

Activity 12: Salmon and Steelhead Restoration Project

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Male Coho salmon from a river in Alaska.
Photo by U.S. Fish and Wildlife Service.

Overview

In this activity, participants review what they have learned about their community, the needs of salmon and steelhead, and the state of the local creek, and then choose and carry out a project for enhancing salmon and/or steelhead in the local watershed.

Note: You may choose to implement the actual project as part of [Activity 13: Community Celebration](#) and invite members of the community to participate.

Background Information

After monitoring the local creek to see how well it meets the needs of salmon and steelhead, participants use what they have learned to plan and carry out a restoration project. They may join with a resource agency, industry, or a private organization to contribute to a project already underway, or may initiate a new project. See [Advance Preparation](#) for possible project ideas.

Keep in mind that projects affecting fish or the flow of the creek must be reviewed and approved by the State Department of Fish and Game. Your local or county authorities may also have additional permitting requirements. Check with your salmon and steelhead resource professional (see [Resource Professionals](#) under [Unit Overview: Tips for Managing the Unit](#)) before you get started on any project.

Objectives

Participants will: (1) identify possible threats to salmon and/or steelhead in the local watershed, (2) brainstorm possible actions for reducing those threats, (3) choose and carry out a restoration project that will help salmon and/or steelhead in the local watershed, and (4) use haiku poetry to reflect on the project.

Time

Setting the Stage: One group session

Activity: Will vary depending on project

Materials

- KWLR chart (started in [Activity 1: Getting to Know Salmon and Steelhead](#))

- Chart paper (optional)
- Strips of paper, 4-inches x 11-inches or larger, or 3-inch x 5-inch sticky notes
- Marker pens
- Tape
- Blank paper for each pair
- Copies of “Choosing a Project” worksheet, 1 per team
- Copies of “Planning a Project” worksheet, 1 per person
- Camera
- Additional materials for selected project
- Drawing paper
- Colored pens, pencils, charcoal or other art supplies
- Examples of haiku poetry

Advance Preparation

1. Scope out ideas for a restoration project. Possibilities include:
 - Creek Restoration - Participants reconstruct eroding stream banks, remove small dams or weirs, or otherwise physically restore the creek. For more information:
 - [Stand by Your Stream - “Streamside Restoration - A Team Effort”](#) from the Department of Natural Resources at Cornell University
 - Restoration Efforts in California: [California Conservation Corps](#)
[Salmonid Restoration Federation](#)
 - [River Corridor and Wetlands Restoration Links](#) (listed by state)
 - Creek Revegetation - Participants plant vegetation along the creek to combat erosion, provide shade for cooling the water, and offer creek habitat for insects. For more information:
 - [Streamside Revegetation Manual](#) (From Streamside Native Plants in British Columbia)
 - From Erosion Control Magazine, [“Come Together: Revegetation Projects Require Concerted Efforts”](#)
 - Brochure - [Plant it Right: Restoration Planting Techniques from Washington State University](#)
 - Creek Clean-Up - Participants organize a clean-up of trash and other debris in and along the creek. For more information on how to conduct a creek clean-up, see [Streamkeeper Savvy: Tips for Helping Streams](#)

- Storm Drain Stenciling - Participants paint signs on storm drains throughout the watershed to inform people that they drain directly into the local waterway - not through a water treatment facility. For more information, see [Earthwater Stencils](#) or contact your city public works department.
 - Newsletter or Web Site - Participants create a newsletter or web site that describes their unit activities and offers suggestions for how the community can enhance salmon and steelhead living in the watershed. See the following web site examples:
 - [The Salmon Cam](#) by Ms. Haugen's science class, Florin High School in Sacramento, CA
 - [The Salmon Page](#) by Riverdale Grade School in Oregon
 - Video - Participants develop a video about the salmon and steelhead in the watershed to present to community leaders. For suggestions on how to do this, see [Adobe's Video Documentary lesson plan](#).
2. Talk with your salmon and steelhead resource professional (see [Resource Professionals](#) under [Unit Overview: Tips for Managing the Unit](#)) about possible projects in your area or for your specific site.
 3. If you are considering a creek restoration or revegetation project, be sure to think about:
 - Who owns the land where the restoration or habitat enhancement will be implemented? Is it public or private?
 - What laws apply? What permits or permissions are necessary to gain access?
 - What will be the impact of participants walking throughout the area and how will that affect the desired outcome of the project?
 4. Before planning a specific project, check with your resource professional for information about laws, regulations, and permits that may apply to your chosen project. Tell participants of your research so that they are aware that laws and regulations are intended to protect the water, air quality, and wildlife for the common good.
 5. If your participants will be doing a creek restoration or revegetation project, visit the site with the appropriate resource expert to plan the project. Look for potential hazards and any fragile areas (such as stream banks or vegetation).
 6. If your school or organization is doing other Adopt-A-Watershed units, map the location of the restoration project. Be sure to label the map with the site's longitude, latitude, and the street address, if applicable. After the project, you will file this information, along with participant reports and pictures, in the Adopt-A-Watershed files so that they can be used for comparison in future years.

