

## LYNNWOOD ELEMENTARY 4<sup>th</sup> Grade Students learn about the THE TEMPORATE RAINFOREST in WASHINGTON STATE



Temperate rainforests are a specialized ecosystem found only a few places on earth like New Zealand, Southern Chile, Oregon and Alaska. Only about 3 % of the original rainforests in the United States remains

Most of today's temperate Rainforest in the United States is in the **Hoh National Rainforest on the Olympic Peninsula in Washington State. A lot of this forest is located in the Olympic National Park.**



It rains a lot in the temperate rainforest. The sound of water is everywhere.

Precipitation ranges from 12 to 17feet of rain a year. That is 140 to 200 inches of rain a year!



Rain and fog keep everything damp.

Source: [http://commons.wikimedia.org/wiki/File:Hoh\\_rain\\_forest\\_trees.jpg](http://commons.wikimedia.org/wiki/File:Hoh_rain_forest_trees.jpg)

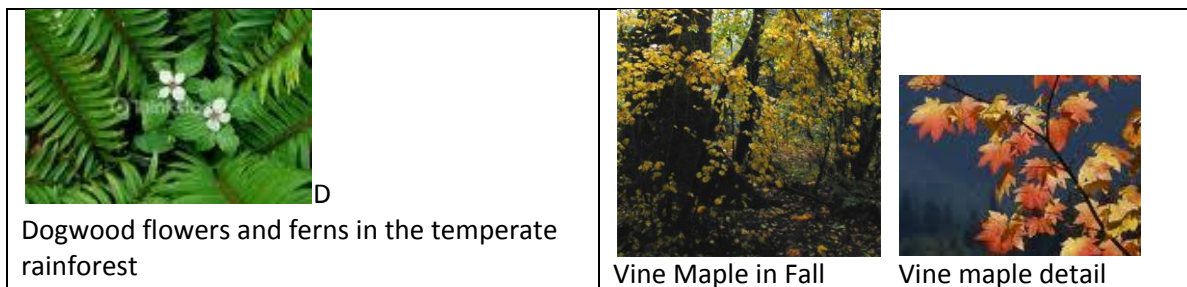
Unlike the tropical rainforest, the temperate rainforest changes with the seasons:

- Spring brings new life: trees grow new leaves, animals are born and eggs hatch.
- Summer temperatures can go up to about 80 degrees Fahrenheit. Summer has growing fruit and berries that help young animals grow bigger and stronger.
- Fall brings maturation and preparation for winter”: deciduous trees lose their leaves. Frogs find a place to hibernate under the fallen leaves.
- Winter temperatures can drop to near freezing. It may sometimes even be cold enough for some ice and snow. Winter is a season of rest for plants and animals.

The tallest trees in the rainforest are the evergreens. They produce seeds for the animals to eat and their branches and trunks support blankets of moss. The Sitka Spruce and the Western Hemlock are the two main tree species in this ecosystem. They can grow up to 280 feet tall. There is also Douglas firs and cedars which are also evergreens.



Shorter trees like dogwood and vine maples lose their leaves in the fall and live under the tall trees. They form the understory layer of the rainforest





In the temperate rainforest, fallen needles and leaves, twigs and fallen trees are on the ground. Mosses, lichens, and small plants also grow on and around the forest floor



Source: <http://www.goingplacesblog.com/RainForest.shtml>

The temperate rainforest has a soil rich in nutrients. Fungi, insects and bacteria that live there slowly digest dead and organic matter on the ground.

#### Green Darner Dragonfly

In 1997, the common green darner dragonfly became Washington's official Insect after a group of students at Crestwood Elementary School in Kent brought the idea of an Insect to the Washington State Legislature. About 25,000 students from over 100 school districts statewide participated in the selection of the common green darner dragonfly.



Picture Source: [http://www.statesymbolsusa.org/Washington/insect\\_dragonfly.html](http://www.statesymbolsusa.org/Washington/insect_dragonfly.html)

Most animals in the temperate rainforest live near or on the ground. Woodpeckers and other small animals eat insects, seeds and berries. Voles and deer eat grass. The vegetation of the temperate rain forest is very thick. It provides a good place for animals to live and grow. The animals also contribute to the health of the forest by keeping the vegetation under control by eating and tramping around.

