Invasive Weeds of the Tahoe National Forest
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Graphic Design
Annaliese Miller

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Invasive Weeds of the Tahoe National Forest

Invasive weeds are aggressive plants that have been introduced into an environment outside of their native range. Sometimes referred to as alien species, these weeds have been separated from the natural enemies that help control them in their homeland. They grow rapidly, reproduce profusely, and compete with native plants for water, light and nutrients. Some of these weeds have been designated as noxious by California and Nevada law, requiring control efforts by property owners.

Invasive weeds tend to outcompete native plants, especially where lands have been disturbed. When they displace native plants and animals, they lower diversity, reduce hunting and fishing potential, change the aesthetics of a habitat, inhibit recreational activities and tourism, crowd out endangered species, and reduce forage value. Along the Truckee River, weeds that have coarse or shallow root systems, such as perennial pepperweed and dalmatian toadflax, increase soil erosion and threaten water clarity.

If you find an invasive weed, please report the infestation to the appropriate county (see contact numbers on the inside back cover).

How to Use the Guidebook

This guidebook will help you identify the invasive weeds threatening the Tahoe National Forest. Common “look-alikes” are also included to help you differentiate between desirable native plants, noted ☺, and undesirable invasives, designated ☹. Plants that could potentially become invasive are marked as ☼. You may choose to avoid planting species that may become invasive on your property. Information on management is also included for each invasive weed, as is the noxious weed status in California. California’s noxious weed rating system designation, which is based on distribution of the weed, is also provided. “A” rated weeds are normally limited in distribution throughout the state; “B” rated weeds are more widespread; and “C” rated weeds are widespread throughout the state. Nevada weed law uses a similar system.

Relative abundance of each species is provided.

Widespread: Found at numerous locations in the area

Moderate: Found at several locations; large populations may occur at a few locations

Infrequent: Only at one or a few locations; no large populations
Preventing the Spread of Weeds

Prevention is the least expensive and most effective way to halt the spread of noxious and invasive weeds.

This requires:

- Educating workers and the public about the importance of managing weeds on an ongoing basis;
- Properly identifying weed species;
- Avoiding or treating existing weed populations; and
- Preventing weed seeds or other plant parts from establishing new or bigger populations.

Steps you can take:
1. Use this book to identify invasive weeds in your area.
2. Inspect your work or play area. Identify any invasive weeds, map the location of the weeds.
3. Clean vehicles, shovels and other soil-disturbing equipment prior to entering a site to avoid introducing weeds.
4. Don’t introduce weed-contaminated soil, fill, or other materials to new sites. Use certified weed-free products.
5. Check shoes, clothing, bicycles and vehicles regularly for weed seeds or other plant parts. Carefully remove and dispose of weedy materials.
6. Pressure-wash vehicles and equipment after driving in weedy areas. Periodically monitor and treat areas to prevent weedy plants from establishing.
7. Establish a decontamination area such as a tarp for cleaning clothing and equipment.
8. Don’t walk, ride or drive through infestations. When operating vehicles, stay on established roads or trails.
9. If dogs accompany you, check their paws and coats for weed seeds or other plant parts and remove them.
10. Don’t plant invasive weeds in your garden or landscape.
11. Get advice for treatment on private property from your local county agriculture department. See contact information on back page.

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<th>Leaves</th>
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<td>no stems, long hairs</td>
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Knapweeds

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<th>Lower Leaves</th>
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<td>spiny combs, deeply lobed</td>
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<td>papery, lobed</td>
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<td>spots, deeply lobed</td>
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<td>spines, winged stem</td>
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<td>no spines, yellow disk, narrow, entire</td>
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<td>Bachelor Buttons (look-alike)</td>
<td>no spots, narrow, entire</td>
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</table>
Also Known As  Common thistle
Origin  Nonnative, invasive
Habitat  Meadows, roadsides, disturbed sites
Life Cycle  Biennial
Flowering Time  Mid-July to fall
Relative Abundance  Widespread
Management  Dig, removing top 2 inches of root; herbicides are available
Noxious Weed List  Nevada-NO; California C-rated