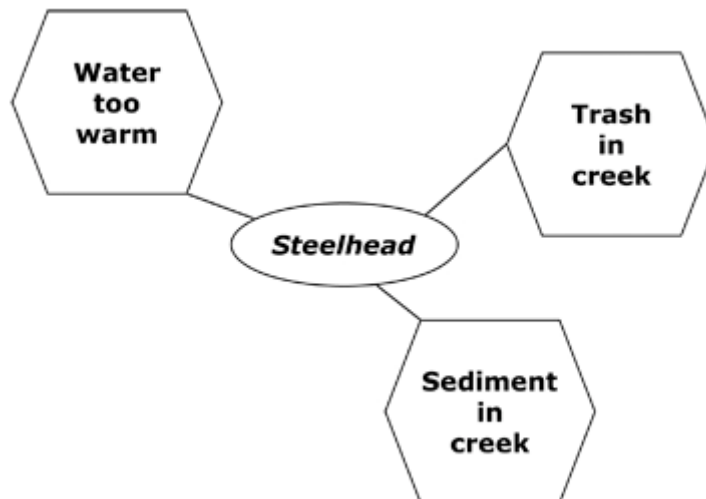
7. Set dates for doing the project, as well as for any meetings that should take place before.
8. Prepare needed materials.
9. Make transportation arrangements and get permission slips, if needed (see [Planning Field Study Trips](#) under [Unit Overview: Tips for Managing the Unit](#)).

Setting the Stage

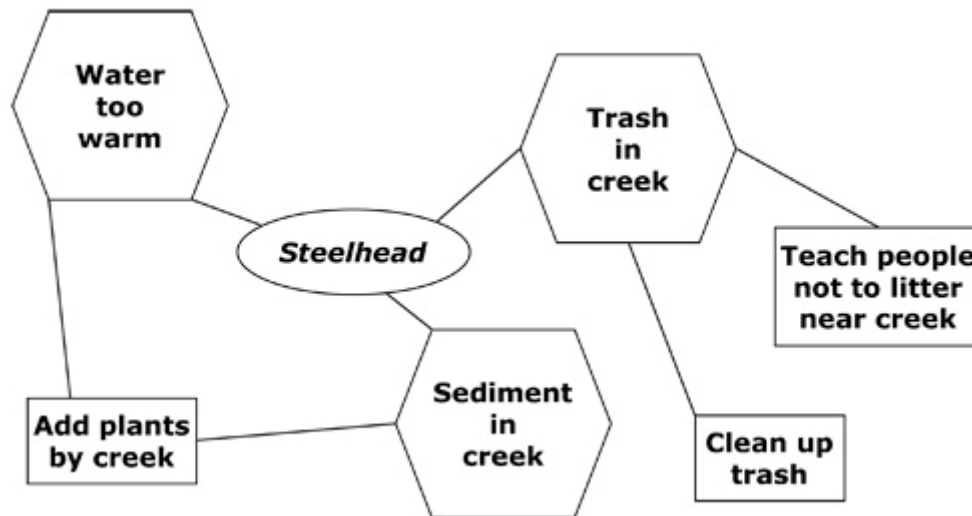
1. Have participants look at the KWLR chart and ask them what they have learned about their local creek and the impact people and salmon and steelhead have on each other within the watershed. Explain that they will have an opportunity to carry out a restoration project to enhance salmon and/or steelhead in your local watershed. The first step will be deciding on a project to do.
2. On chart paper or on the board, write the name of your local salmon and/or steelhead species and draw a circle around it. For example:



3. Ask participants to name some of the threats to salmon and/or steelhead in the local creek that they have learned about through the unit activities, particularly from [Activity 11: Creek Monitoring](#). Add these as hexagons surrounding the original circle. Add lines to show connections. For example:



4. Have participants pair up, and give each pair a blank piece of paper. Have the pairs copy the diagram from the chart or board.
5. Explain to participants that they will use this “mind map” to brainstorm ideas for things the group might do to reduce threats to salmon and steelhead. Pairs will add their ideas to their diagram as rectangles, connecting them with lines. Encourage pairs to be as creative as possible. At this point, they should not be concerned about how practical their ideas are. They should, however, try to come up with at least two ideas for each threat identified by the group. Some of their ideas may connect to more than one threat. For example:



6. Have pairs add their ideas to the group diagram on the chart paper or board.
7. At this point, you may introduce the project ideas you have scoped out (see [Advance Preparation](#)).

