

Refuge Explorer

-Web of Life Edition-



Great Blue Heron with Frog

©Suzy Whittey

Willapa National Wildlife Refuge

Everybody Has a Job in the Web of Life

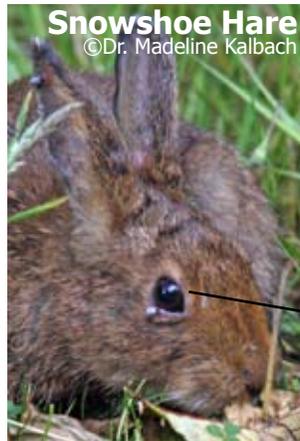
Web of Life Fast Facts

- ◆ Adaptations determine the job an organism has in the web of life.
- ◆ Some organisms provide habitat (food or shelter) for other organisms.
- ◆ Organisms have many structural adaptations that help them survive. We can use these structures to guess the organism's job. Animals that eat other animals are called PREDATORS. The organisms that are eaten by predators are called PREY.

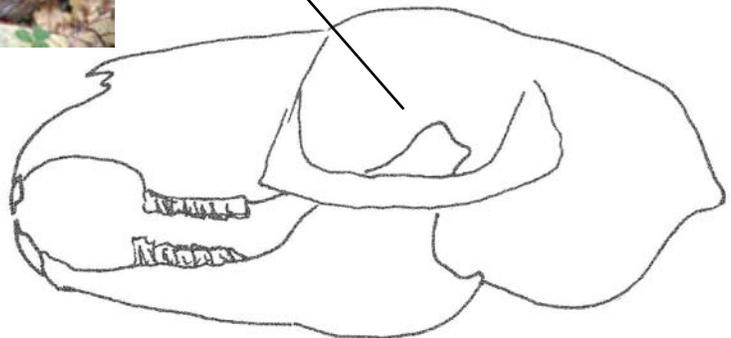
PRODUCERS make food from non-living elements. Producers are generally plants that use the process of photosynthesis.



HERBIVORES are organisms that eat plants. Look for animals that have chisel-like front teeth that clip and wide, flattened back teeth that grind.



Because these animals do not need to catch moving prey, and are often eaten by other animals, their eyes are located on the sides of the head. This placement helps them to see more of their surroundings at one time.

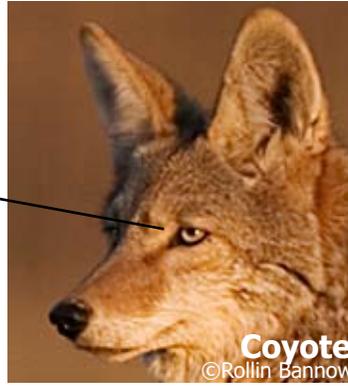


Whenever we try to pick out anything by itself, we find it hitched to everything else in the universe. -John Muir

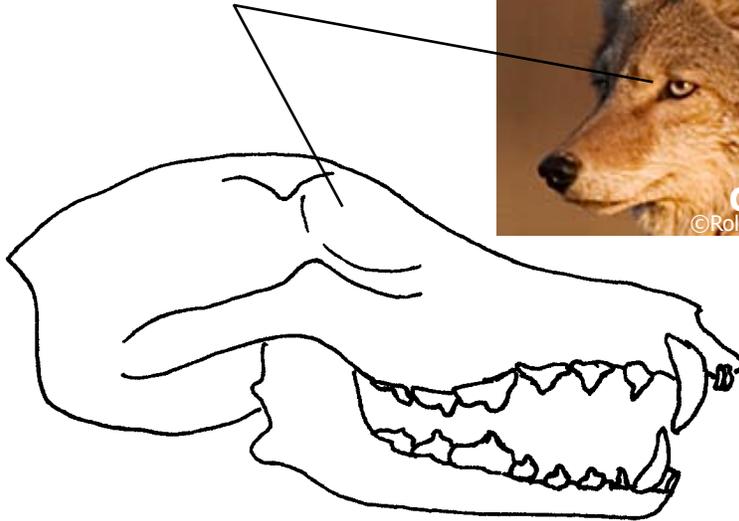


CARNIVORES are organisms that catch and eat animals. Carnivores have sharp, pointed teeth for catching, holding and slicing prey.

Eyes face forward for sharp vision and depth perception.



Coyote
©Rollin Bannow



OMNIVORES are organisms that eat both plants and animals. They have both sharp teeth and grinding teeth.



Raccoon
©Suzy Whitley

SCAVENGERS are organisms that eat animals killed by other organisms. Sometimes herbivores, carnivores and omnivores will scavenge. **DETRITIVORES** are organisms that "eat" dead plants and animals, as well as scat.



Bird's Nest Fungus
©Rollin Bannow

The Scoop on Poop

Some scientists study animal poop, called scat, to discover more about animals. Try your skills as a scatologist. Look at the pictures below and guess what was for dinner.



Coyote Scat
©Julie Tennis



Bear Scat
©Suzy Whitley



Elk Scat
©Julie Tennis

Identifying scat can be important because some animals are hard to find. What they leave behind may be the only clues about them. Some scientists work with trained "scat-sniffing" dogs. These dogs can smell the difference between over a dozen different kinds of scat!

Answers: Coyote: fruit with seeds, Elk: plants (hair and small mammal)



Creature Feature

Rough-skinned Newt

Rough-skinned newts are amphibians. They live both on land and in water. On damp days, newts can be seen walking on the forest floor looking for food.

Newts are carnivores, but have no teeth or claws. They simply bump into worms, slugs, insects, and amphibian eggs. They push their prey into their mouths with their stubby feet and toes.

