



Invasive Species Pocket Guide for Alaska Firefighters



Forest
Service

Alaska
Region

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This document was modified from the original 2007 version, which was produced by Michael Shephard, USDA Forest Service, State & Private Forestry, Tom Heutte, USDA Forest Service, State & Private Forestry, Jamie M. Nielsen, UAF Cooperative Extension Service, and Charles Lindemuth, Chugach Design Group.

2018 additions were provided by the Alaska Wildland Coordinating Group Invasive Species Task Group.



On the cover: CL-415 scooping water during the 2014 Funny River Fire on Alaska's Kenai Peninsula. The invasive plant *Elodea* has been found in several lakes on the Kenai; aquatic invasive species can be spread any time water is moved from an infested area to another waterbody. (USFWS photo by J. O'Connor)

Why Should I Care About Invasive Species in Alaska?

The lower 48 states have extensive problems with invasive species, both terrestrial organisms like noxious weeds and invasive slugs, and non-native aquatic species like waterweeds, mussels, and snails. In the lower 48, these invasive species are causing severe environmental and economic damage. In most cases, once an invasive species is widely established, getting rid of it is impossible.

The situation in Alaska is different. At present, most of Alaska is free of invasive species. The invasive species currently established are found mostly on the “human footprint,” or developed areas such as the road system, towns, cities, mines, and airstrips. People and vehicles generally spread invasive species from the human footprint outwards along transportation routes (roads, airports, float ponds, trails, and rivers) as they move materials and goods. Invasive species are also commonly found along well-used trails and at cabin sites that may be off the beaten path. Although not as widespread as in the lower 48, invasive species still pose serious threats to Alaska’s agriculture, tourism, wildlife, fisheries, and subsistence resources. By taking care to avoid introducing new species to the state, or spreading nonnative species already present to new areas, we all have the opportunity to prevent the extensive invasive species problems that plague the rest of the U.S.

Firefighters and fire-fighting activities have the potential to contribute to the problem of invasive species introduction and spread in Alaska. Disturbance from construction and use of firelines, staging areas, and campsites - as well as from the fire itself – create



Disturbances from firelines, staging areas, and campsites, as well as the fire itself, create ideal conditions for invasive species to become established. (Photo by J. O'Connor, USFWS)

Invasive white sweetclover spreading from the Dalton Highway roadside into a recently-burned area. (Photo by M. Carlson, ACCS)



ideal conditions for invasive species to become established if their seeds or propagules have been unintentionally brought to the fire incident and response areas. The Best Management Practices (BMP) described in this document will help firefighters and water delivery personnel avoid introducing or spreading seeds and propagules to Alaska and within the state.

Firefighting personnel can unintentionally transport invasive species on clothes, gear, and equipment from the lower 48 to Alaska. They can also unintentionally spread invasive species within Alaska, from infested areas to clean areas. Aquatic invasive species can also be spread any time water is moved from an infested area to another waterbody, when seeds, propagules, or larvae are carried in small amounts of water or trapped in the water-handling equipment.

This booklet is a tool to help identify some of the invasive species of greatest concern in Alaska and also suggests BMPs that will help firefighting personnel avoid introducing or spreading them. It also identifies **four invasive species** that should be reported to authorities and how to report them.

▼REPORT IF FOUND:

Zebra mussel • Quagga mussel • Elodea • Spotted Knapweed

Instructions for reporting these four species can be found at the end of the guide.



Firefighting personnel can unintentionally transport invasive species on clothes, gear, and equipment. Note the seeds stuck to the pants on the right. (Forest Service photo by M. Hutten)

