



AREA BEST LINKED TO

City of Kawartha Lakes, County of Haliburton and District Municipality of Muskoka



OBJECTIVES

- Enhance students' understanding of the importance of wetlands and the many roles they play in our environment.
- Involve students in a community initiative to restore a local wetland.



CURRICULUM LINKS

Grade Four:

Science:

- 1.1: Analyse the effects of human activities on habitats and communities
- 3.10 describe ways in which humans are dependent on natural habitats and communities (e.g., for water, flood control in wetlands and leisure activities)

Grade Six:

Science:

- Assess human impacts on biodiversity, and identify ways of preserving biodiversity
- Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans



MATERIALS

Lesson:

- Lesson materials (See Instructions and Resources sections below)

Wetland Restoration:

- Shovels and trowels
- Work gloves
- Native Wetland/riparian plants
- Permits to do work (where appropriate)



BACKGROUND INFORMATION

Wetlands are unique ecosystems that play many important roles in our environment. They are areas where terrestrial and aquatic ecosystems meet, which creates a distinctive environment. Many wildlife species ranging from insects and fish to mammals and birds use wetlands as part of their habitat, for feeding, shelter, breeding grounds and migration.

Wetlands are also very important to humans because of the unique functions that they provide. Wetlands act as a giant sponge and have the ability to hold back large amounts of water after a heavy rainfall or spring melt, and release it slowly over time. This protects our homes and cities from flooding and helps to regulate water levels in lakes and rivers. The plants that grow in wetlands also provide a very important service to us by filtering out contaminants that would otherwise pollute our waterways.

Unfortunately, people have not always realized the great value of wetlands. In fact, part of the reason we now know why wetlands are so important is because so many of them were destroyed, leaving communities to deal with flooding problems and contaminated water. Wetlands have historically been drained and filled in to allow for development of cities and roads or to make more room for agriculture fields. There is legislation in place that protects wetlands from further destruction, however an astonishing percentage of the wetlands in Ontario are already gone.

Nature tends to repair itself, however sometimes enough damage has occurred to an ecosystem that it needs a helping hand to return to a similar version of its former self. Restoring wetlands by planting native wetland plants and allowing water to assume its natural course helps to bring back diversity to the landscape. Eventually, wildlife will return to the area and natural wetland functions will reestablish.

This activity guides instructors through the process of planning a wetland restoration planting event through partnering with a local environmental agency. Students will learn about the value of wetlands in the classroom, and then have the opportunity to take part in the restoration of



INSTRUCTIONS

This activity includes two main components: a lesson and a wetland restoration planting event. It is recommended that teachers collaborate with local environmental groups or government agencies for both components of this activity. There are many organizations that have public outreach and education as well as restoration as part of their mandate, and would gladly partner with schools and teachers to promote wetland awareness. It is likely that the same organization could provide a guest speaker to give an age-appropriate presentation on wetlands to your class, as well as help in the coordination of the planting event. A list of organizations found in most regions that may be able to assist in the delivery of this activity follows:

- Conservation Authority (www.conservationontario.ca)
- Naturalist/Nature Club (www.ontarionature.org)
- Stewardship Council (www.ontariostewardship.org)
- Community Stream Stewards (Ontario Federation of Anglers and Hunters) (www.ofah.org)
- Ducks Unlimited Canada (www.ducks.ca)
- Municipality (Environmental Department)
- Ministry of Natural Resources (www.mnr.gov.on.ca)
- Local environmental initiatives

Lesson:

The lesson could be delivered by teacher(s), by a special guest who is an expert on wetlands, through use of media or some combination of these. The lesson should cover the following topics:

- What is a wetland?
- Why are wetlands important? / What do they do for us and other organisms?
- Why restore wetlands?

Refer to the resources section for many great sources of information to help plan the lesson. Partner agencies will also be a big help in delivering this component of the activity.

Wetland Restoration:

- Make contact with an environmental group or government agency that has knowledge and experience working with wetlands and restoration. Your partner will be a key player in delivering this activity. They will likely be involved in all of the steps described here. Many of the groups listed in the introduction of the 'Instructions' section carry out restoration activities with community groups and provide educational talks as part of their regular activities. In some cases, your partner may be able to take on some, or even all of the steps listed below, or at least be able to provide you with guidance.
- Select a site for the restoration to take place. Perhaps there is a degraded wetland on your school property or in a local park that could use some rehabilitation. Riparian (shoreline) areas are common sites where a wetland existed naturally but was removed for ease of access or other reasons. Your partner agency will likely be able to suggest some possible restoration sites as well.
- Secure appropriate permits. Depending on the site you choose to do the planting at, a permit may be required from one or more of the following agencies: municipality, conservation authority, Ministry of Natural Resources, Parks Canada or others. Your agency partner will likely be able to facilitate the permitting process and know the appropriate parties to contact. Be sure to secure all necessary permits before going ahead with any work.
- Set a date and make a plan for your event. Select the day and time for the restoration planting event. (Plantings are best done in the spring or early fall.) Will it be during school hours or on a weekend? Decide who will be invited to the event – other classes, students' families, the local community, etc. Be sure to arrange for appropriate advertising.

- Order plants and organize materials. Place an order for native wetland plants from a local nursery or plant supplier who is knowledgeable about native species. Your partner will also be able to advise on which species are best suited to your site (they may even take care of this step, as they likely have established relationships with reputable plant suppliers). Determine how this will be paid for – by the partner agency, from the school budget, from fundraising done by the class, etc. Also be sure that other materials needed for the event are organized (shovels, work gloves, refreshments, etc.)
- Take part in the event! Enjoy the day with the students – be sure to take lots of photos and acknowledge the hard work of all those involved. Consider inviting local media to the event, it may generate awareness about wetland restoration as well as promote the activities of your school and partner agency.
- Arrange for aftercare of the site. After restoration work has been done, the site needs to be monitored. This could become an annual project for a class or your school – students could be involved in assessing the survivorship of plantings and plan future restoration activities at the site. Aftercare may also be something that your partner is willing to take on as their responsibility.



RESOURCES/REFERENCES

- Video: Bill Nye the Science Guy – Episode #57 – “Wetlands”
- “Wetlands” Author: Lynn M. Stone, Publisher: Rourke Enterprises, 1989
- “Wetlands” Author: Emile U. Lepthien, Publisher: Children’s Press, 1993
- Ministry of Natural Resources – Wetlands Webpage
http://www.mnr.gov.on.ca/en/Business/Biodiversity/2ColumnSubPage/STEL02_167268.html
- Environment Canada – Wetlands Webpage (with lots of links to other information sources about wetlands)
- <http://www.ec.gc.ca/default.asp?lang=En&n=540B1882-1>
- Wetlands International: www.wetlands.org



FEEDBACK

We appreciate your feedback! Please let us know...

- Did this activity continue the learning your students engaged in at the Water Festival?
- What curriculum requirements did this activity satisfy?
- Was the activity easy to facilitate to your class?
- Did students have fun and learn something new about water?
- Please send photos of your class using these activities!

Please send comments and photos to: iheaven@outtolearn.ca