Water Invaders

Plants that can change Alberta's waters and wetlands

A GUIDE TO INVASIVE PLANTS
FOR BOATERS, COTTAGE OWNERS,
AND WATER GARDENERS

Alberta Invasive Plants Council

www.invasiveplants.ab.ca

Nancy Loewenstein, Auburn University

What are invasive species or "unwanted invaders"?

Invasive species are plants, animals, or other organisms, growing in places other than the native region in which they originate, that have the unique ability to outcompete or replace indigenous native organisms. Coming from ecosystems in other geographic regions, "unwanted invaders" are free of natural enemies. Lacking the checks and balances from their own natural environments, invasive species have a distinct advantage over native species whose populations are kept in check naturally by native predators, competitors or diseases.

Why should you care?

Invasive species tend to be aggressive, and can reproduce at a high rate, giving them the ability to "take over" entire areas by choking out native plants and animals. This reduces the biodiversity (variety of life) in an area, degrading or diminishing habitat for wildlife, including birds, insects and microorganisms. Invasive species can become costly crop weeds, impede water flow and quality, and interfere with recreational activities like boating or fishing.

Detection is important!

Invasive species are a major threat to natural ecosystems around the world, and Alberta's lands and waters are no exception.

Species featured in this brochure are relatively new, or do not yet exist in the wild, within Alberta, e.g., Salt Cedar, Eurasian Watermilfoil, and Hydrilla. In some instances, it may still be possible to contain, eradicate, or, ideally, prevent introduction of newer species like these. In all cases, the goal must be to limit the spread of all invasive species within the province.

Alberta has 800 lakes with fish and over 300 anglers per lake. Many Albertans can be impacted by water loving invasive plants.

– Alberta Environmental Protection 1997

Quick TIPS

- Do not dump bait or bait water
- Never dump aquarium contents into water
- Spread the information – not the invasives

SHORES AND MARSHES

Purple Loosestrife

Lythrum salicaria

(aka Lythrum)

HABITAT: Mostly along riverbanks, wetlands and ditches.
DESCRIPTION: Many stems per plant; to 2 m ht; stems square-shaped; leaves dark green, lance shaped, opposite; showy purple flower spikes July to Sept.; up to 2 million seeds per plant.

THREAT: Loss of native flora and fauna; degradation of wetland habitats; clogging of irrigation systems.

www.fs.fed.us

Flowering Rush

Butomus umbellatus

HABITAT: Shorelines and in water to 3 m. depth, wet ditches, irrigation canals; water gardens.
DESCRIPTION: Perennial; emergent form (flowering) 1-1.5m. ht, rush-like; non-emergent form (non-flowering) limp, floating; rhizomes; pink umbel of flowers June to Aug.; bulbils on rhizomes; can grow from disturbed roots; cross-section of leaf blade triangular.

THREAT: Displaces native shoreline vegetation; interferes with boating and swimming; changes fish and bird habitat – favors non-native predator fish.

Alvin Mitchell, Salish Kootenai College

www.wildroad.ca

Yellow Flag Iris

Iris pseudacorus

(aka Pale Yellow Iris)

HABITAT: Wet ditches, marshes, water gardens.
DESCRIPTION: Perennial; showy yellow iris flowers late spring to early summer:3 large, drooping, yellow sepals with purple-brown markings, 3 upward pointing petals; 0.9-1.2m ht; long, dark green, sword-like leaves; spreads by rhizomes, and seeds; withstands drought, acidic or brackish water.

THREAT: Fast spreading in ditches and marshes; forms almost impenetrable thickets; loss of diversity, native habitat, access.

Nancy Loewenstein, Auburn University

Leslie J. Mehrhoff, University of Connecticut

Himalayan Balsam

Impatiens glandulifera

(aka Himalayan orchid, Ornamental jewelweed, Touch-Me-Not)

HABITAT: Areas with high soil moisture, riparian areas.
DESCRIPTION: Succulent annual 0.9-3 m ht; stems purple-tinged and hollow; flowers lt. pink to purple, orchid-like, June to Oct.; mature seed capsules explode when touched; partially shade tolerant.

THREAT: Can dominate water edges – loss of diversity; dies after first frost – erosion, silting of water.

