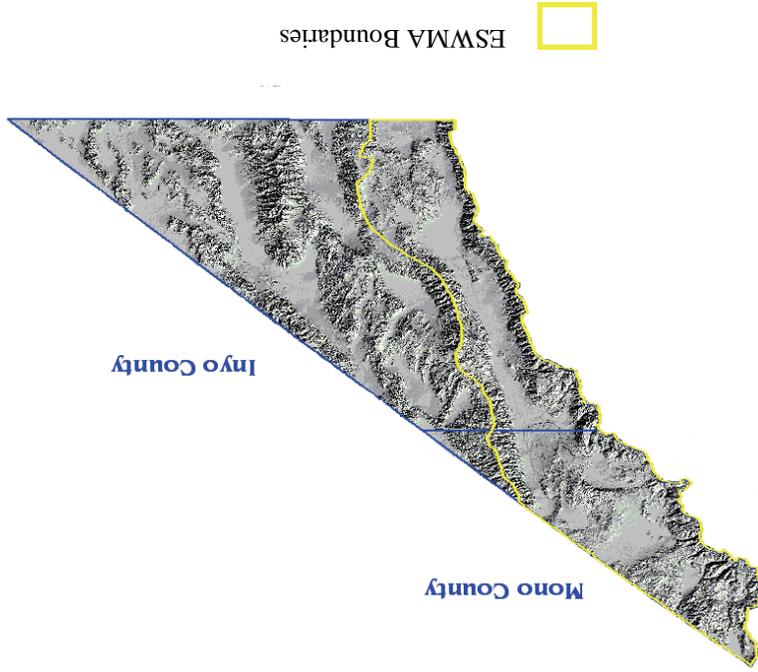


Eastern Sierra Weed Management Area Boundaries



Eastern Sierra Weed Management Area Noxious Weed Identification Handbook

A County, State and Federal Partnership

Cooperators: California Department of Food and Agriculture, Inyo/Mono Counties Agricultural Commissioner's Office, Los Angeles Department of Water and Power, Inyo County Water Department, Bureau of Land Management (Bishop Field Office), Inyo National Forest, Toiyabe National Forest, California Department of Forestry, Natural Resource Conservation Service, Inyo/Mono Resource Conservation District, Inyo/Mono Counties Cattlemen's Association, California Department of Transportation District 9, Bishop Paiute Tribe, and the Bristlecone Chapter of the California Native Plant Society.

Most weed information is from *Invasive Plants in Nevada: An Identification Handbook*, courtesy of the University of Nevada Cooperative Extension by Shawn W. Stoddard, Wayne S. Johnson and Robert E. Wilson.

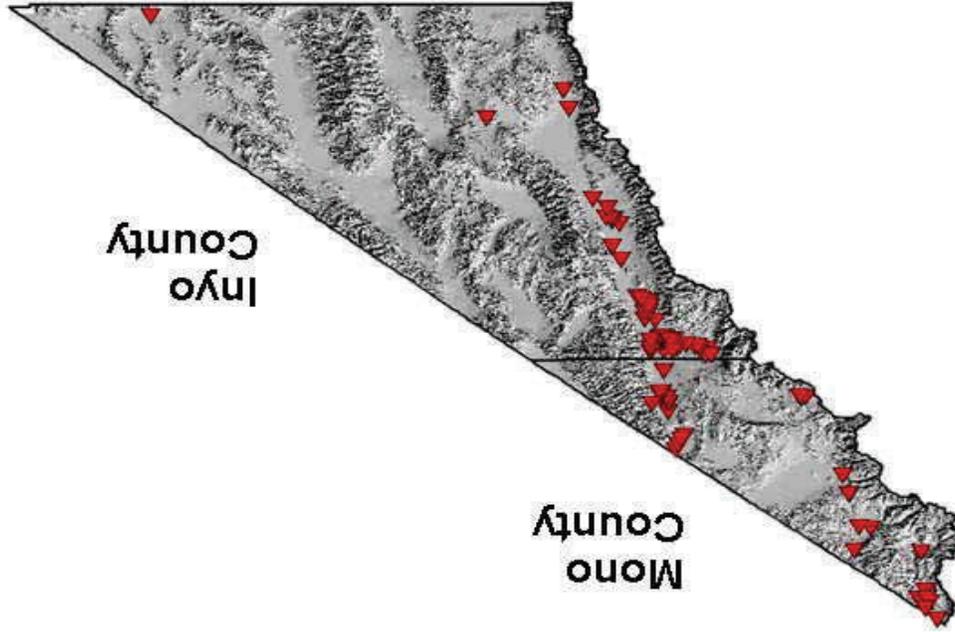
Introduction

Invasive plants or “weeds” are plants that have been introduced into an environment in which they did not evolve and thus usually have no natural enemies to limit their reproduction and spreading. The problem with nonnative invasive plants is the increasing rate of human distribution of flora and fauna around the world which has caused the displacement of native species, increased fire frequency (especially in the Great Basin), and require millions of dollars to be spent annually on invasive species control. Although natural invasions of plants and animals have occurred in the past, none have compared in scale to the present human-induced migration of species. To become a problem, invasive competitive plants must be introduced into an area. They must then establish themselves, reproduce and disperse. Control or management is easiest and least expensive during the first two stages and difficult and very expensive during the last. The key to control is to identify potential weed infestations at very early stages.

The Eastern Sierra Weed Management Area (ESWMA) is unique in that it encompasses a 2.5 million acre drainage basin with very little urbanization or agriculture. These large areas of wildlands are exposed to varying amounts of weed infestation depending on the level of disturbance and the availability of weed seed. In the ESWMA, approximately 30,000 acres of land are currently infested with nonnative invasive plants.

The control of any weed depends on the early detection of it's presence. This handbook will aid in the identification of 25 of the most common nonnative plants that occur, or have the potential to occur, in the eastern Sierra. Use the enclosed map, pictures and descriptions to identify an invasive plant and then fill out the survey form in the back of the book each time you identify a weed at a new location. Send completed forms to the Inyo/Mono Counties Agricultural Commissioner's Office, 207 W. South Street, Bishop, CA 93514, or call (760)-873-7860.

This booklet was assembled by the Eastern Sierra Weed Management Area, a local organization that brings together landowners and land managers for the purpose of controlling invasive weed species.



Known ESWSMA Weed Sites

Rating pending	0
State endorsed holding action and eradication only when found in a nursery	C
Eradication, containment, control or other holding action at the discretion of the County Agricultural Commissioner	B
Eradication, containment, rejection, or other holding action	A

Noxious Weed Ratings by the California Department of Food and Agriculture

Causes severe ecological impacts, plant biology is conducive to moderate or high rates of dispersal and establishment	High
Substantial and apparent—but generally not severe—ecological impacts. Reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance	Moderate
Invasive but ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Reproductive biology and other attributes result in low to moderate rates of invasiveness	Limited
Represents either invasive plants that appear to be expanding their range, or species showing signs of being invasive in some areas of the state	ALERT

Noxious Weed Ratings by the California Invasive Plant Council

What Are We Doing?

- The Eastern Sierra Weed Management Area is composed of multiple agencies and groups working cooperatively toward weed prevention, detection and control, as well as native plant restoration
- Mapping invasive species populations to track their control and spread
- Controlling further spread by containing weed populations through the eradication of new and outlying sites
- Working in the Lower Owens River Project and other mitigation and enhancement project areas to prevent the spread of weedy species
- Utilizing integrated pest management including chemical, mechanical, cultural and biological control and eradication methods on over 30,000 acres
- Public outreach to educate the general public about weeds—their detection, impacts and control

What You Can Do

- Avoid driving through weed-infested areas
- Remove weeds from vehicles by washing thoroughly on a paved area or in a car wash
- Avoid disturbing native vegetation or creating seedbeds (open areas) during weed flowering and seeding season
- If you find a few weeds without flowers or seeds, pull them and leave them in a dry location. If flowers or seeds are present, bag the plants and dispose of them
- Maintain a healthy native plant cover - use native species when designing landscapes
- Be aware of new plants in your area
- Avoid irrigating in areas of disturbed vegetation and soil
- Carefully remove and dispose of weed seeds and “stickers” from clothing, pets and stock
- If you find a weed-infested area, write down the location, type and size of the weed and notify the Inyo/Mono Agricultural Commissioner’s Office or land management agency.

