

KENNEBEC LAKE ASSOCIATION

Winter Newsletter

January 2007

A Word from the President...

Happy New Year everyone! We hope you enjoy your first Winter Newsletter.

With holiday festivities over for another year, various activities such as Boat Shows, Sportsman Shows and the March Cottage Life Show can easily lead one's mind to wander to thoughts of summer at the Lake. Although I am writing this in the middle of the season's first real storm, the unseasonable temperature leaves us wondering about the future of both cottaging and residing at the Lake.

We miss the beauty of a fresh snowfall and the chance to get out and skate. Certainly conditions have hampered businesses depending on a true Canadian winter. A warm winter seems to run counter to our Canadian identity. Our sense of collective self is shaped in part by our immersion in winter conditions and their absence leaves something of a cultural vacuum. Most seriously, of course, is a concern about the future and what these environmental changes will mean for all of us.

On the home front, we need to remind ourselves again to think globally and act locally to ensure that we each do our part to help preserve our beloved Kennebec Lake for future generations.

Congratulations to Gary Smith and Jeff Matson, our two new councillors for Kennebec Ward. Many thanks to our retiring Council member and Kennebec Lake resident, Jack Nicolson, for his supportive work on Council for the past 12 years. Jack will continue as a Member-at-Large on the KLA executive.

Congratulations also to Kennebecer John DuChene who has accepted an interim appointment as Chief Administrative Officer for Central Frontenac. John is a Vice-President of KLA and Chair of the Lake Management Planning Committee.

We encourage you to keep informed by consulting the website, www.kennebeclake.ca. Please feel free to communicate your thoughts and concerns at any time to me (613 335-3606) or to any member of the executive.

Terry Kennedy

The Lake in Winter

by Aileen Merriam

The Lake looks bleak and barren as the snow blows across the surface of the ice. What is happening underneath?

The lake water under the ice is at 4 degrees Celsius from top to bottom (see "A Year in the Life of Kennebec Lake" p. 4). Some chemical and biological processes continue, although at slower rates. As you know, you can still go fishing in winter - even in the cold water, fish still move about and feed although they and their food move more slowly.

Organisms that die, decompose. The dead organic matter that sank into the lake over the summer growing season is broken down in winter by decomposing organisms and decomposing chemical processes at a slow rate because of the low temperature. In a shallow lake, the breakdown of organic matter can use up enough oxygen from the water to cause a shortage.

If all the oxygen is used up near the bottom sediments, chemical conditions are created for the release of phosphorus from the sediments into the lake water. This phosphorus is added to that coming from fertilizers used near the shore and from poor septic systems, contributing to premature "aging" of the lake. In very shallow ponds, lack of oxygen can kill fish. In lakes like Kennebec, where the average depth is 9 metres and the deep holes up to 27 metres, there is usually enough oxygen in the water to support fish through the winter.

Some species that overwinter in the lake do so by becoming dormant. Most plants do this. Some insects and other small critters and several species of frogs lower their metabolic rate and bury themselves in the mud to avoid predators.

If an open water lead forms in the ice, the otters may use it to get to fish and frogs. Otters dive to the bottom and dig big green frogs out to eat. Beavers in the lake depend on the air that enters lodges or bank burrows for oxygen to breathe. For food they cut and store piles of branches and twigs; to access these they need water deep enough to leave room for swimming under the ice. If they have too little food, or the water becomes too low, they may be forced onto the surface where they are easy prey for coyotes.

Muskrats push up piles of vegetation for lodges and for access to air, and feed on plants that remain green in the water under the ice. With several locations to take a breath, they are able to swim long distances under the ice.

Life goes on in many ways under the ice in winter!

www.kennebeclake.ca

Septic Tank System Additives

by Tony Downs

Well, this is a topic of divided opinion. The commercials and testimonials would have us believe that by flushing commercially prepared additives down your toilet, you will keep your septic system active and healthy. But, keeping a septic system healthy requires more than additives. As outlined in several articles in past newsletters, a healthy septic system depends on a number of factors that must all operate together to keep your system up and running effectively.

