

Annual Grasses



Avena sp.



Lolium multiflorum



Hordeum sp.



Bromus sp.

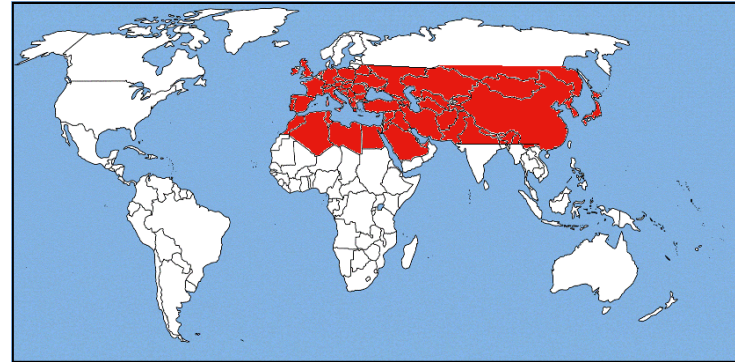
Non-native Plant

Annual Grasses

(*Avena sp.*, *Bromus sp.*, *Hordeum sp.*, *Lolium multiflorum*, etc.)

Where are they from?

These grasses are native to the north temperate zones of Europe, North Africa, and Asia.



How did they get here?

These grasses were brought into the United States as early as the 18th century as a food crop for livestock. They are sometimes planted in certain areas to help prevent soil erosion.

How long do they live?

These are *annual plants*. Annual plants grow, flower, and die within one year or season.

How do they reproduce?

These grasses only reproduce by seed. Each plant can form up to a thousand seeds! The seeds can last up to five years and are quick to sprout when the soil is disturbed. The seeds form from February-May.

How do the seeds spread?

The seeds are *dispersed* (spread) by wind, animals (humans, rodents, grazing animals), and by simply dropping to the ground.

Why should we remove them?

These grasses sprout early in the growing season, form dense and widespread “lawns”, and quickly absorb water and nutrients from the soil, making it difficult for other plants to survive.

Did you know...

One of the more common annual grasses is known as “Wild Oats” or “Oat Grass”. The seeds of this grass, also known as “oats”, are dried and processed to make oatmeal!

Australian Saltbush

Atriplex semibaccata



Non-native Plant

Australian Salt Bush

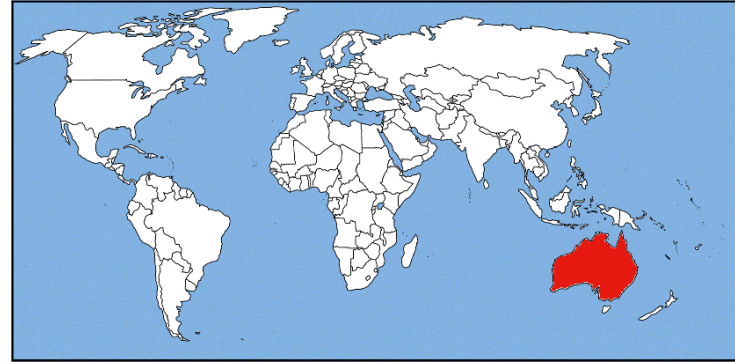
Atriplex semibaccata

Where is it from?

This plant is native to Australia.

How did it get here?

Australian Salt Bush was brought into the United States as a food crop for livestock in 1910. It is a plant that is sold as a ground cover for gardens and landscapes for erosion control and for attracting birds.



How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.

How does it reproduce?

This plant only reproduces by seed. The seeds are inside little red fruits that form from April-December.

How do the seeds spread?

The seeds are *dispersed* (spread) by animals (fruit-eaters: birds, lizards, rabbits, etc.), water, and by simply dropping to the ground.

Why should we remove it?

Australian Salt Bush grows low to the ground and can spread out to completely cover an area. When it covers the ground, it blocks the sunlight and absorbs water and nutrients from the soil. This makes it difficult for native plants to grow and survive in the area, which decreases native wildlife diversity and habitat.

Did you know...

The fruits, or berries, on this plant can be eaten raw or used to make jam.

Non-native Plant



Wild Mustard

Brassica sp.



Non-native Plant

Wild Mustard

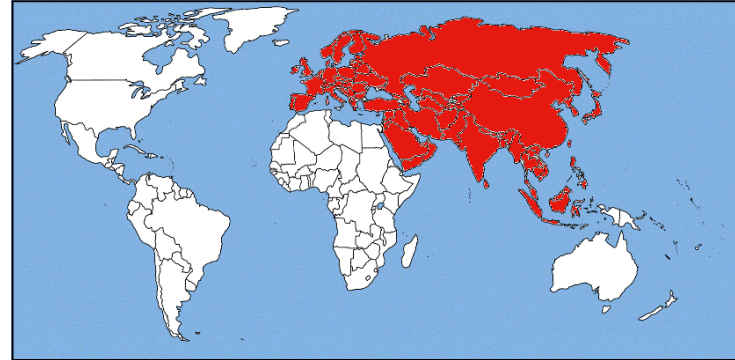
Brassica sp.

Where is it from?

Wild Mustard is native to Europe and Asia (also known as Eurasia).

How did it get here?

Since mustard leaves and seeds are edible, this plant was brought into the United States as a food crop by the early European settlers. One story says that wild mustard was brought to California by the Spanish missionaries in the 18th century who scattered the seeds along the coast, leaving a trail of yellow flowers to mark the path that they had traveled.