- Carry the handbook with you whenever you are out in the field. Put it in your glove compartment, pack or lunch box
- Refer to it when you encounter a plant that you suspect is invasive
- Use the pictures and descriptions to identify the plant
- Fill out the survey form in the back of the book each time you identify an invasive plant in a new location
- On the reverse side of the survey form draw a simple map to locate the site where the invasive plant is encountered. Put as much detail in the drawing as you like. When you finish ask yourself, "is the map drawn well enough that someone unfamiliar with the area could find the site and this plant?"
- Send the completed form and map to: Inyo/Mono Counties Agricultural Commissioner's Office, 207 W. South Street, Bishop, CA 93514.

How to Use this Identification Handbook for Noxious Weeds



Index of Noxious Weeds by Scientific Name

<u>Scientific Name</u>	<u>Common Name</u>	<u>CDFR Rating</u>	<u>Cal-IPC Rating</u>	<u>Page</u>
<i>Acroptilon repens</i>	Russian knapweed	B	Moderate	7
<i>Ailanthus altissima</i>	Tree of Heaven	C	Moderate	8
<i>Alhagi maurorum</i>	Camelthorn	A	Moderate	9
<i>Arundo donax</i>	Giant reed	B	High	10
<i>Brassica tournefortii</i>	Saharan mustard	N/A	High	11
<i>Cardaria draba</i>	Hoary cress	B	Moderate	12
<i>Carduus nutans</i>	Musk thistle/Nodding thistle	A	Moderate	13
<i>Centaurea diffusa</i>	Diffuse knapweed	A	Moderate	14
<i>Centaurea maculosa</i>	Spotted knapweed	A	High	15
<i>Centaurea solstitialis</i>	Yellow starthistle	C	High	16
<i>Centaurea squarrosa</i>	Squarrose knapweed	A	Moderate	17
<i>Chondrilla juncea</i>	Rush Skeletonweed	A	Moderate	18
<i>Cirsium arvense</i>	Canada thistle	B	Moderate	19

<u>Scientific Name</u>	<u>Common Name</u>	<u>CDFR Rating</u>	<u>Cal-IPC Rating</u>	<u>Page</u>
<i>Elaeagnus angustifolia</i>	Russian olive	N/A	Moderate	20
<i>Euphorbia esula</i>	Leafy spurge	A	High + Alert	21
<i>Halogeton glomeratus</i>	Halogeton	A	Moderate	22
<i>Hypericum perforatum</i>	St. Johnswort/Klamath weed	C	Moderate	23
<i>Isatis tinctoria</i>	Dyer's woad	B	Moderate	24
<i>Lepidium latifolium</i>	Perennial pepperweed	B	High	25
<i>Linaria dalmatica</i>	Dalmatian toadflax	A	Moderate	26
<i>Lythrum salicaria</i>	Purple loosestrife	B	High	27
<i>Onopordum acanthium ssp. acanthium</i>	Scotch thistle	A	High	28
<i>Taeniatherum caput-medusae</i>	Medusahead	C	High	29
<i>Tamarix ramossissima</i>	Saltcedar	B	High	30
<i>Tribulus terrestris</i>	Puncturevine	C	N/A	31

Cal-IPC	Moderate	No Alert
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Cdfa	B
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KNOWN ESWMA DISTRIBUTION:

Various infestations are known to occur throughout the ESWMA.

OTHER:

Widely established in the United States, Russian knapweed colonizes cultivated fields, orchards, pastures, roadsides, and wildlands. Propagated by seeds, this weed forms dense colonies by adventitious shoots from widely spreading black roots. Cultivation, moving infested soils and taking contaminated equipment from place to place spreads this weed. Roots may grow deeply in certain soils.

SEED:

Seeds (achenes) 1/8 to 1/4 inch long (3 to 6 mm), and have many white bristles.

FLOWERS:

The cone-shaped flower heads are 1/4 to 1/2 inch (6-12 mm) in diameter and solitary at the tip of the leafy branches. Pink flowers are common, but may range from white to lavender. Many pearly bracts with rounded or acute pearly margins cover the base of the flower (involucre). Flowering occurs from June to September. They are very showy.

LEAVES:

Blue green leaves on emerging plants are toothed and covered with fine hairs. Alternately arranged on the stem, the lower leaves are deeply lobed, 2 to 4 inches (5-10 cm) long, while the upper leaves are entire or serrate, narrow-ling to a stalkless (sessile) base.

GROWTH HABIT:

Russian knapweed is a perennial that is native to Eurasia, specifically the Caucasus region between the Black and Caspian Seas. Stems are erect and openly branched on plants that grow 18 to 36 inches (45-91 cm) tall.

Russian knapweed *Acroptilon repens*
Asteraceae: Sunflower family



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Tree of Heaven *Ailanthus altissima*
Simaroubaceae: Tree of Heaven Family

- GROWTH HABIT:** Tree of Heaven is an invasive plant which grows rapidly and can reach up to 80 feet tall, while the trunk can reach a diameter of 3 feet.
- LEAVES:** Its large, compound leaves are arranged alternately on the stem, and can be 30-60 cm long (occasionally up to 1 m long on vigorous young sprouts) and contain 11-33 leaflets, occasionally up to 41 leaflets. Each leaflet has one to three teeth on each side, close to the base. This helps distinguish it from sumacs.
- FLOWERS:** The flowers are small, yellow-green to reddish, produced in late spring to mid summer in panicles up to 30 cm long. It is dioecious, with trees being either all male or all female.
- SEED:** The seed is 5 mm diameter, encapsulated in a samara 4 cm long and 1 cm broad; the samara is twisted, making it spin as it falls, assisting wind dispersal. Female trees can produce more than 300,000 seeds in a year.
- OTHER:** All parts of this tree produce an unpleasant odor. The bark of the tree is smooth and light grey, while the stems are reddish or chestnut.
- KNOWN ESWMA DISTRIBUTION:** Various infestations are known to occur throughout the ESWMA.

CDFA	N/A
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Cal-IPC	Moderate	No Alert
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Camelthorn *Alhagi maurorum* Medik.
Fabaceae: Legume Family

GROWTH HABIT: Camelthorn is a spiny, perennial shrub 1½ to 4 feet tall. The stems greenish with slender spines ¼ to 1¾ inches long. Leaves are alternate, simple, and wedge-shaped with hairs on the underside but not on the upper surface.

LEAVES: Leaves are alternate, simple, and wedge-shaped with hairs on the underside but not on the upper surface.

FLOWERS: Flowers are small and pea-like. Colors range from pinkish-purple to maroon and occur on the spine tipped branches along the upper portion of the plant.

SEED: Seeds are contained in reddish-brown seedpods with each seed being clearly outlined in the pod.

OTHER: Camelthorn is a very invasive, non-native weed that grows well in the Southwestern U.S. Reproduction is by creeping rhizomes and by seed.

KNOWN ESWSMA DISTRIBUTION: Tecopa area (Inyo County).