BULL THISTLE  Cirsium vulgare  CIVU

Nonnative  Invasive

Tops of leaves rough, sandpaper texture
Underside of leaf cottony, prominently raised main vein

Height: 1 - 6 ft, commonly 2 - 3 ft
Stems: spiny and winged
Leaves: sandpaper texture, prominent veins
Flowers: in clusters at ends of branches
Flower color: pink to purple
### Canada Thistle  *Cirsium arvense*  CIAR4

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<td>Relative Abundance</td>
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<td>Management</td>
<td>Aggressive; pulling and burning favor root resprouting; use chemical control for several years</td>
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<td>Nevada C-rated; California B-rated</td>
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**Nonnative  Invasive**

- Height: 1.5 - 4 ft, commonly 2 - 3 ft
- Stems: smooth and ridged with no spines
- Leaves: smooth and sessile
- Flowers: multiple small flower heads in clusters on each stem
- Flower color: light purple to white

---

**Description**
- **Bracts small and flat against head, tips weak**
- **Flower head drop-shaped**
- **Leaves deeply lobed**
- **Height:** 1.5 - 4 ft, commonly 2 - 3 ft
- **Stems:** smooth and ridged with no spines
- **Leaves:** smooth and sessile
- **Flowers:** multiple small flower heads in clusters on each stem
- **Flower color:** light purple to white

---

**Image:**
- Photograph of Canada Thistle
- Illustration of Canada Thistle

---

**Legend:**
- 0.5 in

---

**Diagram:**
- Flower head drop-shaped
- Bracts small and flat against head, tips weak
- Leaves deeply lobed

---

**Author:** Donaldson
**MUSK THISTLE** *Carduus nutans* CANU4

### Also Known As
Nodding thistle

### Origin
Nonnative, invasive

### Habitat
Pastures, forest, rangelands, roadsides, waste areas, ditches

### Life Cycle
Biennial

### Flowering Time
Mid-July to fall

### Relative Abundance
Infrequent

### Management
Dig, removing top 2 inches of root; herbicides are available

### Noxious Weed List
Nevada B-rated; California A-rated

---

**Nonnative**  **Invasive**

- Bracts large and spiny; purplish in color
- Flower head disk-shaped
- Flower color: deep pink to purple
- Height: 1 - 6 ft commonly 3 - 4 ft
- Stems: spiny and winged
- Leaves: hairless, prominent light-green midrib
- Flowers: single, very large flower at end of bent, naked stem
- Rosette leaves hairless, light-green midrib, whitish margins
ANDERSON’S THISTLE  
*Cirsium andersonii*  
CIAN

**Also Known As**  
Rose thistle

**Origin**  
Native

**Habitat**  
Open places, woodlands, forests

**Life Cycle**  
Biennial

**Flowering Time**  
July to fall

**Relative Abundance**  
Widespread

**Management**  
Desirable native plant; do not disturb

**Noxious Weed List**  
Nevada-NO; California-NO

---

**Native Look-alike**

- **Height:** 2 - 4 ft
- **Stems:** purplish and thornless
- **Leaves:** divided and wavy with spiny margin
- **Flowers:** single flower at end of stem
- **Flower color:** rose red to reddish purple

**Leaf margins**  
Wavy and spiny

**Rosette leaves**  
Not prominently veined, small flat hairs

**Flower head**  
Cylinder-shaped
ELK THISTLE  *Cirsium scariosum*  CISC2

**Also Known As**  Drummond’s thistle

**Origin**  Native

**Habitat**  Moist places at mid to high elevations

**Life Cycle**  Biennial

**Flowering Time**  June to August

**Relative Abundance**  Moderate

**Management**  Desirable native plant; do not disturb

**Noxious Weed List**  Nevada-NO; California-NO

---

**Native Look-alike**

- Height: up to 3 ft, generally less than 1 ft
- Stems: usually no stems; forms round flat rosette
- Leaves: lobed, somewhat spiny, pale green foliage
- Flowers: extend directly from rosette
- Flower color: white to pale lavender

Stemless flower

Rosette leaves have long golden hairs; long fine spines at leaf margins
SNOWY THISTLE