How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.

How does it reproduce?

This plant only reproduces by seed. Each plant can form 500 or more seeds! The seeds can last up to 20 years and are quick to sprout when the soil is disturbed. The seeds form from March-June.

How do the seeds spread?

The seeds *disperse* (spread) by animals (seed-eaters: birds, rodents, etc.) and by simply dropping to the ground.

Why should we remove it?

Wild mustard is an *allelopathic* plant, which means that it produces chemicals that enter the soil and can prevent the growth of other seedlings.

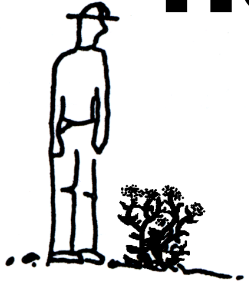
Did you know...

The condiment “mustard” is made by grinding the seeds of the mustard plant and mixing them with water, vinegar, or other liquids, and additional spices.

Non-native Plant

Heart-podded Hoary Cress

Cardaria draba



Non-native Plant

Heart-podded Hoary Cress

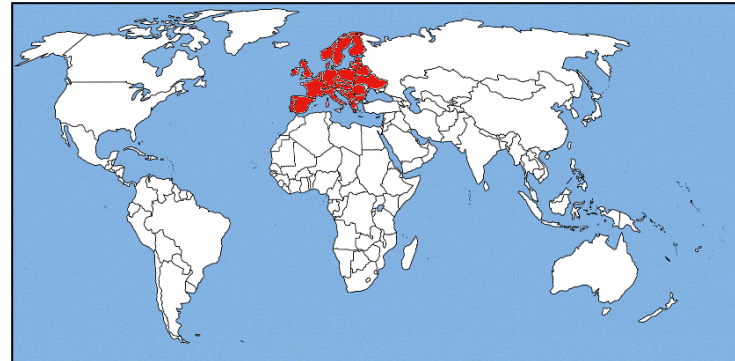
Cardaria draba

Where is it from?

This plant is native to Europe.

How did it get here?

Hoary Cress first appeared in the US in the late 19th century and is believed to have been transported in soil from the *ballasts* of ships. Ballasts are tanks on ships that are filled with water or soil to help with the ship's balance and stability. The seeds may have also been brought here mixed in with shipments of other seeds.



How long does it live?

This is a *perennial plant*. Perennial plants live for two or more years.

How does it reproduce?

Heart-podded Hoary Cress reproduces by seed and through *rhizomes*, or underground roots that send up new plant shoots. Each plant can produce up to 1600 seeds! The seeds form from April-May.

How does it spread?

The seeds *disperse* (spread) by animals (seed-eaters: birds, rodents, etc.), water, and by simply dropping to the ground. It also spreads by rapidly through its extensive root system. Hoary Cress can also sprout from small pieces of its root!

Why should we remove it?

Heart-podded Hoary Cress grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area.

Did you know...

The latin name "*Cardaria*" means "*heart*" in Greek, referring to the plant's heart-shaped seed pods.

Non-native Plant



Italian Thistle

Carduus pycnocephalus



Non-native Plant

Italian Thistle

Carduus pycnocephalus

Where is it from?

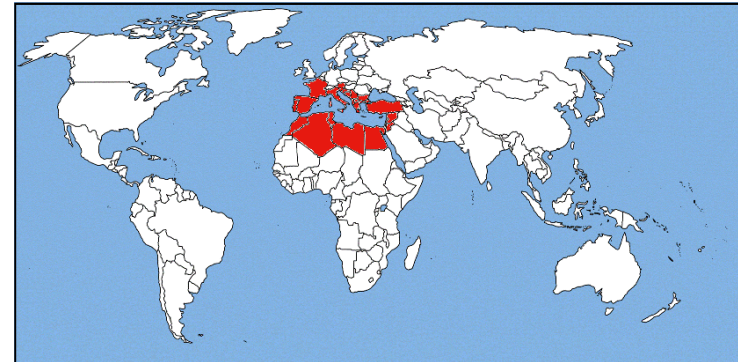
Italian Thistle is native to the Mediterranean region.

How did it get here?

It was accidentally brought to the United States and California in the 1930's.

How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.



How does it reproduce?

This plant only reproduces by seed. A single plant can produce 20,000 seeds in one season! This plant has two types of seeds—brown seeds and silver seeds. These seeds form from May-December and can last up to 10 years.

How do the seeds spread?

Brown seeds drop to the ground and silver seeds *disperse* (spread) by wind.

Why should we remove it?

Italian Thistle grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area.

Did you know...

The latin name "*pycnocephalus*" means "*thick-headed*", referring to the thick clusters of seed heads that form on this plant.

Non-native Plant



Common Iceplant

Carpobrotus edulis/chilensis



Non-native Plant

Common Iceplant

Carpobrotus edulis/chilensis

Where is it from?

Iceplant is native to South Africa.

How did it get here?

It was brought to California in the early 1900's to stabilize the soil near railroad tracks. It is still used as a form of erosion control throughout the United States, particularly along highways, which is where it gets its nickname "Highway Iceplant."



How long does it live?

This is a *perennial plant*. Perennial plants live for two or more years.

How does it reproduce?

