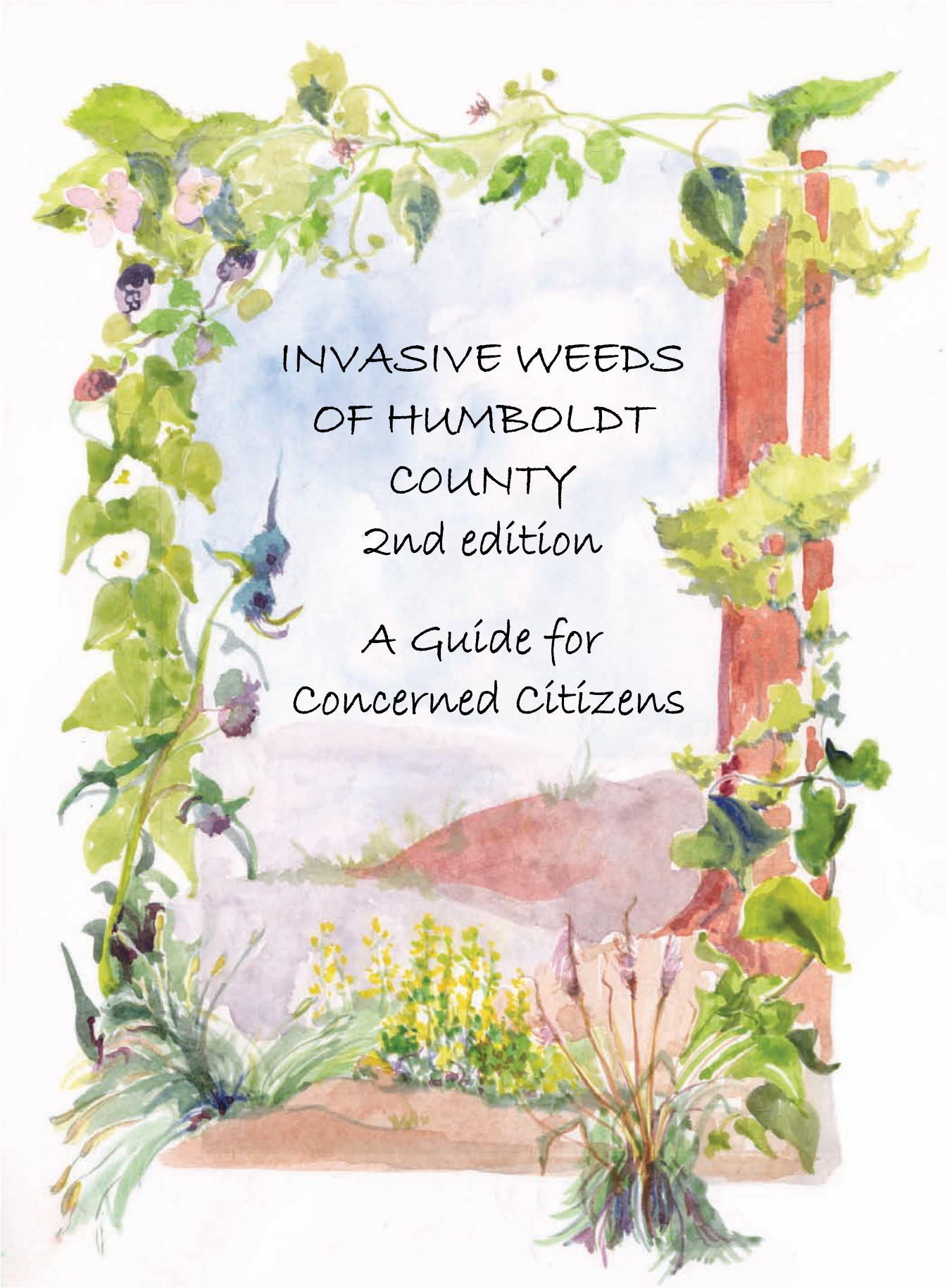

INVASIVE WEEDS OF HUMBOLDT COUNTY

2nd edition

A Guide for Concerned Citizens

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Introduction

How to use this guide

This guide is intended to help you understand the problem of invasive weeds, identify them around your home and community, and take direct action to save our wildlands and protect our natural and agricultural resources from the threat of invasion.

We grouped the weeds by the primary habitat type that they invade. This does not mean, however, that you won't find them in other habitats as well. While some species are fairly specific—for example, European beachgrass is restricted to coastal sand dunes—other weedy species such as pampas grass can occur in a variety of habitats, from dunes to roadsides to your neighbor's backyard.

Color photos are provided on the inside front and back covers of this guide, arranged in the same order as they appear in the text. In addition to the weeds presented here, numerous other invasive weeds occur in Humboldt County. To learn more about them, visit our website at http://www.cdfa.ca.gov/go/HumboldtWMA or consult the other web resources and books listed on the back.

Report new sightings of red alert weed species. While most weeds listed here are widespread in Humboldt County, some are relative newcomers or have a limited distribution. Finding new infestations of "red alert" species and responding quickly is the most cost-effective means of control. Look for the phone symbol throughout this guide to indicate which species to report. If you find them, call Bruce Bryan, Humboldt County Department of Agriculture, 441-5271, bbryan@co.humboldt.ca.us.

