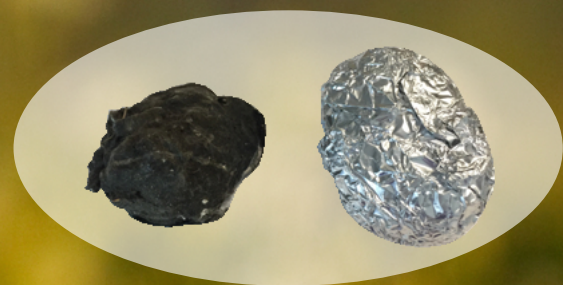


# Amazing Barn *Owl eBook*

Welcome to the Fascinating World of  
Owls



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## Welcome and Thank You!

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Thank you so much for trying out our Amazing Owl Pellet Dissection Kit and for downloading this eBook. We have included a lot of great information about owls, their behaviors, and their prey. If you have any questions whatsoever, please don't hesitate to contact us at [support@evvivasciences.com](mailto:support@evvivasciences.com). Thanks so much for supporting our business and the sciences! We are a family run business and we truly appreciate it!

## Introduction to Barn Owls

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Welcome to the amazing world of barn owls. Barn owls live all over the place and on every continent except for Antarctica! They can live in natural environments including trees and rock formations. However, they frequently live in or near manmade structures such as buildings or barns, which is where they get their name! They frequently live well above the ground and often near an open area such as a field or prairie, where they will have access to plenty of rodents for food. They have extremely sensitive vision and hearing that gives them an incredible ability to find and hunt prey. Below are some pictures of barn owls!



**Figure 1:** *The barn owl!*

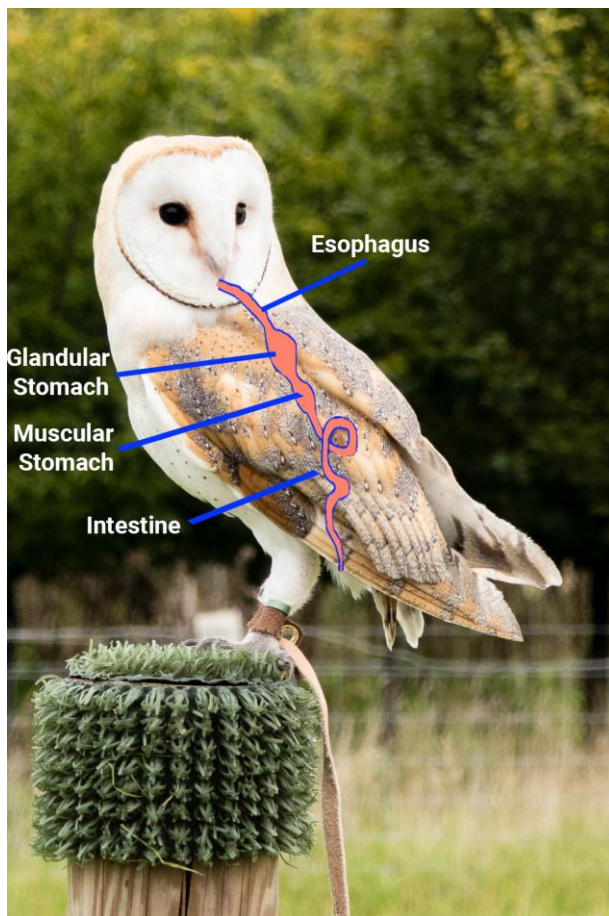
## So What Are Owl Pellets?

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The most common mistake people make (including us!) is to think that owl pellets are the same as owl "poop". Well this is NOT true, believe it or not! Barn owls and many other owls have a unique and amazing digestive system, which we have depicted in the picture below. When barn owls eat their prey, their digestive system absorbs essential nutrients from their prey's soft tissues. However, other tissues and structures such as bone and hair cannot be digested and cannot safely pass through the

digestive tract. For example, bones can be very sharp and can even puncture the intestines, which can cause bleeding and severe infections. Other predators are able to chew up their prey's bones into smaller pieces that can more safely pass through their digestive tract. However, barn owls swallow their prey whole, skeleton and all.