Iceplant reproduces by seeds and by sending horizontal shoots across the surface of the soil and developing roots at a *node*—the area of a plant where leaves attach to the stem. Stems with nodes can break off the plant, float in water, and quickly invade new locations. The seeds are inside fruits that can hold up to 1500 seeds! The seeds are more likely to produce new plants after they are digested by animals. The seeds can form year-round in the Bay Area.

How does it spread?

It grows low to the ground, sending out shoots that form roots to create a thick mat. An individual plant can spread 5 feet in one year. The seeds are *dispersed* (spread) by animals (fruit-eaters: birds, deer, rabbits, etc.), water and by dropping to the ground.

Why should we remove it?

Iceplant can completely cover an area, absorbing water and nutrients from the soil and making it difficult for other plants to survive. It can also change the cycling of nutrients in the soil that native plants depend on.

Did you know...

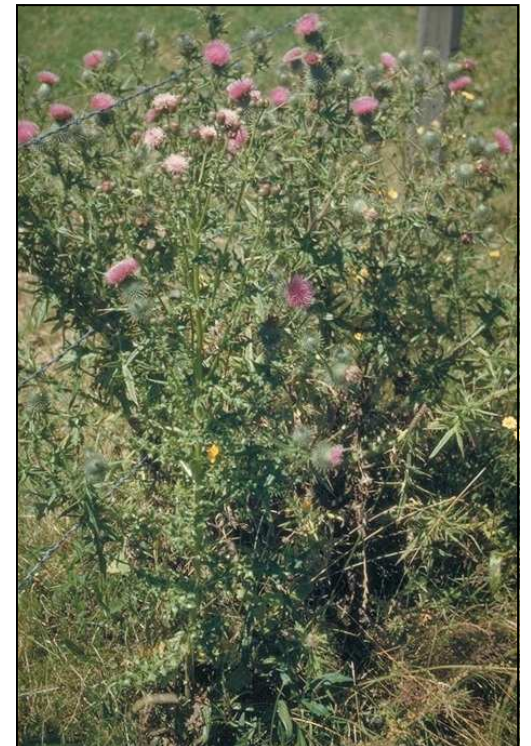
The latin name "*Carpobrotus*" means "*edible fruit*" in Greek. The fruits and leaves of Iceplant are edible and the juice from the leaves has been used as a treatment for sore throats and insect bites.

Non-native Plant



Bull Thistle

Cirsium vulgare



Non-native Plant

Bull Thistle

Cirsium vulgare

Where is it from?

This plant is native to Europe and Asia (Eurasia) and North Africa.

How did it get here?

The seeds of this plant were accidentally brought to the United States mixed in with other crop seed.

How long does it live?

This is a *biennial plant*. Biennial plants take two years to complete their lifecycle. During the first year it produces its leaves and stems and then it flowers, seeds, and dies in the second year.

How does it reproduce?

Bull Thistle only reproduces by seeds. Each plant can produce over 100,000 seeds! The seeds form from July-October.

How do the seeds spread?

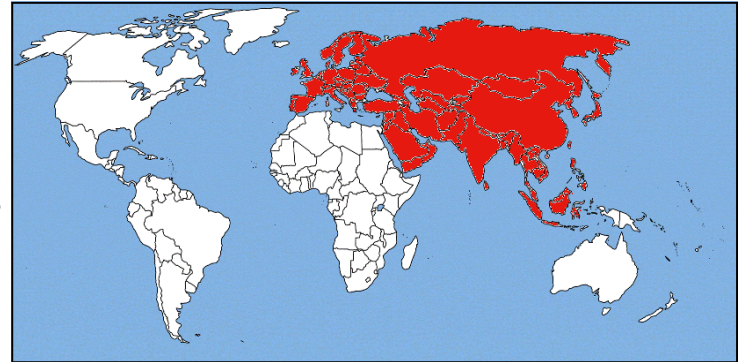
The seeds are *dispersed* (spread) by wind, animals (mostly grazing animals), and by simply dropping to the ground.

Why should we remove it?

Bull Thistle grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area.

Did you know...

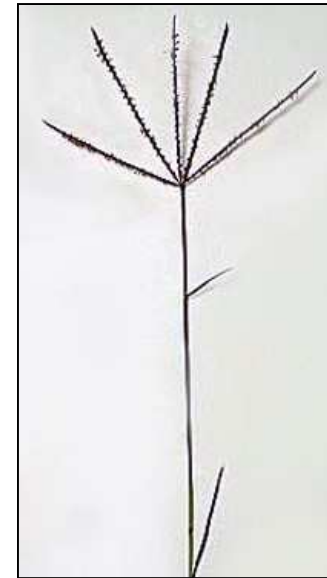
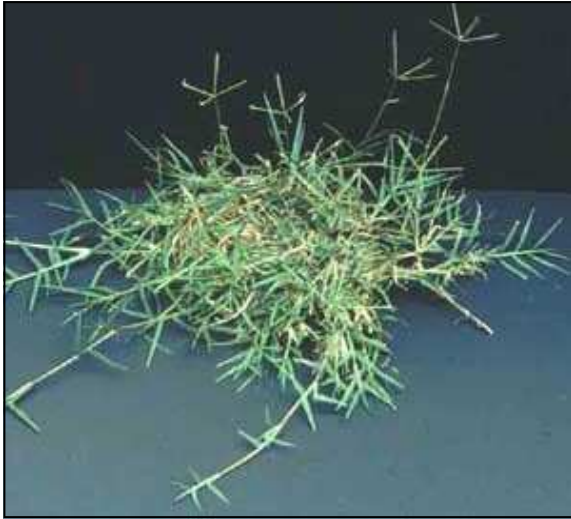
To control the spread of this thistle, land managers have used goats, sheep, cattle, and even certain types of insects which eat the flowers or young seeds of the plant and prevent it from reproducing. Bull Thistle can be identified by small green bumps (warts) on the top of the leaf surface.





