



An Introduction to Barn Owl Pellets

By Susanna Ramsey & Derek Crawley



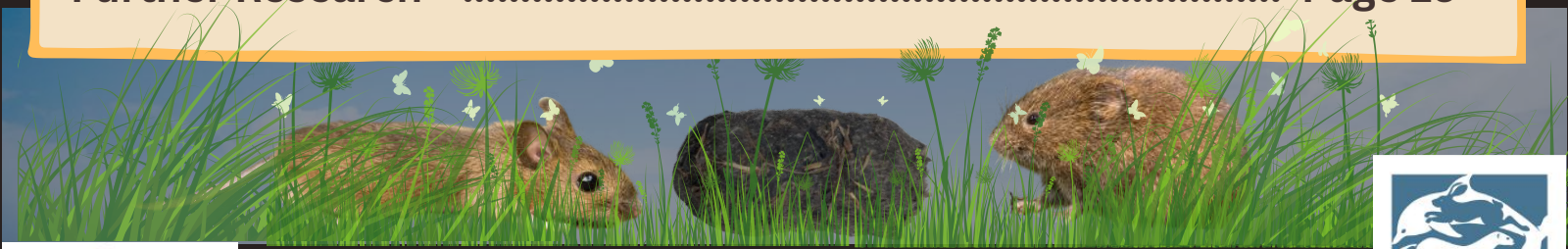
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Barn owl pellet

Barn Owl Pellets



Barn owllet

What is an Owl Pellet?

Barn owls cannot digest the fur and bones of the small mammals which they eat. They swallow their prey whole, absorb all the nutrients from the flesh and then, about 6 hours later, cough up a few lumps containing everything which is no use to them. These lumps are called owl pellets.

They usually produce 1 or 2 pellets per night. Each pellet can hold the remains of up to 6 animals, e.g. 2 voles and 4 shrews.



Field vole



Common shrew

The pellets are quite soft, black and wet, when freshly coughed up. They become light grey as they dry out. You can sometimes see tiny bones and blades of grass poking out from the grey wadding, which is the fur. The pellets are about 3.6cm long and 2cm wide. They are blunt at both ends. They do not smell at all.

They are not poo. Barn owl poo is a runny white liquid which is splattered on the ground or, sometimes, onto the pellets.



Barn owl pellets



Barn Owl Pellets



What Do Barn Owls Eat?

Barn owls eat mainly small mammals such as voles, mice and shrews, most often field voles, common or pygmy shrews and wood mice.



Field vole, Common shrew and Wood mouse

They may also eat bank voles, water voles, water shrews, house mice, harvest mice, yellow-necked mice, brown rats, moles, bats and even very young rabbits. Also, other birds, frogs and earthworms.

Why Do Scientists Study Pellets?

By studying what is inside owl pellets, mammalogists can discover which small mammals are in an area. The content of pellets varies over time, through the seasons and over the years, as the habitats and available food sources change. This is interesting to study, too.

It is generally difficult to monitor small mammals as they are so elusive and difficult to see. They are very shy, small, quick, well-camouflaged and mainly come out at night or at dawn and dusk (crepuscular).

A different way to learn about small mammals is to use humane traps, putting traps out overnight and releasing the animals alive and well-fed, early in the morning. Also, scientists can examine their tracks and signs.

Click on the following links, to see The Mammal Society's free, online resources on [Mammal Tracks](#) and [Mammal Poo](#).



House mouse

Identifying the Bones



Barn owl

Identifying the Bones inside Barn Owl Pellets

On Page 8, there is an ID sheet for the bones most often found in barn owl pellets. The bones are tiny, usually between 0.5- 1.5cm long.

The most common skulls found are those of field voles, shrews and wood mice. Sometimes there are brown rat skulls. On Pages 9 &10, there are photos of sample skulls, teeth and jawbones from these mammals. For most people, it is challenging enough to identify the skulls to this level.



Skull of a Field Vole with a Daisy *



Jawbone of a Common Shrew*

It is possible to identify the different species of vole, shrew and mouse by looking under a microscope or magnifying glass, at the teeth and/or the root holes left in the jawbones.

For example, to identify the species of mouse, you need to count the root holes left in the upper jaw, when the back molar has been extracted! There are 5 root holes for a harvest mouse, 4 for a wood mouse and 3 for a house mouse! Imagine this for a tiny, fragile harvest mouse skull!

Recommended Guides & Books

Click here for the **Mammal Society's Photographic Guide to Bones in Barn Owl Pellets**. Also see 'The Analysis of Owl Pellets' by DW Yalden, published by The Mammal Society and/or 'Mammals of Britain: Their Tracks, Trails & Signs' by MJ Lawrence and RW Brown.



Vole tunnel in rough grass**

Sourcing & Storing Pellets



Barn owl with wood mouse**

Where To Find Pellets

Owl pellets are deposited at roost sites, e.g in a barn, or under a tree. Piles of pellets will build up if the owls visit the same place each night.



Barn with barn owl box*



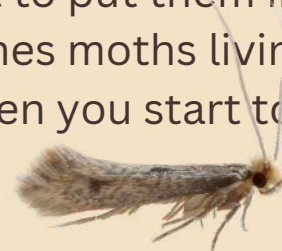
Under a large tree, on tussocky grass **

You may be able to buy pellets from the Barn Owl Trust's online shop or from another online supplier. (They are sometimes for sale on eBay or Amazon.) Make sure they have been collected responsibly.

You should not collect pellets yourself from wild Barn Owl sites in the breeding season, as Barn Owls are protected under the Wildlife and Countryside Act 1981. It is illegal to disturb a Barn Owl breeding site *during the breeding season*, without a licence from the relevant county agency.

Pellet Storage

To keep pellets for more than a week, it is best to put them in a plastic bag in the freezer. This prevents grubs or clothes moths living in the pellets. Otherwise the insects may emerge when you start to dissect the pellets. They will not hurt you but they might damage your jumpers!





