

## Columbia Shuswap Regional Invasive Species Watch-list 2021

PROVINCIAL PRIORITY DEFINITIONS (as per February 2020 list: <a href="https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/invasive-species/guidance-resources/provincial_priority_is_list_final2019_march2_2020_posted_online.pdf">https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/invasive-species/guidance-resources/provincial_priority_is_list_final2019_march2_2020_posted_online.pdf</a> )		
Prevent	1	Species determined to be high risk to BC and not yet established. <b>Management objective</b> is to prevent the introduction and establishment.
Provincial EDRR	2	Species is high risk to BC and is new to the Province. <b>Management objective</b> is eradication.
Provincial Containment	3	Species is high risk with limited extent in BC but significant potential to spread. <b>Management objective</b> is to prevent further expansion into new areas with the ultimate goal of reducing the overall extent.
Regional Containment/Control	4	Species is high risk and well established, or medium risk with high potential for spread. <b>Management objective</b> 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.
Management	5	Species is more widespread but may be of concern in specific situations with certain high values - e.g., conservation lands, specific agriculture crops. <b>Management objective</b> is to reduce the invasive species impacts locally or regionally, where resources are available.
Not listed	6	Species not listed provincially but is noted for presence/absence in the CSRD

Note: the purpose of this watch-list is to improve awareness and reporting in the Columbia Shuswap region. For priority ranking, risk assessments and management tools for invasive species, the Province of BC is the authority. To report invasive species, go to: [www.reportinvasives.ca](http://www.reportinvasives.ca)

Amphibians & Reptiles	Priority rank	Genus	Species	Present in CSRD?	Known Location(s)
Italian wall lizard	1	<i>Podarcis</i>	<i>siculus</i>	Absent	Vancouver ( <a href="https://www.canadianfieldnaturalist.ca/index.php/cfn/article/view/248">https://www.canadianfieldnaturalist.ca/index.php/cfn/article/view/248</a> ) Have been established in Orcas Island- Emily Lomas
American bullfrog	4	<i>Lithobates</i>	<i>catesbeianus</i>	Absent	Creston Valley, Lower Mainland, Vancouver Island, Okanagan (populations may be eradicated). Idaho, US
European wall lizard	4	<i>Podarcis</i>	<i>muralis</i>		
Green frog	4	<i>Lithobates</i>	<i>clamitans</i>		Vancouver, Southern Vancouver Island
Red-eared slider	4	<i>Trachemys</i>	<i>scripta</i>	Unconfirmed	McGuire Lake (unconfirmed)
Snapping turtle	4	<i>Chelydra</i>	<i>serpentina</i>		
Softshell turtle	6	<i>Apalone sp.</i>			
Western fence lizard	6	<i>Sceloporus</i>	<i>occidentalis</i>		One found in Surrey last June. Second found in Delta in November.
Birds	Priority rank	Genus	Species	Present in CSRD?	Known Location(s)
American black duck	5	<i>Anas</i>	<i>rubripes</i>		
Eurasian collared dove	5	<i>Streptopelia</i>	<i>decaocto</i>	Present	CSRD, TNRD

European house sparrow	5	<i>Passer</i>	<i>domesticus</i>	Present	CSRD, TNRD
European starling	5	<i>Sturnus</i>	<i>vulgaris</i>	Present	CSRD
Mute swan	5	<i>Cygnus</i>	<i>olor</i>		
Rock pigeon	5	<i>Columba</i>	<i>livia</i>		
Wild turkey	5	<i>Meleagris</i>	<i>gallopavo</i>		Vernon, Radium, Slocan, Armstrong, Golden?
California Quail	6	<i>Callipepla</i>	<i>californica</i>		Possibly Kamloops, Bachelor Heights
Chukar partridge	6	<i>Alectoris</i>	<i>chukar</i>		
Disease	Priority rank	Genus	Species	Present in CSRD?	Known Location(s)
Chytrid fungus	1	<i>Batrachochytrium</i>	<i>dendrobatidis</i>	Unconfirmed in Glacier and Mount Revelstoke NP.	Confirmed Creston. Unconfirmed in Glacier and Mount Revelstoke NP.
Infectious amphibian diseases (e.g. chytrid fungus, rana virus)	1	multiple	multiple		
Whirling disease	1	<i>Myxobolus</i>	<i>cerebralis</i>		
White-nose syndrome	1	<i>Pseudogymnoascus</i>	<i>destructans</i>		Washington, MB/SK border
Bovine Tuberculosis	6	<i>Mycobacterium</i>	<i>bovis</i>		Wood Buffalo NP and Riding Mountain NP.
Chronic Wasting Disease	6	Abnormal protein called a Prion		Absent	Current USGS map shows none in BC but there is concern in the Peace region and the Kootenays as wild populations may have it.
Fish	Priority rank	Genus	Species	Present in CSRD?	Known Location(s)
American Shad	1	<i>Alosa</i>	<i>sapidissima</i>	Present	Williamson Lake (iMap BC 2006)
Amur goby	1	<i>Rhinogobius</i>	<i>brunneus</i>		
Bitterling	1	<i>Rhodeus</i>	<i>species</i>		
Bighead carp (Asian)	1	<i>Hypophthalmichthys</i>	<i>nobilis</i>		
Black carp (Asian)	1	<i>Mylopharyngodon</i>	<i>piceus</i>		
Blotched snakehead	1	<i>Channa</i>	<i>bleheri</i>		
Channel catfish	1	<i>Ictalurus</i>	<i>punctatus</i>		
Grass carp (Asian)	1	<i>Ctenopharyngodon</i>	<i>idella</i>		
Green sunfish	1	<i>Lepomis</i>	<i>cyanellus</i>		
Monkey goby	1	<i>Neogobius</i>	<i>fluviatilis</i>		
Muskellunge	1	<i>Esox</i>	<i>masquinongy</i>		
Northern snakehead	1	<i>Channa</i>	<i>argus</i>		Burnaby Lk- eradicated
Prussian carp	1	<i>Carassius</i>	<i>carassius</i>		