Ok, here is how it all works! First a barn owl will hunt down and swallow its prey whole. Common prey for the barn owl includes small rodents and birds! The prey will move through the esophagus into the glandular stomach, where enzymes will digest the organism's soft tissues into essential nutrients. These nutrients will pass into the muscular stomach and then the intestine, where many of them will be absorbed into the owl's circulatory system. Any wastes that are not absorbed will be excreted as feces. However, whereas the soft tissue nutrients continue down the rest of the digestive tract, the prey's bones and hair stay in the glandular stomach. Strong muscles within the stomach compress and compact the bones and hair into an owl pellet, which the barn owl then regurgitates out of its mouth. Interestingly the stomach muscles wrap the prey's fur around the sharp bones so it can safely be regurgitated. Owl pellets are more like vomit than poop!



**Figure 2:** The barn owl digestive system. After barn owls swallow their prey whole, the bones and hair from their prey are compressed by the muscles in the glandular stomach into an owl pellet, which is then regurgitated out of the barn owl's mouth. Essential nutrients pass into the muscular stomach and intestine where they are absorbed into the circulatory system.

## Why Dissect Owl Pellets?

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We can learn so much by dissecting owl pellets. By identifying the bones in the pellet, we can figure out what types of animals the owl ate. This information can tell scientists what types of prey live in a particular area. If someone were to continue dissecting pellets from the same region, he or she may observe changes in the types of prey consumed by the owls. Such changes may reflect changes in prey populations during the different seasons or over time. For example, if scientists notice that there are fewer mice bones in owl pellets from a particular region, it suggests that the population of mice in that region is decreasing. Dissecting owl pellets can be fun and encourages kids and students to get excited about science! In addition, students will learn about barn owls, prey and owl anatomy, and may improve their analytical and exploratory abilities!

## Amazing Facts and Cool Information About Owls

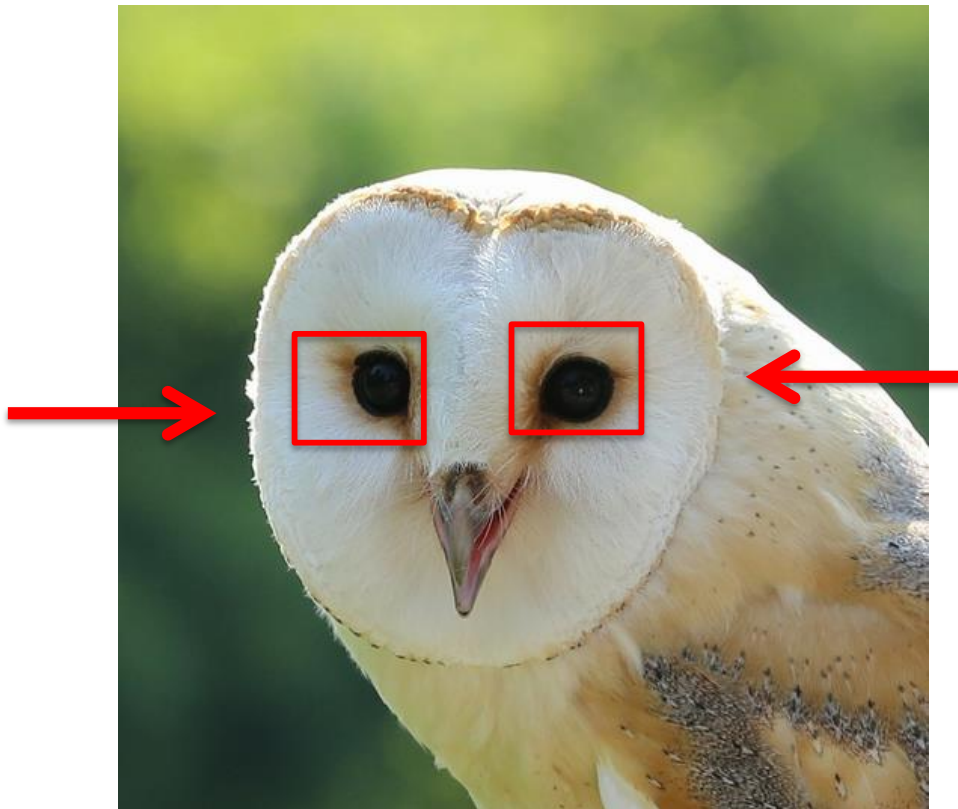
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1. The great horned owl, which is much larger and stronger than most barn owls, will sometimes eat other barn owls. They also eat bigger prey including opossums, raccoons, and occasionally small cats!