Newts have a bright color on their undersides to warn predators that they secrete a powerful poison. If you meet a rough-skinned newt, observe it closely without touching it. This will prevent you from getting sick.

Learn more about the amphibians of Washington, visit: www.burkemuseum.org/herpetology

Generalists & Specialists

Some organisms can live in many places and eat almost anything. They are called **generalists**. Other plants and animals can only live in specific places or eat a few things. These organisms are called **specialists**.

Willapa National Wildlife Refuge is home to both generalists and specialists. Use your Refuge Explorer smarts to determine if the organisms pictured below are generalists or specialists.



Western Pearlshell Mussel
©Marie Fernandez



Dunlin
©Dr Madeline Kalbach

Specialist



Roosevelt Elk
©Rollin Bannow



Big Brown Bat
©Jackie Ferrier



Harbor Seal
©Dr Madeline Kalbach



Common Garter Snake
©Suzy Whittey



Porcupine
©Rollin Bannow



Pickleweed
©Shawn Schmelzer

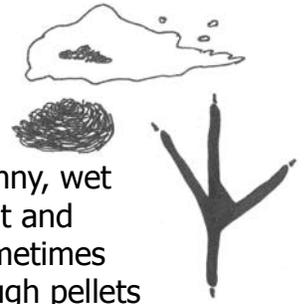
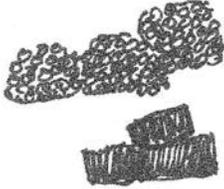
Answers: Specialists: pickleweed, dunlin, seal, porcupine, bat, mussel.
Generalists: elk, snake

Be a Wildlife Sleuth

Match the animal with its tracks and scat.



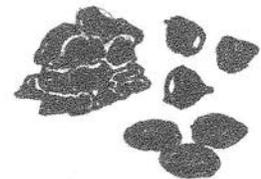
This large scat often has seeds, hair or insect parts



Runny, wet scat and sometimes cough pellets



Scat often has visible plant fibers



Large, rounded pellets



This sticky trail often has leaves stuck to it

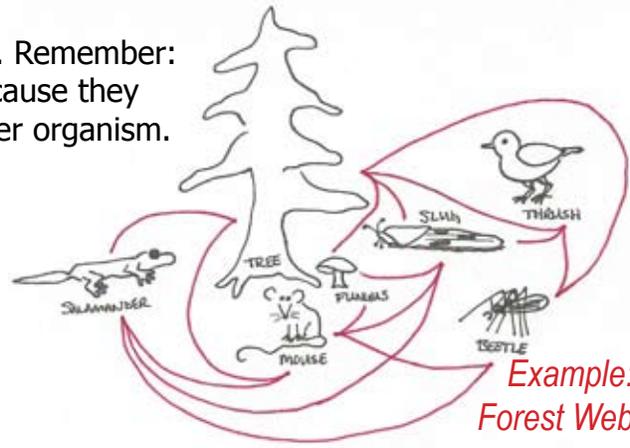


This scat often has fur and bones



It's All Connected

Draw a web of life for your favorite refuge habitat. Remember: in the web of life organisms can be connected because they are predators or prey, as well as habitat for another organism.



Naturalists Take Note

Naturalists and explorers take careful notes and drawings of the things they see, hear, smell and experience. They also note their location, the weather, time of day, temperature and habitat.

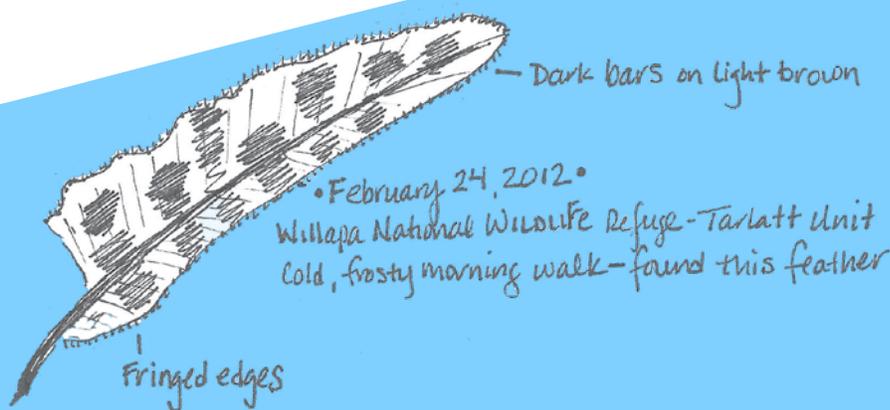
Get outside and make a **field observation** on the space below. Create sketches of what you see (tracks, scat, bones, plants and animals). Take careful notes about location, color, sounds and smells.

Name: _____ Weather: _____

Location: _____ Temperature: _____

Date & Time: _____ Habitat: _____

Notes:



Naturalist of Note

John K.
Townsend
1809 - 1851



A doctor and naturalist from Philadelphia, John K. Townsend traveled to the Pacific Northwest with Thomas Nuttall in 1834. He took careful notes about his observations on this expedition. Below is a portion of his 1836 Report of the Lower Columbia River Region, Oregon and Washington:

"About the first of November the swans, geese and ducks are seen winging their way over us in the most peculiar manner. Their flight is then high and the screams - particularly of the swans - are at times almost deafening."

Many plants and animals are named in honor of John Townsend and Thomas Nuttall, including our local Townsend's Chipmunk. See how many plants and animals you can find in your field guide that are named for these famous naturalists.

Note locations here:

Draw Your Map Here

1

2

3

4

5

6

7

8

↑
North



For more information visit:
www.fws.gov/willapa

Get Outside in March!

- Look, listen and smell your neighborhood. Create your own wildlife map in the space above. Mark where you found parts of your local web of life.