
From The **SHORELINE**

FALL 1998 www.biology.ualberta.ca/alms/home.htm

ALBERTA LAKE MANAGEMENT SOCIETY

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PRESIDENT'S MESSAGE

I had been waiting years for an opportunity to witness one of nature's truly amazing events. Finally this autumn, on the Thanksgiving long weekend in October, I drove into central British Columbia to experience the peak of the Sockeye salmon run on the Adams River.

From the mouth of the Fraser up into central BC, these fish swim upstream focussed on only one objective - reaching the river bed of their birth, to spawn and renew the cycle of life. This herculean, very focussed effort is not unlike what many members of the ALMS Board and volunteers have been through since last winter -

planning for November's giant NALMS International Symposium in Banff.

As many of you know, ALMS is this year's host for the 18th International Symposium of the North American Lake Management Society. This symposium will bring into Alberta some of the best scientists from across North America and worldwide.

Congratulations are in order for Brian Kotak (our past president) and to Al Sosiak for their organization talents and keeping the organizing committee all on track. A year and a half in the making, the symposium is shaping up to be one of the best. Interest has been high and 600 delegates are expected. Scientists from around the world will be in Banff to discuss the latest in aquatic sciences and watershed management.

ALMS (and Albertans) not only benefit from the transfer of information these experts provide, but also financially. Part of the proceeds of the Symposium return to the host organization.

After NALMS '98, ALMS will be working over the winter on program development and gearing up for another season of LakeWatch, our volunteer lake water quality monitoring program. If your community or lake association is interested in participating in the future, please contact us before the end of December to participate in the following year.

Finally, also look to see ALMS' website continue to grow to provide

our members with relevant information about lake and watershed management.

Gerry Haekel

ALMS SEEKS WORKSHOP LOCATIONS

ALMS is looking for locations where it can hold its regular one or two day workshops. It has always been ALMS' goal to move the workshop location throughout Alberta to give as many people as possible, an opportunity to attend.

The 1998-99 Annual General Meeting and workshop will be held before March 31, 1999. To date the only recommendation received has been to hold it at Alberta Beach on Lac Ste. Anne. The location for the Spring AGM will be finalized soon. However, locations for future one or two day workshops will be considered whenever there is a defined interest.

If your municipality, lake or watershed association is interested in having ALMS hold a workshop in your area, contact the ALMS office as soon as possible.

Since organizing and holding a workshop in a particular region within Alberta typically requires a working partnership of a local community with ALMS, the Board of Directors have established the following criteria for choosing a workshop location:

- C Near a lake or other water body that has one or more management issues of interest to Albertans
 - C Commitment and support from a
-

local lake association and/or municipality to:

- identify issues of interest
- assist with on-site organization (facility, catering)
- promote event within region

© Venue able to seat expected interest

The Alberta Lake Management Society will develop the workshop program based on the interest and needs of the local region, provide interesting speakers and knowledge-able resource people, and run the workshop.

LAKE UPDATES FROM AROUND ALBERTA

From

The **SHORELINE**

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From The Shoreline is the official newsletter of the Alberta Lake Management Society (ALMS), providing a forum for the communication and exchange of information and experiences relating to the management of lakes and their watersheds.

Editor: Gerry Haekel

From The Shoreline tries to be published four times each year in Winter (January), Spring (April), Summer (July), and Fall (October).

Articles submitted for publication must be received no later than **one month prior the month of publication.**

Please address all articles and letters to:

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The opinions and advice expressed in the newsletter are those of the contributors and do not necessarily imply endorsement

Pine Lake - Hypolimnetic Withdrawal System Installed in Pine Lake

The Pine Lake Restoration Society and volunteers from the Pine Lake community installed Alberta's first hypolimnetic withdrawal system in September 1998. Hypolimnetic withdrawal consists of the removal of cool, nutrient-rich water from the bottom of a stratified lake. Although 18 of these systems have been installed elsewhere in the world, this treatment has never been attempted in Alberta. Pine Lake has been subject to severe blue-green algal blooms. Over the past three years the society and the community have completed 11 projects designed to reduce nutrient loading from agriculture and wastewater systems in the watershed. Now that external loading has been reduced, a method to deal with internal loading from lake sediments was required. A 1992 study found that 61% of the total phosphorus budget was from internal loading. Eight options were evaluated and hypolimnetic withdrawal was selected.

