



Invasive Species
Council of BC

TOURISM AND INVASIVE SPECIES:

AN INVASIVE-WISE PROGRAM FOR
BRITISH COLUMBIA'S TOURISM INDUSTRY

Program Plan and Strategy | March 2021



Fisheries and Oceans
Canada

Pêches et Océans
Canada





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Overview: An Invasive-Wise Tourism Program for British Columbia

Invasive species have the capacity to negatively impact BC's environment, ecosystems and biodiversity, and therefore directly impact the tourism industry. In addition, tourism is considered to be a major pathway for the introduction and spread of invasive species by the IUCN's Convention on Biological Diversity. The tourism industry is a critical partner in preventing the introduction and spread of invasive species in BC. Tourism operators understand the importance of BC's natural areas and biodiversity to their businesses and are familiar with the locations and activities that tourists engage with. Operators often have direct access to tourists well before they arrive in BC and thus have proactive opportunities to connect with tourists around invasive species prevention.

The Invasive-Wise Tourism Program has identified and developed key resources for tourism operators including online training, recognition tools and outreach resources. These tools will help raise awareness of the importance and impacts of invasive species and support positive actions to prevent their

introduction and spread. The overall goal of the program is to support the adoption and implementation of best practices to ensure invasive species are not introduced, moved or released in BC. Program objectives are to:

- » Raise awareness of the impacts of invasive species in BC and on the tourism industry
- » Demonstrate the connections between tourism activities and invasive species introduction and spread
- » Provide relevant, accessible training, tools and resources to tourism operators and their clients
- » Enable and support tourism operators to take action to protect BC's biodiversity, landscapes and ecosystems from invasive species

The project is funded by Fisheries and Oceans Canada through the Canada Nature Fund for Aquatic Species at Risk and the Invasive Species Council of BC.

Background

What are Invasive Species, and Why are They a Problem?

Invasive species are non-native plants, animals and micro-organisms that negatively impact the environment, economy and society. According to the International Union for Conservation of Nature (IUCN), invasive species are second only to habitat loss in reducing global biodiversity. Invasive species can rapidly establish and spread, compete for food, shelter and space with native species, reduce biodiversity and destroy habitats that support whole ecosystems. They can spread disease, introduce parasites, disrupt food webs and compete with native species for resources, including rare and endangered species.

Invasive species also have big impacts on our economy, damaging the agriculture, forestry, and hydro-electric industries and impacting human health, tourism, recreation and even land values. Invasive species cost BC millions of dollars per year in management efforts and loss of resources. When established, invasive species can result in:

- » Lost income
- » Reduced property values
- » Damage to private property and infrastructure
- » Reduced water quality and quantity (increased erosion and sedimentation)
- » Reduced land and aquatic recreational opportunities
- » Increased control and management costs
- » Export and import trade restrictions imposed
- » Risks to human and animal health and safety
- » Loss of culturally important traditional food and medicinal plants

BC's Tourism Industry

BC's tourism industry is ranked as the most important sector to BC's economy.

Tourism represents \$20.5 billion in revenue and 161,500 direct jobs (Destination BC, 2018).

BC is a top tourist destination for travellers worldwide and is known for its incredible diversity of natural landscapes, wildlife and wild spaces.

According to the Wilderness Tourism Association of BC, wilderness tourism is the main driver of all tourism in BC (2018). BC's destination brand, *Super, Natural British Columbia*[®], and the province's biodiversity, wild spaces and healthy ecosystems are a key aspect of what attracts visitors, in addition to making BC one of the best places to live on earth.

The World Tourism Organization estimates that international tourist arrivals are expected to grow from 1 billion in 2013, to 1.8 billion by 2030 and eco/nature-based tourism is expected to enjoy continued growth (UNWTO 2014).

BC RESIDENTS ARE TOURISTS TOO!