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Giant reed/*Arundo Arundo donax*
Poaceae: Grass family

GROWTH HABIT: This aggressive perennial grass is native to Asia and spreads rapidly from rhizomes and plant fragments. It can grow to a height of 33 feet (10 m), and can grow as much as 2 inches (5 cm) a day.

LEAVES: Grey-green leaves are alternate, 1 to 2 inches (3 to 6 cm) wide, 12 inches (30 cm) long and elongate.

FLOWERS: Flowers are borne in large plume-like panicles in late summer.

OTHER: Arundo is often confused with phragmites, another large grass native to California. It was introduced to California in the 1820's, and lives mostly in riparian areas where it consumes large amounts of water, and creates large monotypic stands. It shades out desirable species and provides no forage or habitat for native animals. Arundo is also known to be highly flammable.

KNOWN ESWMA DISTRIBUTION: Arundo is known to occur in ornamental plantings in several locations within the ESWMA.

CDFA	B
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Cal-IPC	High	No Alert
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Cal-IPC High No Alert

CDFG N/A

KNOWN ESWMA DISTRIBUTION:

Occasionally found on roadsides in Inyo county.

OTHER:

Like Russian thistle (tumbleweed), Saharan mustard spreads rapidly over large distances by breaking off at the base of the stem and "tumbling" in the wind. This weedy species was introduced into the desert of California with date palms, and can create a fire hazard when the plants dry out and accumulate on fence rows or in ditches.

SEED:

Seeds are in capsules, with 7 to 15 reddish seeds in each capsule. Seeds are glabrous, and .04 inch (1 mm) in diameter. One plant can produce up to 9,000 seeds.

FLOWERS:

The inconspicuous flowers have petals less than .25 inches (6 mm) long, with four petals per flower. Flowers can range in color from pale yellow to white.

LEAVES:

Basal leaves are 3 to 12 inches (7 to 30 cm) long, and pinnately lobed. Upper leaves are smaller.

GROWTH HABIT:

This introduced annual weed is native to Africa and the Mediterranean. It grows well in disturbed areas such as fields and roadsides, and spreads rapidly once established. It is commonly the first plant to appear in the spring, sometimes starting so early that it has gone to seed by February.

Saharan mustard *Brassica tournefortii* Gouan
 Brassicaceae: Mustard Family





Hoary Cress *Cardaria draba*
Brassicaceae: Mustard family

- GROWTH HABIT:** This deep-rooted perennial is native to Eurasia and grows up to 2 feet (0.6m) tall and commonly grows on disturbed sites with alkaline soils.
- LEAVES:** The leaves are 1 to 1 1/2 inches long, blue-green, waxy, and lance-shaped. The lower leaves are stalked. The upper leaves are without stalks and have two lobes that clasp the stem.
- FLOWERS:** Flower clusters with white flowers, each with four petals, give the plant a white, flat-topped appearance. Flowering occurs in spring.
- SEED:** Seeds are set by mid-summer. Heart-shaped seed capsules are produced and each contains two reddish-brown seeds separated by a narrow, papery partition.
- OTHER:** It is highly competitive with other species once it becomes established, but can be controlled effectively with herbicides. Two other *Cardaria* species, lens-podded whitetop (*C. chalepensis* L.) and hairy whitetop (*C. pubescens*) are common in the western US. Differences in seed capsules are used to identify each species. Hoary cress may grow from seed and also from root segments if the soil is tilled.
- KNOWN ESWMA DISTRIBUTION:** Hoary cress is a common invader throughout the ESWMA.

CDFA	B
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Cal-IPC	Moderate	No Alert
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GROWTH HABIT:
LEAVES:
FLOWERS:
SEED:
OTHER:

This Eurasian biennial, or sometimes winter annual weed, stands 2 ½ to 3 ½ feet (0.75-0.9 m) tall but may grow to 6 feet (1.8 m) tall.

The leaves are dark green with a white central vein, deeply cut lobes and a spiny edge. The narrow leaves are up to eight inches (20 cm) long, alternately arranged and directly attached to the stem.

Single flower heads growing on the end of long stalks are 1 ½ to 3 inches (4 to 8 cm) in diameter and usually bent over at the neck. The flowers are deep rose, violet or purple, and occasionally white. They have broad spine-tipped bracts at their base; the bottom row or two of which are bent under or recurved.

The fruits are 3/16 inch (5 mm) long, shiny and yellowish-brown with a plume of white hair 3/4 inch (2 cm) long at one end.

Musk thistle was introduced to the US in the early part of the century. This native of southern Europe and western Asia has spread throughout the US and Canada. It invades pastures, wildlands, grain fields, ditch banks, roadsides, waste areas, and stream banks. It spreads rapidly and forms dense stands that crowd out other plants. Tillage cuts the roots that re-sprout and is not recommended for control.

Musk thistle *Cardus nutans*
Asteraceae: Sunflower family



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 Richard Old
 www.xidservices.com





Diffuse knapweed *Centaurea diffusa*
Asteraceae: Sunflower family

- GROWTH HABIT:** This Eurasian native weed is a diffusely branched annual or short-lived perennial. It grows 1 to 2 feet (30-60 cm) tall and has stems that are rough to the touch.
- LEAVES:** Leaves are finely divided except for the reduced leaves of the inflorescence which are mostly entire. Most are covered with fine hairs.
- FLOWERS:** The plant produces many narrow flower heads. The flowers are white to rose or sometimes purplish. Flowering occurs from July to September. The margins of the bracts on the base of the flowers (involucre) are divided like the teeth of a comb. Each bract is tipped with a yellow, slender spine.
- SEED:** The seeds or achenes are brown to grayish and lack a tuft of hairs (pappus).
- OTHER:** Diffuse knapweed infests roadsides, waste areas, dry rangelands and disturbed sites. It is a highly competitive plant which threatens to exclude many desirable species from the pastures and wildlands. The seed is commonly spread by vehicles or by the sale or movement of contaminated sand or gravel.

CDFA	A
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Cal-IPC	Moderate	No Alert
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Cal-IPC High No Alert

CDFR A

KNOWN ESMA DISTRIBUTION:

Walker/Coleville, Crowley Lake (Mono county).

OTHER:

This species and other knapweeds readily establish themselves in disturbed soil. Their early spring growth makes the competitive for soil moisture and nutrients. There is also some evidence that knapweeds release chemical substances which inhibit germination and growth of surrounding vegetation.

SEED:

The seeds are about 1/8 inch (3 mm) long and they are tipped with a tuft of persistent bristles.

FLOWERS:

Single flowering heads develop at the end of branches. The stiff bracts on the base of the flower head (involucre) are tipped with a dark comb-like fringe. The ray flowers are pinkish-purple or rarely cream-colored. The flowering period extends from June to October.

LEAVES:

The leaves are arranged alternately on the stem. Basal leaves grow up to 6 inches (15 cm) long, are narrowly elliptic to oblongeolate and are entire to pinnately parted. The leaves higher up on the stem are pinnately divided.

GROWTH HABIT:

Spotted knapweed is a biennial or short-lived perennial with a stout taproot. It can have one or more branched stems and grows 1 to 3 feet (30-91 cm) tall.

