

Columbia Shuswap Regional District: Invasive Plant Report

Inventory, Treatments, Monitoring
and Public Outreach

Columbia Shuswap Invasive Species Society;
DECEMBER 2023

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1.0 Executive Summary

The spread of invasive alien species is now recognized as one of the greatest threats to the ecological and economic well-being of the planet (Pyšek et al. 2020). In British Columbia, it is estimated that 25% of our endangered species, 31% of our threatened species, and 16% of our species of special concern are negatively impacted by invasive alien species (Voller and McNay 2007).

Invasive Alien Plant (IAP) management is comprised of assessment, treatment and monitoring. Assessment provides land managers with information essential to making well informed management decisions. All IAP assessments consider sensitive ecosystems, vectors of spread and disturbance factors. Treatment can be comprised of mechanical, biological agent, chemical or cultural management, with a focus on spot or broad applications. One or many treatments may be utilized for the completion of a successful integrated pest management plan. Monitoring is vital to evaluate management actions, and adjust if necessary, to reach IAP objectives efficiently and effectively.

2.0 Acknowledgements

This report was produced and submitted by Laura Gaster, Field Operations Manager, Columbia Shuswap Invasive Species Society. Invasive alien plant assessment protocols follow the Province of British Columbia's InvasivesBC Program. The Columbia Shuswap Invasive Species Society is a non-profit organization dedicated to the prevention, management and reduction of invasive species in the Columbia Shuswap Regional District.

Report Contributors:

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3.0 Introduction and Background

3.1 Background

In April of 2013, the Columbia Shuswap Invasive Species Society (CSISS) was formed to address invasive species issues within the boundaries of the Columbia Shuswap Regional District (CSRD). As per the terms of its five-year funding agreement with the CSRD, the CSISS has undertaken many non-regulatory duties and responsibilities previously assigned to the CSRD Noxious Weed Inspector. A second five-year funding agreement was renewed in 2019, to expire February 2024.

3.2 Objectives

The CSISS, acting as a qualified contractor on behalf of the CSRD, will provide noxious and invasive weed control activities including: identify the establishment of new invasive plants, contain the spread of high priority invasive plant species, reduce the impact of well-established invasive plants, provide information

and control recommendations on invasive plant management to regional staff and members of the public and ensure efficient program delivery and effectiveness across all CSRD properties (landfills, transfer stations, parks, fire halls, and parcels).

3.3 Integrated Pest Management

The CSISS follows an Integrated Pest Management (IPM) approach for controlling invasive species. This approach incorporates all aspects of invasive plant management to suppress invasive plant populations in effective, economical and environmentally sound ways. Effective management of a site can incorporate one or multiple control measures. Control measures include: preventive measures and education, manual and mechanical control, biological control, chemical control and monitoring.

3.4 Invasive Plant Management Areas

The Columbia Shuswap Invasive Species Society encompasses the geographic area of the Columbia Shuswap Regional District. For the purposes of planning, this region has been divided into three Invasive Plant Management Areas (IPMAs): Salmon Arm, Revelstoke and Golden (Map 1) each with its own priority invasive plant list that is updated annually at the regional Columbia Shuswap land manager's meeting (Appendix A).

The CSRD invasive alien plant assessments continue to follow the IPMA structure for the Columbia Shuswap for the purpose of determining priority invasive plants for assessment, treatments and monitoring.

Map 1. Invasive Plant Management Areas (IPMAs) in the Columbia Shuswap Region.



4.0 CSRD Landfills and Transfer Stations

In 2023, the CSISS coordinated invasive plant inventories, chemical and mechanical treatment and monitoring at CSRD landfills and transfer stations (Figure 1, Map 2). CSISS visited each landfill and transfer station at least once in the season and completed a comprehensive invasive plant inventory at each site. Sites identified with priority invasive plants received the appropriate treatment and monitoring before seed set.

In total, a certified herbicide applicator treated *4 sites and 0.0854 hectares* over two rounds of treatment from June to August 2023. CSISS staff completed herbicide monitoring at each of the sites, all sites passed inspection. CSISS staff completed mechanical treatment at *5 sites*, removing a total of *0.0030 hectares* of priority invasive plants (Table 1). From previous years, CSISS found a reduction of infestation size at some sites treated and 7 locations had 'No Weed Found' for priority species (Table 2). For complete landfill and transfer station inventory data see Appendix B.

It is recommended that CSRD landfills and transfer stations are prioritized for annual treatment. In addition, treatment efforts should target all noxious weeds and priority invasive plants within landfill and transfer station boundaries. Special care should be devoted to CSRD facilities containing compost as seeds and fragments of invasive plants can be transported by wind or machinery into any exposed medium. Prioritizing these areas will minimize the spread of invasive plants across the region.

Table 1. Treatment data for CSRD Landfills and Transfer Stations 2023

Site ID	Site Name	Priority Species	Treatment Method	Area found and treated (ha)
250657	Salmon Arm Landfill	Blueweed	Chemical	.0400
		Poison hemlock <i>*NEW</i>	Chemical	.0040
301448	Glenemma Transfer Station	Rush skeletonweed	Chemical	.0040
			Mechanical	.0005
301462	Malakwa Transfer Station	Field scabious	Chemical	.0024
			Mechanical	.0012
		Myrtle spurge <i>*NEW</i>	Mechanical	.0001
301522	Revelstoke Landfill (scale side)	Hoary alyssum	Chemical	.0200
			Mechanical	.0006
		Policeman's helmet	Chemical	.0150
301457	Sicamous Landfill	Himalayan blackberry	Mechanical	.0002
301449	Falkland Transfer Station	Scotch thistle <i>*NEW</i>	Mechanical	.0004

Other lower priority invasive species treated at each site, as appropriate.

