



2016 Annual Summary Report



Message from the Chair

The past year has been very gratifying for the Central Kootenay Invasive Species Society (CKISS). The Executive Director, Jennifer Vogel, has continued to strengthen the core team and tighten all the nuts and bolts. Because of her, we are a strong, well run machine that has proven to be a leader in tackling the many issues brought to our region by invasive species.

The CKISS team is composed of dedicated, passionate people that have brought their skills and energy to ensure the success of their organization. If the west Kootenay region's ecosystems evade the devastation from some very serious invaders it will be because of these amazing people. The board is in awe of your work and cannot thank you enough for your efforts.

The CKISS continues to raise awareness of invasive species across all demographics and industries. Education is at the heart of our work and is key to the success of our many programs.

Aquatic invaders took the spotlight in 2016. The looming threat of the introduction of Zebra and Quagga mussels into our waterbodies has really highlighted the importance of CKISS. With Columbia Basin Trust 3-year funding we have been able to position ourselves to deal with this issue. However, the potential of such a disaster far outstrips our resources and this will continue to be a pressing issue. Another creature that has tested our capacity is the American bullfrog. This gigantic species is eating its way into our regions ponds at an alarming rate. Once again bullfrogs have shown gaps in our funding and the incredible capacity of the CKISS team to make things happen.

Speaking of funding... a big thank you to all our current funders and supporters. Without them we would not exist. The CKISS had over 15 funders in 2016 and over 50 stakeholders and partners. We are very grateful for the continuing support and vote of confidence. Thank you also to the board members that volunteer their time and wisdom in guiding CKISS forward. Your time is well spent.

We will be looking to increase our position in the region and strengthen our funding in the next few years. As the economic impact of invasive species is being realized, we hope our capacity to prevent significant costs to the region will also be recognized and supported.

Together we are protecting what is dear to our communities- our ecosystems, nature services, economy and way of life.

Thank you to all our supporters, funders, staff, consultants and board members,

Laurie Carr
President, Central Kootenay Invasive Species Society



Laurie Carr, Bsc. F, Msc. is the President of the Central Kootenay Invasive Species Society (CKISS). Many years of working in the field of conservation biology gave her an appreciation for the importance of invasive species in current environmental issues. After joining the board in 2010, she became the President in 2013. Laurie lives and works in Nelson where she enjoys the Kootenay life with her family. Laurie currently works as a researcher with the Borealis Centre for Environment and Trade Research.



Message from the Executive Director

2016 was a busy year for CKISS. The team reached out to more residents in the region than ever before. We found and treated many new invasive species in remote locations, including Fragrant Water Lily.

Building on the work of 2015, we realized ongoing improvements in areas of governance, education, invasive species management and protection of the regions biodiversity through these program areas.

Some of the specific achievements included:

- Worked diligently to remove new invaders in remote areas
- Expansion of the American Bullfrog surveillance and eradication program in the Creston and Pend D'Oreille regions
- Expanded partnerships with local and regional organizations
- Another successful year of program delivery with over \$450,000 being disbursed throughout the region towards invasive species management and outreach

We would like to express thanks to our ongoing and new funding partners for supporting the work of the CKISS and its partner organizations. A special thank you to our board of directors for their willingness to volunteer their expertise and time and ensuring the ongoing success of the CKISS. In addition, a thank you to our many contractors that assisted with the operational and logistical work of the CKISS.

I would like to also personally thank the CKISS staff team, who complete much of the on the ground work that takes place throughout the region,

Khaylish Fraser
Aquatic Invasive Species Program Coordinator

Laurie Frankcom
Education Program Coordinator

Dave De Rosa
Operations Program Coordinator

Morgan Sternberg
Research Program Coordinator

Erin Bates
Program Assistant and American Bullfrog Lead

Summer Students-2016
Amy Firth and Lindsey Frew

Looking forward to a successful 2017!

Jennifer Vogel
Executive Director, Central Kootenay Invasive Species Society



Jennifer Vogel is the Executive Director of the Central Kootenay Invasive Species Society. Jennifer is passionate about the work of maintaining and protecting biodiversity throughout the region, by managing high priority invasive species. Jennifer oversees the CKISS's fund development, project management and capacity building efforts and works to develop strong partnerships throughout the region and beyond.

What is CKISS?



Photo credit: elusivewelements.com

Slocan Lake: a Kootenay gem that CKISS works to protect from invasive species

British Columbia is the most ecologically diverse province in Canada making the Central Kootenays a beautiful place to work, live and play. The Central Kootenay Invasive Species Society (CKISS) strives to keep our lakes pristine, forests lush, mountains healthy and economies thriving through education and managing invasive species in an effective way.



