

OWL PELLET DISSECTION LAB

Barn Owl pellets have been chosen because these owls swallow small rodents and birds whole, and the resulting pellets generally contain the complete skeletons of their prey. Pellets begin forming within the digestive tract of an owl as soon as the prey is swallowed. Enzymatic juices break down the body tissues in the prey but leave the bony materials and hair or feathers undigested. Depending upon the prey eaten, the undigested portions may include beaks, claws, scales, or insect exoskeletons. This type of material has little nutritional value and must be “gagged” from the system.



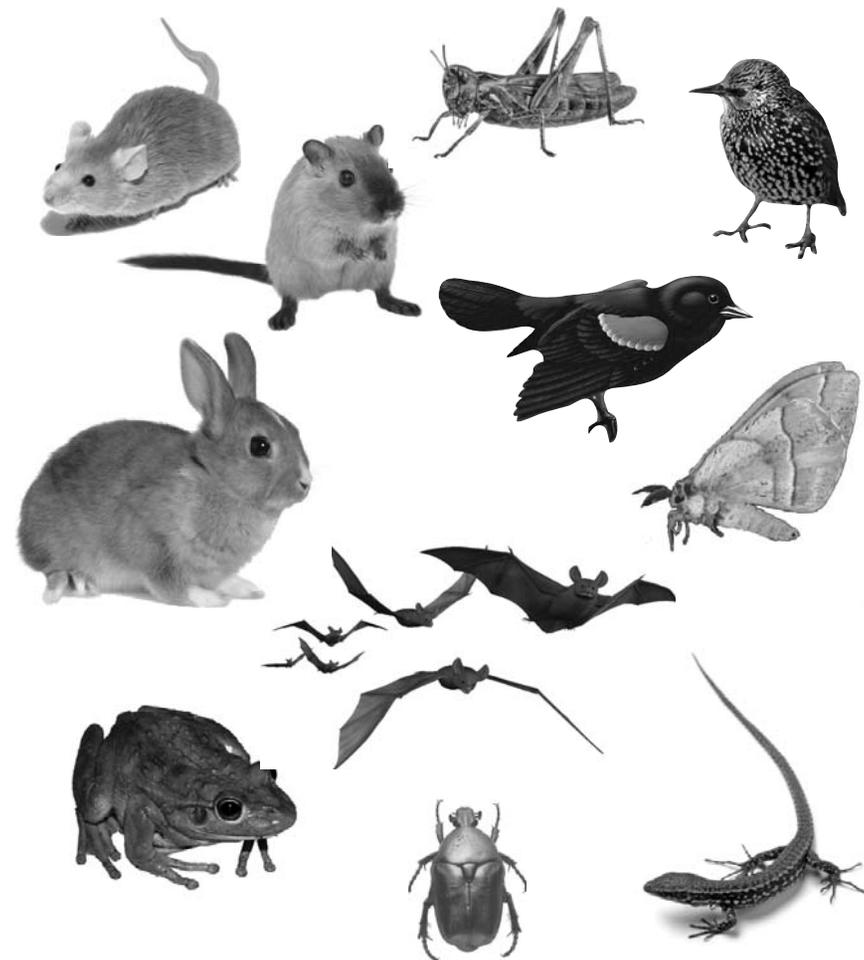
Predatory mammals such as bobcats and wolves have teeth to grind up bones and claws, and a digestive tract adapted to pass these ground parts. Owls, on the other hand, do not have teeth for grinding and cannot pass whole bone and claws through their digestive tract safely. Instead, these materials form a pellet that is surrounded with the hair or feathers of the prey consumed. The pellet is then orally expelled, or gagged, and the owl begins feeding again.

You will need the following items in order to conduct a Barn Owl Discovery Kit Pellet Lab:

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| OBDK Bone Identification Charts | → To aid in prey identification |
| Pencil | → To record findings |
| Clean sheet of paper | → To place extracted bones on |
| Two probes | → To loosen fur from bones |
| Tweezers | → To extract bones away from fur |
| Magnifying glass | → To identify bone type |
| Paper towels | → To absorb excess water |
| Antibacterial wipes | → To sanitize work station |
| White glue | → To secure bleached bones to bone chart |
| Tub of water diluted bleach | → To whiten extracted bones |