Table 2. 'No weed found' on CSRD Landfills or Transfer stations 2023, successful treatments previous years

Site ID	Site Name	Priority Species	Area (ha)
301522	Revelstoke Landfill (scale side)	Greater celandine*	0
		Himalayan blackberry*	0
		Bohemian knotweed*	0

		Blueweed*	0
301453	Skimikin Transfer station	Scotch thistle*	0
317732	Revelstoke Landfill (not scale side)	Bohemian knotweed*	0
301462	Malakwa Transfer station	Knotweed*	0
250602	Golden Landfill	Hoary alyssum*	0
		Blueweed	0
301449	Falkland Transfer station	Policeman's helmet*	0
301457	Sicamous Landfill	Poison hemlock*	0
		Policeman's helmet*	0

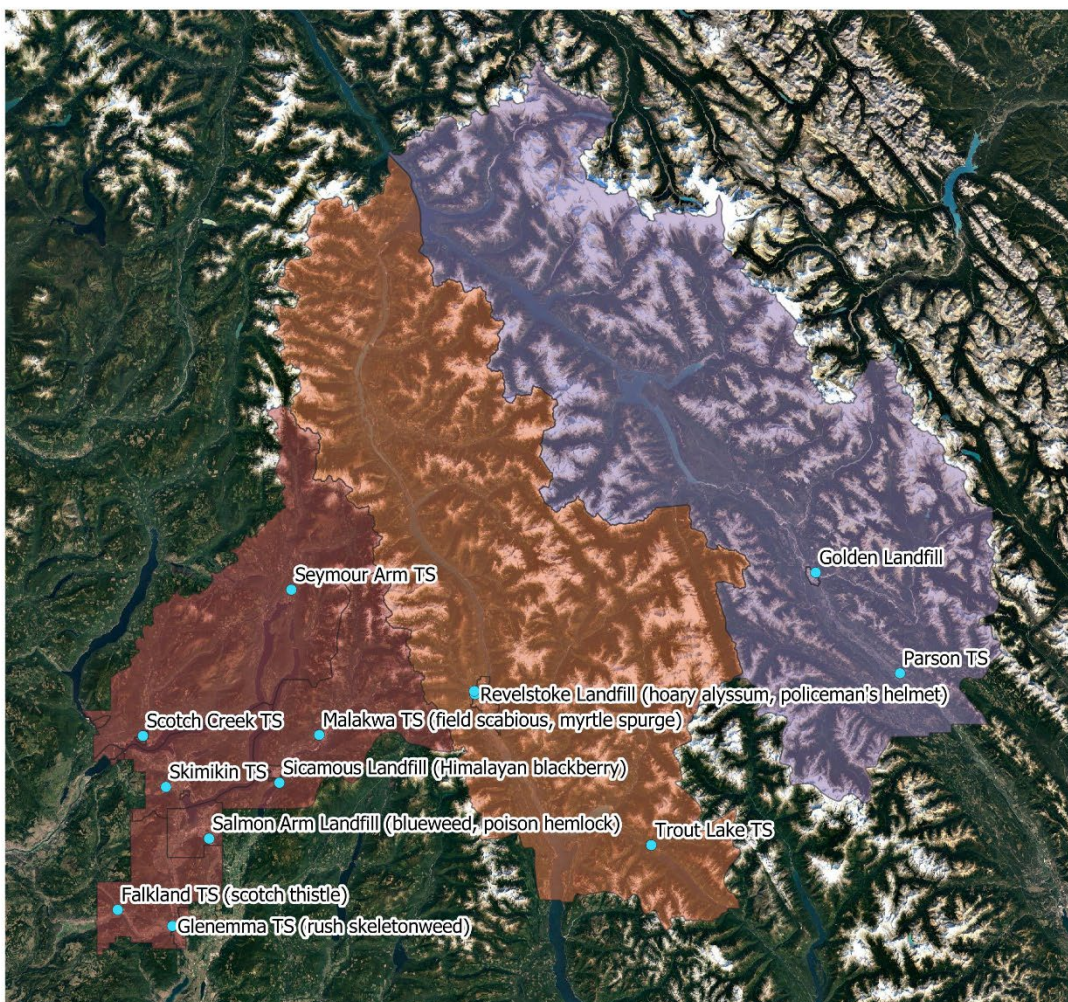
*continue to monitor

Recommendations:

- Continue surveying and monitoring invasive plants within regional district landfills and transfer stations;
- Continue chemical and/or mechanical treatments of high priority species on regional district landfills and transfer stations (most invasive plant treatments require a multi-year approach to fully eradicate a site);
- Continue to provide support and information to regional district staff, contractors and members of the public about invasive plants and best management practices for disposal at landfills and transfer stations;
- Continue to ensure Do Not Compost signage is visible and adequately placed at each landfill and transfer station;
- Continue to provide regional district staff training/ tailgate sessions focusing on identification, reporting and best management practices;
- Continue to provide free disposal of invasive plants at all CSRD landfills and transfer stations.



Figure 1. Poison hemlock (left) and blueweed (right) at Salmon Arm Landfill.



CSRD Landfills and Transfer Stations- Priority Invasive Plants 2023

- Landfill or Transfer Station
- Golden IPMA
- Revelstoke IPMA
- Salmon Arm IPMA

0 25 50 75 km



Map 2. Invasive Alien Plant Inventory and Treatments at CSRD Landfills and Transfer Stations 2023

5.0 CSRD Parks, Fire Halls and Land Parcels

In 2023, CSISS staff inventoried 28 CSRD properties: 23 parks, 4 fire halls and 1 parcels (Figure 2, Map 3). CSRD properties with priority invasive species are surveyed every year and treated mechanically by CSISS staff or a recommendation is made for herbicide treatment (Table 3). CSRD properties without priority species are surveyed every 3 years. *We now recommended to survey CSRD properties without priority species every 5 years* (Appendix D). Since 2015, invasive plant inventory has been occurring on a rotating three-year schedule, due to the small size, light use and forested nature of many of the CSRD water access properties. As well, the past data from 2015 shows similar low priority invasive plants found,

therefore it is recommended to complete a full inventory every 5 years. The CSISS will continue to investigate any invasive plant reports on CSRD properties when they arise.

In total, CSISS staff mechanically treated 3 sites and 0.0004 hectares. CSISS found a reduction of infestation size at some sites treated and 8 locations had 'No Weed Found' for priority species in 2023 (Table 4). For complete CSRD parks, fire halls and parcels inventory data see Appendix C.



Figure 2. Windsor Road lake access (left) and Rocky Point community park (right).

