



## Slocan Lake Stewardship Society Newsletter

Box 322, New Denver, BC V0G 1S0 Web: [www.slocanlakess.com](http://www.slocanlakess.com)

July, 2013

### WHAT'S HAPPENING WITH THE LAKE MANAGEMENT PLAN?

Since SLSS began, one of our primary goals has been to obtain a lake management plan for Slocan Lake. All of our baseline science studies on water, foreshore and fish habitat were designed to provide the necessary starting information for this plan. With the completion of our community values study, (the Imagine! project) the Regional District has allocated time and money for this important process, and steps into its appropriate role coordinating the development of the Slocan Lake Management Plan. The villages of New Denver, Silverton, and Slocan City have all strongly supported a lake management plan.

RDCK already has in place a working group of First Nations, federal, provincial, and local governments who are developing a plan for Kootenay Lake (The Kootenay Lake Partnership, or KLP). That same group of people will be working on the Slocan Lake plan. SLSS "sits at the table" as an observer but has no vote, as this is a government to government task force.

Before the end of the year, we expect the KLP to release a Guidance Document--which lays out the relationship between the science and the current law--for our lake. This is a necessary next step before a plan can be drafted. SLSS has strongly advocated that this document be open to amendment, as the science to date is limited and we have no archeological or cultural studies from First Nations.

After the Guidance Document is complete, the KLP will begin work on the lake management plan. This is the point in the process that community input is important. We can't change the science or necessarily the federal law, but we can argue for what is appropriate for the health of our watershed.

The SLSS role in the coming months will be to monitor the progress of the Slocan Lake Management Plan and to advocate for the incorporation of more in-depth research on blue and red listed species, cultural and archeological sites, and community values that preserve, protect, and enhance the health of Slocan Lake.

### HAVE YOU READ THE LATEST FACTOID IN THE VALLEY VOICE?

Tucked away in a small box in every edition of the Valley Voice lies interesting information about Slocan Lake and its tributaries. These small bits have included facts on sturgeon studies, the history of train wrecks in the lake plus research on water quality, ecology, aquatic invasive species and our various fish species. Future topics include geological information on how our lake was formed, the habits and habitats of Slocan Lake fish, the life cycle of aquatic insects and the intricacies of our wetland systems.

Look for the small fish graphic to find the SLSS Factoid and become better informed about your own aquatic backyard. Read it to your grandkids, share it over coffee, allow yourself be amazed.



**Slocan Lake Stewardship Society**

### DID YOU KNOW....

- Jeremy Baxter, fisheries consultant and local resident has received funds from the Fish and Wildlife Compensation program to research and conduct a spawning assessment of bull trout in Slocan Lake.
- The Redfish students interviewed and recorded 38 stories of Slocan Lake from guests at their May Days booth in New Denver
- Riparian areas are often called the *ribbon of life*; they are the portions of land adjacent to water bodies-lakes, wetlands, creeks, and rivers-that are influenced by, and have an influence on, the aquatic environment. Riparian areas provide critical habitat for wildlife, particularly for species that depend on the aquatic environment: invertebrates, amphibians, mammals, and birds (otter, kingfisher, merganser, great blue heron). Riparian areas are also crucial for maintaining healthy fish habitat.
- The Vision Statement of the Fish and Wildlife Compensation Program: Columbia Basin (FWCP:CB): "Thriving fish and wildlife populations in watersheds that are functioning and sustainable" (2013).
- The Villages of New Denver, Silverton, and Slocan plus the RDCK are sharing the costs of completing a Guidance Document, the first stage towards a Lake Management Plan (LMP) for Slocan Lake.

## WHY ALL THE FUSS ABOUT INVASIVE SPECIES?

**“INVASIVE SPECIES ARE THE BIGGEST SINGLE THREAT TO OUR NATURAL BIODIVERSITY”**, states a Federal Department of the Environment report. An invasive species is a plant, animal or other organism that has been introduced to an ecosystem where it does not historically occur. Invasive species often spread rapidly and extensively. Many invasives are successful “generalists”; they are able to survive under varied conditions, can tolerate disturbance or proximity to human activity, have a wide range of food sources, and have very high reproduction rates. *In their new homes they do not have their normal predators or pathogens.* Some invasives can be so successful they cause the collapse of ecosystems, and are called “ecosystem engineers”.

Most native species cannot *compete* with the newcomers. Native species have evolved for their specific *niche* and do not tolerate changes well. Food sources and reproduction cycles are vulnerable to invasive species.

