



# Columbia Shuswap Invasive Species Society

## Year End Report 2016

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## ACKNOWLEDGMENTS



Figure 1: CSISS 2016- 17 Board Directors left to right John Braisher, Bruce Husband, Hamish Kassa, David Rooney, Valene Kolt (alternate for Darren Komonoski), Adam Croxall, Bryan Chruszcz, and Chris Cochran. CSISS staff front row Laura Gaster, Aimee Barre, and Robyn Hooper. (Not pictured Emily Spiler, Diane Millar, Darren Komonoski, and Margaret Gibson.)

The accomplishments and success of this organization can be attributed to our dedicated staff, Board Directors, the generous funding agencies that contributed to the project, our expert contractors, consultants and numerous volunteers. Special thanks to our 2015-2016 outstanding Board Directors whose dedication and direction has continued to guide the CSISS on its trajectory of continuing growth: Hamish Kassa (CSRSD), Chris Cochran (Town of Golden), Diane Millar (MFLNRO), Bryan Chruszcz (Parks Canada), Darren Komonoski (City of Revelstoke), David Rooney (Illecillewaet Greenbelt Society), Bruce Husband (Shuswap Agricultural Strategy Group), Margaret Gibson (Independent Biologist) and Adam Croxall (BC Hydro) (Figure 1 and Appendix A). A special thank you to out-going Board member Margaret Gibson for her four years on the Board of Directors. We are excited to welcome John Braisher, a Golden area resident and rancher as new director on the 2016-2017 CSISS Board. We would like to thank Emily Spiler, CSISS Summer student through Canada Summer Jobs, for her exceptional efforts engaging residents across the CSRSD in invasive species outreach activities for a second season.

We are extremely grateful to the Columbia Basin Trust (CBT), Ministry of Forests, Lands and Natural Resource Operations (MFLNRO), Ministry of Environment (MoE), Ministry of Transportation and Infrastructure (MOTI), the Columbia Shuswap Regional District (CSRSD), BC Parks, City of Salmon Arm (fee for service signage project), Fish and Wildlife Compensation Program (Community Engagement Grant), Employment and Social Development Canada (Canada Summer Jobs Program) and the Invasive Species Council of BC for providing funding and partnership to the CSISS. Additional thanks are due to the City of Revelstoke, City of Salmon Arm, Town of Golden, Central Kootenay Invasive Species Society, East Kootenay Invasive Species Council, Columbia Basin Environmental Education Network, Kootenay Conservation Partnership, Shuswap Trail Alliance (White Lake Stewards), Friends of Gardom Lake, RBC Salmon Arm, Shuswap Trails Roundtable and Working Group, Parks Canada, the Illecillewaet Greenbelt Society and Wildsight Golden for their support in-kind and partnerships with the CSISS.



## EXECUTIVE SUMMARY

April 2016 marked the start of the fourth operational season of the Columbia Shuswap Invasive Species Society (CSISS). Since its inception, the Society has actively pursued the goals identified in the 2013 CSISS Strategic Plan:

- 1) *Implement a collaborative and coordinated program*
- 2) *Educate, engage and inspire residents and others to participate in invasive plant management*
- 3) *Prevent the introduction of new invasive species*
- 4) *Maximize the probability of detection and eradication of new invasive species*
- 5) *Slow or reverse the spread of existing invasive species and reduce their harmful impacts*
- 6) *Ensure program sustainability*

In 2016, the CSISS strengthened and expanded its network of partners and furthered its objective to deliver **collaborative and coordinated programs** in the CSRD. This was achieved through its partnerships with various levels of government, the Invasive Species Council of BC, other regional invasive species groups, local stakeholders, residents and NGOs. Over 100 new and existing partnerships were established and strengthened.

**Educating and engaging local residents** continued to be a priority in 2016. The CSISS presented to and conducted targeted outreach to various stakeholders, landowners and First Nations. Additionally, the CSISS has supported numerous community events, hosted training workshops, re-designed and replaced outreach materials. Through these outreach activities, the CSISS directly engaged with over 3,110 people in the region.

The CSISS approached 20 garden centres and nurseries and presented the “PlantWise” message to various target groups to **prevent new invasives from establishing in the region**. CSISS staff also actively participated in the “Clean-Drain-Dry” Program, spreading the message to youth, local residents, water stewardship and boating groups to help prevent aquatic invaders such as Zebra/Quagga Mussels. Since January 2016, the CSISS was mentioned in 30 local news, radio and web pieces. Outreach through social media was also emphasized with an average of 1-2 posts per week on Facebook and 190 ‘likes’ on the CSISS page. Through this media coverage the CSISS raised awareness of invasives and the importance of prevention activities.

In 2016, the CSISS staff and an AIS contractor, Chris Harkness, worked hard to inventory critical and high priority water bodies for aquatic invasive plants and Zebra/ Quagga mussel veligers to **maximize the probability of detection and eradication of invasives**. CSISS staff also targeted areas across the region for terrestrial invasive plant surveys, greatly enhancing our knowledge of the distribution and abundance of various high priority species in the region. Special projects included: surveying all new and outdated high priority invasive plant sites (level 1 EDRR and level 2 eradication); invasive plant surveys in BC Parks; City of Salmon Arm ‘Do Not Mow’ signage; Ministry of Transportation and Infrastructure detailed knapweed road surveys south of Golden, priority locations along Right-of-Ways and boundary surveys; and Columbia Shuswap Regional District property surveys.

CSISS staff worked with key partners to **slow and reverse the spread of invasive species**. The CSISS hosted and partnered to provide: a plant identification course with Dr. Ken Marr (Royal BC Museum); two “teaching about invasives” educator/teacher pro-d workshops; a roads and weeds training workshop; and three forestry workshops to train staff and build capacity among program partners. To enhance coordinated control efforts, CSISS staff collaborated with various land managers to ensure accurate, up-to date priority plant targets for active control. During the 2016 field season, CSISS staff documented and entered over 986 invasive plant records into IAPP. Over 158 volunteers participated in 10 weed pulls across the region, pulling over 276 bags of weeds!

In 2016, the CSISS employed 4 staff, 1 AIS contractor and added over \$50,000 to its operating budget. Increasing in-house capacity and multi-year funding agreements enhanced the overall **program sustainability**. Thanks to dedicated staff, diligent Directors, knowledgeable partners and inspired volunteers, the CSISS expanded its programming and made significant progress on each goal identified in the 2013 CSISS Strategic Plan.

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# INTRODUCTION

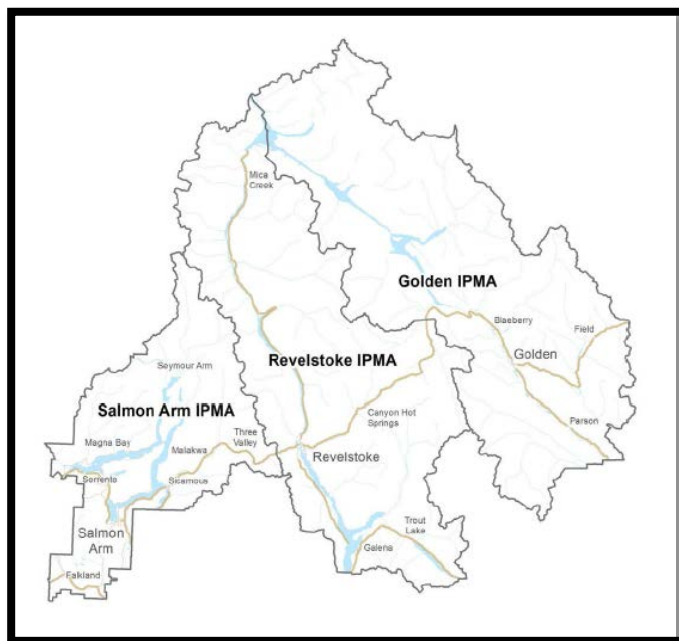
The CSISS was established in April of 2013 after a series of meetings and consultations with land managers, residents and other stakeholders with the aim to develop a collaborative and coordinated approach to invasive species management in the region. The CSISS joined a network of 13 regional invasive species groups in BC. These groups work in cooperation with each other, the Invasive Species Council of BC (ISCBC) and government agencies to inspire action, coordinate management and prevent the spread of invasive species within their jurisdictions.

Based on its constitution, the objectives of the CSISS are:

- To educate and engage public, private landowners, land and aquatic managers, First Nations and others about invasive species and their impacts.
- To establish and operate invasive species management programs.
- To do all other things as are incidental and ancillary to the attainment of the above purposes.

The summer of 2016 marked the Society's fourth season in operation. Having had three years previous to develop a platform of services, strategic and operational plans and increase its presence across the region, the CSISS was able to greatly expand its programming in 2016. The CSISS staff team continued with four staff members in 2016, including three returning staff members, greatly increasing the organization's ability to engage community members and residents as well as invest a presence in smaller communities across the regional district. The CSISS built and expanded connections within local communities and filled knowledge gaps regarding invasives on the landscape. In 2016, the CSISS also expanded its Aquatic Invasive Species (AIS) programs, delivering the Clean, Drain, Dry Program in partnership with the ISCBC and working with partners (Province of BC and BC Hydro) to prioritize and sample high priority water bodies for Zebra/ Quagga mussel veligers and aquatic invasive plants.

## PROJECT AREA



The jurisdiction encompassed by the Society includes the boundaries of the Columbia Shuswap Regional District (electoral areas A, B, C, D, E and F). The CSISS operational area has been further divided into three Invasive Plant Management Areas (IPMAs) for planning purposes (Craig, 2013). This broad, ecologically diverse area includes the Ponderosa Pine (PP), Interior Douglas Fir (IDF), Interior Cedar Hemlock (ICH), Montane Spruce (MS) and high elevation Engelmann Spruce-Subalpine Fir (ESSF) biogeoclimatic zones (Craig, 2013).

Figure 2: The CSISS operating area, including the three IPMA boundaries in the region (Craig, 2013).



## GOAL 1: COLLABORATIVE AND COORDINATED PROGRAMMING

The CSISS maintains a priority plant list for each Invasive Plant Management Area within the CSRD (Figure 2) to help partners coordinate programming and treatments. In addition to the plant lists, the CSISS continues to seek and engage partners to participate in collaborative planning and management. In doing so, the CSISS has become the “one-stop-shop” for invasives in the CSRD and is the point of contact and lead on many invasive species-related issues in the region.

To maximize efficiencies and ensure program sustainability, the CSISS collaborated with invasive species groups within the Columbia Basin, regional committees across the province, the Invasive Species Council of BC (ISCBC), the Columbia Basin Trust (CBT), First Nations and various stewardship groups and NGOs. The CSISS currently partners with over 100 groups, including over 450 individual contacts and 288 subscribers to the CSISS newsletter. These partnerships expanded successful outreach programs including PlantWise, Clean-Drain-Dry, Play Clean Go, and Don't Let It Loose, and continued to secure joint funding (Columbia Basin Collaboration).



Figure 3: Regional invasive species organizations and local land managers discuss priority invasive plants within the Columbia Basin at the CKISS Operational Planning Meeting.

The CSISS has been working in collaboration with the East Kootenay Invasive Species Council (EKISC), Central Kootenay Invasive Species Society (CKISS) and Northwest Invasive Plant Council (NWIPC) to implement coordinated invasive species strategies within the Basin (Figure 3). This includes designing shared outreach materials to maintain consistent messaging throughout the region, collaborating on advertising and promotion, and attending regional meetings and training opportunities. For example, in 2016 a half page colour advertisement for Clean-Drain-Dry was developed and published in Kootenay Mountain Culture, a popular, free magazine, through this Columbia Basin regional collaboration.

To maintain and grow presence across the region, CSISS staff attended and/or hosted more than 26 regional meetings, training opportunities and workshops (Appendix C). The CSISS worked closely with the regional municipalities (City of Salmon Arm, City of Revelstoke, District of Sicamous, Town of Golden's Wildsight Weed Coordinator) to provide staff training on invasive plant identification, provide high priority treatment lists (particularly for invasive knotweed) and discuss other invasive plant management options. CSISS continued to work

closely with the Columbia Shuswap Regional District to conduct extensive invasive plant surveys and respond to landowner requests/reports.

CSISS staff delivered the Invasive Species Council's PlantWise, Don't Let it Loose, and Clean-Drain-Dry programs throughout the region, additionally, CSISS delivered Play Clean Go programming in collaboration with BC Parks and local trail stewardship groups. The CSISS also helped train and provide resources to the Wildsight Golden Weed Coordinator and the regional Invasive Species Council's Job Creation Partnership (employment training) crew. To enhance collaboration, CSISS staff participated in regular conference calls between regional invasive species groups, the BC government and the ISCBC.