Table 3. Treatment data for CSRD Parks, Fire Halls and Land Parcels 2023

Site ID	Site Name	Priority Species	Treatment Method	Area treated (ha)
306500	St. Ives Community Park	English Ivy	Mechanical	.0002
304196	Canterbury Community Park	Blueweed	Mechanical	.0001
322626	Swansea Point Fire Department	Blueweed	Mechanical	.0001

Table 4. 'No weed found' on CSRD Parks, Fire Halls or Land Parcels 2023, successful treatments previous years

Site ID	Site Name	Priority Species	Area (ha)
304196	Canterbury Community Park	Knotweed*	0
301523	Harbour Road Boat Launch	Blueweed*	0
322669	Gail Road Community Park	Poison hemlock*	0
401459	Sicamous Creek Trailhead	Blueweed*	0
317956	Bolean Creek Community Park	Blueweed* poison hemlock*	0 0
317730	Gannor Road land parcel	Greater Celandine*	0

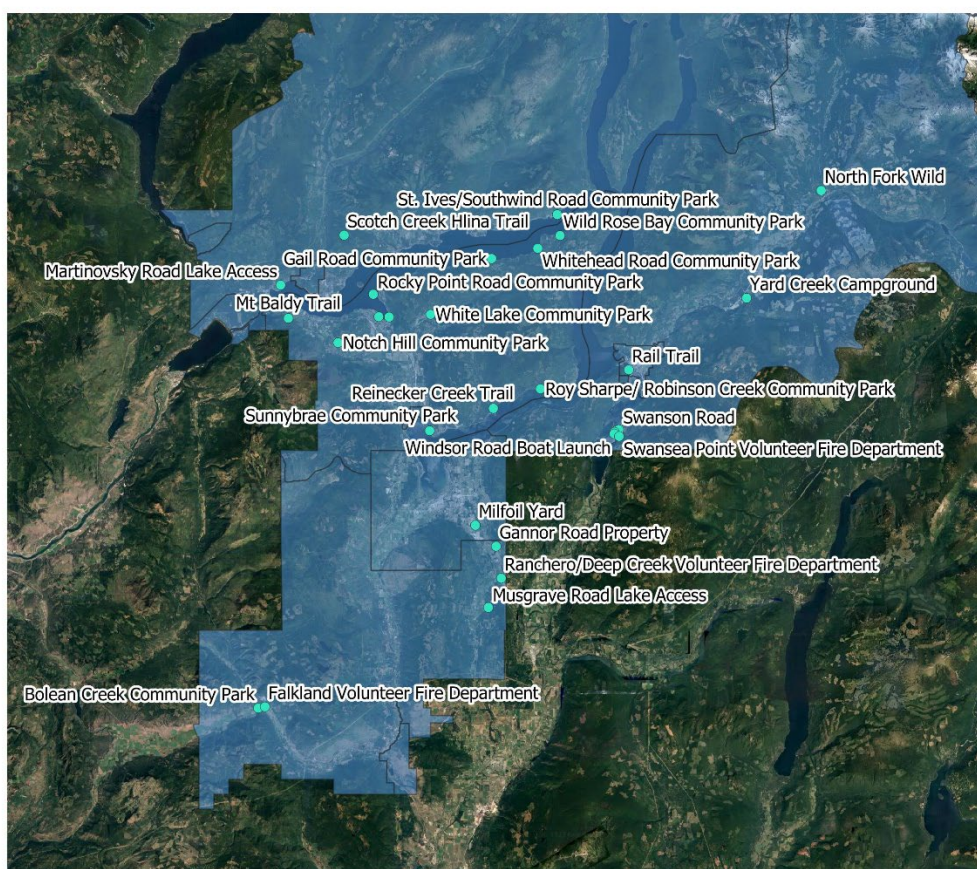
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322623	Roy Sharp Community Park	Himalayan blackberry*	0
301521	Milfoil yard	Knotweed*	0

*continue to monitor

Recommendations:

- Continue surveying and monitoring invasive plants within regional district parks, fire halls and parcels;
- Continue chemical and/or mechanical treatments of high priority species on regional district parks, fire halls and parcels (most invasive plant treatments require a multi-year approach to fully eradicate a site);
- Continue to provide support and information to regional district staff about invasive plants and best management practices for disposal and reporting at parks, fire halls and parcels;
- Continue to provide regional district staff training/ tailgate sessions focusing on identification, reporting and best management practices.



CSRD Parks, Fire Halls and Parcels, Invasive Plant Inventory 2023
Salmon Arm IPMA

● CSRD Parks, Fire Hall or Parcel
■ Salmon Arm IPMA

0 10 20 30 km



Map 3. Invasive Alien Plant Inventory and Treatments at CSRD Parks, Fire Halls and Land Parcels 2023

6.0 Rail Trail

This report will highlight only the CSRD portion of the rail trail. For the full management plan, please see *Shuswap North Okanagan Rail Trail Invasive Plant Management Plan*. Future CSRD reports will not include a rail trail component, as all information will be included within the Shuswap North Okanagan Rail Trail Invasive Plant Management Plan.

The Columbia Shuswap Invasive Species Society (CSISS), acting as a qualified contractor on behalf of Splat sin te Secwépemc (Splat sin), Columbia Shuswap Regional District (CSRD) and Regional District of North Okanagan (RDNO) will deliver an invasive plant management plan for the Shuswap North Okanagan Rail Trail Corridor between Sicamous and Armstrong. The management plan will establish a schedule of recommended activities to prevent, manage and monitor priority invasive plants which impact the site both ecologically and economically. The management plan will acknowledge agricultural values and the role of the Agricultural Land Commission (ALC) and the protection of sensitive environmental and cultural sites along the corridor with respect to the Splat sin.

In 2018, CSISS staff inventoried the Columbia Shuswap Regional District (CSRD) portion of the recently acquired rail trail, approximately 11 km in length. The trail is a mosaic of native, agronomic, and invasive plant species. In total, 23 invasive plant species were documented along the length of the rail trail, only one priority invasive plant species, leafy spurge (*Euphorbia esula*), was found in the initial inventory (Table 5). A total of 300 m² was found along the northern most section of the rail trail. Due to the priority of leafy spurge, annual inventory, treatment and monitoring was recommended. Bohemian knotweed (*Fallopia bohemica*), a priority invasive plant species, was found in 2021 during a follow up inventory of the leafy spurge site. A total of 4 m² was documented, due to the priority of the species, annual inventory, treatment and monitoring was recommended for the Bohemian knotweed (Table 5).