## HOW DO AQUATIC INVASIVE SPECIES (AIS) GET HERE?

- Most aquatic invasive species are transported and travel with humans.
- Global trade and recreational travel routes are the pathways for their spread.
- Aquatic invasive species hitchhike on the bottom of vessels, both commercial and recreational.
- AIS are carried from waterway to waterway by recreational gear and tools, such as: fishing and scuba equipment, jet skis, canoes, kayaks, sea planes, industrial equipment.
- Sometimes fishers deliberately and illegally release AIS, (e.g. **northern**

**pike, bass, perch, and other spiny ray species**), in order to increase fishing opportunities.

- Often, residents empty aquariums and garden plants into waterways.

## HERE'S WHY ALL OF THE FUSS: COSTS OF INVASIVES

- Aquatic invasive species destroy or reduce fish and wildlife habitat, threaten ‘**species at risk**’ and can cause extinctions.
- Rivers and lakes lose their commercial value.
- Tourism, business opportunities, and property values are lowered.
- There are dramatic increases in infrastructure costs to bridges, canals, hydroelectric facilities, municipal water intakes, etc.
- Aesthetic values are lost due to diminished ecosystems; fouled beaches, algae blooms, weed clogged lakes and fishing streams.

## INVASIVES THAT ARE HERE

1. **Plants:** Yellow flag iris, Japanese knotweed, Giant hogweed, Purple loosestrife and Policeman’s helmet (Himalayan Balsam) which often start as garden or pond ornamentals and spread by seed dispersion or root fragments.
2. **Algae:** ‘Rock snot’, Didymo, or Didymosphenia geminata, now appears in Wilson, Silverton, and Bonanza Creeks and in the Slocan, Kootenay, and Columbia Rivers. Rock snot can change the invertebrate population and smother fish eggs. These single celled algae will cover the substrate of a clean, fast flowing stream in a thick brown mat, sometimes with



Didymo in Wilson Creek (Photo by Margaret Hartley)

whitish streamers. Rock snot is spread on recreational and fishing gear, felt soled waders and boats.

## WHAT'S NEXT TO ARRIVE?

1. **Plants:** Eurasian watermilfoil is **NOT** found in either Summit or Slocan Lakes. Hundreds of thousands of dollars are being spent attempting to control milfoil in Kootenay, Christina, Champion, Okanagan, and Shuswap Lakes.  
  
Flowering Rush currently infests some Idaho waterways. It is almost a Sci-fi plant which can flower and seed from a 6m stalk.
2. **Molluscs:** Zebra and Quagga mussels. There are no invasive mussels in B.C., but they are advancing across the U.S. north and from Ontario. Individually smaller than fingernail this Eurasian import will cover any firm surface, even other living organisms. They are carried on the hulls and engine water intakes of recreational boats and industrial equipment. Since their introduction to the Great Lakes in the 1980’s, they have caused extinctions of various native species, dramatically changed water quality. As outlined in COSTS, the Great Lakes have suffered ALL of those listed in this article. The costs have been enormous. Mussels have clogged hydro electric facilities and recreational sites and beaches have been rendered useless and unsightly

(continued on page 3)

ZEBRA MUSSEL



QUAGGA MUSSEL



in the Great Lakes and Lake Champlain.

The New Zealand mud snail found in Port Alberni act similarly to invasive mussels.

3. **Fish:** Northern pike, perch, bass, and some exotics are introduced by people. They are effective predators, which makes them good, large, sport fish. However, they are also devastating to many native aquatic animals and seriously challenge the survival of our trout and salmon fisheries.

## HOW DO WE PROTECT SLOCAN LAKE?

### 1. CLEAN, DRAIN AND DRY

- When citizens practice good boat and fishing gear "hygiene", spread of invasives and pathogens can be prevented.
- **Clean** all equipment of mud and plant debris; **drain** all water intakes, bilges, bait containers; and **dry everything thoroughly**, before entering a waterway.
- Felt soled waders are extremely difficult to dry and are considered one of the most significant spreaders of Didymo.
- A 5% bleach solution is effective for disinfection.

### 2. IN CASE OF AN INFESTED VESSEL

- Do not, under any circumstances, launch a contaminated boat into the lake.
- Contact the Ministry of the Environment (MoE) or a Conservation Officer ( **RAPP phone # 1-877-952-7277 or mobile #7277**) for help with disinfection, if mud snails or invasive mussels are suspected.

