



Ministry of
Water, Land and
Resource Stewardship

Provincial Update

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Fisheries, Aquaculture, and Wild Salmon

Ministry of Water, Land, and Resource Stewardship

November 7, 2023

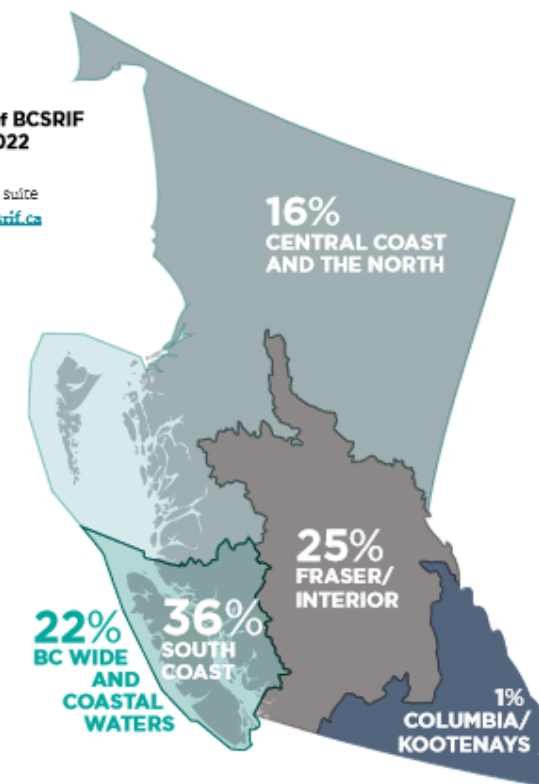
Provincial Initiatives

- The BC Salmon Restoration and Innovation Fund (BCSRIF) Phase 1 distributed over \$128M in funding to 97 projects across the province, these projects will all be completed by March 31st, 2024.
- BCSRIF staff are working with 73 Phase 2 projects to distribute \$127.3M
- Project announcements will be released over the coming weeks.



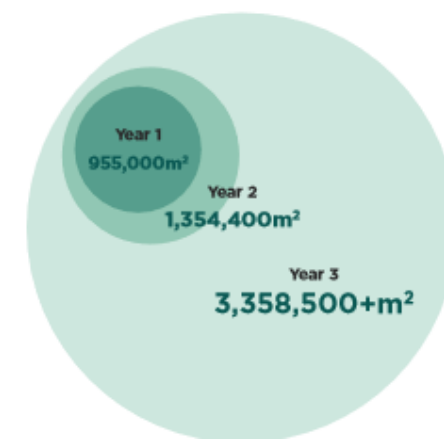
Geographic Distribution of BCSRIF Projects as of March 31, 2022

Additional information on the full suite of projects is available at www.bcsrif.ca



Total Fish Habitat Restored

Recipient's report having physically restored, or provided access to, over 3,358,500 square meters of fish habitat. In addition, over 6,087,500 square meters of aquatic invasive species control was undertaken.



Provincial Initiatives

- B.C. and the First Nations Fisheries Council (FNFC) have been working together on shared priorities and have formalized their relationship.
- FNFC is a key convenor of First Nations and provincial agencies on fisheries.
- BC, DFO and FNFC are in collaborative discussions on a shared approach to wild salmon recovery in BC through a trilateral agreement.



2.9 Develop new strategies to protect and revitalize wild salmon populations in B.C. with First Nations and the federal government, including the development and implementation of a cohesive B.C. Wild Pacific Salmon Strategy. *(Ministry of Land, Water and Resource Stewardship)*

