

Ecology Fieldwork

Chapter 2: Fauna

Invertebrates

Mammals

Birds



In Chapter 2 we shall examine the invertebrates, mammals and birds at our site.

The type of habitat will determine which species live there. Many invertebrates are dependent on particular plant species.



Biodiversity

Biodiversity is the variety of life.

Habitats with more species are considered to be richer than those with fewer species.

Human activities often result in decreasing biodiversity.



Invertebrate Survey

Invertebrates are everywhere within our habitat. They may be found in the soil, under rocks and logs, on plants, (including high in trees), and flying through the study site.

Some are diurnal (active by day) and others only at night (nocturnal).

Many invertebrates are only seen at certain times of the year. Spring and summer are the best seasons. There are less invertebrates to be found in early spring before the leaves are on the trees.

Weather is also a factor. Invertebrates are cold blooded, and need warm weather to be active.

Using a variety of search method will cover more microhabitats within the habitat and will give a broader understanding of the species within the habitat.

Be Kind

Be Gentle

Please be gentle when handling invertebrates. They are easily damaged.

Return

When you have finished examining a creature, return it to the same place where you found it.

Respect the habitat

Replace logs and stones exactly as you found them. Each one is an established microhabitat.



Identifying Invertebrates

There are 1000s of invertebrates in Ireland. Many are very, very small and need a microscope for identification. Unless you are a skilled entomologist I suggest that you let the tiny things go, and concentrate only on the larger invertebrates - those that you can easily see with the naked eye.

You can find an Invertebrate Identification & Ecology Key on our website to help you identify what you find.

Do not worry if you cannot identify everything. Concentrate on the species that you can identify. Even experienced ecologists cannot identify everything!

Invertebrate Survey Methods

Use a bug jar and a magnifying glass to examine specimens. Any clear glass or plastic jar or tub will make a good bug jar.



Direct Searching

Direct searching is the act of simply looking for invertebrates.

Look under logs and stones.
Root through leaf litter.
Look at flowers and foliage.
Examine tree trunks.



Beating Tray or Sheet

Hold a white tray under some foliage. Use a stick to tap the foliage, thereby dislodging any invertebrates, causing them to fall into your tray.

Alternatively, lay a sheet under a tree to catch the dislodged invertebrates.



Pooter



Pooters are only useful to collect very small invertebrates - those that will not get stuck in the pooter tube. However these small invertebrates may be very difficult to identify.

In addition, unless you have your own personal pooter, a shared pooter may be unhygienic.

We suggest that you merely examine a pooter, understand its uses, and then move on to other methods.

Nets & Sweep Nets



A fine mesh net can be used to catch flying invertebrates. The invertebrate, once netted, can be gently transferred to a bug jar for examination.

A sweep net is used for sweeping through long grass and vegetation. After several 'sweeps' of the net, the contents are examined.

Moth Trap

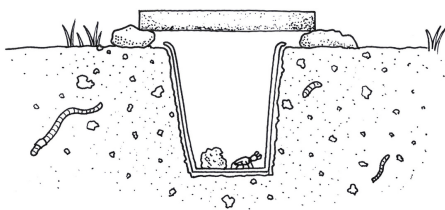
A moth trap consists of a bright light over a box. It is set up and switched on the night before. Moths are attracted to the light, and are trapped unharmed in the box. The catch is examined, identified and released the next day.

Moth traps are expensive and are mostly used by serious 'moth-ers' - people who survey and record moth species.

Leaving an outdoor light on overnight will also attract moths.



Pitfall Trap



A pitfall trap should be set up the day before your study, to trap nocturnal, ground dwelling invertebrates.

Bury a jar into the ground so that the top of the open jar is level with the soil surface. Place some leaves or grass in the bottom of the jar to give invertebrates a secure place to rest.

Put a flat stone over the jar to protect and hide it, but ensure that there are gaps under the stone that invertebrates can crawl under.

In the morning, empty the trap. .

Warning: Pitfall traps can kill shrews, so please use them with discretion.



Invertebrate Recording Sheet

Which invertebrate sampling methods did you use today?

Direct Searching	Beating Tray	Net	Sweep Net	Pitfall Trap	Moth Trap	Pooter

Specimens

Record 5 species, their features, their diet, and the sampling method used.


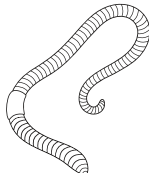
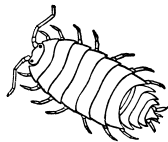

Species	Features	Diet	Sampling Method

Decomposers

Nature is the ultimate recycler.

Everything that dies in Nature is recycled. Dead leaves, dead wood, dead animals - all are turned back into nutrients and used by other organisms.




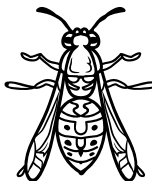
Have you recorded any of these decomposers at your study site?

Fungi	Earthworm	Woodlouse	Slug
			

Pollinators

Almost all flowering plants need pollinators to produce seeds and reproduce. This includes wild plants and crops. Without pollinators, our human food supply would face massive problems.

Study some flowers at your study site and record which insects visit them.

Pollinators Recorded	Examples of Pollinators	
		
	Bumblebee	Hoverfly
		
	Soldier Beetle	Wasp

Mammal Survey

Most Irish mammals avoid people. A lone person, walking quietly at dawn or dusk is more likely to spot wildlife than a loud group of ecology students.