Spotted knapweed *Centaurea maculosa*
Asteraceae: Sunflower family





Yellow starthistle *Centaurea solstitialis*
Asteraceae: Sunflower family

- GROWTH HABIT:** Yellow starthistle, a native European annual, is grayish green and grows 1 to 3 feet (30 to 90 cm) tall. The rigid stems are spreading and branched from the base. They are covered with white to gray, loose, cottony wool.
- LEAVES:** There are three types of leaves. The basal leaves are 2 to 3 inches (5 to 7.5 cm) long and deeply lobed. The leaves on the stem are alternately arranged. The lower areas are narrow with blades that extend down the stem forming wings. The upper leaves are short, 1/2 to 1 inch (1.25 to 2.5 cm) long, narrow, and sharply pointed. Their cottony pubescence gives them a white to gray-green color.
- FLOWERS:** The dandelion-like, bright yellow flower heads occur singly at the ends of the branches. They are about 1 inch (2.5 cm) across with long, sharp, rigid, 3/4 inch (2 cm), straw-colored spines at the base. The lower spines have three prongs, while the middle and upper ones are unbranched.
- SEED:** There are two types of seed; some are light colored with white bristles, while others are dark to black without bristles.
- OTHER:** Yellow starthistle infests cultivated fields, pastures, and waste lands in California, Oregon, Washington and Idaho. “Chewing disease”, a nervous disorder, occurs in horses forced to eat yellow starthistle. This may occur during poor, dry years.
- KNOWN ESWMA DISTRIBUTION:** Topaz (Mono County) and Independence (Inyo County).

CDFA	C
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Cal-IPC	High	No Alert
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Squarrose knapweed *Centaurea squarrosa*
Asteraceae: Sunflower family

GROWTH HABIT:

This native of Eurasia is a long-lived, tap-rooted perennial that grows 1½ to 3 feet (50 to 90 cm) tall.

LEAVES:

The stems of Squarrose knapweed are very branched, with deeply dissected lower leaves and bract-like upper leaves arranged alternately along their length.

FLOWERS:

Flower clusters are small with 4 to 8 rose or pink colored flowers each. The flowers are small, less than 1/2 inch (100 mm) long with an urn-shaped base covered with bracts, usually developing no more than 3 to 4 seeds per head. The bract tip is re-curved or spreading and have terminal spines longer than the lateral spines on each bract.

SEED:

Each flower produces 3 to 4 eighth inch (3 mm) long, dull brown seeds with straw-colored lines and bristles about as long as the seed.

OTHER:

Squarrose knapweed is a competitive weed native to the eastern Mediterranean area. It is not common, but it is an invasive weed found in the surrounding states of Nevada, Oregon and Utah. Livestock and wildlife easily spread seeds.





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Richard Old
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Photo by:
Richard Old
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The stiff down-turned hairs on the lower part of the stem are the diagnostic character for this species.



Photo by:
Richard Old
www.xidservices.com

Rush skeletonweed *Chondrilla juncea*
Asteraceae: Sunflower family

- GROWTH HABIT:** Rush skeletonweed is a perennial that grows 1 to 4 feet (.30-1.20 m) tall. The plant has a deep, extensive root system and stems with distinctive hairs (trichomes). 4 to 6 inches (10-15 cm) up the stem, coarse hairs bend downward and the stem is smooth above.
- LEAVES:** Sharply-toothed leaves form a rosette which withers as the flower stem develops. Other leaves up the stem are inconspicuous, narrow and entire. The leaves and stems exude a milky latex when cut or damaged.
- FLOWERS:** The flower heads are scattered on the branches. They are approximately 3/4 inch (2 cm) in diameter and have 7 to 15 yellow, strap-shaped flowers.
- SEED:** Seeds are produced mid-July through frost. The seed is ribbed with tiny scaly projections on top and has a long beak with numerous soft white bristles at one end.
- OTHER:** Rush skeletonweed is an introduced Eurasian species which has infested several million acres in Idaho, Oregon, Washington, and California. It inhabits well-drained, light textured soils along roadsides, in wildlands, grain fields and pastures. It becomes established most easily in disturbed soils and is very difficult to control once it becomes established.

CDFA	A
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Cal-IPC	Moderate	No Alert
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KNOWN ESWSMA DISTRIBUTION:

OTHER:

SEED:

FLOWERS:

LEAVES:

GROWTH HABIT:

Topaz (Mono County), Bishop (Inyo County).

Canada thistle is an introduced Eurasian species. It inhabits well-drained, light-textured soils along roadsides, in wildlands, grain fields and pastures. It becomes established most easily in disturbed soils and is very difficult to control once it has become established.

Seeds are smooth, light to dark brown, tipped by a cupped, conical point, and are approximately 1/8 inch (2 mm) long.

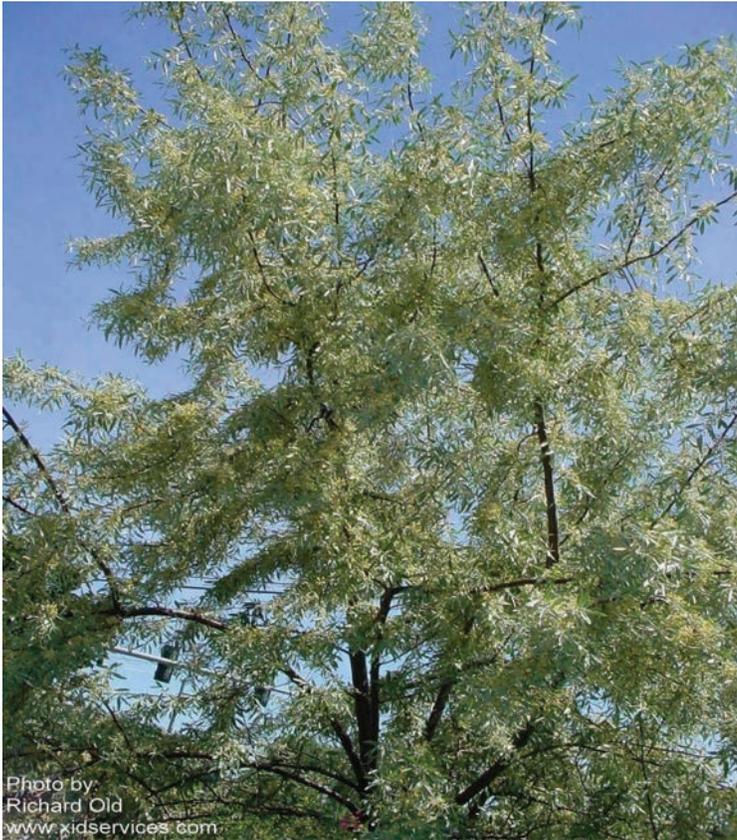
The flower heads consist of small bristly clusters, 3/8 to 5/8 inch (1-2 cm) in diameter, light lavender to deep rose purple. Flowers are male or female.

The leaves vary from light to dark green, and are oblong or lance-shaped, deeply cut with spiny-toothed margins (some may be smooth) and are singly hairy on their underside. The plants have tremendous leaf variability.

Canada thistle is an erect perennial up to 4 feet (1.2 m) tall.

Canada thistle *Cirsium arvense*
Asteraceae: Sunflower family





Russian olive *Elaeagnus angustifolia*
Elaeagnaceae: Oleaster family

- GROWTH HABIT:** Russian olive is a fast-growing tree of moderate size, normally reaching heights from 10 to 25 feet.
- LEAVES:** Leaves are narrow, 2 to 3 inches long, and covered with minute scales which give this tree its distinct silvery appearance.
- FLOWERS:** Flowers are yellow, and arranged in clusters.
- SEED:** Fruits are shaped like small olives and are silvery in color when first formed. These fruits turn tan to brown at maturity.
- OTHER:** Trunks and branches are armed with 1 to 2 inch woody thorns.
- KNOWN ESWMA DISTRIBUTION:** Various infestations are known to occur throughout the ESWMA.

CDFA	N/A
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Ca-IPC	Moderate	No Alert
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GROWTH HABIT:

This Eurasian perennial grows up to 3 feet (1 m) tall and has long ascending, thickly clustered stalks. It reproduces by vigorous rootstalks and seed. The brown roots grow deeply in most soils and contain numerous pink buds at the crown or junction of the root that may produce new shoots. The entire plant contains a milky sap.