Bermuda Grass

Cynodon dactylon



Non-native Plant

Bermuda Grass

Cynodon dactylon

Where is it from?

This grass is native to Eastern Africa.

How did it get here?

It was brought to the United States in the mid 1800's to be used as a food crop for grazing animals. It is still used today for lawns, pastures, and sports fields.

How long does it live?

This is a *perennial plant*. Perennial plants live for two or more years.

How does it reproduce?

Bermuda Grass mainly reproduces by *rhizomes*—underground stems that send up new shoots, or *stolons*—stems that grow above ground or slightly under the surface that can send up new shoots. It also reproduces by seeds. The seeds form from March-August and each seed head can produce up to 230 seeds!

How does it spread?

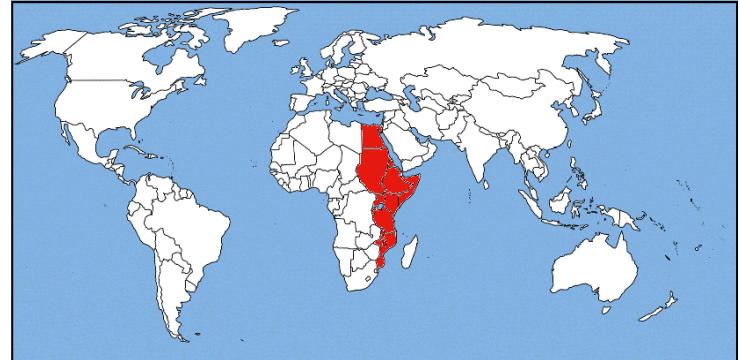
It spreads quickly by rhizomes and stolons. A single rhizome can grow over 2.5 meters (over 8 feet!) in one year. The seeds are *dispersed* (spread) by wind, water, animals (mostly grazing animals), and by simply dropping to the ground.

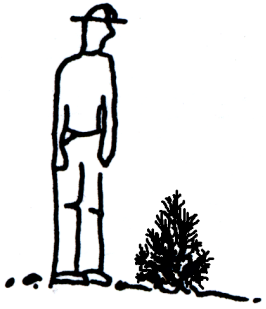
Why should we remove it?

Bermuda Grass grows low to the ground and can spread out to completely cover an area. When it covers the ground, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area. This grass can also climb up and grow over other plants, blocking the sunlight and eventually smothering the plants.

Did you know...

Bermuda Grass was once considered sacred in India because it was used to feed sacred cows. Juice from the stem of this grass was used as a way to stop bleeding in ancient Rome.





Stinkwort

Dittrichia graveolens



Non-native Plant

Stinkwort

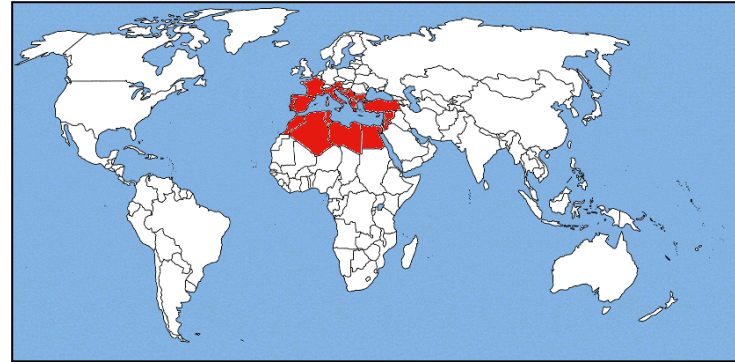
Dittrichia graveolens

Where is it from?

This plant is native to the Mediterranean region.

How did it get here?

It first appeared in the Bay Area in 1984 and its seeds most likely came into the United States mixed in with other crop seed. Its sticky fluffy seeds allow it to travel easily through trade, air, and on vehicles.



How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.

How does it reproduce?

Stinkwort only reproduces by seed. A single plant can produce 15,000 seeds! The seeds form from September-December.

How do the seeds spread?

The seeds are sticky and fluffy which allows them to spread by wind and by sticking to animals, clothing, vehicles, etc.

Why should we remove it?

Stinkwort grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area. It is a new invader to California and has the ability to rapidly expand its range and invade many different habitats.

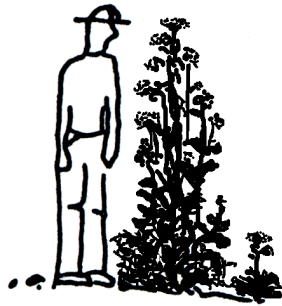
Did you know...

The leaves and stems of this plant produce a strong-smelling oil (terpene) that can cause skin irritation in humans. The oily leaves and stems have been applied on chickens to help treat lice! It can cause illness and death in domestic grazing animals (sheep, goats, cows) and contaminate meat and milk.

Non-native Plant

Fennel

Foeniculum vulgare



Non-native Plant

Fennel

Foeniculum vulgare

Where is it from?