Here are some examples of plants and animals that can be found in the Olympic Rainforest in Washington State:

Pacific Bleeding Heart



Moss



Nurse Log provide nutrients for new growth





Red Breasted Sapsucker



Pileated Woodpecker



Northern Spotted Owl



Pacific Tree Frog



Banana slug



Raccoon



Vole



Black Bear with Chum Salmon



Roosevelt Elk



Douglas squirrel



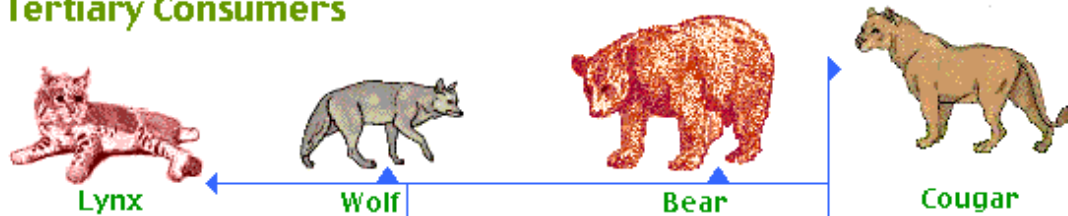
Elk

### Did You Know?

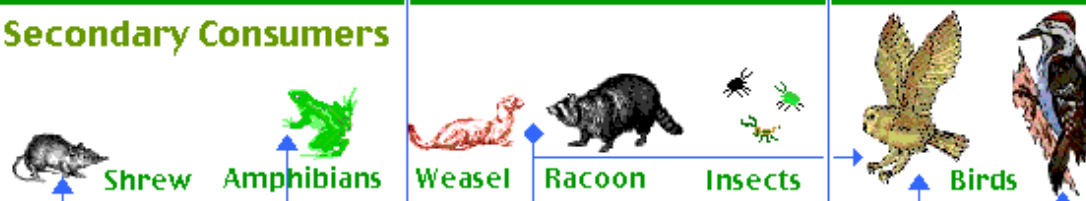
Olympic National Park protects the largest unmanaged herd of Roosevelt elk in the world. Olympic was almost named "Elk National Park" and was established in part to protect these stately animals. <http://www.nps.gov/olym/naturescience/animals.htm>

## A Food Chain in the Temperate Rain Forest Biome

### Tertiary Consumers



### Secondary Consumers

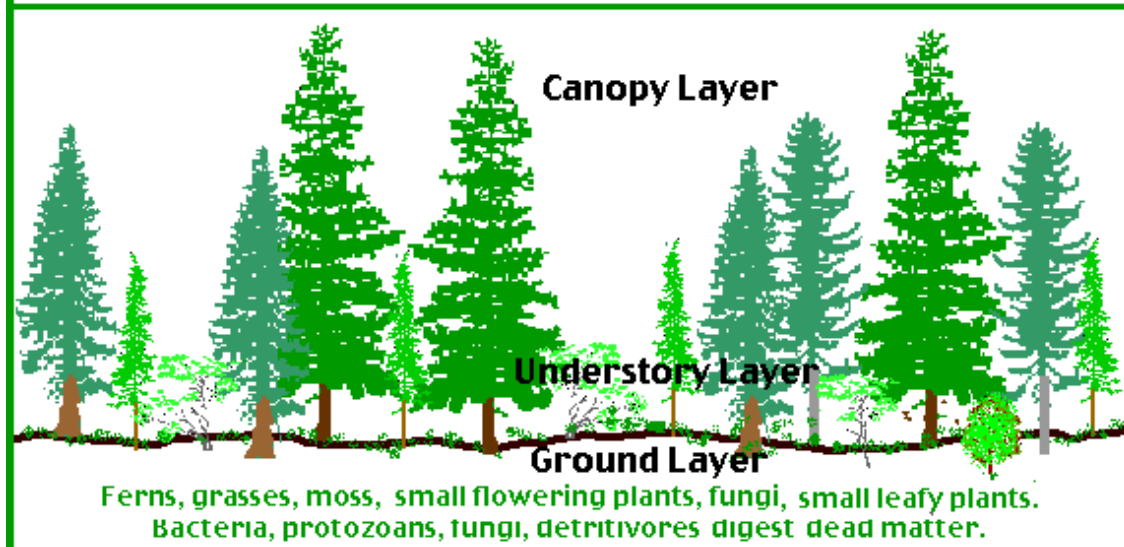


### Primary Consumers



### Primary Producers

Ferns Mosses Shrubs      Canopy level trees: Conifers: Fir Hemlock Cedar Spruce  
Shrubs Flowers      Understory trees: Vine Maples Dogwood



[http://www.world-builders.org/lessons/less/biomes/rainforest/temp\\_rain/tempgifs/tempweb.gif](http://www.world-builders.org/lessons/less/biomes/rainforest/temp_rain/tempgifs/tempweb.gif)



We learned about the Spotted Owl which is an endangered species in Washington State.

