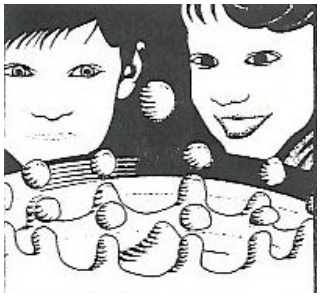
VOLUME 1

Damariscotta Lake
Watershed Association
8 Village St Jefferson ME 04348
(207)549-3836
www.DLWA.org
DLWA_MCC@midcoast.com

W.O.W.

Wonders of Water



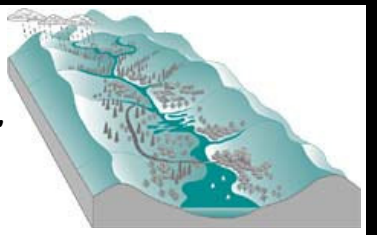
Welcome to Wonders of Water!

Three times a year the **DLWA** will publish this newsletter that will include information about the wonders of water.

Do you know what DLWA stands for???
Damariscotta Lake Watershed Association

These four words stand for a group of people who work together to improve and protect the waters and land both in and around Damariscotta Lake so that you and all natural and human habitants can enjoy it.

No matter where you live, you live in a watershed, so… What is a watershed?

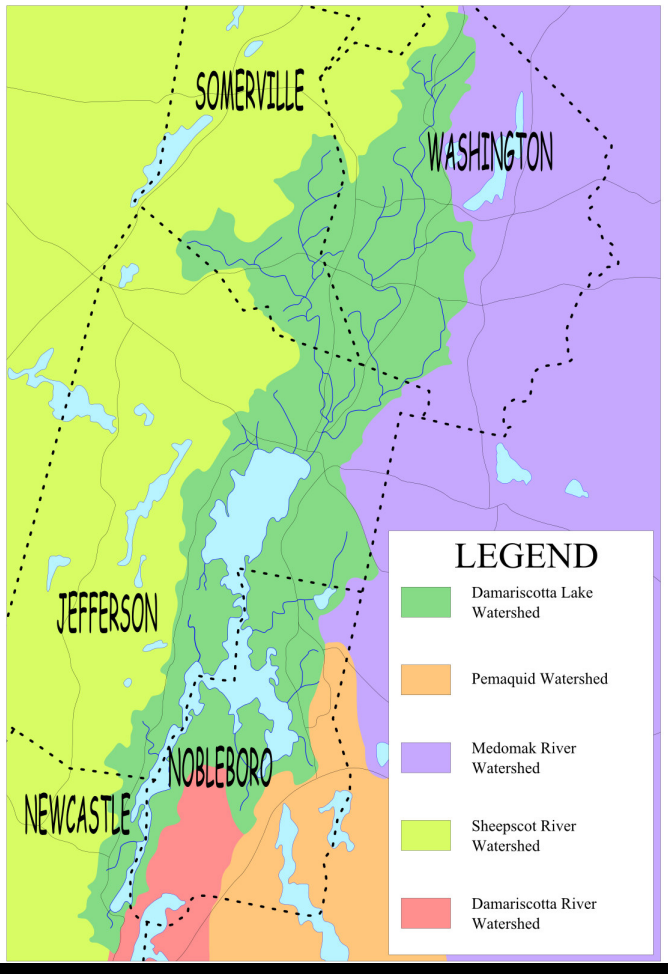


A watershed is an *area of land from which all of the water that lies under it or that falls onto it, drains into a specific body of water.*

The DLWA is concerned with the Damariscotta Lake watershed, which includes all land around the lake from which water will drain into the lake. By looking at the map to the right, you can see that all the land in deep green is the Damariscotta Lake watershed. The boundaries of watersheds are defined by the shape of the land, meaning that in a valley, such as the picture above shows, all of the land flows down hill into the same body of water. Since water on land and underground must flow somewhere, all land areas are part of a watershed.

What watershed do you live in?