Having said that, what about additives? There are two basic types: chemical and biological. The chemical variety is for specific septic problems and should be used with caution since they can upset the biological balance in your system. I will concentrate on biological types in this article. Basically they are made of dormant bacteria (some 10 to 20 billion of them) and enzymes in a granulated powder or liquid form which are activated when they enter the liquid in your tank. They may also contain chemicals to neutralize the pH (acidity/alkalinity) in the tank to enable better digestion, and some have additional nutrients to create a "bloom" of bacteria. The added products join up with the many bacteria provided by your own body to break down the sewage into less harmful compounds.

So, do we need more bacteria to make our systems more effective or efficient? The scholarship on the subject says no, not necessarily. There a number of scientific studies that have examined the use of additives but the results are generally inconclusive. Discussion "rages" on.

The manufacturers, of course, say their additives are useful to maintain a healthy microbial population working in your tank, but usually there is little reference to science. They rely largely on the testimonials of customers. They do manufacture these products to make money, so they would not be in business for very long if there were not some benefits to their products.

One of the claims made is that the products break down or eliminate sludge build up in the tank. There will always be some sludge in your tank. In your tank, there is an active layer that is composed of bacteria breaking down the sewage and a bottom layer of indigestible material and dead bacteria that will not break down any more. It is this indigestible sludge that must be pumped out periodically, regardless of how much additive is used. The additive products are intended to accelerate the active breakdown of digestible material.

Some products claim to break up the scum layer on the top of the liquid. This scum layer holds the grease and fats that would otherwise escape into the tile field. Enzymes break up the grease and fat to enable the bacteria to better do their job, albeit at a slower rate than the rest of the material. Excess scum is also removed during pump out.

When additives are used, they travel through your pipes before reaching the tank. Enroute, they may encounter material lodged in the pipe that water itself will not wash away. This can be a problem, particularly if the slope in your pipes is minimal. The additives get "hung up" on the partial blockages and can break them down so they may be flushed away more easily. These products act similar to drain de-clogging products for your sinks, except they use bacteria rather than chemicals. This can save messy and expensive routing of the pipe later on.

A factor is the frequency of use of your tank. If it used 7 days a week, year round, you are probably adding all the bacteria naturally needed to do the job. If the system is used on weekends only, these products may provide the kick start necessary to make your tank start working immediately to break down the sewage.

So like so many things, it is your call based on your assessment of the advice you get and your particular usage. Regular use of biological additives should not hurt your system and may help it, as well as having the side benefit of breaking down material lodged in the pipes. But you must weigh these potential benefits against the cost of the products themselves. *Unfortunately the scientific jury is still out on the use of additives. Helpful, eh?*

Bookworms Take Note

by Judy Kennedy

Looking for more information about Kennebec Lake and its history, geography, science and people? Here are some book titles available through the Arden Branch of the Kingston Frontenac Public Library.

- 1) **County of a Thousand Lakes:** the history of the County of Frontenac, 1673 - 1973
-researched and written by members of the *Frontenac County History Committee*
- 2) **The Smiling Wilderness:** an illustrated history of Lennox and Addington County -by *Frank B. Edwards*
- 3) **Salmon River Watershed:** Jewel of Eastern Ontario - researched, written and published by *Friends of the Salmon River*
- 4) **Back of Sunset:** a history of Central Frontenac Township - by *Michael Dawber*
- 5) **Kennebec Memories:** History of Arden and area -Centennial project of *Land O' Lakes Public School*
- 6) **Murder at Sharbot Lake** - *Cecil S. Paul*
- 7) **The Dammed Lakes** - *Lloyd Jones*
- 8) **Pictorial History of the Thousand Islands** - *Adria G. Ten Cate*
- 9) **Community Spotlight:** Leeds, Frontenac, Lennox and Addington and Prince Edward -*Nick and Helma Mika*

Do YOU have favourite publications that tell use more about our home place? Let us know for future newsletters.

Arden Public Library Winter Hours

Tuesday	2 - 6
Thursday	5 - 8
Saturday	10 - 1
Arden Community Centre	

Water Quality Monitoring 2006

by Gray Merriam

In the past we have usually sampled only 2 locations in the lake and, except for 1999 and 2000, sampled only in early May as recommended by the Lake Partners Program of the Ontario Ministry of the Environment. These samples were analysed only for the nutrient phosphorus.