Vision Statement

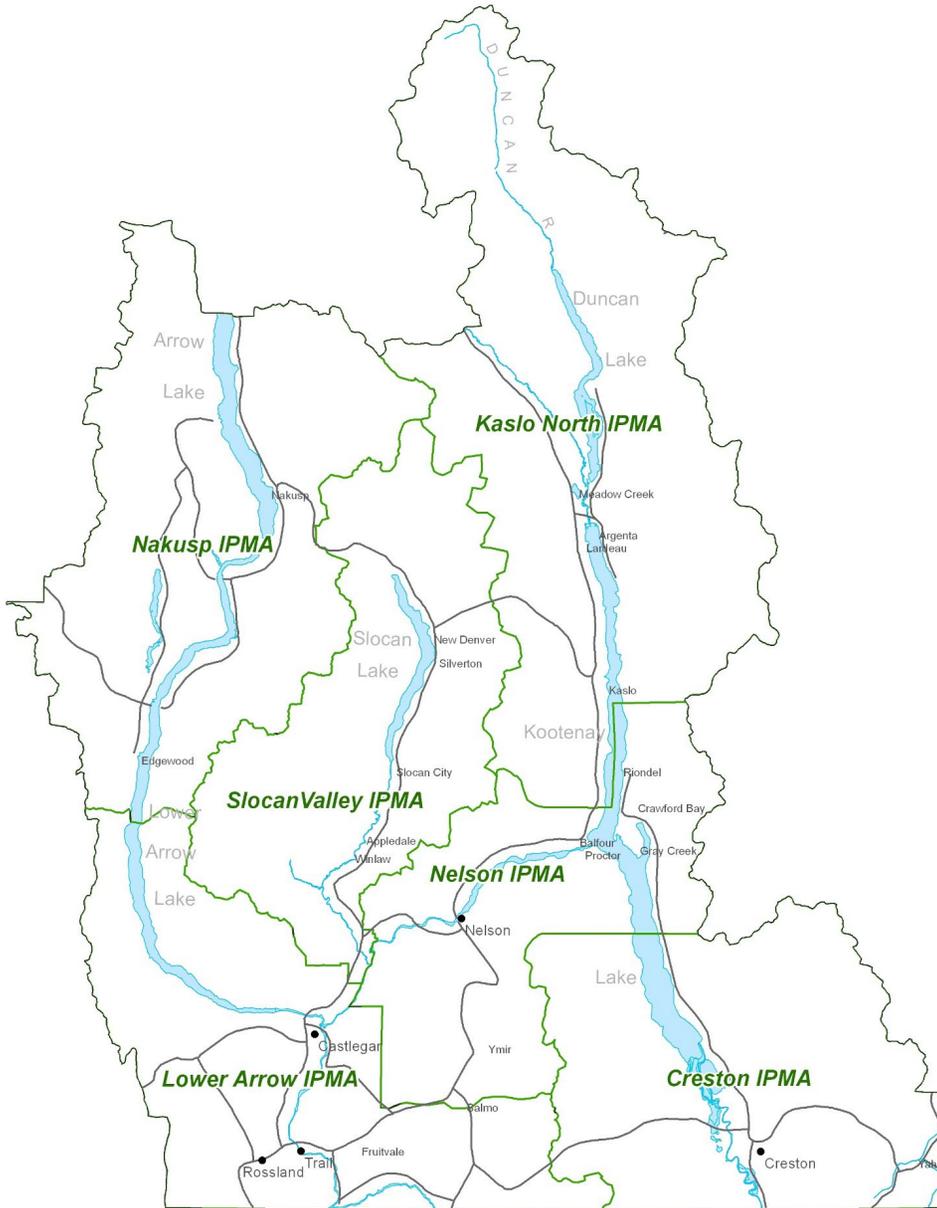
CKISS is a network of partners collaborating to minimize the impacts of invasive species on the ecosystems, communities, and economy of the Central Kootenay region.

The Central Kootenay Invasive Species Society is a non-profit society that was formed in 2005 by a group of residents and company/agency representatives who were interested in promoting collaborative approaches to invasive species management. The Society includes representatives from non-profit societies, utility companies, government agencies, and regional companies.

The purposes of the Society within the geographic area of the Regional District of the Central Kootenay and Areas A & B of the Regional District of the Kootenay Boundary, are to:

- 1. Raise awareness and educate the public, government agencies, and other land managers about invasive species and their impacts in the area;**
- 2. Prevent the further introduction and spread of invasive species in the area through education and awareness, early detection and control, and coordinated integrated weed management efforts;**
- 3. Promote coordinated and collaborative management of invasive species between agencies and land occupiers;**
- 4. Work towards the control/containment of highly invasive non-native species; and**
- 5. Provide a conduit for information and a source of expertise on invasive species**

How did CKISS make a difference this year?