LEAVES:

The leaves are alternate along the stems, narrow and 1 to 4 inches (2.5 to 10 cm) long, except the leaves below the flowers which are broadly egg-shaped and 1/2 to 2 inches (1.25 to 5 cm) long.

FLOWERS:

The flowers are yellowish-green and small, 1/8 inch (2.5 mm). Flowers are arranged in numerous small clusters on the ends of the stalks. A pair of heart-shaped, yellow-green bracts grow immediately below them.

SEED:

Seeds are in a 3-celled capsule. Each cell of the capsule contains a single seed. Capsules explode upon drying, projecting seeds as far as 15 feet. The seeds may be viable in the soil for 8 years.

OTHER:

Leaty spurge is native to Eurasia and was brought into the United States as a seed impurity about 1827. It is a serious problem in North America where it infests almost 2.5 million acres, mostly in southern Canada and the north central United States. It displaces many species and is very difficult to control once established. It causes severe irritation of the mouth and digestive tract of cattle and may result in death.

Leaty spurge *Euphorbia esula* L.
Euphorbiaceae: Spurge family





Halogeton *Halogeton glomeratus*
Chenopodiaceae: Goosefoot family

- GROWTH HABIT:** This Mediterranean annual has many erect stems. Stems are blue-green in the spring, turning yellow or red in the fall. It reproduces by seed only.
- LEAVES:** The fleshy, tube-like leaves occur alternately and in bunches along the stem. They end abruptly and are tipped with a delicate needle-like spine. Tufts of cottony hairs occur at the leaf attachment.
- FLOWERS:** Flowers are green, inconspicuous, and born in the leaf axil.
- SEED:** Seeds are of two types: black, which germinate during the first growing season after produced, and brown, which are dormant but viable for several years.
- OTHER:** Halogeton is toxic to livestock, especially sheep, from high oxalate content, and is easily dispersed by vehicles and road grading equipment.
- KNOWN ESWMA DISTRIBUTION:** Various infestations are known to occur throughout the ESWMA, mainly concentrated on roadsides.

CDFA	A
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Cal-IPC	Moderate	No Alert
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St. Johnswort/Klamath weed *Hypericum perforatum* L.
Clusiaceae: St. Johnswort family

GROWTH HABIT:

This perennial native of Europe stands 1 to 3 feet (30 to 90 cm) tall, is woody at the base, and has branches on the upper half of each stem. At the base are numerous leafy, barren shoots. It has creeping horizontal stems (stolons) that root at the nodes when they touch the ground. The flowering and fruiting period of Common St. Johnswort is from June through September.

LEAVES:

The leaves are light green without stalks (sessile). They are oblong or long and narrow (linear) with an entire margin that rolls backward (revolute). The veins are prominent underneath and small transparent dots cover the blade. Leaves are 3/4 to 1 inch (15 to 25 mm) long and 1/2 to 1/6 inch (2 to 4 mm) wide.

FLOWERS:

The dense, flat-topped flower cluster (cyme) is bright yellow. The outer, narrow (linear) green part of the flower (sepal) is lance-shaped 1/8 inch (4 mm) long and gradually tapers to a short point (acuminate). The bright yellow flower is 3/8 to 1 inch (15 to 25 mm) long and 1/12 to 1/6 inch (2 to 4 mm) wide.

SEED:

The seeds are borne in an oval-shaped, three-celled pod (capsule), 1/6 to 1/4 inch (4 to 6 mm) long, that breaks apart at maturity. The shiny, dark brown or black seeds are produced in large quantities. They are 1/40 to 1/35 inch (6 to .7 mm) long and are net veined.

OTHER:

Common St. Johnswort is poisonous to livestock and difficult to eradicate. It prefers dry, sandy or gravelly soils and often occurs in pastures, open woods, waste places, and along roadsides.



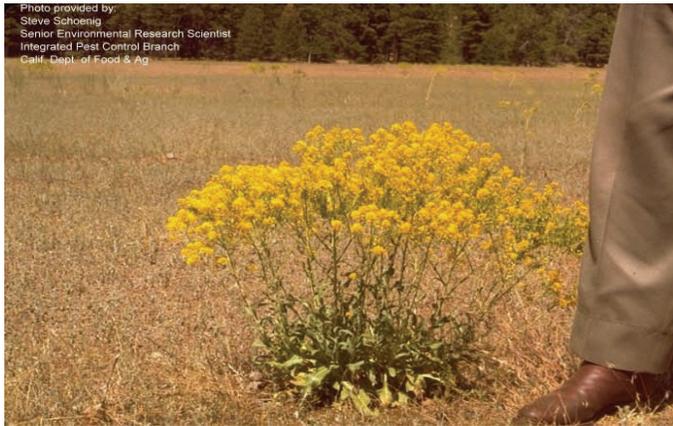


Photo provided by:
Steve Schoenig
Senior Environmental Research Scientist
Integrated Pest Control Branch
Calif. Dept. of Food & Ag



Dyer's Woad 5/77
CDFA/IPC- M. Ketter



Photo provided by:
Steve Schoenig
Senior Environmental Research Scientist
Integrated Pest Control Branch
Calif. Dept. of Food & Ag

Dyer's woad *Isatis tinctoria* L. *Brassicaceae*: Mustard family

- GROWTH HABIT:** Dyer's woad, a European native, is a winter annual, biennial, or short-lived perennial. The mature plant is 12 to 39 inches (30 to 100 cm) tall with erect branches from the base. The lower lateral branches may lie close to the ground but rise at the end (decumbent). Dyer's woad produces a long, thick tap root that can reproduce a new plant if the first is cut off. Dyer's woad begins flowering in April but matures in June or early July.
- LEAVES:** The leaves are bluish-green, borne alternately on the stems, and mostly without hairs, except for some fine hairs on the midrib of the lower leaves. The lower leaves are oblong and lance shaped with coarsely toothed blades that are 2 to 4 inches (5 to 10 cm) long; these narrow to a stalk nearly as long as the leaf blade.
- FLOWERS:** The yellow flowers are tiny, 1/8 inch (3 mm) long, and are crowded into flat-topped or convex, simple, elongated clusters. The outer flower stalks are longer than the inner ones.
- SEED:** A single seed is produced in a purplish-brown, narrow, 1/2 inch (12 mm) long pod. The yellowish seeds are 1/8 inch (3 mm) long, and mature in late spring and early summer. Seeds mature in late spring or early summer.
- OTHER:** Dyer's woad infests wildlands, grain fields, pastures and waste areas and grows along roadsides and fence rows. It may be a problem in cultivated row crops and orchards.

CDFA	B
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Cal-IPC	Moderate	No Alert
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Cal-IPC High No Alert

Cdfa B

KNOWN ESWMA DISTRIBUTION:

Various infestations are known to occur throughout the ESWMA.

OTHER:

Perennial pepperweed grows in waste places, wet areas, ditches, roadsides and cropland, and is very difficult to control once established. The robust, spreading roots and numerous seeds make this weed difficult to control. Mechanical measures spread this plant. Control treatments with chemicals must be timed properly or the effort is wasted.

SEED:

Perennial pepperweed produces a two-seeded fruit capsule. The reddish-brown seeds are round, flat, slightly hairy and about 1/16 inch (1 mm) long.

FLOWERS:

The white flowers develop in dense clusters near the ends of the branches. Individual flowers are very small, but the entire top of the plant blooms in early summer through fall.