What is an invasive weed?

Most people are familiar with the concept of weeds in the context of their yard or garden. Weeds are simply undesirable plant species. This same principle holds true for our natural areas, which are home to a diverse array of native plants. The number and variety of these native species is described by the term "biological diversity." Over the past 150 years, many non-native plants have been introduced to our region, both accidentally and intentionally. Many do not pose an ecological threat, however, some are able to reproduce in the wild and proliferate rapidly and cause the decline or loss of our native plants. Others invade agricultural lands, becoming pests that compete with crops, reduce forage values, and may be poisonous to livestock. We call these invasive weeds.

Why worry about invasive weeds?

Invasive weeds:

- **Change the look and function of landscapes and ecosystems.** Invasive weeds are smothering diverse forest, wetland, dune, and grassland flora, cutting off the base of diverse food webs.
- **Cost us money.** $82 million dollars is spent annually in California to fight invasive weeds, and the cost of impacts is estimated at over $2.4 billion (Cal-IPC 2009). Invasive plants harm local agricultural economies by out-competing native forages and interfering with forest regeneration.
- **Increase the risk of fire.** Prolific growth of some weeds, especially flammable woody plants and annual grasses, increase the risk of wildland fires and/or fires in urban areas.
- **Reduce recreational opportunities.** Invasive weeds can form impenetrable thickets that make access to recreational areas difficult or directly degrade the aesthetic value of parklands.
- **Alter hydrology and/or impede water flows.** Aquatic invasive weeds can clog waterways, affect water quality, an/or interfere with complex aquatic food webs that affect numerous organisms.
- **Change native soils chemically and physically.** Some invasive weeds release chemicals into the soil that make it hard for other plants to grow. Weeds can also physically alter soil structure.
- **Disrupt wildlife corridors and bird migratory routes.** Weeds can restrict movements by wildlife.
- **Contribute to the decline of native species.** Invasive weeds are a major driver of plant and animal species decline, primarily due to habitat loss from ecosystem conversion. In some cases, the damages are irreversible, possibly leading to species extinction.

Introduction

What can you do?

Your individual actions to combat the threat of invasive weeds will make a difference! Your efforts will help protect the diversity of native plant communities in Humboldt County.

Don't plant invasive species.

Be selective when you choose plants for home landscaping. Some invasive plants are still sold in nurseries and garden shops, so beware! If you plant these in your yard, they may escape into nearby natural areas. There are many beautiful horticultural plants available for you to choose from that are not invasive. Consider planting native plant species in your home garden. Natives offer a good choice for home landscaping because they are well-adapted to local conditions and often thrive with less care and less water than required by many non-natives. Native plant gardening enhances the value of your yard for local wildlife including birds and butterflies. Check web resources on the back for suggestions.

Control invasive weeds at home and in your neighborhood.

You may have invasives already growing in your backyard. Wind, water, birds and other animals that eat the seeds of these plants can disperse them in nearby natural areas or rangelands. You can help stop these invasions by removing the source plants. Use the tips in this guide for control methods, and share what you've learned with friends and neighbors. Carefully dispose of the plants you remove so as not to inadvertently spread the plants. You will most likely need to follow-up initial efforts with additional treatments. Persistence is the key to any effective weed control program.

Help prevent the accidental spread of invasive weeds.

When you venture into natural areas, be aware that you could be introducing invasive weeds inadvertently. After driving, hiking, biking, or working in areas with invasive weeds, clean your shoes, socks, clothing, backpack, bicycle, pets, or anything else that might be a carrier of weed seeds. **Never** dump aquarium plants into natural water bodies or storm drains!

Participate in organized weed cleanup activities.

Watch for announcements and opportunities to participate in local community workdays aimed at controlling invasive weeds. Many land managers sponsor volunteer events to help pull invasive weeds on public lands. This is a good chance for you to learn to identify invasive species and to learn about the native plant communities that you will help save.

Educate yourself about integrated pest management.

Integrated pest management is a strategy based on using a combination of techniques to achieve the most cost-effective results with the least detrimental impacts to the environment, non-target species, and people. There are many factors to consider, including the unique characteristics of the target weed and of the infested site. For small infestations, manual or mechanical methods are often a good place to start. With some species, however, these methods may make matters worse by inadvertently spreading the plant. In large infestations, mechanical methods can cause soil erosion. Other methods to consider include repeated mowing, smothering, burning, chemical control, biological control, and/or revegetation with native species. Often, a combination of methods is the most effective.

Understanding how each weed reproduces is critical to learning how to control it. Herbs are plants that lack woody tissue. They can have an annual life cycle, meaning that they germinate, grow, reproduce, and die within a single growing season. Biennial herbs produce vegetative growth their first year, flower and produce seed their second year, then die. Perennial herbs are longer lived, typically flowering each year, and though their above-ground parts may die back over winter, the roots survive from one year to the next. Shrubs and trees are woody plants that can either be evergreen, meaning that they keep their leaves all year, or deciduous, meaning that they lose their leaves during part of the year, typically during winter months. Some plants reproduce primarily by seed and others by creeping roots (rhizomes) or creeping stems (stolons).

