

On the cover: Bull Thistle photo taken by Michael Rasy, UAF Cooperative Extension Service

Bull thistle forms dense, spiny, stands in meadows, pastures, streamsides, and forest openings. This highly-competitive weed monopolizes water, nutrients, and growing space. Once established, stands of bull thistle can suppress the growth of conifer seedlings, reduce land values, and restrict the movement of people and animals.

When trying to identify an unknown plant, color photos often help. This pocket guide provides a selection of invasive plants found across Alaska today. This booklet is not intended to take the place of more comprehensive reference guides, but to help those unfamiliar with these species to begin to recognize them, as the first step towards taking action.

> In recent years, well established and expanding populations of highly invasive plants have been documented in Alaska.

> These species pose a serious threat to Alaska's agriculture, tourism, wildlife, fisheries, and subsistence resources.

Alaska is in an unique position to avoid the extensive invasive plant problems that plaque the rest of the U.S.

Invasive plants in Alaska: Addressing this situation NOW will yield benefits for years to come.

Most introduced plant species are beneficial to Alaskans. We enjoy them in our gardens and they are agricultural staples.

However, a small subset of introduced plants is "invasive." These non-native plants aggressively spread into places where they are not wanted.

People and vehicles generally spread invasive plants from human habitation centers outwards along transportation routes (roads, airports and float ponds, trails and rivers) as they move materials and goods.

Thank you for doing your part to insure that these invasive plant species, and others like them, do not spread into Alaska's wildlands.

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Photos provided by the USDA Forest Service State & Private Forestry or the UAF Cooperative Extension Service, unless otherwise noted.



Japanese knotweed taking over a thimbleberry patch at the base of a totem pole in Juneau



Community members pull together to control purple loosestrife in a city park.

In Alaska we are concentrating on prevention, early detection, and rapid response.

Prevention:

Keeping these invasive plant species from becoming established in Alaska is the highest priority. This booklet is a tool to help identify some of the invasive plant species of greatest concern in Alaska.

Early Detection & Rapid Response:

Not only is it important to recognize these plants, but it is imperative that we find small infestations before they become too difficult to control.

The Alaska Soil and Water Conservation Districts, and many partner organizations, are in the process of forming "Cooperative Weed Management Areas" (CWMAs) across the state, to detect, monitor and treat invasive plant populations.

For additional information about invasive plants in Alaska:

Contact your local UAF Cooperative Extension Service office or appropriate local land management agency.

Or visit:

http://akipm.net www.fs.fed.us/r10/spf/fhp/ www.cnipm.org/index.html

To view or contribute to the state-wide database of exotic plants and see the ranking of invasive plants in Alaska:

akweeds.uaa.alaska.edu

(see back pages for index)



Canada 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 windblown 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.



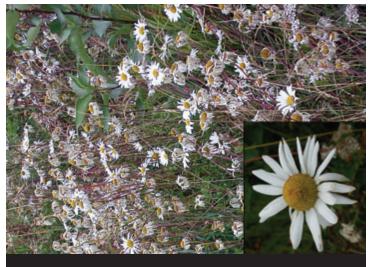


Bull Thistle (Cirsium vulgare)

Sunflower Family

- 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

Oxeve 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 biebersteinii) Sunflower Family

Spotted Knapweed (Centaurea biebersteinii) Sunflower (or C. stoebe L.) Family

- Biennial or short-lived perennial. Plants grow to three feet tall
 from a stout taproot. Basal rosettes have deeply lobed graygreen 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, Valdez, and numerous locations in Southest Alaska.
- Responsible for millions of dollars in economic loss and environmental damage in the western United States.