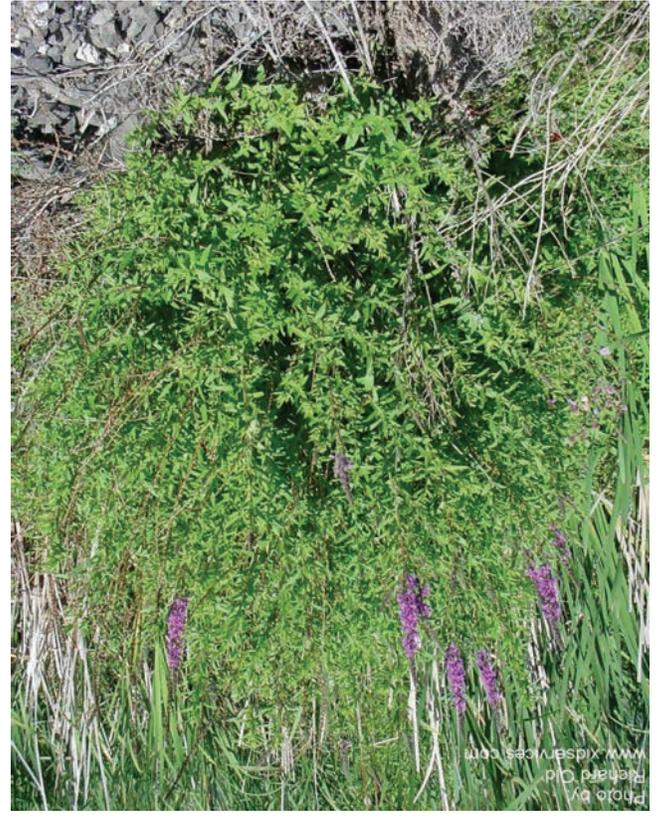
LEAVES:

The lanceolate leaves are bright green to gray-green and have a smooth (entire) to toothed margin. The basal leaves are larger than the upper leaves.

GROWTH HABIT:

Perennial pepperweed is a native of southern Europe and western Asia and grows 1 to over 3 feet (.3 to .9 m) tall.

Perennial pepperweed *lepidium latifolium* L.
Brassicaceae: Mustard family





Dalmatian toadflax *Linaria dalmatica* L.
Scrophulariaceae: Figwort family

- GROWTH HABIT:** Dalmatian toadflax is a perennial from southeastern Europe that is probably an escaped ornamental. It grows up to 3 feet (.9 m) tall and reproduces by seed and underground roots.
- LEAVES:** The egg-shaped leaves are dense and grow alternately along the stem. They have a smooth edge (entire), are waxy gray-green and clasp to the stem. The upper leaves are conspicuously broad-based.
- FLOWERS:** Flowers are showy and borne in axils of upper leaves and are 2-lipped, 3/4 to 1½ inches (1 to 4 cm) long. They have a long spur and are yellow with an orange, bearded throat.
- SEED:** The fruit is a 2-celled capsule about 1/4 inch (5 to 6 mm) long with many irregularly-angled black seeds.
- OTHER:** Dalmatian toadflax is aggressive and may be found along roadsides and on wildlands where it crowds out desirable native species. The extensive, deep root system, along with the waxy leaves which repel pesticides, make this an extremely difficult plant to control.
- KNOWN ESWMA DISTRIBUTION:** Sunny Slopes, Mono County.

CDFA	A
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Cal-IPC	Moderate	No Alert
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GROWTH HABIT:
LEAVES:
FLOWERS:
SEED:
OTHER:

This rhizomatous perennial has erect stems, often 6 to 8 feet (1.8 to 2.4 M) tall. It usually occupies moist or marshy sites, but once established tolerates intermittently dry areas.

The leaves are simple, entire, and grow opposite each other or are whorled along the stem.

Rose-purple flowers have 5 to 7 petals and are arranged in long, vertical racemes at the end of the stems. They are very showy mid-summer to fall.

The small, dark seeds are less than 1/16 inch (1 mm) in size.

Purple loosestrife is an introduced European ornamental. It has escaped to infest aquatic sites—stream banks, shorelines of shallow ponds and reservoirs, canals and ditches where it impedes water flow. This is an aggressive weed in moist sites because of its stout roots and its tendency to spread and propagate from seed and rhizomes.

Purple loosestrife *Lythrum salicaria* L.
Lythraceae: Loosestrife family





Scotch thistle *Onopordum acanthium* ssp. *acanthium* L.
Asteraceae: Sunflower family

- GROWTH HABIT:** Scotch thistle is a robust biennial to short-lived perennial plant native to Europe and western Asia. The mature plant is robust and may grow 6.5 feet (2 m) tall. The stems are winged at the bases of the leaves and the wings extend well below the leaf blades.
- LEAVES:** The leaves are inversely lance shaped (oblanceolate), up to 12 inches (30 cm) long and 4 inches (10 cm) broad. The margins of the leaves are lobed and the lobes have sharp spines. The upper surface of the leaf is green; the underside is grayish. The lowest leaves on the main stem are oblong to egg shaped, 16 inches (40 cm) long and 8 inches (20 cm) broad, and without stalks.
- FLOWERS:** The flowering heads are somewhat globe-shaped and 1¼ to 2 inches (3 to 5 cm) in diameter. They are borne singly at the tips of the branches. The individual outer green, leaf-like structures (bracts) on the flowering heads are lance-shaped. The flowers are reddish-purple and exceed the greenish bracts.
- FRUIT:** The one-seeded fruit (achene) is narrowly egg-shaped, 1/4 inch (5 mm) long, somewhat flattened, and transversely wrinkled (rugulose).
- OTHER:** It grows along roadsides, fence rows, ditch banks, in waste areas and pastures. It rarely infests cultivated crops.
- KNOWN ESWMA DISTRIBUTION:** Walker/Coleville area (Mono county).

CDFA	A
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Cal-IPC	Moderate	No Alert
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Medusahed *Taeniatherum caput-medusae* (L.) Nevski
Poaceae: Grass family

GROWTH HABIT:

This aggressive winter annual may grow 6 to 24 inches (1.5 to 7 dm) tall. Flowering and seed formation occur in May and June.

LEAVES:

The leaf blades are usually 1/8 inch (2 mm) wide or less and are rolled when cut in cross-section.

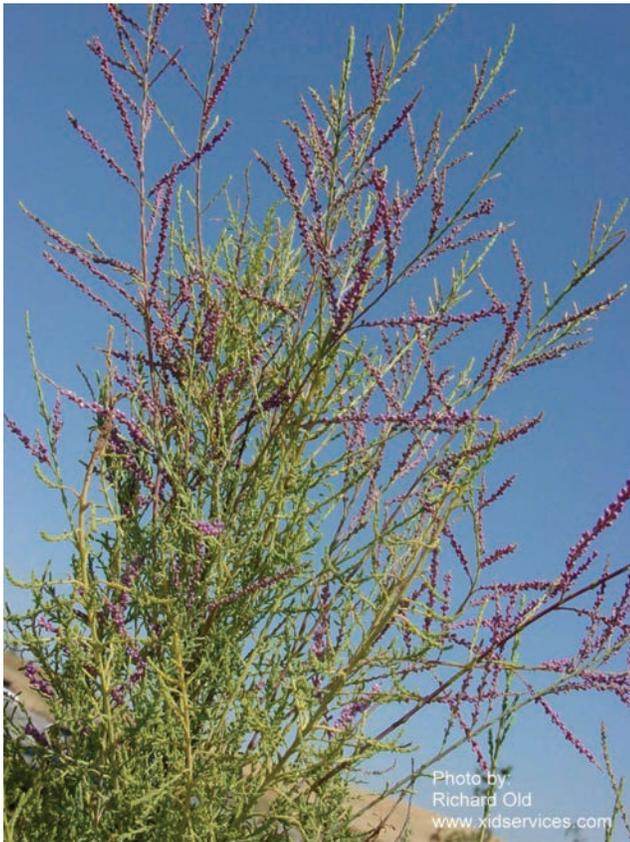
INFLORESCENCE:

The inflorescence is a long-awned spike that is nearly as wide as it is long. The mature awns are twisted and range from 1 to 4 inches (2.5 to 10 cm) long. They are stiff and finely barbed.

