Invasive Species Council of BC

FACTSHEET
SEPTEMBER 2019

Aquariums & Water Gardens

Beautiful in Your Pond or Aquarium, But Be Aware

Aquatic invasive plants are spreading at an alarming rate and creating negative ecological, economic, and recreational impacts in BC. The intentional or accidental release of these species from garden ponds and aquariums into natural waterbodies is one of their primary pathways of introduction. Aquarium hobbyists, pond owners, pet store owners and customers, and water landscapers can prevent the establishment of invasive plants by making informed choices when selecting, trading, purchasing, or disposing of aquatic plants.

The objectives of this publication are to:

- Increase awareness of the negative ecological, social, and economic impacts of aquatic invasive plants.
- Prevent the establishment of new aquatic invasive plants in BC.
- Provide practical strategies for preventing the spread of aquatic invasive plants within and between waterways.
- Encourage responsible practices for aquarium hobbyists, garden pond owners, pet store owners and customers, and water landscapers.

Aquatic invasive species are waterborne, non-native organisms that threaten the diversity or abundance of native species. They also threaten the ecological stability of native waters, or a commercial, agricultural, aquacultural or recreational activity.

— Trout Unlimited Canada

The term invasive plant, as used hereafter, includes provincially listed invasive plants and noxious weeds, as well as other alien plant species that have the potential to pose undesirable impacts on people, the economy, or the environment.

Impacts of Invasive Plants

Most plant species in aquariums and garden ponds are not native to BC. If introduced into natural lakes, ponds, streams, rivers, and wetlands, they can cause severe ecological and economic impacts. Sometimes called “biological pollution,” these species can cause irreversible harm to aquatic environments.

The release of aquarium water into natural waterbodies when pet owners dispose of fish or other aquatic animals can introduce invasive plants, such as parrot’s feather *(Myriophyllum aquaticum)* and Eurasian watermilfoil *(M. spicatum).* Horticultural species, including purple loosestrife *(Lythrum salicaria)*, yellow flag iris *(Iris pseudacorus)*, knotweed *(Polygonum* or *Fallopia* spp.*)*, and policeman’s helmet *(Impatiens glandulifera)*, can also escape into natural wetlands through seeds or vegetative parts being carried by birds or animals, flowing down waterways into lakes, rivers and wetlands, or through improper disposal of garden waste.

Lacking natural pathogens or predators that keep invasive alien species under control in their native ecosystems, invasive plant species can spread rapidly and form dense monocultures, negatively impacting fish and wildlife habitat, species at risk, and native plant biodiversity. For example, many invasive aquatic plant species, such as Eurasian watermilfoil, parrot’s feather, and Japanese wireweed *(Sargassum muticum)* form thick mats on the surface of the water that can prevent light penetration to underwater plants and animals, altering aquatic ecosystems. Once established, aquatic invasive plants are extremely ifficult, if not impossible, to eradicate.

Economically, the impacts of aquatic invasive plants can be devastating. Many of these species can cause damage to boats, dams, and machinery. Real estate values can be diminished on waterbodies with aquatic plants infestations like Eurasian watermilfoil. Management strategies to address infestations are extremely costly.

Do You Know What You Grow?

Make Informed Choices for your Aquarium and Garden Pond

Everyone loves beautiful plants, and making informed choices for your aquarium and garden pond can help safeguard BC's environment and economy for future generations from the impacts of invasive plants.

Think ahead when planning an outing on the water. Ask Yourself,

- *"Will the plant be invasive outside my aquarium or pond?"* Many plant traits that are desirable to gardeners or aquarium hobbyists—such as easy germination and establishment, tolerance to drought and frost, rapid growth and abundant seed production—enable a plant species to become invasive.
- *"If I order a plant from outside BC, could it be invasive in my environment?"* It is possible, although there may be a lag phase before a plant becomes invasive. Investigate whether the plant species is known to be invasive elsewhere in the world.
- *"What do I need to know from my local pet store, nursery or garden centre?"* Find out if a plant is a "fast spreader" or a "vigorous self-seeder" in your planting zone. These are warning signs that the species may be invasive. Again, investigate if the plant is known to be invasive elsewhere.
- *"Is there an alternate plant I can use?"* Check the availability of alternative, non-invasive plants suitable for your area, including exotic and native plants.

Download a copy of the Invasive Species Council of BC's Be PlantWise - Grow Me Instead Brochure from: **https://bcinvasives.ca/resources/programs/plant-wise/** to learn more about selecting appropriate, non-invasive horticultural plant species.

What Can You Do?

Prevention is the most important and cost-effective invasive plant management strategy, but often the least used. It is critical to prevent invasive plants from spreading and becoming established in new waterbodies. Seed and plant part introduction through aquarium water or garden ponds is a key pathway of invasion of new invasive plants into BC and Canada; therefore, factsheets provided for aquatic invaders are focused on PREVENTION. Overall, being aware of aquatic invasive plants and how to prevent their spread are the most effective actions you can take.

Policeman's Helmet (Impatiens glandulifera)

Yellow Flag Iris (Iris pseudacorus)

Integrated Pest Management (IPM)

Since the goal of this document is to prevent the entry and movement of invasive plants between waterbodies, other invasive plant management options are not described. In the event that invasive plants are introduced, Integrated Pest Management (IPM) principles should be implemented. IPM is a decision making process that includes identification and inventory of invasive plant populations, assessment of the risks that they pose, development of well-informed control options that may include a number of methods, site treatment, & monitoring.