Barbara Tokarska Guzik, U of Silesia, Poland

J.R. Crellin

Invasive Phragmites

Phragmites australis subsp. *australis*

(aka European common reed, common reed grass)

HABITAT: Sunny wetlands; borders of marshes, riverbanks, lakeshores; brackish waters; to 2 m depth.
DESCRIPTION: Perennial grass, 1- 7 m ht; strongly spreading by rhizomes; cane-like stems pale yellow (native Phragmites red/purplish stems); large dense, featherlike, grayish purple plumes, late June to Sept.; forms large colonies.

THREAT: Blocks light and occupies all space below ground: produces monoculture; displaces wild rice, cattails, and native wetland orchids; reduces habitat.

Jil Swearington, USDI National Park Service

Richard Old, XID Services Inc.

Didymo *Didymosphenia geminata*

(aka Rock Snot)

HABITAT: Shallow, clear waters; attaches to streambeds, shoreline rocks.
DESCRIPTION: Sand encased single celled algae; forms dense pale brown to white mats: feels like wet wool to touch, not slimy; does not affect water quality; not toxic.

THREAT: Eye irritation; may impact freshwater fish, aquatic plants, and insects; changes stream flow; clogs water intakes; reduces access to water; aesthetics. Transported on felt soled waders – use non-felt waders!

Stu Sutherland, New Zealand

Boaters & Anglers: YOU CAN HELP!

Inspect your boat, motor, trailer, and boating equipment such as anchors and fishing gear, centerboards, rollers, and axles.

Clean your boat, tackle, downriggers, trailer, and other boating equipment by removing any plant parts, zebra mussels, or other organisms that are visible before leaving any waterbody. Some aquatic species can survive more than two weeks out of water. In waterbodies where harmful organisms are known to be present, thoroughly wash equipment with high pressure water (250 psi) to dislodge all small parts and propagules.

Drain water from the motor, live well, bilge and transom wells while on land immediately before leaving the waterbody.

Dry your boat and equipment in the sun before transporting them to another body of water. When moving from an infested waterbody, dry your boat and equipment for at least 5 days before entering another waterbody.

Empty your bait bucket on land before leaving any body of water. Never release live bait into water, or release aquatic animals from one water body into another.

Learn how to identify invasive species.

References

- **AIPC** — www.invasiveplants.ab.ca
- **Centre for Invasive Species and Ecosystem Health** — www.bugwood.org
- **Federation of Fly Fishers** — www.fedflyfishers.org
- **Invading Species Awareness Program** — www.invadingspecies.com
- **Montana Fish, Wildlife & Parks: Aquatic Invasive Species** — http://fwp.mt.gov/fishing/guide/ANS
- **Phragmites Field Guide: Swearingen, J. and K. Saltonstall. 2010.** — http://www.nps.gov/plants/alien/pubs/index.htm
- **Pocket Guide: Invasive Species in Manitoba: River, Lake & Wetland Invaders** — http://invasivespeciesmanitoba.com

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Why should I care?

Noxious weeds threaten the habitat of wildlife by altering natural communities. Noxious weeds can wipe out the native vegetation for nesting, food and cover needed by birds, mammals and fish.

STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

Aquatic invasive species often travel from one body of water to another by "hitching a ride" on watercraft, recreational equipment, and animals.

CLEAN

Remove all plants, animals, and mud. Thoroughly wash everything, including crevices and other hidden areas.

DRAIN

Thoroughly drain your boat before leaving the area, including wells, ballast, and engine cooling water.

DRY

Allow time for your boat to completely dry before launching in other waters.

WARNING - APPROVAL REQUIRED!

In Alberta, before any vegetation control work is done in or near water, an approval is required. For information on approval requirements for shoreline work:

- **Alberta Environment and Water - Pesticide Use In or Near Water - Factsheet:** http://environment.gov.ab.ca/0963.html
- **Alberta Sustainable Resource Development: Shoreline Modifications Factsheet:** http://environment.alberta.ca/03067.html

What can you do?

Prevention, early detection and rapid response are critical for saving habitats from invasive species

IN THE WATER

Eurasian Watermilfoil

Myriophyllum spicatum

Robert L. Johnson, Cornell University

Richard Old, XID Services Inc.

HABITAT: Fertile lake sediments; highly disturbed or high nutrient lakes.
DESCRIPTION: Submersed; large, floating mats; stems pale pink to reddish brown; leaves gray-green, whorls of 3- 4 each with 12-21 pairs thin leaflets; leaves lose stability and collapse around stem when taken out of the water; reproduces by stem fragments.

THREAT: Quickly dominates shallow lakes and rivers: prevents boating, fishing, hunting, and swimming; stems attach to boats, trailers, or animals; specific lake trout fishery damage; eradication nearly impossible.