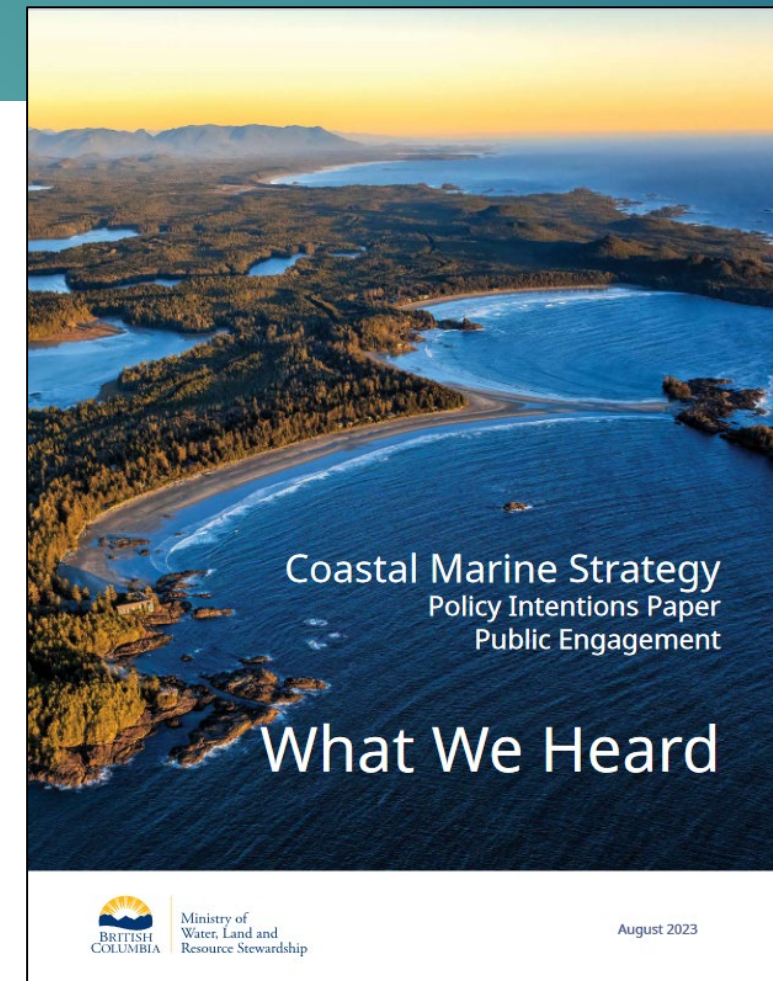
Watershed Security Strategy

- Next step in addressing wild salmon within their freshwater habitat.
- Will shape the future of watersheds and watershed management in B.C. and lead create changes for a future for B.C. where our watersheds are better cared for and stewarded together.
- Will address issues that threaten wild salmon within the freshwater environment by improving governance, data, and science, developing wholistic management approaches, and balancing the supply and demand for water at the watershed scale.
- B.C. invested \$100 million in the WSS&F that will further the legacy of contributing to watershed and salmon habitat protection and restoration.



Coastal Marine Strategy

- The Province is co-developing a Coastal Marine Strategy (CMS) with First Nations
- Will set out a shared vision for healthy coastal marine ecosystems, community well-being, and a sustainable ocean economy.
- Salmon lens being applied to CMS and being weaved into CMS intentions.
- Will include actions that protect the health of the ocean and coastal habitats, where wild Pacific salmon feed and grow.

