



A PRACTICAL GUIDE TO

INVASIVE SPECIES IN ALBERTA

Terrestrial & aquatic invaders — identification, impact, and control

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01 The Regulatory Framework

Alberta's invasive species management is carried out under a layered set of provincial and federal laws, with municipalities responsible for on-the-ground enforcement. Understanding which law applies to which species tells you who to report to and what is legally required of a landowner.

Provincial Legislation

- **Weed Control Act (2010)** and Weed Control Regulation — governs terrestrial invasive plants. Weeds are designated **Prohibited Noxious** (must be destroyed) or **Noxious** (must be controlled). The regulation was updated effective January 28, 2026.
- **Agricultural Pests Act (APA)** and Pest and Nuisance Control Regulation — governs terrestrial pests including insects, diseases, rats, and wild boar. Landowners are legally required to control declared pests on their land.
- **Fisheries (Alberta) Act** — regulates purchase, possession, and release of 52 prohibited aquatic species.
- **Pesticide (Ministerial) Regulation** — governs chemical treatments in or within 30 m of open water.
- **Stray Animals Act** — covers escaped domestic livestock (distinct from wild boar at large).

Federal Legislation

- **Aquatic Invasive Species Regulations (SOR/2015-121)** under the federal Fisheries Act — makes it illegal to introduce any non-native aquatic organism into a water body unless authorized.
- **Plant Protection Act** — administered by the Canadian Food Inspection Agency (CFIA) for regulated plant pests and diseases.

Municipal Role

Cities and counties enforce the Weed Control Act on private property and run their own programs. Edmonton's 2024 Dutch elm disease response, for example, was led locally in cooperation with CFIA and the province.

■ TWO-TIERED WEED APPROACH

Prohibited Noxious weeds are either absent from Alberta or present in small, potentially eradicable populations — the goal is early detection and rapid destruction. **Noxious** weeds are already widespread — the goal is containment and preventing further spread. Knowing which tier a plant is on tells you whether you are legally required to *destroy* it or simply *control* it.

02 Terrestrial Invasive Plants

Alberta lists approximately 46 Prohibited Noxious and 29 Noxious weed species. Below are the most significant of each category, followed by the control approaches that actually work on them.

Prohibited Noxious — Must Be Destroyed

Species	Identification	Impact
Purple loosestrife <i>Lythrum salicaria</i>	Tall perennial, magenta flower spikes, square stems	Chokes wetlands, displaces native riparian vegetation
Rush skeletonweed <i>Chondrilla juncea</i>	Wiry stems, yellow dandelion-like flowers, milky sap	Reduces crop yields; deep taproot makes it persistent

Species	Identification	Impact
Russian knapweed <i>Rhaponticum repens</i>	Grey-green leaves, pink-to-purple thistle-like flowers	Allelopathic — poisons soil against other plants; toxic to horses
Hawkweeds <i>Hieracium</i> spp. & hybrids	Hairy-leaved rosettes, yellow or orange dandelion-like flowers	Displaces pasture and rangeland species
Yellow starthistle <i>Centaurea solstitialis</i>	Yellow flowers with long stiff spines	Toxic to horses; dominates rangelands
Giant hogweed <i>Heracleum mantegazzianum</i>	Huge white umbels, stems to 5 m with purple blotches	Sap causes severe skin burns in sunlight (phytophotodermatitis)

Noxious — Must Be Controlled

Species	Identification	Impact
Canada thistle <i>Cirsium arvense</i>	Spiny leaves, pinkish-purple flower heads, rhizomatous	Major agricultural weed in cereal and forage crops
Scentless chamomile <i>Tripleurospermum inodorum</i>	Daisy-like flowers, finely divided leaves, no scent	Heavy seed producer; contaminates grain
Common tansy <i>Tanacetum vulgare</i>	Yellow button flowers, fern-like leaves, strong odour	Toxic to livestock; spreads along roadsides & riparian zones
Downy brome (cheatgrass) <i>Bromus tectorum</i>	Soft drooping annual grass, reddish at maturity	Increases wildfire frequency; degrades rangeland
Field bindweed <i>Convolvulus arvensis</i>	Twining vine, white-to-pink trumpet flowers	Smothers crops; roots reach 6 m deep
Leafy spurge <i>Euphorbia esula</i>	Yellow-green bracts, milky sap	Toxic to cattle; extremely difficult to eradicate
Oxeye daisy <i>Leucanthemum vulgare</i>	Classic white-and-yellow daisy	Displaces native forbs in pastures
Baby's breath <i>Gypsophila paniculata</i>	Branching plant with tiny white flowers	Escapes from gardens; invades pastures

Control Approaches

Effective weed control is almost always integrated — no single tool works on every species or every site.

