

TRAILS. ONLINE.

Ecology on the Trail

WEEK 3: NICHE

PRE-ACTIVITY

Niche is pronounced as "nitch" or "neesh"

A niche is the role that each living thing has in the community where it lives.

- An ecosystem (a community of living and nonliving things that interact) is like your neighborhood.
- A habitat (the place where something lives) is like your house.
- Your niche would be your role in your house. This would include what you do, what you eat, what chores you do, and how you get along with others in your household. The role that you play in your home is your niche. Describe your niche in the box below. Do you help with the dishes? Do you take the garbage out? Are you the oldest sibling? The youngest sibling? All of the things you do in your home is your role or your niche.

Describe your niche:

THIS WEEK WE ARE VISITING ALTA SKI AREA!



HERE IS A VIEW OF ALBION BASIN IN THE SUMMERTIME



STOP 1- GEOLOGY

GLACIERS

How do you think glaciers are formed? Write your answer here:



Although the glaciers here in the canyons are gone, there are still places where you can see glaciers today!
Have you ever seen a glacier?



The glaciers that formed our canyons left behind a variety of landforms. Picture a steep, rocky slope. Do you think that would be a good place to live? What kind of role might you have there? Some plants and animals have adapted to fill a niche in these places.

Look at the pictures here: a limber pine tree, a Clark's nutcracker, and an example of a rocky area at Alta. How do you think each of these things are connected?

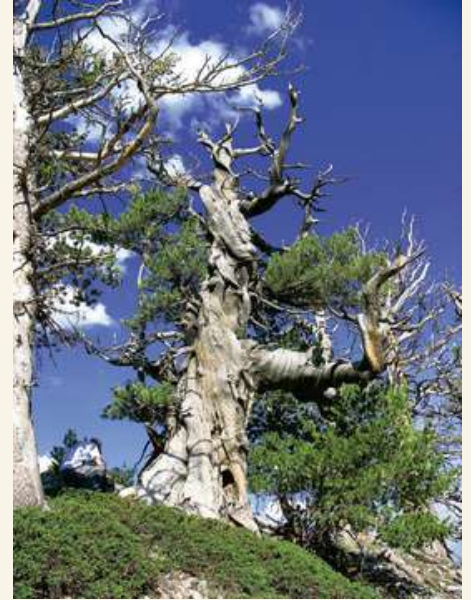


Figure 1. Photo of oldest known limber pine. Modified from Stay Flexible, Grow Old by Michael R. Walker, 2007, retrieved from <https://magazine.byu.edu/article/stay-flexible-grow-old/>. Copyright by Brigham Young University.



✦ Write down your thoughts here:

Your teacher will have the answer!

STOP 2- WILDLIFE



If we look closely at the base of this tree, we see a pile that looks like the photo on the right.

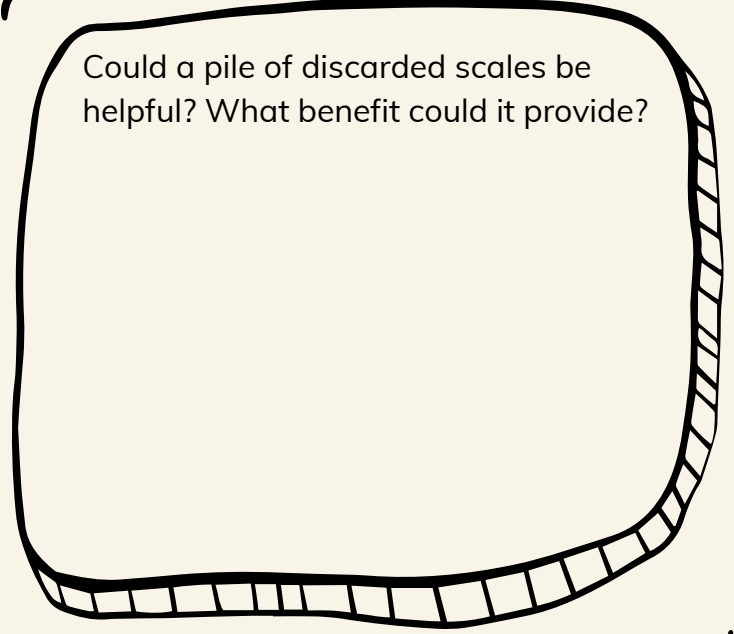
What do you think these pieces are from? What do you think might be making a pile like this?