Pellet*

Pellet Dissection



Barn owl

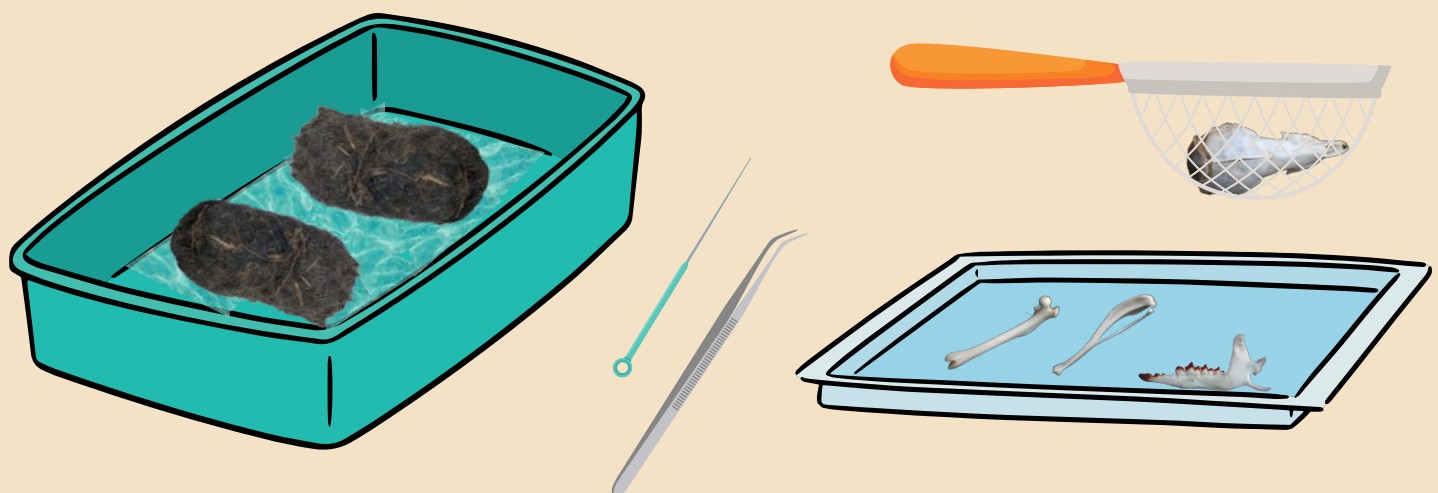
Other Types of Pellet

Other species of owl, as well as birds of prey and many garden, water and woodland birds, also cough up pellets but the bones and other bits inside their pellets, are not so well preserved.

How to Take Apart a Pellet

It is easiest to take apart the pellets if they have been soaked for a while in water, or water with a little detergent added to it. Some people prefer to dissect them when they are dry. You may want latex gloves!

- Pick out the bones from the fur, using tweezers or a darning needle to remove the fur from the crevices. Put the soggy fur to one side to throw away.
- Rinse the bones thoroughly, using a sieve
- Pick out more of the fur
- Rinse again in a sieve
- Sort and identify the bones, using the chart on page 9
- Wash your hands



Common Bones in Barn Owl Pellets

Vole Skull



Vole Jaw Bone



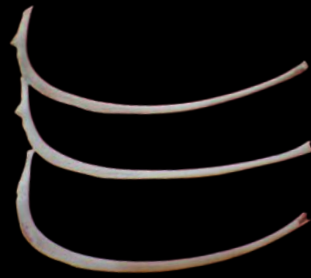
Vole Teeth



Vertebrae



Ribs



Shoulder Blade



Humerus



Forearm



Hip Bone



Thigh



Shin



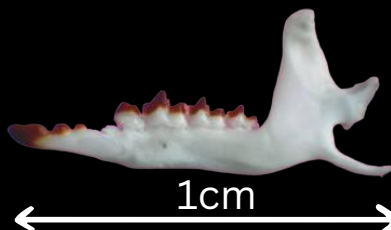
Mouse Jaw Bone



Shrew Skull



Shrew Jaw Bone



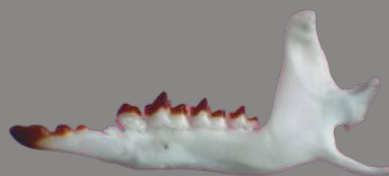
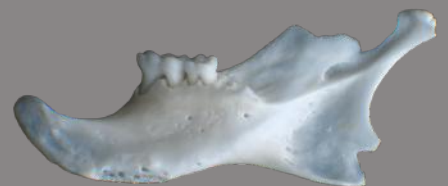
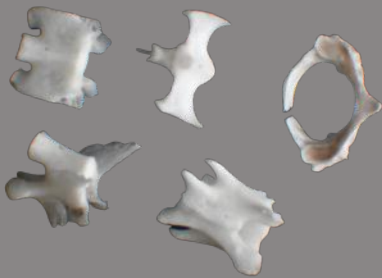
Ear Cavity



Bone photos (C) Susanna Ramsey

Not to scale. These bones are tiny!

Label & Sort the Bones You Find



Not to scale. These bones are tiny!