Table 5: Priority Invasive Plant Inventory and Treatment for the CSRD

Priority Invasive Plant Inventory CSRD				
Species	Date	Area (m2)	Treatment	Notes
Leafy spurge (<i>Euphorbia esula</i>)	2018	300	None	Initial Inventory
	2019	300	None	
	2020	300	None	
	2021	300	Spot application of herbicide, mechanical treatment within Pesticide Free Zone (PFZ)	All plants treated
	2022	250	Spot application of herbicide, mechanical treatment within Pesticide Free Zone (PFZ)	All plants treated
	2023	124	Spot application of herbicide, mechanical treatment within Pesticide Free Zone (PFZ)	All plants treated

Bohemian Knotweed (<i>Fallopia bohemica</i>)	2021	4	Spot application of herbicide	Initial inventory, All plants treated
	2022	3	Spot application of herbicide	All plants treated
	2023	0	No weed found	No treatment. Continue monitoring.

7.0 CSRD Public Reports

CSISS categorizes reports from the public in four ways: 1) requests for information, 2) invasive plant reports, 3) noxious weed complaints, and 4) landowner EDRR visits. Depending on the nature and priority of the report, CSISS confirms by a site visit and/or responded with landowner extension, an outreach letter, or by enacting the provincial or regional Early Detection Rapid Response (EDRR) protocol.

In total, CSISS had 73 requests for information, 46 invasive plant reports, 3 noxious weed complaints and 11 landowner visits for EDRR species.

8.0 CSRD Prevention and Outreach

In 2023, CSISS education and outreach activities continued to focus on target audiences and pathways of spread. The CSISS was represented at a total of 142 events interacting with 1,112 people: including 43 community events, attended 70 partner and stakeholder meetings, hosted 21 workshops/presentations, attended 12 farmer's markets, supported 7 community weed pulls, and hosted 14 youth/school events (Table 6). To encourage proper disposal of knotweed at landfills and transfer stations, the CSISS ensured each refuse station has a 'Do Not Compost Knotweed' sign visible to members of the public and other resources.

Table 6. Community events and activities attended by the CSISS between January and November 2023. *Note: Generally, all campaigns (PlantWise, Play Clean Go, Clean Drain Dry and Don't Let It Loose) are delivered at Youth Events, Farmer's Markets/Festivals and Forums/Radio Interviews.*

Type of Event Hosted/Campaign Delivered	# Events	Direct Interactions
Youth Events	14	597
Weed Pulls and Restoration Events	8	42
Farmer's Markets and Community Events	43	2 262
Forums and Radio Interviews	4	300
PlantWise Outreach Events (23 Garden Centers received outreach)	23	23
Clean Drain Dry and Don't Let It Loose 38 Marina, Campground and Park visits 9 Boater outreach events 3 Pet stores visits	50	150
Online Outreach 6 Media Releases		

4 Newsletters 50 Media Articles/ Features Social Media Reach Instagram – 1,179 followers / 8,890 impressions Facebook- 834 followers / 15,109 impressions		
Events total for CSISS 2023	142	1,112

For a complete and detailed look the CSISS Education and Outreach program, please see the CSISS 2023 Annual Report (to be released January 2024).



Figure 3. Outreach Coordinator Jess Booth presenting on invasive species in the Columbia Shuswap.
Photo: Katee Pederson, Revelstoke Wildflower Festival 2023 at Revelstoke Mountain Resort.

9.0 References

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Voller, J. and McNay, R. S.. 2007. Problem Analysis: Effects of Invasive Species on Species at Risk in British Columbia. FORREX Series 20. Available at: [http://wildlifeinfometrics.com/wp-content/uploads/2018/02/Voller and McNay 2007 Effects of invasive species on species at risk.pdf](http://wildlifeinfometrics.com/wp-content/uploads/2018/02/Voller_and_McNay_2007_Effects_of_invasive_species_on_species_at_risk.pdf)

Appendix A: Priority Plant Lists

Salmon Arm IPMA Priority Plant List

PREVENT – High priority species not currently known in the IPMA and/ or within the region. Management objective is to prevent the introduction and establishment.		
<ul style="list-style-type: none"> - Bighead knapweed - Buffalobur - Bur chervil - Colt's foot - Common bugloss - Garlic mustard - Giant knotweed 	<ul style="list-style-type: none"> - Gorse - Greater knapweed - Himalayan knotweed - Hoary cress - Japanese butterbur - Longspine sandbur - Nodding thistle 	<ul style="list-style-type: none"> - North Africa grass - Plumeless thistle - Puncturevine - Spurge laurel - Tansy ragwort - Tree of heaven - Wood sage
REGIONAL EDRR – High priority species extremely limited in extent (less than 10 very small sites) within the Columbia Shuswap Regional District boundary. Management objective is eradication.		
<ul style="list-style-type: none"> - Cypress spurge - Field scabious - Giant hogweed 	<ul style="list-style-type: none"> - Russian knapweed - Short-fringed knapweed 	<ul style="list-style-type: none"> - Wild chervil - Wild parsnip
ANNUAL CONTROL – Species with limited extent and/ or significant potential to spread. Management objective is to prevent further expansion into new areas with the ultimate goal of reducing the overall extent.		
<ul style="list-style-type: none"> - Baby's breath - Black knapweed (BC) - Blueweed - Bohemian knotweed - Brown knapweed - Himalayan blackberry 	<ul style="list-style-type: none"> - Japanese knotweed - Leafy spurge (BC) - Poison hemlock - Policeman's helmet - Rush skeletonweed (BC) 	<ul style="list-style-type: none"> - Scotch broom - Scotch thistle - Teasel - Yellow archangel - Yellow flag iris
CONTAINMENT – Species is established or with high potential for spread. Management objective is to prevent further expansion into new areas within the region through establishment of containment lines and identification of occurrences outside the line to control.		
Contain to gardens: <ul style="list-style-type: none"> - Butterfly bush - Common periwinkle - English holly - English ivy - Garden yellow loosestrife - Goutweed - Mountain bluet - Myrtle spurge 	Contain to gardens Cont'd: <ul style="list-style-type: none"> - Russian olive - Salt cedar/ Tamarisk - Siberian elm Contain to White Lake: <ul style="list-style-type: none"> - Fragrant water lily Contain to Crazy Creek RR: <ul style="list-style-type: none"> - Marsh plum thistle 	Contain to west portion of IPMA (treat Seymour Arm and east portion of IPMA): <ul style="list-style-type: none"> - Common tansy Contain to Shuswap/ Mara/White Lake: <ul style="list-style-type: none"> - Eurasian water milfoil
MANAGEMENT – Species is more widespread but may be of concern in specific situations with certain high values - e.g., conservation lands, specific agriculture crops. Management objective is to reduce the invasive species impacts locally or regionally, where resources are available.		
<ul style="list-style-type: none"> - Bull thistle (BC) - Burdock - Canada thistle (BC) - Caraway - Chicory - Common comfrey - Dalmatian toadflax (BC) - Diffuse knapweed (BC) - Hoary alyssum 	<ul style="list-style-type: none"> - Hound's tongue (BC) - Knapweed spp. (BC) - Meadow buttercup - Meadow goat's beard - Meadow knapweed (BC) - Nightshade - Orange hawkweed - Oxeye daisy - Purple loosestrife (BC) 	<ul style="list-style-type: none"> - Queen Anne's Lace - Spotted knapweed (BC) - St. John's Wort (BC) - Sulphur cinquefoil - Western goat's beard - Wormwood - Yellow hawkweed spp. - Yellow toadflax (BC)