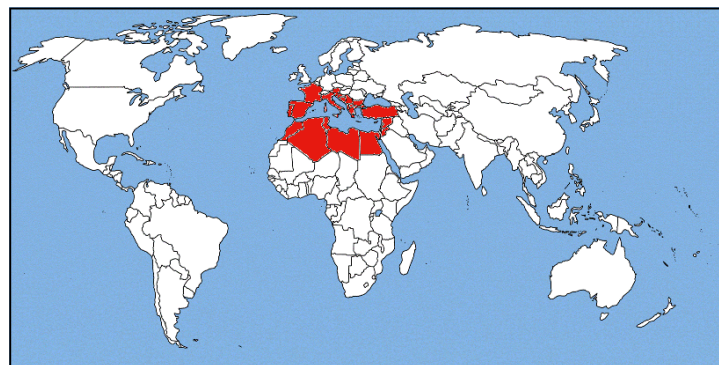
Fennel is native to Southern Europe and the Mediterranean region.

How did it get here?

Since fennel seeds and bulbs are edible, it was brought into California in the late 1800's as a food crop.

How long does it live?

This is a *perennial plant*. Perennial plants live for two or more years.



How does it reproduce?

This plant mainly reproduces by seed but it can also grow new roots and stems from its bulb when older stems die or are removed. Each plant can produce over 100,000 seeds! The seeds form from April-August and can last several years.

How do the seeds spread?

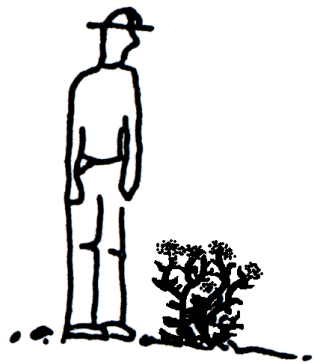
The seeds are *dispersed* (spread) by water, animals (seed-eaters: birds, rodents, etc.), and by simply dropping to the ground.

Why should we remove it?

Fennel grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area. It is important to remove small plants before they develop large taproots which are more difficult to remove.

Did you know...

Fennel has been used as a medicine to treat stomach and intestinal problems and has been used as a natural flea repellent.



Pepperweed

Lepidium latifolium



Non-native Plant

Pepperweed

Lepidium latifolium

Where is it from?

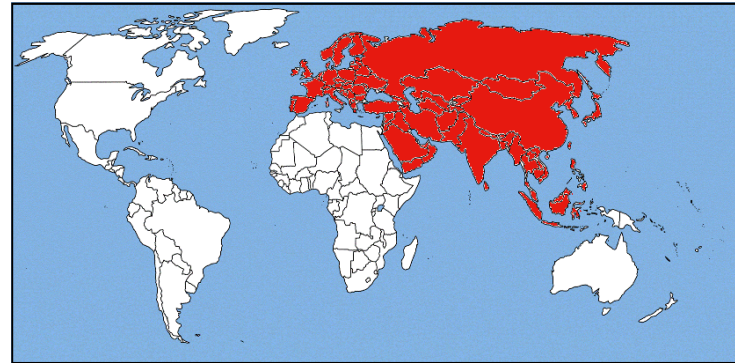
Pepperweed is native to Europe and Asia (Eurasia).

How did it get here?

It was first spotted in California in 1936 after its seeds were accidentally brought here mixed in with sugar beet seeds.

How long does it live?

This is a *perennial plant*. Perennial plants live for two or more years.



How does it reproduce?

Pepperweed can reproduce by seed and by *rhizomes*—underground stems that can send up new shoots. Each plant can produce up to 3,000 seeds! The seeds form from May-July.

How does it spread?

The seeds are *dispersed* (spread) by animals (seed-eaters: birds, rodents, etc.), water, and by simply dropping to the ground. It also spreads rapidly through its extensive root system. Pepperweed can also sprout from small pieces of its root!

Why should we remove it?

Pepperweed has a very deep and spreading root system which acts like a “salt-pump”, pulling salts from deep in the soil and bringing them to the soil surface. This makes the soil more salty, which can make it difficult for native plants to grow and survive. It also invades the habitats of the Endangered Salt Marsh Harvest Mouse and California Clapper Rail and can decrease food availability for nesting waterfowl.

Did you know...

The leaves, shoots, and seed pods of this plant are all edible. The seeds were known as “poor man’s pepper” in medieval Britain and the roots were used as a substitute for horseradish.

Non-native Plant



Horehound

Marrubium vulgare



Non-native Plant

Horehound

Marrubium vulgare

Where is it from?

Horehound is native to Europe.

How did it get here?

It was brought over to the United States because it was used as a medicine for respiratory issues and as a cough remedy.

How long does it live?

This is a *perennial plant*. Perennial plants live for two or more years.

How does it reproduce?

Horehound only reproduces by seed. Each plant can produce a high amount of seed which forms from April-October.

How does it spread?

The seeds of this plant are very sticky and easily get caught in clothing and hair. They are mostly spread by animals with hair (including humans!) and seed-eaters (birds, rodents, etc.) or by simply dropping to the ground.