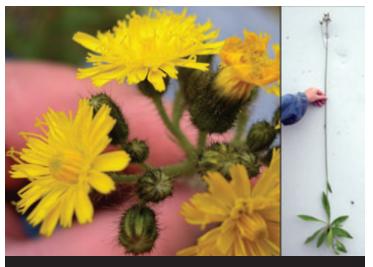
Orange Hawkweed (Hieracium aurantiacum)

Sunflower Family

Orange Hawkweed (Hieracium aurantiacum) Sunflower Family

- 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

Non-Native Yellow-flowered Hawkweeds Sunflower Family

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

Narrowleaf Hawksbeard (Crepis tectorum) Sunflower Family

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

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

Perennial Sowthistle (Sonchus arvensis) Sunflower Family

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 dandelionlike 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

Common Tansy (Tanacetum vulgare) Sunflower Family

- 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

- 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 vellow 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

Western Salsify (Tragopogon dubius) Sunflower Family

- Biennial or occasionally annual, growing 1 to 3 feet tall, with a
 long, stout taproot. The hollow stem, and long, narrow grasslike 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.





Japanese Knotweed (Polygonum cuspidatum)

Buckwheat Family

Japanese Knotweed **Buckwheat Family** (Polygonum cuspidatum, P. bohemica)

- An herbaceous perennial that forms extremely dense stands. shading out competing vegetation. Stems to 10 feet tall, hollow, bamboo-like with thickened nodes where the leaf stalks meet the stem. Leaves broadly oval, to 6 inches long, with short petioles. Branched sprays of small white to greenishwhite flowers in late August/September. Giant knotweed (P. sachalinense) is similar in appearance but has much larger leaves and stems.
- Herbaceous perennial. Dies back, turning bright vellow before dropping leaves in the fall. Reproduces from extensive spreading rhizomes or broken-off pieces of stem. Found on roadsides, stream banks, and beach meadows.
- Clogs waterways and lowers quality of habitat for wildlife, fish, and the insects on which fish depend. Displaces native salmonberries and thimbleberries along shorelines.





Garlic Mustard (Alliaria petiolata)

Mustard Family

- Herbaceous biennial plant. Strong garlic odor when crushed. First year plants are rosettes of dark green kidney shaped leaves arising from a common base with distinct leaf veins and scalloped edges to 4 inches in diameter. Second year plants with few to several-branched stems to 3 feet tall. Second year plants have alternate triangular leaves, decreasing in size toward the top of the stem. Flowers white, 0.25 inches in diameter, with four petals. Plants flower in April-June with seeds produced June-August. Seeds 8 to 10/pod, shiny-black, cylindrical. Very tolerant of cool temperatures and low light.
- Thrives on the moist, shaded soil of river floodplains, forests, roadsides, edges of woods, trails, and forest openings.
- Dominates the understory in forested areas. Reduces forage sites for deer and other grazing wildlife.



White Sweetclover (Melilotus alba) Yellow Sweetclover (M. 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

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.



Scotchbroom (Cytisus scoparius)

Pea Family

- Perennial shrub to 10 feet tall from a forked taproot. Stems strongly angled. Leaves clover-like, deciduous. Flowers numerous, bright yellow, arising from the leaf bases along the stem, similar in appearance to garden peas. Fruits pea like, flattened, brownish-black. Reproduces vegetatively and from seed. Seeds remain viable for up to 80 years.
- Found along forest edges, clearings and meadows. Currently found only in southern Southeast Alaska.
- Grows into dense impenetrable stands which prevent reforestation, create fire hazard, and eliminate forage for deer and other herbivores.



Common Toadflax (Linaria vulgaris)

Figwort Family

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

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

- Annual herb with thick, many-branched, hexagonally angled stems which can grow to 10 feet. Stems smooth, multibranched, 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.



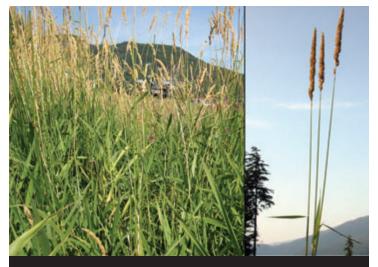


Splitlip Hempnettle (Galeopsis bifida)

Mint Family

- 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

Reed Canarygrass (Phalaris arundinacea) Grass Family

- 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

- 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

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.