Control methods and management strategies vary by invasive plant species, severity of the plant invasion, and site characteristics. Site-specific mechanical, chemical, or biological control methods may be applied. Additional information on control methods is available in species-specific factsheets (https://bcinvasives.ca) from a regional invasive plant committee coordinator, or online at: https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/plant-health/weeds

Contacting your regional invasive plant committee is an excellent way to receive information specific to your area and to get involved locally. To find a committee near you, please visit https://bcinvasives.ca/about/partners/bc-stakeholders/

Targeted Invasive Plant Solutions: »

Aquarium Hobbyists, Pond Owners, and Water Gardeners

Japanese Wireweed
(Sargassum muticum)

Eurasian Watermilfoil
(Myriophyllum spicatum)

Parrot's feather
(Myriophyllum aquaticum)

Knotweed
(Polygonum or Fallopia spp.)

General

These suggestions are always applicable:

» **Educate** yourself, find out what invasive plants are in your area, and inform others.
» Before purchasing an exotic plant, check reliable sources: https://bcinvasives.ca/ 1-888-WEEDSBC, or your local invasive plant committee to find out if the species is invasive.
» **Request** only non-invasive plants from your local pet store, nursery or garden centre.
» Do not buy or sell invasive plants; **seek alternative choices** including native species.
» **Replace** invasive plants with non-invasive exotic or native alternatives.
» **Trade** only non-invasive plants with other hobbyists.
» **Help** educate other aquarium hobbyists, pet store owners, and water gardeners.
» **Report** invasive plants to your regional invasive plant committee by calling 1-888-WEEDSBC (1-888-933-3722), or the through the Invasive Alien Plant Program: https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/invasive-species/iapp.

Aquarium Hobbyists

» **Drain** aquarium water on dry land. Never release or flush unwanted aquarium pets or aquarium water into natural waters, drainage ditches, or sewers.
» **Dispose** of aquatic invasive plants by drying or burning them.
» Do not allow any of your aquarium species, including fish, snails, amphibians, crustaceans, or aquarium weeds (algae), to be released, or to escape into any BC aquatic environment.
» **Contact** a veterinarian or pet retailer for guidance about humane disposal of live animals, including fish, snails, amphibians, and crustaceans

Garden Pond Owners

» **Ensure** garden ponds remain "closed systems" and do not drain into natural waterbodies.
» **Control** established invasive plants using site and species appropriate methods, such as hand-pulling, digging, cutting and mowing.
» **Deadhead** (remove) flowers, seedpods and berries of known invasive plants to prevent reproduction and to reduce seed spread by birds, wildlife, pets, and people.
» **Don't "recycle"** garden debris into a public park or natural area.
» **Dispose** of invasive plant parts and seeds responsibly (i.e. bag and landfill or incinerate).
» **Avoid** composting invasive plants, as they can quickly re-establish themselves.
» **Contact** your local invasive plant committee to learn more about responsible disposal techniques in your area.

Legislation & Regulations

There is a growing network of partnerships and collaborations among all levels of government, industry, retailers, regional invasive plant committees, gardeners, and other concerned individuals to address unwanted horticultural plants and stop their spread. In addition, there are pieces of legislation and regulations that pertain to aquatic invasive plant species.

Federal

The Fisheries Act specifies that it is an offence to harmfully alter, disrupt, or destroy fish habitat, including streamside vegetation. It is also an offence to move or introduce aquatic organisms (including plants) to new habitats: https://laws-lois.justice.gc.ca/eng/acts/f-14/

The Plant Protection Act and Regulations aim to 'prevent the importation, exportation, and spread of pests injurious to plants and to provide for their control and eradication and for the certification of plants and other things.' https://laws-lois.justice.gc.ca/eng/acts/p-14.8/

Provincial

In BC, invasive plant management on all lands (Crown and non-Crown) is regulated by the BC Weed Control Act, and the management of specific Crown lands is regulated by the Forest and Range Practices Act, the Community Charter, and the Integrated Pest Management Act. For more information, see the ISCBC's Legislative Guidebook for Invasive Plant Management in BC. https://bcinvasives.ca/documents/IPC3-Legislative-Guidebook.pdf

References/Links

Provincial and Regional Coordination:

- Invasive Species Strategy for British Columbia: https://bcinvasives.ca/about/invasive-species-strategy-for-bc

Species Identification and Management

- Forests, Lands, Natural Resource Operations and Rural Development: https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/forests-lands-natural-resource-operations-and-rural-development
- BC Shellfish Growers Association Aquatic Invasive Species Guide: http://bcsga.ca/wp-content/uploads/2013/02/BCSGA_AIS-brochure_final_proof.pdf
- E-Flora BC, Electronic Atlas of the Plants of BC: www.eflora.bc.ca
- Community Mapping Network: http://cmnbc.ca/
- Global Invasive Species Database: www.issg.org/database/welcome/
- Marine Invasive Species Identification Guide - For the Puget Sound Area: http://www.psp.wa.gov/downloads/ANS/MISM_Online.pdf

In BC, the economic losses from purple loosestrife alone are estimated to be $20 million annually.

— Report No. 12: Economic Impacts of Invasive Plants in British Columbia, Invasive Plant M. Vardy Council of BC.

- Aquatic Plant Identification Manual for Washington's Freshwater Plants: https://fortress.wa.gov/ecy/gisresources/lakes/AquaticPlantGuide/index.html
- Provincial Inventory and Mapping Database Invasive Alien Plant Program (IAPP) Application, Reference Guide and Field Forms: https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/invasive-species/iapp
- Integrated Pest Management BC Ministry of Environment Integrated Pest Management Program: https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management

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Canada

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Additional Comntact info