The hypolimnetic withdrawal project was first proposed in 1996, and redesigned by Aware Engineering of Red Deer to address public concerns about lake level and other issues. Two-thirds of the \$339,000 cost of construction was obtained from a provincial fund, and the remainder was supplied by the County of Red Deer. Fifty volunteers from the Pine Lake community donated their time, with crews working from dawn to dusk over a three-week period to complete the project. The system consists of a concrete intake set at 10.7 m depth near the south end of the lake, connected by a 1524 m (55.9 cm diameter) polyethylene pipeline to a control chamber at the lake outlet. A pre-cast weir with stop-logs was installed to control lake level and create head to operate the system. Water will be discharged from the pipeline to a stilling basin and a series of wetlands in Ghostpine Creek to remove nutrients. The system will

only be operated between May 1 and September 1, when lake level is within a range that previous surveys determined was acceptable to the community.

The hypolimnetic withdrawal system is the last major construction project of the Pine Lake Restoration Program. Monitoring of the lake and tributaries has been proposed for the initial years of operation, to assess project benefits and downstream impacts. Modelling indicates that the system should provide an obvious improvement in water quality within five years.

*Al Sosiak
Pine Lake Restoration Society*

Wabamun Lake - There has been some delay in the water treatment plant's performance and as a result there are ongoing discussions taking place with TransAlta Utilities Corporation (TransAlta) and Alberta Environmental Protection (AEP) to resolve the issues associated with the plant. The water treatment plant is a priority issue for TransAlta, the Wabamun Lake Task Group and AEP.

Over a period of time, TransAlta have resolved problems including clogging of the plant's extra-fine filters and freezing of the plant's cooling tower. They are now dealing with a water disinfection issue and the operational difficulties TransAlta have been experiencing are not related to the plant's size and capacity. This last concern centres around the possibility that microscopic living organisms (called zooplankton) may survive the water treatment process. TransAlta are testing the use of Chlorine and ozone to kill the water organisms as water enters the plant and it is reported that this process removes 99.999 per cent of the organisms. AEP agree in principle with the use of chlorine provided that TransAlta de-chlorinates the water as it exits the plant prior entering the lake.

As a result, TransAlta are asking AEP to amend the water treatment plant

licence to include approval for the disinfection process and to relax the requirement for no living organisms. AEP are in the process of reviewing TransAlta's recommendations.

East Pit Lake - Aside from the issues involving Wabamun Lake, TransAlta has a success story worthy of description. Part of TransAlta's power generation operations involves the mining of lands near Lake Wabamun. After the coal is mined, the lands are reclaimed, usually to a similar land use that existed prior the mining operations. Part of this reclamation involved the creation of East Pit Lake. Ownership of the land has been transferred to Public Lands and the Stoney Plain Fish and Game Association now hold a recreational lease for the area. They have entered into a management agreement for the operation of the property and they have successfully introduced trout into the lake. Part of the management agreement is that the public have access to the land. The lake is fast becoming popular with people who flyfish.

Wizard Lake - The Counties of Leduc and Wetaskiwin have undertaken to develop a new Lake Management Plan for Wizard Lake. The old plan is now 18 years old and the two councils decided that land use policies needed to be reviewed before an increase in demand for multi-lot subdivision or large scale developments occurred. A draft report has now been completed and will be released for public discussion once it has been reviewed by Council on December 15, 1998. Leduc Councillor Ed Chubocha stated that "the Alberta Lake Management Society played an important role early on in the process by raising the awareness of lake users around the lake".

BIOLOGY

What makes good fish habitat in rivers / streams.

Watching the Adams River Sockeye

salmon run in October got me thinking about what makes such a small river/stream so important for fish? The answer: HABITAT! So what is good stream habitat?

FISH HABITAT is:

Substrate

Clean, unsilted gravel beds are essential for many species of fish for spawning and egg survival.



Structure

Physical structure within a water body is also essential in providing micro-habitats for aquatic species. Boulders, tree trunks, etc., create pools, runs and riffles in streams and provide cover within lakes.



Other fish species require aquatic vegetation rooted in shallow shore areas to attach their eggs to. These plants also provide young fish with protection from predators.

Cover

Over-hanging grasses, shrubs and trees reduce water temperatures; provide coarse woody material which increases in-stream structure and stream stability, provide leaf or other fine particulate matter to support aquatic foodchains, and provide a food source of terrestrial insects. Over-hanging banks also provide fish with shelter or hiding cover.