*Cirsium occidentale* var. *candidissimum* CI0CC

---

**Also Known As**  
None

**Origin**  
Native

**Habitat**  
Disturbed areas, shrubby areas, open woodlands

**Life Cycle**  
Biennial

**Flowering Time**  
July to September

**Relative Abundance**  
Widespread in Northern California

**Management**  
Desirable native plant; do not disturb

**Noxious Weed List**  
Nevada-NO; California NO

---

**Native**

- Height: 1.5 to 6.5 ft
- Stems: densely white wooly hairs
- Leaves: densely white wooly hairs on both surfaces
- Flowers: single or in clusters at the end of branches
- Flower color: pink to red

---

Densely white wooly hairs

Large reflexed bracts, wooly hairs

3/4 - 2 in
Also Known As  Tumble knapweed
Origin  Nonnative, invasive
Habitat  Roadsides, waste areas, dry rangelands, disturbed sites
Life Cycle  Annual to short-lived perennial
Flowering Time  June to August
Relative Abundance  Infrequent
Management  Minimize seed production; pull or dig plants several times per year and monitor for several years; herbicides are available
Noxious Weed List  Nevada B-rated; California A-rated

Nonnative   Invasive

- Bract tips spiny; margins divided like teeth of comb
- Upper leaves narrow and entire
- Stems stiff and widely branching
- Height: 1 - 2.5 ft
- Stems: rough to touch
- Leaves: upper, entire; lower, deeply lobed
- Growth form: maintains bush shape; after frost, can break off and tumble
- Flower color: white to pale pink
RUSSIAN Knapweed  *Acroptilon repens*  ACRE

**Also Known As**  Creeping knapweed

**Origin**  Nonnative, invasive

**Habitat**  Roadsides, riverbanks, ditches, pastures, waste places

**Life Cycle**  Rhizomatous perennial

**Flowering Time**  July to fall

**Relative Abundance**  Infrequent

**Management**  Cut or mow prior to seed set to reduce current year’s growth; chemical control is needed

**Noxious Weed List**  Nevada B-rated; California B-rated

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Nonnative  Invasive

- **Bract margins** papery, NOT spiny
- **Upper leaves** narrow and entire
- **Stems** openly branched
- **Height**: 1 - 3 ft, generally 2 - 3 ft
- **Stems**: erect, cobwebby
- **Leaves**: upper, entire; lower and rosette, lobed
- **Growth form**: thick rounded clumps with drooping branches
- **Root**: black below crown
- **Flower color**: pink to purple
Also Known As  *Centaurea stoebe*

Origin  Nonnative, invasive

Habitat  Disturbed soil, rangelands, pastures, meadows, roadsides, areas with summer rainfall

Life Cycle  Perennial; sometimes biennial

Flowering Time  July to early September

Relative Abundance  Moderate

Management  Minimize seed production by cutting or mowing; dig, removing top 2 - 6 in of root; herbicides are available

Noxious Weed List  Nevada A-rated; California A-rated

Nonnative  Invasive

- Height: 1 - 5 ft; generally closer to 3 ft
- Stems: erect and rough
- Leaves: upper, linear; lower, divided
- Growth form: tall with open branching
- Flower color: pink to purple
YELLOW STARTHISTLE  *Centaurea solstitialis* CESO3

**Also Known As**  None

**Origin**  Nonnative, invasive

**Habitat**  Roadsides, waste areas, grasslands

**Life Cycle**  Annual

**Flowering Time**  Late June to September

**Relative Abundance**  Infrequent

**Management**  Pull, dig or mow at first sign of yellow flowers; herbicides are available

**Noxious Weed List**  Nevada A-rated; California C-rated

---

**Nonnative  Invasive**

- Lower leaves deeply lobed
- Upper leaves entire
- Long spines at tips of bracts (up to 1 in long)
- Height: 0.5 - 5 ft, commonly 2 ft
- Stems: winged
- Leaves: gray and hairy; upper, entire; lower, deeply lobed
- Growth form: stiffly branching
- Flower color: yellow
ASTER *Aster* spp. 