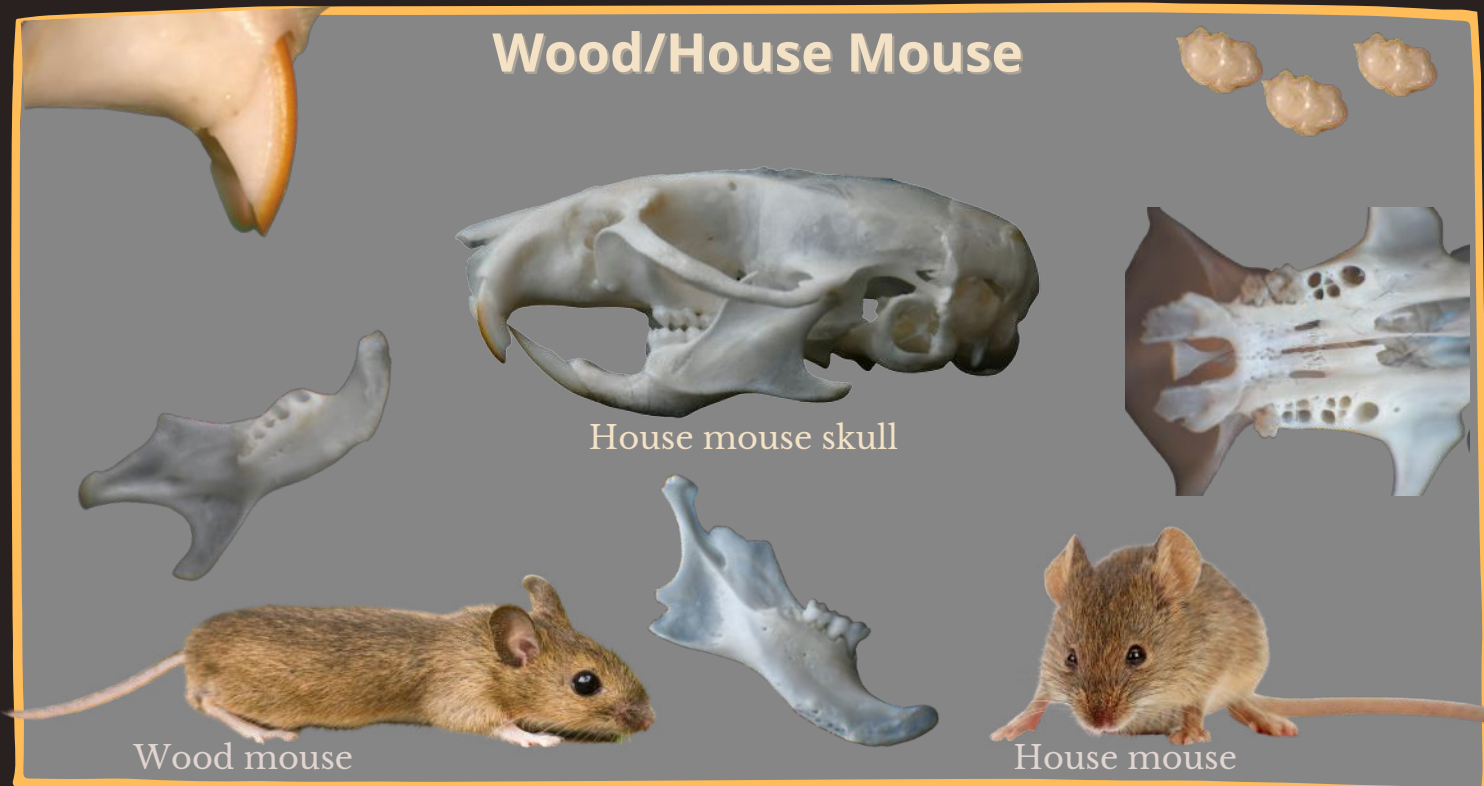
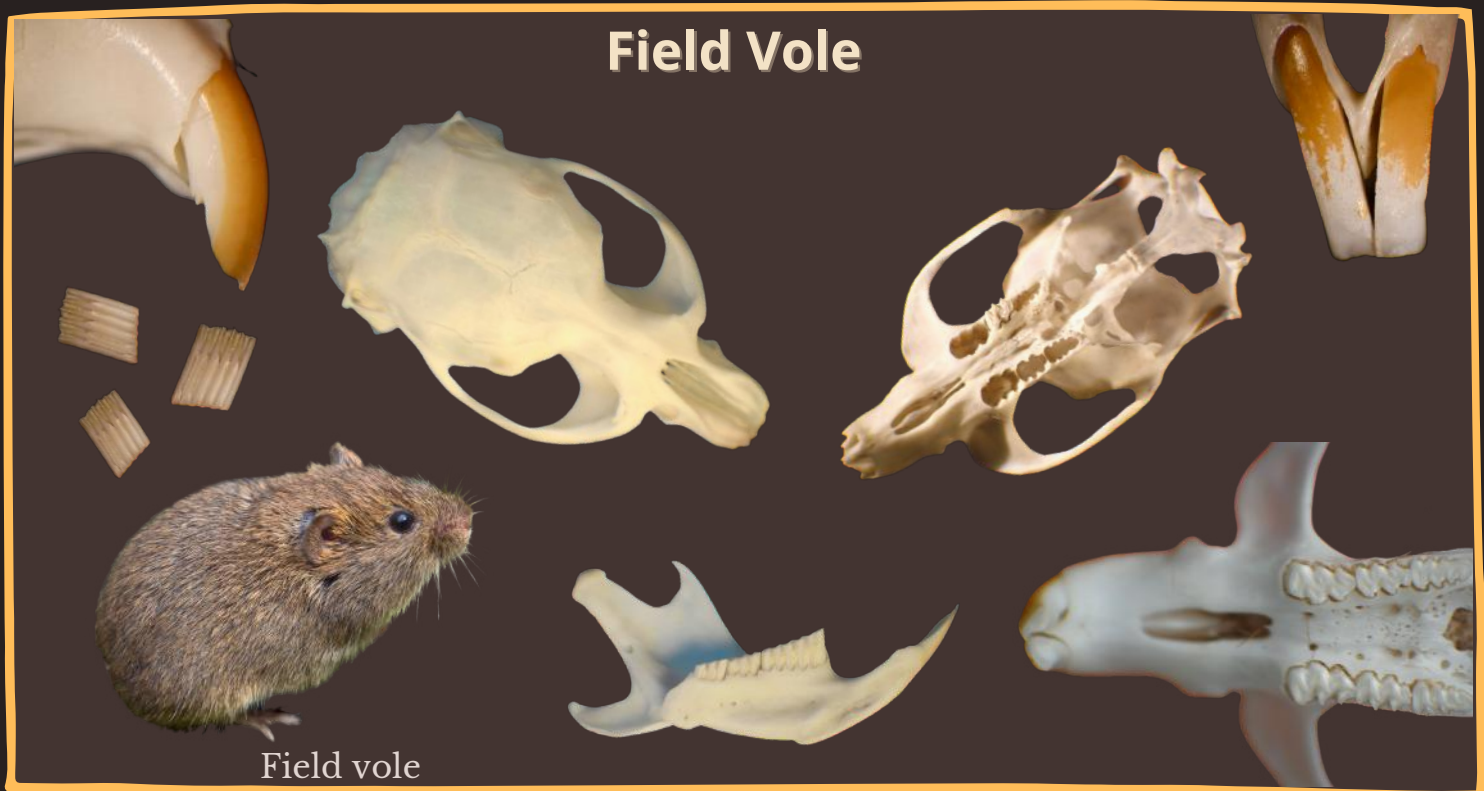