### 3. LEARN TO RECOGNIZE INVASIVE SPECIES—LEARN ABOUT OUR NATIVE SPECIES

### 4. CONTACTS AND INFORMATION

**Central Kootenay Invasive Plant Committee (CKIPC):** [www.ckipc.ca](http://www.ckipc.ca) or (250)352-1160

**Invasive Species Council of BC (ISCBC):** [www.bcinvases.ca](http://www.bcinvases.ca)

**U.S. Dept. of Agriculture (USDA) National Invasive Species Information Center:** [www.invasivespeciesinfo.gov](http://www.invasivespeciesinfo.gov)

## SLSS INITIATIVES FOR AQUATIC INVASIVE SPECIES CONTROL

In partnership with CKIPC and Fortis BC, CLEAN, DRAIN AND DRY signs have been installed at boat launches from Summit Lake to the confluence of the Slocan and Kootenay Rivers. A SLSS representative sits on the CKIPC Invasive Aquatics Working Group. Volunteers are participating in a monitoring program, collecting water samples to be screened by a MoE lab for zebra and quagga mussel veligers (zygotes). SLSS partners with regional and municipal governments to support boat washing stations, veliger testing, and education programs.

## Examples of Invasive Plants



Yellow flag iris



Japanese knotweed



Giant hogweed



Policeman's helmet



Purple loosestrife

Photos from CKIPC



## BASELINE WATER STUDIES NEAR COMPLETION

Three years of water studies of Slocan Lake have provided a baseline from which to compare future water quality studies in the areas of: nitrogen, phosphate, chlorophyll, pH, temperatures, metals' concentrations, and dissolved oxygen. Importantly, near shore testing of coliform counts has been taking place.

Each of these parameters plays its own unique role in a lake's health. *Interested in specifics?* Check out the results on the SLSS website for Slocan Lake's results to date.

Go to: [www.slocanlakess.com/com/research-2/reports/](http://www.slocanlakess.com/com/research-2/reports/)

One example of a parameter's impact on a lake is *surface temperature*. Surface temperature readings serve as an important ecological indicator. By

measuring surface temperature, we can record and compare readings from season to season and year to year. Surface temperature helps to determine much of the seasonal oxygen, phosphorus, and algal conditions.

A large number of volunteers have made the testing possible with their energy, skills, and long term commitment. Special thanks go to lake testing team leaders Lane Haywood, Richard Johnson, Anita Werner and Jason Hartley, to Chris Deighton and Wayne Schweitzer who generously donated their boats for the mid-lake testing, and to Peter Roulston for his SECCHI dip testing on the temperature and turbidity of the lake...and to the many volunteers for their help lending canoes, testing, and driving samples to the Passmore Labs. SLSS's Three Year water studies of Slocan Lake has been funded by Columbia Basin Trust.



**Results?** The good news is that Slocan Lake is a remarkably healthy lake. A very clear message from the 2008 *Official Community Plan* (OCP), Redfish student interviews in 2012 and 2013, and the 2012 *Imagine! Project* was a community response that said maintaining the health of Slocan Lake was the community's #1 value.

**Final Report?** Watch for the final three year water studies summary this Fall. It will be on the SLSS website and will be in a Valley Voice news release.

## BC WILDLIFE FEDERATION COMES TO SLOCAN LAKE

The BC Wildlife Federation brought a free 2.5 day immersion **Wetlands Education Program** (WEP) to the Slocan Lake area: Hills and the Bonanza and Hunter Siding Marshes. The BC Wildlife Federation's WEP helps build the capacity of BC citizens to determine their backyard wetland assets, and increase their community's environmental health using this knowledge. This intense workshop was attended by 25



mostly "local" residents, including two 2013 Lucerne Secondary graduates.

Slocan Lake Stewardship Society, the Slocan Lake Research Centre, and the Slocan River Streamkeepers partnered to bring this exciting and free educational science activity to our communities. Funding was provided by highly diverse sources: CBT, Fish and Wildlife Compensation Program (FWCP), Habitat Conservation Trust Fund, the Real Estate Foundation of BC, the Province of BC, Environment Canada, the RBC Blue Water Project, and Wildlife Habitat Canada.

### What did we learn in the field and classroom?

- birds, butterflies, vegetation and plant identification, amphibians, invertebrates, and bats of our local wetlands
- that invertebrates and amphibians are the "canaries in the coalmine" regarding the health of a wetland, and hence, our watershed

- endangered and 'at risk' species residing in the West Kootenays generally, and specifically within the Slocan Lake watershed
- how to utilize GPS systems
- wetland value and classifications; swamps, marshes, bogs, fens, shallow water
- wetland surveying, wetland soils, wetland water sampling

