



WOW: WETLANDS

GETTING STARTED, GRADES 9-12

LEARNING OBJECTIVES

A healthy functioning wetland is defined by its robust biodiversity, water and soil quality and amount of water it consistently maintains over the course of a year or season. To better understand wetland systems and improve conservation and stewardship initiatives and projects we must not only look at scientific data, but at our student's ability to identify wetland benefits and needs. A wetland is a part of a larger system and to ensure it remains sustainable we must look holistically at the social, economic and environmental issues.

Students will increase their knowledge and begin developing a conservation and stewardship mindset about wetlands as a natural resources.

- Understand the basic characteristics of a wetland including their functions.
- Study wetland functions and health through observation, research, literature, field investigation and collaboration with resource experts.
- Analyze data to inform Eco-Action team discussions and decisions.
- Communicate wetland information to the larger school community and engage the community in supporting wetland campaigns and initiatives.
- Age appropriately, discuss the societal and economic impacts associated with healthy wetland conservation and stewardship, remembering that education for sustainable development addresses society, economics and the environment; smaller systems making up a larger system.

INTERDISCIPLINARY CONNECTIONS

Art, Citizenship, Geography, Language Arts, Math, Science, Social Studies, Specific CTE and STEM programs

ECO-SCHOOLS USA PATHWAY CONNECTIONS

Biodiversity, Climate Change, Schoolyard Habitats®, Water, WOW-Watersheds and WOW-Oceans

METRICS NEEDED FOR AWARDS

1. How many actions did students take to improve wetland health?



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UN'S SUSTAINABLE DEVELOPMENT GOALS – CONNECTIONS TO PATHWAY

<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>



ARE YOU A GLOBE SCHOOL?

The Global Learning and Observations to Benefit the Environment (GLOBE) Program is an international science and education program that provides students and the public worldwide with the opportunity to participate in data collection and the scientific process, and contribute meaningfully to our understanding of the Earth system and global environment. **Learn more at >>** <http://www.nwf.org/Eco-Schools-USA/GLOBE.aspx>

Below are protocol connections to the Wetland audit. (Optional, but recommended.)

Atmosphere Protocols

Aerosols | Air Temperature | Clouds |
Precipitation | Surface Ozone | Surface
Temperature

Pedosphere Protocols

Bulk Density | Soil Characterization | Fertility |
Infiltration | Soil Moisture-Sensor or SMAP |
Soil pH | Soil Temperature

Hydrosphere Protocols

Alkalinity | Conductivity | Dissolved Oxygen |
Freshwater Macroinvertebrates | Mosquitos | Nitrates |
pH | Salinity | Water Temperature | Transparency

Biosphere Protocols

Arctic Bird Migration | Biometry | Green Up/Green
Down | Land Cover Classification

MATERIALS

science notebook | Internet for research and data collection | pH test strips, probes or kits | soil and water temperature probes or thermometers | Secchi Disk* | state specific wetland field guides

*DIY Secchi Disk

- <https://zebrazapps.com/embed/#/b2f40eb4598249c19bc3028ca532eb55>
- <http://www.des.nh.gov/organization/divisions/water/wmb/vlap/documents/secchi.pdf>



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PROCEDURE

Adult volunteers are highly encouraged to assist in audit facilitation and provide expertise as a part of the Eco-Action team.

1. Determine who the **resource specialists** are in your community, region or state. These individuals can assist with the audit and provide richer student experiences and deeper understanding.
2. Read through the audit first and set aside realistic periods of time to complete each section.
3. The Eco-Action Team will work together to gather the required audit data.
4. **Analyze the results** and **develop an action plan**. Be sure to **communicate** results, actions and outcomes throughout the entire process.
5. **Keep this audit** with your records. This information is needed when responding to Eco-Schools USA surveys, when applying for awards and when communicating with the community, school board and members of the media.

Your data and all evidence, including notes, photographs, sketches, calculations, audits, etc. need to be kept in a location that is easily accessible to the Eco-Action team. We recommend binder, file system or Google folder. Your documentation is very important and will be used:

- to inform decisions,
- to engage the community,
- as evidence to support findings,
- to update your dashboard, and
- to apply for awards.