**Figure 3:** The great horned owl is one of the natural predators of barn owls. Yes they eat barn owls! This is one of the reasons barn owls avoid heavily wooded areas, which are home to great horned owls.

2. Great horned owls sometimes prey on skunks! They are one of the few animals that actually have the stomach for skunks!
3. Most people think that all owls make a hooting (“hoo-hoo”) sound. However, this is the typical sound of a great horned owl and some other owls. In contrast, the barn owl makes a loud screeching sound!! Check out this great website below to hear all kinds of owl sounds:  
[www.owlpages.com/owls/sounds.php](http://www.owlpages.com/owls/sounds.php)
4. Did you know that you can dissect an owl pellet online? Check out this cool virtual pellet dissection activity created by Kidwings!!  
<http://kidwings.com/virtual-pellet/>
5. Barn owls have asymmetric faces! Check out the picture below and notice how their eyes and ears on either side of their faces are not symmetrical. Scientists believe this gives them a much better ability to pinpoint and hunt prey!



**Figure 4:** Notice how the barn owl's face is slightly asymmetric. For example, the left ear opening is higher than the right ear. So, if a mouse makes noise below the owl's line of sight, it will sound louder on the right ear compared to the left. This gives barn owls amazing accuracy for locating prey.

6. Barn owls usually hunt at night. Their incredible hearing allows them to hunt and catch scurrying rodents in pitch black.
7. Pest control workers, step aside! Each barn owl will typically eat 4 rodents daily. That adds up to 1460 rodents per year per barn owl. Many farmers like keeping barn owls around because they help control the numbers of rodents!
8. Barn owls do not build their own nests. They usually find cavities and holes that already exist, including crevices, hollow trees, or nest boxes!
9. An important and easy way to help barn owl survival is to build a nest box for them. You can also buy prebuilt nest boxes online! Here is a great website with more information:  
<https://www.thespruce.com/barn-owl-boxes-nesting-owls-386640>
10. Many owls, including the barn owl can turn their heads left and right for a total of 270 degrees. There is no view out of sight!



**Figure 5:** It is all about the head turn! This figure shows a great horned owl turning its head to look WAY over its shoulder. Talk about flexibility!

11. The wing tips of many owls are “soft”, which allows them to fly much more silently compared to other birds of prey!
12. Barn owls' hearing is 35-100 times more sensitive than ours!
13. Great horned owls are very protective of their eggs and their young. They will even attack people if they are perceived to be a threat! Check out the video link at the end of this ebook!

## Barn Owl Habitats

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As described, barn owls live on every continent except for Antarctica! (Interestingly, however, the great horned owl is more common in the Americas). Barn owls enjoy living in both manmade and natural cavities, including hollow trees and tree stumps, small caves, holes in riverbanks, abandoned buildings, barns, and even in between bales of hay. One of the most important factors in deciding where to nest and roost is the abundance of prey! A single barn owl will eat about four rodents daily, which adds up to 1460 rodents per year. As a result, an abundance of prey near the nesting area is critical for barn owls to survive and raise their young. In addition, barn owls want their nests to have a great vantage point, so that they can easily find and hunt their prey! In other words, their nests are typically high above the ground and frequently overlook an open field or meadow. This not only gives the nest safety, but it allows the owl to easily spot prey running in the field below. Interestingly, barn owls don't actually construct a nest. They frequently just lay their eggs on top of debris including their own owl pellets, which provide cushioning.