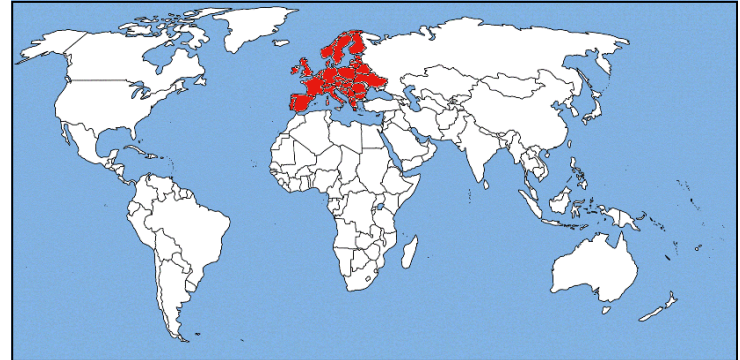
Why should we remove it?

Horehound grows low to the ground and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area.

Horehound grows well in saline (salty) soils found along the shoreline.

Did you know...

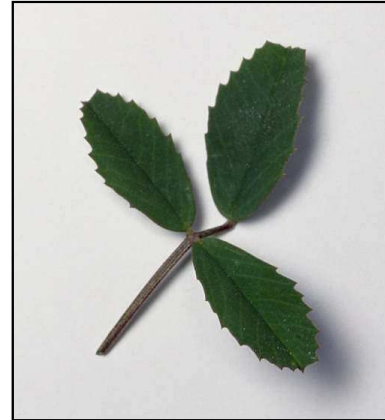
The latin name "*Marrubium*" means "*bitter juice*." The bitter juice that comes from the leaves of this plant has been used to make candy and cough syrup. The name "*Horehound*" comes from the Old English word "*horehune*" meaning "*hairy white plant*". "*Hore*" means white hair and "*hune*" means plant.





Sweet Clover

Melilotus indicus



Non-native Plant

Sweet Clover

Melilotus indicus

Where is it from?

Sweet Clover is native to Europe and Asia (Eurasia).

How did it get here?

It was brought to the United States in the early 1900's to be used as a *cover crop*—plants used in farming to “cover” the fields after the harvest season to help add nutrients to the soil and prevent erosion.

How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.

How does it reproduce?

This plant only reproduces by seed. Each plant can produce over 14,000 seeds! The seeds form from April-October.

How do the seeds spread?

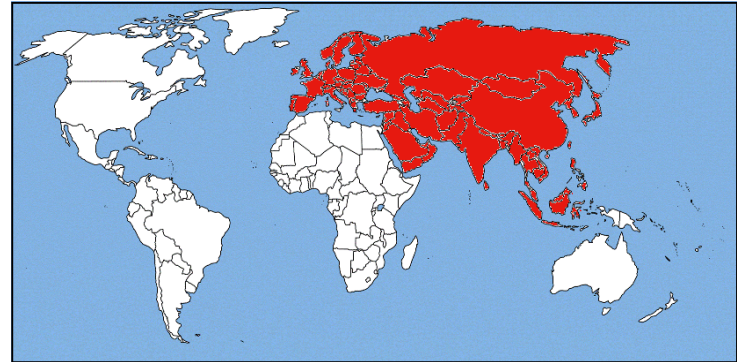
The seeds *disperse* (spread) by animals (seed-eaters: birds, rodents, etc.) and by simply dropping to the ground.

Why should we remove it?

Sweet Clover grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area. It is a *nitrogen-fixer*, which means that it makes nitrogen that is released into the soil. This extra nitrogen helps invasive plant species grow quickly, out-competing the native plants which have evolved to live in soils with very little nitrogen.

Did you know...

The latin name “*Melilotus*” means “*honey lotus*,” referring to its flowers which are a major source of nectar for honey bees.





Slenderleaf Iceplant

Mesembryanthemum nodiflorum



Non-native Plant

Slenderleaf Iceplant

Mesembryanthemum nodiflorum

Where is it from?

Slenderleaf Iceplant is native to South Africa.

How did it get here?

It may have come to the United States as early as the 1500's in the *ballasts* of ships. Ballasts are tanks on ships that are filled with water or soil to help with the ship's balance and stability. The plant was also brought here to be used as a form of erosion control and as a garden plant. It is still being used for these purposes.



How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.

How does it reproduce?

This plant only reproduces by seed. Each plant can produce a large amount of seed. The seeds are inside of small fruits that appear from June-August.

How do the seeds spread?

The seeds are dispersed (spread) by animals (fruit-eaters: birds, mice, rabbits, etc.) and by simply dropping to the ground.

Why should we remove it?

Slenderleaf Iceplant absorbs water and nutrients from the soil and also releases salts into the top of the soil, which can make it difficult for other plants to grow and survive.

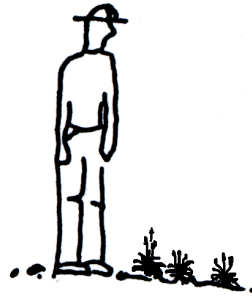
Did you know...

The seeds and leaves of this plant are edible. The leaves can also be crushed and used as a soap. This plant can live in very salty soils, which is why there are often large populations growing along the edges of the salt ponds around the Bay.