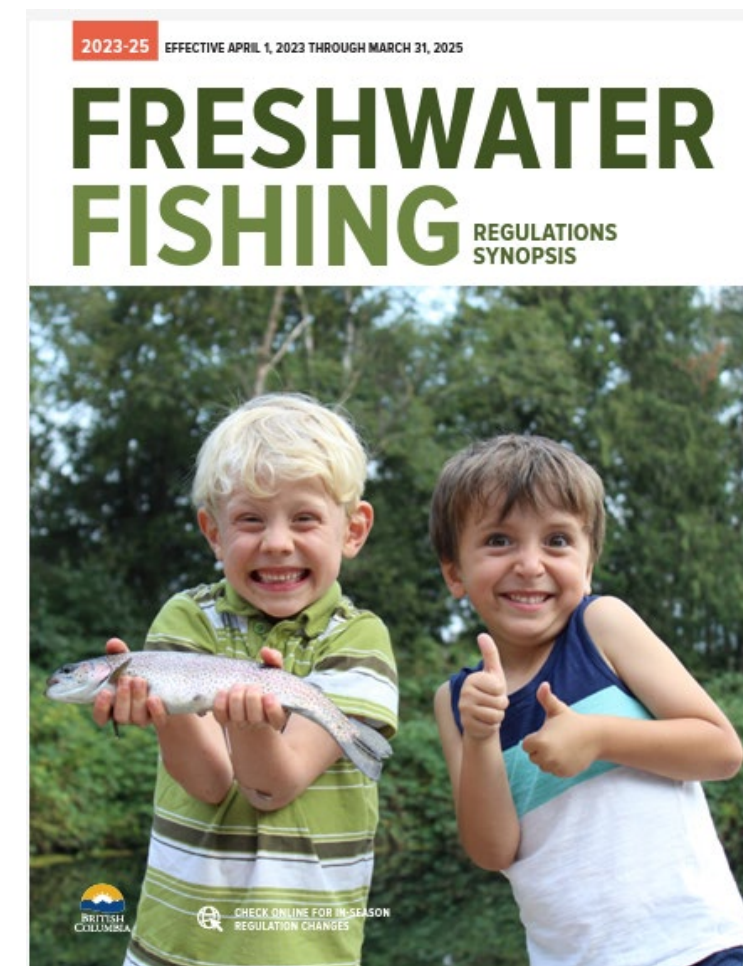


Habitat Programs

- Reorganization of MoF and WLRS – biologists and regional function
- BC provided a grant of \$15 M to PSF and FNFC to support ongoing collaboration
- PSF, BC, DFO partnered to quickly respond to high-priority drought issues
- Riparian Areas Protection Regulation Program
- Provincial wetland policy development
- Fish habitat restoration projects – 2021 flood event
- Drought management – environmental flow needs
- BC Fish Passage Program
- FRPA fisheries sensitive watersheds

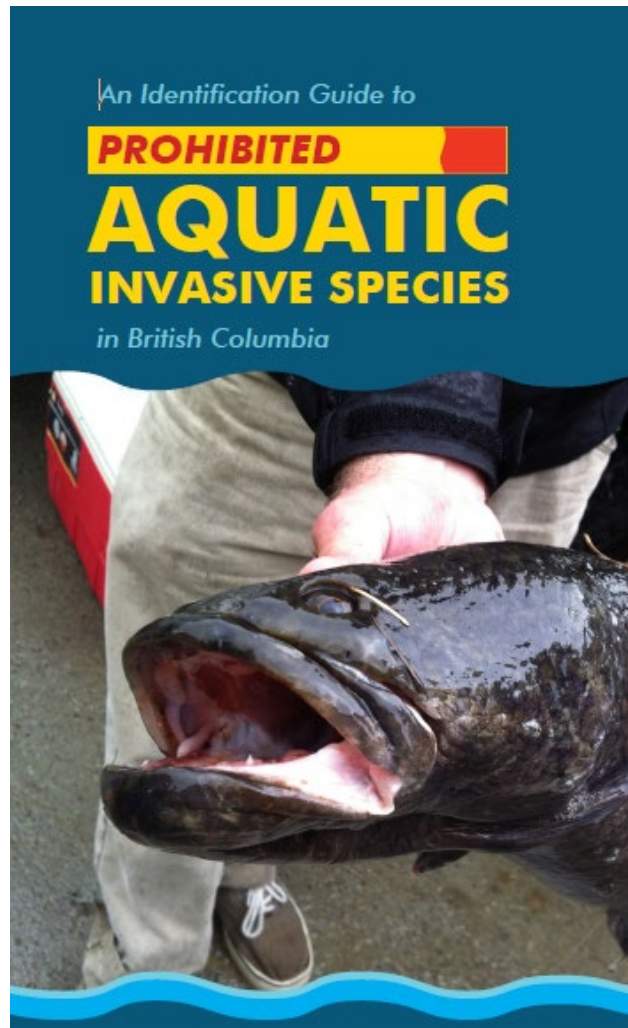
Provincial Aquatic Invasive Species

- All water bodies with new detections will immediately be closed to fishing for that species.
- Some water bodies with high-risk introductions may be closed indefinitely to ALL fishing.
- Where feasible, high-risk aquatic invasive species (AIS) will be eradicated from watersheds.
- Where eradication is not immediately feasible, measures to manage risk and prevent AIS spreading (such as special regulations) will be implemented.
- For a limited number of lakes, AIS may be managed as a regulated fishery which could be terminated



