

# The Great Horned Owl



wl  
in the Oxbow



## Student Scientists

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## Glossary

**Natural habitat** (**nach** ür ul **ha** buh tat): The natural environment of an organism; place that is natural for the life and growth of an organism.

**Nocturnal** (**nôk** tür nul): Relating to or occurring at night.

**Voles** (vôlz): Small rodents that typically have a heavy body, a blunt nose, and short ears and inhabit both moist meadows and dry uplands; sometimes doing much damage to crops. They are closely related to muskrats and lemmings but resemble stocky mice or rats.

**Prey** (pra): An animal, including insects, hunted or seized for food.

**Sufficient** (suh **fish** ent): Being as much as needed.

**Cultivated** (**kul** tuh vat ed): Prepared for planting.

**Invasive species** (in **va** siv **spe** ses): Any plant, animal, or organism that is not native to the ecosystem it is in, and is likely to cause harm to the environment, the economy, or human health.

**Overabundance** (ov ür uh **bun** dens): Too many.

## Pronunciation Guide

**a** as in ape

**ä** as in car

**e** as in me

**i** as in ice

**o** as in go

**ô** as in for

**u** as in use

**ü** as in fur

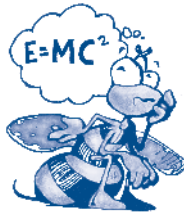
**oo** as in tool

**ng** as in sing

Accented syllables are in **bold**.

# Thinking About Science

Although environmental scientists usually spend some of their time outdoors, they also spend time doing research in the library and on computers. When conducting an experiment, scientists must spend time reading and writing, as well as time outside collecting data. The student scientists in this research collected data outdoors, as well as from the Internet. They put this information together to answer their research question.



# Thinking About the Environment

All organisms need energy to survive. For animals, energy is obtained by eating plants or other animals. In this research, the student scientists were interested in identifying the kinds of animals a particular bird eats to survive. That bird is the great horned owl. When an animal eats a plant or another animal, they are a part of a food chain.



# Introduction

Do you remember the last time you saw an owl in its **natural habitat**? Chances are you do not. This is because most owls are **nocturnal** animals and there are not a lot of them out in the open. Owls, like every other animal, have a certain habitat. They generally live alone or with their mate in hollowed out trees. They also live in old stick nests created by hawks. Owls eat rodents such as mice and **voles**. One of the most powerful species of owl is the great horned owl. The great horned owl can be helpful because it **preys** on mice and rats.

**Our research question was:**  
**Is the Oxbow a good habitat for**  
**the great horned owl**  
**(figures 1 and 2)?**



**Figure 1. Great horned owl.**

The great horned owl's body structure is a very important feature that contributes to its survival in its habitat. They have very strong feet and sharp claws to help grasp their prey; they also have a curved beak to tear its prey into bite sized chunks.



**Figure 2.** The Oxbow is a forested area in Greenfield Village, part of The Henry Ford in Dearborn, Michigan.

## Method

The first thing that we did as a class was go into the Oxbow. While in the Oxbow we were able to observe the land and search and identify land areas that would be sustainable habitats for the great horned owl (**figure 3**). Some of the places that were **sufficient** habitats for the great horned owl were dead and hollowed out trees, the fields, and places near the water. One reason that there are so many dead trees in the Oxbow is due to the emerald ash borer. You can read about this **invasive species** in another article of this journal. It is not good to have an invasive insect species in the Oxbow. However, these dead trees are a good habitat for the owls.

Then we researched the food sources of the great horned owl. After we had identified its food sources, we determined whether they were available in the Oxbow.



**Figure 3.** The class observed various habits in the Oxbow.

## Reflection Section

What is the research question the student scientists wanted to answer?

How would you determine if an area would provide a good habitat for the great horned owl?





# Reflection Section

**Invasive species are plants or animals that overtake an area and cause harm to the native plants or animals that naturally live there. Do you think that all native plant or animal species are harmed by an invasive species? Why or why not?**

**How do you think the student scientists researched the food sources of the great horned owl?**



## Findings

The Oxbow has many good qualities that are suitable for the owl's habitat, such as the open field for the owls to roam and look for food. And, the Oxbow is full of dead trees where the owls can live (figure 4).

However, we found that there is an opportunity to improve the habitat for the great horned owl in the Oxbow. One of the easiest things to do that will enhance the Oxbow for owls is to plant a field of



**Figure 4.** There are many dead trees in the Oxbow.

wheat. Behind the Oxbow is a horse pasture that is perfect for the field of wheat (**figure 5**). When it is warm enough, the horses can be moved to another part of Greenfield Village. This will enable the field to be **cultivated** and the wheat field to be planted. When the field is planted the voles will be attracted to their new habitat. Voles are one of the great horned owl's biggest food sources. The owls also eat many types of smaller animals and small food such as squirrels, rabbits, skunks, bats, frogs, grasshoppers, and berries (**figure 6**). Great horned owls will also occasionally eat ducks and geese.



