**Wetlands 101 Program**

**Stewardship Association of Municipalities (SAM)**

# Created by: Outreach Coordinator Karleena Squires

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# This programming is appropriate for grades K-12 - activities can be chosen/adapted based on their ages. This program can be delivered in person or virtually and provides instructions for both.

**OBJECTIVE**

Participants will spend time in a wetland, and/or spend time learning about wetlands, in order to understand how and why wetlands are an important ecosystem within Newfoundland and Labrador. This program provides some building blocks for a lifetime of active and thoughtful engagement with wetlands and other natural spaces. Participants will:

* Engage with their local wetlands through exploration and conservation activities;
* Experience time in or learning about nature (specifically, wetlands) that is beneficial to their mental and physical well-being, which can encourage continued exploring of nature;
* Learn about wetlands and their values, that face a variety of threats, human degradation, invasive species, and, loss of habitat, and be able to understand how to protect them;
* Explain the benefits of wetlands to our communities.

# **OUTLINE**

* Introduction and Wetlands 101 Presentation
* Activity (complete at least 3-5 activities depending on the event’s time length and age of the group)

**All Ages / Younger Groups / Older Groups**

* + Interpretive Walk
  + Wetland Metaphors
  + Name That Duck
  + Where Does the Water Go?
  + Wetland Scavenger Hunt
  + Conservation Brainstorming
  + Wetland Jeopardy
  + Printable Activities
  + Community Engagement\*

\*We encourage the older groups to complete or plan a community engagement project as one of their activities.

* Closing

Prior to the meeting, confirm time, location(s), number of attendees, and presence of supplies with the group/class leader.

**INTRODUCTION**

* Introduce yourself - who are you, your position, what you do, etc.
* Land Acknowledgement: In the spirit of respect and friendship, we acknowledge that we practice conservation on traditional lands that have been, and continue to be, inhabited by the Indigenous Peoples of Newfoundland and Labrador. We are thankful to all the generations of people who have cared for these lands, and recognize and deeply appreciate their historic connections to these places. SAM recognizes our shared responsibility in conserving these special places and seeks to assist communities in achieving this goal.
* Introduce SAM, here are a few important notes:
  + SAM helps protect important habitats in our province.
  + What is a habitat?
    - Everything an animal or plant needs to survive: all habitats need to have food, shelter and water.
  + What are some examples of habitats in your community?
  + SAM helps to protect important habitats within many communities across the province. (Include an example from their community if they are a SAM Community).
  + What are some threats that we would need to protect these habitats from?
    - Climate change, development, pollution, flooding, etc.
  + Present the Wetlands 101 Presentation - you will notice there are speakers’ notes on the slide, you can use these to compliment the slides and provide more information. If you are doing a walk, these are great speaking points and we recommend bringing them along.

**ACTIVITY: INTERPRETIVE WALK**

* In person - invite SAM to help run your walk or run it yourself!
* If the weather permits, start the event off with an interpretive walk - programming activities can be completed along the walk.
* Recommended walk location would be a local wetland or your community’s conservation area if they are a SAM Member.
* Provide information about wetlands, including the values of wetlands, while in the field that you would provide in the presentation when indoors/virtual (can be found in the Speaker’s Notes).

**ACTIVITY: WETLAND METAPHORS**

* In person or virtual
* Supplies:
  + Virtual: Jamboard Link - <https://jamboard.google.com/d/1ciSEbwvVShwQO-4v7QLNEkBlXHGoDIgxggAAckC457s/edit?usp=sharing>
    - There are 5 boards already created for groups. If you need more, simply duplicate the frame. When you are finished, please reset the boards.
  + In Person: matching game sheets found in Appendix A (1 per participant or group), writing utensil, you can have the following items on hand, or simply show a photo of the items: pillow/blanket, soap, whisk, sponge, egg (plastic or real), strainer, granola bar, water bottle
* In person, spread the supplies out on a table or on the floor. Depending on the number of people, give each participant/group a copy of the Wetland Metaphors matching game sheet (Appendix A) and a writing utensil, or divide them up into pairs/small groups.
* If completing virtually, have the linked Jamboard ready to go (please reset once the activity is completed). Participants will be divided into groups and each group assigned a Jamboard to use - you may want to split them into breakout rooms to complete this so they can discuss while completing. Have them match the photo of the metaphor photo with the sticky note description.
* Have them match the item up with its metaphor discussed during the presentation on the sheet/jamboard. For younger children, read out the metaphor (without naming the item) and have them write the letter to the corresponding metaphor that matches with the item on their sheet. Discuss the metaphors after:
  + A: Granola Bar: wetlands provide a source of nutritious food.
  + B: Sponge: wetlands act like giant sponges, soaking up rain and snowmelt and slowly releasing water in drier seasons. Thus, they help to reduce floods and to ease the worst effects of drought.
  + C: Egg: wetlands are important nesting places for many animals.
  + D: Strainer: wetlands have the unique ability to purify the environment by removing particles and toxins from water, like our kidneys filter toxins out of our bodies.
  + E: Whisk: wetlands help to mix nutrients and oxygen into the water, which are important for fish and other wildlife.
  + F: Soap: wetlands help to cleanse the environment.
  + G: Pillow/Blanket: wetlands are a resting place for migrating birds. They can stop there to feed and rest before continuing their journey.
  + H: Water Bottle: wetlands provide drinking water.