BC Wildlife Act

Controlled Alien Species Regulation



- Provincially regulated invasive fish species
 - Prohibitions: Possess, Breed, Ship/Transport or Release
- Schedule 3 listed species commonly sold in pet-aquarium industry, including:
 - Snakehead spp.
 - Tench
 - Western Mosquitofish
 - Oriental weatherloach

INVASIVE SPECIES ALERT!

WESTERN MOSQUITOFISH
(*Gambusia affinis*)

PROHIBITED IN BC

REPORT INVASIVE SPECIES
www.reportinvasives.ca

NATIVE RANGE
The Western Mosquitofish is native to the Mississippi River and to tributaries from southern Indiana and Illinois to the Gulf Coast and parts of northeastern Mexico.

DESCRIPTION
Western Mosquitofish...

- Are small, non-descript fish, that grow to be 1-5 cm long
- Have large eyes, that take up most of their face
- Have a distinct dorsal fin, extending behind the eye
- Are olive in colour, with a greenish-blue hue, and speckled with grey and black markings
- Have 1-2 rows of black spots on dorsal(back) and caudal(tail) fins


BIOLOGY & SPREAD
Western Mosquitofish can spread due to their wide ranging diet and competitive nature towards river fish species. If introduced into B.C., their northern distribution would likely be limited by their intolerance to cold-waters and ice-cover during the winter; however southern regions of B.C. could be susceptible.

HABITAT
Western Mosquitofish water, in vegetated areas, can be found in BC.

ARE THEY HERE?
No, the northern-most province of BC.

LOOKALIKES
There are no native Western Mosquitofish.

PRIMARY IMPACT:
The Western Mosquitofish is extremely aggressive and can impact native species.



INVASIVE SPECIES ALERT!

TENCH
(*Tinca tinca*)

PROHIBITED IN BC

REPORT INVASIVE SPECIES
www.reportinvasives.ca

NATIVE RANGE
Tench are native to most of Europe and parts of western Asia.

DESCRIPTION
Tench...

- Have an unringed fin on eyes
- Have a robust body, covered with small embedded scales
- Have the fin with rounded margin
- Do not have a dorsal fin
- Have an long snout (spear-like projection) at each corner of mouth
- Can be silver-green to olive yellow/gold along the side
- Are typically 20-25 cm in size
- Can be kept in red in colour and (when called golden)

BIOLOGY & SPREAD
Tench have spread into B.C. from the Columbia River. Tench are highly tolerant to survive in low oxygen level and all populations of Tench are growing rapidly. Populations of Tench are growing rapidly during a spring found to reproduce at temperatures of 10-15°C and their tolerance to spread to a variety of habitat type.

HABITAT
Tench are commonly found in ponded waterways. They can tolerate low temperature several degrees below, during winter. Tench bury under mud to wait out winter.

ARE THEY HERE?
Yes, the northern-most province of BC.

LOOKALIKES
There are no native Tench.



INVASIVE SPECIES ALERT!

WHITE CLOUD MOUNTAIN MINNOW
(*Trematichthys albomaculata*)

PROHIBITED IN BC

REPORT INVASIVE SPECIES
www.reportinvasives.ca

NATIVE RANGE
White Cloud Mountain Minnows are native to China and Vietnam.

DESCRIPTION
White Cloud Mountain Minnows...