Operations Terrestrial Invasive Species

- Total Area Surveyed: 966 Ha
- Total Area Treated: 87 Ha
- 30+ priority species treated utilizing Integrated Pest Management procedures in 2016
- Release of 800 Spotted Knapweed biocontrol weevils (*Cyphocleonus achates*) at 8 sites

High priority species treated in 2016

1. Wild Chervil
2. Baby's Breath
3. Field Scabious
4. Giant Hogweed
5. Hoary Cress
6. Leafy Spurge
7. Plumeless Thistle
8. Policeman's Helmet
9. Purple Loosestrife
10. Scotch Thistle
11. Rush Skeletonweed
12. Teasel
13. Blueweed
14. Hoary Alyssum
15. Himalayan Blackberry
16. Bohemian, Japanese and Giant knotweed
17. Yellow flag Iris
18. Scentless Chamomile
19. Scotch Broom
20. Fragrant Water Lily

High priority species NOT present in the CKISS region which were surveyed:

1. Nodding Thistle
2. Russian knapweed



Giant Hogweed profile



Giant hogweed is an invasive plant that was introduced through horticultural curiosity. It causes soil erosion and outcompetes native species for space and resources. The plant poses a health risk to the public due to its toxic sap that causes painful burns. If you see this plant DO NOT TOUCH it and report sightings. This plant gets confused with native Cow Parsnip. The main differences between the two are that Hogweed is very tall with sharply toothed leaves and dark reddish purple spots on the stem.

Photo credit: T.Voekler



Research Programs

Partnership Development

Morgan Sternberg has been assisting with developing partnerships with local, regional and provincial academic institutions, including the following:

- Selkirk College – Selkirk Geospatial Research Centre: *Unmanned Aerial Vehicle (UAV) mapping*
- Thompson Rivers University: *Yellow Flag Iris management*
- University of British Columbia: *environmental DNA (eDNA) projects*
- University of Victoria: *eDNA projects*



Bullfrogs

CKISS is working together with partners to conduct research that will help us better understand the impact of Bullfrogs in our environment:

- Partnered with University of Victoria to validate current eDNA primer in order to assist with analysis precision to understand how close Kootenay Boundary area bullfrog DNA are to Vancouver Island bullfrog DNA.
- Worked with Rapid Response Plan to create the Kootenay Boundary American Bullfrog Early Detection Program.



Yellow Flag Iris

CKISS partnered with Thompson Rivers University to create a Multispectral Fingerprint for Yellow Flag Iris that could greatly improve range estimates for infestations of Yellow Flag Iris and other invasive plants.

Research included the following milestones:

- Developed an improved mapping tool for invasive plants.
- Wildlife Habitat Canada approved Yellow Flag Iris mapping in the Creston Valley Wildlife Management Area using a UAV equipped with a multispectral lens.



Operations Aquatic Invasive Species

Invasive mussels anyone?

- 62 plankton samples collected
- 17 waterbodies sampled
- 2 substrate samplers monitored

Result?

No zebra or quagga mussels detected!

We are STILL invasive mussel free!



CKISS donated a pressure washer to the Canadian Columbia River Inter-tribal Fisheries Commission who have the authority to inspect and decontaminate watercraft at three First Nations resorts. This machine will facilitate the prevention of an invasion of Zebra and Quagga Mussels in the Columbia River watershed.

Fragrant Water Lily Profile

An easily recognizable aquatic plant with a showy white flower. This fast growing plant can quickly create dense infestations choking out native plants. It can affect the value of water front property, reduce water based recreation opportunities and create hazardous swimming conditions. How to prevent the spread? Do not plant Fragrant Water Lily in your garden and dispose of any garden waste properly by bagging and bringing it to a landfill.



American Bullfrog Program Ramps Up... and they keep on coming!



- CKISS and partners organized an eDNA Workshop with a provincial expert in May 2016.
- eDNA analysis completed on 95 water samples collected from 9 locations.
- Acoustic monitoring devices installed at 8 locations, with over 13,500 hours of recorded data analyzed.
- 30 visual and 20 call-playback surveys completed.
- 382 tadpoles, 23 juveniles, and 33 adult American Bullfrogs eradicated in 2016.
- Bad news... new Bullfrog infestation in Creston area, much closer to endangered Northern Leopard Frog population.

American Bullfrog profile



The American Bullfrog (*Lithobates catesbeianus*) is native to Eastern North America and was introduced to coastal BC by people who wanted to 'farm' the frog for its meaty legs. It is a large amphibious frog that lives along the waters' edge of lakes and ponds. They have smooth skin that can vary in colour from pale green to dark olive and some have brown spots. Bullfrogs have large golden eyes, large tympanums ("ears") and a skin fold following the shape of the eardrum. During mating season in the spring the male's distinctive call is a loud, low-pitched droning bellow. Listen online at ckiss.ca/species/american-bullfrog/.