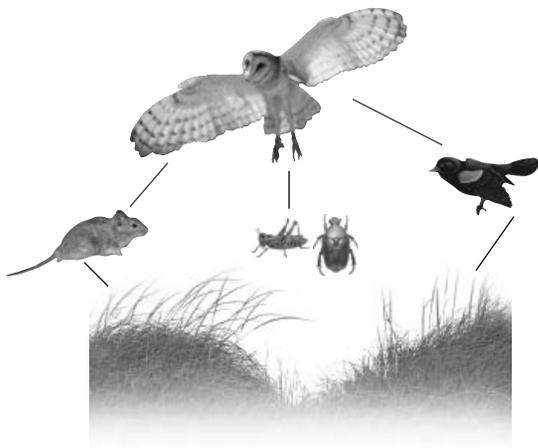


Scientists and teachers take advantage of this unique process by collecting these pellets and examining their contents. Since owls are not very selective feeders, these pellets can be used in a variety of instructional settings. The contents are a direct indication of what an owl has fed on. A one-year study of a particular Barn Owl revealed the following diet: 1,407 mice, 143 rats, 7 bats, 5 young rabbits, 375 house sparrows, 23 starlings, 54 other birds, 2 lizards, 174 frogs, 25 moths, and 52 crickets.



Constructing a Food Web

Animals that eat other organisms for energy and growth are called consumers. There are three consumer levels found in a food web, primary, secondary and tertiary. Primary consumers are usually herbivores; they feed on photosynthetic products such as grass and seeds. Secondary consumers gulp down primary consumers. And tertiary consumers (carnivores) devour secondary consumers and are usually found at the top of the food chain. Here is an example of a food web including the Barn Owl.



Exercise 1: What other carnivores and herbivores you would add to the food web? Listing these others, construct a food web, with the Barn Owl at the top.



What's on the Outside?

Before you dissect the pellet, examine the outside of the pellet for clues to where it was gathered. Pellets are collected from a variety of places around the country. Using the chart below to see if you can determine where the Barn Owl might have gagged your pellet.

What you might find: Where owl gagged the pellet:

Milo Seeds → Open sheds

Grain → Grain elevator

Dirt → Cut banks and under trees

Hay or Straw → Barns and Hay Sheds

Feathers → Man-made nesting boxes

Pine needles → Under Evergreen trees

Exercise 2:

1. On your piece of paper, write down the clues that might indicate where your pellet was gathered.
2. Can you identify other items stuck to the outside of the pellet?

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What's on the Inside?

Exercise 3: Label a clean sheet of paper for each pellet you dissect, for example, pellet one, pellet two, etc.

NOTE: If you find that the pellets do not come apart easily, you can soak them in warm water to soften them.

Using the probes provided, begin to loosen the hair of the owl pellet. As bones are uncovered, carefully remove them using your tweezers and place them onto a properly labeled sheet of paper.

Take extra care to keep skulls intact and near the mandibles (see Owl Brand Discovery Kit Bone Identification Charts).

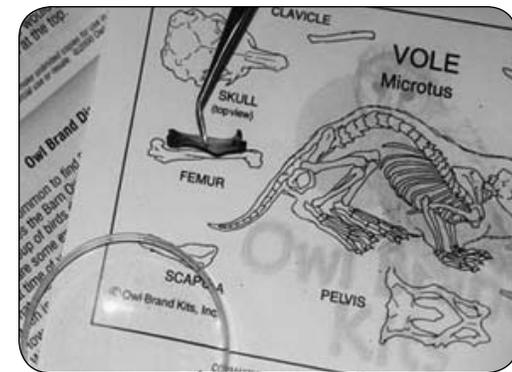
Continue to extract bones from the hair of the prey. Once you have found all the bones, you can begin identifying them by comparing them to the illustrations on the charts provided.