## AQUATIC INVASIVE SPECIES PARTNERSHIPS

The 2016 season continued to see program growth for Aquatic Invasive Species (AIS) both for the CSISS and for the Columbia Basin as a whole. In the spring, CSISS Aquatic Invasive Species Program Coordinator and Board Chair participated in the inaugural Steering Committee Meeting for AIS in the Columbia Basin and continued involvement at the autumn Steering Committee Meeting with the addition of CSISS' Executive Director. Steering Committee members have a combined wealth of knowledge and increase communication and collaboration between regional, provincial and international governing bodies, stakeholders and First Nations.

CSISS staff have continued to implement the [AIS Framework](#) within the Columbia Basin in collaboration with the other regional Columbia Basin invasive species organizations (EKISC, CKISS, NWIPC) with support from the Columbia Basin Trust and the Ministry of Environment. This involved updating AIS priority ranking matrices and carrying out AIS surveys in priority water bodies, as well as collaborating on AIS outreach programs, including outreach materials for the Basin, delivering the ISCBC Clean, Drain, Dry Program, as well as conducting outreach at boat launches and marinas. Close communication was maintained with the Ministry of Environment and BC Hydro to coordinate AIS survey efforts and identify gaps.

## GOAL 2: EDUCATE, ENGAGE AND INSPIRE

The CSISS continues to educate, engage and inspire residents and others to participate in invasive species management. CSISS staff received over 118 requests for presentations in the past year. In addition, education and awareness activities have increased (Figure 4). Special effort was focused on attending events and hosting displays in smaller, rural communities across the regional district. As well, the CSISS met with city staff in Salmon Arm, Sicamous, Revelstoke and Golden, and contacted all First Nations in the region.

In 2016, CSISS was represented at over 154 community events and meetings, distributed 7 e-newsletters, hosted several workshops and training events, visited 20 garden centres, 48 boat launches and marinas, and supported 10 community weed pulls. New in 2016, CSISS led two new professional development training workshops for teachers to teach about invasive species in partnership with the Invasive Species Council of BC (ISCBC) and Columbia Basin Environmental Education Network (CBEEN). In addition, CSISS hosted the following workshops: Forestry and Invasives (x3 with MFLNRO and ISCBC), Roads and Weeds (with ISCBC and MoTI), Parks Canada Highways and Weeds, and Annual Spring Invasive Plant ID and Management (x4 with municipal staff and others). Targeted outreach was provided during the free CSRD yard waste days to promote proper disposal (deep burial in landfill) of invasive plants in October-November, and prepared new outreach signage at CSRD sites. CSISS also partnered closely with the Invasive Species Council Job Creation Partnership Crew in the Revelstoke area, and with

the Vernon crew to help deliver information at events. In total, CSISS had direct interactions with 3,110 people (Table 1). The CSISS outreach programs continue to be reviewed and evaluated for improvements annually. After presentations and workshops, CSISS staff distributed feedback forms to participants and will work to incorporate suggestions for the 2017 operational season.

Table 1: Community Events and Meetings Attended by CSISS Jan- Dec 2016

<b>Number of Events</b>	<b># Attendees</b>	<b>Direct Interactions</b>
14 Youth Events and Environmental Educator Workshops (11 within Columbia Basin)	560	478
10 Weed Pulls (4 within Columbia Basin)	109	109
77 Aquatic-related Outreach events (30 within Columbia Basin) (45 Boat launches visited, 27 within Columbia Basin)	3,592	1,508
20 Garden Centres visited with Plant Wise outreach (8 within Columbia Basin)	23	23
<b>84 Events total in the Columbia Basin</b>	<b>3,687</b>	<b>1,840</b>
<b>154 Events total for CSISS 2016</b>	<b>7,510</b>	<b>3,110</b>

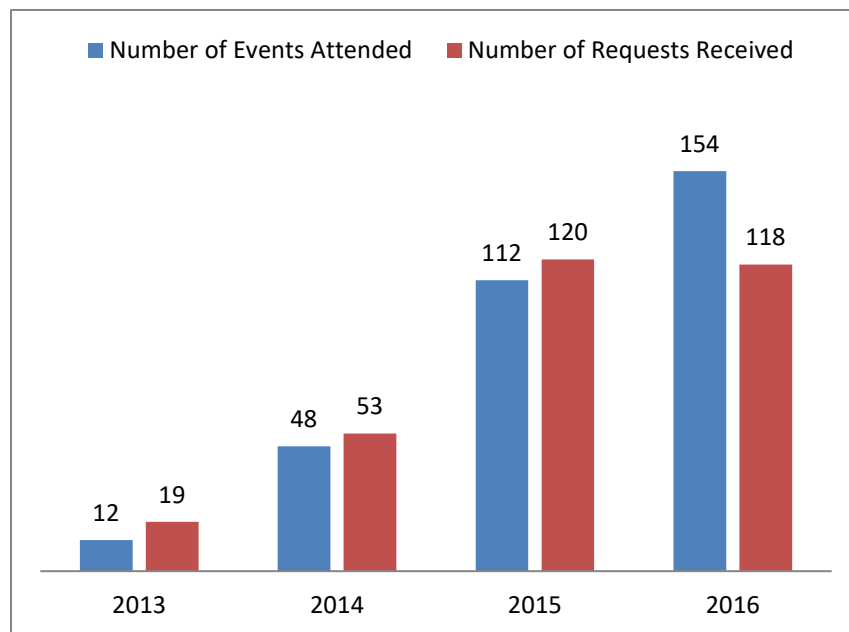


Figure 4: Chart showing the number of Events CSISS attended and requests for presentations/information received from 2013-2016



## MEDIA COVERAGE

Since January, the CSISS has delivered 5 press releases, 5 full articles, and has been mentioned in 30 news, radio and web pieces including: The Society for Ecological Restoration, The Columbia Valley Pioneer, Castanet Kelowna, Kootenay Mountain Culture, Columbia Basin Environmental Educators Network (CBEEN), Columbia Basin Trust Newsletter, Columbia Basin Watershed Network Newsletter, The Vernon Info News, Revelstoke Times Review, Revelstoke Mountaineer, The Salmon Arm Observer, the Revelstoke Current, the Golden Star, the North Shuswap Kicker, Friday AM, Columbia Shuswap/Salmon Arm EZ Rock, Stoke FM, as well as multiple websites, Facebook pages and E-newsletters (See Appendix B for a full listing of media interactions). Through these platforms, the CSISS raised awareness of invasives and the importance of preventing their establishment and spread.

## WEBSITE AND SOCIAL MEDIA

CSISS staff have been updating and utilizing the CSISS website ([www.columbiashuswapinvasives.org](http://www.columbiashuswapinvasives.org)) as a platform to engage the public and land managers and enable them to connect to events and local information pertaining to invasive species management (Figure 5). The homepage was updated approximately twice monthly during the summer to advertise current events and has been viewed over 8, 120 times this year. The website includes general information about priority invasives, how to get involved, a method of contacting the CSISS and news of upcoming events and meetings. The CSISS also hosts a Facebook page and posts social media updates (1-2 times/week in the summer) relevant to the organization in order to reach a larger audience and advertise events. The CSISS has also begun delivering quarterly e-newsletters to more than 288 recipients highlighting our local and regional events and activities.

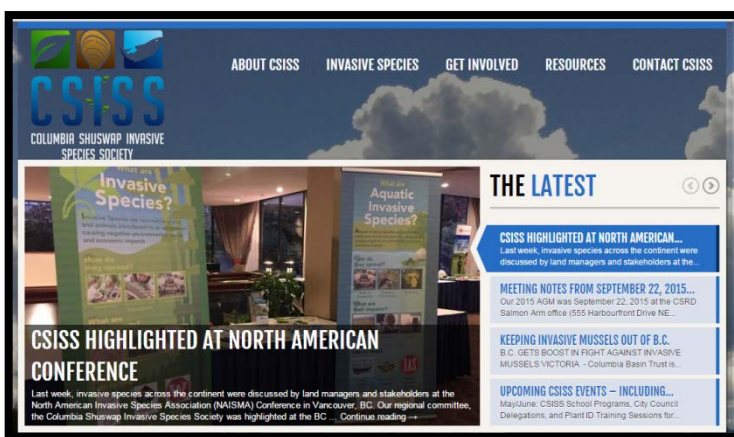


Figure 5: Image of CSISS website (left) and Facebook page (right) used to help spread the word about invasives.

## COMMUNITY OUTREACH

The CSISS partnered with numerous non-profit groups to raise awareness of invasive species in the Columbia-Shuswap region. All community halls and organizations in the rural communities within the CSRD to offer education and outreach. CSISS outreach brochures were provided to partner organizations to distribute at workshops and information booths throughout the region, as well as at municipal offices, the CSRD office, and Service BC locations.

Through several partnerships the CSISS supported 10 weed pulls: three yellow flag iris weed pulls at Little White Lake, Gardom Lake and Turner Creek with White Lake Stewards, Friends of Gardom Lake and Royal Bank of Canada Salmon Arm Branch; a weed pull at Martha Creek Provincial Park with the Invasive Species Council; a Himalayan balsam weed pull with City of Revelstoke and Invasive Species Council; two bittersweet nightshade weed pulls in Salmon Arm at the SABNES trail with the Shuswap Naturalists Club; two weed pulls with Wildsight Golden at Reflection Lake and along the Kicking Horse River; and a burdock weed pull at White Lake with Shuswap Trail Alliance.

In addition to community weed pulls, CSISS staff set up information booths at Farmers Markets and community events in Golden, Salmon Arm, Revelstoke, Falkland, Carlin, Sicamous, Scotch Creek, Blind Bay, Celista, and Sorrento to raise awareness of invasive species issues and educate the public on how to prevent their spread. We presented to a variety of community groups, clubs, stewardship and recreation groups, reaching some of the smaller, rural locations in the CSRD (Appendix B).

## WORKSHOPS AND EVENTS

To build capacity amongst partners, interested residents and stewardship groups, the CSISS hosted various workshops and training opportunities. These efforts led to an increase in reporting, awareness and identification of invasive species in our region (Figure 6).



Figure 6: Plant ID Course with Dr. Ken Marr from Royal BC Museum (left and middle) and weed pull of bittersweet nightshade with Shuswap Naturalist Club on SABNES trail (right).

In April, the CSISS held a Roads and Weeds Workshop with Ministry of Transportation and Infrastructure (MoTI) and the Invasive Species Council of BC for local MoTI staff and highways contractors (Emcon Services and JPW). There were subsequent annual tail gate sessions and meetings with MoTI staff and highways contractors. The CSISS hosted Ken Marr, from Royal BC Museum to deliver a two day workshop on plant identification. This was well attended by local residents, Parks Canada, other invasive species groups and various land managers. In September, the CSISS hosted Forestry and Invasives workshops with the Invasive Species Council of BC and Ministry of Forests Lands and Natural Resource Operations (MFLNRO) (Figure7). The workshop was delivered twice in Revelstoke and once in Golden with participants from the MFLNRO staff and forestry industry.

In spring and early summer, the CSISS delivered four workshops to increase invasive plant identification skills and best management practices in the region (in Salmon Arm, Revelstoke, Sicamous, and Golden). Participants in these workshops included: Parks Canada, municipal and regional government staff, stewardship groups, recreation groups, landscapers, industry groups, and others. The CSISS provided training to the Golden Wildsight Weed Coordinator and Invasive Species Council of BC's Revelstoke JCP crew at the start of their operational season and continued to support them throughout the season.

A highlight of these and other workshops was announcing the new Provincial 'Report-A-Weed' and 'Report Invasives' apps for phones and other devices (through [www.reportinvasives.ca](http://www.reportinvasives.ca)).

Annual training sessions will be open to other regional stakeholders who are interested in Spring 2017.

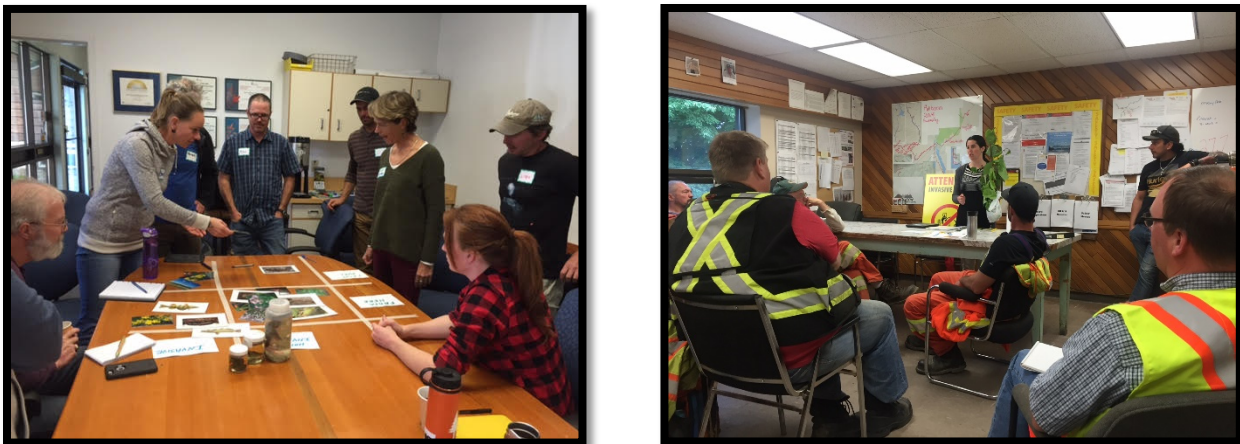


Figure 7: Forestry and Invasives Workshop (left) and Roads and Weeds Tailgate session with local highway contractors (right) at CSISS training workshops.