**ACTIVITY: NAME THAT DUCK**

* In person or virtual
* Supplies:
  + Virtual: Duck ID Slides (found at the end of the Wetlands 101 presentation), Duck ID Guide (Guide can be given out ahead of time on paper or provided digitally)
  + In Person: Print out the Duck ID slides and Duck ID Guides
  + If printing any materials, we recommend colour printing.
* Virtually:
  + Provide everyone with a copy of the Duck ID Guide linked below, but it can also be located in Appendix B. You can either email it to them prior to the meeting, share Appendix B and the slides at the same time on screen, or have them visit: <https://www.samnl.org/_files/ugd/8f91a6_cc31635c9dff4f538e9aac5614ca9c0c.pdf>
  + Show the Name That Duck Slides and have them use the ID Guides to identify the ducks.
* In Person:
  + Place the photos of the various ducks around the room, they are numbered but do not have to be put up in order.
  + Provide each person or group with a copy of the Guide.
  + They must correctly identify each duck using the ID Guide.
  + Have participants use a sheet of paper and label it 1-10, and write down the name of the duck that corresponds with the numbered duck photo.

**ACTIVITY: WHERE DOES THE WATER GO?**

* In person or virtual
  + If completing virtually, participants will require the list of supplies prior to the meeting in order to have time to gather them.
* Supplies: 2 small plastic containers (about the size of a shoebox), 2 plastic bags, garden soil, piece of sod (or similar absorbent such as a towel or piece of carpet), scissors/craft knife, straw, some heavy books or blocks of wood, 2 buckets/containers, 2 cups, measuring cup, water, tea bag, small spoon or wire whisk
* Research water supplies in your community. Where does your community’s drinking water come from? Where does it go? How is it used? Is anything added to the water before discharging it?
* Have you ever noticed that rivers sometimes look brown after a big storm? Heavy rains wash soil and other materials into the river. This is known as siltation. Too much sediment sometimes clogs the gills of fish. Sediment can contain fertilizers or harmful chemicals that pollute rivers.
* Wetlands and the plants within act as natural filters, trapping sediment and filtering out toxins the way a strainer traps spaghetti while allowing water to run down the drain. By trapping and absorbing sediment, wetland plants help reduce pollution problems downstream. This is why wetlands are referred to as the Earth’s kidneys because they can filter out toxins and other things that do not belong in our waterways.
* Using the Wetland Sediment Trap Instructions in Appendix C, make a wetland sediment trap to demonstrate how wetlands act as natural filters (can be done individually or as a group).

**ACTIVITY: WETLAND SCAVENGER HUNT**

* In person or virtual
* Supplies: Scavenger Hunt List in Appendix D
* Virtual: Provide your group with their scavenger hunt sheets to complete in a local wetland on their own time.
* In Person: If you are meeting in person, visit a local wetland and complete the scavenger hunt.
* Can’t get out to an actual wetland? Hide photos of the items around the room for them to find.