Quick Facts

- Voracious predator that eats anything that fits into its mouth, we found a 28 g songbird in the stomach of a captured bullfrog!
- Severely reduces native biodiversity
- Carriers of several amphibian diseases
- Lays a lot of eggs compared to native frog species
- Can move overland up to five kilometres in one year



Education

Resources Dispersed: 8067

Youth Outreach Activities: 375 students , 275% increase from 2015

CKISS outreach booth: 18 community events

Volunteers: 53

of people reached at events, workshops and presentations: 12,520

Social Media

CKISS saw a dramatic increase to website traffic and social media buzz in 2016!



of hits on CKISS new website: 51,888, in 2015 it was 8960 hits

of Facebook likes: 274

of NEW likes on Facebook page: 122

of Twitter followers: 49

CKISS N'Tell Newsletter:

of subscribers to newsletter: 558

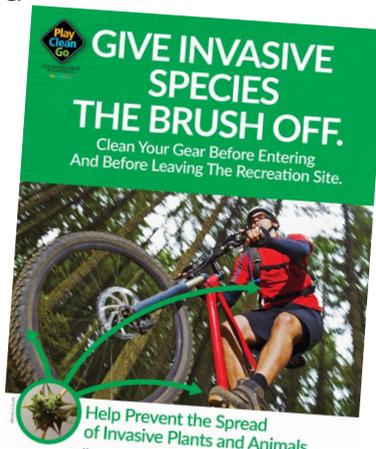
of NEW subscribers to our newsletter: 154, in 2015 it was only 32!

CKISS in the News:

of times in media: 39, including 2 interviews on the CBC!

CKISS Advertising

- Ask the Professional Column: 2 submissions to the Nelson Star to highlight both PlantWise and Clean, Drain, Dry campaigns
- Clean, Drain, Dry advertising placed in Kootenay Mountain Culture Magazine
- Clean, Drain, Dry & PlayCleanGo advertising placed in regional tourism magazine
- Bullfrog open house advert in the Creston Valley Advance



Education Programs, Events & Resources

1. **PlayCleanGo:** Education and outreach campaign targeted at outdoor recreationalists. We are a partner; through this partnership we receive support with resources.
2. **Clean, Drain, Dry (ISCBC):** campaign aimed at boaters and activities taking place on bodies of water throughout the province.
3. **PlantWise (ISCBC):** campaign aimed at horticulture industry, growers and buyers.
4. **Don't Let it Loose:** CKISS initiative that is aimed at local schools, pet shops and aquarium stores, with opportunities for Citizen Science.
5. **Buy it where you Burn It:** a NEW campaign added in 2016 that targets car campers and park users to use local wood for campfires to avoid moving tree eating pests & diseases.
6. **Communities Pulling together:** On-going program, where citizen groups/schools pull invasive plants at high priority sites.
7. **Presentations/Workshops:** CKISS provides workshops and presentations to local citizen and stewardship groups. A highlight in 2016 was the "Teaching about Native and Invasive Species: a hands on approach to the new B.C. curriculum" offered to teachers.



8. **Eco Action Restoration Project:** a three year program started in 2016 that improves local ecosystems by planting native species and teaches the value of biodiversity to school groups.



8.

9. **Bullfrog Interpretive Sign:** 1 new sign designed to educate the public about why Bullfrogs are a problem, how to ID and report the invasive frog. Sign installation will take place in the Spring of 2017 at the Creston Valley Wildlife Management Area.



9.

10. **NEW brochures:** 2 new Aquatic and Terrestrial brochures designed. Printing and distribution of NEW brochures to commence in the spring of 2017.



10.

11. **NEW branding for Outreach Booth:** CKISS outreach booth attends a variety of local events with a variety of props and free educational resources



11.

12. **NEW Youth t-shirts:** cool t-shirts for budding biologists with a funky Bullfrog lifecycle design



12.

13. **NEW Bullfrog Resources & Events:** Invader Alert handouts, Report Sightings wallet cards & Bullfrog Open House in Creston



13.

14. **NEW Play, Clean, Go signs & boot brushes:** at BC parks trailheads



14.

15. **NEW CKISS Truck with promotional wrap**



15.

16. **'Environment Expo in the Park & AGM'** hosted by CKISS



16.

17. **NEW Knotweed Awareness Sign in Village of Slocan**



17.

Funders

Thank you to our funders. We appreciate your continuing support!



Stakeholders

Thank you to our stakeholders. We look forward to working together again this year!



Photo credit for front and back cover:

- Bullfrog Eating, Catherine Goodwin
- Knotweed Cover Shot, Commons Wikimedia
- Zebramussels, US Fish and Wildlife Service



ckiss.ca