Rainbow snakehead	1	<i>Channa</i>	<i>maculata, argus &amp; bleheri</i>		
Red bellied piranha*	1	<i>Pygocentrus</i>	<i>nattereri</i>		
Rock bass	1	<i>Ambloplites</i>	<i>rupestris</i>		
Round goby	1	<i>Neogobius</i>	<i>melanostomus</i>		
Silver carp (Asian)	1	<i>Hypophthalmichthys</i>	<i>molitrix</i>		
Spottail shiner	1	<i>Notropis</i>	<i>hudsonius</i>		
Tubenose goby	1	<i>Proterorhinus</i>	<i>semilunaris</i>		
Tui chub	1	<i>Gila</i>	<i>bicolor</i>		
Warmouth	1	<i>Lepomis</i>	<i>gulosus</i>		
Western mosquitofish	1	<i>Gambusia</i>	<i>affinis</i>		
White cloud mountain minnow	1	<i>Tanichthys</i>	<i>albonubes</i>		
Oriental weather loach	2	<i>Misgurnus</i>	<i>anguillicaudatus</i>		Lower Fraser valley
Rosy red minnow (Fathead minnow)	2	<i>Pimephales</i>	<i>promelas</i>		
Goldfish	4	<i>Carassius</i>	<i>auratus</i>	Present	White Lake (note eradication efforts in 2020 -Mike Phelps ENV Fisheries Officer), Shuswap Lake, 70th Ave Pond, Lost Lake?, McGuire Lake?
Northern Pike	4	<i>Esox</i>	<i>lucius</i>	Absent	-iMap BC shows at Pearson Crossing Columbia Wetlands- this is an incorrect GPS location. -“Northern pike have also been confirmed a few times in Kooacanusa Reservoir during Montana State gill net assessments and I have confirmed northern pike caught on two occasions in the mainstem upper Kootenay River near Canal Flats and again in the lower St. Mary River (upper Kootenay River tributary) near the St. Eugene Mission. Those are the only confirmed catch records.” Source: Fish Biologist Kootenay region via Khaylish Fraser.
Yellow perch	4	<i>Perca</i>	<i>flavescens</i>	Present	Upper Arrow, Williamson Lake, Pinaus Lake, Little Pinaus Lake, Square Lake, Cedar Creek, Some lakes treated with Rotenone (Gardom, Skimikin, Larch Lake, Larch Pond, Nellies Lake) no re-establishment since.
Black bullhead	5	<i>Ameiurus</i>	<i>natalis</i>		
Black crappie	5	<i>Pomoxis</i>	<i>nigromaculatus</i>		Vancouver
Bluegill sunfish	5	<i>Lepomis</i>	<i>macrochirus</i>		
Brown bullhead	5	<i>Ameiurus</i>	<i>nebulosus</i>		
Common carp	5	<i>Cyprinus</i>	<i>carpio</i>	Present	Shuswap Lake, Upper Arrow, Canoe Pond, Larch Hills Lake, Shuswap River (Enderby)
Largemouth bass	5	<i>Micropterus</i>	<i>salmoides</i>	Absent	

