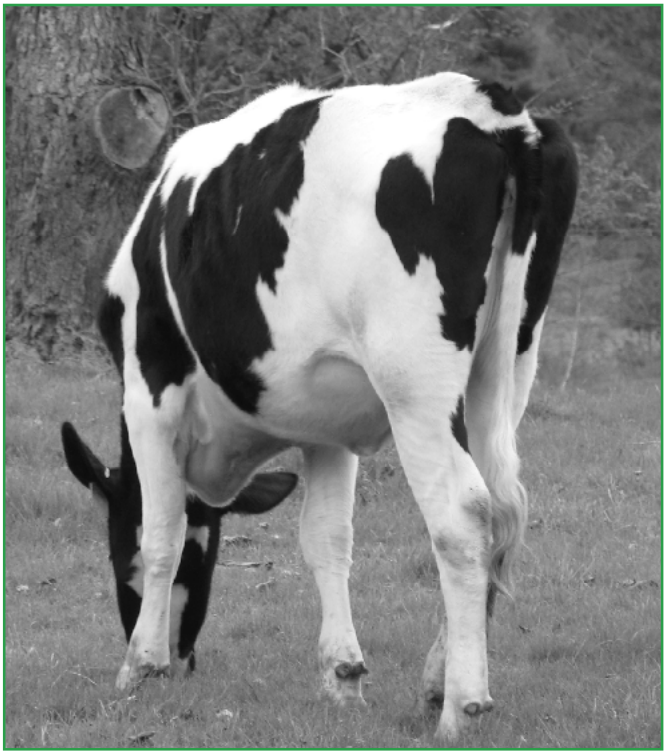
Calais Lakes and Ponds Working Group

Newsletter- Spring/Summer 2005

The Straight Scoop on Cow Poop



Every summer, beaches on Lake Champlain and other ponds and lakes in Vermont are closed because of high bacteria levels in the water. Several bacteria can cause illnesses in people, but the chief culprit is *E.coli*, which comes from animal waste and washes into our lakes and streams. One of the primary sources of *E.coli* is manure runoff from farms. But a major test recently completed on 40 test plots in an East Montpelier hayfield found that several simple changes in application practices can dramatically reduce the amount of bacteria in manure runoff into our waters.

Bacteria in manure can be killed by heat, dryness, aging, or solar radiation. All these methods were tested in the hayfield. Some manure was stored in small pits for 30 days, other manure for 90 days, and then both samples were applied to the field next to fresh manure. The researchers built a rain simulator, so they could cause it to rain on the fields on command, and tested the bacteria levels of the runoff. Some plots received rain one day after manure application, others three days afterward. Other experiments involved testing manure tilled into the soil against manure left on the surface, and testing runoff from fields with 5 to 6 inch hay stubble against fields with 2 to 3 inch stubble.

The results showed that this significant source of bacteria in our waters can be completely controlled through these simple practices. The manure aged for 30 days had only 3 percent the *E.coli* of the fresh manure. 90-day-old manure had virtually the same *E.coli* level as plain soil. Rain falling 3 days after manure application produced only half the *E.coli* in runoff compared to rain 1 day after manure application. Differences in hay stubble height had no significant impact on *E.coli* levels.

Tilling the manure into the soil reduced *E.coli* in runoff by 60 percent and reduced all runoff significantly, since the “rain” tended to sink into the loosened soil, instead of running off the top. This is an important consideration, because bacteria is not the only problem with manure. Manure is also a major source of nitrogen and phosphorus in our waters. These nutrients are responsible for the algae blooms we see on ponds. They also cause excessive plant growth, reduce oxygen levels, and kill fish. Aging, drying, or heating manure has no impact on the levels of nitrogen and phosphorus in it, but tilling it into the soil reduces all runoff and protects water quality. Of course, the best solution is to apply as little manure or fertilizer as possible. You may need much less than you think!

What You Can Do to Reduce Water Contamination from Your Fields

- Age manure at least 30 days before application
- Try to apply at the beginning of a long dry spell
- Till the manure into the soil
- Don’t apply manure to ground that is saturated or frozen
- Apply as little manure and fertilizer as possible!

This newsletter sponsored in part by:

Lake Champlain Basin Program

Grants Received to Promote Calais Water Quality

The Calais Lakes and Ponds Group has received four grants to help us continue to improve water quality in Vermont through water testing, education, and road maintenance. We received a Better Back Roads grant to install a cement culvert on the road above Curtis Pond and reduce road erosion into the pond. (We are applying for another such grant this year to install culverts on roads along other Calais ponds.) We have also received grants from the Lake Champlain Basin Program and the Vermont Watershed Grants program to allow us to continue to study water quality on Calais ponds, complete reports on each pond, and disseminate the information through these newsletters. An additional grant under the LaRosa Laboratory Services Partnership from the Water Quality Division of the Vermont Agency of Natural Resources will allow testing of *E.coli* levels in Curtis Pond to continue. We thank the organizations for their ongoing support! If you are interested in applying for grants to improve the water quality of your lake or pond and want more information, contact:

Noreen Bryan at 223-5478
noreen1945@yahoo.com

Wanted: Lay Monitors!

The Lay Monitor Program of the State of Vermont's Water Quality Division involves volunteers throughout the state who test the water quality of their local lakes and ponds and report their results to the state. The state provides all the equipment to do the tests and posts the results online. This is an invaluable source of information that helps us maintain the health of our water bodies. Currently, Calais has volunteers for Curtis, Nelson, Number Ten, Sabin, and North Montpelier Ponds, but not for Bliss, Mill, or Adamant Ponds. If you are interested in becoming the lay monitor for one of these ponds, contact:

Amy Picotte
amy.picotte@anr.state.vt.us
at the Vermont Agency of Natural Resources
Water Quality Division
103 South Main Street • Building 10
North Waterbury, Vermont 05671-0408.
Phone 802-241-3777.

