



Christina Lake Stewardship Society

Christina Lake Watershed Management Plan (CLWMP) and Implementation Strategy Annual Review Meeting Proceedings

December 4th, 2013

The Christina Lake Stewardship Society's CLWMP Annual Review offered a myriad of different speakers discussing the health status of the lake and future plans for the area. A main theme was reconnecting people to the Christina Lake Watershed, and discussing why we want to protect this special lake. Close to 80 people came out including those from all levels of government, as well as non-profit organizations, biologists and local residents. There was a great lunch provided by Twisted Forks and some interesting displays to check out during the breaks. Grace McGregor, Area C Director, facilitated the function and introduced all the various speakers. The first speaker was Brenda LaCroix, CLSS Stewardship Coordinator and Project Manager.

Brenda LaCroix, Christina Lake Stewardship Society's Stewardship Coordinator and Project Manager –
CLWMP and Implementation Strategy Annual Progress Report

Brenda LaCroix began with a "Watershed Moment" and provided the crowd with information on Christina Lake, including the wildlife and general lake characteristics, to get everyone thinking about why we are trying to protect this most valuable asset. She then discussed how the Christina Lake Stewardship Society (CLSS) endeavors to maintain the health of the lake by designing projects and goals around the CLWMP recommended action items (updated annually) which includes core operation

initiatives, public education, community involvement initiatives, monitoring programs and field work.

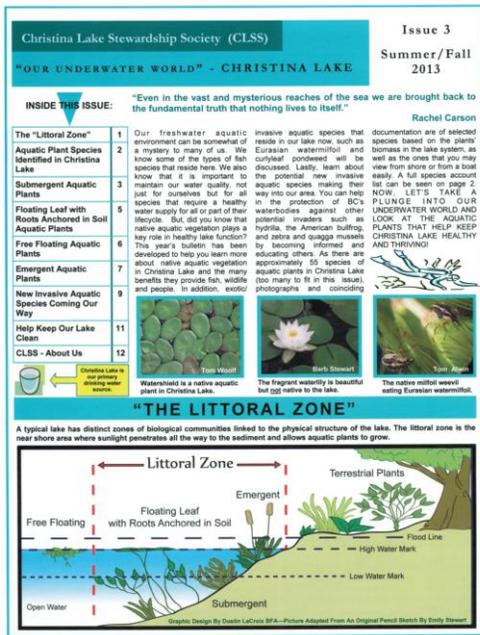


This photo of three River Otters was taken at Christina Lake by Val Pressacco.

One of their many highlights included the Young Stewards of the Boundary Summer Youth Program workshops that were funded with assistance from the Grand Forks Credit Union Endowment Fund and the Phoenix Foundation. Approximately 1250 parents and children visited the Interpretive Gallery. The Aquatic Invasive Species Educational Program was also very successful, which was discussed further in a following presentation. Kokanee enumerations occurred in August and September with the aid of many local volunteers, and they recorded the second highest counts (in Sandner Creek) in the history of this program. The CLSS Dock Removal Project involved removing 31 derelict docks off of crown land, 370 hours of volunteer work, 2.5 tons of waste to the dump and 15-20 tons of campfire wood placed around the lake. This dock removal project was funded with support from Christina Lake Parks and Recreation, and would not be possible without the great work of volunteers. For all projects and programs offered by the CLSS in 2013, the total volunteer work was actually quantified by In-Kind Contributions

of \$148,000! This shows the dedication of the volunteers that participate in the CLSS programs.

Another highlight was the production of a new bulletin by Brenda, "Our Underwater World" - Christina Lake that has received great reviews from the public. They have also started an aquatic plant documentary to correspond to the bulletin that you can see at their expanded Interactive Gallery at the Christina Lake Welcome Centre.



The aquatic bulletin "Our Underwater World" Christina Lake produced by CLSS B. LaCroix.

Mike Sokal, Environmental Impact Biologist for the Environmental Protection Division of the Ministry of Environment – **2013 Water Quality Update**

Mike Sokal began his presentation by discussing the goals of the lake sampling program. These goals include providing water quality data to inform decision makers and the public, as well as looking at the status of the lake and any trends. These

trends could be in response to climate change, pollution or management actions. Data is compared to the "Water Quality Objectives" that were set in 1994 (Ministry of Environment, Cavanagh et al.) and determine safe limits of various water quality parameters.