INSUFFICIENT INFORMATION – Species have insufficient information on their distribution, impacts, potential for spread and/or feasibility of control. Further information is required.		
<ul style="list-style-type: none"> - Bachelor's button - Black locust - Carpet burweed - Creeping buttercup - Curly leaf pondweed - Dame's rocket 	<ul style="list-style-type: none"> - Eyebright - Field bindweed - Flat peavine - Greater celandine - Green foxtail - Kochia 	<ul style="list-style-type: none"> - Lady's thumb - Russian thistle - Scentless chamomile (BC) - Sweet fennel - Wild four o'clock - Woolly vetch

BC – biocontrol

Revelstoke IPMA Priority Plant List

PREVENT – High priority species not currently known in the IPMA and/ or within the region. Management objective is to prevent the introduction and establishment.		
<ul style="list-style-type: none"> - Bighead knapweed - Buffalobur - Bur chervil - Colt's foot - Common bugloss - Field scabious - Giant hogweed - Gorse - Greater knapweed 	<ul style="list-style-type: none"> - Himalayan knotweed - Hoary cress - Japanese butterbur - Longspine sandbur - Nodding thistle - North Africa grass - Plumeless thistle - Poison hemlock - Puncturevine 	<ul style="list-style-type: none"> - Rush skeletonweed (BC) - Russian knapweed - Scotch thistle - Short-fringed knapweed - Spurge laurel - Tansy ragwort - Tree of heaven - Wood sage - Yellow flag iris
REGIONAL EDRR – High priority species extremely limited in extent (less than 10 very small sites) within the Columbia Shuswap Regional District boundary. Management objective is eradication.		
<ul style="list-style-type: none"> - Cypress spurge - Garlic mustard 	<ul style="list-style-type: none"> - Giant knotweed - Wild chervil 	<ul style="list-style-type: none"> - Wild parsnip
ANNUAL CONTROL – Species with limited extent and/ or significant potential to spread. Management objective is to prevent further expansion into new areas with the ultimate goal of reducing the overall extent.		
<ul style="list-style-type: none"> - Baby's breath - Black knapweed (BC) - Blueweed - Bohemian knotweed - Brown knapweed 	<ul style="list-style-type: none"> - Himalayan blackberry - Hoary alyssum - Japanese knotweed - Leafy spurge (BC) - Marsh plume thistle 	<ul style="list-style-type: none"> - Policeman's helmet - Scotch broom - Teasel - Yellow archangel
CONTAINMENT – Species is established or with high potential for spread. Management objective is to prevent further expansion into new areas within the region through establishment of containment lines and identification of occurrences outside the line to control.		
Contain to gardens: <ul style="list-style-type: none"> - Butterfly bush - Common periwinkle - English holly - English ivy - Garden yellow loosestrife - Goutweed 	<ul style="list-style-type: none"> - Mountain bluet - Myrtle spurge - Russian olive - Salt cedar/ Tamarisk - Siberian elm 	Contain to southern portion of IPMA: <ul style="list-style-type: none"> - Common tansy Contain to Revelstoke and Arrow Reservoirs: <ul style="list-style-type: none"> - Eurasian water milfoil
MANAGEMENT – Species is more widespread but may be of concern in specific situations with certain high values - e.g., conservation lands, specific agriculture crops. Management objective is to reduce the invasive species impacts locally or regionally, where resources are available.		
<ul style="list-style-type: none"> - Bull thistle (BC) - Burdock - Canada thistle (BC) - Caraway - Chicory - Common comfrey - Dalmatian toadflax (BC) - Diffuse knapweed (BC) 	<ul style="list-style-type: none"> - Hound's tongue (BC) - Knapweed spp. (BC) - Meadow buttercup - Meadow goat's beard - Meadow knapweed (BC) - Orange hawkweed - Oxeye daisy - Purple loosestrife (BC) 	<ul style="list-style-type: none"> - Spotted knapweed (BC) - St. John's Wort (BC) - Sulphur cinquefoil - Western goat's beard - Wormwood - Yellow hawkweed spp. - Yellow toadflax (BC)

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INSUFFICIENT INFORMATION – Species have insufficient information on their distribution, impacts, potential for spread and/or feasibility of control. Further information is required.		
<ul style="list-style-type: none"> - Bachelor's button - Black locust - Carpet burweed - Creeping buttercup - Curly leaf pondweed - Dame's rocket - Eyebright 	<ul style="list-style-type: none"> - Field bindweed - Flat peavine - Fragrant water lily - Greater celandine - Green foxtail - Kochia - Lady's thumb 	<ul style="list-style-type: none"> - Nightshade - Queen Anne's Lace - Russian thistle - Scentless chamomile (BC) - Sweet fennel - Wild four o'clock - Woolly vetch