Northern Spotted Owl

Description

- dark brown feathers
- white spots on head, neck, underside
- fringed wings
- about 18 inches tall
- 4 foot wing span
- dark colored eyes
- hidden ears
- small yellow bill

Habitat

- multi layered canopy (100 feet thick)
- old-growth forest
- Pacific Northwest
- Canada

Young

- owlets
- hatch from eggs
- 2-3 eggs - March/April
- 30 days to hatch

Food

- small animals
- rodents
- birds
- flying squirrels
- insects
- snakes

Enemies

- people
- logging

Interesting Facts

- nocturnal predator
- coughs up pellets (8 hours)
- borrow nest
- use holes for nest

We also took a closer look at the banana slug and the pacific Tree Frog

Temperate Rain Forest Animal	Description	Habitat	Food	Young	Enemies	Interesting Facts
Northern Spotted Owl	<ul style="list-style-type: none"> <li>• 18 inches tall</li> <li>• 4 foot wingspan</li> </ul>	<ul style="list-style-type: none"> <li>• old growth forest</li> <li>• canopy of the T.R.F.</li> </ul>	<ul style="list-style-type: none"> <li>• flying squirrels</li> <li>• rodents</li> </ul>	<ul style="list-style-type: none"> <li>• owlets</li> <li>• hatch from eggs</li> </ul>	<ul style="list-style-type: none"> <li>• people</li> <li>• logging</li> </ul>	<ul style="list-style-type: none"> <li>• nocturnal predator</li> <li>• hidden ears</li> <li>• uses holes for nest</li> </ul>
Banana Slug	<ul style="list-style-type: none"> <li>• 2 tentacles</li> <li>• can be bright yellow</li> <li>• muscular foot</li> </ul>	<ul style="list-style-type: none"> <li>• lives on the T.R.F. floor</li> </ul>	<ul style="list-style-type: none"> <li>• fungi</li> <li>• rotten plants</li> </ul>	<ul style="list-style-type: none"> <li>• 20 or fewer eggs are laid</li> <li>• eggs laid on the soil or under logs</li> </ul>	<ul style="list-style-type: none"> <li>• snakes</li> </ul>	<ul style="list-style-type: none"> <li>• are hermaphrodites</li> </ul>
Pacific Tree Frog	<ul style="list-style-type: none"> <li>• camouflages from light green to dull tan</li> </ul>	<ul style="list-style-type: none"> <li>• temperate rain forest</li> </ul>	<ul style="list-style-type: none"> <li>• insects</li> </ul>	<ul style="list-style-type: none"> <li>• 10 to 70 eggs laid in a cluster on grass</li> </ul>	<ul style="list-style-type: none"> <li>• owls</li> <li>• rodents</li> </ul>	<ul style="list-style-type: none"> <li>• hibernates in the winter</li> </ul>

The list of endangered species in Washington State includes the grizzly bear, the caribou, the northern spotted owl and the Chinook salmon. Washington has 39 threatened and endangered plants and animal species. The complete list can be found at the following link:

<http://www.endangeredspecies.com/states/wa.htm>

4<sup>th</sup> grade students made maps of Washington State



Forests are really important because they produce Oxygen and help clean up the air in a natural way. They absorb CO<sub>2</sub> and helps reduce global warming. Trees also help anchor the soil and provide habitat for plants and animal in an intricate ecosystem where every plant and animal has a place.

The temperate Rainforest located on the Olympic Peninsula in Washington State is the last rainforest in the United States and it is a really special place.

**It is important to protect the Olympic temperate rainforest** to preserve the plants, animals and natural communities that represent the Diversity of life on Earth by **protecting the land and waters they need to survive.**



**Washington State Symbols Poster made by Joey:** The Washington State Tree is the Western Hemlock, the State bird is the yellow goldfinch and the Washington State Flower is the Coast Rhododendron.



Lynnwood Elementary School is a K-6 school in the Edmonds School District. This photo was taken on a nice autumn day in October 2010. You can see the tall evergreens behind the school which are so typical for our region.

From the town of Edmonds, you can ride a ferry to the Olympic Peninsula and drive to the Hoh Rainforest.

The nickname for our state is the **Evergreen State** because the firs are always green. But this is only true for the western part of Washington State. The

The Eastern part of the state is much drier as the rain is stopped by the Cascade mountains and the ecosystem is very different.

Other Sources: <http://www.nps.gov/olym/naturescience/temperate-rain-forests.htm>  
<http://www.marietta.edu/~biol/biomes/temprain.htm>,  
[http://wms6.pbworks.com/w/page/6392078/kristen\\_biome](http://wms6.pbworks.com/w/page/6392078/kristen_biome)