Destination BC estimates there were approximately 21.6 million overnight visitors to BC in 2017. Over half of the visitors (53%) were BC residents, whereas visitors from other parts of Canada accounted for 21.1% and international tourists made up the remaining 25.9% (Destination BC 2019). Therefore, it is important to note that it is not just international tourists that have the capacity to introduce and spread invasive species. BC's resident tourists also have an important role to play in the protection of the province's biodiversity and are an important audience to consider.

Tourism as a Pathway for Invasive Species

Invasive species have the capacity to negatively impact BC's environment, ecosystems and biodiversity, and therefore directly impact the tourism industry. In addition, tourism is considered to be a major pathway for the introduction and spread of invasive species by the IUCN's Convention on Biological Diversity. Tourism activities include congregations of large numbers of people arriving from all over the globe, moving around by vehicles, trains, boats and aircraft to a range of locations. Tourist recreational activities such as fishing, boating, hiking and camping can also be key pathways of spread for invasive species. These activities can also bring travellers to ecologically sensitive areas like national and provincial parks, biodiversity hotspots and areas that are refuges for vulnerable native species. It is therefore important to raise awareness of invasive species throughout the tourism industry and provide tools, resources and best practices for their prevention and management.



Tourism Vancouver Island / Ben Ciesbrecht

Program Development

- » Solicit and convene a group of tourism industry advisors to guide the development of the plan and provide input on resources and best practices.
- » With input from advisors, finalize the Invasive-Wise Tourism Program, including confirming key partners, key audiences, influencers, resources, training, branding and resources. For the context of this project, *key partners* include the major tourism organizations in the province, while *key audiences* include major operators who work primarily in and around the aquatic sectors of BC (see below for further details).
- » Identify approximately 15 potential diverse partners who are willing to adopt, pilot and implement the program's best practices and provide feedback.
- » Solicit feedback from the pilot phase and adjust the program resources and strategies accordingly.
- » Expand the program to tourism operators across BC, including new operator key audiences.

A Need for Consistent Messaging

For an effective province-wide call to action, it is very important that the Invasive-Wise Tourism Program and all associated resources develop and utilize consistent messaging across key partners and audiences. Consistency of messaging will support the social marketing campaign by ensuring that stakeholders like tourism operators and associations, international and resident tourists are all receiving and sharing the same common information, thus improving the odds of effectively changing behaviours.

Initial Focus on Aquatic Pathways

Understanding and managing the tourism-related vectors and pathways that enable the introduction of invasive species is one of the most effective means to prevent invasions. Aquatic invasive species are of particular concern, as once established in a freshwater or marine ecosystem, invasive plants and animals are almost impossible to get rid of, and their impacts are far reaching and long lasting. Tourism-related aquatic activities known to introduce and spread invasive species include fishing, recreational boating (yachts, boats, kayaks, rafting, canoes, etc.), passenger ships (cruise lines, ferries, charters, water taxis), floatplane/seaplane trips and scuba diving.

The Invasive-Wise Tourism Program is focusing on aquatic pathways initially, with key learnings from the project to be adapted and applied to other elements of the tourism industry. Best practices, tools and resources will be developed for four major audiences:

- » Marinas and Associated Rental Operators
- » Fishing Guides and Outfitters
- » Float Plane Operators
- » Resorts and Accommodators (lodges, fishing camps, etc.)

The program is grounded in key issues, current research on pathways, surveys and behaviour change studies, and identifies key partners, influencers and key audiences. Best management practices (BMPs) for each target audience are being developed together with relevant and applicable resources and tools. The development of all resources is guided by an advisory committee made up of key tourism partners that represent each of the target audiences, in order that all developed resources target appropriate behaviors, and are relevant and applicable to tourism operators and their clients.