Food

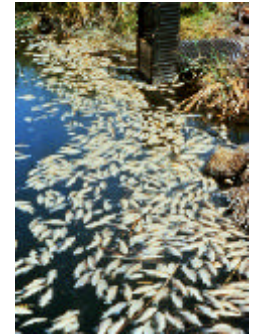
Insects are the primary source of food for fish.



Aquatic insects may be produced within the stream itself, or from stream-side vegetation in the adjacent riparian area which can provide a wide ranging source of terrestrial insects.

Water Quality

Most fish species are sensitive to changes in water quality. Fish are particularly sensitive to temperature, dissolved oxygen, and the amount of suspended solids (e.g. silt) in the water. Other factors that affect water quality include nutrient levels, presence of contaminants or toxins, the stability of banks and their susceptibility to erosion, as well as the extent of the adjacent riparian area and its ability to function as a buffer.



Water Quantity

There must also be sufficient volume of flowing water available to support and maintain the ecological integrity of rivers, streams and riparian environments, as well as demands for other water uses.

WHAT'S NEW

Intensive Livestock Operations - Issue Update

Over the last two years, the issue of water quality in relation to manure management and intensive livestock operations has been an issue for many Albertans. In March 1998 the Department of Agriculture, Food and Rural Development released a discussion paper on Regulatory

Options for Livestock Operations. The Discussion Paper was created in response to concerns expressed by municipal governments, livestock developers and citizens regarding the current process for approving new livestock facilities, as well as the framework for monitoring and enforcing the environmental sustainability of existing livestock operations.

The discussion paper was distributed and discussed March through June of this year and the province received input from 850 people attending eighteen open houses. Another 240 people and groups responded to a questionnaire in writing.

An Advisory Committee of ten members was formed to assist the province in reviewing concerns and formalizing recommendations to government. The group is represented by both urban and rural municipal groups, Alberta Chicken Producers, Medical Officers of Health, Environmental Law Centre, Alberta Pork Producers, Alberta Cattle Feeders Association, Alberta Milk Producers, Alberta Cattle Commission and a grain producer.

According to Alberta Agriculture, "the advisory group is now developing a proposed system of managing approvals, operating standards and compliance measures for livestock operations. Their recommendations will be circulated to stakeholders for comments in December 1998-January 1999, before final approval. It is hoped that a package of legislation and regulations will be ready for the Spring 1999 sitting of the legislature.

"The current (1995) Code of Practice for Responsible Livestock Manure Management will remain the reference document for municipalities and developers until the new regulatory system is in place. The updated revisions to the Code of Practice will likely be incorporated into several documents including legislation and regulations, a Best Practices Guide and Minimum Distance Separation

Guidelines for municipalities and developers."

A more detailed summary on the *Regulatory Options for Livestock Operations* can be obtained from Alberta Agriculture's Internet web site "www.agric.gov.ab.ca/economic/policy/ilo/index.html" or from Tammy Noonan, Policy Secretariat, Alberta Agriculture, Food and Rural Development at (403) 422-2070. In addition a revised text of *The Code of Practice for Responsible Livestock Development and Manure Management (Apr. 15/98)* can be viewed at "www.agric.gov.ab.ca/livestock/code/code.html".

Current monthly Alberta Government and Departmental news releases are available at "www.gov.ab.ca/acn.cfm".

New Property Tax Exemptions for Non-profit Organizations

On December 22, 1998 the Provincial government issued a news release regarding new property tax exemptions for non-profit organizations. Property that is leased or rented by non-profit benevolent organizations from commercial landlords can now be exempted from property taxes as a result of changes to the Community Organization Property Tax Exemption Regulation.

"Under the Municipal Government Act, only property owned by such organizations or leased from government could be excluded from property taxes," said Municipal Affairs Minister Iris Evans.

"Some non-profit organizations felt that the existing regulation (Community Organization 1998 Property Tax Exemption Regulation) missed certain groups in the categories for exemption," said Evans. "The new regulation will mean more organizations will be eligible and it will be easier to apply for the exemption.

"Municipalities will have the

discretion to require organizations to apply or reapply for the exemption on a one to three year cycle."

For more information contact Joan Forge - Minister's Office, Alberta Municipal Affairs - 427-3744 or Paul Leeder - Communications, Alberta Municipal Affairs - 427-8862.

NEXT NEWSLETTER DEADLINE

Articles to the editor, etc. must be received by **February 15, 1999** to be considered for the Winter newsletter.

We welcome your letters, newsletter articles, event notices, and suggestions for improving the newsletter.

Let us know what's happening in your lake neighbourhood this year! **E**

Editor