**Also Known As** Various

**Origin** Native

**Habitat** Meadows, gardens

**Life Cycle** Annual or perennial

**Flowering Time** Late July to fall

**Relative Abundance** Widespread

**Management** Desirable native plant; do not disturb

**Noxious Weed List** Nevada-NO; California-NO

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**Native Look-alike**

- Bracts do not have spines
- Leaves narrow and entire

- Height: variable, often 1 - 2 ft
- Stems: smooth to hairy
- Leaves: upper and lower leaves narrow and entire
- Growth form: ranges from short to tall
- Flower color: variable, often pink to purple with yellow center
BACHELOR’S BUTTONS  *Centaurea cyanus*  CECY2

**Also Known As** Cornflower

**Origin** Nonnative, can be invasive, has escaped from cultivation

**Habitat** Disturbed grasslands, open woods, ornamental plantings

**Life Cycle** Annual

**Flowering Time** July to September

**Relative Abundance** Widespread

**Management** Mechanical controls (pull, dig, hoe); herbicides are available

**Noxious Weed List** Nevada-NO; California-NO

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**Nonnative Look- alike**

- Height: up to 3 ft
- Stems: erect and branching
- Leaves: grayish and hairy; generally not toothed except lower leaves
- Growth form: tall, bushy
- Flower color: multicolored (white, blue, purple, pink, red)

- Bract tips pale, finely fringed, spineless
- Leaves narrow and entire; generally not toothed except lower leaves

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**Also Known As**  Whitetop, short whitetop, *Cardaria pubescens*

**Origin**  Nonnative, invasive

**Habitat**  Meadows, fields, roadsides, ditches, streambanks, rangelands

**Life Cycle**  Rhizomatous perennial

**Flowering Time**  May to June

**Relative Abundance**  Infrequent

**Management**  Mow two to three times per year at bud stage to slow spread; do not pull, as plants will grow from root fragments; chemical control is needed

**Noxious Weed List**  Nevada C-rated; California B-rated

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**HOARY CRESS  *Cardaria draba*  CADR**

- **Height:** up to 2 ft, commonly 1 ft
- **Stems:** single stem gives rise to one flower cluster
- **Leaves:** blue-green foliage; upper leaves clasp stem; lower leaves petiolate
- **Flower color:** white

- Single stem
- 2 lobes clasp stem on upper leaves
- Leaves lance-shaped
- Tiny 4-petaled flowers in dense clusters near ends of branches
**PERENNIAL PEPPERWEED** *Lepidium latifolium* LE LA 2

**Also Known As** Tall whitetop

**Origin** Nonnative, invasive

**Habitat** Riparian areas, floodplains, meadows, seasonally wet areas, roadsides

**Life Cycle** Rhizomatous perennial

**Flowering Time** Late June to August

**Relative Abundance** Moderate

**Management** Do not pull, dig, or cut the roots, as this may stimulate new growth; chemical control is needed

**Noxious Weed List** Nevada C-rated; California B-rated

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**Nonnative | Invasive**

- Height: 1 - 6 ft, commonly 3+ ft
- Stems: multiple branches grow from each stem
- Leaves: upper leaves, sessile; lower leaves, petiolate; basal leaves, much larger than upper leaves
- Flower color: white
POISON HEMLOCK *Conium maculatum* L. COMA2

**Also Known As**
- Poison parsley
- Extremely poisonous if ingested

**Origin**
- Nonnative, invasive

**Habitat**
- Wet areas in meadows, seeps, springs and floodplains

**Life Cycle**
- Biennial

**Flowering Time**
- July to Fall

**Management**
- Manual hand-pulling or multiple mowing or chemical control

**Noxious Weed List**
- Nevada-YES; California-NO

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**Nonnative  Invasive**

- Height: 3 - 8 ft, commonly 3+ ft
- Stems: branched, light green with purple spots
- Leaves: compound, lacy resembling parsley, seedlings may appear fern-like
- Flower color: white

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</table>
WHITE SWEETCLOVER  *Melilotus albus* MEAL12

Also Known As  None

Origin  Nonnative, used in soil stabilization mixes

Habitat  Roadsides, waste areas

Life Cycle  Annual to biennial

Flowering Time  June to August

Relative Abundance  Widespread

Management  Hand pull wearing gloves; dig or mow prior to seed set; herbicides available