In 2006 we sampled monthly at 10 locations including Cox Lake. In advance, we determined that the lake does undergo stable thermal stratification with spring and fall "turnovers". The extra analysis was provided by MOE thanks to Victor Castro. Sampling was done by Doug Smith, Ed and Marj Swain, Peter Smiley, (who coordinated the work in June, July and August and supplied a boat), Ron Henry and Si Tucker (who each supplied boats) and Aileen and Gray Merriam.

We have results for all nutrients in all samples and for heavy metals in the two historic sampling sites (head of the Salmon River and east end deep hole). These results gave no surprises. There are no problems with heavy metals. Nutrients are in the range expected for a lake with medium productivity. After spring turnover brought nutrients up from the bottom, phosphorus levels approached the top of the mid-range (16.8 micrograms per litre). As organisms in the lake grew, they used up much of the nutrients to build their biomass and the amount of nutrients free in the water dropped to safe values.

However the spring maximum nutrient levels in Kennebec Lake are as high as it is safe to go without causing the many problems associated with eutrophication. We need to persist in our efforts to ensure that all our septic systems are functioning properly and pumped regularly, and that all our shorelines have a minimum of 15 metres of natural vegetation and its leaf litter intact -- 30 metres would be better.

Trees, shrubs and advice are available!

Logo Contest Winner

by Judy Kennedy

In the Spring 2005 Newsletter we invited readers to submit ideas for a logo for KLA to be used on letterhead. Two people sent in 5 designs; these were shown at the AGM in August and you voted for one of the three submitted by Noreen Dertinger. Noreen's designs were computer generated pictures of the lake, and the chosen design features a loon, a map of the lake and text.

Noreen is a Software Quality Analyst and clarinetist; she and her family cottage on the north east side of the Lake. She set up our website and acts as the webmaster - visit her at: webmaster@kennebeclake.ca.

Noreen won a KLA vest and we are working with her to translate her winning idea into the logo. We hope to have this ready in time for the Spring 2007 Newsletter.

The other two designs were submitted by Paige Devitt. Thank you and congratulations to Noreen and Paige.

Adopt-a-Loon Platform

Thanks to two members of the Stewardship Committee, our loon platforms have been adopted!

Si Tucker (335-2289) has agreed to take on responsibility for the loon platform now in the bay at the head of the Salmon River. Bill VanVugt (335-2082) is now the adoptive parent of the platform located near Green Island in the east end of the lake.

If you have ideas about these platforms or wish to help with their on-going maintenance, please contact the appropriate parent!

Canoe and Kayak enthusiasts - watch our website www.kennebeclake.ca for an outing on Kennebec Lake, along with the Cataragui Canoe Club. Late April or early May, depending on water levels.



Meet Paige Devitt - a young Kennebecer

by Judy Kennedy

Ten-year-old Paige Devitt placed second in the logo contest. Her two drawings featured things she enjoys about the Lake. Paige is the granddaughter of Margaret and Nelson Westlake who have a cottage on Thrush Trail, off Blue Heron Ridge.

Paige is in Grade 5 in Claremont, Ontario. She has been coming to Kennebec Lake since she was born. She enjoys swimming, fishing, tubing and water skiing. Paige says she loves the colours and the good feeling she gets when at the Lake. She often goes for walks in the woods to see and listen to the environment around her. Before she leaves the Lake she says she likes to run down to the dock to look at and remember the sunset.

We encourage other young cottagers out there to send us articles about what they love about being at Kennebec Lake. You can send them to jkennedy48@hotmail.com.

Legal Aspects of Source Water Protection

by *Laura Bisset*

On December 5, 2005, the Minister of the Environment in Ontario introduced Bill 43, "an Act to protect existing and future sources of drinking water and to make complementary and other amendments to other Acts," also known as the proposed **Clean Water Act, 2005**. The Bill was made in response to the Walkerton tragedy.

The Bill's stated purpose is the protection of existing and future sources of drinking water; and it is intended that this purpose be carried out by way of watershed-based source protection. Pursuant to the Bill, watershed-based source protection involves the following process:

- ◆ The Bill designates source protection areas coincident with the jurisdictional areas of Ontario's thirty-six conservation authorities. The conservation authorities for each area are called source protection authorities. (Kennebec Lake is located in the Salmon River watershed, which falls under the jurisdiction of Quinte Conservation.)