Non-native Plant

English Plantain

Plantago lanceolata



Cutleaf Plantain

Plantago coronopus



Non-native Plant

English & Cutleaf Plantain

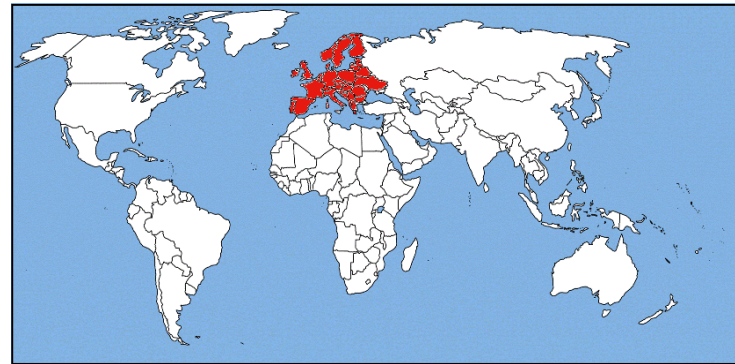
Plantago lanceolata & *Plantago coronopus*

Where are they from?

These Plantains are both native to Europe.

How did they get here?

They came to the United States with European settlers as early as the 17th century. They have spread throughout the United States because their seeds easily get mixed in with shipments of crop seeds.



How long do they live?

These are *perennial plants*. Perennial plants live for two or more years.

How do they reproduce?

These plants reproduce by seed and by forming new plants from the root of an older plant. Each plant can produce many seeds which form from March-November.

How do the seeds spread?

The seeds are *dispersed* (spread) by animals (seed-eaters: birds, rodents, etc.) and by simply dropping to the ground.

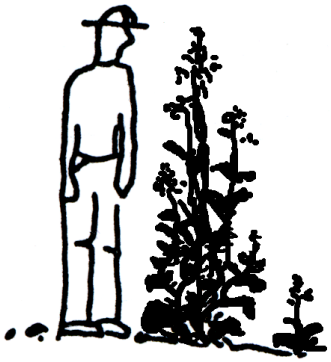
Why should we remove them?

These Plantains grow densely and can spread out to completely cover an area. As they cover the ground, they block the sunlight and absorb water and nutrients from the soil, making it difficult for other plants to grow and survive in that area.

Did you know...

English Plantain leaves have been used in teas to treat coughs and diarrhea. The leaves have also been mashed, heated in water, and placed on wounds to help them heal.

Non-native Plant



Wild Radish

Raphanus sativus



Non-native Plant

Wild Radish

Raphanus sativus

Where is it from?

This plant is native to the Mediterranean region.

How did it get here?

Wild radish roots are edible so it was brought here as a food crop by the European settlers who came to California in the mid-1800's.

How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.

How does it reproduce?

This plant only reproduces by seed. Each plant can produce thousands of seeds. The seeds can form almost any time of year in the Bay Area.

How do the seeds spread?

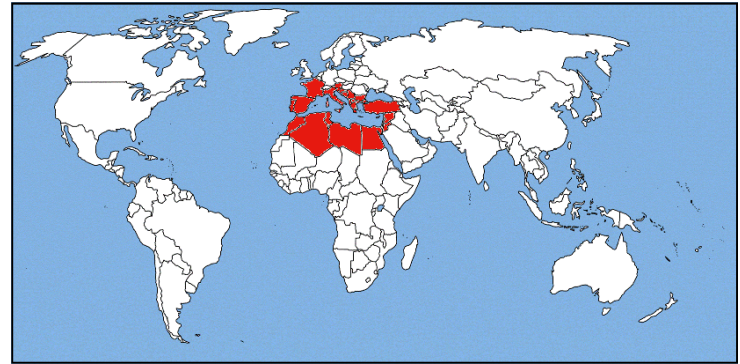
The seeds *disperse* (spread) by animals (seed-eaters: birds, rodents, etc.) and by simply dropping to the ground.

Why should we remove it?

Wild Radish grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area. Wild Radish is able to change *micro-organisms* (bacteria, fungi, nematodes) in the soil that can help the Radish plants reproduce and thrive. These same micro-organisms can also discourage the survival of native perennial plants.

Did you know...

The latin name "*Raphanus*" comes from the Greek word "*raphanos*" which means "*quick-appearing*" referring to how rapidly this plant can grow from seed.



Himalayan Blackberry

Rubus armeniacus



Non-native Plant

Himalayan Blackberry

Rubus armeniacus

Where is it from?

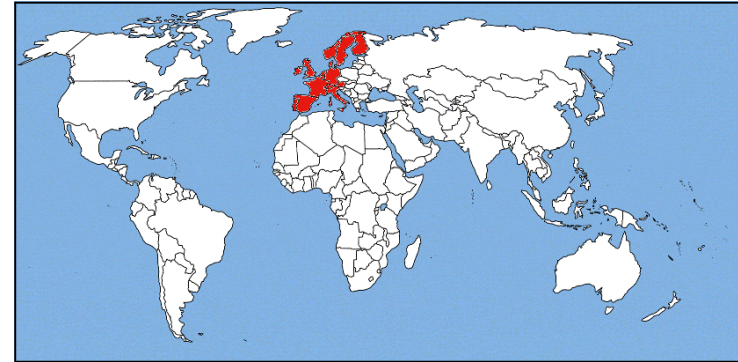
Himalayan Blackberry is native to Western Europe.

How did it get here?

This plant was brought to California as a food crop in the late 1800's.

How long does it live?

This is a *perennial plant*. Perennial plants live for two or more years.



How does it reproduce?

This plant can reproduce by seed and by *rhizomes*—underground stems that can send up new shoots. Each plant can produce a large amount of seed. The seeds are found in the blackberry fruits which form from July-September.