Key Partners

The key partners that support and coordinate BC's tourism operators include:

1. [Destination BC](#)
2. The Regional Destination Marketing Associations
 - » [Cariboo Chilcotin Coast Tourism Association](#)
 - » [Thompson Okanagan Tourism Association](#)
 - » [Northern BC Tourism Association](#)
 - » [Kootenay Rockies Tourism](#)
 - » [Vancouver Coast and Mountains](#)
 - » [Tourism Vancouver Island](#)
3. [Indigenous Tourism Association of Canada](#)
4. [Indigenous Tourism BC](#)
5. [Tourism Industry Association of BC](#)
6. BC's Tourism Industry Partners and Associations (aquatic focus)
 - » [BC Fishing Resorts and Outfitters Association](#)
 - » [Freshwater Fisheries Society of BC](#)
 - » [Sport Fishing Institute of BC](#)
 - » [Fishing BC](#)
 - » [BC Float Plane Association](#)
 - » [West Coast Fishing Guides Association](#)
 - » [Guide Outfitters Association of BC](#)
 - » [Angler's Atlas](#)

Influencers

Influencers are a group of people who use their extensive social media following to influence their audience. They could be travel bloggers, vloggers, and photographers who have a passion for nature or their sport of choosing, like fly fishing. Influencers will be an important part of this project by being both ambassadors and a mouthpiece for the program. Using their social influence, they could disseminate Invasive-Wise Tourism education and awareness information to their own followers.

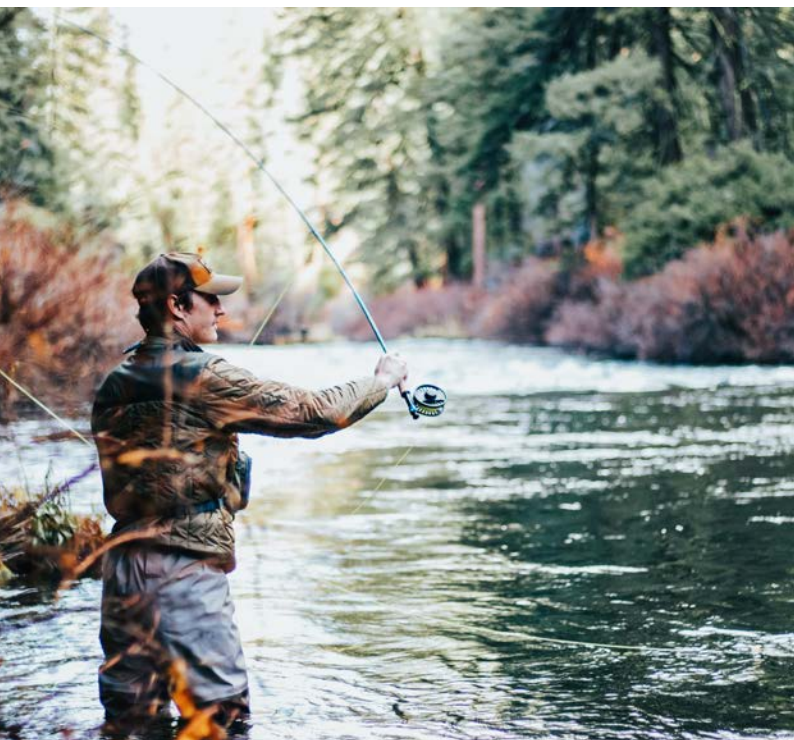
Some potential influencers could include:

- » Professional anglers and Fishing BC Ambassadors like Kathy Ruddick (Ruddick's Fly Shop), Don Freschi (Sport Fishing on the Fly), Brian Chan (Riseform Flyfishing Ventures), Rod Hsu (Fishing with Rod), etc.
- » BC-based professional photographers like Paul Nicklen (National Geographic)
- » Science broadcasters, journalists or authors like Jay Ingram (formerly with CBC and Discovery Channel)
- » Local targeted social media influencers like 604explore.ca

Target Audiences

1. Marinas and Associated Rental Operators
2. Fishing Guides and Outfitters
3. Float Plane Operators
4. Resorts and Accommodators (lodges, fishing camps, etc.)