**Figure 6:** A barn overlooking an open area might make an excellent spot for a barn owl's nest because it provides safety and a great vantage point for spotting prey!

## Barn Owls Raising Their Young!

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Once a nest is chosen and a female barn owl lays her eggs, her mate will begin collecting and dropping off food at their nest. When a female lays her eggs, they are called a clutch. Barn owls may have up to 8 eggs in a single clutch, and these eggs typically take about 30 days to hatch. The female will consume food brought by her mate ravenously until her eggs hatch. At that point, her priority will be feeding her babies. Baby barn owls are too small to swallow prey whole, so their mother will tear off pieces of food for them to eat. Barn owls have a very high reproductive capacity and may have several clutches of eggs in a given year. Usually the nesting season is from January to May, but in some instances, barn owls may nest all year round. Whereas great horned owls are monogamous, meaning they have one mate throughout their lives, barn owls may have multiple partners. In fact, scientists have observed male barn owls providing food for two separate nests at the same time. By about eight weeks, the baby barn owls are usually able to take their first flight.



However, their parents will continue feeding them for another 4-6 weeks. After that time, the “babies” are typically off on their own.

## Some Facts About Owl Talons!

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Owls are equipped with razor sharp claws called talons. The strength of the owl's talons depends on the type of food it eats. For example, some owls predominantly eat insects and their talons are not especially strong. In contrast, barn owls, which feed on larger animals such as rodents need fairly strong talons. The Great Horned Owl, which can feed on very large prey including raccoons have especially strong talons that allow it to grasp prey that is sometimes much larger than the owl itself.



**Figure 7:** *The person carrying this owl needs to wear thick protective gloves so he or she is not injured by the owl's razor sharp talons.*

## Prey

Barn owls eat a wide range of prey, from insects to small birds, and rodents. The figure below shows some of the organisms that barn owls consume. However, while barn owls eat a wide range of small animals, voles make up 80% of their diet usually. Barn owls are not that picky and in very hot weather, they have been known to eat snakes and even scorpions! Although barn owls are predators, there are actually several animals that will feed on barn owls. These include eagles, hawks, raccoons, opossums and even other owls like the Great Horned Owl. However, human activities such as land development and insecticide use can also cause significant harm to barn owls and their prey.



**Figure 8:** Barn owls eat a wide range of prey including small birds, rats, squirrels, mice, rabbits, voles, insects, moles, and occasionally skunks!

## Cool Owl Videos

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*Barn Owl Attacking/Hunting In Slow Motion*

<https://www.youtube.com/watch?v=FkP4Ro2gRl8>

*Baby Barn Owl Learning How To Fly*

<https://www.youtube.com/watch?v=3C7do93-GB8>

*How Do Owls Fly So Silently*

[https://www.youtube.com/watch?v=d\\_FEaFgJyfA](https://www.youtube.com/watch?v=d_FEaFgJyfA)