NATIVE LOOKALIKE: Northern Watermilfoil

Myriophyllum exalbescens
(aka Sibiricum)

Gary Fewless

HABITAT: Same habitat as Eurasian; Northern watermilfoil common in Alberta lakes.
DESCRIPTION: Similar to Eurasian, but has 5-9 pairs of thin leaflets on each leaf in the leaf whorl; leaves keep rigidity when taken out of the water.

THREAT: Sometimes dominates shallow water areas: interferes with use.

Curly Leaf Pondweed

Potamogeton crispus

Chris Evans, River to River CWMA

Three Lakes Council, NY

HABITAT: Ponds, lakes with fertile, hard water; low light tolerant to 5m depth.
DESCRIPTION: Submersed; unique life cycle: first in spring, dies mid-summer; leaves reddish green, stiff, crinkled, small "teeth" on leaf edge; stems flattened; flowers whitish, tiny on spikes; burr-like winter buds.

THREAT: dense mats interfere with water recreation; displaces native plants; dying mats unsightly, increase phosphorus: algal blooms; also spread wrapped around propellers; sold as aquarium plant.

Hydrilla *Hydrilla verticillata*

David J. Mourhead, University of Georgia

Robert Vidéki, Duronicum Kft.

Robert Vidéki, Duronicum Kft.

HABITAT: Lakes, rivers, reservoirs, ponds, and ditches; aquariums, water gardens.
DESCRIPTION: Submersed; stems to 8m long; leaves in whorls of 4-8, small, pointed; leaf margins distinctly saw-toothed; toothed leaf midrib; tiny white flowers on long stalks; potato-like tubers attached to the roots. (Tubers distinguish this plant from lookalikes).

THREAT: *"Worst aquatic invader of North America"*: outcompetes Eurasian watermilfoil and Brazilian elodea; dense mats reduce sport fish size, water quality; can impact power generation, irrigation; prevents boating, fishing, hunting, and swimming. Do not release from aquariums or water gardens.

NATIVE LOOKALIKE: Canadian waterweed

Elodea canadensis

Kristian Peters

HABITAT: Common in North America; lakes, Rivers, ponds and ditches; food and habitat for fish, waterfowl, other wildlife.
DESCRIPTION: Leaves in whorls of three along stem: to 5 mm wide.

THREAT: Occasional rampant growth: interferes with water access, aesthetics.

Brazilian Elodea

Egeria densa
(aka Brazilian waterweed, Anacharis)

Ann Murray, University of Florida

Leslie J. Mehrhoff, University of Connecticut

HABITAT: Still or flowing waters, lakes, ponds, pools, ditches; aquarium plant.
DESCRIPTION: Submersed; rooted or drifting floating mats; looks like large Canadian waterweed; bushy whorls bright green leaves, 4-6 per whorl, each at least 2 cm long; leaf midrib smooth (Hydrilla has toothed midrib).

THREAT: May outcompete Eurasian watermilfoil; can cover hundreds of hectares; displaces native plants; unsightly; interferes with water recreation; poor fish habitat.

WOODY SHORELINE

Russian Olive

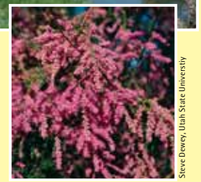
Elaeagnus angustifolia

HABITAT: Invasive in riparian areas - southern Alberta and US States; shelterbelts, urban parks.
DESCRIPTION: Deciduous silver tree or shrub to 10.6 m ht; thorny stems; small, fragrant yellowish flowers June and July; hard green to yellow fruits.

THREAT: Invades old fields, woodland edges, disturbed areas, stream and river banks, seasonal wetlands; forms dense shrub layer: displaces native species and closes open areas.

Salt Cedar

Tamarix spp.
(aka Pink Cascade Tamarisk)



Steve Dewey, Utah State University

HABITAT: Margins of streams, river, irrigation canals, flood plains, seasonal wetlands.
DESCRIPTION: Deciduous, loosely branched shrubs or small trees, 1.5-6.0 m ht; juniper-like scaly leaves; flowers small, pale pink to white, in finger-like clusters; deep tap root.

THREAT: Salt accumulates in leaf scales: leaf litter salinizes soil: unsuitable for native vegetation; high water use: lowers water tables; dense stands restricting access.

See it – report it

You find it –
Experts verify it –
Together we keep Alberta natural!

www.invasiveplants.ab.ca