For each of the four target audiences, key issues pertaining to invasive species introduction and spread, and key partners within the target audience are identified. Existing BMPs are outlined, and key audiences to target for resource development are identified. There is substantial overlap between these four groups and therefore some resources will apply to all four of them. However, specific resources will also be developed for each of the four groups, to ensure that they are relevant, useable and apply to each groups' individual needs.





1. Marinas and Associated Rental Operators

ISSUES

Recreational fishing boats can be a major vector of spread for invasive species in localized areas (Darbyson, et al., 2009). BC has Canada's largest boating community, and the province is highly susceptible to invasive species introductions, especially due to its proximity to the United States (Murray, et al., 2011). Other boating pleasure crafts such as barges can also be the cause of secondary spread of invasive species from the United States to BC, or within BC's waterways (Murray, et al., 2011). This is an issue when smaller pleasure crafts are transported to pristine natural areas which have not yet been tainted with invasive species (Murray, et al., 2011).

Invasive species can attach into several areas of boats, such as the hull, propeller, fishing equipment, and be transported within the standing water of internal compartments like ballast tanks or live-wells (Murray, et al., 2011).

KEY AUDIENCES

- » Boaters
- » Boating clubs
- » Boat crew/staff
- » Marinas
- » Local community boating docks
- » Boat/watercraft rental organizations

BEST MANAGEMENT PRACTICES

1. Always ask if arriving boats have been inspected by a BC Provincial Mussel Inspection Team
2. If a boat has not gone through provincial inspection, determine if it has come from an area where Zebra and Quagga mussels are present
3. If a boat is coming from a high-risk region, call the BC provincial government RAPP hotline: 1-877-952-7277
4. If you are bringing a boat to BC from an infested region, fill out the Out of Province Watercraft Form and follow instructions: https://www2.gov.bc.ca/assets/gov/home/featured-services/invasive-mussels/bc_moe_out_of_province_watercraft_form.pdf
5. **CLEAN DRAIN DRY** practices apply to all watercraft: <https://bcinvasives.ca/play-your-part/clean-drain-dry/>

2. Fishing Guides and Outfitters

ISSUES

BC offers a tremendous diversity of recreational fishing opportunities with over 20,000 lakes and 750,000 km of streams. Each year, more than 300,000 licensed anglers spend about \$500 million in BC, with much of the economic activity taking place in rural areas. These opportunities and the native ecosystems that support them are threatened by the introduction of Aquatic Invasive Species (AIS). Anglers and boaters (both motorized and non-motorized) often use their boats/equipment in more than one watershed within a two-week period (Anderson et al, 2014). If boats and equipment are not cleaned and dried after each use, this can introduce and spread AIS widely. Aquaculture, fishing and leisure activities are collectively responsible for more than 40% of the introductions of aquatic species in Europe (Gallardo et al, 2013).

AIS can hitch a ride on boats, trailers, fishing gear and clothing. Plants get hooked on props and trailers, and animals such as invasive freshwater mussels have tiny larvae that live in water for up to 30 days and can also attach to boats and equipment. Some species are microscopic: whirling disease is spread by spores in water, mud, on fishing gear or infected fish (alive or dead).

Some anglers illegally transport and release sport fish species like bass and perch into BC waterbodies. Non-native fish species such as small and largemouth bass, yellow perch, crappie, walleye and northern pike were intentionally introduced to BC as game fish. They cause many problems for

BC's native fish species, by competing with them for resources and preying on them. Possession of live fish or use of live fish bait is illegal in BC. There are also intentional or accidental releases of non-native fish such as goldfish and koi from garden ponds and aquariums.