Conducting the Activity

Part One – Planning the Project

1. Have each team use the “Choosing a Project” worksheet to analyze one of the project ideas identified in Setting the Stage or that you have scoped out (see [Advance Preparation](#)).
2. Have teams present their analysis to the group. If participants recommend doing a particular project, make a big note of that on the mind map.
3. Help participants identify one project from the recommended list to carry out.

4. After selecting the project, help participants plan the necessary tasks to implement the project. Ask participants to think of all the tasks they would need to do to carry out the project. Write each task on separate strips of paper (or sticky notes), and post them on the wall. As a group, look over the tasks and determine which would need to happen first, second, and so on. Rearrange the strips (or sticky notes) as needed so that you end up with a chronological listing of the tasks.
5. Have participants transcribe the tasks in order onto the “Planning a Project” worksheet (or have one participant transcribe the tasks, and make copies of the whole page for the group).
6. For each task, help participants plan who will do it, how they will do it, what resources (materials and information) they will need to do it, and when it will be done. Have them write this information on their individual worksheets.

Part Two – Implementing the Project

1. Facilitate participants in doing the project steps as planned.
2. If conducting a creek restoration or enhancement project, have participants make a large sign with the date of the project, the name of the group, the name of the watershed, and the name of the project in BIG letters. Have participants take “before and after” pictures of their project using the sign.
3. Have participants take photos of any displays or products they make, and provide documentation of the results of the project. For a systematic way of documenting the project by establishing points and taking photographs, see [“A Guide to Photo Plots”](#).

Part Three – Reflecting on the Project

1. At the project site and after the project is complete, gather in a circle and discuss:
 - What were the most rewarding aspects of the project?
 - What were the most challenging aspects?
 - How might we measure our project’s success?
 - Is there anything we would do differently next time?
2. Ask if any of the participants have read or written haiku poetry and if anyone knows what haiku poems are typically about. (Nature.) Ask participants if they know the structure of a haiku poem. (Haikus are three-line poems. The first line has five syllables, the second line has seven syllables, and the third line five syllables.)
3. Read several haiku poems to the group. Ask participants to share their observations about the poems.

4. Give participants time to write haiku poems of their own emphasizing what the restoration project has meant to them personally. Ask them to illustrate their poetry with the art supplies provided.
5. Ask volunteers to share their poems and illustrations.

Wrap-Up

1. Have participants use their photos or other documentation as the basis for writing a summary of the project. They should write a description of the project, why the group chose this particular project, what it did, what effect the project had on salmon and/or steelhead (if known), and what affect it had on people (including themselves). Have them place all the materials and their poems in their team portfolios.
2. Have participants look at the KWLR chart and add things they have learned under “L” and any new questions under “W.”

Enrichment

- Contact your local newspaper and share the results of your project with them.
- Make a video of your project and share with other classrooms in your school, with others in the community, or with your elected officials.

Names: _____

Date: _____

Choosing a Project

Project Idea:

1. What difference would this project make to salmon and steelhead?
2. What difference would it make to the community?
3. Are there people in our community working on this project? How could we work with them?
4. What would we need to know to do this project?
5. What resources would we need to do this project?
6. How much time would this project take?
7. What safety issues would we need to consider for this project?
8. Would you recommend that the group do this project? Why or why not?

Names: _____

Date: _____

Planning a Project

Project Task	What is needed to do it?	Who will do it?	How will it be done?	When will it be done?

Names / *Nombres*: _____

Date / *Fecha*: _____

Choosing a Project *Escoger el proyecto*

Project Idea / *Idea del proyecto*:

1. What difference would this project make to salmon and steelhead?
¿Qué diferencia haría este proyecto con respecto al salmón y a la trucha del mar (el steelhead)?

2. What difference would it make to the community?
¿Qué diferencia haría a la comunidad?

3. Are there people in our community working on this project? How could we work with them?
¿Hay personas en nuestra comunidad quienes trabajan en este proyecto? ¿Como podemos trabajar con ellos?

4. What would we need to know to do this project?
¿Que es lo que tendríamos que saber para hacer este proyecto?

5. What resources would we need to do this project?
¿Que recursos necesitaríamos para hacer este proyecto?

6. How much time would this project take?
¿Cuanto tiempo nos tomaría hacer este proyecto?

7. What safety issues would we need to consider for this project?
¿Qué aspectos de seguridad necesitaríamos considerar para este proyecto?

8. Would you recommend that the group do this project? Why or why not?
¿Recomendaría usted que el grupo hiciera este proyecto? ¿Por qué si o por qué no?

Names / Nombres: _____

Date / Fecha: _____

Planning a Project
Planear el proyecto

Project Task / <i>Tarea del proyecto</i>	What is needed to do it? <i>¿Que es necesario para hacerlo?</i>	Who will do it? / <i>¿Quién lo hará?</i>	How will it be done? <i>¿Cómo será hecho?</i>	When will it be done? <i>¿Cuándo será hecho?</i>