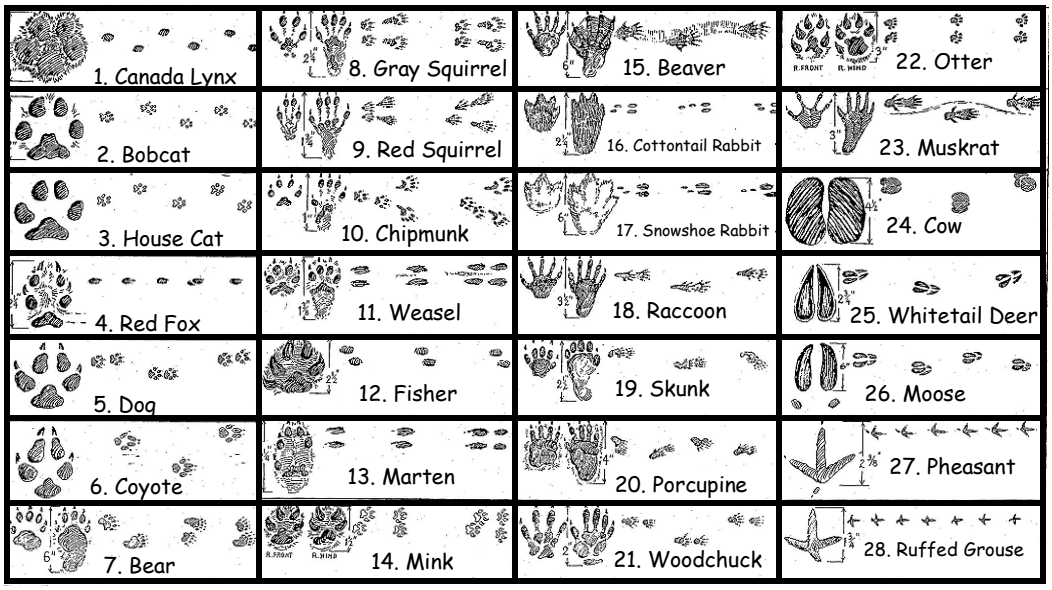
If you live in Somerville, Washington, Jefferson, Nobleboro, or Newcastle, chances are you might live in the Damariscotta Lake watershed. By looking at the map below, you can find out which watershed you live in (the thin black lines represent roads and the blue lines represent streams). The Damariscotta Lake watershed is 56.8 square miles in size, covering parts of 5 towns. Some habitats that can be found within the watershed are forest, wetland, stream, river, lake and meadow.



MAINE ANIMAL TRACKS

Whether in the snow or in the mud, animal tracks are an excellent clue in determining who, or what, has walked before you on a path. The size, shape, and spacing of animal tracks can provide you with the information needed to determine what left the track. Using the chart of animal tracks below, see if you can notice any similarities or differences between the tracks. For example, do all of the tracks look alike? Do some tracks look more similar than others? What do some tracks have that others don't?

Chances are, you have seen animal tracks before. Some tracks can be simple to identify if they belong to a pet, like a dog or a cat; but tracks of wild animals might be harder to identify. If you can't always identify an animal track, you can always look for other clues around it such as fur, feathers, or scat to help figure out what animal left the tracks.

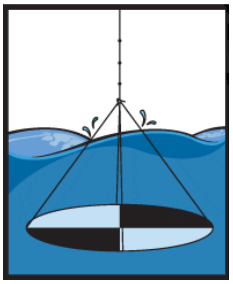


Looking at the chart to the left, you can see that animals in the cat family (1-3) do not have claws in their tracks, due to their retractable claws. You may also notice that in the track of the muskrat (23) there is a line dragging between the feet, which shows that a muskrat's tail drags on the ground when it walks. Every little part of a track can help you to identify what has left it. Another example would be in tracks in which the feet travel in a straight line (4) or in which the feet tend to zig-zag (1). Why do you think this is? Some tracks also show pairs of feet that go one in front of the other (rabbit, squirrel), these tracks show that the animal was hopping rather than walking.

Can you think of any Maine animals whose tracks are not on the chart above?

