



Washington
Department of
**FISH and
WILDLIFE**

Wildlife and Wildfires

6-8th Grade

Themes: Pollinators, biodiversity, food systems

Location:

The lesson can be taught in the classroom or **remote learning modification**: over a virtual classroom.

Modifications, Adaptations:

For COVID-19 distance learning, or other remote learning modification, look for **remote learning modifications** throughout the lesson plan.

Standards:

NGSS

[MS-ESS3-2](#)

Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

[MS-LS2-3](#)

Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

OSPI

[ESE 1: Ecological, Social, and Economic Systems](#)

Students develop knowledge of the interconnections and interdependency of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, tribal, and global levels.

Materials:

WDFW Wildfire PowerPoint, Wildlife and Wildfires Assignment

Objectives:

Students will...

1. Identify the way they think about fire and how fire impacts ecosystems and wildlife.
2. Judge whether they think fire in the Pacific Northwest is positive or negative in a discussion with their peers.
3. Examine the impacts of fire suppression.
4. Research and develop a report on how one Washington species has adapted to, or relies on fire.
5. Determine what types of fire might be good for habitat restoration.

Vocabulary:

Biophysical setting: Vegetation that may have been dominant on the landscape prior to Euro-American settlement and are based on both the current biophysical environment and an approximation of the historical disturbance regime.

Fire ecology: The study of the role of fire and nature.

Fire regime: The pattern, frequency, and intensity of wildfires that prevail in an area over long periods of time.

Fire Suppression: The act of extinguishing or containing a fire, beginning with its discovery.

Fuel: Any dead or living material that will burn, including grasses, dead branches and pine needles on the ground, as well as standing live and dead trees.

Mitigation: An action taken to reduce or limit losses.

Prescribed fire: The planned application of fire to natural fuels, including logging debris, grasslands and/or understory vegetation, with the intent to confine the fire to a predetermined area. A prescribed natural fire refers to allowing naturally-ignited fires, such as those started by lightning, to burn under specific management prescriptions without initial fire suppression.

Serotinous: A pinecone or other seed case that requires heat from a fire to open and release the seed.

Succession: The gradual replacement of one plant and animal community by another.

Wildfire: Any fire occurring on wildlands that is not meeting management objectives and thus requires a suppression response.

Wildland fire: Any fire that burns in wildlands, including wildfires and all prescribed fires.

Procedure:

Wildfire: Good or Bad?

Break students into groups of three. Give them the following prompts:

- What comes to mind when you think about wildfires?
- Do you think wildfires are good or bad for wildlife?
- How do wildfires impact habitat?

Ask students to discuss the prompts for five minutes and have one person take notes. Based on the group's discussion, give students five to ten minutes to find photos online that represent their answers to the prompts (no research into the topic!). Ask groups to create a collage with supporting text on either one PowerPoint slide or a one-page Word Document. [Click here to share an example.](#) Have student groups share their slides with the class and write down themes or ideas that emerge on a whiteboard. You could also create a [Google Jamboard](#) that highlights students' main ideas. Arrange ideas by positive and negative effects of wildfire. Ask students to think whether benefits of fire outweigh its negative effects. Make sure to save students' work. At the end of this lesson, you will have students repeat this exercise and analyze how their viewpoints on fire may or may not have changed.

Remote learning modification: Use breakout rooms to break up students into groups of three to four. Students can



use [Google Slides](#) to create a shared document of their discussion. You can then place one photo or more photos from each group's slides onto a virtual whiteboard like [Google Jamboard](#).

Afterward, watch the 11-minute video, "[Wildlife that Depend on Wildfire to Survive](#)"

While watching the video, have students answer the following questions:

1. What is one species that relies on fire? Describe why fire is important to the species.
2. How has historical fire suppression impacted Pacific Northwest forests?
3. How does smoke from wildfire help salmon?
4. Why is fire important to indigenous peoples in the Pacific Northwest?

For homework, assign students to watch the 5-minute video, "[For Forest Wildlife, Fire Brings a New Start](#)" and read the accompanying article from the Oregon Zoo. Although they discuss Oregon forests in this video, the concepts also pertain to Washington forests.

Have students answer the following questions:

1. How have humans changed the way that wildfires burn?
2. Why do fires burn differently in different ecosystems?
3. How did the Eagle Creek Fire impact pikas?
4. Do you think fire is important to Pacific Northwest ecosystems? Why or why not?