## FIRST NATIONS ENGAGEMENT

In 2016, CSISS staff developed new First Nations partnerships and collaborations, and continued to invite regional First Nations to events and training sessions (Figure 8). The CSISS staff participated in a number of meetings with First Nations, including:

- Switzmalph Cultural Society Restoration Site visit with Val Janzen, ethnobotanist in the Shuswap;
- Skatsin Resources (Neskonlith First Nation) Weed Management Workshop;



- Meeting with Revelstoke Aboriginal Educator from School District;
- Presentation to Sexqéltkemc te Secwepemc Lakes Division (included Councillors and Chiefs from Splat sin, Neskonlith, Little Shuswap, and Adams Lake Indian Bands);
- Shuswap Trails Roundtable, First Nations participants included Splat sin, Neskonlith, Little Shuswap, and Adams Lake Indian Bands.

All First Nations within the CSISS region were invited to our Annual General Meeting and Workshops. Any First Nations interested in participating in the CSISS or receiving training within the CSISS region are encouraged to contact CSISS staff.



Figure 8: Field tour with Switzmaph Cultural Society (left) and Invasive Plant ID training with Skatsin Resources, Neskonlith and Southern Interior Weed Management Committee in 2016 (right).

## OUTREACH PROGRAM EVALUATIONS

In 2016, we continued to use feedback forms to evaluate the effectiveness of our workshops and programs. In total we surveyed 134 workshop participants. The majority of participants found the workshop speakers engaging and learned something about invasive species and are more aware of their impacts after the workshop. The majority of participants will participate in positive behavior change regarding invasive species (Table 2). The results from our surveys will help to guide our future outreach programming (Figure 9).

Table 2: Survey Results from CSISS Evaluation Forms in 2016

	I will try to reduce the spread of invasive species at work (eg. follow BMPs, proper weed removal/disposal)	I will try to reduce the spread of invasive species at home (eg. removal/disposal of weeds)	I have decided to become "Plantwise" and will not grow any horticulturally invasive plants in my garden	I will now Clean, Drain, and Dry my boat to prevent the spread of aquatic invasive species	I will talk to another person about invasive species to help spread the word	I now have a better idea of which weeds to pull, spray, or treat	I am now able to identify some invasive species that I see
YES	78%	84%	75%	51%	73%	78%	81%
NO	0	0	0	0	0.70%	0.70%	0
N/A or Sometimes	12%	16%	15%	49%	26.30%	21.30%	19%

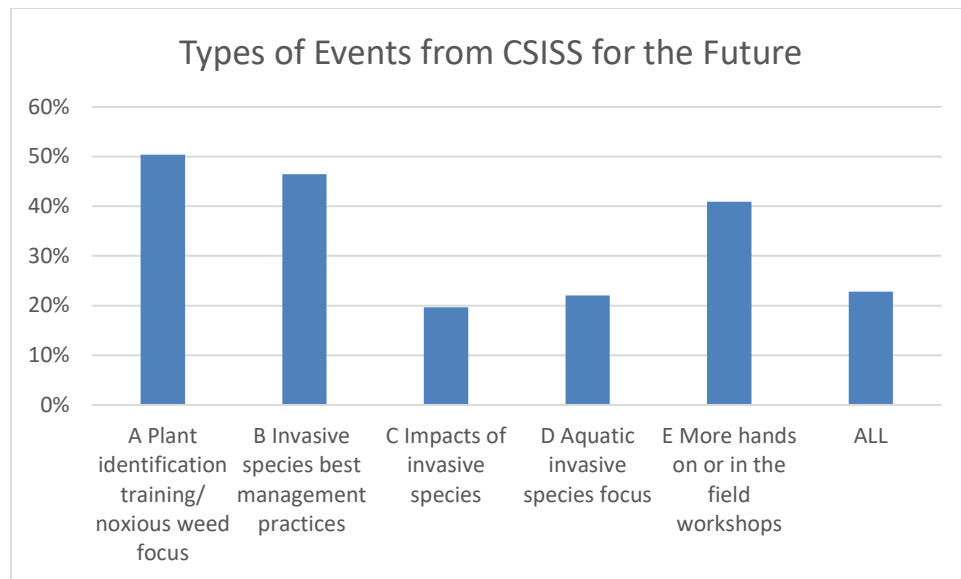


Figure 9: Survey results from workshop participants regarding future CSISS events.

## GOAL 3: PREVENT THE INTRODUCTION OF NEW SPECIES

The CSISS has been focusing on various behaviour change programs in partnership with others to help prevent the introduction of new species. The CSISS also provides training, resources and best management practices to partners in order to help prevent new introductions (*see Workshops and Events section above*).

### PLANTWISE PROGRAM

The CSISS continued to actively partner with the Invasive Species Council of British Columbia (ISCBC) to deliver the PlantWise Program, encouraging key groups such as the horticulture industry and consumers to commit to choosing and utilizing only native or non-invasive plants instead of their invasive alternatives.

CSISS staff delivered the PlantWise message at 65 community-based events, workshops and meetings speaking to youth, home gardeners, land managers, and stewardship groups directly reaching 1,614 individuals. Specifically, CSISS hosted a PlantWise workshop at a local garden centre to educate both staff and gardeners about invasive plant identification and the social, environmental and economic consequences of their establishment.

Additionally, the CSISS approached 20 garden centres and nurseries with the Plant Wise Industry program. Staff encouraged the horticulture industry to become PlantWise Certified and committing to selling only native or non-invasive plants to help prevent new invasives from establishing in the region. The CSISS found one garden centre selling invasive baby's breath in a seed mix, 5 garden centres selling invasive English ivy plants, 2 garden centres selling invasive baby's breath plants and 1 garden centre selling invasive tamarisk plants.

### CLEAN DRAIN DRY PROGRAM

In 2016, the CSISS expanded its Aquatic Invasive Species (AIS) programs, delivering the Clean, Drain, Dry message to youth, local residents, water stewardship and boating groups to help prevent the spread of aquatic invasive plants and organisms to BC waters.

The CSISS directly reached over 2,100 individuals at 78 community-based aquatic related events encouraging boaters to 'Clean, Drain, and Dry' all watercraft and equipment to help reduce the spread of aquatic invaders such as Zebra/Quagga mussels (Figure 10).

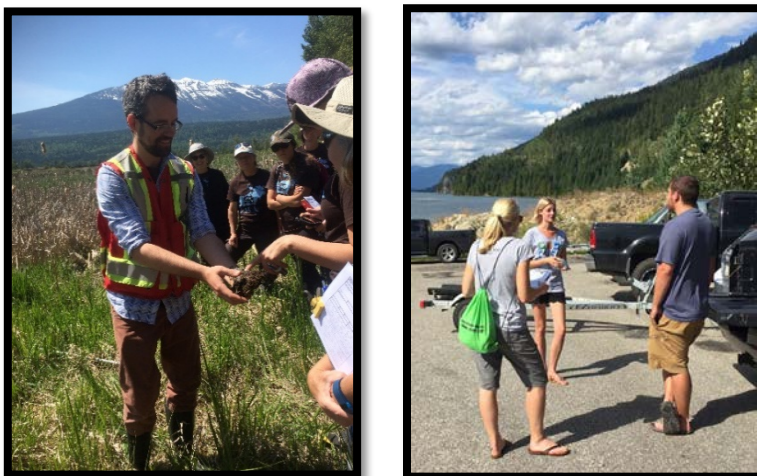


Figure 10: Wetland Keepers Presentation in Golden area about Clean, Drain, Dry (left) and boater surveys at boat launches 2016 (right).



In partnership with the Ministry of Environment (MoE), the Invasive Species Council of British Columbia (ISCBC), and other regional Invasive Species Societies, the CSISS was able to develop and deliver Boater Surveys collecting relevant information on the movement and habits of watercraft owners across the province. This information is essential to improve local, regional and provincial aquatic invasive species initiatives to reduce the spread and introduction of aquatic invaders, such as invasive Zebra/Quagga mussels.

In total, CSISS staff directly spoke with 48 boaters (48 surveys) and visited 45 boat launches and marinas across the region to encourage AIS prevention activities. Information from the CSISS boater surveys showed that no boats were from at risk areas with Zebra/ Quagga mussels, all 20 out-of-province boats were from Alberta. Ten of the 20 out-of-province boats had been inspected at either an Alberta or BC Provincial inspection station (Golden 8 inspections, Valemount 1 inspection, Kamloops 1 inspection), and two out-of-province boaters noted the BC Provincial inspection stations were closed at time of passing. Knowledge about aquatic invasive species was high among survey participants, 62% were aware of Zebra/ Quagga mussels with the majority of information coming from highway signage, media and brochures provided at check stops (Figure 11).

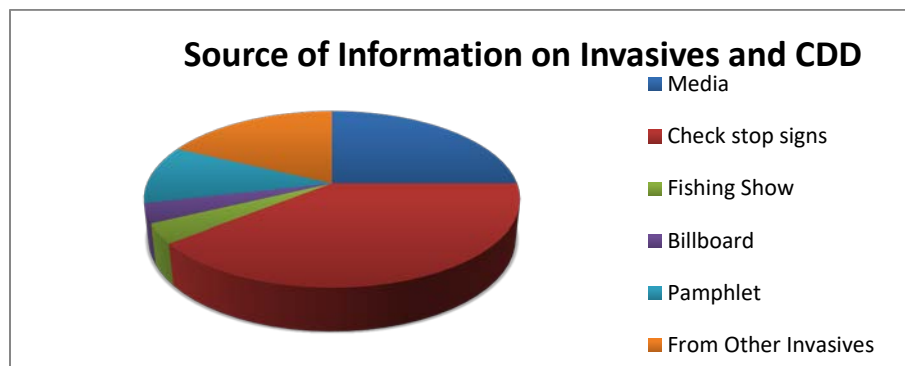


Figure 11: Boater survey data on sources of information regarding invasive species and Clean, Drain, Dry practices.

## DON'T LET IT LOOSE PROGRAM

The 'Don't Let It Loose' program was released by the Invasive Species Council in summer 2015 to discourage pet owners from releasing potentially invasive pets into the wild (e.g. American Bullfrogs). The new program was promoted during applicable CSISS outreach events and presentations in 2016. CSISS staff visited all aquariums and pet stores (total of 10) in the region to determine if there are invasive species for sale, and distributed the Don't Let It Loose program message. Invasive parrot's feather was found in one store, and owners are reluctant to stop selling. In 2017, the CSISS plans to distribute this program message to schools in the region that may have school aquariums or classroom pets and develop regional Don't Let It Loose resources.

## PLAY, CLEAN, GO PROGRAM

In 2016, the CSISS partnered with Play, Clean, Go, a program encouraging youth, trail users, and recreational groups to practice proper trail etiquette by cleaning all equipment, clothing and pets when arriving at and leaving a recreational site to help reduce the spread and introduction of invasive species.

Through strong partnerships with the Shuswap Trail Alliance, BC Parks, Parks Canada, the Equestrian Trail Association, cultural societies, community associations, cycling clubs, and naturalist clubs, the CSISS successfully delivered 59 Play, Clean, Go community presentations directly reaching 1,592 individuals (Figure 12). CSISS also distributed around 80 handheld 'Play Clean Go' boot brushes to trail users. In partnership with BC Parks, four 'Play Clean Go' signs and boot brushes were installed at Roderick Haig Provincial Park – a park that sees thousands of visitors on its trails, thereby preventing invasive species and promoting awareness. In 2017, CSISS plans to continue to collaborate with trail and recreation groups to place signage and boot-brushes at high traffic trail heads, encouraging recreationalists everywhere to Play, Clean, Go and help reduce the spread of invasive species.



Figure 12: CSISS staff present the Play Clean Go Program at a BC Parks Campsites (left) and Participants learn best practices at the annual CSISS spring Plant ID training sessions (right).

## GOAL 4: MAXIMIZE THE PROBABILITY OF DETECTION AND ERADICATION OF NEW INVASIVES

The CSISS maximized the probability of detection and eradication of new invasives by raising public awareness and delivering invasive species workshops described above. Additionally, CSISS staff responded to invasive species reports and conducted terrestrial and aquatic targeted invasive species surveys on behalf of partner agencies.

