



Washington
Department of
**FISH and
WILDLIFE**

Redband Trout and You

La Trucha de Banda Roja y Tú

K-5th

Themes: Food webs, habitat quality

Location:

This lesson's activities can be done in the classroom with student computers.

Remote learning modification: Lesson can be taught over Zoom or Google Classrooms,

Standards:

NGSS

[5-LS2-1](#)

Develop a model to describe the movement of matter among plants, animals, decomposers and the environment.

[3-LS4-4](#)

Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Washington 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.

Modifications, Adaptations:

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

This lesson also has materials in Spanish.

K-2 adaptation: This lesson can be adapted to teach kindergarten through second grade students as well. Adaptations for these grades are built in to this lesson plan.

NGSS

[2-LS4-1](#)

Make observations of plants and animals to compare the diversity of life in different habitats.

Materials:

WDFW Redband Trout PowerPoint, Food web activity, [From the Field: Fisheries Biologist Part I](#) video, [From the Field: Fisheries Biologist Part II](#) video, Video questions assignment sheet, [Redband trout Google Slides habitat activity](#)

Objectives:

Students will..

1. Define what a food web is and explain how food webs illustrate relationships between species in an environment.
2. Create their own food web based around redband trout and predict what would happen if certain elements changed.
3. Compare and contrast habitat elements for redband trout.
4. Describe ways they can help redband trout.
5. Analyze three different ecosystems for redband trout suitability and explain why, or why not they think that habitat would have redband trout.

Vocabulary:

English

Adaptable: The ability to adjust to new conditions.

Adfluvial: A life history where fish are hatched in rivers or streams, but spend the majority of their life in connecting lakes or marshes. When they spawn, they return to the area they hatched in.

Endangered: A species at risk of extinction. Organisms can receive an endangered classification globally, nationally, or statewide

Endemic: A species that evolved to one specific ecosystem and is only found in one geographic area on Earth.

Fish passage barriers: Barriers that prevent fish from moving throughout streams, or migrating to oceans or lakes. For example, many undersized culverts under roads prevent fish from passing through that stream.

Fluvial: A life history where fish spend their entire life in streams and rivers. They spawn at the headwaters of streams they occupy.

Life history: The sequence of events related to survival and reproduction that occur from birth through death.

Macroinvertebrate: Small aquatic animals without backbones that can be seen without a microscope. They often include larval insects like dragonflies as well as snails, worms, and beetles.

Migration: The seasonal movement behavior when animals seek habitat (food, water, shelter, space) in different regions.

Opportunistic: When animals (consumers) eat or consume any prey they can catch.

PIT tag: Passive Integrated Transponders (PIT) tags are animal tracking tags that activate when they pass close to a special antenna.

Population abundance: The total number of individuals in an area.

Redd: Shallow depressions trout and salmon build in the bottom of freshwater rivers and streams to lay their eggs in.

Riparian zone: The area that borders rivers or other bodies of water. This includes floodplains and streambanks. Riparian areas are typically rich in vegetation.

Salmonid: Members of the salmon family. Salmon and trout



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are smooth-scaled fish that have: (1) an adipose fin; (2) a large mouth with the jaw extending back beyond the eye; and (3) soft-rayed fins.

Spawn: When fish release or deposit eggs.

Threatened species: A species that is likely to become endangered in the foreseeable future without cooperative management or removal of threats.

Spanish

Adaptable: La capacidad de ajustarse a nuevas condiciones.

Adfluvial: Un recorrido vital en el que los peces nacen en ríos o arroyos, pero pasan la mayoría de su vida en lagos o pantanos que se conectan. Cuando desovan, regresan al área en la que nacieron.

En peligro de extinción: Una especie que corre el riesgo de extinguirse. Los organismos pueden recibir una clasificación de estar "en peligro de extinción" a nivel global, nacional o estatal.

Endémico: Una especie que se desarrolló en un ecosistema específico y solo se encuentra en un área geográfica en la Tierra.

Barreras de paso de peces: Barreras que evitan que los peces se muevan entre ríos o que migren a océanos y lagos. Por ejemplo, muchos conductos muy pequeños bajo los caminos evitan que los peces pasen por ese arroyo.

Fluvial: Un recorrido vital en el que los peces pasan toda su vida en arroyos y ríos. Desovan en las nacientes de los ríos que ocupan.

Recorrido vital: La secuencia de eventos relacionados con la supervivencia y reproducción que ocurren desde el nacimiento hasta la muerte.