Field vole

Skulls, Jawbones & Teeth



Wood mouse



**Not to scale! These bones were photographed through a microscope.
The skulls are about 2cm long.**



Common shrew

Skulls, Jawbones & Teeth



Brown rat

Common /Pygmy Shrew



Common shrew



Pygmy shrew



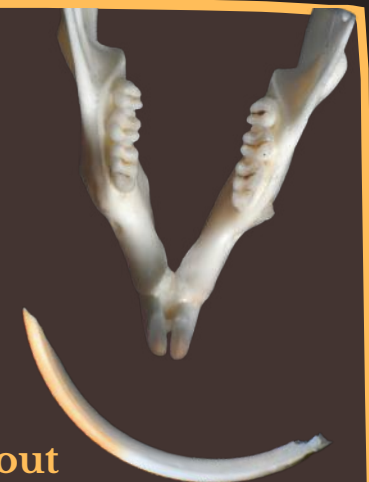
Shrew skulls are about
2cm long



Brown Rat



Rat skulls are about
4cm long



Brown rat



Not to scale! These bones were photographed through a microscope.

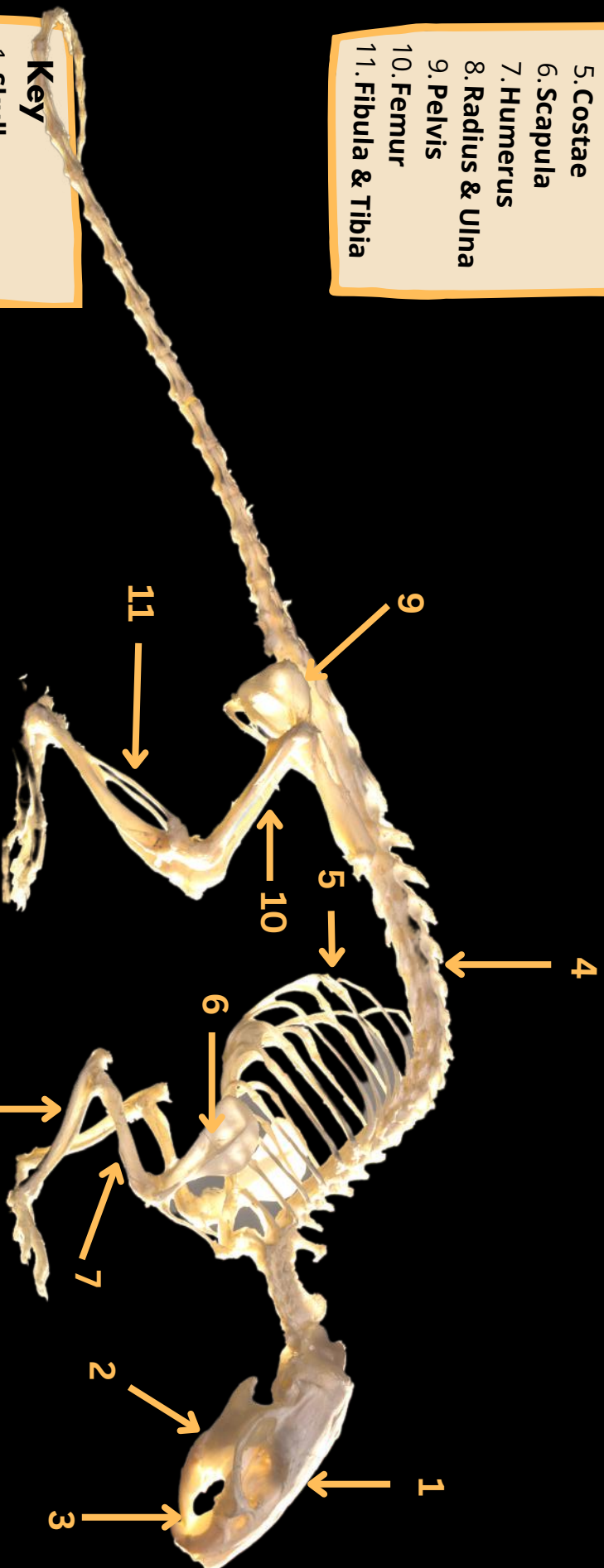


Mammal SOCIETY

Brown Rat Skeleton

Rattus norvegicus

- Key**
1. Cranium
 2. Mandible
 3. Teeth
 4. Vertebrae
 5. Costae
 6. Scapula
 7. Humerus
 8. Radius & Ulna
 9. Pelvis
 10. Femur
 11. Fibula & Tibia