KEY AUDIENCES

- » Fishing guides/outfitters
- » Fishing derby organizers
- » Fishing resorts
- » Fishing club members

BEST MANAGEMENT PRACTICES

1. Ensure that all clients declare where their boat and equipment was last used
2. Ensure that no clients have live bait
3. Check all boats prior to use to ensure that they are **CLEAN DRAIN DRY** and free of invasive species
4. Check all boats and gear after use in each water body to ensure they are **CLEAN DRAIN DRY** and free of invasive species
5. All guest vehicles are parked in areas free of invasive species
6. No invasive species are used in landscaping
7. Invite clients to take an Invasive-Wise pledge





Destination BC/Grant Harder

3. Floatplane Operators

ISSUES

Water resource managers throughout North America have been concerned about floatplane/seaplane activity as a pathway for the spread of invasive species for well over a decade. Remote and less accessible areas often rely upon floatplanes for commercial and private transportation and these isolated areas are especially vulnerable to invasion and the harmful effects of invasive species.

Similar to a boat, floatplanes are great vectors for the transport of AIS like Zebra and Quagga mussels and Eurasian watermilfoil. AIS could be transported via fouling of the cables, cross members, rudders, transom, step area, wheel wells and chine of the floats/pontoons, or in the water inside the floats themselves. Elodea (Elodea spp.) is an invasive submerged freshwater aquatic plant and was presumed introduced into Alaska via the dumping of aquaria in the 1980s (Morton et al. 2014). In 2015 elodea was found in Anchorage’s Lake Hood, the world’s largest and busiest float plane base. Currently, infestations are primarily in urban lakes but since 2015 is being spread by floatplanes to remote destinations across Alaska. Aquatic invasive plant species can negatively affect native biodiversity by creating dense mats of vegetation. They can also lead to aquatic recreation losses through fouling of rudders and propellers and creating swimming hazards (NPS 2018).

KEY PARTNERS

- » Floatplane charters with service in BC
- » Wilderness/outdoor adventure companies
- » Floatplane bases/facilities
- » Pilot associations

KEY AUDIENCES

- » BC floatplane operators and businesses
- » Tour operators
- » Tourists

BEST MANAGEMENT PRACTICES

1. Before entering the aircraft:
 - » Inspect/remove AIS, organic debris, mud from floats, wires or cables, and rudders
2. Before takeoff:
 - » Do not taxi through heavy aquatic plant growth
 - » Raise and lower water rudders to clear off plants
3. After takeoff:
 - » Raise/lower water rudders several times to free aquatic plant fragments while over the waters you are leaving or over land
4. Storage or mooring:
 - » If feasible, remove aircraft from the water and allow parts to dry
 - » Aircraft moored for extended periods may have fouling mussels or other organisms attached and should be cleaned regularly

4. Resorts and Accommodators

ISSUES

Aquatic-based tourist facilities such as fishing lodges, camps, and wilderness resorts can be pathways for the introduction and spread of invasive species. Tourists arriving and recreating at these locations can spread invasive species through boating, fishing, and travelling to and from parks (Anderson, et al., 2015). As nature tourism and ecotourism continues to grow in popularity, there is an increased potential of spreading invasive species to pristine wild areas (Anderson, et al., 2015).

Increased tourism to wild areas increases the likelihood of new invasive species establishing in sensitive areas, which can be damaging to tourism activities as well as natural habitats.

As tourism activities expand and new facilities are being built, it is important to develop outreach and awareness resources for tourist facility operators.

KEY PARTNERS

- » British Columbia Hotel Association
- » Destination BC
- » Tourism Vancouver
- » Tourism Industry Association of BC
- » Indigenous Tourism Association of BC
- » Wilderness retreats
- » Regional and municipal tourism associations
- » BC Parks
- » Wilderness resorts

KEY AUDIENCES

- » Resort operators
- » Fishing tour operators
- » Hotel managers
- » Hunting tour guides
- » Backcountry resorts
- » Mountain biking resort operators