The Ministry of Environment sampling occurs in the fall and spring, and the CLSS does biweekly sampling of temperature and Secchi depth. He informed the people in attendance that Phosphorus is the key nutrient determining water quality, and levels have not changed much since 2012. He said that the overall water clarity of Christina Lake is excellent, and he thanked the CLSS for all of their hard work. He also touched on future issues including the importance of continued monitoring of Christina Lake, and the impacts of Zebra and Quagga mussels on the aquatic food web.



This photo shows an instrument used in water quality data collection (From Mike Sokal's presentation).

Andy Gilmore, Crew Supervisor for the Eurasian Watermilfoil Removal Program for the Regional District of Kootenay Boundary Environmental Services – **Christina Lake Eurasian Watermilfoil Control Program 2013**

Andy Gilmore informed the audience that this was the 27th consecutive year for the program, and the longest running season of

26 weeks in the program's history. They had two crews of 4 divers working 7 days a week for a total of 96 dive hours per week. A top priority was to gain control over the south bay that they had begun working on in 2012. Extremely dense patches were targeted on Thursdays when both crews were working. A highlight for the crew was gaining control over a large 200m patch at Treadmill Creek within the Provincial Park that will reduce the amount of fragments moving to other areas of the lake. They finished their first full lap of the lake on August 26th, and the second on November 7th with a few exceptions.

A new monitoring program was initiated where IT services of the RDKB produced a map on a monthly basis of the places the milfoil boat had visited (see the photo below). Areas behind the buoys at both the north and south ends of the lake continue to be a problem and control may not be possible using SCUBA methods. He also touched on the Milfoil weevil as a possible biological control, and work is underway to determine its feasibility in Christina Lake.



This map shows the area covered by the Christina Lake Eurasian watermilfoil Removal Crew
(For an enlarged view go to RDKB.com)



Milfoil Weevil (*E. lecontei*)

Lisa Tedesco, Habitat Biologist
for the Ministry of Forest lands and
Natural Resource Operations –
**Presenting for Matthias Herborg on
the Provincial Mandate for Aquatic
Invasive Species (AIS)**

Lisa Tedesco began this presentation by talking about different aquatic invasive species (AIS) including 133 species of flora and fauna in B.C. She then went into why B.C. needed a new regulation in regards to alien species, and the main factor was that invasive species pose the second largest threat to biodiversity behind habitat loss. The Controlled Alien Species Regulations controls the breeding, shipping and releasing of alien animals, and now includes more of these harmful species. For 2013, the main priority was on education and training for Schedule 4 species including the Zebra and Quagga mussels. The new regulations also allow Conservation Officers to order a “decontamination order”, if a boat has been in an area containing these mussels. Lisa also went into the fines and penalties for introduction and transportation of these AIS.

Changes to the Federal *Fisheries Act* that would allow the Border Service Agency to enforce the prohibition of import, live transport, and possession of Asian carps (in Canada) and Zebra/Quagga mussels (in Western Canada) are supposed to be implemented in the spring of 2014. She finished her presentation with a plug on preventing the spread of these species, and if there are any concerns, the public is to contact the RAPP line (1-877-952-7277), Conservation Officers, Matthias Herborg, Lisa Tedesco, Brenda LaCroix or all five.





This is a Snakehead fish, one of many invasive fish species that were included in this presentation compiled by Matthias Herborg.

Heather Ling, Senior Stewardship Assistant for the Christina Lake Stewardship Society – **The Christina Lake Aquatic Invasive Species (AIS) Program and Zebra and Quagga Mussel Monitoring Program**

Heather Ling started her presentation with some of the impacts that AIS can have upon introduction including: food web competition, displacement of native species, as well as costs to the economy, recreation and tourism. The AIS within Christina Lake include the Eurasian watermilfoil, Fragrant waterlily and the newest invader, Curlyleaf pondweed. She stated that there are also 13 introduced fish species within the lake, where three of them were introduced by government stocking.

The AIS Educational program offered by CLSS, in partnership with the Boundary Invasive Species Society, included 3 days a week at the Texas Creek Boat Launch watching for watercraft coming from high-risk areas with mussels. They saw 319 boaters and provided the public and 19 resorts and hotels with educational materials pertaining to stopping the spread of AIS. No boats were observed from high-risk areas and another highlight involved talking to the area's MP and MLA to discuss implementation of mandatory boat inspections of watercraft coming into the province.

CLSS's Zebra and Quagga Mussel Monitoring Program will now be in its sixth year. The substrate samplers were located in 5 locations around the lake in high-boat-traffic areas. They are hoping to incorporate a plankton net for earlier detection of mussel veligers, signage at border crossings and all resorts and boat launches, and a new microscope and identification training for 2014. Heather is also hoping to do a Master's thesis in regards to re-vegetation of native submerged macrophytes following the removal of the Eurasian watermilfoil.