- Key**
1. Skull
 2. Jaw bone
 3. Teeth
 4. Spine
 5. Ribs
 6. Shoulder blade
 7. Humerus
 8. Forearm
 9. Hip
 10. Thigh
 11. Shin



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The Nature Collection



Field vole

Field Vole Skeleton

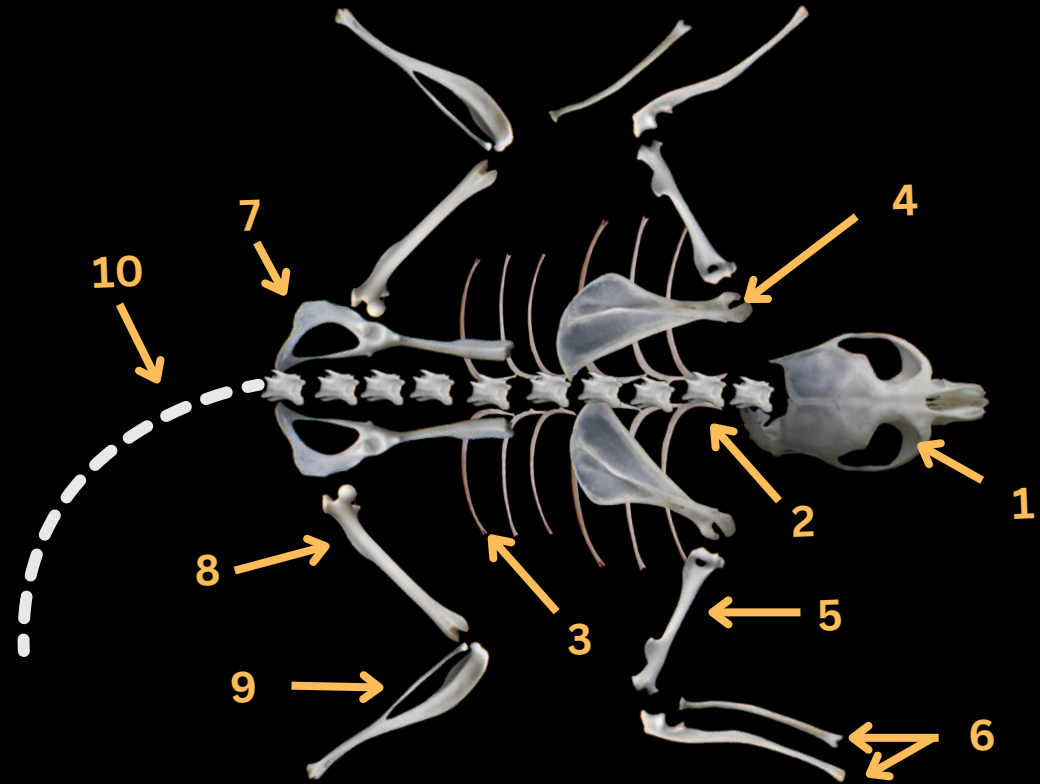


Field vole

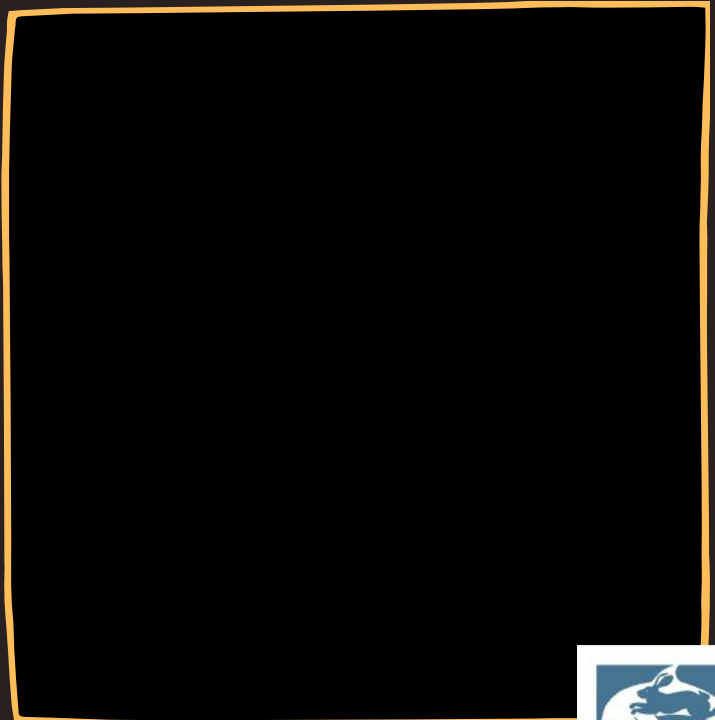


Key

- 1. Cranium/Skull
- 2. Vertebrae/Spine
- 3. Costae/Ribs
- 4. Scapula/
Shoulder blade
- 5. Humerus/Upper
arm
- 6. Radius & Ulna/
Forearm
- 7. Pelvis/ Hip
- 8. Femur/Thigh
- 9. Fibula & Tibia/
Shin
- 10. Tail vertebrae/
Tail bones



Lay out the bones you have found in the empty box, to build your own vole skeleton or match up the bones and lay them on top of one of the skeletons.