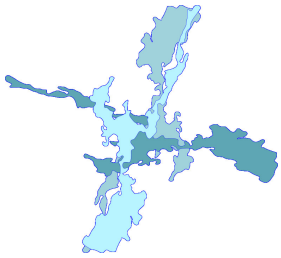
Water Quality Monitoring

To make sure that a lake is not polluted, water quality monitoring tests are done on the lake and streams. Monitors, people who measure water quality, use many tools to test the water. To test the water's clarity a monitor will use a secchi disk, which is a white and black disk attached to a sinker and a measuring tape. A monitor simply drops the disk into the water until it disappears from sight and then reads the measurement off the tape at water level. Using a secchi disk, we will be testing the water clarity of Damariscotta Lake at Water Wonder Day in the spring. Monitors also check dissolved oxygen levels and temperature in the lake with the help of digital meters. If you would like to practice using a secchi disk before Water Wonder Day, you may do so, virtually, through the Volunteer Lake Monitoring Program website at: mainevolunteerlakemonitors.org/recertify/disk/php



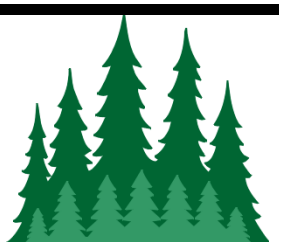
Dissolved Oxygen and the Upside-Down Lake

Fish need oxygen to breathe just like all creatures; but fish breathe dissolved oxygen through the water, unlike humans or animals who breathe oxygen in the air. Warm water holds less oxygen than cold water; however, water at or near the lake surface tends to be at oxygen saturation (perfect level of oxygen in the water), while deeper water doesn't have the access to oxygen so it is typically well below oxygen saturation. In the summertime, the warmest water on the lake is at the surface; this top layer is often the most oxygen rich, too. Bass, which thrive in high oxygen waters and on abundant food sources, live near the surface; Trout, on the other, hand live deeper below the surface because they love the cold water. The colder a lake is overall, the easier life is for all fish which is why high water temperatures make summers a stressful time for fish.



In fall, however, the surface temperatures of lakes drop. When the surface reaches 39° Fahrenheit and storm winds start, the entire lake starts to mix, with the temperature and oxygen levels becoming almost the same no matter how deep the water. In the winter, the lake is coldest at the surface and gets warmer at deeper levels; but, just as in summer, oxygen levels are highest at the surface, creating an "upside-down lake". Ice fishing thrives on this change because it means that trout and salmon are spending time at the surface of the lake. Spring brings the same sort of mixing as the fall once the water at the lake's surface reaches 39° Fahrenheit.

TREES



Trees play several important roles in a watershed. They have always been appreciated for their beauty, shade, and as a building material, but we often forget to recognize that they are also a critical animal habitat. Even after trees die, they continue to provide homes, whether for small critters to nest inside or for birds to create nests atop.

Trees also act as natural pollution filters: their canopies, trunks, roots, and associated soil filter polluted material before it enters the ground, water, or storm sewers. Trees can also help to prevent or slow down erosion. Hard rains which can loosen soils can be slowed down by trees. When rain drops accelerate on a free fall from the clouds to the forest canopy, they are slowed or stopped when they hit the trees. Some of this precipitation is then held by the tree until well after the storm, preventing too much surface run-off from entering the lake at once.

Erosion harms both the land and the water. When erosion occurs, valuable top soil is lost and pollutants enter the water. The duff layer (organic material, such as leaves on the forest floor) is another important filter which helps to slow down surface run off and aids in preventing erosion.

Trees also filter water by sucking it up through their roots. Trees are big plants, so they "drink" and store a lot of water. This huge intake of water by trees helps to keep water levels normal and to reduce the risk of flooding.

Trees reduce top soil erosion, prevent harmful pollutants from entering waterways, slow down run-off, and ensure that groundwater supplies are kept replenished.

Know Your Trees

Write the name of each tree next to its leaf or needles. Choose from the following list of trees to label each picture: Fir, Spruce, Maple, Pine, Apple, Birch, Ash, Cedar, Oak.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

REVIEW

Do you live in a watershed? _____

What tool do water quality monitors use to measure the water's clarity? _____

True or False: The warmer a lake is, the easier it is for all fish to live. _____

The size, _____, and spacing of tracks can help you determine what animal left them.

Why are dead trees important in nature? _____

_____

True or False: Erosion harms both the land and the water. _____

What causes the line in the muskrat's tracks on Page 2? _____