- ◆ Each source protection authority must establish a source-protection committee, to carry out planning activities, with the support of the source protection authority. The source protection committee must draft terms of reference for its study; prepare an assessment report identifying watersheds and drinking water threats; and develop a source protection plan.

- ◆ The Bill then provides mechanisms to regulate drinking water threats, based on the source protection

plan, such as enforcement activities and the requirement, in certain instances, of land use planning decisions to conform with source protection plans.

Quinte Conservation reported in its Information and Progress Report of the summer of 2006 that it has begun work in anticipation of the passage of the Bill. It foresees undertaking scientific studies in support of its obligations under the Bill until 2008; completing a risk assessment in 2007; compiling an assessment report in 2008; preparing a source protection plan by 2010; and commencing implementation, monitoring and updating shortly thereafter.

The implications of the Bill for Kennebec Lake residents and cottagers are unclear at this point, and will likely remain unclear until Quinte Conservation has completed its analysis and made its recommendations; and until the government publicizes the regulatory scheme that will support the legislation. Interested persons should participate in the public consultation process to gain information and provide their input.

Laura Bisset is an associate practising with the Municipal and Environmental Law Group in the Toronto office of Davis & Company LLP. The group advises public and private sector clients on a broad range of environmental, municipal, land use and regulatory issues.

This article is intended to provide general information on legal issues of interest to the cottagers of Kennebec Lake. It is not intended to be a comprehensive review nor is it intended to provide legal advice. Readers should not act on information in this article without seeking specific advice on the particular matter from a lawyer.

New Council in Central Frontenac *by Judy Kennedy*

The November 2006 municipal election resulted in a new four-year council for Central Frontenac. Kennebec Lake is situated in Ward I.

Our new councillors are:

Gary Smith - former Canadian Diplomat and vice-president of York University, now living on Big Clear Lake, and

Jeff Matson - fourth generation resident of Arden and member of G.E. Matson and Sons Construction.

Gary Smith is also Council's new representative on Quinte Conservation.

Our new Mayor is **Janet Gutowski** - former Central Frontenac councillor and Bell Canada employee, now residing in Hinchinbrooke Ward south of Sharbot Lake.

Re-elected in other wards were: Frances Smith, Bob Harvey and Bill Snyder. All other members of Central Frontenac council are new.

Council is busy planning for the next four years. Issues at the top of the list include:

- a) responsible planning and spending of tax dollars
- b) environmental concerns
- c) waste management
- d) manageable tax rates
- e) systematic road maintenance
- f) better and easier communication with residents in Central Frontenac, both permanent and seasonal

Kennebec Lake Highs and Lows - 2006

Thanks to Marj and Ed Swain and Guenter Nitsche we have exact water level data for the east end of Kennebec Lake and for the Salmon River where it leaves the lake.

Levels at the two gauges did not differ significantly. Early spring readings are not available because ice broke the gauge on the lake, and the river gauge was not yet installed.

The total change in water level from 1 June to 1 November was 78 centimetres. The minimum was recorded on 1 September and the maximum on 20 November; the change was 131 cm. Over the main boating season from 1 June to 1 September, the level dropped steadily for 53 cm. with a maximum weekly change of 10 cm. Original data have been submitted to Quinte Conservation.

These are the changes in water level that can be expected. The time of the peak level will vary depending on storms. In 2005 the peak was on 9 September.