A photo of Curlyleaf pondweed taken at Christina Creek.

Lisa Tedesco, Boundary Invasive Species Society Director – **Terrestrial Invasive Species Program Highlights for 2013**

Lisa Tedesco first discussed the name change from Boundary Weed Management Committee to the Boundary Invasive Species Society (BIS) and an expansion of their mandate to incorporate aquatic invasive species. Her presentation then focused on the work done this year. They attempted to eradicate Plumeless thistle, Common teasel and Mouse-ear hawkweed due to their limited distribution.



A photo of Hoary Alyssum taken from Lisa Tedesco's presentation.

Two new patches of Longspine sandbur were detected in Christina Lake, and one area was treated with manual removal. The BIS also worked hard to contain Yellow Flag Iris, Hoary Alyssum, Blueweed, Cypress spurge, Japanese knotweed and Lamium. A local resident also found a new invasive species in Christina Lake, the Alleghany blackberry near Schulli Road which was treated by the Ministry of Transportation. Cutleaf blackberry was also found in the Nature Park and this small patch was removed by the crew. BIS is also in the monitoring stages for Catsear hawkweed, Fragrant waterlily and Creeping jenny. The aquatic invader, Curlyleaf pondweed is also a concern that has been found in the lake, and Lisa said that we should watch for any indication of the Flowering rush in this area.

Lisa also touched on the various projects that the Society has been involved in including, a visit by Barb Stewart to a wash station near Dawson Creek that helps prevent the spread of Knapweed, a Rancher's Field Day, and the Goats Eat Weeds Workshop made possible by the RDKB. Another large project they have been involved in is the restoration at Boothman's Oxbow Provincial Park. There was a community involvement component to this project which included the aid of three local school classes to plant grass plugs and shrubs in the park, as well as help from the CLSS the Granby Wilderness Society, and Graham Watt of the Kettle River Water Management Plan team. They

did a lot of work in this area but there is still more to be done in 2014.

Dave Webster, Conservation Officer – Wildlife Conflicts at Christina Lake 2013

Dave Webster started off by stating that it was a good year at Christina Lake in regards to wildlife conflict compared to previous years. Most of his time was actually spent in Grand Forks this season. During his presentation he also let the crowd know that there were still active bears in the area as of December 4th, 2013 meaning that they had a good food source still available late in the season. Dave also talked about three young cougars that were causing problems in the late spring this year. These animals caused a decline in the feral cats that were an easy food source for the cougars, but in the end the cougars were destroyed. Dave said that continued public education is important, and this part of his job is facilitated by the CLSS in Christina Lake. He also said that the public needs to be responsible for what is in their yards, i.e., if you leave fruit in your trees unpicked, if you leave your garbage out, or if you have bird feeders hanging in your yard, you will attract bears.

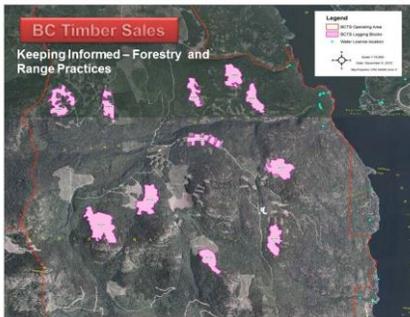


This bear is a little too comfortable in its neighbourhood.

Dawn Guido, Practices Forester for B.C. Timber Sales – **Current Tenures and Harvesting Plans**

Dawn Guido first introduced Ingrid Russell who also works for B.C. Timber Sales (BCTS), and is responsible for looking at the impacts that timber removal would have on areas before the sale has been finalized. Ingrid is the person that will be contacting you if your property may be affected by this removal, well in advance of beginning the project. Ingrid is also responsible for looking at habitat values and Species at Risk within a designated logging area.

Dawn then discussed the state of the current cutblocks in the area where they have finished timber removal. Slash burning has been underway, and planting of this area will begin in 2015. Dawn also stated that there are no further plans for more removal of the high-value timber within the Christina Lake Watershed for 2014.

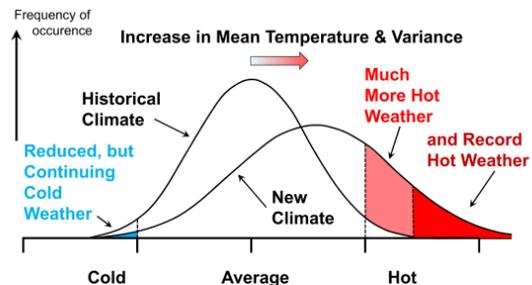


A map of the BCTS harvesting area.