Plants that Invade Coastal Sand Dunes

European Beachgrass

Ammophila arenaria (Grass family)

Where you will find it: coastal sand dunes

Description: Perennial grass, 1-4 feet tall. European beachgrass is a coarse, clumped grass. It has stiff, narrow, rolled leaves that turn brown in the fall. Conversely, the native dune grass *Leymus mollis* has broad, flat, blue-green leaves.

What it does: This aggressive grass is responsible for nearly wiping out native dune plant communities along the west coast. It was introduced to stabilize dunes and prevent sand from blowing. It creates a steepened foredune and cuts off sand flow, starving native plants that need moving sand to thrive. At risk in local dunes are two federally endangered plants, the Humboldt Bay wallflower and beach layia.

How to get rid of it: Dig out the roots about 3 ft. deep, and use a rake to thoroughly remove rhizome fragments. Remove new resprouts every few weeks spring through fall. Land managers on the North Coast have used this method successfully to restore and protect native dune plant communities.

Iceplant

Carpobrotus edulis (Fig-Marigold family)

Where you will find it: sand dunes, sandy roadsides, coastal bluffs, coastal prairies

Description: Perennial groundcover. Iceplant has succulent leaves and bright purple or yellow flowers, with a fig-like fruit. Also called “Hottentot fig” or “highway iceplant,” the species has been planted to stabilize sandy areas adjacent to roadways and as a hardy ornamental groundcover.

What it does: Iceplant forms dense mats that smother native plants. Iceplant can reduce soil pH and cause an increase in organic matter that is detrimental to native dune plant species. Iceplant fruits are eaten by rabbits, who then disperse the seed.

How to get rid of it: If you have a dense patch, “roll it up” like a carpet as you sever the roots underneath. Sparser patches need to be dug up. Use a rake to thoroughly remove all root fragments and follow up by removing re-sprouts. If possible, dispose of the material off-site.

Yellow Bush Lupine

Lupinus arboreus (Legume family)

Where you will find it: sandy areas, mostly near the coast

Description: Evergreen shrub, 4-6 feet tall. It is easily identified as the shrub in the dunes with many spikes of bright yellow pea-shaped flowers. Yellow bush lupine is native to the central and southern coastal regions of California, introduced here as an ornamental plant and to stabilize dunes along the railroad.

What it does: Yellow bush lupine adds nitrogen to nutrient poor dune soils in which native dune plants are well-adapted. Increased soil fertility allows non-native plant species to invade, out-competing native species.

How to get rid of it: Before they go to seed, cut mature plants at the base and split the trunk to discourage re-sprouting. Small seedlings can be pulled up. The seedbank lasts for years so you’ll need to continue to pull seedlings in subsequent years.

Plants that Invade Grasslands, Fields, and Roadsides

Fennel

Foeniculum vulgare (Carrot family)

Where you will find it: widely distributed in disturbed areas, especially moist sites

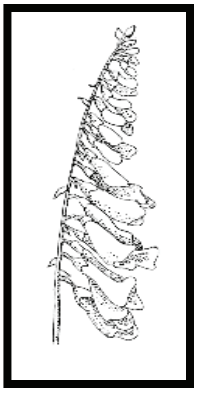
Description: Perennial herb, 2-10 ft. tall. Fennel has upright stems, a stout taproot, feathery leaves with a licorice scent, and flowering stalks with umbrella-like clusters of small yellow flowers. Do not confuse fennel with poison hemlock, which has purple spots on the stem.

What it does: Fennel aggressively competes with native plants for available light, water, and nutrients. It has prolific seed production and a long-lived seed bank.

How to get rid of it: If seeds are present, carefully bag the seed head, cut it off and dispose of it. Dig out individual plants. For large infestations, repeated cutting or mowing can control fennel. Fall burning followed by chemical control in the spring is also effective.

Foxglove

Digitalis purpurea (Figwort family)



Where you will find it: disturbed sites in full sun to part shade, on well-drained acid soils

Description: Perennial herb, 1-5 ft. tall. It's hard to miss this beautiful plant, with one-sided stalks of nodding, bell-shaped, pinkish purple to white flowers. It is cultivated both ornamentally and as a medically important heart stimulant.

What it does: This popular garden plant has escaped into the wild where it may grow so densely that it crowds out native plants. It is toxic to humans, pets, and livestock.

How to get rid of it: Foxglove reproduces only by seed. Pull it up before it goes to seed. Wear gloves, as it can cause numbness of the hands.

Gorse

Call 441-5271 to report new sightings

Ulex europaeus (Legume family)

Where you will find it: disturbed sites, sand dunes, gravel bars, pastures, logged areas

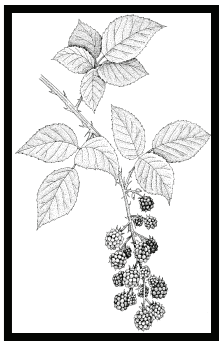
Description: Prickly evergreen shrub, 6-10 ft. tall. Similar to Scotch broom, gorse has yellow pea-shaped flowers. Unlike broom species, gorse has linear leaves that develop into long, sharp spines.

