



Water Resources project resource guide

What is this guide?

The purpose of this project resource guide is to help support your learning within the water resources project area. It provides step-by-step suggestions on how to get started and how to continue learning within the project area.



What is project learning?

We believe young people learn best by doing. In our program, you have the opportunity to choose project areas that interest you. We then offer opportunities for positive learning environments and guidance from adult mentors. We also encourage you to take leadership roles and learn independently.

What is a water resources project?

The water resources project is about understanding the ecosystems of lakes, rivers, and wetlands. Wetlands are important! They store water, clean it and help prevent flooding. Minnesota originally had 18.6 million acres of wetlands that provided habitat for birds, fish and other wildlife. Half of them are now gone due to human activity. Learn how to protect wetlands and water quality, and how we depend on our state's wetlands. A project on water resources can be to learn about surface water and groundwater or create a model of the water cycle. You could investigate your local water quality and how human activities (such as agriculture, urban development, and home septic systems) affect it. You could also lead a service project to help educate others on how to be good water stewards. Let's get started!

Getting started with a water resource project

Figure out what you want to learn

First, think about what you want to learn about water resources. One way to do this could be to write down all your questions—anything you are currently wondering about or want to learn how to do. Here are some ideas to get you started.

- Where does water come from?
- Where does my tap water come from?
- What are the differences between types of wetlands?
- What does it mean to have oxygen in the water, and why is this important for fish and other life in the water?
- What kind of pollution affects the water bodies near me?
- Why is water conservation important, and what can I do about it?

Do some research

Next, find some resources that can guide you and provide answers to your questions. Here are a few resources you may find useful.

- [Water resources and aquatic invasive species activities](#)
- [National 4-H water activity books](#) (for sale)
- [Environmental education and citizen science activity book from Utah 4-H](#) (free download)
- In-depth look at the [water cycle](#)
- [PBS videos](#) about Earth's hydrosphere
- Learn about [aquatic invasive species](#) from the MN DNR

Identify your project

Now it's time to narrow down your research into a specific project focus. What do you want to do? For instance, you could:

- Discover the macroinvertebrates and other critters that live in your local water body. Make a video of what you find and what it means for water quality!
- Demonstrate water's chemical/physical properties, such as how heat and salt affect water density or how a wetland ecosystem changes each season.
- Show the importance of water to life through a display on water/wetland ecosystem services like filtration or nutrient cycles from plants.
- Share how water connects earth systems through a display of your local water cycle or watershed.
- Research your local water body's thermoclines or nutrient cycles.
- Display how water is used by people, such as through:
 - A record tracking your family's water footprint at home, or
 - A model showing stormwater runoff, or
 - A map of water accessibility or insecurity in a specific region of the world

- Explore water/wetland resource management practices, such as erosion control practices and terraces, or a map of local, regional, state, or global water bodies and water quality.

Do your project!

Once you know what you want to do, it's time to do it! This is the fun part. You may get messy or encounter challenges, but in 4-H we learn by doing. It's all part of the learning process! You can ask others for help and ideas. Be sure to take pictures or video as you go or have some other way to record what you're doing and how it's going.

Reflect

The most important part of doing a project is the learning that happens as a result. Think about:

- What was my goal for this project when I began?
- What am I learning from this project that I didn't know before? OR What was the most challenging part of this project? Why?
- Did you have fun doing the project? What would you do differently?
- What am I learning about myself by doing this project?

Share your work

After you finish your project, it's time to share what you learned! Sharing your new skills and getting others excited about your project is a great way to continue learning and can be a valuable way to serve your community! Here are some ideas:

- Share your project at school, with your 4-H club or other out-of-school time program.
- Ask to set up an info table at your local library, community center, or community event such as a festival or farmer's market.
- Develop an exhibit to take to your local county fair through the 4-H program. Head back to the [water resources project page](#) for more information about how to showcase your project at a county fair.

Take your learning further

You've wrapped up one project...what's next? What questions did this project spark for you? What are you inspired to learn more about? Maybe your macroinvertebrate discoveries made you curious about other insects. Or maybe you want to know more about the trees that thrive near wetlands. Check out these other project areas related to water resources:

- [Entomology](#)
- [Environmental science](#)
- [Wildlife biology and management](#)
- [Forest resources](#)
- [Geology](#)

Explore these future study and career opportunities related to water resources:

- You could study [water science at the University of Minnesota](#).
- Park rangers, [hydrologists](#) and [conservation scientists](#) study and manage natural resources and water supplies.



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