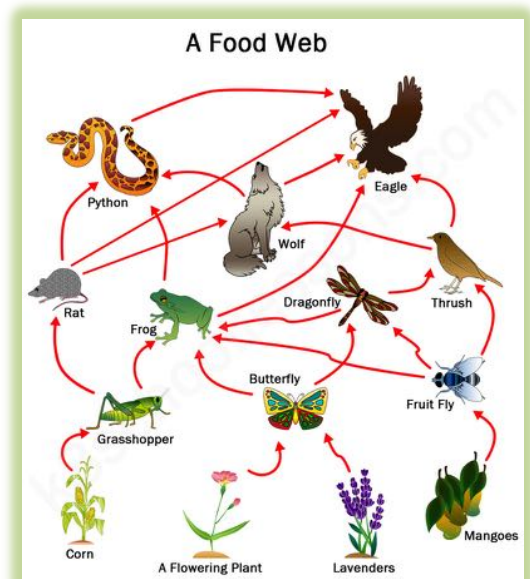


Decomposers break down the waste products and dead tissue of plants and animals. They return nutrients to the soil, where new plants grow. The way that producers, consumers, and decomposers provide nutrients for one another is called a food chain.

The non-living parts of an ecosystem are things like rocks, water,

soil, sand and air. All of these are vital to the survival of the living parts and are usually where the chain starts and/or finishes.

Most ecosystems have more than one food chain and these food chains overlap and connect to form a food web. For example, in the chain above grasshoppers are consumed by bluebirds, but they can also be consumed by frogs.



Can you add and/or label the kind of Producers, Consumers and Decomposers you think would live in these ecosystems? Identify as many as you can think of. Draw and label them.

### **Mountains & Rivers**



### **Forests & Ponds**



## Under & Over the Sea



## Macro and Micro ecosystems

'Macro' and 'Micro' are words describing size. 'Macro' is bigger than 'Micro'. A macro-ecosystem is on a large scale – like the ones we have been looking at so far. A micro-ecosystem is on a small scale, like a rock pool or a plant pot. The size of an ecosystem determines what animal and plant life you will find.

### Macro-ecosystem

- Large size, like a forest or a lake
- Could have many different surfaces – rock, soil, grass etc
- You would look for larger animals, such as birds, rabbits, mice and polecats
- Would be home to larger plants such as trees, bush grass, gorse and large flowers.



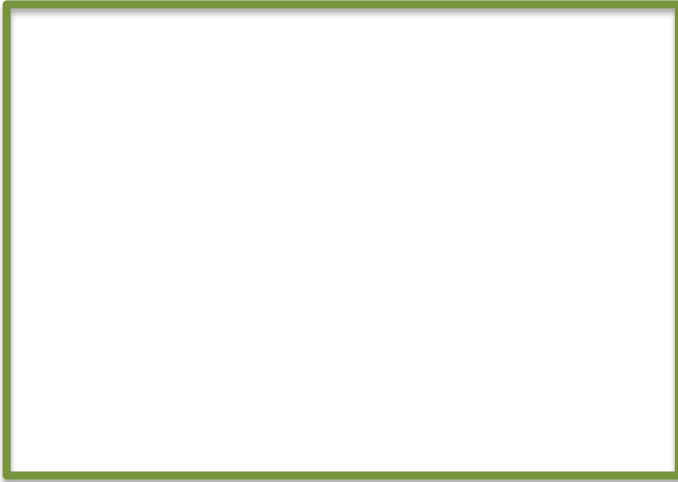
### Micro-ecosystem

- Small size, such as a rock pool or under a large rock
- Often only one type of surface
- Smaller animals might be found, such as beetles, earwigs and worms
- Small plants such as grass, small flowers, mushrooms and ferns might be found.

Can you put the words below into the correct box?

**Macro ecosystem**

**Micro ecosystem**



Trees

Cliffs

Branches

Rockpool

Leaves

Stones

Hedges

Ponds

Beaches

Bark

Hedgerows

Plant Pot

Garden

Log Pile

Car Park

Reservoirs

Walls

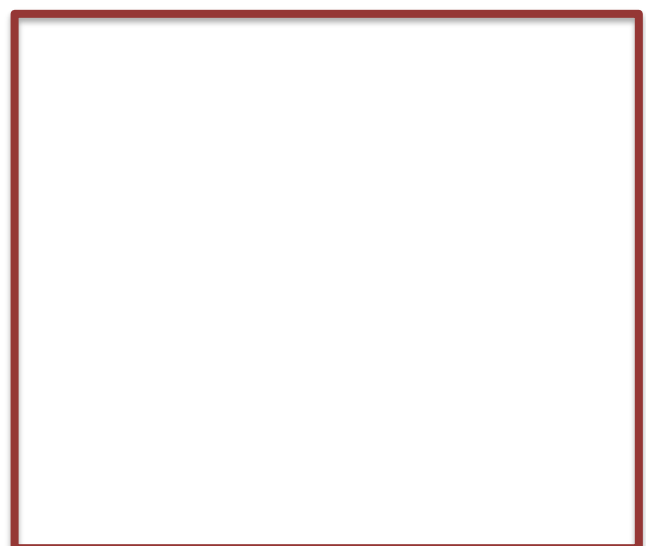
Fallen Trees

Parks

Can you think of some Macro and Micro ecosystems near you? Try to name or take pictures of as many as you can and put them in the boxes:

**My Macro ecosystems**

**My Micro ecosystems**



An ecosystem's health depends on a delicate balance among all its members and the environment. If something disturbs the balance, the ecosystem and all its members may suffer. Natural things that can disturb ecosystems include a changing climate and natural disasters. Human activities that can disturb ecosystems include polluting and clearing land for farms or buildings.



Humans also are responsible for many invasive species. An invasive species is a living thing that spreads through an ecosystem where it did not exist before. Invasive species can threaten the plants and animals that originally made up the ecosystem.



An example of an invasive species on the Isle of Man is Japanese Knotweed. This spreads rapidly, can grow almost anywhere, is very difficult to control, and outcompetes native plants damaging wildlife habitats. For this reason, under the Wildlife Act 1990, it is an offense to plant Japanese Knotweed.

Next week we'll be learning about:  
**Our Place in Nature**