What it does: Gorse aggressively displaces native plants, acidifies soils, and creates a fire hazard. While relatively uncommon in Humboldt County, it is a major pest in neighboring counties.

How to get rid of it: Like Scotch broom, this plant is best removed by its roots with a tool like a Weed Wrench™, or it will resprout. Remove it before it goes to seed, as the seed bank can persist for decades.

Himalayan Blackberry

Rubus armeniacus (Rose family)



Where you will find it: widely distributed in disturbed sites, roadsides, and streambanks

Description: Evergreen, sprawling shrub, forming dense mounds. Himalayan blackberry can be distinguished from native blackberries by its stout arching stems, broad-based spines, and larger black berries.

What it does: Despite its tasty berries, Himalayan blackberry poses a threat by creating dense thickets that shade out native plants and reduce the forage value of pastures.

How to get rid of it: Grub out the roots. Himalayan blackberry will resprout from any remaining roots and it will also regenerate from seed, so infested sites need persistent treatment. Repeated mowing can be an effective control method. Grazing by goats has been used with some success.

Jubata Grass and Pampas Grass

Cortaderia jubata and *C. selloana* (Grass family)

Jubata Grass

Where you will find them: disturbed sites near the coast, post-logging forest lands

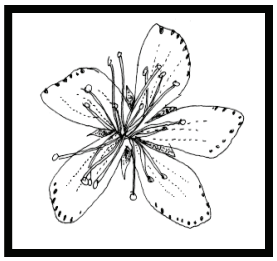
Description: Perennial grass, 6-15 ft. tall. Jubata grass is often confused with and called pampas grass. Jubata grass has flowering stems twice as long as the leaves with pink to violet plumes. Pampas grass has stems about the same length as the leaves, with light violet to white plumes.

What it does: All jubata grass are female plants, however, each plant can produce prolific viable seed without pollination, making this species highly invasive. True pampas grass needs to have both male and female plants present to successfully reproduce.

How to get rid of it: Remove and place any seed plumes in a sealed plastic bag for disposal. Stems can be chopped down with a pulaski or an axe, while the root ball must be dug out using a combination of chopping and digging, or you can cover the root ball with black plastic until it dies. Seeds do not persist long in the soil.

Klamathweed

Hypericum perforatum (St. John's wort family)



Where you will find it: roadsides and pastures

Description: Annual herb, 1-3 ft. tall. Klamathweed has bright yellow, five-petaled flowers with numerous showy, purple-tipped stamens. The leaves are opposite. Both leaves and flowers have purplish spots.

What it does: Klamathweed is an aggressive competitor that crowds out native plants. Over-grazing promotes this weed, which is poisonous to livestock.

How to get rid of it: A beetle has been successfully introduced as a biological control for this plant in Northern California, and consequently Klamathweed is not nearly as prevalent as it once was. However, the beetle does not tolerate dust well, so Klamathweed populations tend to grow more densely on the edges of dusty gravel and dirt roads.

Poison Hemlock

Conium maculatum (Carrot family)

ALL PARTS OF THIS PLANT ARE HIGHLY POISONOUS AND FATAL IF INGESTED

Where you will find it: disturbed sites, especially where moist or shady; streambanks

Description: Biennial herb, 2-10 ft. tall. A member of the carrot family, poison hemlock has characteristic umbrella-shaped clusters of small white flowers. Purple blotches on the stem are a diagnostic feature.

What it does: Poison hemlock crowds out native plants. It is fatally toxic to humans, pets, livestock, and wildlife. This is the plant that was reputedly used to poison Socrates.

How to get rid of it: Be extremely careful when weeding out this plant as it can poison humans via oral contact with a small amount of seed, leaves, or roots. Additionally, direct contact with the skin can cause dermatitis. Using gloves, pull up plants before they go to seed. Repeated mowing close to the ground will also work.

Scotch Broom and French Broom

Cytisus scoparius and *Genista monspessulana* (Legume family)

Scotch Broom

Where you will find them: disturbed sites, streambanks, logged forests; acid soils

Description: Evergreen shrubs, 6-10 ft. tall. Brooms can be identified by their yellow pea-shaped flowers, small leaves, and spineless stems. Scotch broom can have yellow or yellow-red flowers, and it has very small or no leaves. French broom has small but distinct, oval-shaped leaves. A third broom, Spanish broom (*Spartium junceum*) is present but less common in Humboldt County. It has slender stems with linear leaves that are deciduous.

What it does: Invasive brooms aggressively compete with native plants for available light and water. Brooms add nitrogen to the soil, a change that can be detrimental to native plants. Brooms are unpalatable for livestock and wildlife. Brooms invade forest openings and timber lands after logging, and they increase the risk of wildland fires.

How to get rid of it: Use a Weed Wrench™ or other tool to remove large plants when soils are damp in winter and spring. If you cut down established plants you will need to dig out their roots or they will resprout. You will need to continue to treat invaded areas because new plants will grow from the seed bank, which can persist for decades.

Spanish Heath

Erica lusitanica (Heath family)

Where you will find it: disturbed open sites near the coast, especially on sandy soils

Description: Evergreen shrub, 3-6 ft. tall. This shrub, erroneously called "heather," is popular in floral bouquets. It has beautiful tiny, white, bell-shaped flowers and soft, needle-like, bright green foliage.