BC – biocontrol

Golden IPMA Priority Plant List

PREVENT – High priority species not currently known in the IPMA and/ or within the region. Management objective is to prevent the introduction and establishment.		
<ul style="list-style-type: none"> - Bighead knapweed - Black knapweed (BC) - Brown knapweed - Buffalobur - Bur chervil - Colt's foot - Field scabious - Garlic mustard - Giant hogweed - Giant knotweed - Gorse 	<ul style="list-style-type: none"> - Greater knapweed - Himalayan blackberry - Himalayan knotweed - Japanese butterbur - Longspine sandbur - Marsh plume thistle - Nodding thistle - North Africa grass - Plumeless thistle - Puncturevine - Rush skeletonweed (BC) 	<ul style="list-style-type: none"> - Russian knapweed - Scotch broom - Scotch thistle - Spurge laurel - Tansy ragwort - Teasel - Tree of heaven - Wild chervil - Wood sage - Yellow archangel - Yellow flag iris
REGIONAL EDRR – High priority species extremely limited in extent (less than 10 very small sites) within the Columbia Shuswap Regional District boundary. Management objective is eradication.		
<ul style="list-style-type: none"> - Common bugloss - Cypress spurge 	<ul style="list-style-type: none"> - Hoary cress - Short-fringed knapweed 	<ul style="list-style-type: none"> - Wild parsnip
ANNUAL CONTROL – Species with limited extent and/ or significant potential to spread. Management objective is to prevent further expansion into new areas with the ultimate goal of reducing the overall extent.		
<ul style="list-style-type: none"> - Baby's breath - Blueweed - Bohemian knotweed - Common Tansy - Diffuse knapweed (BC) 	<ul style="list-style-type: none"> - Hoary alyssum - Japanese knotweed - Knapweed spp. (BC) - Leafy spurge (BC) - Meadow knapweed (BC) 	<ul style="list-style-type: none"> - Poison hemlock - Policeman's helmet - Scentless chamomile (BC) - Spotted knapweed (BC)
CONTAINMENT – Species is established or with high potential for spread. Management objective is to prevent further expansion into new areas within the region through establishment of containment lines and identification of occurrences outside the line to control.		
Contain to gardens: <ul style="list-style-type: none"> - Butterfly bush - Common periwinkle - English holly - English ivy - Garden yellow loosestrife 	<ul style="list-style-type: none"> - Goutweed - Mountain bluet - Myrtle spurge - Russian olive - Salt cedar/ Tamarisk - Siberian elm 	Contain to northern portion of IPMA: <ul style="list-style-type: none"> - St. John's Wort (BC) Contain to Town of Golden <ul style="list-style-type: none"> - Orange hawkweed
MANAGEMENT – Species is more widespread but may be of concern in specific situations with certain high values - e.g., conservation lands, specific agriculture crops. Management objective is to reduce the invasive species impacts locally or regionally, where resources are available.		
<ul style="list-style-type: none"> - Bull thistle (BC) - Burdock - Canada thistle (BC) - Caraway - Chicory 	<ul style="list-style-type: none"> - Common comfrey - Dalmatian toadflax (BC) - Hound's tongue (BC) - Meadow buttercup - Oxeye daisy 	<ul style="list-style-type: none"> - Purple loosestrife (BC) - Western goat's beard - Wormwood - Yellow hawkweed spp. - Yellow toadflax (BC)
INSUFFICIENT INFORMATION – Species have insufficient information on their distribution, impacts, potential for spread and/or feasibility of control. Further information is required.		
<ul style="list-style-type: none"> - Bachelor's button 	<ul style="list-style-type: none"> - Field bindweed 	<ul style="list-style-type: none"> - Nightshade

<ul style="list-style-type: none"> - Black locust - Carpet burweed - Creeping buttercup - Curly leaf pondweed - Dame's rocket - Eurasian water milfoil - Eyebright 	<ul style="list-style-type: none"> - Flat peavine - Fragrant water lily - Greater celandine - Green foxtail - Kochia - Lady's thumb - Meadow goat's beard 	<ul style="list-style-type: none"> - Queen Anne's Lace Russian thistle - Sulphur cinquefoil - Sweet fennel - Wild four o'clock - Woolly vetch
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BC – biocontrol

Appendix B: CSRD Landfills and Transfer Stations Inventory Data

The CSISS recommends surveying all landfills and transfer stations annually. All high priority plants highlighted in red.

Landfill and Transfer Station (Site ID)	Site ID	Survey Date	Invasive Plants Present 2023
Salmon Arm landfill	250657	June 13, 2023	Blueweed , bittersweet nightshade, bull thistle, burdock, Canada thistle, chicory, common tansy, field bindweed, hoary alyssum, mullein, oxeye daisy, poison hemlock , perennial sow thistle, spotted knapweed, St. John's wort, sulphur cinquefoil, western goat's beard, yellow hawkweed spp.
Sicamous landfill	301457	July 13, 2023	Bladder campion, cheatgrass, chicory, common tansy, field bindweed, Himalayan blackberry , hoary alyssum, mullein, oxeye daisy, spotted knapweed, St. John's wort, sulphur cinquefoil, western goat's beard, yellow hawkweed spp
Revelstoke landfill – scale	301522	July 11, 2023	Bittersweet nightshade, bull thistle, burdock, Canada thistle, chicory, common comfrey, common tansy, field bindweed, hoary alyssum , mullein, oxeye daisy, policeman's helmet , spotted knapweed, St. John's wort, yellow hawkweed spp
Golden landfill	250602	July 26, 2023	Bull thistle, burdock, Canada thistle, chicory, hound's tongue, mullein, oxeye daisy, spotted knapweed, western goat's beard, wormwood, yellow hawkweed spp
Falkland transfer station	301449	July 13, 2023	Bittersweet nightshade, bull thistle, Canada thistle, burdock, common tansy, field bindweed, hoary alyssum, hound's tongue, mullein, oxeye daisy, scotch thistle , spotted knapweed, sulphur cinquefoil, yellow toadflax
Malakwa transfer station	301462	July 13, 2023	Annual sow thistle, chicory, common comfrey, common tansy, field scabious , hoary alyssum, field bindweed, mullein, myrtle spurge , oxeye daisy, spotted knapweed, St. John's wort, sulphur cinquefoil, yellow hawkweed spp
Parsons transfer station	301467	July 25, 2023	Burdock, Canada thistle, mullein, oxeye daisy, western goat's beard, spotted knapweed, sulphur cinquefoil, wormwood, yellow hawkweed spp.