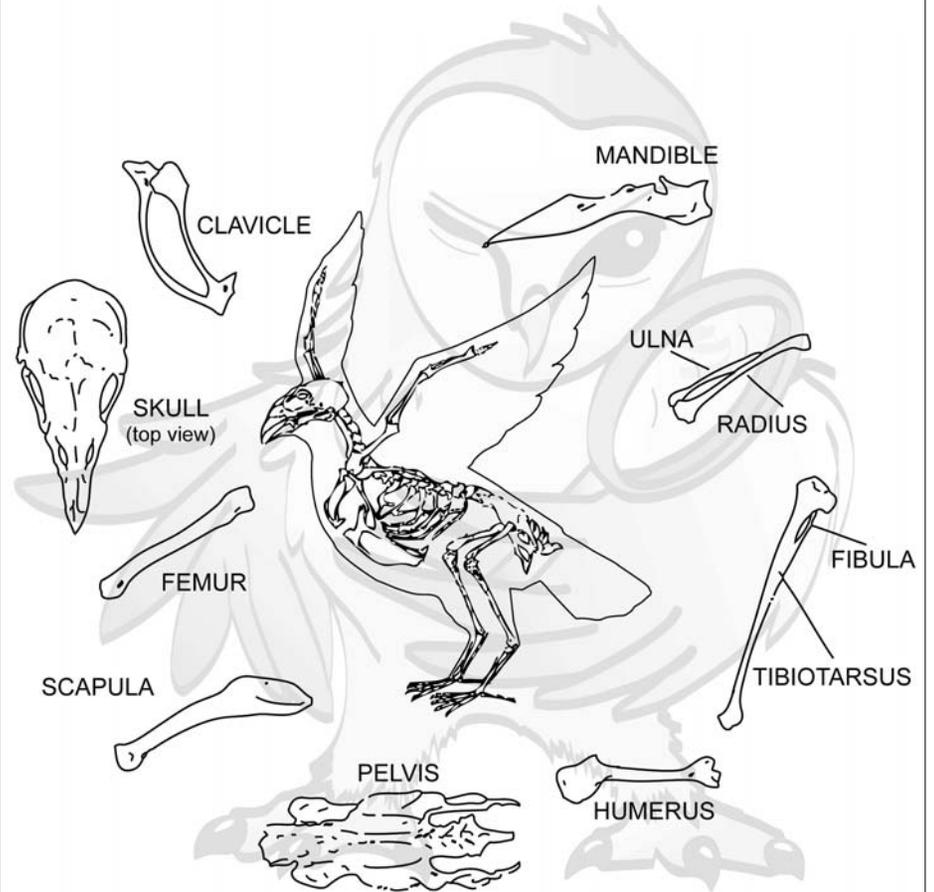
Bleaching & Mounting the Bones to your Owl Brand Bone Identification Charts

Exercise 4:

1. Keep the bones from each prey item separate by setting each set onto a separate clean (labeled) sheet of paper.
2. Place the bones into a tub of diluted bleach to whiten them. (Bleaching is Optional)
3. After the bones have been cleaned, set them onto a separate dry paper towel.
4. Using a magnifying glass and the Owl Brand Discovery Kits Bone Identification charts, try to identify the type of skeleton that was found in your owl pellet.
5. Use white glue to attach the bones to the correct Bone Identification chart.