Noxious Weed List  Nevada-NO; California-NO

Nonnative Look-alike

- Pea-shaped flowers
- Many small fragrant flowers borne on irregular spikes at the ends of elongated stems
- Height: 2 - 6 ft, commonly about 3 - 5 ft
- Stems: well-branched and coarse
- Leaves: 3 leaflets
- Flower color: white

Leaves consist of 3 leaflets, margins finely toothed
YARROW *Achillea millefolium* ACMI2

**Also Known As** Common yarrow, milfoil

**Origin** Native and introduced, can be invasive

**Habitat** Gardens, meadows, grasslands, forests

**Life Cycle** Perennial

**Flowering Time** June to September

**Relative Abundance** Widespread

**Management** Dig, removing as much root as possible; forms dense mat if mowed; chemical control is available

**Noxious Weed List** Nevada-NO; California-NO

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Native Look-alike

- Flower heads flattened, dome-shaped corymbs
- Leaves hairy and very finely pinnately divided, appearing feather-like
- Height: 2 - 3 ft
- Stems: hairy-wooly
- Leaves: feather-like; evenly distributed along stem; lower leaves larger
- Flower color: white or pink
Also Known As  Wild snapdragon,  
*Linaria genistifolia* ssp. *dalmatica*

Origin  Nonnative, invasive

Habitat  Roadsides, pastures, rangelands, cultivated fields

Life Cycle  Perennial

Flowering Time  July to fall

Relative Abundance  Moderate

Management  Pull or dig for several years, removing as much root as possible; do not mow; chemical control is available

Noxious Weed List  Nevada A-rated; California A-rated

Nonnative  Invasive

- Height: up to 3 ft
- Stems: erect and branched
- Leaves: ovate, alternate and entire; succulent and waxy
- Growth form: more scattered than yellow toadflax
- Flower color: yellow, with orange, bearded throat

Leaves ovate, tips pointed

Spurs long, somewhat curved or straight

Flowers borne in axils of upper leaves and bracts

Leaves clasp stem
YELLOW TOADFLAX  *Linaria vulgaris* LIVU2

Also Known As  Butter and eggs

**Origin**  Nonnative, invasive

**Habitat**  Rangelands, roadsides, waste places, cultivated fields

**Life Cycle**  Perennial

**Flowering Time**  July to fall

**Relative Abundance**  Moderate

**Management**  Pull or dig for several years, removing as much root as possible; do not mow; chemical control is available

**Noxious Weed List**  Nevada A-rated; California-NO

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Nonnative  Invasive

- Height: 1 - 2 ft; shorter than dalmatian toadflax
- Leaves: linear, smooth to sparsely hairy; succulent and waxy
- Growth form: tends to grow in crowded patches
- Flower color: yellow, with orange, bearded throat
Also Known As: None
Origin: Nonnative
Habitat: Ornamental gardens
Life Cycle: Annual to perennial
Flowering Time: June to fall
Relative Abundance: Widespread
Management: None; recommended garden flower

Noxious Weed List: Nevada-NO; California-NO

- Height: 0.5 - 3 ft
- Leaves: upper, long and narrow; lower, lanceolate; soft, not waxy
- Flowers: fuzzy-hairy
- Flower color: yellow, but other colors are available
Also Known As: Spike watermilfoil

Origin: Nonnative, invasive

Habitat: Ponds, ditches, streams, lakes

Life Cycle: Perennial

Flowering Time: June through September

Management: Hand removal, taking care to avoid releasing fragments

Noxious Weed List: Nevada-YES; California-NO

14+ leaflet pairs per leaf. Native 5-12 leaflet pairs.

Leaves collapse when out of water. Native stiffer, does not collapse.