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Trout Lake transfer station	301530	July 12, 2023	Common tansy, orange hawkweed, oxeye daisy, spotted knapweed, St. John's wort, yellow hawkweed spp.
Glenemma transfer station	301448	July 13, 2023	Cheatgrass, chicory, dalmatian toadflax, hoary alyssum, mullein, sulphur cinquefoil, rush skeletonweed , western goat's beard
Skimikin transfer station	301453	July 17, 2023	Canada thistle, chicory, common tansy, hoary alyssum, mullein, spotted knapweed, oxeye daisy, perennial sow thistle, St. John's wort, sulphur cinquefoil, Queen Anne's lace, western goat's beard
Scotch Creek transfer station	301452	Sept 20, 2023	Bull thistle, burdock, chicory, common tansy, hoary alyssum, mullein, oxeye daisy, spotted knapweed, St. John's wort, sulphur cinquefoil,
Seymour Arm transfer station	304207	Sept 20, 2023	Chicory, eyebright, meadow buttercup, meadow knapweed, mullein, orange hawkweed, oxeye daisy, St. John's wort, yellow hawkweed spp

Appendix C: CSRD Parks, Fire Halls and Land Parcels Inventory Data

All high priority plants are highlighted in red.

Parks, Fire Halls and Parcels	Site ID	Survey Date	Invasive Plants Present 2023
Rocky Point Road Community Park	317983	July 27, 2023	Chicory, yellow archangel, yellow hawkweed spp.
Canterbury Road Lake Access	304196	July 13, 2023	Blueweed , chicory, common periwinkle, common tansy, creeping buttercup, hoary alyssum, oxeye daisy, yellow hawkweed spp.
Harbour Road Boat Launch	301523	July 27, 2023	Bittersweet nightshade, burdock, Canada thistle, chicory, common tansy, creeping buttercup, field bindweed, hoary alyssum, oxeye daisy, sulphur cinquefoil, yellow hawkweed spp, western goat's beard
Roy Sharpe/ Robinson Creek Community Park	322623	July 17, 2023	Bull thistle, chicory, oxeye daisy, queen anne's lace
St. Ives/Southwind Road Community Park	306500	Sept 20, 2023	Chicory, English ivy , oxeye daisy, spotted knapweed, sulphur cinquefoil, yellow hawkweed spp
Bolean Creek Community Park	317956	July 13, 2023	Burdock species, chicory, common tansy, hoary alyssum, oxeye daisy, spotted knapweed, yellow hawkweed spp.
Gannor Road Property	317730	June 8, 2023	Chicory, common tansy, mullein, orange hawkweed, oxeye daisy, spotted knapweed, St. John's wort, sulphur cinquefoil, western goat's beard
Gail Road Community Park	322669	July 27, 2023	Bittersweet nightshade, burdock, Canada thistle, chicory, common tansy, creeping buttercup, oxeye daisy, perennial sow thistle, St. John's wort, yellow hawkweed spp.
Sunnybrae Community Park	317955	July 17, 2023	Annual sow thistle, chicory, mullein, oxeye daisy, spotted knapweed, sulphur cinquefoil, western goat's beard

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Swanson Road	317934	July 13, 2023	Burdock species, chicory, common tansy, hoary alyssum, mullein, oxeye daisy, sulphur cinquefoil, yellow hawkweed spp.
Westminster Road Lake Access	317932	July 13, 2023	Burdock species, common periwinkle, hoary alyssum
White Lake Community Park	316825	July 28, 2023	Bittersweet nightshade, burdock species, Canada thistle, chicory, common tansy, hoary alyssum, mullein, oxeye daisy, Queen Anne's lace, spotted knapweed, sulphur cinquefoil
Whitehead Road Community Park	317970	July 27, 2023	Burdock species, chicory, common tansy, creeping buttercup, meadow buttercup, mullein, oxeye daisy, yellow hawkweed spp.
Wild Rose Bay Community Park	317964	July 27, 2023	Chicory, meadow buttercup, oxeye daisy, yellow hawkweed spp.
Windsor Road Boat Launch	317931	July 13, 2023	Annual sow thistle, burdock spp, chicory, creeping buttercup, hoary alyssum, mullein, oxeye daisy
Yard Creek Campground	317936	July 13, 2023	Oxeye daisy, spotted knapweed, St. John's wort, yellow hawkweed spp.
Blind Bay Beach Sandy	301525	July 27, 2023	Bittersweet nightshade, burdock spp, bull thistle, Canada thistle, chicory, creeping buttercup, hoary alyssum, orange hawkweed, oxeye daisy, sulphur cinquefoil, yellow hawkweed spp.
Martinovsky Road Lake Access	306531	Sept 20, 2023	Burdock spp, chicory, mullein
Mt Baldy Trail	322661	July 28, 2023	Burdock spp, Canada thistle, chicory, common tansy, hoary alyssum, oxeye daisy, spotted knapweed, sulphur cinquefoil, western goat's beard, yellow hawkweed spp.
Musgrave Road Lake Access	322635	June 8, 2023	Bittersweet nightshade, bull thistle, Canada thistle, chicory, common tansy, hoary alyssum, mullein, orange hawkweed, oxeye daisy, spotted knapweed, western goat's beard
North Fork Wild	322630	July 13, 2023	Chicory, mullein, oxeye daisy, St. John's wort, sulphur cinquefoil, yellow hawkweed spp.
Notch Hill Community Park	322705	July 28, 2023	Chicory, common tansy, hoary alyssum, mullein, spotted knapweed, sulphur cinquefoil, western goat's beard
Reinecker Creek Trail	322622	July 17, 2023	Chicory, oxeye daisy, yellow hawkweed spp.
Scotch Creek Hlina Trail	322655	n/a	Wildfires- did not survey
Tom Kelley Memorial Park	301446	July 26, 2023	Canada thistle, meadow buttercup, oxeye daisy, yellow hawkweed spp.
Nicholson Volunteer Fire Department	317760	July 26, 2023	Burdock spp, bull thistle, mullein, oxeye daisy, spotted knapweed, western goat's beard
Falkland Volunteer Fire Department	301451	July 13, 2023	Bull thistle, Canada thistle, chicory, hoary alyssum, mullein, scentless chamomile, spotted knapweed, sulphur cinquefoil, western goat's beard, yellow toadflax
Ranchero Volunteer Fire Department	322634	June 8, 2023	Chicory, common tansy, mullein, spotted knapweed, western goat's beard
Swansea Point Volunteer Fire Department/ Community Hall	322626	July 13, 2023	Blueweed , Canada thistle, chicory, common tansy, eyebright, mullein, oxeye daisy, spotted knapweed, sulphur cinquefoil