**ACTIVITY: CONSERVATION BRAINSTORMING**

* In person or virtual
* Supplies needed:
  + In Person: chart paper or bristol boards (large paper), markers
  + Virtual: Blank Jamboard/Whiteboard App
* Divide into smaller groups (virtually you can use breakout rooms), or complete all as one group. Explain the following situation:
  + David just bought a new piece of land in Torbay, NL. He is excited to build his first home, and the piece of land he bought is beautiful. There is a small pond behind the land, and a river runs just at the edge of his property into the pond. David has never owned land by a body of water before and is looking forward to his family using the pond for water activities such as swimming and kayaking.
  + Before beginning to build his home, David learns that the pond is a protected wetland area, as the river and pond are home to many animals including nesting waterfowl and other bird species - this particular wetland is actually a protected wetland area under a Municipal Habitat Stewardship Agreement. David is told that because it is a protected wetland, he cannot build within the riparian buffer (75 meters from the pond, 30 meters from the river) - he must keep the buffer intact. David reaches out to SAM to learn more about this Agreement and why these rules are in place - what is a riparian buffer and why must it be protected?
  + Discuss: You work for SAM - what would you say to David about why these rules are in place? What are some reasons to protect the riparian buffer? What are some ways he can still enjoy the pond and river next to his property? *Younger children may need some prompting/ideas to start with.*

**ACTIVITY: WETLAND JEOPARDY**

* In person or virtual
* Supplies:
  + In person: projector and screen, Jeopardy link below
  + Virtually: Jeopardy link below
* Recommended to be completed as one of the last activities as many questions are covered throughout the programming. This activity is recommended for ages 10/12+ due to the difficulty of some questions.
* Jeopardy Game: <https://jeopardylabs.com/play/wetlands-101>

**ACTIVITY: PRINTABLE ACTIVITIES**

* In person or virtual.
* See Appendix E
* Virtual: Email to participants prior to the meeting
* In Person: Can be provided as a handout to be completed if finished tasks early, or can be brought home.
* For the colouring sheets, you can show photos of the animals so that they can colour them accurately if they wish.

**ACTIVITY: COMMUNITY ENGAGEMENT**

* Follow up on learning about Wetlands, by completing a Community Service Act or volunteer work towards Career Development Hours.
* Visit <https://www.samnl.org/> under our Resources Tab for possible Service action ideas
* Service action ideas can include, but are not limited too:
  + Constructing bird houses, or nesting boxes (instructions can be found on our website here: <https://www.samnl.org/enhance-and-restore-wildlife-habitats>)
  + Constructing bat boxes (instructions can be found on our website here: <https://www.samnl.org/bats>)
  + Establishing a trail network within your community, or maintaining an already existing trail network (<https://www.samnl.org/trails>)
  + Create geocaches in areas where people can enjoy local wetlands
  + Petition or write letters to your municipal government to encourage them to protect wetlands in your community
  + Plant pollinator friendly species of plants that are native to your area
  + Organize a clean-up of your community or of your local wetlands (<https://www.samnl.org/clean-up-litter> / <https://shorelinecleanup.org/>), or organize and maintain a waste reduction program at your school or within your group
  + Organize an event for World Wetlands Day (February 2nd, annually / <https://www.worldwetlandsday.org/>)
  + Take part in a Bird Count (contact Dr. Catherine Dale at Birds Canada NL to organize [cdale@birdscanada.org](mailto:cdale@birdscanada.org) / or Nature NL [naturenl@naturenl.ca](mailto:naturenl@naturenl.ca))
  + If you live near a wetland, contact your local university or non-profit such as SAM or Ducks Unlimited Canada and see about setting up a Water Quality Monitoring Project to measure the quality of the water in the wetland over a period of time
  + Develop a calendar with photos of local wetlands and sell them as a fundraiser, use the money to help support the wetland in some way such as designing and purchasing “No Littering” signs to put up in the area
  + Produce a newsletter with articles about wetland habitats and wildlife to distribute to your school or local community.
  + Develop a video, pamphlet, poster or other creative display to encourage wetland protections (we’d love to see them, feel free to send to [samengagement995@gmail.com](mailto:samengagement995@gmail.com)!)

**CLOSING**

* Thank everyone for listening and participating.
* For Girl Guides and Scouts, SAM is providing a special SAM Crest at no cost to participants, email [samengagement995@gmail.com](mailto:samengagement995@gmail.com) to arrange for pick-up/delivery of crests.

# **Appendix A: Wetland Metaphors Matching Sheet**

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# **Appendix B: Duck ID Guides for Name that Duck Activity**

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# **Appendix C: Where Does the Water Go Wetland Sediment Trap Instructions**

Supplies: 2 small plastic containers (about the size of a shoebox), 2 plastic bags, garden soil, piece of sod (or similar absorbent such as a towel or piece of carpet), scissors/craft knife, straw, some heavy books or blocks of wood, 2 buckets/containers, 2 cups, measuring cup, water, tea bag, small spoon or wire whisk

Objective: To place a sediment trap in a box to see how wetlands help filter flowing water in streams and rivers.