Wood mouse

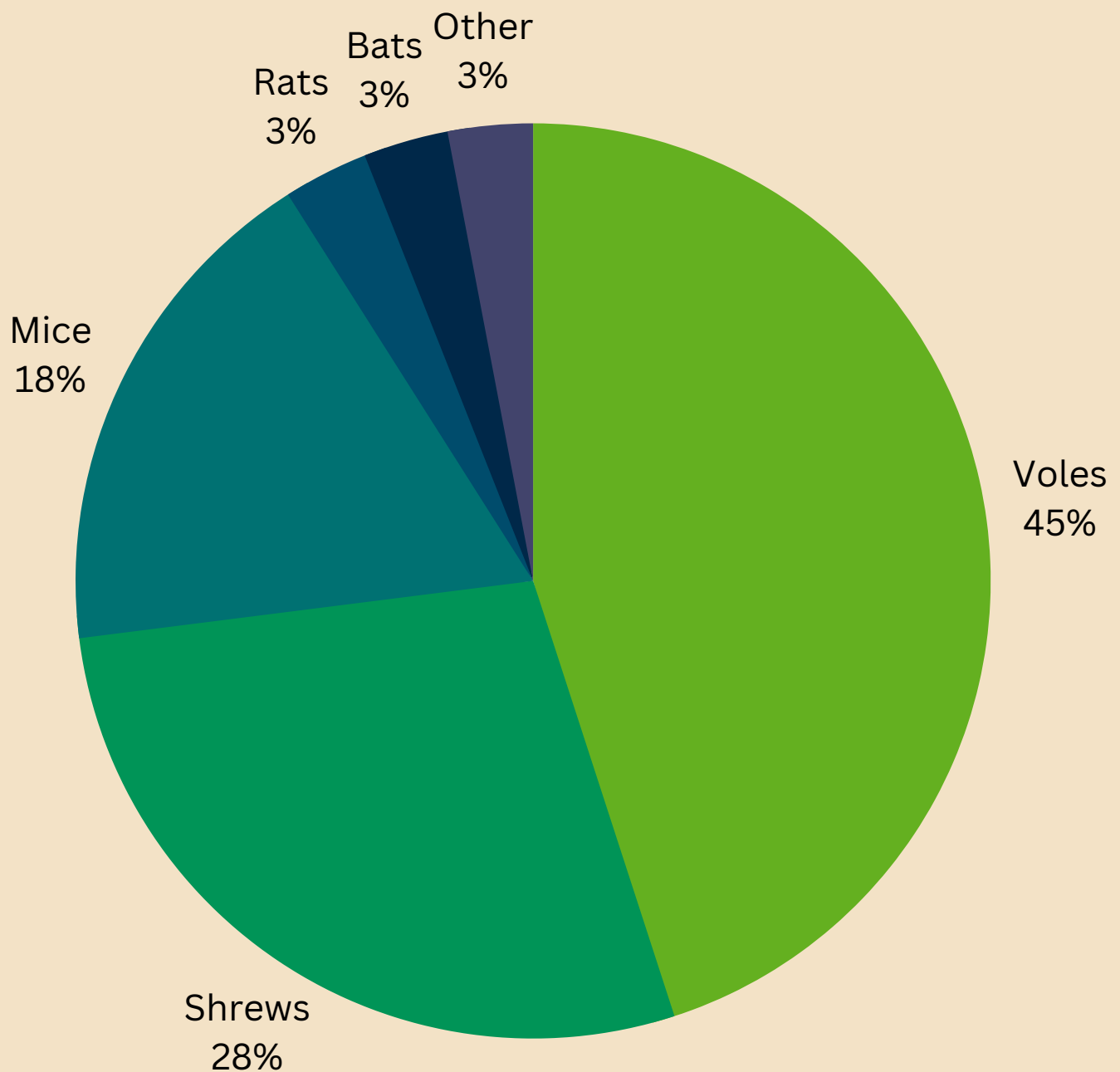
Pellet Analysis Pie Chart 1



Brown rat

Pie Chart

Put the data for several pellets, into a pie chart or graph.
The prey will be mostly voles, shrews and mice but sometimes there may be rats, bats, birds and even frogs!