### INVASIVE SPECIES REPORTS

In 2016, the CSISS responded to 136 invasive species reports and noxious weed complaints. Complaints and reports were received through the CSISS toll free number (1-855-785-9333), Report-a-weed form on the CSISS website, in person, and through CSISS partners and members via email. CSISS staff responded to reports using the Invasive Species Reporting Protocol that was developed in 2014 (Stafl, 2014). Depending on the nature and priority of the report, it was confirmed by a site visit and/or responded to with landowner extension, an outreach letter, or by enacting the provincial Early Detection Rapid Response (EDRR) protocol. All invasive species reports were entered into the provincial Invasive Alien Plant Program<sup>1</sup>.

### TARGETED INVASIVE PLANT SURVEYS

The CSISS focused on filling key information gaps on the presence, spatial extent, and distribution of priority invasive plants identified in the 2013 CSISS Operational Plan and through the priority lists of our partners (Craig 2013). In 2016, the CSISS completed 278 new site surveys, 986 invasive species surveys, 28 biological dispersal monitoring surveys and 12 mechanical treatment sites (Figure 13 and Figure 14). CSISS staff entered 15 chemical treatment records (CSRD contractor) and monitored 3 of those sites for the CSRD. Chemical treatments were carried out by a licensed applicator contracted by the CSRD. Mechanical treatments consisted of work done by landowners, volunteers at weed pulls, and CSISS staff at high priority sites during survey work.

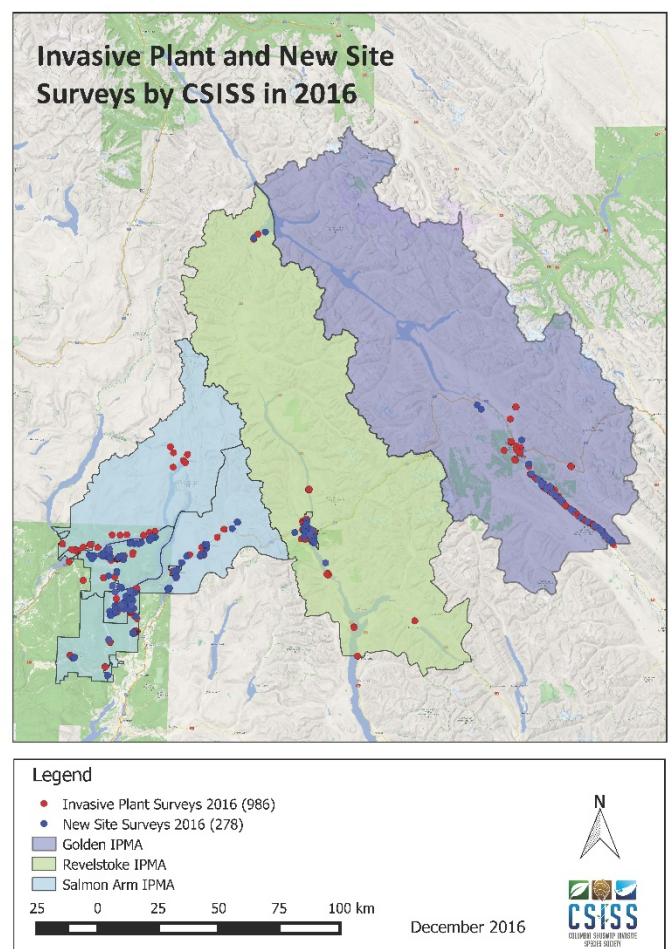


Figure 13. Complete record of all invasive plant and new site surveys conducted by the CSISS in 2016



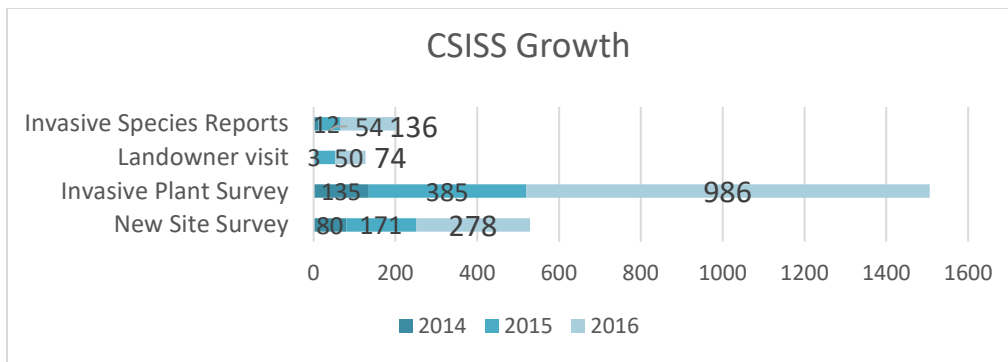


Figure 14. CSISS growth from 2014 to 2016 highlighting Invasive Species Reports, Landowner Visits, Invasive Plant Surveys and New Site Surveys.

In addition, outdated high priority sites were resurveyed. For example, CSISS completed 148 new plant surveys of the high priority invasive species knotweed (*Fallopia* spp.) (Figure 15). Many of the knotweed sites surveyed were reported to the CSISS through invasive species reports from the public and CSISS partners, such as the City of Revelstoke. CSISS staff found 2 Early Detection Rapid Response (EDRR) species in 2016: Knotweed was found at 5 locations in the Golden IPMA and wormwood (absinth) was found at 1 location in the Salmon Arm IPMA. All information from EDRR species is shared with the landowner, the reporter, and the Provincial Invasive Plant Specialist.

All data was entered into the provincial Invasive Alien Plant Program (IAPP) database. IPads and GIS pro software were used to increase speed and efficiency of data entry in the field, to assist navigation in the field, to increase ease of uploads to the IAPP data base, and to help quickly create and share maps with stakeholders.

Several CSRD properties were inventoried, as well as many priority locations along the Ministry of Transportation and Infrastructure Right-of-Way including boundary surveys and detailed spotted knapweed surveys south of the Town of Golden. Invasive plant surveys for BC Parks was completed in detail for both the Shuswap and Columbia regions. An inventory for invasive knotweed species and corresponding Do Not Mow signage was installed for the City of Salmon Arm. The CSISS also worked with the Wildsight Golden Weed Coordinator and the Invasive Species Council of BC Jobs Creation Partnership to train staff on invasive plant inventory and treatment records and to ensure data was correctly entered into IAPP.

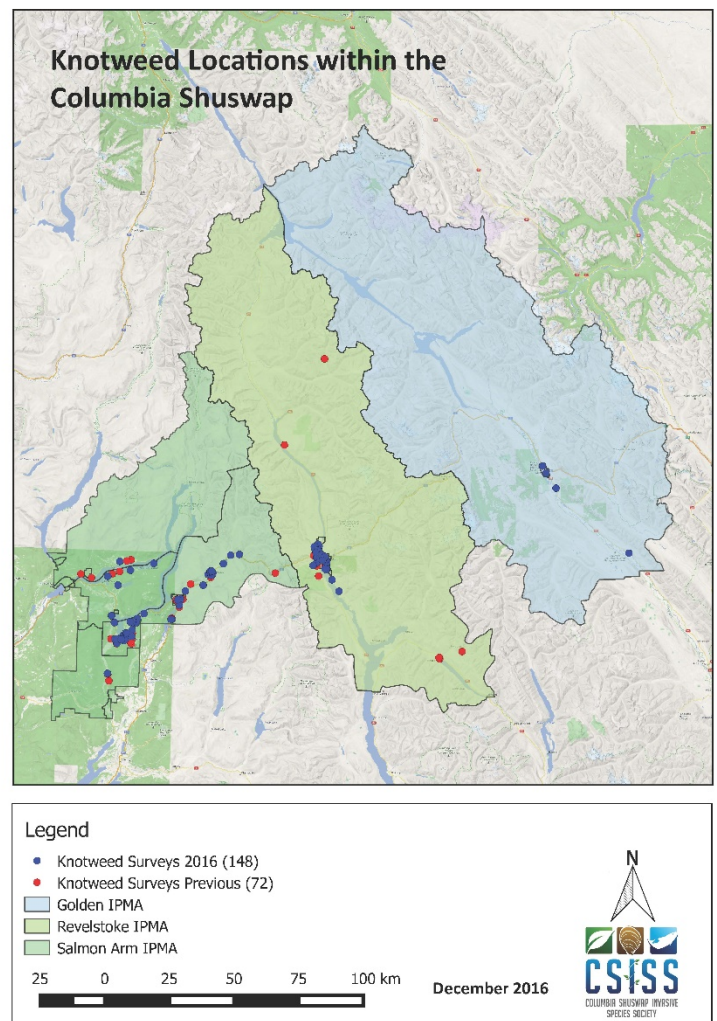


Figure 15. Knotweed locations within the Columbia Shuswap, including the 148 knotweed surveys conducted in 2016.

## SURVEYS OF CSRD OWNED LAND AND PROPERTIES

As part of the Society's important partnership with the CSRD, each year CSISS staff complete invasive plant inventories on CSRD properties (Figure 16). These sites include landfills, transfer stations, fire halls, regional parks and other property types (e.g. Revelstoke airport). In 2016, CSISS staff inventoried 59 CSRD properties, and completed 460 invasive plant records on CSRD properties.

Many low priority, widely distributed invasive plants were found on CSRD regional parks and fire hall properties and are being controlled with frequent mowing. However, around the perimeter of some of these properties, invasive plants were found growing to maturity and were unable to be controlled by mowing due to fence lines and steeper gradients and have the potential to spread. In general, CSRD properties were well-maintained, mowed and brushed. General maintenance of parks through mowing, hand-pulling, brushing and digging will help prevent the spread of the low priority, more widespread plant species. Special care should be devoted to high traffic areas, such as parking lots, trail-heads, and roadsides to prevent the spread of invasive plant material.

Where high priority species were found on CSRD properties, CSISS staff surveyed and alerted the required personnel/contractor to treat the infested sites. The high priority invasives found at some CSRD sites include: knotweed species, rush skeleton weed, blueweed and Himalayan balsam. These priority species should be targeted for annual control and eradication.

Additionally, CSISS staff helped guide the work of the CSRD spray contractor by providing inventory records of landfill and transfer station sites as well as guidelines for completing treatment records. CSISS staff monitored 3 high priority properties of the 15 treated sites to determine treatment effectiveness. CSISS staff entered all treatment and monitoring records into IAPP.

In addition, CSISS and CSRD partnered to install 'Do Not Compost Invasive Plants: Double Bag and Deep Burial for Safe Disposal of Invasive Plants' at landfills and transfer stations to prevent invasive plants entering the yard waste. CSISS and Invasive Species Council partnered to provide education and outreach during free yard waste days in October – November 2016. A media release was also prepared and reported in local media sources regarding safe disposal of invasive plants.

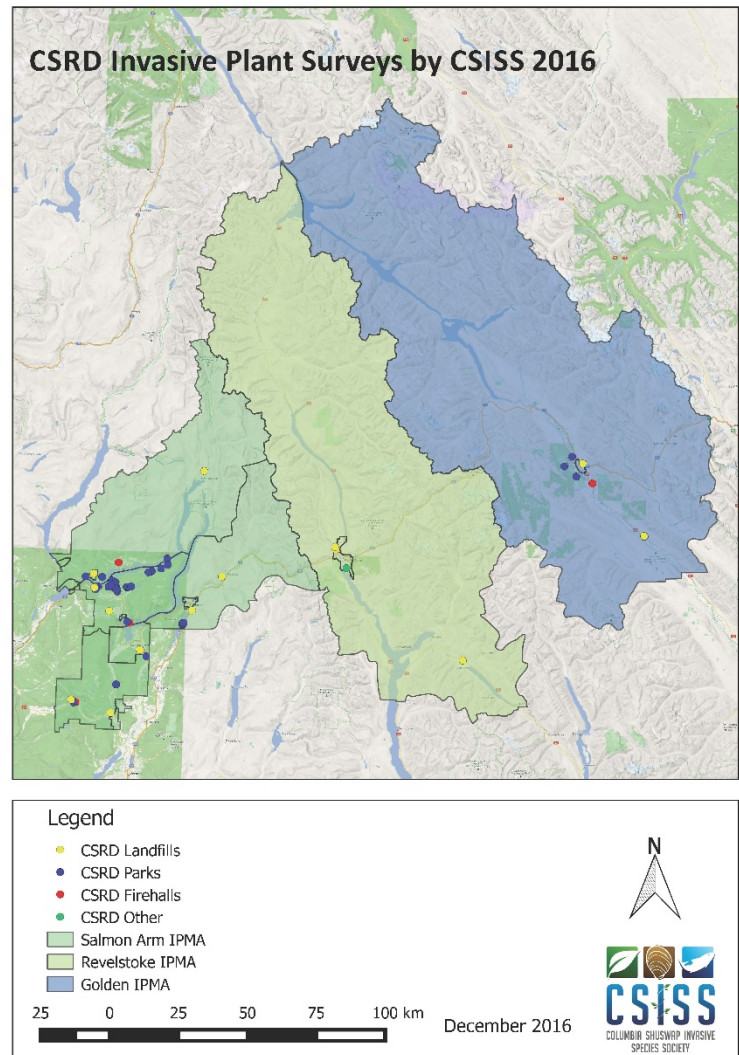


Figure 56: Surveys conducted by the CSISS on CSRD properties in 2016.