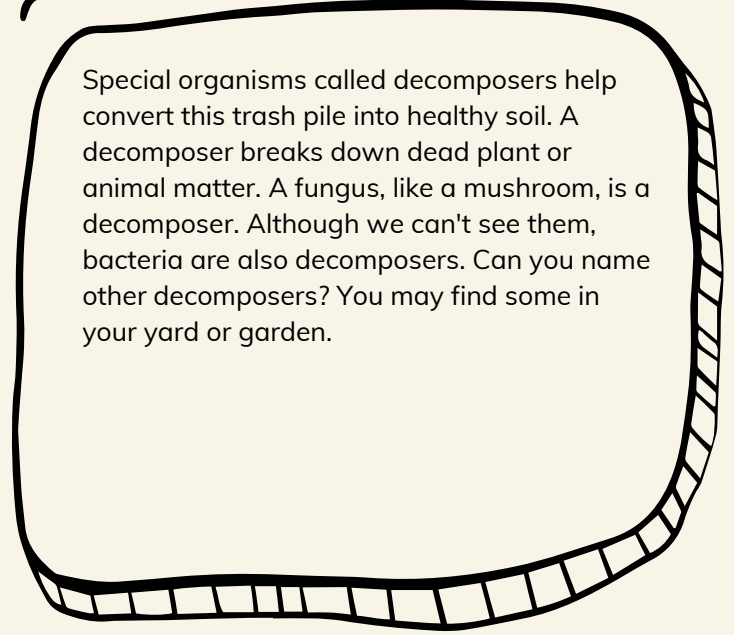
Those pieces are the scales from conifer cones, and they were left behind by squirrels!



Could a pile of discarded scales be helpful? What benefit could it provide?



Special organisms called decomposers help convert this trash pile into healthy soil. A decomposer breaks down dead plant or animal matter. A fungus, like a mushroom, is a decomposer. Although we can't see them, bacteria are also decomposers. Can you name other decomposers? You may find some in your yard or garden.



One tree can provide a habitat for many different species, which means there may be many niches to fill. How many different animals might call this tree home? What role do they play?

We already mentioned squirrels, but we'll give you a few examples below to think about.



Porcupine:



Bird:



Caterpillar:



Choose your own animal:

STOP 3: HISTORY AND HUMAN USE



Figure 2. Miners on Alta's main street, about 1873. From the Wilburn and Jean Pickett Photograph Collection, by Multimedia Archives, Special Collections, J. Willard Marriott Library, University of Utah, 2003, reference URL <https://collections.lib.utah.edu/ark:/87278/s63n2r36>.

What kind of role do you think you would fill if you lived in the town of Alta during this time period?

Today, one role that humans fill in the canyon is performing avalanche control to keep the canyons safe. Think about where you live and go to school. How do humans play a role in controlling the snow? If we did not have those roles, how might things change?

STOP 4: PLANTS AND TREES

How might plants fill a niche in an ecosystem? Try to list a few different ways. If you can, it may be helpful to discuss with a partner:

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-
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-
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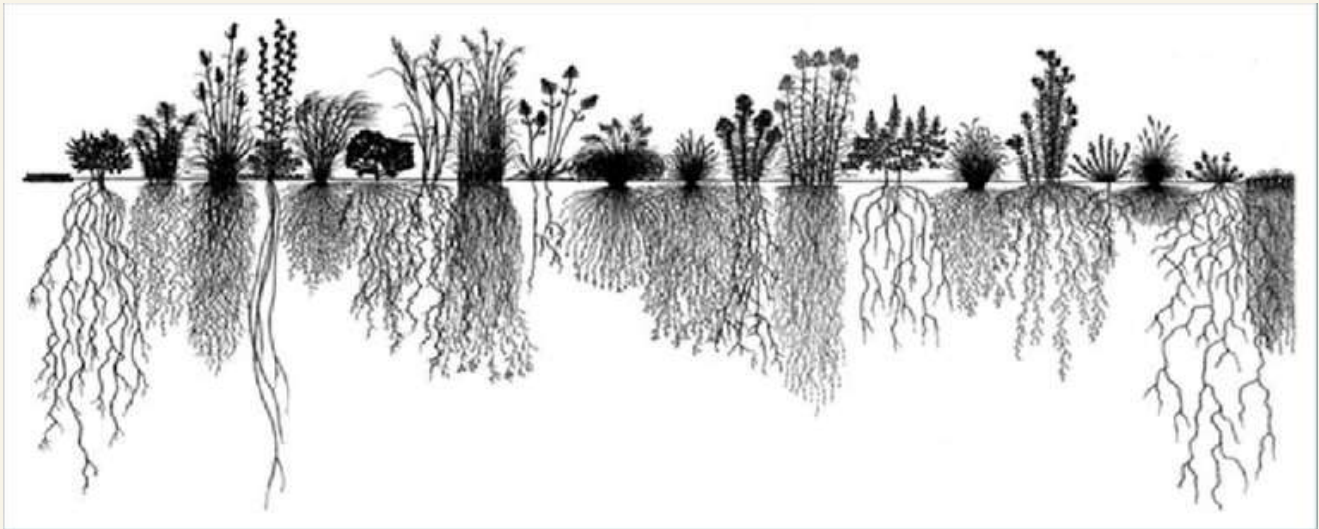


Figure 3. The root systems of different prairie plants. Modified from United States Department of Agriculture-Illinois native plant guide, by ResearchGate, retrieved from https://www.researchgate.net/figure/The-root-systems-of-different-prairie-plants-Modified-from-United-States-Department-of_fig3_40730903.

What do you think might happen to the stream in the canyon if there were no plants? The activity on the next slide might help you answer this!

Do you think that plants are important to the watershed?

EROSION IN ACTION!

Let's do a little activity to see erosion in action! For this activity, all you'll need is a hose or bucket of water, and access to a few different spots outside.

If you're at home, check with your adult to make sure it's ok for you to make a little mess! And be sure to clean up when you're done!

Compare what happens if you introduced a lot of water to a patch of grass, a patch of dirt without plants, and a portion of sidewalk or driveway. What happens to the water? Where does it go? How fast does it move? Does it carry anything with it? Record your observations below.







Patch of grass	
Patch of dirt without plants	
Sidewalk or driveway	

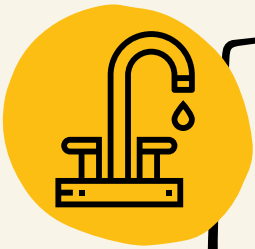
STOP 5: WATERSHED



What are some ways you use water in your daily life? List some by the water droplets below.

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_____	_____	_____
		
_____	_____	_____



The water here in the canyons is our drinking water down in the valley! How long do you think it takes for the water in the canyon to end up in your home or school?



The freshwater we have here in the canyons is a precious resource that we need to take care of. What are some ways that we can use less water in our day-to-day lives?



POST-ACTIVITY

Understanding an animal's role in the environment can help us appreciate it in new ways. Think of an animal or plant that might not be your favorite. Write down how you feel about it and why. Now think of a few roles it plays in the environment. Lastly, look back at how you originally felt about this organism, has your opinion changed or shifted? Why or why not?

REFERENCES

Miners on Alta's Main Street, about 1873 [Digital image]. (1873). Salt Lake City, UT: Wilburn and Jean Pickett Photograph Collection, Multimedia Archives, Special Collections, J. Willard Marriott Library, University of Utah. Reference URL: <https://collections.lib.utah.edu/ark:/87278/s63n2r36>

ResearchGate. The root systems of different prairie plants [Digital image]. United States Department of Agriculture - Illinois. Retrieved from https://www.researchgate.net/figure/The-root-systems-of-different-prairie-plants-Modified-from-United-States-Department-of_fig3_40730903.

Walker, M. R. (2007). *Photo of oldest known limber pine* [Digital image]. Provo, UT: Brigham Young University. Retrieved from <https://magazine.byu.edu/article/stay-flexible-grow-old/>