Pygmy shrew

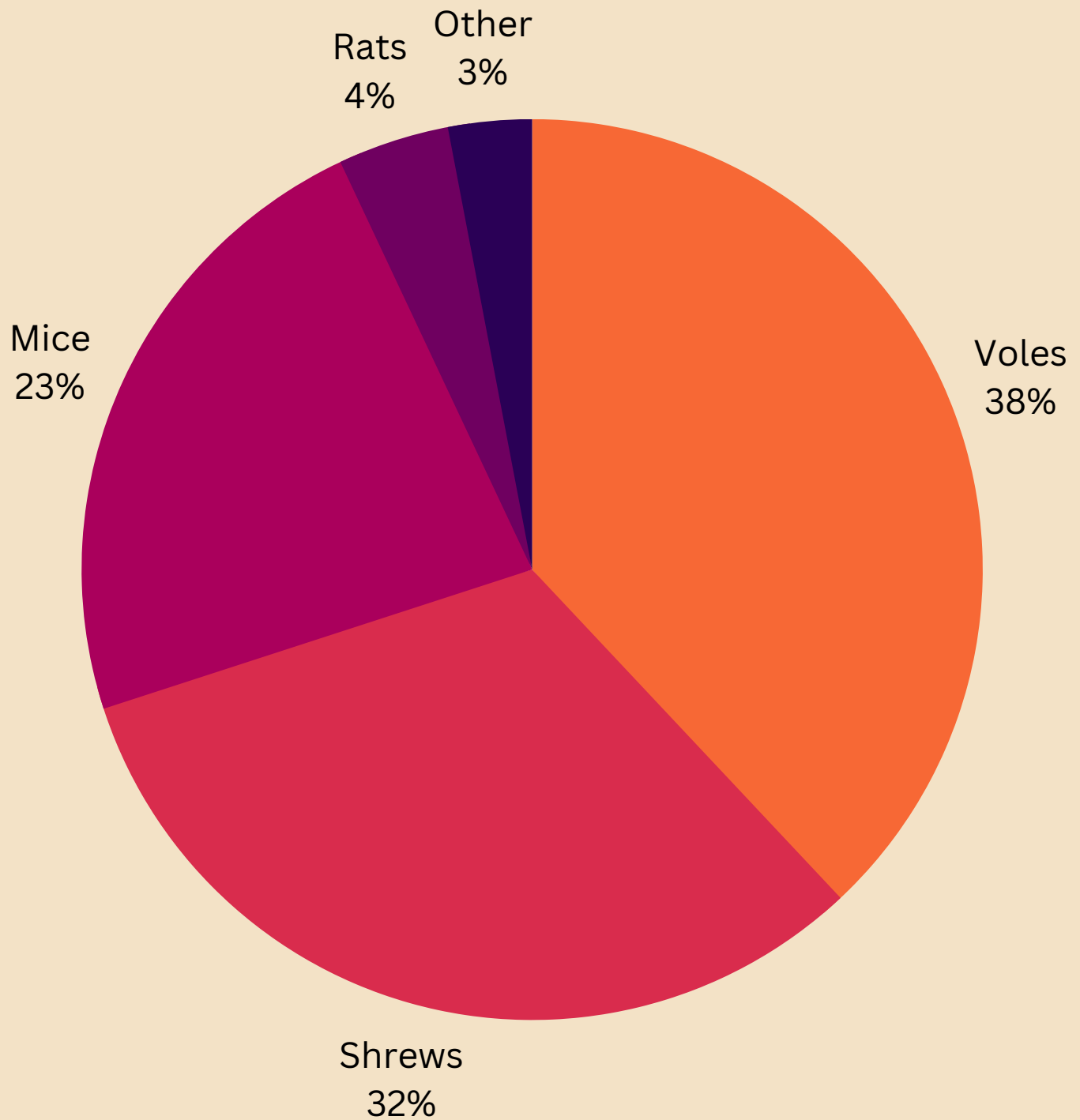
Pellet Analysis Pie Chart 2



Bank vole

Pie Chart

Compare it with the data for another site or for the previous year!