OTHER:

Medusahed, introduced from Eurasia, is predominant on million of acres of semi-arid rangeland in the Pacific Northwest. It is extremely competitive, crowding out even such undesirable species as downy brome. Infested ranches have suffered 40 to 75 percent reductions in grazing capacity. Control of small, isolated infestations is critical to reduce the impact of Medusahed on Great Basin wildlands. Sometimes Medusahed is confused with foxtail barley or squirttail. However, it's spike-like head does not break apart as the seeds mature, and it is an annual rather than a perennial. After the individual awned florets fall away, a bristly head made up of awn-like glumes persists, often over winter. Medusahed seedlings are similar to downy brome seedlings, except the latter is much more hairy.





Saltcedar *Tamarix ramosissima* Ledeb.
Tamaricaceae: Tamarisk family

- GROWTH HABIT:** This deciduous shrub and small tree is native to Turkey, Iran, Southern USSR, China and Mongolia and grows 5 to 20 feet (1.5 to 6 m) tall. Bark on saplings and small branches is reddish-brown, turning gray as it matures, and is fissured with age.
- LEAVES:** The pale blue-green leaves are small and scale-like, have a smooth (entire) edge and are borne alternately on highly branched slender stems.
- FLOWERS:** Flowers are pink to white, may occur in the spring and through the late summer and are usually 5-petaled. Small flower tamarisk (*T. parviflora* DC.) is similar in appearance, but has 4-petaled flowers, with brown to deep purple bark on the stems. Smallflower tamarisk was introduced from southern Europe and is also widespread.
- SEEDS:** Seeds are pollen-grain sized, easily dispersed and will germinate readily on any open, moist sites.
- OTHER:** Originally, Saltcedar was introduced as an ornamental and later used as a streambank stabilization species. It has invaded throughout the desert southwest, mostly along waterways, altering wetland habitats. It's aggressive root system uses copious amounts of ground water, often to the detriment of other species. Few, if any plants grow under it's canopy, due to the high concentrations of salt that builds up in the soil from it's accumulated leaf litter and the excretion of salt from the glands on the leaves.
- KNOWN ESWMA DISTRIBUTION:** Various infestations occur throughout the ESWMA.

CDFA	C
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Cal-IPC	High	No Alert
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C	CDFA
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Cal-IPC	N/A	No Alert
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Puncturevine *Tribulus terrestris* L.
Zygophyllaceae: Caltrop family

GROWTH HABIT: This Mediterranean annual is mat forming with trailing stems up to 5 feet (1.5 m) long.

LEAVES: Leaves are opposite, hairy and divided into 4 to 8 pairs of leaflets. Oval leaflets are 1/4 to 1/2 inch (6 to 12 mm) long.

FLOWERS: Flowers are yellow with 5 petals in leaf axils, up to 1/2 inch (12 mm) wide.

SEEDS: Fruits break into 5 sections with 2 to 4 seeds per capsule. Capsules are tack-like structures with 2 sharp spines, resembling the head of a goat.

OTHER: Puncturevine is toxic to livestock in a vegetative condition. Fruits cause mechanical injury. Easily dispersed by vehicles and road grading equipment.

KNOWN ESWSMA DISTRIBUTION: Along roadsides throughout the Owens Valley (Inyo county), and the Walker/Coleville area (Mono county).

Glossary

alternate.....	leaf structure not opposite on the stem
annual.....	completing the life cycle in one growing season
awned.....	a slender bristle-like appendage usually at the end of a structure
basal.....	of or at the base
biennial.....	completing the life cycle in two growing seasons
bract.....	a more or less modified leaf situated near a flower or inflorescence
creeping.....	to grow along the ground or some structure
dioecious.....	flowers unisexual, the male and female flowers on different plant
divided.....	said of leaves; deeply lobed, the sinuses extending to the base of the leaf or midrib
entire.....	margins smooth without teeth or lobes
floret.....	small flower, especially one in a dense cluster; a grass flower
flower.....	seed-producing structure of a plant
fruit.....	ripened ovary and it's structures that enclose it at maturity
glabrous.....	smooth, no hairs present
glandular.....	bearing glands; glandular hairs with a sticky substance at the end
glumes.....	chaff-like bract; used for the two lower empty bracts of a grass spikelet
herbaceous.....	having the characteristic of an herb; leaf-like in color and texture
inflorescence.....	flowering part of a plant; generally used for a flowering cluster
lanceolate.....	lance-shaped; several times longer than wide with broadest part toward the base and pointed at the apex
lateral.....	born on the side of a structure or object
leaf.....	flat thin part of a plant growing from the base or stem
linear.....	narrow and flat with sides parallel as in a leaf
lobed.....	bearing lobes; generally the sinuses are not half-way to the base of leaf or midrib, as in oak leaves
monoculture.....	only one species present
monotypic.....	when referring to a vegetation community, consisting mostly of only one species of plant
oblong.....	two or four times longer than wide with the sides nearly parallel as in a leaf
oxalates.....	a salt of oxalic acid; a poisonous acid found in some plants
perennial.....	a plant whose life cycle extends for three or more years
persistent.....	remaining attached after like parts normally fall off
phyllary.....	the name of the bract on the head of a sunflower
pinnate.....	compound leaf with the leaflets on two opposite sides of an elongated axis
protrusion.....	a part of a structure that sticks out
pubescent.....	covered with hairs, generally short soft hairs
ray flowers.....	generally the showy strap-shaped flower in the head of a sunflower; as opposed to the less showy disk or tube flower
recurved.....	curved outward, downward, or backward
reduced.....	lessened in size or form
rhizomatous.....	stem growing laterally partly or wholly beneath the soil
root.....	the portion of the plant, generally below ground, that anchors the plant and absorbs moisture and nutrients from the soil
rosette.....	dense basal cluster of leaves arranged in a circular fashion about one point usually at ground level
seed.....	that part of the plant containing the mature embryo from which a new plant can generate
serrate.....	with sharp teeth directed forward; often said of leaf edges
sessile.....	without a stalk of any kind; said of a leaf or flower coming right off the stem
simple.....	of only one part; not divided into separate segments; not compound
sinus.....	the depression or recess between two adjoining lobes as in a leaf
stamens.....	one of the pollen-bearing organs of a flower, male part; made up of filament and anther
stem.....	the main stalk of a plant; supports leaves, flowers and fruit
terminal.....	of or at the end of something
toothed.....	a small marginal lobe; as on a saw dentate
tuber.....	a thickened, short, usually subterranean stem having numerous buds called eyes; like a potato
undivided.....	not divided; of one part
whorled.....	with three or more leaves or other structures arranged in a circle around a stem or common axis
wings.....	membranous or thin expansion bordering or surrounding an organ such as a stem
winter annual.....	an annual plant that germinates in the fall, completing its life cycle the following year

Eastern Sierra Weed Management Area Noxious Weed Location Form

Return to: Inyo/Mono County Agricultural Commissioner's Office
207 W. South St.
Bishop, CA 93514
Or call: (760) 873-7860

Date:	Recorder's Name:
Time:	Phone Number:
Weed Name(s):	Infestation Estimate (area, percent infested, and/or # of plants):
Control Methods (what was used and at what rate?):	Land Use (roadside, pasture, range, crop, facility, etc.):

Township: _____ Range: _____ Section: _____ 1/4

Latitude: _____ Longitude: _____ County: _____

UTM: _____ E _____ N _____
Check if GPS: []

Other Notes (site marked, descriptive location):

Feel free to duplicate this form (Use reverse for map)