Have students turn in their answers and discuss in class during the next period.

How fire has shaped the Pacific Northwest

Open the WDFW PowerPoint, "Wildfires in Washington". This PowerPoint takes students through how fires have historically shaped Pacific Northwest ecosystems and addresses how fire suppression has increased high intensity fires. Make sure presenter notes are on as most slides have supplemental information or cues for student prompts. Vocabulary words are bolded. If the definition is not in the slide, check the presenter notes. **Remote learning modification:** This PowerPoint can be taught over Google Classroom, Zoom, or any other virtual platform.

After the PowerPoint, pass out the "Wildlife and Wildfires" assignment. Students will choose one species and one ecosystem the species lives in using the U.S. Department of Agriculture Fire Effects Information System Database. They will research how the species relies on fire or uses fire to its advantage. From there, students will record data from the database and make recommendations for habitat restoration based on historical fire regimes and current fire occurrence. We recommend giving students one week to complete this assignment. After students have turned in their assignment, ask for volunteers to share their reports with the class.

Wildfire: Good or Bad Part II

Have students break up into the same groups of three they did for the opening assignment. Give students the same prompts:

- What comes to mind when you think about wildfires?
- Do you think wildfires are good or bad for wildlife?

- How do wildfires impact habitat?

Again, have students discuss the prompts for five minutes and have one person take notes. Based on the group's discussion, give students five to ten minutes to find photos online that represent their answers to the prompts (no research into the topic!). Have groups create a collage with supporting text on either one PowerPoint slide or a one-page Word Document. After students have finished with their project, pass out their first slide. Ask them to compare.

- Did their thoughts on fire change or stay the same?
- Why are some fires "good" and others are "bad"?
- Do they think the benefits of fire outweigh the negatives?
- Do they think fires are good for Pacific Northwest ecosystems and peoples? Why or why not?

Give groups about five minutes to answer these questions and then have students share as a class.

Ask students if they think there is anything they can do to help wildlife after wildfires. Listen to student answers, and then take five minutes to popcorn read the blog, "[Four Ways to Help Wildlife after Wildfires](#)". Additionally, it's important to note that human-caused wildfires (i.e., fires that started from fireworks, campfires, target shooting, or other human activity) can, and should be avoided. Check out the [#RecreateResponsibly Wildfire tips and resources](#) and make sure these resources are available to students.

Optional extension:

- We encourage you to take students to any nearby [WDFW wildlife area](#) if you can. Have students hypothesize how fire might be part of the ecosystem.
- Additionally, [check out this lesson](#) where students "pop" open a serotinous pine cone!



Idea: Show off your students' work! Share student projects from this lesson with WDFW.

Facebook: @WashingtonFishWildlife

Instagram: @TheWDFW

Twitter: @WDFW

#WildWashington #WildWa

Did you teach this lesson? [Give us your feedback.](#)



Additional Resources :

We encourage you to use the following resources as either a supplement to this lesson, or to share the resources with students for their project.

Supplemental activities:

- [Exploring Wildland Fire, An Educator's Guide](#)- Bureau of Land Management
- [Northern Cascades Curriculum](#)- Fireworks

Other resources:

- [Forest Management](#)-WDFW
- [Careers in Fire Science](#)- National Park Service
- [Wildfire in Ecosystems: Effects of Fire on Fauna](#)-U.S. Forest Service
- [Middle School Resources](#)- Smokey Bear
- [Fire-Adapted: plants and Animals Rely on Wildfires for Resilient Ecosystems](#)- Defenders of Wildlife
- [Endangered Wildlife, Habitat Burned in Washington wildfires; Years of Effort to Boost populations Wiped Out](#)- The Seattle Times

Videos

- [Wildfire and Animals-What is the Real Story](#) (video)- U.S. Fish and Wildlife Service
- [Misconceptions and Benefits of Fire](#) (video)-U.S. Forest Service
- [Why Certain Naturally Occurring Wildfires are Necessary](#) (video)-TEDed
- [Endangered Pygmy Rabbits Rescued from Washington Wildfire](#) (video)-BLM
- [What Happens to Wild Animals During a Wildfire](#) (video)-Science Insider