Best Management Practices for Fire Management

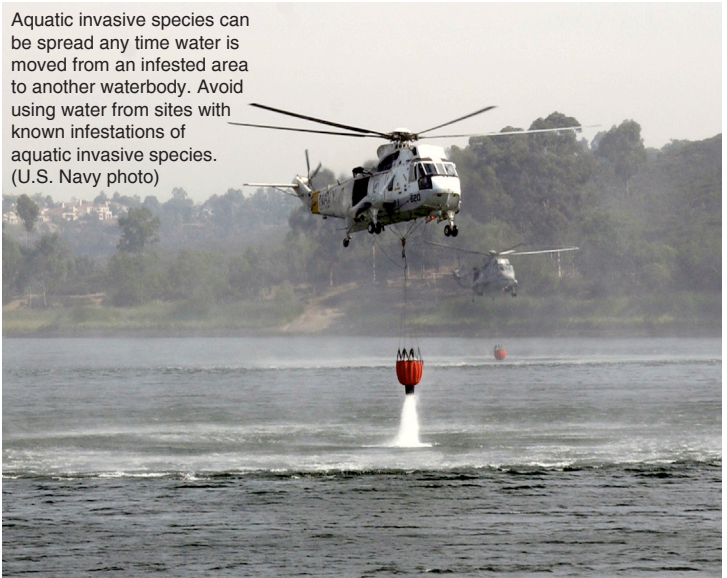
BMPs for ground operations

Invasive species can be introduced and spread unintentionally when firefighters and equipment are moved from infested areas to clean areas. Therefore...

- Ensure that all equipment (including borrowed or rental equipment) is free of seeds, propagules, and soil before entering incident location.
- Remove weed seeds from clothing, boots, and fireline gear if travel occurred in infested areas.
- If vehicles have traveled through infested areas, hose them off before moving them somewhere else.
- Flag high-risk weed infestations in areas of concentrated activity and avoid the infestations if possible.
- Avoid or minimize ground-disturbing activity in areas where invasive species occur whenever possible, including planned ignitions.
- When possible, establish incident bases, fire operations staging areas, aircraft landing zones, and other sites that will receive repeated use in areas that have been inspected and are verified to be free of invasive species.
- Remove flower and seed heads of invasive plants in areas that will receive repeated use, if possible; put in garbage bags for disposal.

If you are not sure if invasive species are a problem at your site, request the assistance of a Resource Advisor.

Aquatic invasive species can be spread any time water is moved from an infested area to another waterbody. Avoid using water from sites with known infestations of aquatic invasive species.
(U.S. Navy photo)



BMPs for Water Delivery- Scoopers, helicopters, portable pumps, hoses, portable tanks, etc.

Aquatic invasive species can be easily and unintentionally spread from contaminated ponds and lakes to clean locations, creating whole new infestations. Therefore...

- Avoid using water from sites with known infestations of aquatic invasive species.
- Remove all plant parts, debris and mud from external surfaces of gear and equipment before relocating.
- Avoid obtaining water from multiple sources during a single operational period unless drafting/dipping equipment is decontaminated or changed out with clean equipment between sources.
- If it is necessary to use waterbodies with known infestations of aquatic invasive species, avoid using the water in areas where it can reach other water sources. Decontaminate equipment before utilizing other water bodies within the state or outside of the state.
- When cleaning equipment, find a level, high-and-dry area away from a water source. Semi-permeable surfaces that allow water to seep into the ground without pooling are best.
- Do not use chemicals that contain bleach or quaternary ammonium compounds to clean aircraft fuselages or water delivery components (e.g., helicopter buckets and footvalves). These chemicals do not meet corrosion requirements for aluminum.
- Remember: Clean, Drain (or Rinse), and Dry— Everything, Every Time you come into contact with water known to harbor aquatic invasive species.

Quagga



Zebra



Zebra and Quagga Mussels

Dreissenidae Family

- Not detected in Alaska as of 2017.
- Zebra Mussel (*Dreissena polymorpha*)
 - ¼ - 1 ½ inches long, triangular shell sharply pointed at its hinging end. Yellowish and dark banding pattern that can be smooth or zig zag; variable.
 - Standing or running fresh waters, including brackish waters. Usually found in clusters, can attach to any available hard surface. Generally found in shallow water (6 – 30 feet). Under suitable conditions can live for many days out of water.
- Quagga mussels (*Dreissena rostriformis bugensis*)

May be striped similar to a zebra mussel. Small threads (ropes present on the hinge edge of the shell. Shell rounded or fan shaped with pointed edges at either side. Also a fresh water organism.

REPORT IF FOUND



Waterweed (*Elodea* spp.)