Graham Watt, Project Coordinator for the Kettle River Water Management Plan – **Conserving Water and Protecting Fish Habitat in the Kettle River Watershed**

Graham Watt first discussed the status of the Kettle River Water Management Plan (KRWMP) and how it connects to the

Christina Lake Watershed. Through this plan, some challenges have been identified including low recharge rates for the Kettle River, which is bad news for our native fish species due to decreased suitable habitat and high water temperatures. Graham also touched on a presentation by Greg Utzig that was presented at a local Climate Change Forum. The slide that Graham presented showed how during climate change, the bell curve of many average days of weather with a few extremes will shift towards hotter weather with less average days and more extreme climatic events (see diagram below). An example of this is the mudslide that killed four people in Johnson's Landing in 2013. Graham also discussed the importance of wetlands which are becoming more and more scarce within this area, and the Wetland Keepers Course that he attended along with other members of the community such as the CLSS, BIS and Granby Wilderness Society.



Adapted from: Reassoner 2012 11

A diagram used in Graham Watt's presentation to describe climate change.

Jenny Coleshill, Project Manager for the Granby Wilderness Society – **Kettle River Riparian Impact Assessments Project Update**

Jenny Coleshill first went into some background on this project which is part of the Kettle River Water Management Plan (KRWMP). She discussed why they are doing the riparian impact assessments

which includes finding out the status of the watershed. She then described the importance of riparian areas for a variety of ecosystem functions including preventing soil erosion and providing wildlife habitat, as well as some indicators of stress for these zones. Some of the things they were looking at include threats and vulnerabilities, and the conditions of the riparian areas along the Kettle River.



A stretch of the Kettle River that was filled with rock to prevent erosion but is now causing erosion downstream (Taken from Jenny Coleshill's presentation)

Jenny then got into the riparian threat assessment methodology which includes large-scale assessment using GIS, and fine-scale on the ground riparian assessment. She also discussed a model developed by MFLNRO which will be expanded upon to give a good idea where riparian areas are, and which areas would support healthy riparian or aquatic ecosystems.

This data collection provides baseline data on current conditions, and prioritizes areas for restoration and stewardship. Jenny finished her presentation by showing some of the damage that has been done, or is being done to the Kettle River to raise awareness on the impacts that we are having on this very important water body.

All of these presentations are available on YouTube.

Considerations and Initiatives for 2014

- Incorporation of a plankton haul net in CLSS Water Quality Sampling.
- A new microscope and identification training for the detection of mussel veligers.
- Expansion of the Aquatic Invasive Species Program to include a voluntary boat inspection component, new signage at all campgrounds, and a large banner signaling people to prevent the spread of these species on the highway coming into Christina Lake.
- Expansion of the Dye Kit program
- Partnership on a Master's project looking at controlling the spread of Eurasian watermilfoil in Christina Lake.
- An update on the Foreshore Inventory and Mapping Project.
- Continuation of the Dock Removal Project with support from Christina Lake Parks and Recreation.
- Native aquatic vegetation survey and photo documentation.

Appreciation Awards

Dave Beattie and Glen Brewer were presented with posters picturing underwater photography of two native aquatic plants, the Yellow waterlily and Watershield. These awards were to thank these two individuals for their contribution to the Water Quality Sampling Program over the last decade!



A poster that was presented. This photo shows the Yellow waterlily.

Grace McGregor, Area "C" Director was also given a poster to thank her for her many years facilitating this event.

Door Prize Draw

Mike Sokal, Environmental Impact Biologist for the Environmental Protection Division of the Ministry of Environment won the door prize of another aquatic plant poster. To win this he had to identify the organism in an underwater photograph. This photograph pictured a yellow, jelly mass attached to Watershield stems, and was identified as a Bryozoan colony. Other guesses included mussel eggs and fish eggs, but it was Mike that got the right answer!



The door prize photo picturing the Magnificent bryozoan (*Pectinatella magnifica*) colony.



Terry McRitchie, RDKB Eurasian Watermilfoil Control Program, Takes the Plunge – "Our Underwater World" Christina Lake Documentary Production



Our AIS Educational Program Banner – Featuring Zebb the Zebra Mussel "The Nastiest, Raunchiest Outlaw in a Shell"!

Photo Gallery



Ecosystem Explorer's – Young Stewards of the Boundary Youth Program



CLSS Derelict Dock Removal Program Volunteers

For more information you can contact the
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