Walk the Kingsbury Branch

The most important watershed in Calais is that of the Kingsbury Branch, which runs along Route 14 from North Montpelier Pond to East Calais Village. This summer, we will walk the watershed, determining the health of the stream and looking for troublesome erosion spots. We need lots of volunteers so that we can divide up this large area, so don't hesitate to join in! Contact Noreen Bryan at 223-5478 or Laura Brown at 454-7723 if you are interested. If you are a landowner on the Kingsbury Branch and don't want us walking your part of the stream, please let us know that, too.

Paddle on Number Ten Pond

An in-lake water survey of Number Ten Pond will take place on July 15. We will gather at the boat access lot on #10 Pond Road at 9 a.m. Susan Warren of the VT DEC, Water Quality Division, will lead the survey. We will observe the vegetation in the water and along the shoreline and determine what this can tell us about the health of the pond. Susan is a fount of information on this subject, so expect to learn a lot! Most of the work will be done on the water, so bring a canoe if possible. Please pack a lunch and be prepared with raingear. For more information, or to let us know of your plans to participate, please contact Rowan Jacobsen at 456-1661. We look forward to seeing you there!

10 Pond sparkles in the summer sun

Common Loon

Calais is fortunate to have several lakes that make ideal habitat for the common loon *(Gavia immer)*. Loons are regular summer residents on Nelson and Number Ten Ponds and have been seen on Sabin Pond, Bliss Pond, and others in the area. That's a good sign, because loons thrive only on clear, unpolluted waters. They require fairly large lakes with good supplies of fish (especially suckers, perch, and shad), not too much acidity, and undisturbed shoreline for nest building. Loons can barely walk on land, and so build their nests within a foot or two of shore. They won't build their nests near any development, and if disturbed too often, they will readily abandon their nests and eggs.

That is one reason why loons had been declining in Vermont (and elsewhere) for many years. Another major threat to loons is lead sinkers, which loons ingest with fish that got away from fishermen. Lead toxicity accounts for 50 percent of adult loon deaths in New England. Loons also suffer from mercury poisoning and entanglement in fishing lines.

In 1983, there were only 7 nesting pairs of loons in the entire state, and the loon was listed on the state endangered species list. However, thanks to greater public awareness and the work of the Vermont Loon Recovery Project, the loon population in Vermont has been steadily rising. In 2004 there were 43 nesting pairs in the state for the second consecutive year, and the loon was removed from the state endangered species list. Still, loons need help from us to maintain their success.

To many, the haunting cries of the loon are an essential part of the summer lake experience. There are four different calls. The *tremolo* is the famous loon cackle, the only call made when they are in flight, and it's responsible for the phrase "crazy as a loon." The *wail* is the eerie wolflike howl heard day and night on our ponds; it's a way of staying in touch with other adult loons. The *hoot* is a quiet, one-note warning call of a mother to her chick; if you can hear it, you are too close! The *yodel* is the complex string of phrases made by the male as a mating call.

The eerie cry of the loon has affected people and cultures throughout history. In Norway, the call was believed to be a premonition that someone would drown. British Columbia natives thought the call preceded a storm. Faeroe Islanders believed that the loon called as it was accompanying somebody to the underworld. On a more upbeat note, other Native Americans believed the call was the echo of the voice of the Creator from the day he made the world.

We've long known that each loon's yodel was unique, and that, since a pair of loons will nest on the same lake for many years, you can hear a slightly different yodel at each lake. According to biologist Jeff Fair, the yodel and the lake are even more inseparable than we thought.

Scientists had never successfully tagged loons, as they do other bird species, because loons hate being handled and often died in the process. Recently, new methods of trapping loons have allowed them to be tagged and tracked, with surprising results. Loons mate for life? Well, not always. Within a general framework of monogamy, there seems to be a fair amount of loon swinging going on.

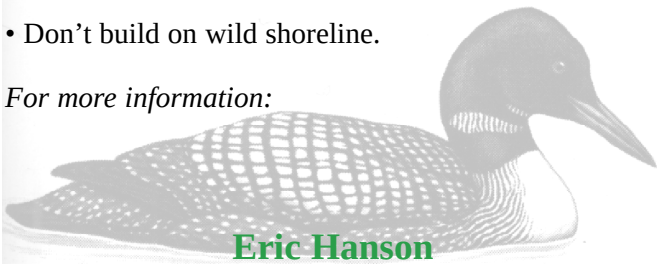
Loons stick to the same lake for life? Biologists were sure of this one, because the same call would echo from a particular lake for years. Now we know that occasionally the loons on a lake will change, but the yodel remains the same. The new loon will sing its predecessor's call, even though they never met. Likewise, a loon moving from one lake to another will change its call to match that of its new home.

How to explain this? "Scientifically", Fair says, "we call it magic". We can't explain it. But it's clear that the yodel goes with the lake, not the loon, and that the loon is the mouthpiece of the lake. The landscape sings through the loon. The next time you hear the mystical yodel of a loon on a Calais lake, think of it as the land itself, giving the "All's well" call.

How You Can Help Loons

- Don't use lead sinkers (these will be outlawed in Vermont as of 2006)
- Don't discard fishing line around lakes. If you see a loon diving near you, reel in.
- Don't approach a nesting loon or cause a wake near one in a powerboat.
- If you see a loon nesting, contact the VLRP.
- Don't build on wild shoreline.

For more information:



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