

TRAILS. ONLINE.

Ecology on the Trail



WEEK 5: BIODIVERSITY



PRE-ACTIVITY: BIODIVERSITY

What is biodiversity? Sometimes it is helpful to break words down into parts. "Bio" means life and "diversity" means many different kinds. Biodiversity refers to the many different kinds of life on Earth, including plants, animals, fungi, and even microorganisms! Biodiversity also includes the variety of habitats and ecosystems that cover the planet.

Why do you think biodiversity is important?

PRE-ACTIVITY: BIODIVERSITY STUDY

For this activity you'll need some paper, a writing utensil, and something you can use to create a large circle with. A hula hoop is great, but other items like a long string or even a phone charging cord will work just fine! The key is that we want something that will create a circle of a fixed size, so we can replicate our study area at a different location later.

Once you have gathered your materials, head out into your yard, schoolyard, or a park. Place your hula hoop (or other item) on the ground somewhere. This will be your study area.

First, take an inventory of all the plants within your circle. It is okay if you don't know the names of each plant, just describe them the best you can! Now count how many you see of each type of plant.

Next, focus on insects or any other creatures within your circle.

Does your data tell you anything about this location? Is there more biodiversity here than you thought before you started? Hold onto your data, because we'll do this activity again later.

STOP 1- GEOLOGY



The rock here was used to build the Salt Lake Temple in the late 1800's. How would you have broken the large boulders into smaller sizes? How would you have transported them 20 miles away to the building site?



Trilobite, Figure 1



Horn coral

Figure 1. Fossil of trilobite. Modified from *Zacanthoides grabau*, Middle Cambrian, Langston Formation, Wellsville Mountains, Box Elder County, Utah, USA - Houston Museum of Natural Science by Daderot, 2012, retrieved from https://commons.wikimedia.org/wiki/File:Zacanthoides_grabau_i_Middle_Cambrian_Langston_Formation_Wellsville_Mountains_Box_Elder_County_Utah_USA_-_Houston_Museum_of_Natural_Science_-_DSC01411.JPG. CC0 1.0.

Figure 2. Fossil of Gastropod *Euomphalus*. Estonian Museum of Natural History Specimen No 171329 photo (g1 g1-239 b.jpg) by Tiit Hunt, 2006, retrieved from [https://commons.wikimedia.org/wiki/File:Estonian_Museum_of_Natural_History_Specimen_No_171329_photo_\(g1_g1-239_b.jpg\).jpg](https://commons.wikimedia.org/wiki/File:Estonian_Museum_of_Natural_History_Specimen_No_171329_photo_(g1_g1-239_b.jpg).jpg). CC BY-SA 4.0.



Gastropod, Figure 2



Brachiopod



Brachiopod

These fossils are all examples of marine creatures that once lived in the area. Since these are creatures that lived underwater, what does that tell us about the canyons? Are there creatures that you can find in the canyons today that resemble any of these fossils? What about in other places in the world?

How do you think that geology is related to biodiversity?



STOP 2- WILDLIFE



What kind of adaptations would help you if you were a mountain goat that lived on steep, rocky cliffs?

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What kind of impact do you think that mountain goats might have on biodiversity? How could they impact the soil and the plants in their habitat?

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Figure 3. Mountain Goat, Enchantments Basin, by Adam Schneider, 2016, retrieved from https://commons.wikimedia.org/wiki/File:Mountain_Goat,_Enchantments_Basin.jpg. CC BY-SA 4.0.





Figure 4. Mountain lion, by K Fink, 2013, retrieved from <https://commons.wikimedia.org/wiki/File:Mountain-lion-01623.jpg>. Public domain by the National Park Service.

Why are predators important? What could happen if there were no predators?

STOP 3 - PLANTS

Invasive plants are plants that have been introduced to an area where they are not naturally found. Sometimes this can happen by accident, or sometimes this can happen on purpose if people don't know that what they are planting is harmful. How might invasive plants be harmful?



What are some ways that you can prevent the spread of invasive plants?



STOP 4: WATERSHED

How do you think that the watershed is connected to biodiversity?

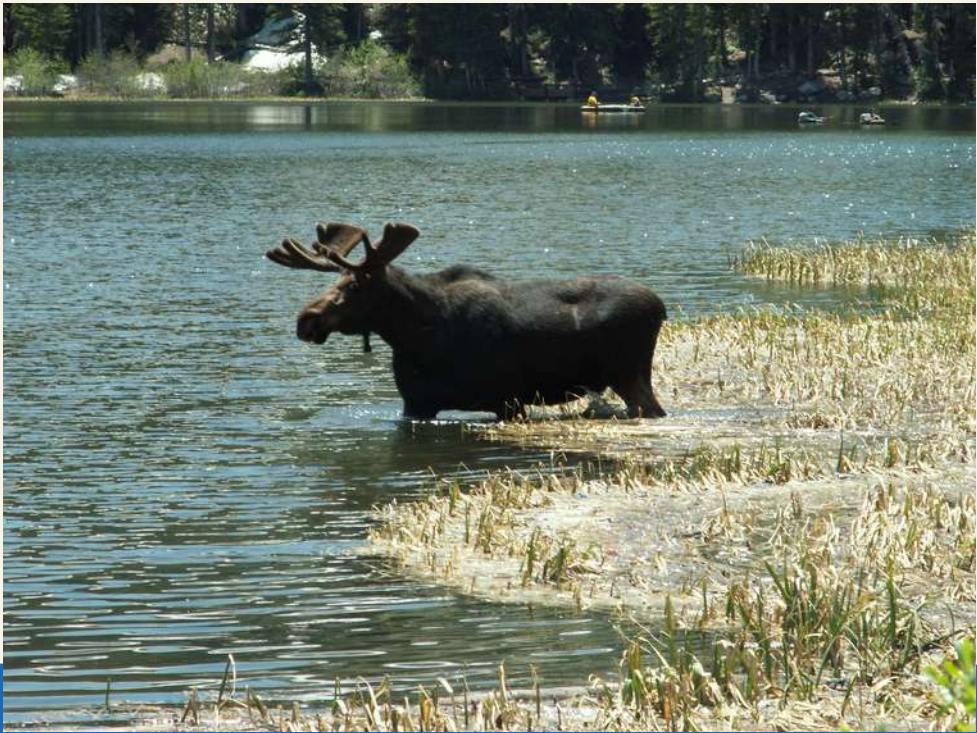


Photo by R. Middleton

STOP 5: HISTORY AND HUMAN IMPACT

What are some ways that humans can help preserve biodiversity?





BONUS ACTIVITY

Bring the same tool (hula hoop, string, phone cord) you used to make a circle for the pre-activity and find a spot along the trail to do another biodiversity study. Please keep your feet on the trail while you are investigating.

How does what you found here compare with what you found at your home or school? What can you tell about the biodiversity at each location?



POST-ACTIVITY

Let's reflect on our experiences over the last 5 weeks. What was your favorite thing that you learned? What was your favorite thing that you saw? Did you like one of the trails more than others? How does being in nature make you feel?

PHOTO REFERENCES

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