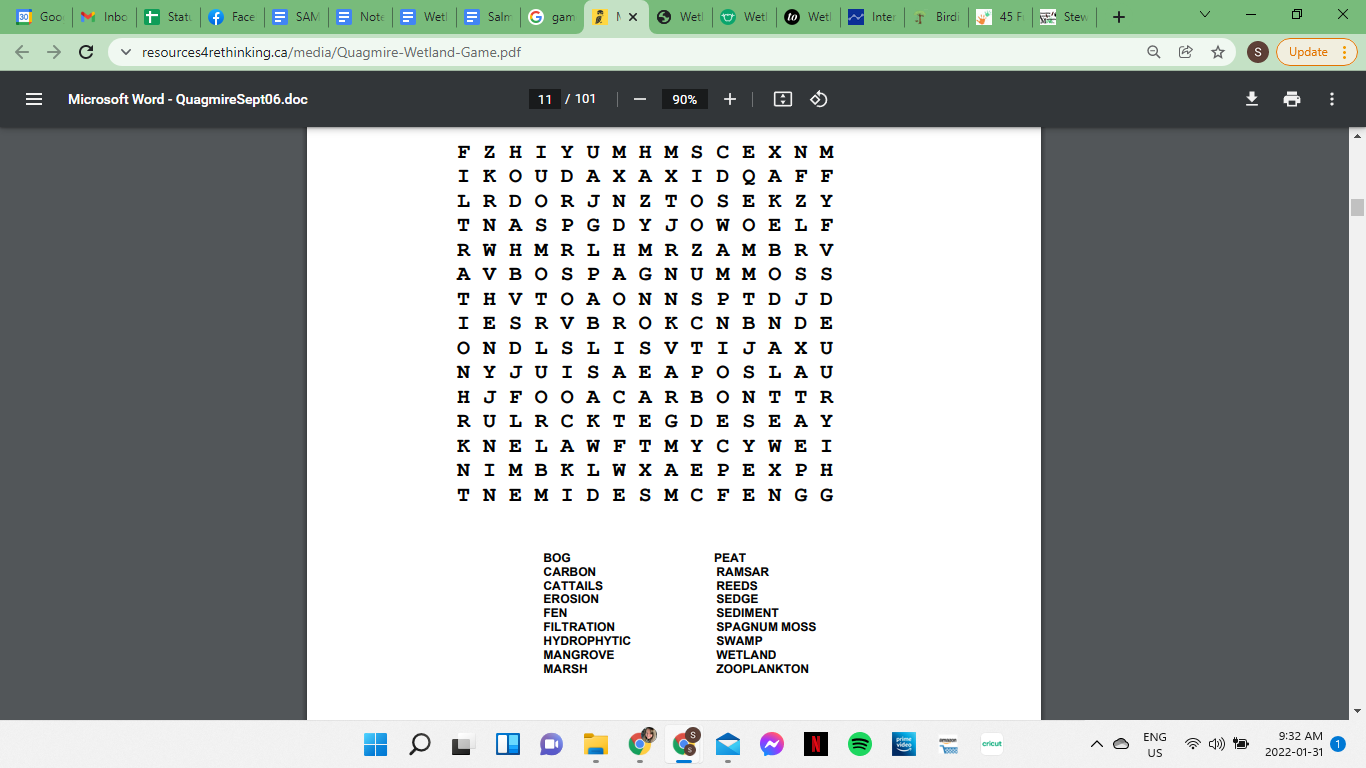
Instructions:

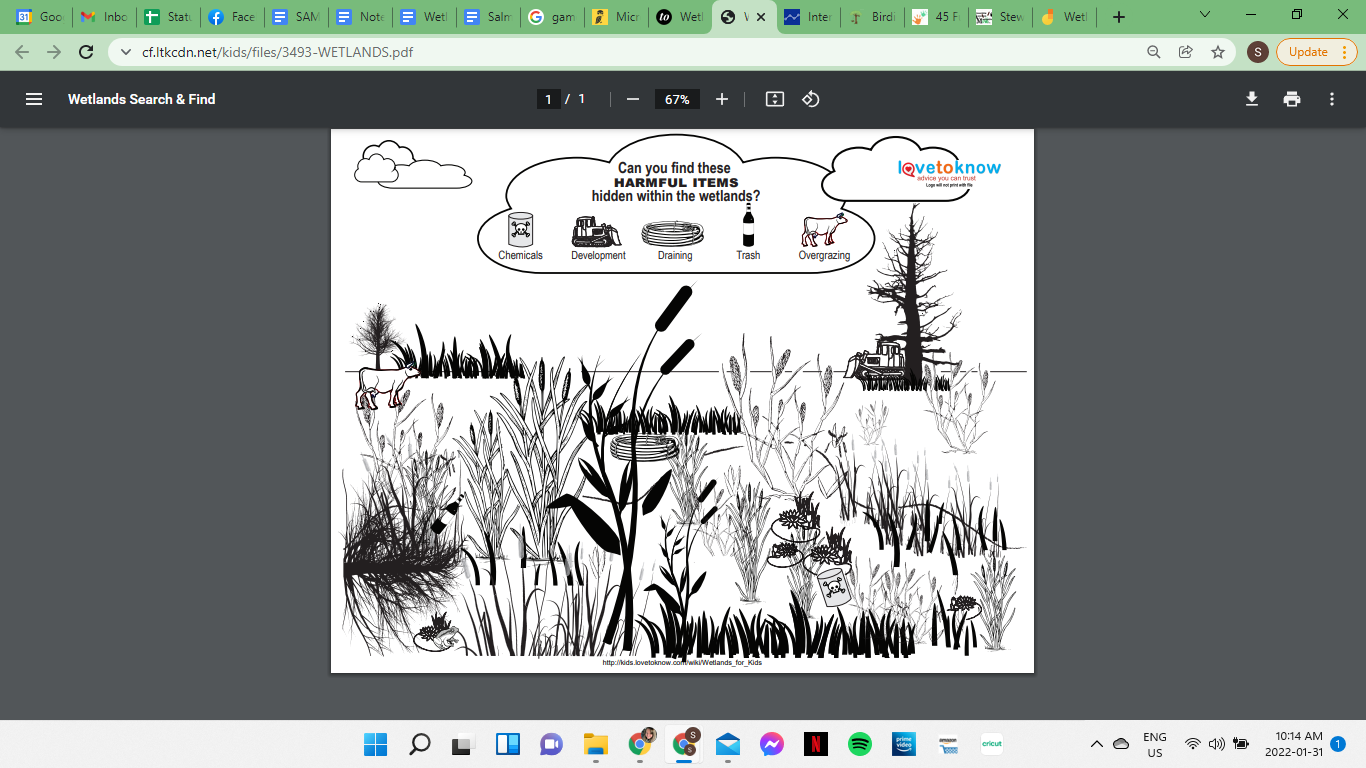
1. Line the inside of each container with the plastic bag. Place 5 cm (2 inches) of garden soil over the bottom of one container. Cover half the soil with a thick piece of sod (or other absorbent material as noted above) and pack soil onto the other half until it is level with the base of the sod. The sod/absorbent materials represent plants in a wetland.
2. Fill the second container with garden soil to the same depth as the soil in the first box.
3. With scissors/craft knife, make one small hole (no larger than the drinking straw) on one end of each container, the hole should be just above the soil line. In the first container, the hole should be placed at the sod end.
4. Cut a straw in half, to make 2 small straws, and poke each half partway into each of the holes so that it pierces the plastic liner in the box. The straw will be the drain spout.
5. Set the two containers side by side at the edge of a table or counter, with the straw sticking out over the edge. Place a couple of books or pieces of wood under the back end of each container so that both boxes are sloped at the same angle. The slope will make the water move quickly, as it does in a fast river or stream.
6. Place a bucket/container on the floor under each straw to catch the water when it flows out.
7. Put 250 ml (1 cup) of water in each cup. Cut open a tea bag and sprinkle half of the tea into each cup. The tea leaves represent the sediment in the water. Stir up the water so the tea leaves float around.
8. Quickly pour one cup into the soil at the back of each container. Watch what happens to the water as it flows through the container and drains out the other end.
9. Check the water in the pail. Which pail contains the most tea leaves? What else is in the pails?

# **Appendix D: Wetland Scavenger Hunt**

| Pine Cone | Maple Leaf | Animal Tracks | Dogberries |
| --- | --- | --- | --- |
| Insect | Purple Flower | Moss | Spider Web |
| Duck | Mushroom | Animal Home | Feather |
| Cattail Plant | Fallen Tree | Bird in Flight | Rocks |

# **Appendix E: Printable Activities**





# **Colour Me In!**