What it does: Spanish heath alters soil pH, making it difficult for native plants to survive. It can totally dominate the shrub layer.

How to get rid of it: Chop down the shrub and dig out the roots, as they will resprout. Regeneration from the seed bank will also require follow-up treatment.

Teasel

Dipsacus fullonum (Teasel family)

Where you will find it: disturbed sites, especially where moist; streambanks

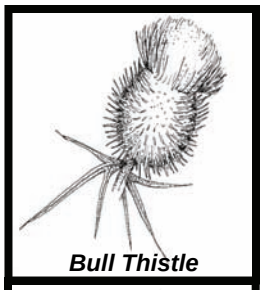
Description: Biennial herb, 4-6 ft. tall. Teasel resembles a thistle, but it is not one! Teasel has a spiny flower head with tiny purple flowers composed in circular rings. The stems are prickly, with opposite leaves. Teasel is used in dried flower arrangements.

What it does: Teasel out-competes native plants and reduces the forage value of pastures.

How to get rid of it: Before it sets seed, remove teasel by pulling it up, using gloves to protect your hands from prickles. Alternatively, repeated cutting will exhaust root reserves, eventually killing the plants.

Bull Thistle and Canada Thistle

Cirsium vulgare and *C. arvense* (Sunflower family)



Bull Thistle

Canada Thistle

Where you will find them: open disturbed sites

Description: Herbs, 1-4 ft. tall. Bull thistle is a biennial plant that forms a basal rosette of leaves the first year, produces a flower stalk the second year, and then dies. It has cobwebby stems, spined leaves, and purple flower heads 1-2 inches wide. Canada thistle is a multi-stemmed perennial with pink to purplish flower heads 0.5-1 inch wide.

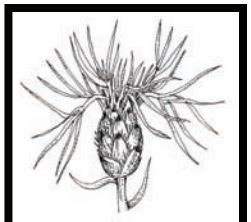
What it does: Bull and Canada thistles are serious agricultural pests, lowering the forage value of pasture and rangelands and competing with crops for nutrients and water. Dense thistles can also limit access to recreational areas and invade wildlands.

How to get rid of it: To control bull thistle, cut flowering stalks before they go to seed or hoe out the leafy rosettes. Canada thistle is especially problematic because it can reproduce from tiny root fragments. For this reason, cultivation should be minimized in dense infestations. Repeated mowing during the growing season can drain the plants' reserves and eventually kill the plants.

Spotted Knapweed, Diffuse Knapweed, and Meadow Knapweed

Centaurea maculosa, C.diffusa, and *C. debeauxii* (Sunflower family)

Call 441-5271 to report new sightings



Spotted Knapweed

Diffuse Knapweed

Where you will find them: open disturbed sites

Description: Herbs, 3-4 ft. tall. Spotted knapweed has divided leaves and pink to purple flowers. Black tips on the bud bracts, which lack a vertical spine, are a diagnostic feature of spotted knapweed. Diffuse knapweed produces a many-branched stem with lobed leaves and white to purple flowers. Flower bracts have 4 to 5 pairs of horizontal spines and one long vertical spine. Meadow knapweed is bushy, with simple leaves and slightly larger, bright pink to purple flowers with fringed bracts that lack a vertical spine.

What it does: Among the greatest threats to grazing lands and grasslands in the Western U.S., knapweeds severely decrease forage quality for livestock and wildlife.

How to get rid of it: Knapweeds are known from only a few isolated locations in Humboldt County. You can help by reporting new infestations.

Yellow Star Thistle

Centaurea solstitialis (Sunflower family)

Where you will find it: open disturbed sites, more prevalent inland on dry soils

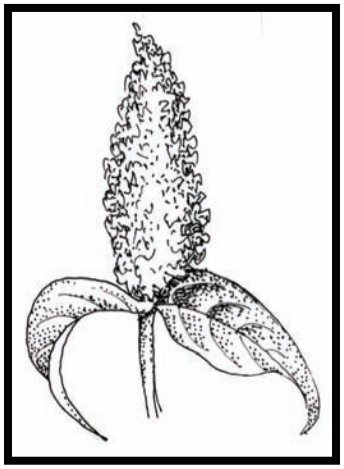
Description: Annual herb, 1-3 ft. tall. Yellow star thistle is a very prickly plant with a deep taproot. Yellow star thistle has deeply-lobed, white-woolly leaves. Solitary yellow flowers are located at the end of the branches and have stiff, lateral inch-long spines.

What it does: Yellow star thistle has devastated many acres of land in interior regions of California. The thistle reduces the forage value of rangeland, and it is poisonous to horses. Yellow star thistle negatively impacts recreation and degrades wildlife habitat.

How to get rid of it: Yellow star thistle reproduces only by seed, however, seed production is prolific and seeds can persist in the soil up to ten years. It is best to treat new infestations early. Established populations are problematic to control, and generally a combination of methods is most effective, including burning, chemical control, and manual or mechanical removal.