*Great Horned Owl Protecting Her Chicks*

<https://www.youtube.com/watch?v=-xFtVNkMf-M>

*Great Horned Owl Swimming for Its Life*

<https://www.youtube.com/watch?v=SxQLKBYNG5U>

## Resources

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1. <https://www.barnowltrust.org.uk/owl-facts-for-kids/#tenamazingfacts>
  - a. (owl facts)
2. Assymetrical owl face, modified by us
  - a. <https://creativecommons.org/licenses/by/2.0/>
  - b. <https://www.flickr.com/photos/ronmacphotos/9687108875/in/photolist-fL1XYx-csMb3W-csMAZd-bmbvAg-fLizf3-6PVkc8-ruE7Dw-68RAVj-4cqvf5-gCJ8Nb-5hPAJU-n4CTrk-4cmwha-s3Htnp-rLjDcz-bzttQ4-fLiz79-GWKzVq-dwggwzj-xDqY1q-MA5d5e-DcPDQY-fLiyXJ-bXpXx5-mA5C4e-gDvJqK-rLbvE5-mA7bGg-D2Fmt-8sNgkH-bE1QXG-gqr1GY-uZSBN8-8urXZs-cCUJHN-814tGT-7MFmFT-cAXY2A-gN5qBS-cFzdDh-Rktzn-aNW762-zPYBkG-8uoT7a-8v5qh4-bxi9By-51hGx3-c1JydY-v34vQR-viZbnC>
3. Barn owl anatomy, modified by us from:
  - a. <https://www.flickr.com/photos/cdpm/24418979444/in/photolist-DcPDQY-fLiyXJ-bXpXx5-mA5C4e-gDvJqK-rLbvE5-mA7bGg-D2Fmt-8sNgkH-bE1QXG-gqr1GY-uZSBN8-8urXZs-cCUJHN-814tGT-7MFmFT-cAXY2A-gN5qBS-cFzdDh-Rktzn-aNW762-zPYBkG-8uoT7a-8v5qh4-bxi9By-51hGx3-c1JydY-v34vQR-viZbnC-ogsa1T-7F72R9-cc5n75-aF73e3-aF3cqk-2Z2yMt-82xo8-GzpZjD-dSSW71-dSuoN6-dSSVLm-2YVyKg-dTbzY1-qPq1Q2-euNdr5-5PgQEE-prjEGc-Gkjnay-Spd7xk-dSuoUt-21Hadyg>
  - b. <https://creativecommons.org/licenses/by/2.0/>
4. Great Horned owl:
  - a. <https://creativecommons.org/licenses/by/2.0/>
  - b. <https://www.flickr.com/photos/spencer77/6154182672/in/photolist-TEgpxk-anPN6N-Sf2iXJ-U6z4q9-68LqLX-o6FeuL-26c8zqi-7RjET9-awDq2i-G5ThPL-awDfyn-n1B1fW-SCs2VL-kk6TQY-WHJZCN-jUAW5U-GTXQcS-4NPchH-gzsFBp-7QCK87-7RjEHy-kUpPu3-CsyNXv-gs8TKY-rgW55b-6MKfND-hd7ocC-gPrhBq-6fda6j-ELHwZj-FtUpaV-eh4tga-6zmQZp-xKf7Jd-gQCvxx-SQCcD7-4HHaUB-dapKpa-US68Vh-USQwHV-bsK5Q6-noHtCt-oZHsFW-4LSeaB-pjNasA-6q1wvE-US684s-fzjfa-6rVpuy-W7nTBn>
5. Owl turning head modified by us (cropped) from:
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  - b. <https://www.flickr.com/photos/8802700@N03/5797984104/in/photolist-9QmbFb-cantCG-canuhm-c9N5hC-canucC-cantHN-canuSU-cansQN-canr3b-c8wqZQ-canp5y-canpSh-cansVf-canoMw-canqAo-canoRq-canoFU-cans4U-cansis-7AmbTk-c8WqCj-cantUj-canmwh-canrDh-cant1q-canpFA-c8x1YN-canoC7-c8wuVq-canqKL-canteY-cantph-c8x1Lu-cans8W-canpgW-canrgj-cansAG-canurW-canrsN-c8wtmh-canqQL-c8UbVG-canu57-canryA-canq7Y-canrko-canpXj-canrcY-cant5d-c8EFx1>
6. Barn near open field:
  - a. <https://creativecommons.org/licenses/by/2.0/>
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7. Owl Talons
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  - b. <https://www.flickr.com/photos/calliope/30110212/in/photolist-5kkdV7-3EjHA-aLswmM-gRtz7Y-oJTfHw-7QCMjU-ocTpVo-nALSzL-5WV1S9-pFPzwE-CM1HFh-9FQefq-8gWnvG-QZmPfd-5rKKtq-nLRBIA-e31aMK-D29P3-5sNyUr-dZv6so-5sSYcu-86pTJH-gv9EkP-4EQwDg-8b6DS4-s7xg5d-x6rCh-uVV7va-D4yw6q>

8. skunk:
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10. Mouse:
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11. Vole:
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12. small bird:
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13. Mole:
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15. Squirrel