Hydrocharitaceae Family

- An underwater, perennial plant that sometimes forms tangled masses in lakes and ponds, with long trailing stems. Leaves are arranged in whorls of three around the stem. Individual plants can vary greatly in appearance depending on growing conditions. Some are bushy and robust, others have few leaves and weak stems. In some environments plants are bright green; in others dark green to nearly black. No part of the plant extends above the surface of the water.
- Most likely to be found in lakes near the road system or that receive significant floatplane use.
- **Reproduces vegetatively. A single plant fragment, carried unintentionally by aircraft to a different body of water, can start a whole new infestation.**



Creeping Thistle (*Cirsium arvense*)

Sunflower Family

- A perennial that grows to five feet tall with erect, ridged, branching stems. Leaves curled, wavy, oblong, alternate on stem with woolly hairs on underside. Leaves arise directly from the stem without a distinct leaf stalk. Flowers are purple-pink in clusters at the ends of branches.
- Forms colonies via an extensive horizontal and vertical root system; can eventually cover acres. Also spreads by wind-blown seeds. Young plants appear as basal rosettes that bolt in late summer. Grows in fields, pastures, forests, and along roadsides, ditches, and river banks.
- **Restricts recreational land use, scratches and infects animal skin, and produces allelopathic chemicals to suppress surrounding vegetation. Very difficult to eradicate once established.**



Bull Thistle (*Cirsium vulgare*)

Sunflower Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

- Biennial erect plant rises from a fleshy taproot. A large, flat rosette forms in the first year, and flowers and stems elongate in the second year. Stem grows 2 to 5 feet tall with many spreading branches. Leaves hairy and prickly on upper side, and cottony underneath. Stems have irregular spiny “wings.” Flower heads are 1.5 to 2 inches, urn shaped, purple ray florets. Bracts under flowers are fleshy and tipped with spines.
- Found on disturbed sites, roadsides, and riparian areas. Found in Anchorage and Southeast Alaska.
- **Restricts recreational land use, decreases land value, and competes with native vegetation for water, space, and light.**



Oxeye Daisy (*Leucanthemum vulgare*)

Sunflower Family

- A short-lived showy perennial that spreads vegetatively by rhizomes or from seeds. Heads solitary at the ends of branches, consisting of ray and disc flowers. White ray florets 0.5 to 1 inch long. Yellow discs 0.5 to 1 inch across. Leaves hairless to sparsely hairy, alternate along the stem, becoming progressively smaller towards the top, oblanceolate, with crenate to lobed margins. Upper leaves toothed, lacking a petiole.
- Common on roadsides, disturbed areas, beach meadows, and landscaped areas. Frequently a component of wildflower seed mixes.
- **Forms dense colonies, is unpalatable to grazing animals and insects, and hosts several plant viruses. Heavy infestations can cause soil erosion.**



Spotted Knapweed (*Centaurea stoebe*)

Sunflower Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

- Biennial or short-lived perennial. Plants grow to three feet tall from a stout taproot. Basal rosettes have deeply lobed gray-green leaves. Flower heads solitary at the ends of branches. Involucral bracts beneath flowers are stiff and topped with dark comb-like fringe giving a spotted appearance. Flower heads pink-purple, consisting of ray florets only, solitary at the end of stem branches.
- Spreads only by seeds. Adapted to well-drained soils. Seeds dispersed near the parent plant or transported by people, wildlife, vehicles, and in soil, crop seed, and contaminated hay. Look for this plant along roadsides in Alaska. Found in Anchorage, Fairbanks, Valdez, and numerous locations in Southeast Alaska.
- **Responsible for millions of dollars in economic loss and environmental damage in the western United States.**



Orange Hawkweed (*Hieracium aurantiacum*)

Sunflower Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

- A perennial with colorful orange-red flowers about one inch in diameter. Flower heads are red on the edges and orange in the center. Flowers consist of ray florets only with notched upper margins. Leaves clustered in a basal rosette. A few small leaves may be found on the 6 to 8 inch long stem, but often stems remain leafless. Leaves are covered with soft white hairs. Stems have shorter dark colored hairs. Leaves are darker green on the upper surface than the lower surface. Stems 2 to 12 inches, occasionally growing to two feet. Milky juice produced by leaves and stems.
- Spreads by stolons, rhizomes, and seed. A favorite flower of unwary gardeners and wildflower enthusiasts. Found along roads, riparian areas and beaches.
- **Moves into forb meadows and wetlands where it spreads aggressively. Forms dense mats, crowding out native plants.**



Non-Native Yellow-flowered Hawkweeds

Sunflower Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

Meadow Hawkweed (*Hieracium caespitosum*)

Mouse-ear Hawkweed (*H. pilosella*)

Narrowleaf Hawkweed (*H. umbellatum*)

Common Hawkweed (*H. lachenalii*)

- Both native and non-native species of hawkweed exist in Alaska. Native Alaskan hawkweeds lack stolons, have branched stems with many leaves, and generally are found in high-elevation meadows.
- Mouse-ear hawkweed has a solitary yellow flower.
- Similar in appearance to orange hawkweed, meadow hawkweed grows to 3 feet, its stem covered in coarse black gland-tipped hairs, and bearing multiple yellow flowers.
- Narrowleaf hawkweed has hairy leaves with serrated margins.
- Common hawkweed has 7-10 stem leaves that are strongly toothed and tapering to the narrowing stem.