Gray Merriam

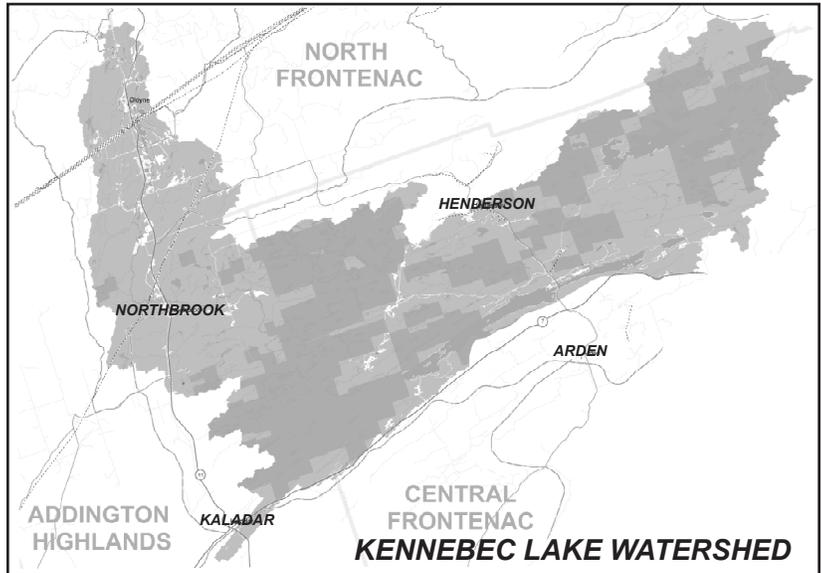
Lake Management Planning

by John Duchene

The Council of Central Frontenac recently completed its review of the Official Plan and adopted several amendments. One of the major areas of improvement included support for “**lake management planning**,” which should be done on a “**watershed basis**” and involve partnership with local groups and government agencies. This watershed approach reflects the fact that the quality and quantity of water moving across the land to the lake is influenced by the use of the land over and through which the water travels. (See watershed map.).

The Kennebec Lake Association (KLA) has embraced this approach to planning and will continue to work with Central Frontenac, Quinte Conservation and neighbouring municipalities to achieve success. The process will include developing a good technical understanding about the lake and its watershed; reviewing and reinforcing values held by all stakeholders; and outlining appropriate planning, development and stewardship strategies to help conserve and protect the watershed for existing and future users.

Lake management planning will require ongoing projects and programs by the KLA and its partners. Further work will include resource inventories and analysis, public meetings/workshops, stewardship projects and related education programs, all with the aim of encouraging appropriate water and land uses.



The new Official Plan states, “... Central Frontenac enjoys a unique character and quality of life that distinguishes the municipality from other areas of Ontario. The basis of land-use decisions should always keep in mind the rural values, the sense of place and the unique landscapes, the importance of water resources and the quality of life enjoyed by those who live in or who visit the community. Progress is valued where it is an asset to the community and respects the principles of sustainable development and the integrity of our community values.”

The lake management planning process for Kennebec Lake and its watershed certainly reflects this statement. The KLA’s Lake Management Committee, along with the Stewardship Committee, will continue to promote a healthy watershed agenda for 2007 so that what we value today will be protected for tomorrow.

Wildlife in Winter

by Bea Heissler

Wildlife is adapted to survive natural conditions through all seasons. As property owners in this pristine landscape, we support local wildlife by minimizing our impact on natural rhythms and cycles.

Layers of forest litter and snow protect plants, hibernating invertebrates, amphibians and reptiles through the winter months. Small mammals tunnel under the snow to escape the cold and search for invertebrates, seeds and plant tissues to satisfy their high energy needs. We can help by leaving brush piles, not raking up fallen leaves and ensuring diversity of native plants.

Deer, hare and rabbits browse on twigs, buds and bark in the winter. If you find yourself getting upset by damage to shrubs and trees, protect the lower trunk with mesh or hard plastic wrap.

Squirrels and chipmunks rely on adequate sources of cones, nuts, and other seeds to gather in the fall.

Raccoons, skunks, and bears live off body fat while they sleep though most of the winter. We can help them by ensuring den sites, natural food sources and undisturbed habitat.

The prime concern of winter birds is finding enough food. They depend on seeds, berries, buds and hibernating insects they find in trees. Ensuring a variety of native plants that make these food sources available is the best way to assist birds through the winter.