- **Prevention** — clean equipment, certified seed, inspected soil and gravel imports.
- **Mechanical** — mowing, hand pulling, tillage; timing is critical, especially before seed set.
- **Chemical** — selective herbicides matched to species, adjacent crops, and water proximity.
- **Biological** — approved insect agents (leafy spurge flea beetles, Canada thistle stem weevils, etc.).
- **Cultural** — competitive seeding, rotational grazing, healthy native cover.
- **Revegetation** — critical after removal to prevent re-invasion.

■ WHERE GARDEN CENTRES FIT IN

It is illegal to sell, trade, or transport Prohibited Noxious plants, cuttings, or seeds in Alberta. Many of today's worst weeds started as escaped ornamentals. If you find a Prohibited Noxious species in your garden, you are legally required to destroy it. The Alberta Invasive Species Council publishes a list of non-invasive alternatives with similar colour, size, and texture.

03 Terrestrial Animals, Insects & Diseases

Wild Boar at Large — *Sus scrofa*

ID: Eurasian-type pigs, typically with long dark hair and a woolly underfur. Live in matriarchal groups called "sounders." Escaped domestic pigs are *not* wild boar — they fall under the Stray Animals Act.

Impact: Prolific — sows can breed at six months and produce multiple litters averaging six piglets each. They damage crops and pastures, prey on newborn livestock and ground-nesting birds, destroy riparian areas through rooting and wallowing, and can host up to 39 diseases transmissible to livestock, wildlife, and people. African Swine Fever (near-100% pig mortality, no cure) is the top emerging concern. U.S. agricultural damage is estimated at \$1.5 billion annually.

Regulation & Control: Declared a pest under the Agricultural Pests Act — the same designation as Norway rats. Alberta shifted away from bounties in 2015 toward **whole-sounder trapping** with trail-camera monitoring. Hunting is actively discouraged because it scatters sounders and makes them nocturnal and wary. Report sightings to the **Squeal on Pigs!** program (310-FARM).

Norway Rat — *Rattus norvegicus*

Impact: Damages stored grain and infrastructure; carries pathogens.

Regulation & Control: Alberta has held **rat-free status since the 1950s** — one of the world's most successful rodent eradication programs. A Rat Control Zone along the Saskatchewan border is actively patrolled. Any rat sighting elsewhere in the province triggers immediate response. Report to 310-FARM.

Dutch Elm Disease — *Ophiostoma ulmi* & *O. novo-ulmi*

ID: Not a species but a fungal disease transmitted by three elm bark beetles — the smaller European (*Scolytus multistriatus*), native (*Hylurgopinus rufipes*), and banded (*Scolytus schevyrewi*) elm bark beetles. Watch for wilting, yellowing, and curling leaves ("flagging") starting on one branch, then rapid tree death.

Status: Alberta holds the largest remaining DED-free stand of American elm in the world. In **August 2024**, DED was confirmed in Edmonton for the first time (Killarney and Yellowhead Corridor East). Infected trees plus all elms within 20 m (to cover root-graft spread) were removed. Following successful containment, Alberta is still considered DED-free.

Regulation & Control: Fungi and beetle vectors are declared pests under the APA. Key rules:

- Provincial **pruning ban April 1 to September 30** — when beetles are active.
- Elm firewood **cannot be stored or transported**.
- Pheromone trap monitoring by STOPDED (Society To Prevent Dutch Elm Disease).
- Report suspected DED: 311 in Edmonton/Calgary; 310-0000 in rural Alberta.

Mountain Pine Beetle — *Dendroctonus ponderosae*

Note: A *native* insect behaving invasively. After major outbreaks in B.C., it spread east across the Rockies into Alberta's pine forests — including the ecologically significant jack pine boreal forest, which has no co-evolutionary history with it.

Impact: Has killed millions of hectares of lodgepole and jack pine. Threatens the boreal pine forest if it establishes permanently in jack pine.