- Grow to a maximum of 3.4 cm long
- Have a black dot on back of tail fin
- Have white tipped dorsal and ventral fins
- Have a yellow-orange to red dorsal (back) fin
- Have a pink mid-lateral band with a black pigmentation
- Have an iridescent golden green backside
- Have a lower jaw that projects slightly forward and a blunt snout

WHY SHOULD WE CARE?
The White Cloud Mountain Minnow is a cold water tolerant fish that can survive water temperatures as low as 2 °C. When water bodies freeze over during the winter months, there is potential for White Cloud Mountain Minnows to survive in warmer waters at deeper depths. This species feeds on benthic aquatic invertebrates and the larvae of aquatic insects, which could impact the dynamics of B.C. ecosystems if they were to become established. White Cloud Mountain Minnows are also potential carriers of diseases and parasites that could impact native fish. If this species were to be released into the wild.

BIOLOGY & SPREAD
If released into the wild, White Cloud Mountain Minnows could potentially establish and spread into regions of B.C. This would be possible due to their low temperature tolerance and wide ranging diet (plant and animal matter). Their preference for living in schools and their ability to spawn several times per year could further magnify their impacts if introduced.

Did You Know?
White Cloud Mountain Minnows are sold in the aquarium trade under a variety of names, including White Cloud, Canton, and Canton Fish. There are two varieties also distributed in the aquarium trade called Golden Cloud and Meteor Minnows.

PRIMARY IMPACT:
The potential impact of White-cloud mountain minnow's introduction is not known. They are not here yet, and owning or moving them in BC is ILLEGAL.



Invasive Fish – What can you do?

- Follow rules on bait usage (no fin fish, alive or dead)
- Where fishing regulations permit, harvest the invasive fish
- Where fisheries for the invasive fish are closed, you must not target these species and any incidental catches must be released.
- If you suspect your catch is a new introduction, harvest it (or take a photo if regulations require release) and report it using the Provincial reporting tools
- **It is ILLEGAL to possess live fish or release live fish into B.C.'s lakes or streams.** Persons convicted for a first offence of the illegal movement of aquatic invasive species could be fined up to \$100,000 and/or receive a prison term of up to 12 months.



Provincial Website & Resources



[Home](#) > [Environmental protection and sustainability](#) > [Plants, Animals & Ecosystems](#) > [Invasive species](#) >

▼ Priority invasive species

► Plants

Birds

Amphibians and reptiles

Mammals

Fungus and disease

Fish

Insects and spiders

Invertebrates other than insects and spiders

► Inter-Ministry Invasive Species Working Group

► Invasive species management in B.C.

Invasive Fish

Invasive fish are fish from one part of the world that are transported, or migrate due to climate change, beyond their natural range and become established in a new area where they can cause potential harm to native ecosystems.

There are 5 priority categories for fish which determine the province's response.

1. [Prevent](#)
2. [Early detection and rapid response \(EDRR\)](#)
3. Provincial Containment
4. [Regional containment/control](#)
5. [Management](#)

The fish on this page are organized into these categories.

www.gov.bc.ca/invasive-species

INVASIVE SPECIES ALERT!

SMALLMOUTH BASS (*Micropterus dolomieu*)

NATIVE RANGE

Smallmouth Bass are native to central and eastern North America, extending from the Great Lakes in Quebec to as far south as central Texas.

DESCRIPTION

Smallmouth Bass...

- Are grey-green to brown on dorsal (back) side
- Are lighter in colour with dark vertical bands on sides
- Are white on ventral (bottom) side
- Have two dorsal fins that are fused together: the most anterior section of dorsal fin has spines and posterior section has soft rays
- Have a mouth that extends just below the eye
- Can grow to be 23-40 cm long as adults
- Have a flat and oval shaped body

WHY SHOULD WE CARE?

Smallmouth Bass...

- Can have adverse ecological effects on native species and ecosystems
- Are to blame for the decline and local extinction of native prey species (fish and amphibians) in other regions where they have been introduced
- Can feed on juvenile salmon, thus posing a risk to recreational and commercial fisheries in B.C.
- Are known carriers of parasites that can be harmful to native fish species

BIOLOGY AND SPREAD

Smallmouth Bass are spreading into B.C. primarily by intentional introductions for sport fishing. Natural dispersal has also occurred from the US through the Columbia River system and other trans-boundary rivers and streams.