Pumpkinseed sunfish	5	<i>Lepomis</i>	<i>gibbosus</i>	Absent	Skimikin Lake
Smallmouth bass	5	<i>Micropterus</i>	<i>dolomieu</i>	Absent	Gardom Lake, treated
Trench	5	<i>Tinca</i>	<i>tinca</i>		
Walleye (Southern BC)	5	<i>Sander</i>	<i>vitreus</i>		
Yellow Bullhead	5	<i>Ameiurus</i>	<i>melas</i>		
Atlantic salmon	6	<i>Salmo</i>	<i>salar</i>		
Black bullhead	6	<i>Ameiurus</i>	<i>melas</i>		
Brown Trout	6	<i>Salmo</i>	<i>trutta</i>	Present	Trout Lake
Eastern Brook Trout	6	<i>Salvelinus</i>	<i>fontinalis</i>	Present	Gardom Lake, Williamson Lake, and the Columbia River System (iMapBC) ALL IPMS's (consensus at land manager meeting) Eradication in progress LLKY (Parks Canada)
Fathead minnow	6	<i>Pimephales</i>	<i>promelas</i>		
Rainbow trout	6	<i>Oncorhynchus</i>	<i>mykiss</i>	Present- Widespread	All IPMA's. Eradication in progress LLKY
Red bellied pacu	6	<i>Piaractus</i>	<i>brachypomus</i>		
Red shiner	6	<i>Cyprinells</i>	<i>lutrensis</i>		
Yellow bullhead	6	<i>Ameiurus</i>	<i>natalis</i>		
Fungi	<b>Priority rank</b>	<b>Genus</b>	<b>Species</b>	<b>Present in CSRD?</b>	<b>Known Location(s)</b>
Death cap	3	<i>Amanita</i>	<i>phalloides</i>		Vancouver
White pine blister rust	6	<i>Cronartium</i>	<i>ribicola</i>	Present- widespread	CSRD All
Insects	<b>Priority rank</b>	<b>Genus</b>	<b>Species</b>	<b>Present in CSRD?</b>	<b>Known Location(s)</b>
Spotted lantern fly	1	<i>Lycorma</i>	<i>delicatula</i>		
Asian longhorned beetle	2	<i>Anoplophora</i>	<i>glabripennis</i>		
Gypsy months (Asian & European)	2	<i>Lymantria</i>	<i>spp.</i>	Unconfirmed	Parks Canada may be monitoring in the future (unconfirmed)
Japanese beetle	2	<i>Popillia</i>	<i>japonica</i>		Vancouver
Asian Giant (Japanese) hornet	2	<i>Vespa</i>	<i>mandarinia</i>		Eradicated from Nanaimo in 2019, confirmed in the Fraser Valley in 2020
Apple maggot	3	<i>Rhagoletis</i>	<i>pomonella</i>		
Argentine ant	4	<i>Linepithema</i>	<i>humile</i>		Found in a single location in Victoria.
Asian needle ant	4	<i>Pachycondyla</i>	<i>chinensis</i>		Nearest record from Bellingham .
European fire ant	4	<i>Myrmica</i>	<i>rubra</i>		Naramata, Vancouver
Balsam woolly adelgid	5	<i>Adelges</i>	<i>piceae</i>	Present	CSRD- Parks Canada will be monitoring
Brown marmorated stink bug	5	<i>Halyomorpha</i>	<i>halys</i>	Present	Kelowna (high density and spreading outward). Detected in Salmon Arm 2019, 2017. Throughout the Okanagan and also in Similkameen Valley. Source BMSB report 2020 (Dropbox\CSISS Inventory and Plant Surveys\CSISS Non-Plant Species\Insects\Brown Marmorated Stink Bug)