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Milfoil yard	301521	June 8, 2023	Bull thistle, Canada thistle, common tansy, Dalmatian toadflax, hoary alyssum, mullein, orange hawkweed, oxeye daisy, spotted knapweed, St. John's wort, sulphur cinquefoil, western goat's beard, yellow hawkweed spp.
CSRD Rail Trail (priority spp only)	338394	June 14, 2023	Leafy spurge

Appendix D: CSRD Parks, Fire Halls and Land Parcels Inventory Schedule

The CSISS recommends surveying sites with priority invasive plants annually and all other sites every five years.

Parks, Fire Halls and Parcels	Site ID	Survey Schedule					
Rocky Point Road Community Park	317983	2023	2024	2025	2026	2027	2028
Canterbury Road Lake Access	304196	2023	2024	2025	2026	2027	2028
Harbour Road Boat Launch	301523	2023	2024	2025	2026	2027	2028
Roy Sharpe/ Robinson Creek Community Park	322623	2023	2024	2025	2026	2027	2028
St. Ives/Southwind Road Community Park	306500	2023	2024	2025	2026	2027	2028
Bolean Creek Community Park	317956	2023	2024	2025	2026	2027	2028
Gail Road Community Park	322669	2023	2024	2025	2026	2027	2028
Gannor Road Property	317730	2023	2024	2025	2026	2027	2028
Sicamous Creek Trails	301459	2023	2024	2025	2026	2027	2028
MacArthur Heights Trailhead	317984	2023	2024	2025	2026	2027	2028
Evelyn Falls (Airstrip Park)	306503		2024				
Beswick Road Community Park	304209		2024				
Bristow Road Lake Access	306498		2024				
Don Fink Community Park	304208		2024				
Farrell's Field Community Park / Ice Rink	306513		2024				
Lakeview Park	306505		2024				
Magna Bay Wharf Road Boat Launch	306512		2024				
Ross Creek Park	306507		2024				
Scotch Creek Wharf Road Park	306525		2024				
Welch Road Lake Access	306506		2024				
Balmoral Trailhead	301527			2025			
Blind Bay Beach Pebble	301526			2025			
Caen Road Community Park	316823			2025			
Cambridge Road Lake Access	317933			2025			
Malakwa Community Park	338387			2025			
Cedar Heights Community Park	317987			2025			
Cedar Lake Recreation Site	338362			2025			
Cornwall Road Lake Access	306529			2025			
Eaton Road Lake Access	317929			2025			
Gillespie Road Community Park	316820			2025			
Hugh Road Community Park	316826				2026		

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John Evdokimoff Community Bike Park	301532				2026		
Joyce Lake Campground	312505				2026		
Kicking Horse Mountain Resort Park	317756				2026		
Markwart Road Boat Launch	301531				2026		
Moonraker Trails	301447				2026		
Mt Tuam Community Bike Park	317986				2026		
Oxford Road Lake Access	317930				2026		
Parson Recreation Park	301469				2026		
Reedman Road Community Park	317988				2026		
Rocky Martinson Community Park	317972					2027	
Rose Clifford Park	306524					2027	
Shannon Beach Community Park	317971					2027	
Silver Creek Community Park	301455					2027	
Sorrento Blind Bay Park	317991					2027	
Sunnybrae Community Park	317955	2023				2027	
Swanson Road	317934	2023				2027	
Westminster Road Lake Access	317932	2023				2027	
White Lake Community Park	316825	2023				2027	
Whitehead Road Community Park	317970	2023				2027	
Wild Rose Bay Community Park	317964	2023				2027	
Windsor Road Boat Launch	317931	2023					2028
Yard Creek Campground	317936	2023					2028
Blind Bay Beach Sandy	301525	2023					2028
Martinovsky Road Lake Access	306531	2023					2028
Mt Baldy Trail	322661	2023					2028
Musgrave Road Lake Access	322635	2023					2028
North Fork Wild	322630	2023					2028
Notch Hill Community Park	322705	2023					2028
Reinecker Creek Trail	322622	2023					2028
Scotch Creek Hlina Trail	322655	2023					2028
Tom Kelley Memorial Park	301446	2023					2028
Lady Slipper Park	-	-	-	-	-	-	-
Birchcliffe Park	-	-	-	-	-	-	-
Mara Heights Park	-	-	-	-	-	-	-
Eagle Bay Volunteer Fire Department	301524		2024				
Malakwa Volunteer Fire Department	301464		2024				
Anglemont Volunteer Fire Department	306504			2025			
Scotch Creek Volunteer Fire Department	306528			2025			
Silver Creek Volunteer Fire Department	301454				2026		
Sorrento Volunteer Fire Department	301529				2026		
White Lake Volunteer Fire Department	301478				2026		
Tappen Volunteer Fire Department	317954					2027	
Celista Volunteer Fire Department	306497					2027	
Nicholson Volunteer Fire Department	317760	2023				2027	

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Falkland Volunteer Fire Department	301451	2023					2028
Ranchero Volunteer Fire Department	322634	2023					2028
Swansea Point Volunteer Fire Department	322626	2023	2024	2025	2026	2027	2028
Swansea Point Community Hall	322626	2023	2024	2025	2026	2027	2028
Scotch Creek Community Hall	306528			2025			
Revelstoke Airport	317741		2024				
Milfoil Yard	301521	2023	2024	2025	2026	2027	2028
CSRD Rail Trail Leafy Spurge site – annually until treatment and monitoring complete	338394	2023	2024	2025	2026	2027	2028

*Note: In 2024, CSISS will move to a 5-year inventory rotation schedule for sites with low/no priority invasive species, but for spreading out number of sites some locations may be monitoring more frequently until we get on the new schedule.