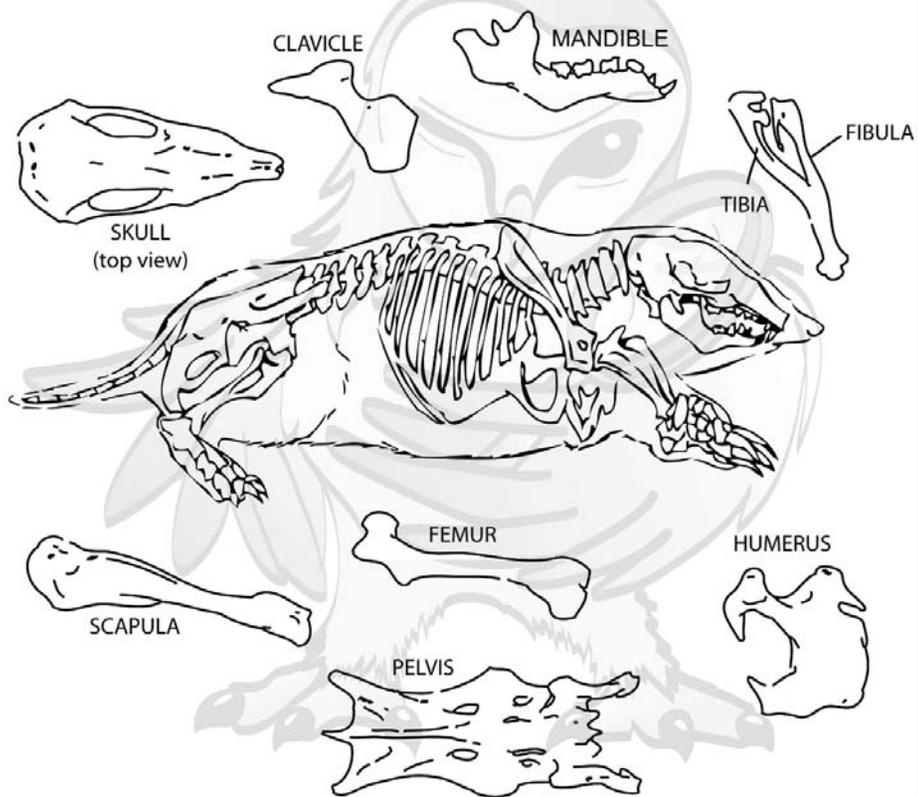


BIRD



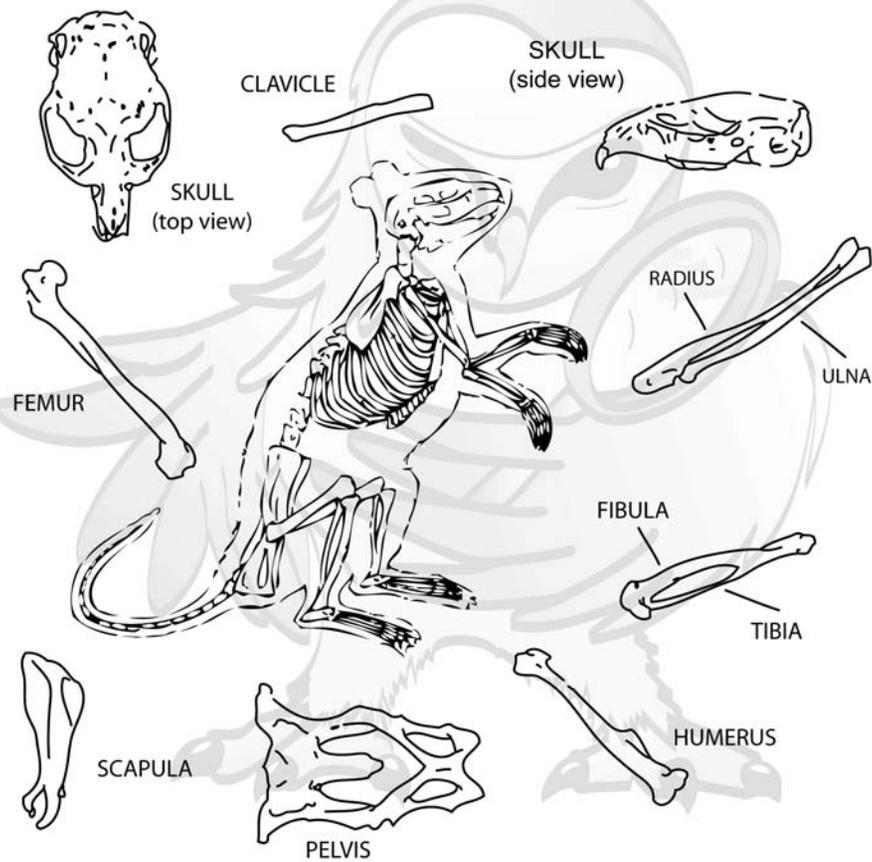
MOLE

Scaparus orarius