Butterfly Bush

Buddleja davidii (Buddleja family)



Where you will find them: open disturbed sites, woodlands, streambanks

Description: Deciduous or semi-evergreen shrub/tree, 5-15 ft. tall. Butterfly bush has cylindrical heads of purple flowers that resemble lilac, and narrow, pointed leaves. Butterfly bush is planted as an attractive ornamental plant, but it can become a pest in your own garden, your neighbors' gardens, and in nearby wildlands.

What it does: Butterfly bush outcompetes native plants for nutrients and water. It is pollinated by butterflies, and it produces prolific seeds which are dispersed by wind, water, animals, clothing, and vehicles.

How to get rid of it: You'll need to be persistent as this shrub readily resprouts from the base. You can dig out entire plants, including the roots. Alternatively, cut the plants at ground level and treat the stumps chemically or cover with black plastic until they die.

Cotoneaster (Orange Cotoneaster and Silverleaf Cotoneaster)

Cotoneaster franchetii and *C. pannosus* (Rose family)

Orange Cotoneaster

Where you will find them: forests, shrublands, and grasslands near the coast

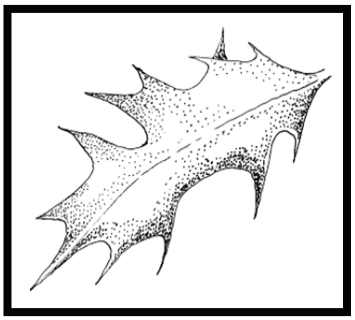
Description*:* Evergreen shrubs 4-10 ft. tall. Orange cotoneaster has green leaves, pink flowers and orange fruits. Silverleaf cotoneaster has deep green leaves with silver undersides, white flowers, and clusters of red fruit. Both species are planted as ornamentals. Birds consume the fruits and contribute to spreading the seed.

What it does: Theses cotoneaster species have become naturalized in local coastal forests. They are spreading rapidly and are expected to become a major problem as they displace native shrubs.

How to get rid of it: Remove cotoneaster by cutting near the base and pulling up or digging out the roots. Cotoneaster resprouts from the base so grub out as much of the roots as possible. Removing this plant before berries form will limit the spread of new seeds.

English Holly

Ilex aquifolium (Holly family)



Where you will find it: moist forested areas

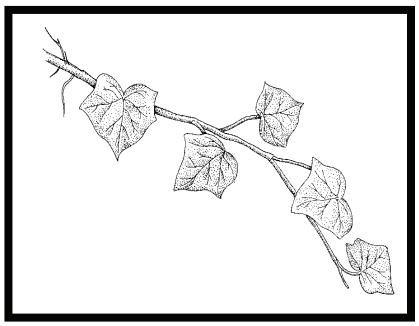
Description: Evergreen shrub or tree, up to 40 ft. tall. English holly is another popular yard tree that is spreading into our local forests. Holly has dark green lobed leaves with a shiny appearance and spiny tips. Holly trees have separate male and female plants. The females produce red berries used in Christmas floral arrangements and wreaths.

What it does: English holly competes with native tree and shrub species. Birds consume the berries and subsequently spread holly seeds.

How to get rid of it: English holly is slow-growing and may be controlled by removing plants before they start producing seed, 5-12 years after germination. Cut near the base and dig out roots or treat the stumps chemically to prevent resprouting.

English Ivy

Hedera helix (Ginseng family)



Where you will find it: open forests, streambanks

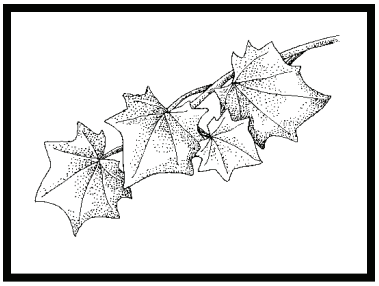
Description: Perennial woody vine. Most people recognize this common vine with deep green, waxy leaves from its use as an ornamental plant climbing on walls and in other landscaping. English ivy has two growth forms. Vegetative forms have triangular leaves with 3-5 distinct lobes. Reproductive forms have rounder leaves and they produce clusters of small white flowers and dark blue fruits.

What it does: English ivy can form a dense ground cover, smothering other plants. It also climbs trees and can choke the tree by severing the layer of tissue below the bark that transports nutrients. Dense infestations add weight to trees and can make them topple. It may take time, but this popular ivy will kill your spruce and redwoods, so don't delay in removing the vine.

How to get rid of it: Where growing on the ground, you can pull out the vines, making sure to grub out the roots. For tree infestations, cut about a one-foot section out of the ivy stems near the base, taking care not to harm the trunk of the infested tree. The remaining aerial portions of ivy will die and are easier to pull out later.

Cape (German) Ivy

Delairea odorata (Sunflower family)



Where you will find it: coastal forests, streambanks, disturbed shady sites

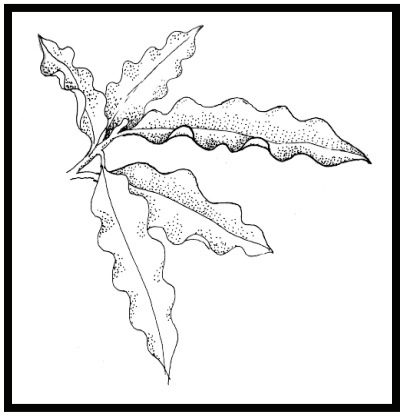
Description: Perennial vine. Although it's not a true ivy, Cape ivy, also known as "German ivy," is named for its ivy-like, waxy leaves, which are yellow-green and have sharper points than English ivy. Like English ivy, Cape ivy creeps over the ground and climbs trees. It may die back to roots in dry summers. Cape ivy has tiny yellow flowers. Don't confuse it with wild cucumber, a native with somewhat similar leaves but cup-shaped white flowers.