Narrowleaf Hawksbeard (*Crepis tectorum*)

Sunflower Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

Related Species: Smooth Hawksbeard (*Crepis capillaris*), is another invasive species.

- Annual or winter annual to 3 feet tall. Basal leaves are stalked and lance-shaped with margins varying from numerous backward-pointing teeth to deeply lobed. Stem leaves clasp the stem. Leaf margins are often curled back towards the midrib. Bracts below dandelion-like yellow ray flowers are smooth, lacking hairs.
- Often found on disturbed soil; waste places, riverbars, or roadsides. Thrives in dry, coarse soil.
- **Competes with seedlings, forages, cereals and oilseeds. The most serious infestations of this weed occur in weak crop stands. Spreads into riparian areas.**



Hairy Catsear (*Hypochaeris radicata*)

Sunflower Family

- Perennial herb with a basal rosette of dandelion-shaped leaves. Similar in appearance to dandelion, but can grow to 2 feet. Leaves are densely hairy on both sides. No leaves on stems. Several simple or branched stems 6 to 24 inches tall. Yellow flower heads, often several heads per stem.
- Grows in meadows, gardens, roadsides, and waste places. Especially common in southern Southeast Alaska.

Similar Species:

Fall Dandelion
(*Leontodon autumnalis*),
is a similar-looking exotic
species now spreading in
Southcentral Alaska. However,
fall dandelion blooms later in
the season.





Perennial Sowthistle (*Sonchus arvensis*)

Sunflower Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

**Related Species: Common Sowthistle (*Sonchus oleraceus*)
Spiny Sowthistle (*Sonchus asper*)**

- Perennial with flowers and leaves similar to the dandelion. Plants to 4 or 5 feet tall. Flower heads are 1 to 2 inches across. Long stems arise from a basal rosette of dandelion-like leaves. Stems are branched only at the top. Basal and stem leaves have prickly margins. Leaves on the stem are less numerous, and clasp the stems at the base. Plants exude a milky sap when broken. Bracts below flowers have numerous gland-tipped hairs
- Commonly found in waste areas, meadows, woods, lawns, roadsides, beaches, ditches, and river and lake shores.
- Can drastically reduce crop yields in agricultural areas by displacing native plants on beaches and in meadows, competing with desired plants for nutrients.



Common Tansy (*Tanacetum vulgare*)

Sunflower Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

- Perennial, spreads by seed and by short rhizomes, forming dense clumps. Flat-topped clusters of button-like yellow flowers. Numerous composite flower heads (20 to 200 per plant). Heads composed of disc florets only- flower heads without petals. Upright stems often purplish-red and dotted with glands. Leaves alternate and deeply divided into narrow individual leaflets, giving a feathery appearance. Plants grow to five feet tall. Strong odor reminiscent of creosote.
- Thrives in disturbed habitats in full sun. Found on roadsides, river and stream banks, and beach meadows.
- **Mildly toxic to grazing animals. This plant can grow along streams and restrict water flow.**



Tansy Ragwort (*Senecio jacobaea*)

Sunflower Family

Tansy Ragwort (*Senecio jacobaea*)

Sunflower Family

- Short-lived perennial with one to several stems arising from a taproot. The plant grows 1 to 4 feet tall. Leaves deeply cut. Basal leaves stalked 2 to 8 inches long. Leaves become smaller and petioles become shorter moving up the stem. Flower heads borne in terminal clusters, heads consist of yellow ray and disc florets. Ray florets number 10 to 13. Petals are 0.25 to 0.5 inches long.
- Forms a low-growing rosette in the first year. Found in waste places, roadsides, clearcuts, meadows.
- Contains a toxic compound responsible for considerable livestock mortality. It is estimated that the State of Oregon has lost \$7 million per year to livestock poisoning by this plant.