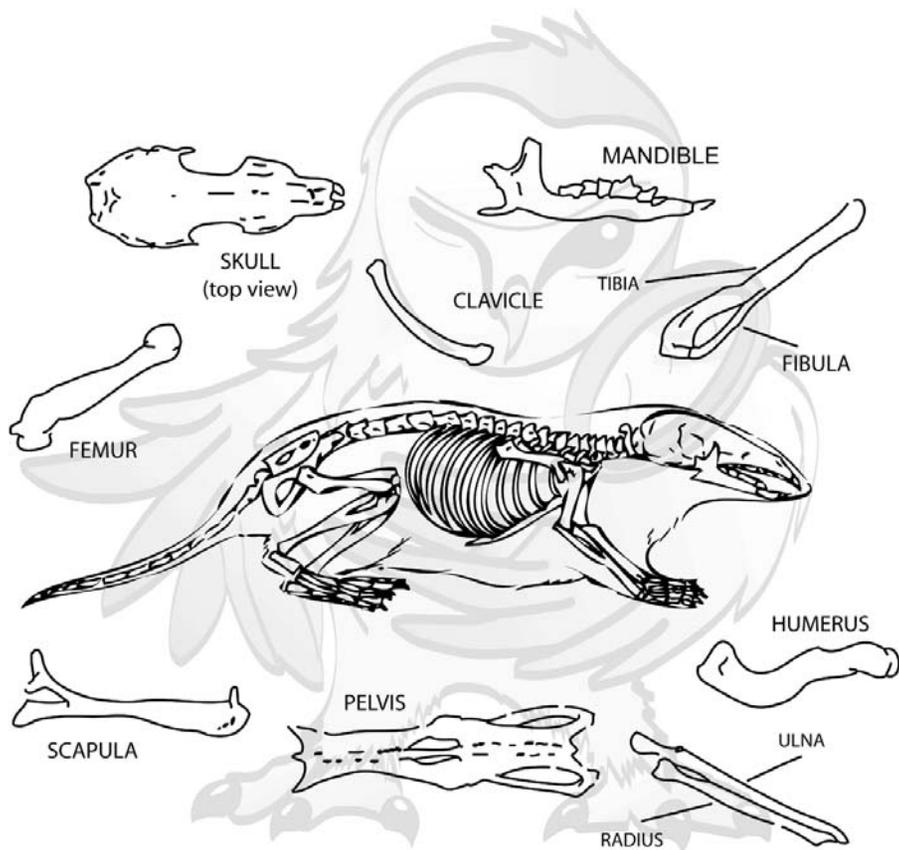
MOUSE

Microtus



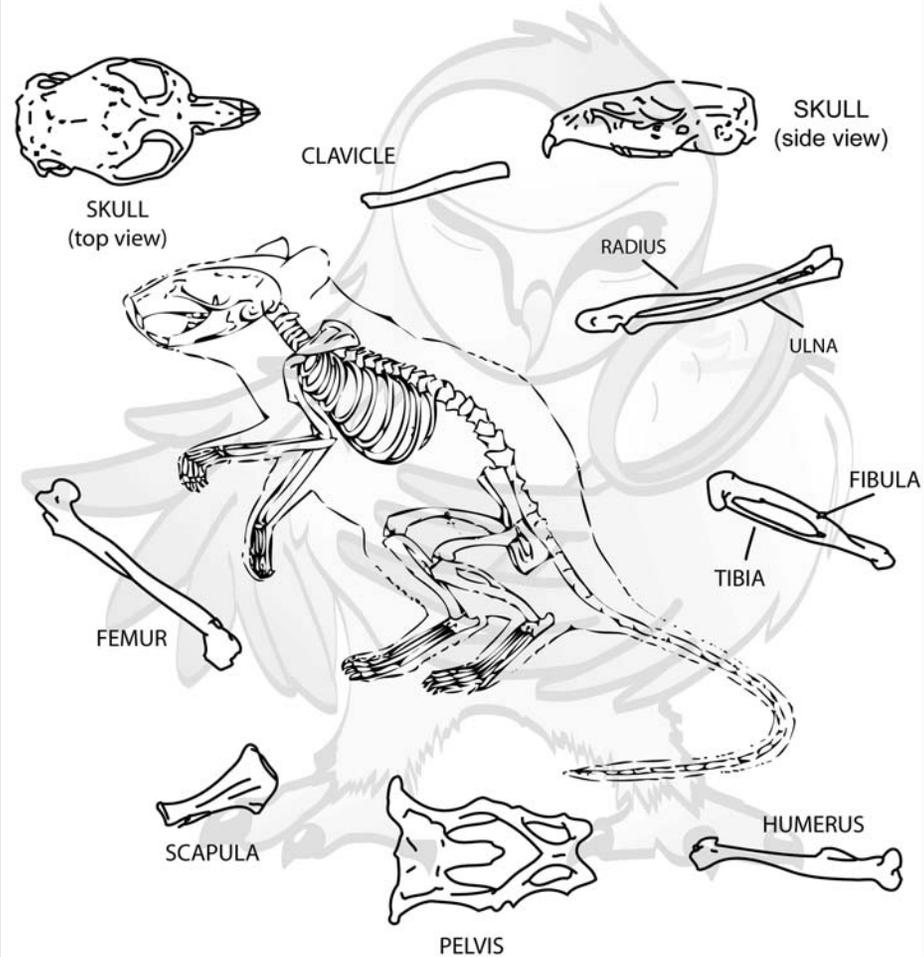
SHREW

Sorex Vagrans



RAT

Microtus



VOLE

Microtus