## BC PARKS INVENTORIES

In spring 2016, the CSISS entered into a funding agreements with BC Parks to survey Provincial Parks: Martha Creek, Blanket Creek, and Shelter Bay within the Revelstoke Invasive Plant Management Area and Roderick Haig Brown and Yard Creek within the Salmon Arm Invasive Plant Management Area. The detailed invasive plant surveys include all areas of the Parks including trails, trailheads, parking lots, campgrounds, roadsides and high traffic areas such as picnic areas and beaches/ waterfront. All invasive plant survey records have been entered into the provincial Invasive Alien Plant Program (IAPP) database. In addition, with Park Enhancement Funds, CSISS was able to provide outreach in all the parks with: a weed pull (Martha Creek park), boater surveys, signage at kiosks and general public outreach on all our behavior change programs (page 14-16 above).

### COLUMBIA REGION

The detailed inventories of the Columbia Region Parks include three overall site surveys (Martha Creek, Blanket Creek and Shelter Bay), 28 invasive plant survey records, and one biocontrol dispersal monitoring record. CSISS prepared a special report for these parks based on new capital projects occurring in 2016-7.

The BC Parks were well-maintained, mowed and brushed. CSISS staff found common, low priority invasive plants along roadsides and perimeters. General maintenance of parks through mowing, hand-pulling, brushing and digging will help prevent the spread of the low priority, more widespread plant species. Special care should be devoted to high traffic areas, such as parking lots, trailheads, and roadsides to prevent the spread of invasive plant material.

A new infestation of leafy spurge, a high priority species, was found at Martha Creek Park in June 2016 (Figure 17). CSISS staff alerted BC Parks and provincial invasive plant specialist (Ministry of Forests Lands and Natural Resource Operations), who had the site treated by a certified contractor in July 2016. High priority invasive plant infestations, such as the Leafy Spurge site at Martha Creek, should be prioritized for annual targeted treatment.



Figure 67: New infestation of leafy spurge found at Marth Creek Provincial Park.

### SHUSWAP REGION

The detailed inventories of the Shuswap Region Parks include two overall site surveys (Roderick Haig Brown and Yard Creek) and 53 invasive plant survey records (Table 3).

The BC Parks were well maintained by mowing, brushing and herbicide treatments (Roderick Haig Brown). CSISS staff found low priority, common invasive plants alongside roadways, parking lots, trails, trailheads and open fields (Figure 18). Continued maintenance of parks through mowing, hand-pulling, brushing and digging will help prevent the spread of the low priority, widespread plant species. Special care should be devoted to the parking lot and trails leading up to the salmon viewing platform at Roderick Haig Brown Park as this is a high traffic location.





Figure 78: Common tansy (left) and bull thistle (middle) are common invasives found along pathways in Roderick Haig Brown Provincial Park. Orange hawkweed (right) is found in Yard Creek Provincial Park.

No high priority invasive plants were found in either park. Due to the high traffic (foot and vehicle) at both parks it is recommended that Park staff and contractors are trained to identify and report high priority invasive species to help mitigate future potential infestations. As mentioned in the Play Clean Go section (page 16), new 'Play Clean Go' signage was installed in Roderick Haig Provincial Park with boot brushes to prevent the spread of invasive plants.

As a whole, B.C. Parks and properties are very well cared for, mowed and maintained to an excellent standard. B.C. Parks should continue to invest in the maintenance of parks and schedule mowing activities prior to seed set in order to prevent the spread of invasive species.

Table 3: Yard Creek and Roderick Haig Brown Provincial Park invasive plant surveys.

Provincial Park	Location	IAPP Site ID	Invasive Plants
Roderick Haig Brown	Main parking lot	230562	Diffuse knapweed, spotted knapweed, sulphur cinquefoil.
Roderick Haig Brown	Kiosk and area adjacent to main parking lot	307922	Chicory, hoary alyssum, mullein, spotted knapweed, sulphur cinquefoil, white cockle.
Roderick Haig Brown	Eastern beach access parking lot	317752	Meadow buttercup, oxeye daisy, creeping buttercup, burdock.
Roderick Haig Brown	Phil Rexin Trails and lower riverside trails	317753	Bull thistle, burdock, Canada thistle, creeping buttercup, hoary alyssum, meadow buttercup, mullein, oxeye daisy, spotted knapweed, sulphur cinquefoil, common tansy.
Roderick Haig Brown	Salmon viewing platform and trails	317752	Bull thistle, chicory, hoary alyssum, mullein, sulphur cinquefoil.

Roderick Haig Brown	Wade Road, raft and kayak pull out area	231764	Chicory, common tansy, diffuse knapweed, hoary alyssum, mullein, oxeye daisy, spotted knapweed, sulphur cinquefoil, western goat's-beard.
Roderick Haig Brown	Hiuihill (bear) Creek parking	102225	Burdock, chicory, mullein, oxeye daisy, spotted knapweed, St. John's wort, sulphur cinquefoil, western goat's-beard.
Yard Creek	North side of Hwy 1, parking lot and trails	317937	Burdock, eyebright, orange hawkweed, oxeye daisy, sowthistle, spotted knapweed, St. John's wort.
Yard Creek	South side of Hwy 1, campground	317936	Hawkweed species, meadow buttercup, orange hawkweed.
Yard Creek	South side of Hwy 1, day use area	289471	Hawkweed species, orange hawkweed, oxeye daisy, spotted knapweed.

## CITY OF SALMON ARM SIGNAGE

In 2016, the CSISS inventoried high priority knotweed species throughout the City of Salmon Arm. Knotweed is a growing concern for municipalities as the invasive plant's root structure can cause damage to building foundations, pavement, and septic tanks, overall, reducing property values. It also has environment impacts on riparian and wetland habitats. Learn more about knotweed on [our website](#) and the [new ISCBC TIPS sheet](#).

CSISS staff inventoried 41 knotweed locations within Salmon Arm (Municipal, Ministry of Transportation and Infrastructure, CSRD, and Private Land). To mitigate the spread of knotweed, CSISS staff installed 10 Do Not Mow signs along city Right-of-Ways to alert roadside mowers of the infestation ahead (Figure 20). Not all of the municipal knotweed locations required Do Not Mow signage. Knotweed is a challenging plant to control, only 0.6 grams of plant material is required to grow into a new infestation. Mowing knotweed increases the risk of spreading the plant along city Right-of-Ways and contaminated equipment can transport knotweed to new locations. Do Not Mow signage is the first step to preventing the spread of knotweed.

Additionally, the Do Not Mow signage worked as public outreach, educating landowners about knotweed (Figure 19). In 2016, CSISS received 93 invasive species reports specifically relating to knotweed across the CSRD, with reports detailing signage viewed on right-of-ways.



Figure 19: An example of Do Not Mow signage installed for the City of Salmon Arm.

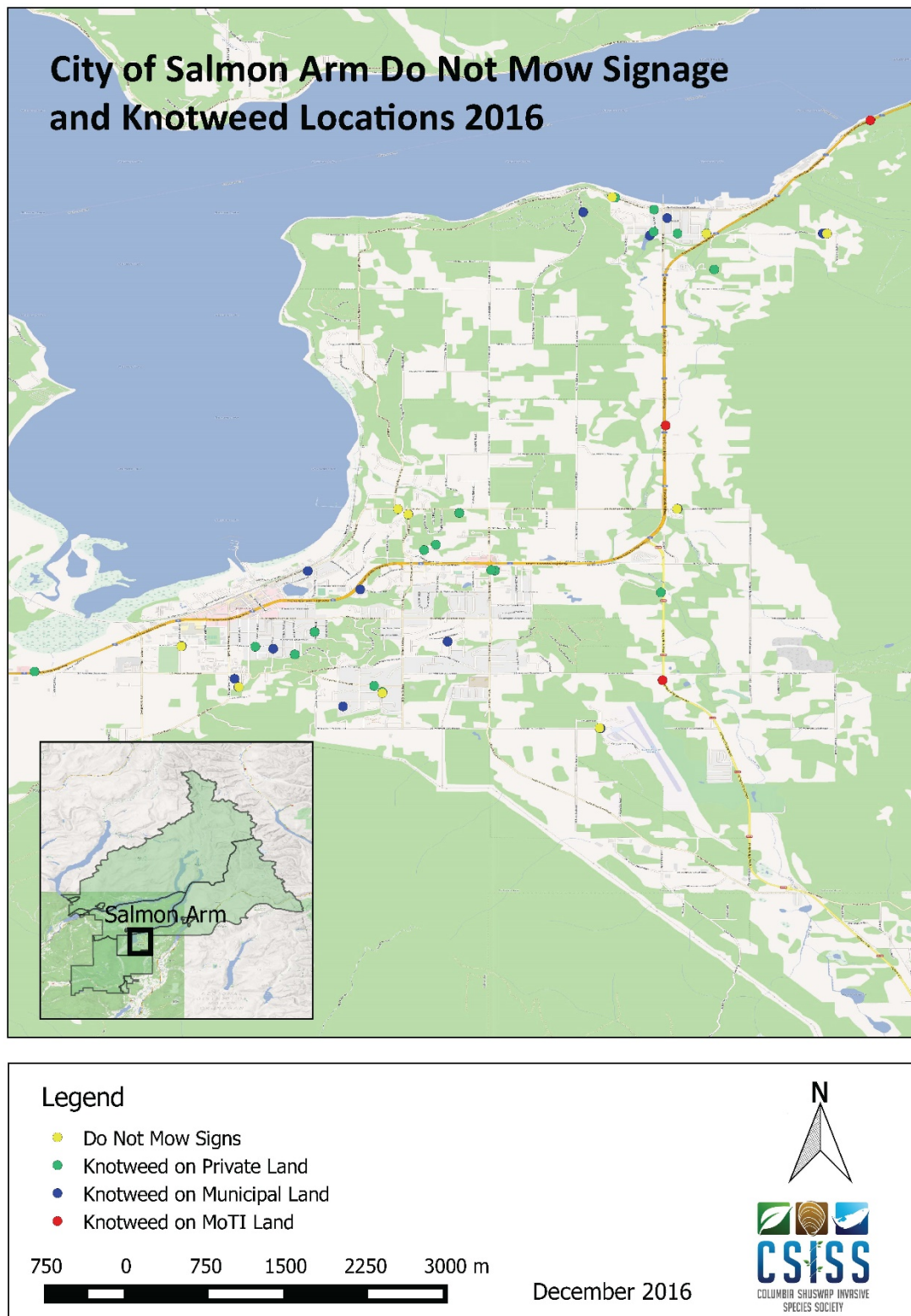


Figure 20: Do Not Mow signage installed for the City of Salmon Arm highlighting all knotweed locations found.



## MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE SURVEYS

CSISS staff completed high priority plant inventories on Ministry of Transportation and Infrastructure (MoTI) Right-of-Ways, two gravel pit inventories, and a detailed spotted knapweed (*Centaurea biebersteinii*) inventory south of the Town of Golden. A total of 182 sites were surveyed with 444 new invasive plant records created (Figure 21). As a follow up to 2015, Ben Hynes and Younger Pit were surveyed in the Golden IPMA region as CSISS staff were now able to survey them due to a reduction in site activity. In addition, the ISCBC Job Creation Partnership's Vernon and Revelstoke teams, completed gravel pit herbicide treatment at high priority active sites as recommended by 2015 CSISS surveys. CSISS provided contacts and survey details to assist the ISCBC.

Detailed spotted knapweed surveys were completed south of the Town of Golden on Highway 95 and side roads. A total of 31 new sites were created and 23 biocontrol monitoring surveys completed (Figure 22). The data collected will be used to determine relevant management recommendations, evaluate containment lines and the shared border with the East Kootenay Invasive Species Council (EKISC) where knapweed is actively controlled.

The CSISS continued to partner with MoTI for knotweed species management. In 2016, CSISS staff installed 19 Do Not Mow signs along MoTI Right-of-Ways and completed outreach with adjacent landowners.

Additionally, the Do Not Mow signage worked as public outreach, educating landowners about knotweed. In 2016, CSISS received 93 invasive species reports specifically relating to knotweed across the CSRD, with reports detailing signage viewed on Right-of-Ways.