Western Salsify (*Tragopogon dubius*)

Sunflower Family

Photos by Michael Rasy, University of Alaska, and Howard F. Schwartz, Colorado State University, Bugwood.org.

- Biennial or occasionally annual, growing 1 to 3 feet tall, with a long, stout taproot. The hollow stem, and long, narrow grass-like leaves contain a milky white juice. Stems are swollen immediately below yellow ray flowers. Bracts are distinctly longer than the yellow flower petals. Dandelion-like seeds are wind dispersed. Juvenile plants resemble shoots of grass. Flower heads open and point toward the sun in the morning, following it until midday before closing again.
- Occurs along roadsides and disturbed sites. A large population has become established along the Turnagain Arm segment of the Seward Highway, and is spreading rapidly despite control efforts. This species has also been found in Fairbanks and on Prince of Wales Island.
- High densities of this plant are likely to inhibit growth and recruitment of native forbs and grasses.



White Sweetclover, Yellow Sweetclover (*Melilotus officinalis*)

Pea Family

Photos by Tom Heutte, USDA Forest Service, and University of Alaska - Anchorage, Bugwood.org.

White Sweetclover, Yellow Sweetclover (*Melilotus officinalis*)

Pea Family

- Annual or biennial; in the first season of growth they produce vegetative shoots which may reach 12 inches. Upright growth habit. Intolerant of shade. White and yellow sweetclover are very similar, differing primarily in flower color.
- Plants can grow to 6 feet tall, from a taproot. Sweet-scented, with many-branched stems. Leaves toothed, oblong to lance shaped, and compound with three leaflets. Flowers small and white or yellow, in tapering spike-shaped clusters at the end of branches.
- **Rapidly colonizes open waste areas, and spreads quickly along riparian areas and riverbanks. Already growing aggressively along several major Alaskan rivers.**



Bird Vetch (*Vicia cracca*)

Pea Family

Photos by Michael Rasy, University of Alaska, and Caleb Slemmons, National Ecological Observatory Network, Bugwood.org

Related Species: Hairy Vetch (*V. villosa*)

- Perennial which reproduces by seed and vegetatively by underground rhizomes. Multiple, branching vine-like stems have small tendrils and alternate, pinnately-compound leaves with 8 to 10 leaflets. Bilaterally symmetrical purple flowers are arranged on a one-sided spike. Flowering occurs from spring to late fall. Seeds contained in inch-long, brown, lance-shaped pods.
- Bird vetch aggressively climbs fencing, trees, bushes, and other vegetation, monopolizing sunlight, space, and moisture. Spreads along roadsides, trails, and other disturbed areas.



Common Toadflax, Butter & Eggs (*Linaria vulgaris*)

Figwort Family

Photos by Michael Shephard, USDA Forest Service, Bugwood.org.

Common Toadflax, Butter & Eggs

(*Linaria vulgaris*)

Figwort Family

- An aggressive perennial that can reproduce by seeds or rhizomes, with 1 to 25 stems per plant. Woody, smooth, erect, leafy, often in clumps to 2 feet tall. Numerous pale green leaves to 3 inches long, alternate, narrow and pointed at both ends. Flowers borne at the end of each stem in spike-like clusters, yellow, with central bearded orange patch, one inch long, similar to snapdragons with a spur extending below the lower lip of the corolla.
- Common in roadsides, waste areas, lake shores, beach meadows, pastures, and edges of forests.
- A persistent, aggressive invader, capable of forming dense colonies. Toxic to grazing animals.



**Ornamental Jewelweed,
Himalayan Balsam (*Impatiens glandulifera*)**

Balsam Family

Photos by Tom Heutte, and Michael Shephard, USDA Forest Service, Bugwood.org.

Ornamental Jewelweed, Himalayan Balsam

(*Impatiens glandulifera*)

Balsam Family

- Annual herb with thick, many-branched, hexagonally angled stems which can grow to 10 feet. Stems smooth, multi-branched, reddish in color, but can also be green with large swollen nodes and glands at the nodes. Lower leaves opposite upper leaves whorled with three leaves to a node. Leaves lance-shaped to lance-ovate, 6 inches long, from a stout petiole. Leaf margins finely, sharply serrated. Irregular flowers one inch in length, pink-purple to white, with five petals.
- Thrives in lowlands, riparian zones, and along beaches.
- Rapidly clogs streams and wetlands. Prolific seed production and aggressive spread make control difficult. Unwary gardeners have contributed to its spread into Alaska.