Pipistrelle bat*

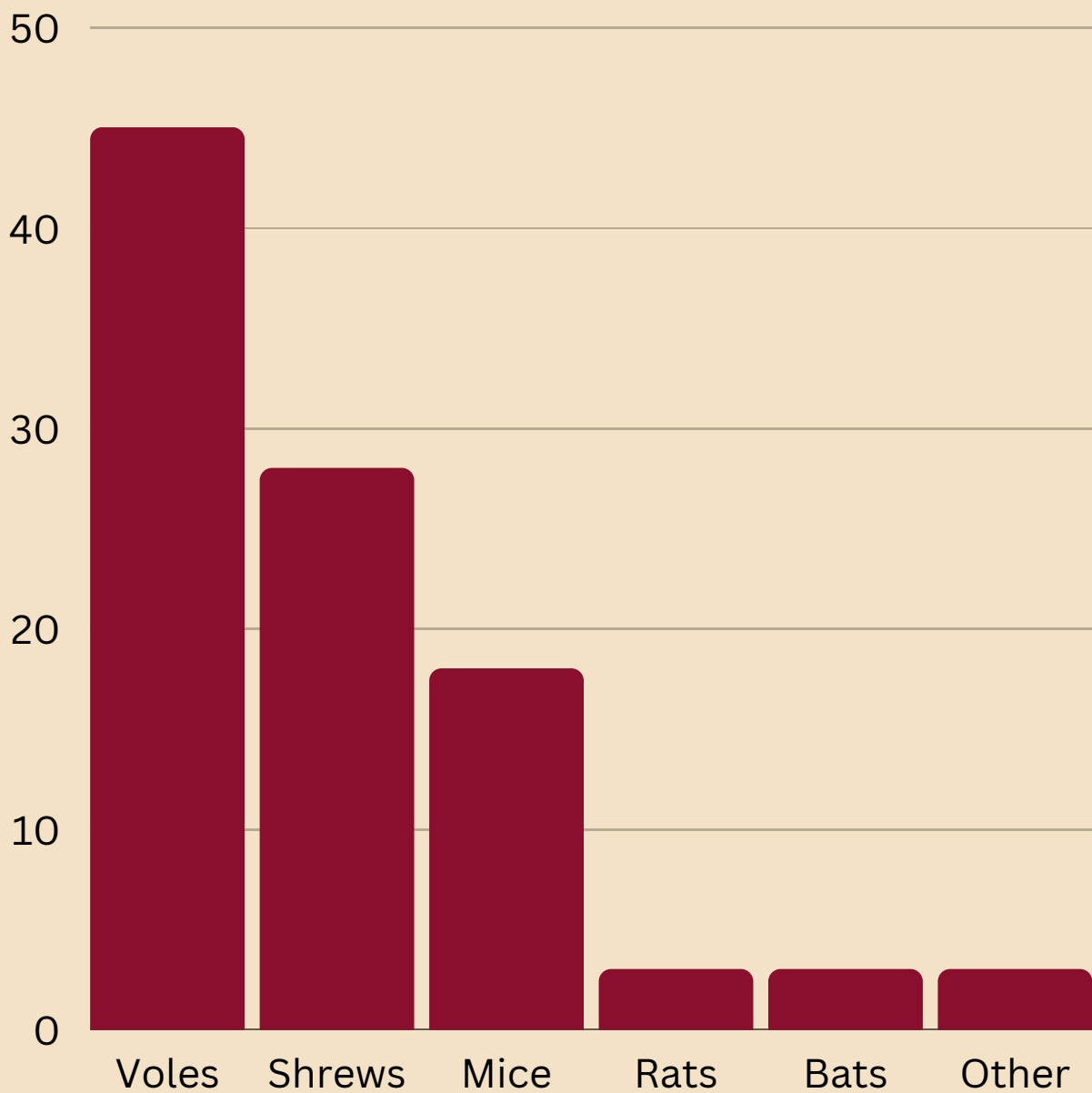
Pellet Analysis Bar Chart



Barn owl

Bar Chart

Put the data for several pellets, into a bar chart





Report Your Findings



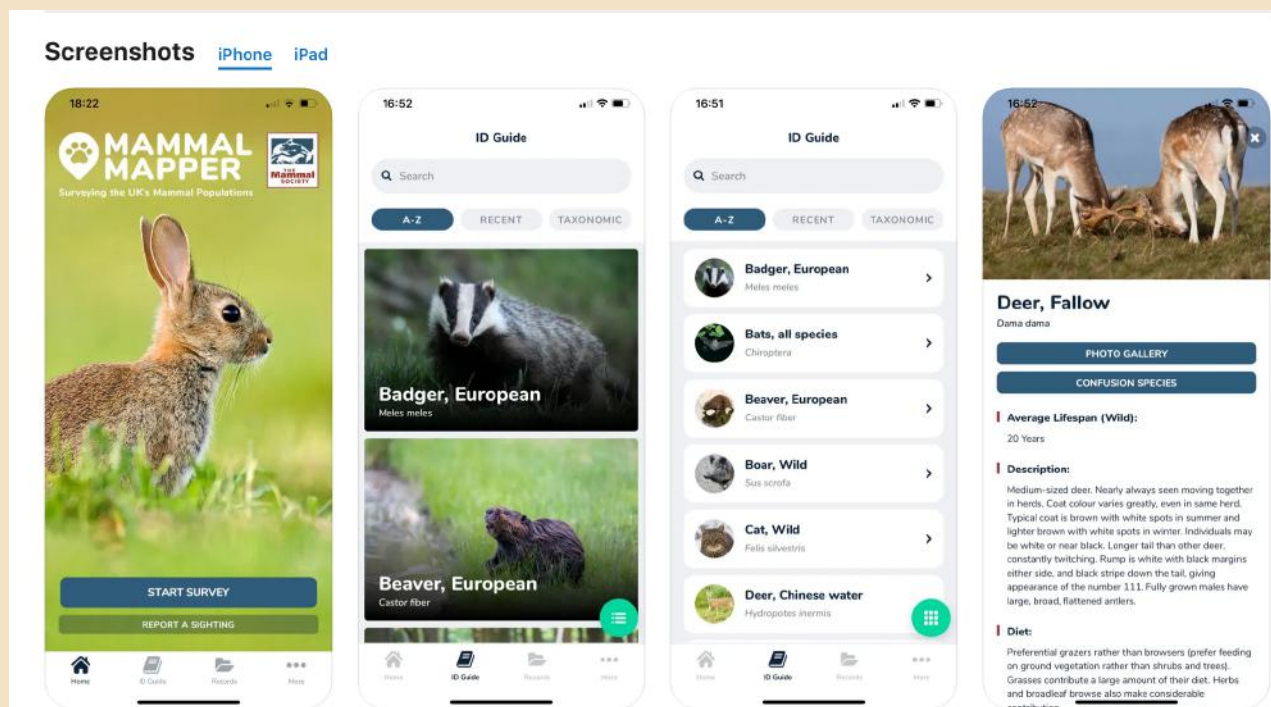
Report Your Findings

If you know where the pellets were collected, why not record and report what you have found?

The **Mammal Mapper App** is an App designed to enable you to record signs and sightings of UK mammals. It is **FREE to download** to your smart phone from the App store or Google Play.

Use the App out on a walk or when you get home. You will build up a library of mammals you have spotted and you will contribute to mammal research and conservation. The App is very easy to use. It guides you, step by step, on what you need to do.

[Click here](#) to read more about it on **The Mammal Society website**.





Field vole

Bone Photos To Show Scale!



Common shrew



Vole Hip Bones in a Pea Pod*



Vole Skull with a Daisy*



Vole Ribs with Daisy Petals*



Vole Shoulder Blade Leaning on a Daisy*



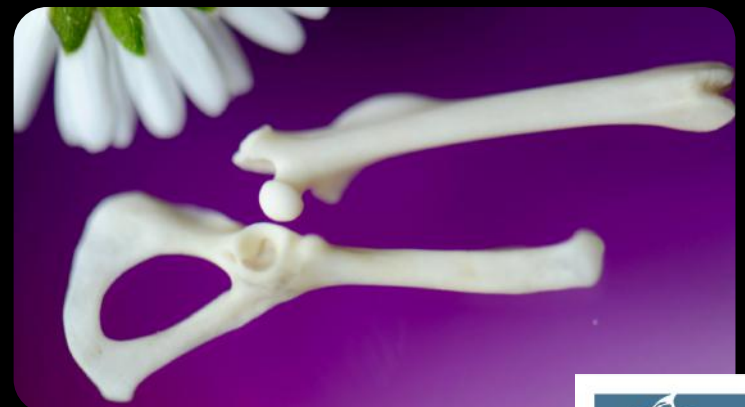
Vole Shin Bones with a Daisy*



Shrew Hip Bone, Ribs and Neck Vertebrae*



Vole Thigh Bones in a Mushroom*



Vole Hip & Thigh Bones & a Daisy*



Water vole

Further Research



Water shrew

Click on this link to The Mammal Society website to find out more about UK mammals.



Mountain hare

The Mammal Society: Full Species Hub

The British Isles are home to around 90 species of mammal in the land, sea and air. Click on the hare photo to access the Hub and discover more about these mammals.

Click on this link to discover more resources and activities on the Mammal Youth Hub.



Harvest mouse

The Mammal Society: Mammal Youth Hub

If you are a mini mammalogist or a teacher inspiring your class about the wonderful world of mammals, take a look at the resources on the Mammal Youth Hub! Click on the harvest mouse photo.

Click on this link to The Nature Collection.



Hedgehog skull*

The Nature Collection

If you want to learn more about all kinds of UK animals, looking in particular at their skulls and skeletons, click on the skull photo.