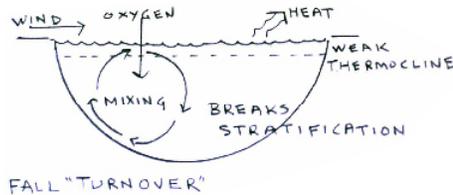
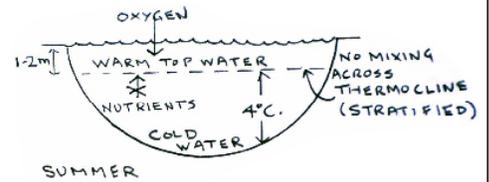
The Kennebec Lake area is an example of people and wildlife sharing natural spaces. When we leave our cottages in fall, recognition that plants and animals need their natural environment to prepare for winter goes a long way to ensuring their survival through the cold months.

NATURE NOTES

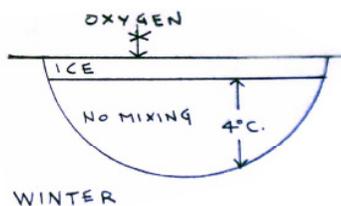
A Year in the Life of Kennebec Lake

Our lake, as all other lakes, changes its character throughout the year as a result of the interesting physical properties of water and the power of the sun and the wind. Water changes in density as it becomes warmer or colder. The density of water molecules determines how they float or sink in the lake. Water is lightest at 0 degrees C., heaviest at 4 degrees and lighter again above 4 degrees.

In summer, when the lake has a warm surface layer, that layer separates from the deep colder layer and water in the two layers does not mix. No atmosphere gases, such as oxygen, can get into the bottom layer. For the same reason nutrients, such as phosphorus, in the bottom water and sediments can not reach the surface layer.



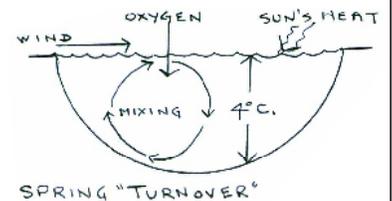
In autumn the lake water gradually loses heat - warm water cools to 4 degrees C. and sinks to the bottom until all water in the lake approaches the same temperature and density. At this point it only takes a little wind across the surface to stir the water up and mix it from top to bottom - the fall "turn-over". Algae use nutrients mixed up from the depths for their "fall bloom".



As the surface water continues to lose more heat and goes from 4 to 0 degrees C., it becomes less dense and floats to the surface. In time the lighter surface layer becomes ice and the wind can no longer stir the water. Mixing stops and all the water under the ice reaches 4 degrees. No additional oxygen can enter the water until the spring melt. Fortunately water at zero degrees is buoyant so ice forms on the surface. Imagine how different it would be if water were heaviest at 0 degrees and formed on the bottom! Many creatures that live in the lake could not survive.

Finally the spring sun moves back towards the north. The first large amount of solar heat is absorbed by the ice as it melts. Once the ice thins and the underside becomes saturated with water, it begins to sink. Normally this is the way ice leaves Kennebec Lake; there is not an "ice out" as in many lakes. Hardly any ice from the lake makes its way down the Salmon River.

When the ice has melted, the heat energy from the spring sun warms the meltwater back up to 4 degrees C., like all the water below. Once again the winds cause a spring "turnover" and mixing of all the lake water, bringing nutrients up from the bottom. These nutrients, combined with the spring sunlight, allow algae to grow rapidly - producing a "spring bloom".



Soon the sun will warm the surface water enough that once again the lake will "stratify" or separate into a warm top layer and cold bottom layer. Dive down and you will feel it!

Amazing what goes on in and under that placid lake surface stretching so beautifully from our shorelines, powered by the natural processes that occur all around us.

by Gray and Aileen Merriam

Let's Talk Turtleand Frogs and Skinks and

Come out for an interesting early afternoon in April. KLA, working with the Friends of the Salmon River, bring to Arden one of FSR's Public Lecture Series.

Hear an enthusiastic, knowledgeable speaker from the Metropolitan Toronto Zoo.

Learn about the many fascinating turtles, other reptiles and amphibians that share this area with us.

Enjoy pictures and life stories.

Talk about local turtle rehabilitation centres.

Where: Kennebec Community Centre

Contact: Noreen Dertinger webmaster@kennebeclake.ca

When: Sunday, 29 April 2007, 1:00 p.m.

or Aileen Merriam 613 335-3589

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Text Editor/Reproduction: Judy Kennedy

Thanks to: contributors of articles/ volunteers who collate and distribute.