What it does: Cape ivy smothers native plants. It has creeping stems that root at the nodes.

How to get rid of it: Cape ivy is especially problematic because the vines break easily when pulled, and the plants can reproduce from stem fragments containing root nodes. Cover dense infestations with black plastic.

Pittosporum (Victorian Box)

Pittosporum undulatum (Pittosporum family)



Where you will find it: forests, shrublands, streambanks

Description: Evergreen tree up to 45 ft. tall. Pittosporum, also called "Victorian box," is a popular landscaping tree. It has long pale green evergreen leaves with wavy margins and produces fragrant, cream-colored flowers and marble-sized, orange fruit.

What it does: This tree has escaped from home gardens into local forests where it is spreading rapidly, displacing native plant species.

How to get rid of it: Simply cutting down this tree will eliminate it, as it isn't known to resprout from roots. Regeneration from seeds may need attention in following years.

Japanese Knotweed, Himalayan Knotweed, and Giant Knotweed

Fallopia japonica, Persicaria wallichii, and *Fallopia sachalinensis* (Buckwheat family)

Giant Knotweed

Call 441-5271 to report new sightings

Where you will find them: streambanks, freshwater wetlands, moist roadsides areas

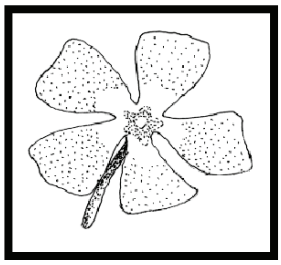
Description: Perennial herbs. These invasive plants have large, alternate leaves set on hollow, zig-zagging stems, with long creeping roots. Japanese knotweed grows to 9 ft. tall, with stalks of tiny white flowers and oval leaves 1-4 inches long, 2/3 as wide. Himalayan knotweed grows to 6 ft. tall with stalks of small, fragrant, white to pink flowers and lance-shaped leaves up to 8 inches long, less than 1/2 as wide. Giant knotweed grows to 12 ft. tall with stalks of small, greenish white flowers and broad leaves 8 to 16 inches long, 2/3 as wide, with a heart-shaped base.

What it does: Knotweeds suppress native plants with their thick uniform growth.

How to get rid of it: Young infestations of knotweed can be controlled manually with care to remove ALL portions of the plants, especially the roots. Knotweeds are particularly worrisome because they can re-establish from very small amounts of stem or root material. In dense infestations, chemical control has been effective.

Periwinkle

Vinca major (Dogbane family)



Where you will find it: streambanks, coastal forests, and woodlands

Description: Spreading, perennial vine. The bluish-purple, windmill-shaped flowers of this low-growing perennial ornamental are very distinctive. The shiny, dark green leaves are arranged in pairs on the stem.

What it does: The same attributes that make this desirable as a groundcover horticulturally (vigorous spreader that outcompetes garden weeds) make it disastrous where it has escaped from garden plantings into natural areas. It rapidly forms dense mats that smother native plants. Periwinkle can reproduce from fragments of the sprawling stems that root at the nodes. Periwinkle has become a pest especially along streambanks locally, where stem fragments are transported by stream flows.

How to get rid of it: For small infestations, cover with black plastic for one to two growing seasons. You can also pull it up, but be careful to get all fragments, and remember to go back and check for resprouts.

Tree of Heaven

Ailanthus altissima (Simarouba family)

Call 441-5271 to report new sightings

Where you will find it: disturbed streambanks and woodlands

Description: Deciduous tree, 30-65 ft. tall. This tree has large, compound leaves 1-3 feet long. Mature trees resemble few other species in our region, however, young plants can be confused with the native species Oregon grape. When crushed, tree of heaven foliage has an unpleasant odor. The tree produces clusters of small greenish flowers.

What it does: Tree of heaven spreads prolifically, forming dense thickets that displace native plants.

How to get rid of it: It is best to catch infestations early, when whole plants can be removed. Once mature, cutting promotes extensive suckering, so to be effective, it must be repeated regularly and/or used in combination with chemical control.

Parrotfeather

Myriophyllum aquaticum (Water-Milfoil family)

Where you will find it: freshwater ponds, ditches, and slow-moving streams

Description: Perennial aquatic herb. Parrotfeather, also known as "water-milfoil," is used in aquaria. It has feathery leaves that form whorls around the stem. Parrotfeather grows in water, but stems can extend up to a foot above the water surface.

What it does: Parrotfeather spreads aggressively via vegetative propagation, forming dense mats that can clog waterways and impede water flows, making it difficult to boat, swim, or fish. It alters aquatic food webs while creating ideal habitat for mosquito larvae.