Macroinvertebrado: Pequeños animales acuáticos sin columna vertebral que se pueden ver sin microscopio. Con frecuencia, incluyen insectos larvarios como libélulas, así como caracoles, gusanos y escarabajos.

Migración: El comportamiento de movimiento estacional cuando los animales buscan un hábitat (comida, agua, refugio, espacio) en diferentes regiones.

Oportunista: Cuando los animales (consumidores) comen o ingieren cualquier presa que puedan atrapar.

Etiqueta de PIT: Las etiquetas de PIT (Passive Integrated Transponders, transmisores pasivos integrados) son etiquetas de rastreo de animales que se activan cuando pasan cerca de una antena especial.

Abundancia de población: El número total de individuos en un área.

Desovadero: Depresiones de poca profundidad que las truchas y los salmones construyen en el fondo de los ríos y arroyos de agua dulce para poner sus huevos.

Procedure:

Redband trout PowerPoint, Slides 1-7

Open the WDFW Redband Trout PowerPoint. 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. Teach through slide seven. **Remote learning modification:** This PowerPoint can be taught over Google Classroom, Zoom, or any other virtual platform.

Food web activity

After you are done with slide seven, distribute the food web assignment. This assignment asks students to apply what they learned in the first half of the PowerPoint. Students will design their own food webs around redband trout and then answer supplemental questions about what role(s) trout play in their ecosystems. Give students the rest of class time to finish this project. If after 30 minutes, they still have not completed, they can take home as homework and bring in the next science period. **Remote learning modification:** This assignment can be distributed as homework and done on the computer.

K-2 Modification: Open up the K-2 Redband trout PowerPoint and go through slides 1-7. Make sure presenter notes are on. Afterward pass out the Redband Trout Food Chains Assignment. In this assignment, students will use the information from the PowerPoint to create two food chains that highlight the diversity of species connected to redband trout. You can have this be an in class assignment or pass out for homework.

Redband trout PowerPoint, Slides 8-26

In your next class period, review slides 8-26. This part of the presentation teaches students about redband trout life histories, habitat requirements, threats to the species, and what students can do to help trout. 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.

K-2 Modification In the K-2 Redband trout PowerPoint Review slides 8-18. Make sure presenter notes are on.

From the Field: Fisheries Biologist

Distribute assignment sheet for the two videos, "From the Field: Fisheries Biologist part I and II". Assign as homework (both videos together are about 12 minutes) and have students answer the questions as they watch the videos. Next science period, have students turn in their answer sheets and discuss some of the questions. Ask students if there is anything they still wonder about redband trout or that they want to know. Write these thoughts on a whiteboard or virtual whiteboard like [Google Jamboard](#). **Remote learning modification:** Have students turn in assignments online and use breakout rooms to facilitate discussion about the videos.

Assessing habitat quality

In the final assignment, students will identify ecosystem elements that make ideal redband trout habitat. Students will look at three different habitats, then identify and label the elements they think make ideal habitat for redband trout. After identifying these elements, students will answer a set of three questions for each habitat. Their final project will be to make their own ideal redband trout habitat using what they have learned in this lesson. We recommend giving students access to the slides in case they need them as a resource. Students can draw their ideal redband trout habitat or create it using photos from the internet. Three final questions accompany this assignment.

K-2 Modification Instead of the redband trout habitat have students open the [redband trout biodiversity activity](#). This short activity also contains the final assessment where students draw their own biodiverse redband trout activity.



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Optional extension:

If you are able, take students on a field trip to redband trout habitat. Redband trout are a subspecies of rainbow trout found east of the Cascades. [Use this resource to help find what lakes rainbow trout are found at in Washington](#). While on your field trip, have students describe the habitat elements. You could even host a small garbage clean-up to help support clean habitat. Remember to [Leave No Trace](#) and [be respectful of any fish or wildlife you may see](#).

K-2 Modification: Take students to a wildlife area, school yard, or nearby riparian area. Have them observe the habitat and count the number of species (plant and animal). Talk about their findings as a class and have them decide whether or not they think the area is biodiverse.

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.

- [Rainbow trout](#)- WDFW
- [Interior Redband Trout](#)- WDFW
- [Redband Trout Activity Book for Kids](#)- Idaho Department of Fish and Game
- [Native Trout](#)- USFS Pacific Northwest Region
- [Spokane's Redband Trout](#)- Spokane Riverkeeper
- [Interior Redband Trout](#)- USFWS Columbia River Region
- [Interior Redband Trout Poster](#)