BEST MANAGEMENT PRACTICES

1. In cooperation with appropriate specialists, check that all plants and animals on the premises are not listed as invasive species. As an organization, commit to not planting any invasive plants on-site for ornamental or landscaping purposes. Work with local nurseries and landscaping contractors to use only non-invasive species.
2. Have an invasive species management plan specific to the resort/hotel/business.
 - » Complete an audit of any existing invasive species in or around the property and obtain advice from appropriate specialists on how to remove/replace them
 - » Create a list of activities that run the risk of introducing invasive species, and share it with staff
 - » Develop training around invasive species prevention for staff
 - » Install appropriate signage at key locations where invasive species introductions may occur (e.g. trail heads, boat launches, fish cleaning stations, etc)
3. Share information with guests on invasive species and their impacts and identify key actions guests can take to prevent the spread of invasive species on the premises and in the surrounding areas.







Key Potential Resources for the Industry

There is a wide variety of potential resources for the four target audiences, some of which are more general and apply to all, whereas others are specifically targeted. It is acknowledged that some resources or outreach will be for the operators directly, while other resources will be for their clients. Some resources and outreach ideas being explored include:

- » Online targeted Training for operators and staff
- » Recognition program: E.g. If operators pledge to **CLEAN DRAIN DRY** boats and equipment and encourage awareness of invasive species management practices, they can be eligible to receive outreach resources such as boat decals, brochures, and stickers to place on their equipment or in their place of business
- » Through the recognition program, operators can also advertise the fact that they are Invasive-Wise on their website or at their place of business.
- » Codes of Conduct
- » Webinars to increase knowledge about aquatic invasive species
- » Presentations at conferences
- » Articles and information placed in popular map books, publications
- » Videos or mobile apps that demonstrate best practices
- » Rack cards, factsheets or brochures about invasive species, best practices, etc.
- » Field guides to help identify invasive species
- » Youth activities to engage and educate children
- » Branded boating, fishing, floatplane accessories

Delivery Mechanisms

Methods and avenues to get the word out to the industry about the programs resources and best practices are being piloted.

Program promotional avenues include:

- » Key partners, organizations and audiences
- » Industry associations, presentations at conferences and meetings
- » Social media promotion
- » Through ISCBC e-News, partner networks



Industry Recognition

Industry recognition will be an important aspect of the program, and include a range of promotional resources and avenues. Suggestions include:

- » Profile of participating operators on the ISCBC website, other partner websites
- » Social media profiles, promotional videos
- » Industry publication articles about program and participating members
- » Case study profiles/a before and after case study of a partner
- » e-News articles

Measuring Success

Survey

An initial survey tool was developed and distributed widely to operators, partners and stakeholders across BC to help establish a baseline of current knowledge and practices around invasive species awareness, capacity, and management. At the completion of the Invasive-Wise Tourism project, a survey will be repeated to measure the projects effectiveness in increasing understanding, collaboration, capacity, resources and implementation of practices to protect SAR from invasive species. It will also help determine the efficacy and uptake of best practices as a result of this program in the tourism sector, fishing sector, and with Indigenous operators.



Program Advisory Team

ISCBC would like to recognize the wonderful program advisory team who have contributed their incredibly valuable time, energy and expertise to all aspects of program development and who continue to provide their wisdom and guidance. This contribution is especially valued and extraordinary given the severe impacts of the COVID-19 pandemic on the tourism industry and their individual organizations. Many thanks to you all!

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Piloting

The pilot phase where a range of operators implement the best practices and draft resources will help ensure what is developed for the program is relevant, useable, adaptable and well-tailored to the specific audience's needs. The tourism organizations who pilot the program will be canvassed through surveys, phone calls, joint meetings and interviews to provide feedback, successes and challenges to better inform the program going forward.

Note: Due to COVID-19 restrictions in 2019–2020, direct implementation of the program's resources was not possible, but a pilot phase is planned for spring and summer 2021 following government protocols. See the ISCBC website for further information, resources and program updates.



**For more information on the Invasive-Wise
Tourism program or to sign up, please contact**

**Invasive Species Council of BC
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BCINVASIVES.CA**