Leaves arranged in whorls of 4 around stem at each node

- Growth form: submersed aquatic; forms mats; spreads by plant fragments
- Stems: branch near water’s surface; growing stems and tips are red
- Leaves: feather-like; dark green to brown
- Flowers: tiny and stand above the water surface
- Flower color: pinkish; spike inflorescence
COMMON ELODEA *Elodea canadensis* ELCA7

**Also Known As**
American waterweed, Canadian waterweed

**Origin**
Native

**Habitat**
Ponds, ditches, streams, lakes, reservoirs

**Life Cycle**
Perennial

**Flowering Time**
Summer

**Management**
Usually not a problem, remove by hand when it becomes dominant or problematic

**Noxious Weed List**
Nevada-NO; California-NO

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**Growth form:** submersed aquatic; spreads by plant fragments and turions

**Stems:** branch at nodes

**Leaves:** dark green, most often in whorls of 3; lanceolate to oblong

**Flower color:** white; flowers bloom at the water surface; have 3 small petals

**Native**

**Look-alike**

Leaves arranged in whorls of 3

Leaves do not collapse when out of water.
KLAMATHWEED  *Hypericum perforatum*  HYPE

Also Known As  St. John’s Wort

Origin  Nonnative, invasive

Habitat  Pastures, meadows, roadsides, waste areas

Life Cycle  Perennial

Flowering Time  June to late September

Relative Abundance  Moderate

Management  Pull or dig repeatedly; use biocontrol insects; chemicals are available

Noxious Weed List  Nevada A-rated; California C-rated

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Nonnative  Invasive

- Height: 1 - 3+ ft
- Stems: erect with numerous rust-colored branches
- Leaves: elliptic to oblong, entire, opposite, sessile; not over 1 in long
- Growth form: bushy
- Branches: somewhat 2-ridged and woody at the base
- Flower color: yellow
SCOULER’S ST. JOHNSWORT *Hypericum formosum* var. *scouleri* HYFOS2

Also Known As None
Origin Native
Habitat Streambanks, meadows
Life Cycle Tap-rooted perennial
Flowering Time Summer
Relative Abundance Moderate
Management Desirable native plant; do not disturb
Noxious Weed List Nevada-NO; California-NO

Native Look-Alike

- Height: 0.5 - 2.5 ft
- Stems: slender; extend from base
- Leaves: ovate to oblong, flat, more or less clasping
- Growth form: upright and stemmy
- Flower color: yellow
Also Known As: Skeleton weed

Origin: Nonnative, invasive

Habitat: Roadsides, rangelands, pastures, disturbed soils

Life Cycle: Perennial with extensive, deep root system

Flowering Time: Mid-July through frost

Relative Abundance: Infrequent

Management: Difficult to control without herbicides due to extensive deep root system

Noxious Weed List: Nevada A-rated; California A-rated

- Height: 1 - 4 ft
- Stems: rigid and wiry; highly branched; cut surfaces exude milky sap
- Leaves: upper, narrow and entire, inconspicuous; stems often lack leaves
- Growth form: bushy
- Flower color: yellow
Also Known As
None. Other brooms, deemed “sterile cultivars,” are available.

Origin
Nonnative, invasive

Habitat
Pastures, forests, waste areas

Life Cycle
Perennial

Flowering Time
June to August

Relative Abundance
Moderate

Management
Cut stems at ground level in late summer; pull seedlings; dig plants; use weed wrench to remove root; herbicides are available

Noxious Weed List
Nevada-NO; California C-rated

Nonnative     Invasive

- Numerous showy pea-like flowers
- Flattened, hairy, brown to black seed pods
- Upper leaves simple and entire
- Branches: many leafless or have few leaves
- Lower leaves 3 leaflets, hairy

- Height: woody shrub up to 10 ft
- Stems: hairy when young, then generally smooth; most sharply 5-angled or ridged
- Branches: dark green; more-or-less erect
- Leaves: upper, simple and entire; lower, 3 leaflets, hairy
- Flower color: pale to deep yellow
Also Known As  Common teasel, wild teasel
Origin  Nonnative, invasive
Habitat  Irrigation ditches, canals, wetlands, riparian areas, disturbed sites
Life Cycle  Tap-rooted biennial
Flowering Time  July to fall
Relative Abundance  Infrequent
Management  Dig or hand-pull, removing as much root as possible; herbicides are available
Noxious Weed List  Nevada-NO; California-NO

Nonnative  Invasive

- Height: to 7 feet tall, commonly 3+ feet
- Stems: branched, rough and spiny
- Leaves: conspicuously veined; stem leaves lanceolate and up to 10 inches long
- Growth form: erect
- Flower color: lavender to purple, rarely white
**GLOSSARY**

Alternate: Borne singly at each node, such as leaves.

