

January 2021

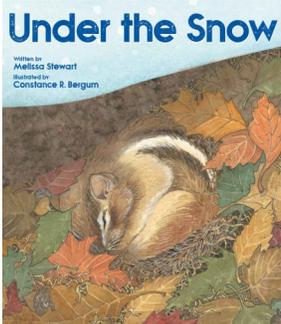
Issue 17

SWIFTlet

Soil and Water Information for Teachers: lessons on environmental themes

BELOW THE WINTER SNOW

LITERACY CONNECTIONS



Franklin Soil and Water Conservation District
Creating Conservation Solutions for Over 70 Years

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Winter in Ohio is a time when cold temperatures and changes in food and water availability cause many organisms to change their behavior in order to survive. These behavioral changes can include migration, adaptation and/or some form of slowing down their bodies, more generally referred to as hibernation. Those organisms that reduce their physical activity, must find a suitable shelter for protection and for many, it is found underground in our soil and water resources. Let's go a little deeper and learn about a few animals that dig in to survive winter.

Groundhog *Marmota monax*

Perhaps the most notable hibernator in Ohio is the **groundhog**. These mammals have extensive underground burrows— one of which is used for winter hibernation. From late fall to late winter, groundhogs go underground and into a dormant state in which their body temperature and heart rate decrease significantly: 99° F to 40° F (body temperature) and 100 beats per minute to 4 beats per minute (heart rate). Groundhogs are considered 'true hibernators.'

Woodland Box Turtle *Terrapene carolina carolina*

As cold-blooded reptiles, **woodland box turtles** must adjust their activity in order to maintain their optimal body temperature. During the winter, these turtles enter a hibernation-like state called brumation. When temperatures begin to cool, box turtles find a space where they can be somewhat insulated, often by digging into soil and leaf litter. This space is called a hibernacula.

American Toad *Anaxyrus americanus*

While some amphibian species are freeze-tolerant, the **American toad** is not. In order to survive frigid winter temperatures, these toads will dig backwards into the soil, burrowing below the frostline. You can create a hibernacula for toads in your own backyard—check out the next page for more information.

Spotted Salamander *Ambystoma maculatum*

Spotted salamanders are the state amphibian of Ohio, although they are not often seen because they spend much of their time under rocks, logs, leaf litter and in the burrows of other animals. The same is true for them during the winter months when they enter brumation in burrows below the frost line. If the weather does warm up during the winter, these animals can become briefly active.

Be sure to check out our February 2021 SWIFTlet we'll dig a little deeper into spotted salamander behavior during the late winter months.

BELOW THE WINTER SNOW

BELOW THE SNOW AT HOME

It's time to get creative and put our artistic skills to work! Let's repurpose a cardboard tube into an animal burrow!

Supplies:

- Cardboard Tube (from paper towels or toilet paper)
- Scissors
- Glue or Tape
- Crayons, Markers or Paint
- Pencil
- Construction Paper
- Modeling Clay, Play Dough, Other (Optional)
- Pipe Cleaners (Optional)
- Recycled Materials (egg crates, cardboard, paper, caps, plastic bottles, etc.) (Optional)



Procedures:

- Identify Ohio animals that go underground to survive the winter months. Choose which animal(s) you would like to create in a burrow.
- Select what medium you will use to create your animal: Paper, modeling clay, play dough, pipe cleaners (chenille stems), or recycled materials.
- Using your supplies, create your animal. The photos in the Division of Wildlife Field Guides may be a helpful reference:

Mammals of Ohio

Reptiles of Ohio

Amphibians of Ohio

- Write a summary of your animal to introduce it to your family or classmates. Include the following: Name? Where does it live? What does it eat? How does it prepare for and survive the winter?
- Find a space to proudly display your winter animal.

ADDITIONAL RESOURCES

Getting Ready for Hibernation

Where do Bugs go in Winter?

National Wildlife Federation: Life in Litter

Read Aloud: Bear Snores On

National Geographic Kids: 10 Fascinating Facts About Hibernation

Read Aloud: Winter Dance

MetroParks Snow Story 1: Animals and Snow

How Animals Survive Winter

Give it a Try

Hibernacula are shelters occupied by dormant animals during the winter. Many animals use an underground hibernacula including the American toad! You can build a winter retreat for toads in your own backyard or community. [Check out this article](#) from National Wildlife Federation for instructions on how to build a toad hibernaculum.



QUESTIONS TO EXTEND LEARNING:

1. Many organisms tunnel underground, using soil for protection. Soil is an important resource. What are some ways you can protect soil in your backyard or community?
2. What other ways do animals survive winter? Think of animals you see outside during the winter. How do they survive cold temperatures and limited food availability?

Did You Know?

We often use the word hibernation to describe dormancy during the winter months, but there are different forms of dormancy and during different seasons. Torpor, brumation, estivation are three terms describing different forms of dormancy. Check out these articles for more information:

Ask a Naturalist: Hibernation vs. brumation vs. estivation

Hibernation: Nature's Nap Time

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