How to get rid of it: If you have this in your garden pond, remove it, but be sure you don't dispose of it in any way that it can get into a natural water body.

Purple Loosestrife

Lythrum salicaria (Loosestrife family)

Call 441-5271 to report new sightings

Where you will find it: freshwater wetlands, streambanks

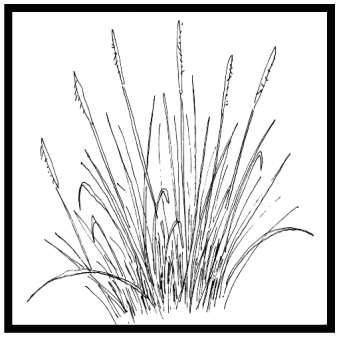
Description: Perennial herb, 1-6 ft. tall. Purple loosestrife has dense spikes of beautiful rose or purple flowers. The whorled 4-inch long leaves are lance-shaped.

What it does: This plant has choked freshwater wetlands across the United States, earning it the nickname "the purple plague." Seeds mostly sink, but after germination, seedlings float to the water surface and can disperse to new sites.

How to get rid of it: In Humboldt County, purple loosestrife is known to occur on the banks of the Eel River, and it is expected to spread. Report new infestations.

Spartina

Spartina densiflora (Grass family)



Where you will find it: coastal salt marsh

Description: Perennial grass, 1-5 ft. tall, clumped. Also known as "cordgrass," there are four species of Spartina that are invasive pests in tidal marshes on the coasts of California, Oregon and Washington. A fifth species, *S. foliosa,* is native to salt marshes from Bodega Bay, CA, south. The only species of Spartina present in Humboldt County, *S. densiflora,* was introduced from Chile inadvertently in the mid 1800s, and has since become a dominant species. It has displaced the native marsh community that once existed. *S. densiflora* has stiff leaves with flower stalks taller than the leaves.

What it does: *S. densiflora* alters both the physical structure and biological composition of tidal marshes. It is difficult to restore native salt marsh communities locally without intrusion by *S. densiflora.*

How to get rid of it: Recent coast-wide efforts to eradicate all invasive Spartina species has drawn attention to the need for a regional eradication plan for *S. densiflora* in Humboldt County. Locally, researchers at the Humboldt Bay National Wildlife Refuge have developed an effective method of eradication that involves repeated cutting using brush-cutters, cutting at the soil surface and slicing into the root of the plant. *S. densiflora* seedlings commonly re-invade treated areas, and they can be controlled by burning with hand-held flamers or by cutting.

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More photos on inside of front cover

Web Resources

BugwoodWiki Invasipedia - http://wiki.bugwood.org/invasipedia

Bureau of Land Management (BLM) - http://www.blm.gov/weeds

CalFlora - http://www.calflora.org

California Department of Agriculture (CDFA) Encycloweedia - http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia_hp.htm

California Invasive Plant Council (CAL-IPC) - http://www.cal-ipc.org

California Native Plant Society (CNPS), Northcoast Chapter - http://northcoastcnps.org

Humboldt County Department of Agriculture - http://co.humboldt.ca.us/ag/

Humboldt County Weed Management Area - http://www.cdfa.ca.gov/go/HumboldtWMA

Redwood National and State Parks - http://www.nps.gov/redw/naturescience/exotic-vegetation.htm

U.S. Fish and Wildlife Service's Plant Guide for Humboldt Bay's Dunes and Wetlands - http://www.fws.gov/Humboldtbay/plants.html

Books

Bossard, C., J. Randall & M. Hoshovsky (eds.). 2000. **Invasive Plants of California's Wildlands.** Univ. of Calif. Press.

DiTomaso, J. 2003. **Aquatic and Riparian Weeds of the West.** Diane Pub. Co.

DiTomaso, J. 2007. **Weeds of California and other Western States (vols 1 & 2).** Univ. of Calif. Agriculture and Natural Resources.

Whitson, T. 2006. **Weeds of the West (9th Edition)**. Diane Pub. Co.

Photo credit: James Sowerwine

HWMA's FREE Lend-A-Wrench Program

The Humboldt County Weed Management Area (HWMA) has Weed Wrenches™ available for free check-out by community members and organizations wishing to control invasive brooms and other woody shrubs.

Eliminate invasive shrubs in three easy steps:

1. Check out a Weed Wrench™ from the HWMA.
2. Pull out your mature shrubs in winter or spring, when the ground is wet, before seed set.
3. Monitor the site and remove seedlings as they occur.

Seeds of some shrub species, such as Scotch broom, can persist in the soil for many years, so diligent follow-up treatment is important to successfully eradicate an infestation. New seedlings are much easier to pull than mature plants.

Weed Wrenches™ are available at:
Bureau of Land Management Arcata Field Office
1695 Heindon Road (off Janes Road) in Arcata.
Call (707) 825-2300 for more information.

Humboldt County Weed Management Area

Humboldt County Weed Management Area is a consortium of public agencies, non-profit organizations and private citizens dedicated to the goal of reducing the impacts of invasive plants to natural and agricultural lands in Humboldt County.

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- An online version of this guide is available at the HWMA's website: http://www.cdfa.ca.gov/go/HumboldtWMA