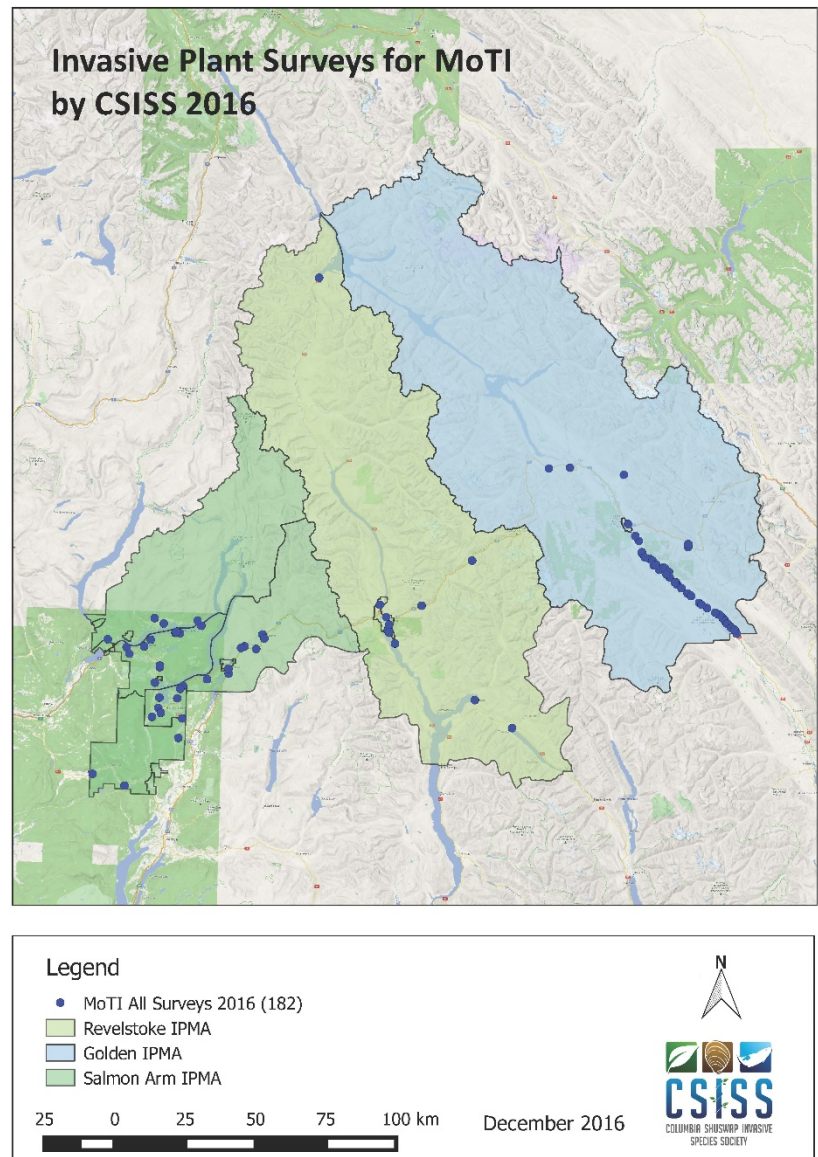


Figure 21: All invasive plant surveys for MoTI completed by CSISS staff in 2016.

Highway corridors are vectors of spread for invasive plants. The CSISS completed MoTI roadside boundary surveys detailing invasive species found on regional borders. These surveys help target new high priority, EDRR species entering the CSISS region, and awareness of neighbouring invasive plant priorities (Table 4).

MOTI Right-of-Way inventories were targeted at plants listed in the CSISS EDRR and Eradication lists (Craig, 2013), as well provincially designated Noxious Weeds (BC Weed Control Act). CSISS staff inventoried new infestations of knotweed, Himalayan balsam, Himalayan blackberry, purple loosestrife, yellow flag iris, baby's breath, big head knapweed and wormwood, a regional EDRR species in Salmon Arm IPMA. Existing sites containing blueweed, scotch broom, and teasel were also surveyed.

CSISS staff contacted landowners adjacent to MOTI sites with resources and information on best management practices for high priority species.

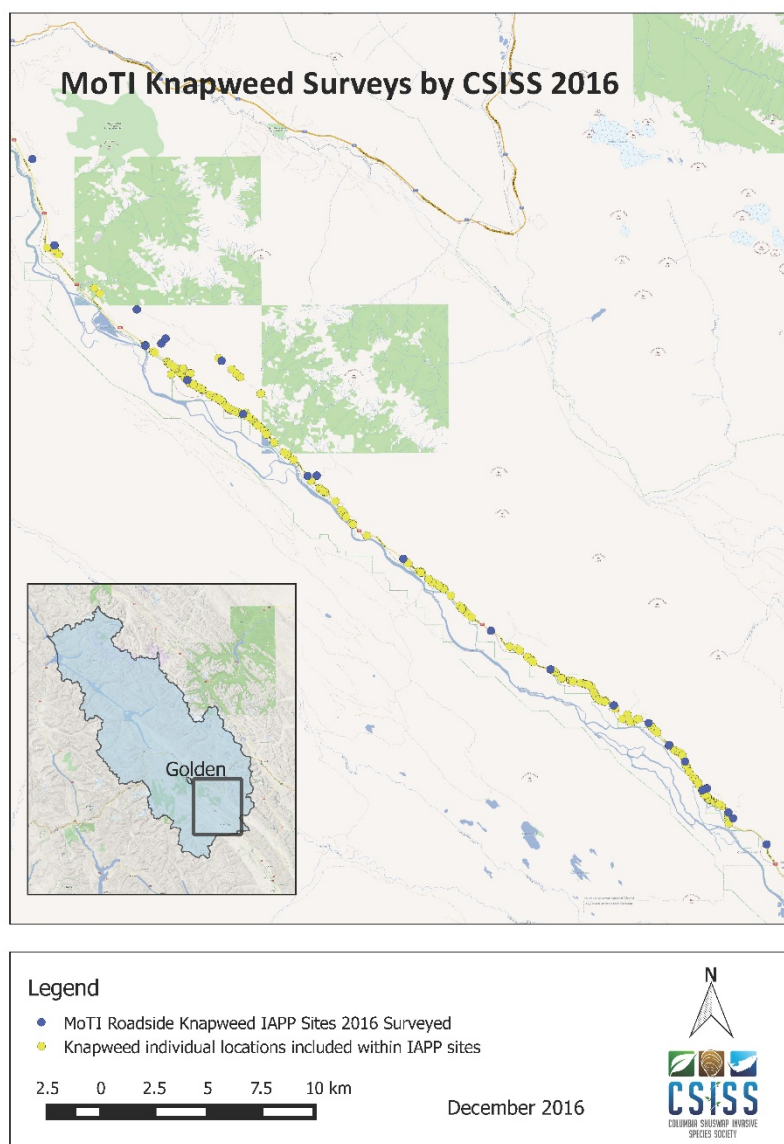


Figure 22: Detailed spotted knapweed surveys conducted for MoTI south of the Town of Golden in 2016.

Table 4: MoTI roadside boundary surveys completed by the CSISS.

Boundary Location	Year Surveyed	IAPP Site ID
Hwy 95, south of Parsons (EKISS boundary)	2016, 2014	301490
Hwy 23 N, north of Mica (Northern limit)	2016	317995
Hwy 1, west of Field (Alberta/ Yoho NP boundary)	2016, 2014	317761
Hwy 23 S, south of Galena Bay (CKISS boundary)	2016, 2014	287590
Hwy 1, west of Sorrento (TNRD boundary)	2014	248999
Hwy 97, west of Falkland (TNRD boundary)	2014	301500
Hwy 97B, south of Salmon Arm (NORD boundary)	2017 planned	n/a
Hwy 97, south of Falkland (NORD boundary)	2014	301493
Hwy 97A, south of Sicamous (NORD boundary)	2017 planned	n/a
Highway 31 to Beaton	2014	301438, 301436



## AQUATIC INVASIVE SPECIES SURVEYS

In 2016, the CSISS Aquatic Invasive Species Program continued to see growth, both for the CSISS and for the Columbia Basin as a whole. CSISS staff continued to implement the Canadian Columbia Basin Regional Framework for an Aquatic Invasive Species Program: 2015 to 2020 (Craig, 2015) in collaboration with the EKISC, the CKISS and the NWIPC with support from the Columbia Basin Trust (CBT) and the Ministry of Environment (MoE). Regionally, the CSISS utilized the Ranking Matrix for Monitoring Priority of Water Bodies (Craig 2015) to focus survey and outreach efforts at priority locations within the Columbia Shuswap.

A new funding partnership with the MoE and continued support from the CBT, allowed the CSISS to expand and increase the number of Zebra and Quagga Mussel (ZQM) Veliger samples collected in 2016. In total, the CSISS collected 35 ZQM Veliger samples at 22 priority waterbodies (Salmon Arm IPMA: 19 samples at 9 waterbodies, Revelstoke IPMA: 6 samples at 5 waterbodies, and Golden IPMA: 10 samples at 8 waterbodies) (Figure 24 and Table 5). For locations requiring a watercraft for sampling purposes, the CSISS hired experienced contractor Chris Harkness (Harkness, 2016). Close communication was maintained with the Ministry of Environment and BC Hydro to coordinate AIS survey efforts in the region. No ZQM Veligers were found in samples collected by the CSISS, currently there are no known cases of ZQM infestation in the Province of BC.

In addition to ZQM Veliger sampling, the CSISS and contractor Chris Harkness conducted aquatic and riparian invasive plant surveys. A number of invasive plants are present in the Columbia Shuswap Region including: Eurasian watermilfoil, yellow flag iris, curly-leaf pondweed and fragrant waterlily. No new aquatic or riparian invasive plants were found at the sampling points in waterbodies surveyed by the CSISS in 2016, but some new sites were detected by partner agencies (MFLNRO's contractor Chris Harkness). All data was inputted into IAPP database, and a special report from CSISS aquatic surveys was prepared by the contractor for [our website](#).

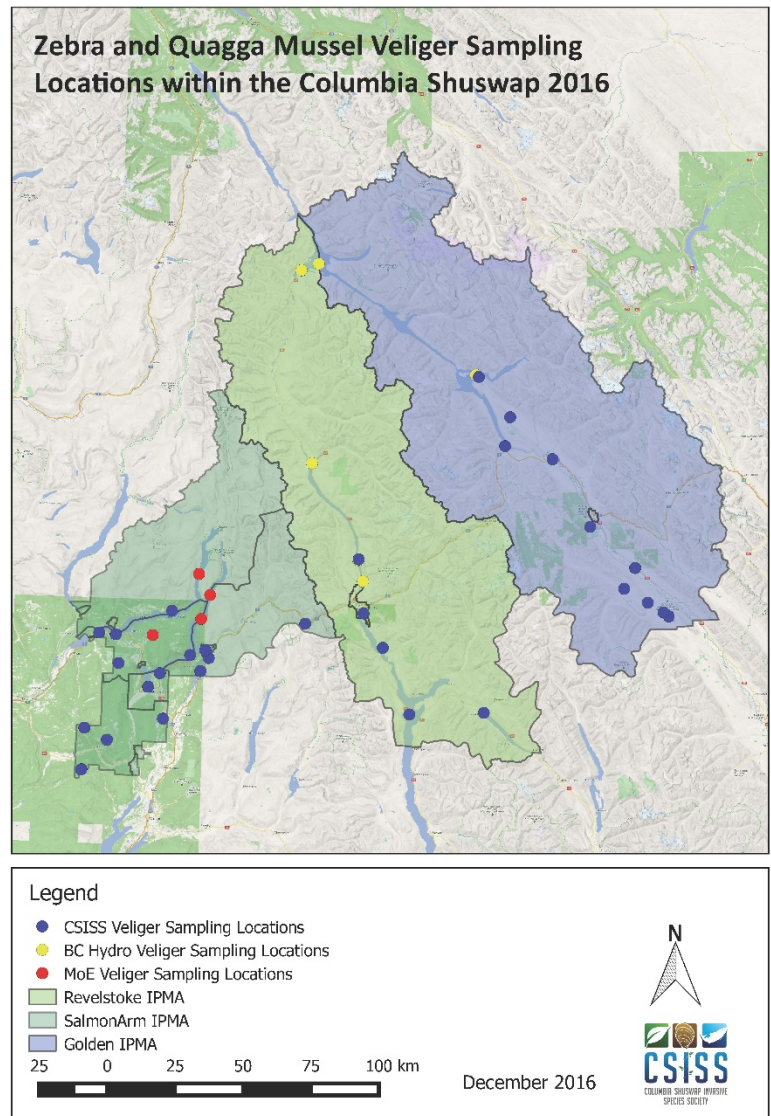


Figure 23: Sampling locations for AIS surveys carried out by the CSISS and partners in 2016.