Axil: The point formed between the stem and any part, such as a leaf, attached to it.

Bract: A modified leaf at the base of a flower.

Corymb: A flat-topped or round-topped arrangement of flowers where the lower flower stalks are longer than the upper stalks.

Cyme: A flat-topped or round-topped arrangement of flowers in which the terminal flower blooms first.

Crenulate: Having very small, rounded teeth on the leaf margin.

Disk flower: The tiny, tubular flower of the Asteraceae that forms the center disk of the flowerhead.

Divided: Deeply lobed leaf in which lobes are indented to the base or the midrib.

Elliptic: Shaped like an ellipse or a narrow oval, broadest in the middle.

Entire: The margins are smooth, without teeth or lobes.

Inflorescence: A flower cluster.

Linear: Narrow and flat with sides or edges parallel, as in a leaf.

Lobed: Bearing lobes cut less than halfway to base or midvein.

Margin: The outer edge of the leaf, which may be smooth, serrated, lobed, etc.

Midrib: The middle vein of a leaf.

Oblong: Leaf shape in which the leaf is two to four times longer than it is wide, with nearly parallel sides.

Opposite: Leaves or other structures borne across from each other at the same node.

Ovate Leaf: Egg-shaped leaf that is attached at the broad end.

Palmate: Having three or more veins or lobes radiating from a central point, similar to the fingers on a hand.

Panicle: A branched inflorescence in which the flowers bloom from the bottom up.

Petiole: The stalk of a leaf.

Pinnate: A compound leaf with leaflets arranged on opposite sides of the axis.

Raceme: A simple, elongated arrangement of flowers.

Ray flower: The long, narrow flower that radiates outward from the disk flower in the Asteraceae family. Each ray flower resembles a single petal.

Rhizomatous: Having rhizomes, or horizontal underground stems that produce shoots above and roots below.

Rosette: A dense, basal cluster of leaves arranged in a circular fashion around one point, usually at ground level.

Serrate: With sharp teeth directed forward; generally refers to leaf edges.

Sessile: Without a stalk of any kind; for example, a leaf directly attached to a stem.

Spatulate: Shaped like a spatula, with a rounded blade that tapers to the base.

Spike: An unbranched, long flower stalk in which the flowers attach directly to the stem and mature from the bottom upwards.

Toothed: Having sharp points or lobes along a margin, as on a leaf.

Turion: Detached winter bud by means of which many water plants survive winter.

Umbel: A flat-topped flower arrangement.

Winged stem: A stem with one or more thin, flat margins protruding along the length of the stem.
WEED MAPPING

The Nevada-Placer Weed Management Group and the Tahoe National Forest have been mapping weeds since 2001. Regular mapping and inventory helps us determine which species are present in the area, what management methods are appropriate, and whether management has been a success. We can also track patterns of spread and plan preventive practices.

We welcome your mapping information.

Please include:

- the date surveyed
- the weed name and code (preferably the scientific name)
- the location of the observation using UTMs if available. If using a global positioning system (GPS) unit, set your meter to datum NAD83.
- a thorough description of the location
- the size of the infestation in square feet or acres
- the density of the infestation (number of plants or estimated percent cover)
- any control methods you employed

Please do not take any management actions or remove plants until they have been positively identified. Consult your county or Tahoe National Forest weed contact for assistance.

Forward the data to the appropriate contact. See listings on next page.

CONTACT INFORMATION

For weed information and mapping on the Tahoe National Forest, contact:
Tahoe National Forest East Zone Botanist
(530) 587-3558
Email contact information
surie@fs.fed.us

For weed control information on private land contact:
Nevada County Agriculture Department
(530) 273-2648
Placer County Agriculture Department
(530) 889-7372
Sierra County Agriculture Department
(530) 283-6365
Natural Resources Conservation Service
(530) 283-7510

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