**Figure 5.** The horse pasture would be a perfect place to plant wheat.

<b>Voles and mice</b>	Mice are in the Oxbow already, and voles could survive there quite well if more grain was planted for them to eat.
<b>Squirrels</b>	Squirrels are currently present in the Oxbow and in the surrounding areas.
<b>Rabbits</b>	Rabbits are present in the Oxbow and can survive off the vegetation and grass.
<b>Skunks</b>	Skunks are already in the Oxbow and eat weeds, which there is plenty of in the area. They also eat rodents, lizards, salamanders, and other animals.
<b>Berries</b>	Berries are currently in the Oxbow, and more can be planted.
<b>Grasshoppers</b>	Grasshoppers are found everywhere in Michigan, and they eat other insects, so there is great availability.
<b>Bats</b>	Bats are in the Oxbow, and there is a good habitat for them already, including bat houses.
<b>Frogs</b>	Frogs are in the water near the Oxbow. They eat the insects in and near the water, and there are plenty of them.
<b>Geese</b>	Near the Oxbow, there is an abundance of geese. Great horned owls occasionally prey on the young of ducks and geese.

**Figure 6.** Some food sources of the great horned owl and their availability in the Oxbow.

# Reflection Section

When you improve the habitat for the great horned owl, do you think other animals benefit from the improvement also? Why or why not?

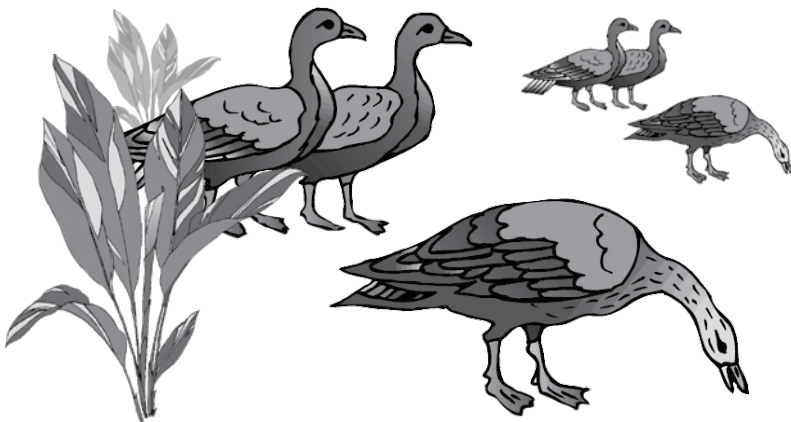
What are some benefits of attracting more great horned owls to the Oxbow?



## Discussion

A favorable habitat can have many benefits. Native bird species may need help so that their native habitats can be restored. The great horned owl is a bird that may be able to control an undesirable species in the area. One problem species present in the Metro Detroit area and the Oxbow is the Canada Goose. There is an **overabundance** of these animals and they have become a nuisance over the years. The great horned owl would be able to help with this problem because the owls can use geese as one of their food sources. This would help keep the Canada Geese in the Oxbow under control instead of being a problem.

One thing that could be done in the Oxbow is to add a wheat field. The field will help to accommodate the mouse-like creature called a vole. A vole's main food source is wheat. This is important because the great horned owl also eats the vole. All of these animals and plants will help make an ecosystem strong so it will not fail. In other words, the wheat, the voles, and the great horned owls would possibly balance out the ecosystem.\*





Through all of our research findings, we have concluded that the great horned owl should survive and do well in the Oxbow. We found that the great horned owl's habitat is similar to the habitat found in the Oxbow. The great horned owl eats many different types of animals and many of these animals are abundant in the Oxbow. For example, Canada Geese, mice, and other small animals are available in the Oxbow.

There would be an even greater abundance of rodents if there were more wheat fields. These fields could easily be planted. Everything that is needed for the great horned owl's existence is provided in the Oxbow. With the great horned owl living in the Oxbow, it will attract more tourists, aid in the learning of others, and will support the food chain and ecosystem.



\*After Forest Service scientist review, we want to note that it is difficult for humans to judge balance in an ecosystem that is already altered by humans. In this example, humans are further altering the system through agricultural practices.

## Reflection Section

**Do you think it is a good idea to enhance the great horned owl's habitat in the Oxbow? Why or why not?**

**Let's say the student scientists were able to plant a wheat field where the horse pasture is now. How might the student scientists find out if planting the wheat field had any impact on the number of great horned owls living in the Oxbow?**



# FACTivity

In this FACTivity, you will do a similar study to the student scientists in this research.

Using your school library, the Internet, and other resources, identify five birds that should live in the natural area around your school. Divide your class into five groups. Each group will do research about a different bird. The question each group will answer is: Is the natural area around our school a good habitat for the bird we are researching?



To answer your question, you will need to develop a method similar to the student scientists in this research. You will need to find out what kind of resting and nesting areas your bird needs. You will also need to identify what kind of food your bird eats to survive. When you have completed your research, write up your results using the same format as the student scientists. You may want to include photos, drawings, and other illustrations in your report.



If you are a PLT-trained educator, you may use #22 "Trees as Habitats" as an additional resource.

## Student Article Citations

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<http://www.owlpages.com/owls.php?genus=Bubo&species=virginianus>

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