Splitlip Hempnettle (*Galeopsis bifida*)

Mint Family

Photos by Tom Heutte, USDA Forest Service, and Jamie Nielsen, University of Alaska Fairbanks, Cooperative Extension Service, Bugwood.org.

- Annual which can grow to 4 ft tall. Flowers purple, pink, white or pale yellow with dark variegated markings, growing in clusters at base of leaf stalks. Stems branched, bristly-haired, square in cross section, and swollen beneath the leaf stalks. Leaves opposite on stalks, egg-shaped to lance-shaped with large rounded teeth and pointed tips. Leaves prominently veined and covered with bristly hairs.
- Forms dense stands on disturbed sites, forest edges, riparian areas, meadows, and beaches. Numerous seeds are small and easily spread on shoes, tires, and recreational equipment. Gardeners quickly come to despise this plant.



Reed Canarygrass (*Phalaris arundinacea*)

Grass Family

Photos by Michael Shephard, USDA Forest Service, and Jamie Nielsen, University of Alaska Fairbanks, Cooperative Extension Service, Bugwood.org.

- Tall reed-like perennial rising from stout rhizomes. Stems are hollow, 2 to 6 feet tall, with bluish-green waxy coating. Leaf blades flat, up to 3/4 inch wide, with clasping ligules. Leaves rough, sheaths open. Panicle inflorescence is 6 to 18 cm long with spikelets occurring in clusters on short scabrous branches. Seed heads reddish to purplish at base, becoming straw colored; compact at first then opening at maturity.
- Highly variable species preferring moist sites. Begins growing early in the season.
- Forms dense, persistent, monospecific matted stands. Difficult to impossible to eradicate once established. Spreads within sites by creeping rhizomes, effectively excluding all other vegetation. Found along roadsides, ditches, wetlands, riparian areas, beaches, and growing into lakes.



Downy Brome (*Bromus tectorum*)

Grass Family

Photos by Tom Heutte, USDA Forest Service, and Chris Evans, University of Illinois, Bugwood.org.

Downy Brome, Cheatgrass (*Bromus tectorum*) Grass Family

- Annual or winter annual grass rises 2 to 28 inches from a fibrous root system. Seeds germinate in late fall or early spring, and rapid spring growth produces mature seed roughly 2 months later. Seedhead is dense and drooping, and seeds range from straw-colored to purplish. Grows in solitary clumps or tufts, with light-green leaves, and membranous ligules. Leaf sheathes densely and softly hairy. Lemmas have long, soft hairs and long awns, giving the grass its “downy” appearance.
- Occurs on rangelands, roadsides, waste places, and disturbed sites. Will invade grasslands and open forests, especially on sandy or gravelly soils. A highly variable, prolific seed producer, adapted to a broad range of site conditions.
- Early maturation and accumulation of dead above-ground material greatly increases fire hazard. Awns injure eyes and mouths of grazing livestock and wildlife.








Purple Loosestrife (*Lythrum salicaria*)

Loosestrife Family

- A perennial plant which grows 2 to 8 feet tall. Produces tall spikes of purple-magenta flowers, each with 5 to 7 “ruffled” petals and a small yellow center. Lance-shaped leaves have smooth edges, and are usually arranged opposite one another, in groups of 2 or 3 along the stem. As many as 40 stems arise from the base of a well-established mature plant. Stems are 4 or 5-sided in cross-section.
- Purple-pink flower spikes may be confused with Alaska’s native fireweed (*Epilobium spp.*) but in Alaska purple loosestrife blooms in the fall, well after fireweed blooms have faded.
- An aggressive wetland invader, purple loosestrife chokes waterways, degrading wildlife habitat and fish spawning areas. Single plants can produce millions of tiny seeds, which are easily spread by wind, water, and wildlife. Wild loosestrife is known to hybridize with horticultural varieties.