Rampion Bellflower (Campanula rapunculoides) Bluebell Family

Rampion Bellflower (Campanula rapunculoides) Bluebell Family

- A perennial plant with erect stems which grow 1 to 3 feet tall. Numerous purple bell-shaped flowers with 5 teeth have a nodding appearance. Leaves are heart-shaped near the base of the plant, growing thinner and more lance-shaped further up the stem. Leaves are coarse textured with fine, irregular teeth on leaf margins. Plants develop white, tuberose roots and a network of spreading rootstock. Stems produce a milky sap when broken.
- Rampion bellflower spreads by seed and rootstock, forming dense patches. Thrives in the open and under birch/spruce forest canopy in southcentral Alaska. Difficult to control in cultivated and natural areas. Rapidlyexpanding patches spread into lawns and gardens and out-compete native vegetation in forests and riparian areas.



Species to Monitor:

Siberian peashrub (*Caragana arborescens*), and European bird cherry (*Prunus padus*), are important ornamental species for the nursery and landscape industries in Alaska.

These hardy species are well-suited to Alaskan climates, and make good additions to urban yards and landscaped areas. However, both species have been observed moving into natural areas, outside of cultivation.

Siberian peashrub seedlings have become established in open woodlands, meadows, and riparian areas, and European bird cherry is now the dominant vegetation along many of the streams running through Anchorage greenbelts. The easy establishment and rapid displacement of native vegetation by both of these species is cause for concern.

Please be vigilant where these species are planted and cultivated, and report their movement into natural areas to the Cooperative Extension Service or appropriate local agency.



A dense canopy of European bird cherry along a streamside in Anchorage. In the area pictured here, bird cherry has largely displaced the native vegetation, such as willow and birch, on which wildlife depends.



Siberian Peashrub (Caragana arborescens)

Pea Family

Siberian Peashrub (Caragana arborescens) Pea Family

- Upright branching shrub or small tree with yellow-green bark on young twigs. Mature branches and trunk have gray to olive-green bark and horizontal lenticels. Leaves are alternate or whorled and compound, with 8 to 12 elliptic leaflets, and without an end leaflet. Young leaves are light green, darkening in summer, and yellow in fall. Stipules are narrow and often persist as spines. Yellow tubular flowers are borne on a stalk that grows from leaf axil. Fruit is borne in pods; green and flattened at first, and sharply pointed, smooth and brown when mature.
- A popular ornamental shrub, it forms a dense spreading root system, and is now moving into natural areas. A known invader of woodlands and riparian areas in Canada and the northern United States.



European Bird Cherry (Prunus padus)

Rose Family

- A low-branched tree which spreads by seed and can reach up to 35 feet in height. Produces showy white flowers, borne on 5-inch long spikes, and a large number of small black bitter fruits in late summer. A favorite of some birds, who spread the seed along streams. Purplish gray to greenish bark. Leaves elliptic to obovate, with sharply serrate margins.
- A favorite ornamental in Alaska. Generally, moose do not browse this tree. It is now spreading freely into riparian zones in Anchorage and Fairbanks.
- Along urban rivers and streams, it is the dominant understory seedling and sapling, replacing native trees and shrubs.

Selected Invasive Plant Species of Alaska

COMMON NAME	SCIENTIFIC NAME	FAMILY	PAGE
Canada Thistle	Cirsium arvense	Sunflower	1
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Hairy Catsear	Hypochaeris radicata	Sunflower	15
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Common Tansy	Tanacetum vulgare	Sunflower	19
Tansy Ragwort	Senecio jacobaea	Sunflower	21
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Japanese Knotweed Polygonum cuspidatum, P bohemica		Buckwheat	25
COMMON NAME	SCIENTIFIC NAME	FAMILY	PAGE
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Orange hawkweed invading the Kodiak National Wildlife Refuge