Table 5. Zebra Quagga Mussel Veliger Sampling Locations and Results 2016

Waterbody	Location	IPMA	Date Sampled	Veliger
Trout Lake	Trout Lake	Revelstoke	18-Jul-2016	Negative
Arrow Lake	Shelter Bay	Revelstoke	21-Jul-2016	Negative
Shuswap Lake	Sunnybrae	Salmon Arm	25-Jul-2016	Negative
Shuswap Lake	Sorrento	Salmon Arm	25-Jul-2016	Negative
Shuswap Lake	Anglemont	Salmon Arm	25-Jul-2016	Negative
Shuswap Lake	Canoe	Salmon Arm	26-Jul-2016	Negative
Gardom Lake	Gardom Lake	Salmon Arm	25-Jul-2016	Negative
Mitten Lake	Mitten Lake	Golden	2-Aug-2016	Negative
Columbia River	Columbia Wetlands Adventures	Golden	2-Aug-2016	Negative
Kinbasket Lake	Kinbasket Lake Resort	Golden	3-Aug-2016	Negative
Pinaus Lake	Pinaus Lake	Salmon Arm	16-Aug-2016	Negative
Bolean Lake	Bolean Lake	Salmon Arm	16-Aug-2016	Negative
Lady King Lake	Lady King Lake	Salmon Arm	16-Aug-2016	Negative
Mara Lake	Trans Canada Highway Overpass	Salmon Arm	17-Aug-2016	Negative
Mara Lake	Waterways Houseboat	Salmon Arm	17-Aug-2016	Negative
Mara Lake	Windsor Road Boat Launch	Salmon Arm	17-Aug-2016	Negative
Williamson Lake	Williamson Lake	Revelstoke	25-Aug-2016	Negative
Columbia River	Trans Canada Highway Overpass	Golden	12-Sept-2016	Negative
Kinbasket Lake	Bush Harbour	Golden	12-Sept-2016	Negative
Revelstoke Lake	Martha Creek	Revelstoke	20-Sept-2016	Negative
Arrow Lake	Shelter Bay	Revelstoke	20-Sept-2016	Negative
Shuswap Lake	Canoe	Salmon Arm	22-Sept-2016	Negative
Shuswap Lake	Markwart Boat Launch	Salmon Arm	22-Sept-2016	Negative
Shuswap Lake	Salmon Arm Warf	Salmon Arm	22-Sept-2016	Negative
Mara Lake	Trans Canada Highway overpass	Salmon Arm	22-Sept-2016	Negative
Mara Lake	Windsor Road Boat Launch	Salmon Arm	22-Sept-2016	Negative
Joyce Lake	Joyce Lake	Salmon Arm	26-Sep-2016	Negative
Skimikin Lake	Skimikin Lake	Salmon Arm	26-Sep-2016	Negative
Three Valley Lake	Three Valley Lake	Salmon Arm	27-Sep-2016	Negative
Echo Lake	Echo Lake	Revelstoke	27-Sep-2016	Negative
Blackwater Lake	Blackwater Lake	Golden	28-Sep-2016	Negative
Cedar Lake	Cedar Lake	Golden	28-Sep-2016	Negative
Loon Lake	Loon Lake	Golden	29-Sep-2016	Negative
Wilbur Lake	Wilbur Lake	Golden	29-Sep-2016	Negative
Bittern Lake	Bittern Lake	Golden	29-Sep-2016	Negative

## GOAL 5: SLOW AND REVERSE THE SPREAD AND MINIMIZE THE IMPACT OF EXISTING INVASIVES

The CSISS works hard to slow and reverse the spread of existing invasive species and reduce their impacts. This is done in coordination with CSISS partners by coordinating priorities for control, as well as having staff respond to reports in the region and engage with landowners.

A total of 136 invasive species reports were directed to the CSISS in 2016, all sites were visited by CSISS staff for verification and IAPP inventory. Additionally, CSISS staff visited 74 landowners (Salmon Arm IPMA: 20 visits, Revelstoke IPMA: 48 visits, and Golden IPMA: 6 visits) to deliver relevant information packages about how best to manage their infestations and mailed 85 outreach letters and informative materials to landowners unavailable for in-person meeting.

Out of the 136 reports, 92 knotweed reports and 9 noxious weed reports were brought to the attention of the CSISS (Figure 24). Three of the noxious weed reports did not contain listed noxious weeds, the remaining 6 were found to contain listed regional or provincial noxious weeds and were contacted by CSISS staff. While the CSRD has enforcement abilities under the BC Weed Control Act to respond to noxious weed complaints, the CSISS responds to invasive species reports with landowner outreach and site inventories from the roadside.

Additionally, three Forestry companies (BCTS, LP Holdings, and Tolko) whose worksites contain priority invasive marsh plume thistle were also contacted. CSISS staff provided them with best management practices, relevant resources and maps.

The CSISS is working with local government staff to improve landowner outreach efforts and compliance associated with noxious weed complaints. An updated BC Weed Control Act regulation and new Invasive Species Act that prohibits the sale of invasive species and includes enforcement has been recommended to provincial government by CSISS and several other invasive species organizations.

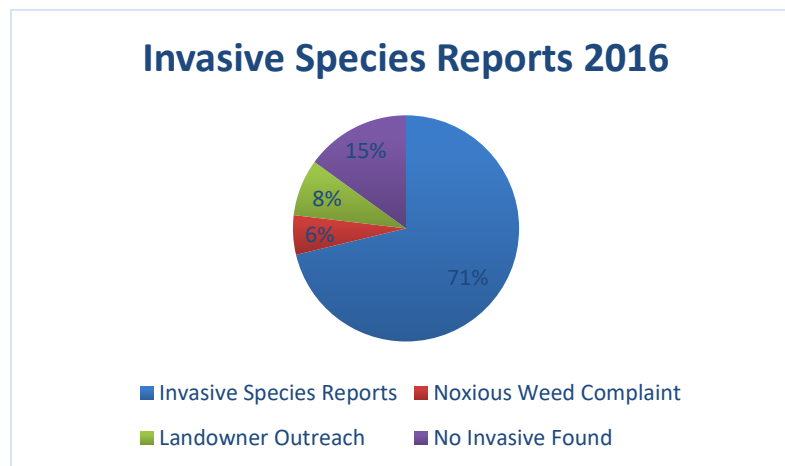


Figure 24: Invasive species reports received by CSISS in 2016, broken down by category.

## GOAL 6: PROGRAM SUSTAINABILITY

During the 2016 season, the CSISS gratefully received increased support for invasive species related programming in the region. The CSISS received funds from the Ministry of Forests, Lands and Natural Resource Operations (MFNLRO), the Ministry of Transportation and Infrastructure (MOTI), Ministry of Environment (MOE) and BC Parks (Parks Enhancement Funds and special capital project in Columbia region). In addition to funding from the provincial government, the CSISS confirmed multi-year funding agreements from both the Columbia Shuswap Regional District (CSRD) and the Columbia Basin Trust (CBT). CSISS received funding for a summer student from the federal government through the 'Canada Summer Jobs' program. Small contributions were also received from: Invasive Species Council of BC, Shuswap Trail Alliance, Columbia Basin Environmental Education Network, City of Salmon Arm (fee for service 'Do Not Mow' signage project), and the Fish and Wildlife Compensation Program (Teaching about Invasives Workshop Community Engagement Grant).

Additional funding sources are being pursued for the 2016 season. A grant application has been submitted to the Fish and Wildlife Compensation Program (FWCP) to expand AIS programming in the region. A grant application was submitted to the National Wetland Conservation Fund (Environment and Climate Change Canada) for control of yellow flag iris in Shuswap wetlands (White Lake and Little White Lake), in partnership with local groups and agencies. There are plans to seek funding from a variety of other funding sources.

In April, we bid farewell to the original CSISS coordinator Natalie Stafl, and Robyn Hooper (previously Program Manager) assumed the role of Executive Director. We are enormously grateful for the contributions of Natalie Stafl to the organization and wish her all the best at Parks Canada. The CSISS staff team in 2016 included two returning staff members, Laura Gaster (Aquatic Invasive Species Program Coordinator) and Emily Spiler (Invasive Species Program Assistant). An additional staff member was hired, Aimee Barre, to coordinate the field operations program. Staff helped greatly enhance the level of service the CSISS was able to deliver in the region (Figure 25). Retaining a quality staff team is important for the CSISS which has thus far been exceptionally successful. Similarly, the CSISS has been fortunate to have received direction from a knowledgeable, diverse Board of Directors. Each individual brings a unique perspective to the organization and has been instrumental in helping the CSISS address many aspects of invasive species management in the region.

The CSISS Policy Manual was updated in 2016 to include 'Workplace Bullying and Harassment Policy' and 'Policy on use of Society owned vehicle'; the manual helps to facilitate orientation of new staff and directors (Stafl, 2015, updated Hooper 2016). The manual is reviewed and signed by the Board Directors annually and updated as necessary. CSISS staff have created and maintained an Outreach Framework 2015-2020. This framework informs CSISS outreach targets, performance measures, staff work plans, calendars for specific outreach programming, and helps to determine gaps in stakeholder groups (Hooper et al. 2015).



Figure 25: CSISS Staff members (from left to right) Robyn Hooper (Executive Director), Aimee Barre (Field Operations Program Coordinator), Emily Spiler (Invasive Species Program Assistant, Summer Student), and Laura Gaster (Aquatic Invasive Species Program Coordinator).

## REFERENCES

Craig, J.A. 2013. Columbia Shuswap Invasive Specie Society Strategic Plan 2013-2017. Prepared for the Columbia Shuswap Invasive Species Society.

Craig, J.A. 2013. Operational Plan for Terrestrial Invasive Plants in the Columbia Shuswap 2014 to 2019. Prepared for Columbia Shuswap Invasive Species Society.

Craig, J. A. 2015. Canadian Columbia Basin Regional Framework for an Aquatic Invasive Species Program: 2015 to 2020.

Harkness, C. 2016. North Columbia Priority Aquatic Invasive Species Surveys. Prepared for the Columbia Shuswap Invasive Species Society.

Hooper, R, Stafl, N., Gaster, L., Spiler, E., Gibson, M. and Rooney, D. 2015. CSISS Outreach Framework 2015-2020. Prepared for the Columbia Shuswap Invasive Species Society.

Stafl, N. 2014. CSISS Invasive Species Reporting Protocol. Prepared for the Columbia Shuswap Invasive Species Society.

Stafl, N. 2015. CSISS Policy Manual Version 2. 0. Prepared for the Columbia Shuswap Invasive Species Society.

### Additional Resources:

CSISS Resources (Operational and Strategic Plans, Aquatic Survey Reports): <http://columbiashuswapinvasives.org/about-csiss/csiss-resources/>

Information on high priority regional species: <http://columbiashuswapinvasives.org/invasive-species/high-priority-invasives/>

## APPENDIX A: CSISS STAFF AND BOARD DIRECTORS 2016

### Current CSISS Board Directors (2016- 2017)

<b>Hamish Kassa</b>	Chair, CSISS	Columbia Shuswap Regional District
<b>Chris Cochran</b>	Vice-Chair, CSISS	Town of Golden
<b>John Braisher</b>	Board Directors, CSISS	Rancher and Golden resident
<b>Bruce Husband</b>	Board Directors, CSISS	Shuswap Agricultural Strategy Group
<b>Bryan Chruszcz</b>	Board Directors, CSISS	Parks Canada
<b>David Rooney</b>	Board Directors, CSISS	Illecillewaet Greenbelt Society
<b>Adam Croxall</b>	Board Directors, CSISS	BC Hydro
<b>Darren Komonski</b>	Board Directors, CSISS	City of Revelstoke
<b>Diane Millar</b>	Board Directors, CSISS	Ministry of Forests, Lands and Natural Resource Operations

### 2015-2016 CSISS Board

<b>Hamish Kassa</b>	Chair, CSISS	Columbia Shuswap Regional District
<b>Chris Cochran</b>	Vice-Chair, CSISS	Town of Golden
<b>Margaret Gibson</b>	Secretary, CSISS	Independent Biologist
<b>Bruce Husband</b>	Board Directors, CSISS	Shuswap Agricultural Strategy Group
<b>Bryan Chruszcz</b>	Board Directors, CSISS	Parks Canada
<b>David Rooney</b>	Board Directors, CSISS	Illecillewaet Greenbelt Society
<b>Adam Croxall</b>	Board Directors, CSISS	BC Hydro
<b>Darren Komonski</b>	Board Directors, CSISS	City of Revelstoke
<b>Diane Millar</b>	Board Directors, CSISS	Ministry of Forests, Lands and Natural Resource Operations

### **CSISS Staff 2016**

Robyn Hooper	Executive Director, CSISS (previously Program Manager)
Natalie Stafl	Former Executive Director, CSISS (January-March 2016)
Laura Gaster	Aquatic Invasive Species Program Coordinator, CSISS
Aimee Barre	Field Operations Program Coordinator, CSISS
Emily Spiler	Invasive Species Program Assistant (Summer Student), CSISS

## APPENDIX B: EVENTS ATTENDED BY CSISS AND PARTNERS 2016

*Events highlighted in grey pertain to the Columbia Basin Region of the CSlSS Area*