How does it spread?

The seeds are dispersed (spread) by animals (fruit-eaters: birds, mice, rabbits, etc.) and by simply dropping to the ground. It also spreads rapidly through its extensive root system. Blackberry can also sprout from small pieces of its roots and its shoots!

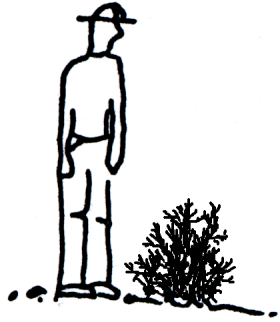
Why should we remove it?

Himalayan Blackberry grows densely and can spread out to completely cover an area. When it covers the ground, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area. This plant can also climb up and grow over other plants, blocking the sunlight and eventually smothering the plants.

Did you know...

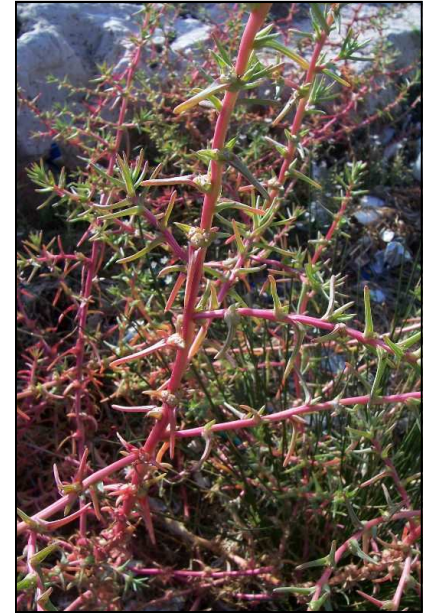
There is a blackberry that is native to California that also produces tasty berries. It looks very similar to the Himalayan Blackberry but the California Blackberry has thin, straight thorns while the Himalayan Blackberry has wide, curved thorns.

Non-native Plant



Russian Thistle

Salsola soda



Non-native Plant

Russian Thistle

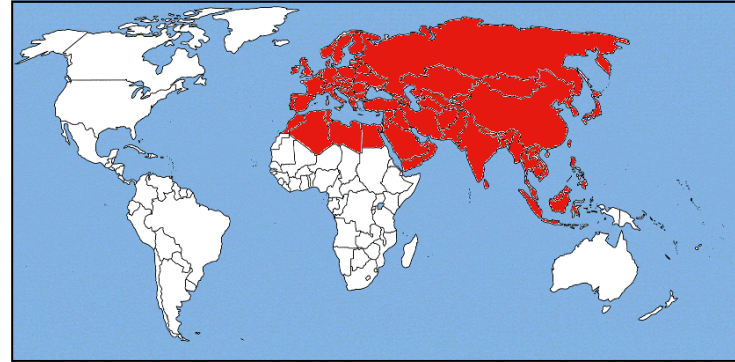
Salsola soda

Where is it from?

Russian Thistle is native to the Mediterranean region and Eurasia (Europe and Asia).

How did it get here?

This plant was accidentally brought to the United States when its seeds were mixed in with shipments of flax seeds in the late 1800's. It was then intentionally brought into the U.S. as a food crop for grazing animals.



How long does it live?

This is an *annual plant*. Annual plants grow, flower, and die within one year or season.

How does it reproduce?

This plant only reproduces by seed. Each plant can produce anywhere from 1500-100,000 seeds depending on its size! The seeds form from July-October.

How do the seeds spread?

The seeds *disperse* (spread) by animals (seed-eaters: birds, rodents, etc.) and by wind. When Russian Thistle is full grown and begins to die, the entire plant can be easily blown away by the wind, which is where it gets its other name "Tumbleweed". As it tumbles, or rolls, across the ground, the seeds are shaken loose, spreading the seed as far as the wind can take it.

Why should we remove it?

Russian Thistle grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area. It can also invade the habitat for the Endangered plant named "Soft Bird's Beak," as well as other rare plants along the shoreline.

Did you know...

The leaves of Russian Thistle are edible and are considered a popular vegetable in Italy. The fresh leaves can be boiled or eaten raw. The name "*Salsola*" is the Latin word for "*salt*", referring to this plant's ability to live in salty soils.

Non-native Plant



Milk Thistle

Silybum marianum



Non-native Plant

Milk Thistle

Silybum marianum

Where is it from?

This plant is native to the Mediterranean region.

How did it get here?

It is believed that Milk Thistle was accidentally brought into the United States when its seeds were mixed in with shipments of cattle feed.

How long does it live?

This is a *biennial plant*. Biennial plants take two years to complete their lifecycle. During the first year it produces its leaves and stems and then it flowers and dies in the second year.

How does it reproduce?

Milk Thistle only reproduces by seed. Each plant can form over 2,000 seeds! The seeds form from late spring through early summer.

How do the seeds spread?

The seeds are *dispersed* (spread) by wind, animals (birds and grazing animals), and by simply dropping to the ground.

Why should we remove it?

Milk Thistle grows densely and can spread out to completely cover an area. As it grows, it blocks the sunlight and absorbs water and nutrients from the soil, making it difficult for other plants to grow and survive in that area.

Did you know...

This plant is used as a medicine for liver cleansing and to treat liver diseases, and has been used as an antidote for Death-cap mushroom poisoning. Milk thistle is also an ingredient in Rockstar Energy Drinks.