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16. Rabbit

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- b. <https://www.flickr.com/photos/29638108@N06/9166175657/in/photolist-eXZ3Fk-dgiXS-7SU1DT-cVv8KG-4guda-7SXhah-6DsmrX-6L11cE-6DsmuB-6DsmDk-6DwuYJ-c1JtUJ-a5nFzu-KXdpdt-eYbs9s-98dD4m-8XfxCi-KLgb5A-nym1eu-7kzrjz-7kvsy6-eR2go4-cg3dfo-7jvyuR-4Vusef-efboFx-5cwUVj-2JBtYY-7YAgQY-8Xgj7X-opoqEP-cMiBD5-31ji5j-6RfwtE-7Ki8Eu-itw1dF-9BXEgw-7XCvKx-cVkgQ9-jDouWn-6yS57b-gthdpU-5fdhb-6yN6sZ-7Yx4DB-nym1mo-gTRkJK-9HJ79g-nNmx4M-sq5s5y>

17. Barn Owl Pictures:

- a. <https://www.flickr.com/photos/hisgett/6942362843/in/photolist-bztqB6-nED1Sg-bztpfT-dBcVft-bztsjF-9n1ESb-csMb3W-csMAZd-fLizf3-8qjWfq-6PVkc8-ruE7Dw-dBcVhc-68RAVj-4cqvf5-9CJ8Nb-5hPAJu-4cmwha-GWKzVq-s3Htnp-rLjDcz-bzttQ4-fLiz79-dwgwzj-xDqY1q-MA5d5e-DcPDQY-fLiyXJ-mA5C4e-9DvJqK-rLbvE5-mA7bG9-D2Fmt-bE1QXG-n4CTrk-gqr1GY-uZSBN8-8urXZs-cCUJHN-814tGT-zPYBkG-7MFmfT-8uoT7a-bxigBy-GzpZjD-cFzdDh-5PgQEE-rrtVjX-cAXY2A-8v5qh4>
- b. <https://www.flickr.com/photos/xkristinax/9652234028/in/photolist-fGwDU5-8amoaR-bztqB6-nED1Sg-bztpfT-dBcVft-bztsjF-9n1ESb-csMb3W-csMAZd-fLizf3-8qjWfq-6PVkc8-ruE7Dw-dBcVhc-68RAVj-4cqvf5-9CJ8Nb-5hPAJu-4cmwha-GWKzVq-s3Htnp-rLjDcz-bzttQ4-fLiz79-dwgwzj-xDqY1q-MA5d5e-DcPDQY-fLiyXJ-mA5C4e-9DvJqK-rLbvE5-mA7bG9-D2Fmt-bE1QXG-n4CTrk-gqr1GY-uZSBN8-8urXZs-cCUJHN-814tGT-zPYBkG-7MFmfT-8uoT7a-bxigBy-GzpZjD-cFzdDh-5PgQEE-rrtVjX>
- c. <https://www.flickr.com/photos/seabamirum/3160392778/in/photolist-5PgQEE-rrtVjX-cAXY2A-8v5qh4-9N5qBS-51hGx3-c1JydY-v34vQR-viZbnC-ogsa1T-7F72R9-cc5n75-aF73e3-aF3cqk-zZ2yMt-82xo8-dSSW71-dSuoN6-dSSVLM-2YVykG-dTbzY1-qPq1Q2-euNDR5-Rktzn-pnjEGc-Gkjinay-Spd7xk-dSuoUt-21Hady9-aNW762-5PgR5E-aE551-hQwi6S-8GHd44-25ZXG5U-CDJvY-dJbBDZ-76GqzB-bELKgL-eSyGcE-cJrejU-7W1cX2-JEmZx7-osdYq2-fLiznN-CDJzT-4cqviQ-ThzWmP-23BqDUp-6jJZF6>
- d. <https://creativecommons.org/licenses/by/2.0/>

18. Kidwings Explores Barn Owls Habitat, Habits & Prey

- a. <https://www.obdk.com/resources/>