Control: Single-tree removal and burning (Level 1 control), aerial surveys, and prescribed fire. Alberta continues major investment in slowing eastward spread.

Other Regulated Terrestrial Pests

- **Emerald ash borer** (*Agrilus planipennis*) — not established in Alberta; a top threat to ash trees; CFIA-regulated.

- **Gypsy / spongy moth** (*Lymantria dispar*) — intermittent detections trigger CFIA response.
- **Clubroot** (*Plasmodiophora brassicae*) — soil-borne canola pathogen; a declared APA pest with municipal plans.
- **Fusarium head blight** (*Fusarium graminearum*) — regulated in some municipalities to protect cereal crops.

■ WHY NO FIREWOOD MOVEMENT

Don't move firewood. Buy it where you burn it. Firewood is one of the top vectors for Dutch elm disease, emerald ash borer, and mountain pine beetle — a single load of contaminated wood can establish a new infestation hundreds of kilometres from the source. Provincial parks and most campgrounds enforce this.

04 Aquatic Invasive Species

Alberta's Fisheries (Alberta) Act lists 52 prohibited aquatic species. Because almost no aquatic invasive can be eradicated once established, prevention is the entire strategy.

Invasive Mussels — The Top Priority

Species: Zebra mussel (*Dreissena polymorpha*), quagga mussel (*Dreissena rostriformis bugensis*), and the emerging golden mussel (*Limnoperna fortunei*).

ID: Small (typically under 5 cm) bivalves with D-shaped striped shells; attach to hard surfaces with byssal threads.

Impact: Prolific filter feeders that strip plankton from the water, collapsing food chains and reducing native fish populations. Clog water intakes, hydroelectric infrastructure, and irrigation systems. Great Lakes damages run up to **\$500 million annually**. Lake McGregor alone could cost Alberta \$284 million per year if infested. Mussels survive up to 30 days out of water, making trailered watercraft the primary vector.

Status: Alberta remains **invasive mussel-free**. They are established immediately east in Manitoba (Lake Winnipeg) and in many U.S. states.

Regulation: Mandatory watercraft inspections began **June 1, 2025** — Alberta became the first province in Canada to require them. Starting 2026, the inspection season runs May 1 – September 30. Budget 2025 allocated \$18 million over five years. In 2024, 13,408 inspections found 15 mussel-positive watercraft. K-9 detection dogs assist at inspection stations. Zebra mussels have also been found in **moss (marimo) balls** sold at pet and garden stores — provincial disposal protocols apply to any purchased since January 1, 2021.

Whirling Disease — *Myxobolus cerebralis*

ID: A microscopic myxozoan parasite — not visible without a lab. Infected juvenile trout may show a whirling swim pattern, darkened tail, or skeletal deformities.

Impact: Attacks salmonids (trout, whitefish, mountain whitefish) by deforming cartilage and nervous system in juveniles. Can cause wild trout population collapses.

Status: First confirmed in Alberta in Johnson Lake (Banff National Park) in 2016. Since detected in the Bow, Oldman, Red Deer, and North Saskatchewan river systems, and in the Belly River inside Waterton Lakes NP in 2023.

Control: Cannot be eradicated once in a watershed. Parks Canada has closed water access in Yoho and Kootenay national parks (October 2023) and banned non-motorized watercraft from outside park boundaries on Waterton Lakes waters and angling in flowing waters (April 2024). Anglers and boaters must **Clean, Drain, Dry** all gear.

Prussian Carp — *Carassius gibelio*

ID: Resembles goldfish or crucian carp — bronze or silvery, deep-bodied, up to about 45 cm.

Impact: Reproduces by *gynogenesis* — females use sperm from other cyprinids to trigger egg development without genetic contribution, so a single female can found a population. Already widespread in southern Alberta river systems.

Control: Prohibited under the Fisheries (Alberta) Act. Anglers who catch one must kill it and either eat it or dispose of the carcass well away from water. Focus is on preventing spread to new watersheds.