Drumming katydid	5	<i>Meconema</i>	<i>thalassinum</i>		
European chafer beetle	5	<i>Amphimallon</i>	<i>majale</i>		Vancouver
European paper wasp	5	<i>Polistes</i>	<i>dominula</i>		
Large yellow underwing	5	<i>Noctua</i>	<i>pronuba</i>		
Praying mantis	5	<i>Mantis</i>	<i>religiosa</i>		
Spotted wing drosophila	5	<i>Drosophila</i>	<i>suzukii</i>		Fraser Valley, maybe Okanagan
Winter moth	5	<i>Operophtera</i>	<i>brumata</i>		
Woodlouse spider	5	<i>Dysdera</i>	<i>crocata</i>		
Codling Moth	6	<i>Cydia</i>	<i>pomonella</i>	Present	Salmon Arm orchards
Garden soldier fly	6	<i>Exaireta</i>	<i>spinigera</i>		
Impressive fire ant	6	<i>Myrmica</i>	<i>specioides</i>		
Little fire ant	6	<i>Wasmannia</i>	<i>auropunctata</i>		
Seven-spotted ladybug	6	<i>Coccinella</i>	<i>septempunctata</i>	Unconfirmed	Revelstoke (unconfirmed)
Tropical stinging ant	6	<i>Hypoponera</i>	<i>punctatissima</i>		
Western Yellowstriped Armyworm	6	<i>Spodoptera</i>	<i>praeifica</i>	Unconfirmed	Was reported for the first time in the North Okanagan valley of British Columbia in Enderby, Armstrong and Spallumcheen in July 2018
Invertebrates	Priority rank	Genus	Species	Present in CSRD?	Known Location(s)
Apple snail	1	<i>Ampullariidae</i>	<i>sp.</i>		Found for sale in Salmon Arm pet store 2020 - reported.
Conrad's false mussel	1	<i>Mytilopsis</i>	<i>leucophaeata</i>		
Marbled crayfish	1	<i>Procambarus</i>	<i>fallax f. virginialis</i>	?	Unknown species of crayfish present in Skimikin Lake
Quagga mussel	1	<i>Dreissena</i>	<i>bugensis</i>	Absent	Montana/ Manitoba
Ringed crayfish	1	<i>Orconectes</i>	<i>neglectus</i>	?	Unknown species of crayfish present in Skimikin Lake
Rusty crayfish	1	<i>Orconectes</i>	<i>rusticus</i>	?	Unknown species of crayfish present in Skimikin Lake
Spiny waterflea	1	<i>Bythotrephes</i>	<i>longimanus</i>		
Virile crayfish	1	<i>Orconectes</i>	<i>virilis</i>	?	Unknown species of crayfish present in Skimikin Lake
Zebra mussel	1	<i>Dreissena</i>	<i>polymorpha</i>	Absent	Montana/ Manitoba, found in aquarium stores in Moss balls 2021
European Brown garden snail	2	<i>Cornu</i>	<i>aspersum</i>		
Red swamp crayfish	2	<i>Procambarus</i>	<i>clarkii</i>		One location lower mainland, Also Washington and Oregon
Cherry shrimp	3	<i>Neocaridina</i>	<i>davidi</i>		
Invertebrates	Priority rank	Genus	Species	Present in CSRD?	Known Location(s)
Chinese, Japanese and other mystery snails	3	<i>Cipangopaludina spp./Bellamya</i>	<i>chinensis</i>		Idaho (Priest Lake)
Invasive freshwater clam	3	<i>Corbicula</i>	<i>fluminea</i>	Present	Shuswap Lake (Salmon Arm reach), Washington State (Osoyoos Lake, Pend D'Oreille)

New Zealand mudsnail	3	<i>Potamopyrgus</i>	<i>antipodarum</i>		Spokane and Vancouver Island
Banded garden snail	5	<i>Cepaea</i>	<i>nemoralis</i>	Present	Golden, Revelstoke
Freshwater jellyfish	5	<i>Craspedacusta</i>	<i>sowerbyi</i>		
Land slugs	5	<i>Arion spp.</i>	<i>rufus and vulgaris</i>		
European black slug	6	<i>Arion</i>	<i>ater</i>		Parks Canada- Natalie to confirm
Giant garden slug/ leopard slug/ great grey slug	6	<i>Limax</i>	<i>maximus</i>	Present	Revelstoke
Japanese mussel / Asian date mussel	6	<i>Musculista</i>	<i>senhousia</i>		
New Zealand green-lipped mussel	6	<i>Perna spp.</i>			
Northern quahog clam	6	<i>Mercenaria</i>	<i>mercenaria</i>		
Spanish slug	6	<i>Arion</i>	<i>vulgaris</i>		
Varnish clam	6	<i>Nuttalia</i>	<i>obscurata</i>		
<b>Mammals</b>	<b>Priority rank</b>	<b>Genus</b>	<b>Species</b>	<b>Present in CSRD?</b>	<b>Known Location(s)</b>
Nutria	1	<i>Myocastor</i>	<i>coypus</i>		South Vancouver/ Oregon. Known to be on Salt Spring Island, but none were found during surveys 2020
Fallow deer	3	<i>Dama</i>	<i>dama</i>		Main island and Sidney Island
Feral swine	3	<i>Sus</i>	<i>scrofa</i>		Lumby, Christina Lk? Williams Lk? Peace region surveys planned for 2021
Virginia opossum	3	<i>Didelphis</i>	<i>virginiana</i>		Hornby,
Eastern fox squirrel	4	<i>Sciurus</i>	<i>niger</i>		
Eastern grey squirrel	4	<i>Sciurus</i>	<i>carolinensis</i>	Present	Revelstoke
European rabbit	4	<i>Oryctolagus</i>	<i>cuniculus</i>	Present	Revelstoke, Big Eddy, unconfirmed
Norway/Brown rat	4	<i>Ratus</i>	<i>norvegicus</i>		Nelson (unconfirmed)
Roof/Black rat	4	<i>Ratus</i>	<i>ratus</i>	Present	Revelstoke, Sicamous, Shuswap
Eastern cottontail rabbit	5	<i>Sylvilagus</i>	<i>floridanus</i>		
House mouse	6	<i>Mus</i>	<i>musculus</i>	Present	CSRD