Date	Event	# of Attendees	# Direct Interactions
16-Jan-16	Media Communications Training	10	10
17-Jan-16	Columbia Basin Invasive Species Team Meeting (NWIPC, EKISC,	12	12
21-Jan-16	CSRD Inventory and Review Meeting	3	3
29-Jan-16	Email/Phone Meetings with 21 Garden Centres	21	21
01-Feb-16	Invasive Species Strategic Meeting	20	15
01-Feb-16	ISCBC Annual Forum and EDRR Bootcamp	150	50
02-Mar-16	Shuswap Trail Alliance AGM	20	20
15-Mar-16	Meeting CBEEN, NCES (Junior Naturalists), and School District	4	4
16-Mar-16	Meeting Shuswap Trail Alliance	2	2
16-Mar-16	Presentation to North Shuswap Community Group and Garden	20	20
17-Mar-16	Meeting with City of Salmon Arm Staff	3	3
05-Apr-16	Steering Committee Meeting Nelson	37	37
07-Apr-16	Roads and Weeds Workshop	17	17
09-Apr-16	STA- Trail Maintenance Day	12	12
12-Apr-16	Sicamous Career Fair	50	18
12-Apr-16	Meeting Regional District North Okanagan Weed Officer	1	1
14-Apr-16	EKISC AGM	36	36
15-Apr-16	Shuswap Trails Round Table Meeting	15	15
16-Apr-16	STA- Cedar Creek Trail Weed Pull	19	19
19-Apr-16	SIWMC AGM	32	32
19-Apr-16	Sicamous Interagency Meeting	7	7
20-Apr-16	CKISS Operational Planning Meeting	30	30
22-Apr-16	Garden Centre visit-Salmon Arm	12	12
26-Apr-16	Invasive Species and Climate Change Presentation at OASISS	25	25
04-May-16	JCP Field Ops Partner Meeting	8	8
05-May-16	Share the Trails- workshop Indoor	50	15
06-May-16	Share the Trails- workshop outdoor	29	29
10-May-16	CSISS Plant ID and Management Workshop- Sicamous	8	8
10-May-16	CSISS Plant ID and Management Workshop- Salmon Arm	16	16
12-May-16	CSISS Plant ID and Management Workshop-Revelstoke (morning	20	20
12-May-16	Re-Veg Project with Mandy Kelner	12	12
14-May-16	Salty Street Festival, Salmon Arm	100	33
14-May-16	Wetland Keepers Workshop	26	26
18/19-	Plant ID Workshop with Ken Marr	13	13
20-May-16	Pro-D Day Teach Teachers about Invasives	10	10
20-May-16	Stoke FM Interview	1	1
21-May-16	Timber Days	200	36
25-May-16	SABNES Weed Pull Nightshade	20	20
26-May-16	Emcon Highway Services Revelstoke- Presentation	25	25
26-May-16	STS Political Council Meeting Shuswap First Nations	12	12
27-May-16	Columbia Basin Outreach Team Meeting	5	5
27-May-16	Community Based Social Marketing Workshop	24	24



28-May-16	Teacher Training Workshop	26	26
28-May-16	Environmental Education Evening	68	68
28-May-16	Carlin Country Market	100	40
29-May-16	Gardom Lake YFI Weed Pull	8	8
31-May-16	CSISS Plant ID and Management Workshop- Golden	8	8
02-Jun-16	Yellow Flag Iris Weed Pull- Little White Lake	10	10
03-Jun-16	Yellow Flag Iris Outreach with BC Parks Staff	4	4
04-Jun-16	Eco Fair- Salmon Arm	100	21
05-Jun-16	RBC Blue Water Day- Yellow Flag Iris Weed Pull	14	14
12-Jun-16	ilearn Street Festival	100	50
15-Jun-16	Garden Centre Outreach- Golden	6	6
15-Jun-16	Don't Let it Loose Outreach- Golden	3	3
15-Jun-16	Golden Farmers Market with Wildsight	100	40
16-Jun-16	Himalayan Balsam Weed Pull- Revelstoke	14	14
17-Jun-16	Wildsight Golden Weed Pull	4	4
20-Jun-16	Shuswap Trails Round Table Meeting	19	19
27-Jun-16	Garden Centre visit- Revelstoke	5	5
30-Jun-16	MFLRNO Stewardship Staff Meeting Columbia-Kootenay Region	8	8
30-Jun-16	BCTS outreach materials and introductions	5	5
01-Jul-16	Canada Day Celebrations- Blind Bay	50	22
01-Jul-16	Sicamous Canada Day Fest	100	19
5-7 Jul-16	AIS Outreach at Boat launches and Marinas- Golden	7	7
05-Jul-16	Meeting City of Revelstoke	1	1
06-Jul-16	Meeting City of Salmon Arm	3	3
06-Jul-16	Meeting CSRD staff re Invasive Species Reporting Protocol	1	1
08-Jul-16	Shuswap Farm and Craft Market	80	15
09-Jul-16	Shuswap Garden Club Flower Show	50	5
09-Jul-16	Hanna's Garden Centre Invasive Species Workshop	9	9
09-Jul-16	Salmon Arm AIS Outreach	5	5
10-Jul-16	Scotch Creek Farmer's Market	80	20
10-Jul-16	Scotch Creek AIS Outreach	4	4
13-Jul-16	Celista Farmer's Market	110	29
14-Jul-16	Blind Bay Farmer's Market	50	17
14-Jul-16	Blind Bay AIS Outreach	10	10
16-Jul-16	Parks Day in Revelstoke	70	39
17-Jul-16	AIS Boat Launch Outreach- Salmon Arm	30	18
18-Jul-16	AIS Boat Launch Outreach- Revelstoke	4	4
20-Jul-16	Parks Canada BMP's for Highways	14	14
20-Jul-16	Ross Street Downtown Shuswap Farmer's Market	40	7
21-Jul-16	BC Parks Outreach Day (Martha Creek, Blanket Creek, Shelter	55	55
22-Jul-16	Wildsight Golden Weed Pull (at bike park)	8	8
23-Jul-16	Sicamous Family Fun Day	50	11
26/27 Jul-	AIS Outreach at Boat launches and Marinas- Shuswap	10	10
27-Jul-16	Pet store outreach in Salmon Arm	11	10
29-Jul-16	Get Wild Golden, Summer Camp	16	16
28-Jul-16	Pet store outreach in Revelstoke	2	2
30-Jul-16	Revelstoke Farmer's Market	50	20

02-Aug-16	Revelstoke Junior Naturalists	10	10
03-Aug-16	Revelstoke Junior Naturalists	7	7
05-Aug-16	AIS Boat Launch Outreach in Shuswap	19	19
06-Aug-16	Shuswap Marina Open House Resort	60	28
06-Aug-16	Sicamous Antique Boat Show (only JCP crew attended)	100	99
06-Aug-16	Harbour road boat launch outreach	4	4
09-Aug-16	AIS Boat launch outreach- Revelstoke	6	6
10-Aug-16	Meeting with Val Janzen	1	1
12-Aug-16	Martha Creek Weed Pull	8	8
13-Aug-16	Sorrento Farmer's Market	50	28
19-Aug-16	Boater Surveys in Sicamous	40	31
20-Aug-16	Salmon Arm Roots and Blues Saturday	500	28
21-Aug-16	Salmon Arm Roots and Blues Sunday	400	17
23-Aug-16	Boater Surveys in Sicamous	50	30
31-Aug-16	Environmental Educator Meet and Greet	50	50
07-Sep-16	Edible Invasives Workshop- Revelstoke NCES/ ISCBC	13	13
07-Sep-16	Regional Invasive Species Monthly Phone call	12	12
08-Sep-16	Neskonlith Splat'sin First Nations Crew Training	8	8
09-Sep-16	Salmon Arm Fall Fair	800	85
10-Sep-16	Street Fest Revelstoke- ISCBC Team	250	76
13-Sep-16	Meeting on Finance Standing Committee Key Message Meeting	10	10
15-Sep-16	EKISC Field Tour	26	26
15-Sep-16	Mid Columbia Program Catalogue and Restoration Field Tour	12	12
16-Sep-16	CBT Program Review Meeting and CB Regional Team Meeting	6	6
17-Sep-16	White Lake Fun Day	110	10
18-Sep-16	Revelstoke Garlic Festival- ISCBC Team	1250	145
20-Sep-16	Revelstoke Forestry Workshop- Morning	12	12
20-Sep-16	Revelstoke Forestry Workshop- Afternoon	11	11
21-Sep-16	CSISS AGM	26	26
21-Sep-16	Golden Forestry Workshop	26	26
23-Sep-16	Kokanee Fish Festival- ISCBC Team	182	182
30-Sep-16	Voices of Sustainability Symposium	19	19
05-Oct-16	Revelstoke Secondary School Presentation	22	22
05-Oct-16	Regional Invasive Species Monthly Phone call	12	12
05-Oct-16	SABNES Weed Pull Nightshade - October	10	14
08-Oct-16	CSDR Free Yard Waste Day-outreach	5	5
12-Oct-16	Golden Free Yard Waste Day- outreach	3	3
13-Oct-16	Revelstoke Free Yard Waste Day- Outreach	1	1
13-Oct-16	Malakwa Free Yard Waste Day- outreach	7	7
14-Oct-16	Revelstoke Secondary School Leadership Fair	50	50
14-Oct-16	Sicamous Free Yard Waste Day- Outreach	25	25
18-Oct-16	Revelstoke Restoration Meet and Greet	19	19
19-Oct-16	Salmon Arm Pet Shops Re-visit	5	5
20-Oct-16	Revelstoke Restoration Meet and Greet	16	16
21-Oct-16	SA Landfill Outreach - Yard Waste	12	10
24-Oct-16	Skimikin Transfer Station	6	6
24-Oct-16	Sicamous Transfer Station Outreach	3	3

24-Oct-16	Shuswap Trails Steering Committee Meeting	15	15
25-Oct-16	ISCBC JCP Meeting	13	13
26-Oct-16	College of the Rockies Presentations	18	18
26-Oct-16	Glenemma TS Yard Waste Outreach	4	4
26-Oct-16	Arrow Heights Elementary School Presentation	27	27
27-Oct-16	Begbie View Elementary School Presentation	24	24
31-Oct-16	Salmon Arm Landfill- Yard waste outreach	4	4
01-Nov-16	Stoke FM Interview	3	3
01-Nov-16	Meeting with ISCBC-Rev Crew- Outreach and workplan	3	3
02-Nov-16	Columbia Park School Presentation	26	26
02-Nov-16	Arrow Heights Elementary School Presentation	26	26
03-Nov-16	CRED Talk- Turtle Presentation	21	21
07-Nov-16	Revelstoke Landfill Visit	15	15
22-Nov-16	Columbia Basin AIS Steering Committee	24	24
22-Nov-16	Revelstoke Volunteer Fair	200	44
30-Nov-16	Shuswap Trails Round Table Meeting	80	80
05-Dec-16	Kootenay Conservation Partnership Presentation	20	10
TOTAL	COLUMBIA BASIN	2,927	<b>2,266</b>
TOTAL	CSRD	7,510	<b>3,110</b>

## APPENDIX C: COLLABORATION, WORKSHOPS AND TRAINING OPPORTUNITIES ATTENDED OR HOSTED BY CSISS

- Monthly conference calls and meetings with Columbia Basin invasive species groups
- Monthly conference calls with BC Regional invasive species groups
- Invasive Species Council of BC Annual Forum
- Regional Committee Field Tour and Annual Meeting
- Participation in Invasive Species Month planning
- Invasive Species Webinars for training purposes, e.g. ISCBC Webinars, Green Teacher webinars
- Coordination calls with ISCBC for PlantWise, Clean Drain Dry, and Don't Let it Loose Programs, and coordination with Revelstoke and Vernon Job Creation Partnership crews
- Media Communications Workshop (hosted by CKISS)
- Plant Identification Workshop with Dr. Ken Marr from Royal BC Museum (hosted by CSISS)
- Roads and Weeds Workshop (hosted by CSISS)
- East Kootenay Invasive Plant Field Tour (hosted by EKISC)
- Environmental Educator's Gathering, with School District 6 and CBEEN
- Invasive Plant ID and Best Management Workshops for Regional Stakeholders/ Field Crews - 5 sessions in Revelstoke, Golden, Sicamous, and Salmon Arm (organized by CSISS)
- First Nations meetings (Switzmalph Cultural Society Restoration Site visit; Communications with Revelstoke Aboriginal Education School District Coordinator; Shuswap Trails Roundtable with many First Nations groups and stakeholders; Neskonlith Splatstin Field Crew Invasive Plant Training Workshop led by CSISS and SIWMC); and Okanagan Indian Band Weed Management meeting with OIB, North Okanagan Regional District and CSISS)
- Regional Invasive Species Societies AGMs (SIWMC, EKISC, CKISS, OASISS)
- Shuswap Trails Roundtable and Working Group meetings
- CBEEN Community Based Social Marketing Workshop
- CBEEN, ISCBC and CSISS Workshop on "Teaching About Invasives" with Columbia Basin educators, teachers and invasive species education coordinators
- CSISS Annual General Meeting
- Hosted three Forestry and Invasive Plant Workshops, in partnership with ISCBC and MFLRNO (Golden and Revelstoke)
- Voices of Sustainability Symposium with environmental educators (hosted by CBEEN)
- Canadian Columbia Basin Aquatic Invasive Species Steering Committee Meetings (spring and fall)