It is often easier to spot wild mammals in our cities rather than our countryside. Urban foxes and grey squirrels have lost their fear of people.

In rural areas most sightings of wild mammals are fleeting. It is often possible, however, to spot their tracks and signs.

Trail Cameras

Trail cameras can be used to reveal the animals that use a habitat, by day and by night.

Be careful where you put your trail camera. They can be stolen if they are easily spotted.



Ecology of Mammals

Record the ecology of each mammal species that you discover.

What does it eat?

What eats it?

Are there any ecological issues with the species?

Is it native or introduced? Is it an invasive species?



Identifying Mammals

Online resources and field guides can be used to identify and research Ireland's mammals.

You can also download our short Guide to Mammals.

Mammal Recording Sheet

What evidence of mammals did you see today?

Droppings	Tracks / Footprints	Feeding signs	Fur or Hair	Bones	Dens

Species

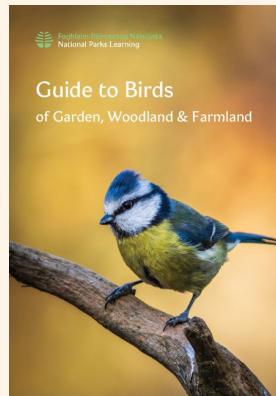
Record any mammal species that you saw or found evidence of.

Species	Evidence	Diet	Predated by

Bird Survey

There are hundreds of species of bird in Ireland.

Some live here all year round. Some visit in the winter to avoid colder weather in the far north. Others breed here in summer, but head south to warmer climates for the winter.



Identifying Birds

A comprehensive guide book is required to identify every bird in Ireland. However, we have a short guide to the commoner birds.

Beaks

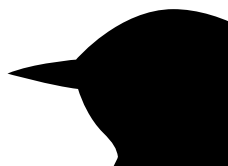
Birds use their beaks for feeding, preening, making nests, and more.

Beaks come in a wide variety of shapes and sizes. The shape of the beak can often tell us what the bird eats.



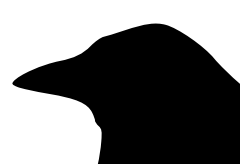
Seedeater

Sparrows & Finches
Cone shaped for cracking seeds.



Insectivore

Robins, wrens, etc.
Pointed for picking up invertebrates.



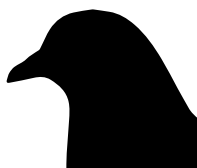
Crows

Unspecialized
beak for an omnivore diet.



Birds of Prey

Sharp hooked
beak, for ripping up prey.



Pigeons

Small beak, for swallowing seeds whole.



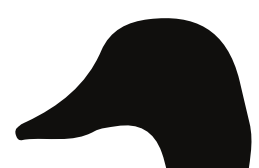
Woodpecker

Chisel shaped
beak for drilling wood.



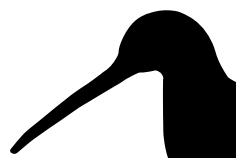
Heron

Long sharp
beak for catching fish.



Duck

Wide flat beak
for dabbling in water.



Wader

Long beak for probing in mud.

Bird Recording Sheet

What evidence of birds did you find today?

Sighting of Live Birds	Song/Calls	Feathers

Species

Record 5 bird species that you saw or heard.

Species	Description	Diet	Beak Shape

Protect Nature

We believe that everyone deserves the opportunity to learn, love and protect Nature.



Learn

Learning to recognize our native plants and animals



Love

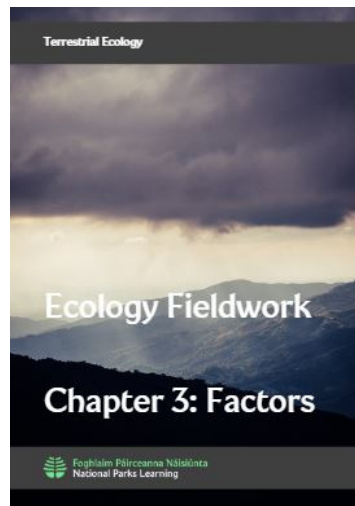
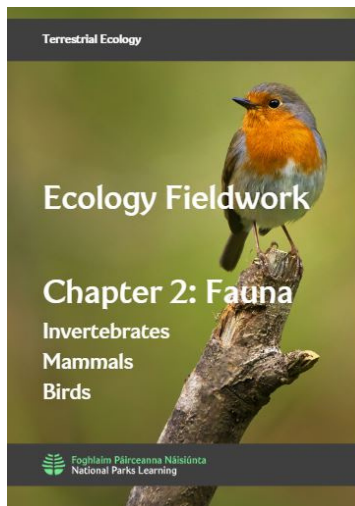
Growing to love Nature. We love what we know.



Protect

Protecting Nature. We protect what we love.

What Next?



Ecology Fieldwork Notes	
Name	
Date	
Location	
Habitat	
Adjacent habitats (if applicable)	

We would love to hear from you

We hope that you enjoyed this Lesson Plan and that you found the resources easy to use.

If you have any suggestions on this lesson, or ideas for future resources, please contact us.