Selected Invasive Species of Alaska

COMMON NAME	SCIENTIFIC NAME	FAMILY	PAGE
 Zebra Mussel (Report if found)	<i>Dreissena polymorpha</i>	Dreissenidae	1
 Quagga Mussel (Report if found)	<i>Dreissena rostriformis bugensis</i>	Dreissenidae	1
 Waterweed (Report if found)	<i>Elodea</i> spp.	Hydrocharitaceae	3
Creeping Thistle	<i>Cirsium arvense</i>	Sunflower	5
Bull Thistle	<i>Cirsium vulgare</i>	Sunflower	7
Oxeye Daisy	<i>Leucanthemum vulgare</i>	Sunflower	9
 Spotted Knapweed (Report if found)	<i>Centaurea stoebe</i>	Sunflower	11
Orange Hawkweed	<i>Hieracium aurantiacum</i>	Sunflower	13
Non-Native Yellow-flowered Hawkweeds	<i>Hieracium</i> (<i>pilosella</i> , <i>umbellatum</i> , <i>lachenalii</i>)	Sunflower	15
Narrowleaf Hawksbeard	<i>Crepis tectorum</i>	Sunflower	17
Hairy Catsear	<i>Hypochaeris radicata</i>	Sunflower	19
Fall Dandelion	<i>Leontodon autumnalis</i>	Sunflower	19
Perennial Sowthistle	<i>Sonchus arvensis</i>	Sunflower	21
Common Tansy	<i>Tanacetum vulgare</i>	Sunflower	23
 Report if found			

COMMON NAME	SCIENTIFIC NAME	FAMILY	PAGE
Tansy Ragwort	<i>Senecio jacobaea</i>	Sunflower	25
Western Salsify	<i>Tragopogon dubius</i>	Sunflower	27
Sweetclover, white & yellow	<i>Melilotus officinalis</i>	Pea	29
Bird Vetch	<i>Vicia cracca</i>	Pea	31
Common Toadflax, Butter & Eggs	<i>Linaria vulgaris</i>	Figwort	33
Ornamental Jewelweed, Balsam Himalayan	<i>Impatiens glandulifera</i>	Balsam	35
Splitlip Hempnettle	<i>Galeopsis bifida</i>	Mint	37
Reed Canarygrass	<i>Phalaris arundinacea</i>	Grass	39
Downy Brome, Cheatgrass	<i>Bromus tectorum</i>	Grass	41
Purple Loosestrife	<i>Lythrum salicaria</i>	Loosestrife	43

FOR MORE INFORMATION:

For additional information about invasive species in Alaska: Contact your local UAF Cooperative Extension Service office or appropriate local land management agency. Or visit: <http://www.alaskainvasives.org>

Alaska Weeds ID app for phone: <https://apps.bugwood.org/apps/alaska/>

For invasive species information specific to firefighting operations: Interagency Standards for Fire and Fire Aviation Operations (“Redbook”). Primarily Chapter 11, pages 254 – 255: <https://www.nifc.gov/PUBLICATIONS/redbook/2018/RedBookAll.pdf>

Guide to Preventing Aquatic Invasive Species Transport by Wildland Fire Operations (National Wildfire Coordinating Group 2017): <https://www.nwcg.gov/sites/default/files/publications/pms444.pdf>

Fire Management and Invasive Plants. A Handbook (USFWS 2008) https://www.fws.gov/invasives/pdfs/USFWS_FireMgtAndInvasivesPlants_A_Handbook.pdf

HOW TO REPORT AN INVASIVE SPECIES

In this guide, pages marked with a red triangle indicate species that are either not yet known to exist in Alaska, or exist in very limited areas. If you think you have found one of those species, please report it! Such reports are extremely valuable to Alaskan invasive species managers.

REPORT IF FOUND

To report a suspected sighting of one of the species marked with a red triangle:

1. If possible, collect a sample of the plant or mussel in a sealable plastic bag.
2. If possible, take some photos of the organism singly and within the larger population, and the place you found it.
3. Note the location. GPS coordinates are ideal, but info such as “the south end of Wolverine Lake” is also valuable.
4. Plants: A link to an online submission form is available at <http://www.alaskainvasives.org>. Or download the AK Weeds ID app for your mobile device.
5. Mussels or other animals: An online submission form is available at <http://www.adfg.alaska.gov/index.cfm?adfg=invasivespeciesreporter.main>
6. Or you can call 1-877-INVASIV

Thank you for doing your part to insure that invasive species do not spread into Alaska's wildlands.

Field notes:

Field notes:



Decontaminating equipment prevents spreading aquatic invasive species from infested areas to clean areas. (Forest Service photo)