Invasive Aquatic Plants

Species	Key Traits	Impact
Eurasian watermilfoil <i>Myriophyllum spicatum</i>	Submerged, feather-like leaves in whorls of 4	Forms dense mats; chokes out natives and recreation
Flowering rush <i>Butomus umbellatus</i>	Emergent, pink umbel, triangular stem	Invades shorelines & irrigation canals; hard to remove
Curly-leaf pondweed <i>Potamogeton crispus</i>	Submerged, wavy serrated-edge leaves	Early-season growth shades out natives
European common reed <i>Phragmites australis</i> subsp. <i>australis</i>	Tall reed to 5 m, dense dark plumes	Dominates wetlands, displaces cattails and native reeds
European water chestnut <i>Trapa natans</i>	Floating rosettes, spiny nuts	Forms impenetrable surface mats
Yellow flag iris <i>Iris pseudacorus</i>	Yellow flag-like flowers, sword-shaped leaves	Invades shorelines; toxic to livestock

Other Aquatic Species of Concern

- **Common carp** (*Cyprinus carpio*) — established in some waters; muddies water, damages aquatic vegetation.
- **Asian carps** (bighead, silver, grass, black) — not in Alberta; all prohibited.
- **Rusty crayfish** (*Faxonius rusticus*) — not established; prohibited.
- **New Zealand mud snail** (*Potamopyrgus antipodarum*) — tiny, highly invasive; spreads via felt-soled waders.
- **Asian clam** (*Corbicula fluminea*) — not established; prohibited.
- **Goldfish & koi** — aquarium releases establish feral populations in stormwater ponds, sometimes treated with rotenone under special approval.

■ DON'T LET IT LOOSE

Never release aquarium fish, plants, live food, or bait into any water body or storm sewer. Rehome unwanted pets through shelters, pet stores, or online trading groups. Sport fish may only be returned to the water they were caught in — never moved between water bodies. Aquarium and bait-bucket releases are a leading pathway for aquatic invaders, and many prohibited species started with a single well-meaning release.

05 Prevention, Reporting & Resources

On the Water — Clean, Drain, Dry

- **Clean** all plants, mud, and sand from boats, trailers, waders, and gear before leaving the shore. Pressure-wash or use hot water (60°C / 140°F or hotter) if possible.
- **Drain** all water from bilges, livewells, ballast tanks, motors, and buckets on land, well away from waterways.

- **Dry** everything completely — minimum 5 days in hot weather, 18 days in cool, or 3 days frozen.
- **Stop** at every open watercraft inspection station. Mandatory for watercraft crossing Alberta's southern or eastern borders since June 1, 2025. Fines apply.

On Land

- Buy certified weed-free seed, hay, and gravel.
- Clean vehicles, ATVs, boots, and pets between natural areas.
- **Don't move firewood** — buy where you burn.
- Use native or non-invasive ornamentals; never plant Prohibited Noxious species.
- Report suspect plants, pests, or fish promptly.

Reporting Contacts

What to Report	How
Aquatic invasive species	AIS hotline 1-855-336-BOAT (2628) , or EDDMapS Alberta app / website
Wild boar sightings	310-FARM (3276) or the Squeal on Pigs! program
Rats anywhere in Alberta	310-FARM (3276)
Suspected Dutch elm disease	311 in Edmonton/Calgary; 310-0000 in rural Alberta
Weeds on private land	Your municipal or county Agricultural Fieldman

Key Organizations

- **Alberta Environment and Protected Areas** — lead ministry for AIS and wildlife invasives.
- **Alberta Agriculture and Irrigation** — lead for weeds, wild boar, rats, agricultural pests.
- **Alberta Invasive Species Council (AISC)** — *abinvasives.ca* — fact sheets for every regulated species; runs Squeal on Pigs! and Protect Our Waters campaigns.
- **STOPDED** — Society To Prevent Dutch Elm Disease; operates the provincial DED monitoring program.
- **CFIA** — federal regulator for plant pests crossing borders.
- **Fisheries and Oceans Canada (DFO)** — enforces the federal AIS Regulations.
- **Parks Canada** — manages invasives in Banff, Jasper, Waterton, Yoho, and Kootenay.

■ WHY ALBERTA'S POSITION IS UNUSUAL

Alberta is still rat-free, still largely Dutch-elm-disease-free, and still invasive-mussel-free — a combination unmatched almost anywhere in North America. That position has been held only through active, continuous prevention. Every person who cleans their boat, pulls a weed, or reports a sighting is part of that defence.

Quick-Start Resources

- **abinvasives.ca** — one-page fact sheet on virtually every regulated Alberta species.
- **EDDMapS Alberta** — free app for ID and GPS-tagged reporting with photos.
- **alberta.ca/invasive-species** — current regulated species lists and watercraft inspection info.