Once introduced, populations can increase quickly as females lay thousands of eggs at a time and spawn several times per season. Their ability to feed on a wide range of prey species further allows them to spread and invade a variety of habitat types. The diet of Smallmouth Bass can include aquatic invertebrates, juvenile fish, amphibians, and even small birds.

REPORT INVASIVE SPECIES

www.reportinvasives.ca



INVASIVE SPECIES ALERT!

YELLOW PERCH (*Perca flavescens*)

NATIVE RANGE

Yellow Perch are native in North America, east of the Continental Divide. In Canada their native range starts in Alberta and extends northward into the Northwest Territories and eastward to Nova Scotia. Yellow Perch's southern native range extends into the US, reaching from North Dakota to the eastern Atlantic states, and south to South Carolina and Georgia.

DESCRIPTION

Yellow Perch...

- Are oval shaped and laterally compressed
- Are on average 10-25 cm long
- Have two dorsal (back) fins: the fin closest to the head is taller and longer than the other
- Have a bright green to olive back, yellow-green sides, and white belly
- Have approximately 7 green-brown vertical bands on sides
- Have yellow-green dorsal and caudal fins, yellow-red pelvic fins, and a forked tail

WHY SHOULD WE CARE?

Yellow Perch...

- Could impact ecosystem biodiversity by preying heavily on young fish and insects
- Are known carriers of parasites that are harmful to other fish species
- Could compete with native fish species for food and habitat
- Have shown to impact salmon growth and survival in small B.C. lakes where they have been introduced

BIOLOGY AND SPREAD

Yellow Perch have been introduced to non-native regions by stowing away on boats, being released from fish markets and aquariums, being stocked for sport fishing, and escaping from fish lines when used as live-bait. Once established, Yellow Perch can reproduce and spread quickly. Females lay up to 15,000 eggs at a time, and these eggs develop into larva and juveniles that can drift to new regions downstream with the current. Mature individuals will also swim to new regions in search of food.

REPORT INVASIVE SPECIES

www.reportinvasives.ca



INVASIVE SPECIES ALERT!

GOLDFISH (*Carassius auratus*)

NATIVE RANGE

Goldfish are native to eastern Asia, including parts of China, Hong Kong, Japan and the Republic of Korea.

DESCRIPTION

Goldfish...

- Have a deep-elongated body, with a large head and eyes, and a small mouth
- Have a long dorsal (back) fin, which is longer than the head
- Have large scales on body, but lack scales on head
- Can range in colour from gold to olive-green to white
- Are on average 15-20 cm long and weigh 100-300 grams when mature adults

WHY SHOULD WE CARE?

Goldfish...

- Have been reported to compete with native fish species for food in areas where they have been introduced
- Have shown to prey on native fish species in areas where they have been introduced
- Can disturb sediment while feeding, which increases water turbidity and may harm aquatic plants

BIOLOGY & SPREAD

Goldfish are being intentionally released into B.C. waterbodies by pet owners and escaping from outdoor ponds and aquariums. This species is an effective invader for its abilities to rapidly reproduce, withstand temperature and oxygen-level changes, and consume an omnivorous diet. Once introduced, they can establish in local ponds and streams, and rapidly spread to surrounding water bodies.

HABITAT

Preferred habitats of Goldfish include streams and pools, ditches, and ponds. They tend towards areas where there is submerged aquatic vegetation. Goldfish can tolerate a wide range of temperatures and oxygen levels, and are unaffected by ice cover.



PRIMARY IMPACT:
Compete with and feed on native fish species.



REPORT INVASIVE SPECIES

www.reportinvasives.ca

DID YOU KNOW?

Goldfish are thought to be the first foreign fish species introduced to North America, dating back to the 17th century.

Invasive Species Reporting tools



All Invasive Species B.C. Invasive Species App



- Information to include:
 - Photo
 - Location
 - Date the animal was observed

Invasive Mussels 1-877-952-RAPP (7277)



www.gov.bc.ca/invasive-species

Provincial Contacts

Aquatic Invasive Animals Primary Contact:

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