### Why are wetlands important to the Slocan Lake watershed??

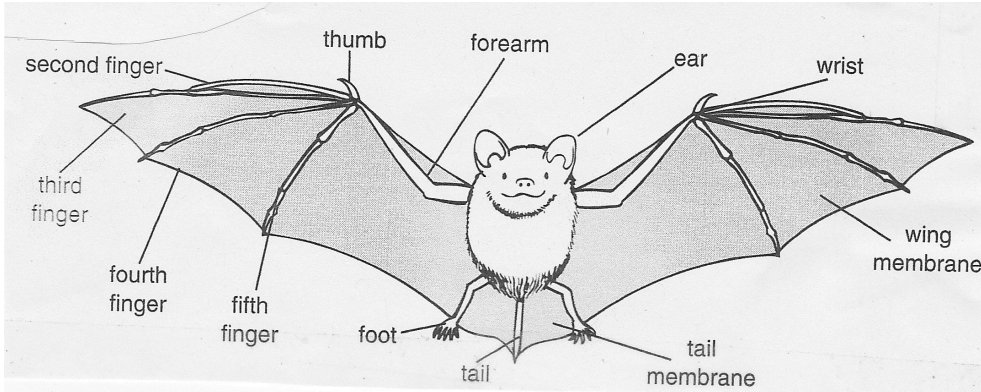
- wetlands are the kidneys of the earth; a purification system of our waters, and hence, Slocan Lake and its watershed
- wetlands are sponges of the earth; they reduce flooding
- wetlands are highly productive with enormous plant growth
- wetlands are a very rich and biologically diverse ecosystem, providing shelter, food, nesting sites for an exceedingly wide variety of animal and plant life.



# GO BATTY!

## KIDS' PAGE

Bats are an important part of our ecosystem. They help control nocturnal insect populations and cycle nutrients from wetlands to forests.



Do You Know These Words?

Nocturnal  
Echolocation  
Ecosystem  
Nutrients  
Cycle  
Guano

### COOL BAT FACTS

- There are more than 1,000 different kinds of bats in the world
- There are 16 species of bats in BC and at least 11 species of bats in the Kootenays!
- A bat is a mammal, just like you!!
- 25% of mammalian species are bats
- Bats catch insects while flying through the air
- Some bats have a membrane around their tails that they use like a baseball mitt to scoop insects
- A bat sends a sound which bounces off an insect. It listens for the ECHO of the sound to find the location of its tasty snacks (echolocation)
- Some bats eat their weight in insects each day, making them an effective means of insect control
- A bat can catch and eat 14 insects in one minute!
- Bat waste, called guano, is a valuable fertilizer
- Bat size is measured by length of the forearm
- Bats fingers are almost the same size as the body!



Find these words in the puzzle above

echolocation	species	nocturnal	nutrients
guano	roost	mammal	wetlands
membrane	forearm	bat	Kootenays
insect	wingspan	thumb	wrist
tail	environment	microbat	megabat

Learn more about bats in the Kootenays and building your own bat house at: [www.kootenaybats.com](http://www.kootenaybats.com)



## SUMMIT LAKE TOADFEST



The western toad (*Anaxyrus boreas*), is listed as

- Near Threatened by the World Conservation Union
- Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
- Is blue-listed (of special concern) by the BC Conservation Data Centre.

The precarious existence of the western toad is due to its loss of habitat. Summit Lake hosts a regionally and provincially significant breeding population of western toad, estimated to involve millions of toads and toadlets. Tens of thousands of adults and juveniles are killed by vehicle traffic on Highway 6 as they migrate to and from the lake in three phases every year:

1. Adults moving to the lake to breed;
2. Adults leaving the lake post-breeding; and
3. Toadlets leaving the lake after transforming from tadpoles

Join biologist Jakob Dulisse in a truly "hands on" educational experience assisting the toadlets cross the road.

## TOADFEST

### at Summit Lake

**August 27 -from 4 to 7 p.m.**

**August 28 - 10 a.m.- 1:00 p.m.**



Photos by: Angus Glass

## NOTES FROM A WILDLIFE TREE

A wildlife tree is any standing live or dead tree with special traits that provide valuable *habitat* for wildlife. I am a wildlife tree and I have some of these characteristics:

- a large diameter with sound root systems and some large branches
- some intact bark and some loose bark
- cavities and evidence of decay such as fungal conks, cankers, hollows, and cracks
- a key role in the forest nutrient cycle since I house many layers of the *food chain*
- provided homes (*habitat*) to thousands of different wildlife species
- great value to the forest. My value is determined by my size, age, condition, abundance, species, geographic location, and my surrounding habitat

If safe, please leave me standing!



large height and diameter

large branches

broken tops

natural cavities

heart rot

hollow trunks

sloughing bark



Wanted 500 ml plastic bottles with lids to be used for water testing on Carpenter Creek, call Lane at : **358-7279**



Keep your eyes and ears open. Our Wetlandkeepers will be taking on projects in our wetlands, and citizen scientists, our local volunteers are always needed!