**COMPLETE
IF KNOWN**

MAP

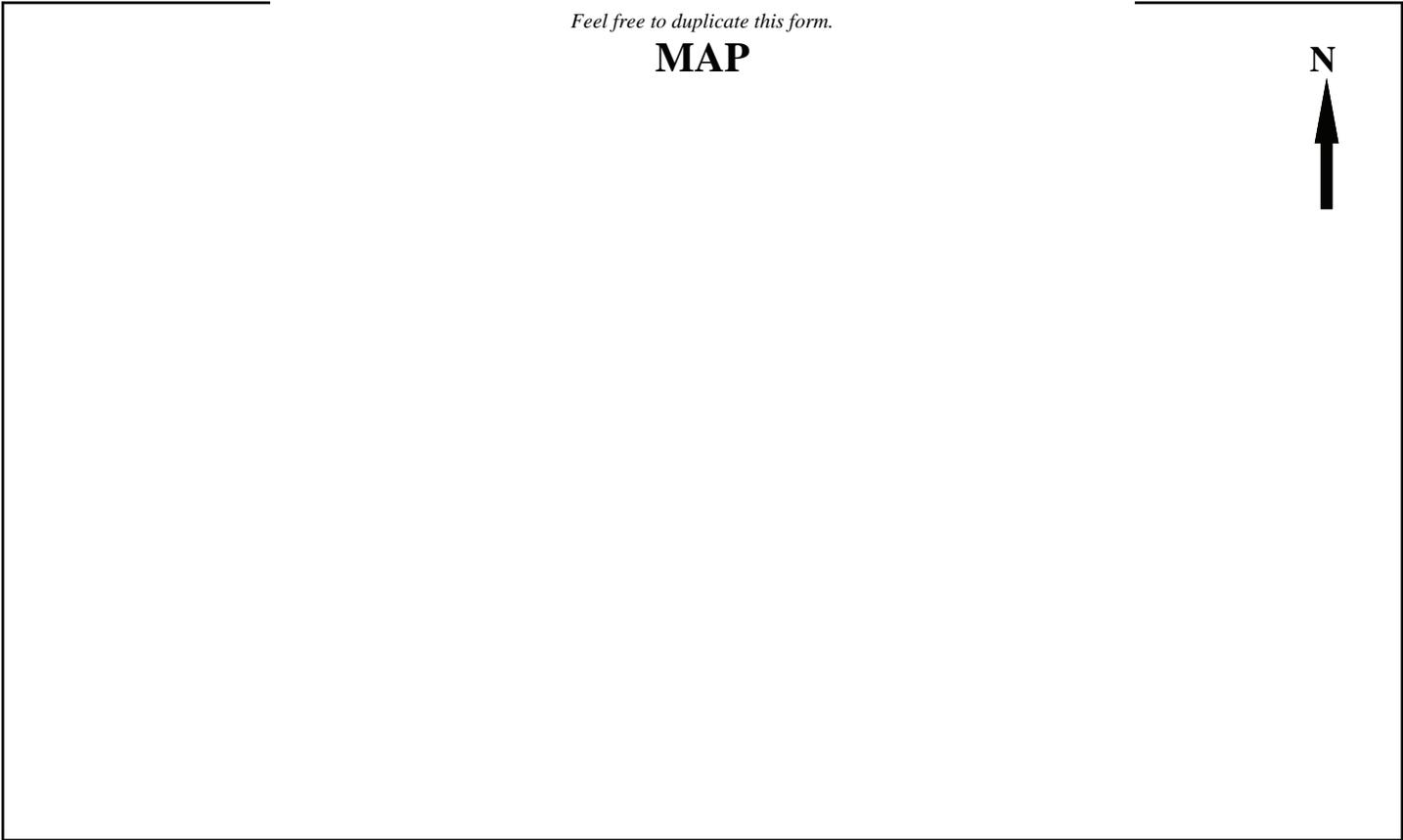
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MAP



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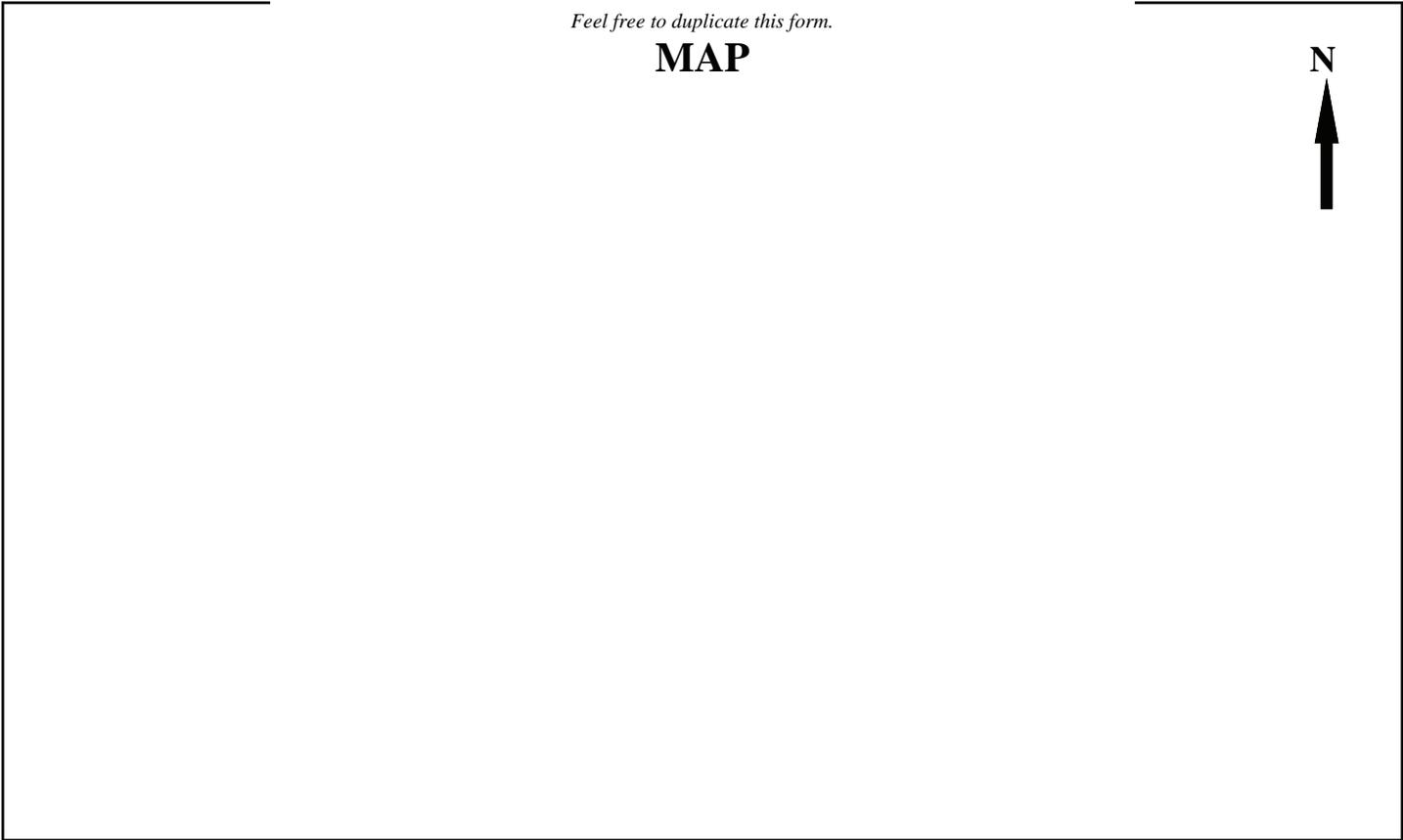
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