Oxeye daisy
Leucanthemum vulgare Lam.

History and Ecology in North America

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SYNONYMS
Ox-eye daisy, dog daisy, marguerite blanche, *Chrysanthemum leucanthemum, Leucanthemum praecox*

CLASSIFICATION

RANKING	SCIENTIFIC NAME	COMMON NAME
Kingdom	Plantae	Plants
Subkingdom	Tracheobionta	Vascular plants
Superdivision	Spermatophyta	Seed plants
Division	Magnoliophyta	Flowering plants
Class	Magnoliopsida	Dicotyledons
Subclass	Asteridae	
Order	Asterales	
Family	Asteraceae	Sunflower family
Genus	*Leucanthemum*	
Species	*Leucanthemum vulgare* Lam.	Oxeye daisy

HISTORY AND DISTRIBUTION
Oxeye daisy is native to Europe and western Asia and was introduced to North America as a contaminant in crop seed and in commercially sold mixes of wildflower seeds. It has been reported throughout most of North America (**Fig. 1**) but is especially problematic in the northern USA and in Canada.

Figure 1. Oxeye daisy reported distribution in North America (Credit: EDDMapS, www.eddmaps.org; USDA PLANTS Database, plants.usda.gov; iNaturalist.org; all accessed 24 November 2024)

IMPACT
Oxeye daisy displaces native plant species, reduces forage production, and is a contaminant of certified seed crops. While not considered poisonous to livestock, it may impart a disagreeable taste and odor to the milk of dairy cows. It's been shown to carry several crop diseases and is difficult to eradicate from lawns. This weed has also been documented causing contact dermatitis in people.

IDENTIFICATION
At a Glance
Oxeye daisy (**Fig. 2**) is an herbaceous perennial growing 1–3 ft (30–90 cm) tall from shallow, short-spreading roots. Leaves are alternate with uneven lobed margins. Flower heads are typically 1–3 in (2½–7½ cm) in diameter with white outer ray florets and yellow inner disc florets. Seeds are cylindrical, ribbed, and have no pappus.

Figure 2. Flowering oxeye daisy (Travis McMahon, MIA Consulting)

Roots
Oxeye daisy grows from a shallow, fibrous root system with short rhizomes (**Fig. 3a**). Rhizomes are underground, horizontal stems that send out new shoots and roots, contributing to the lateral spread of the plant. Rhizome fragments can also root and generate new plants.

Stems and Leaves
Plants are generally 1–3 ft (30–90 cm) tall and produce one to several upright stems. Stems arise singly from the crown or rhizomes and can be either branched or unbranched. Stems are often green and lightly ribbed with very sparse hairs (**Fig. 3b**), although some are purple-tinged (**Fig. 3c**), especially at maturity. Rosette leaves are dark green on both sides, typically 2–4 in (5–10 cm) long, spoon-shaped with narrow stalks, and have lobes or rounded teeth along their margins (**Fig. 3d**). Stem leaves are alternate, smaller

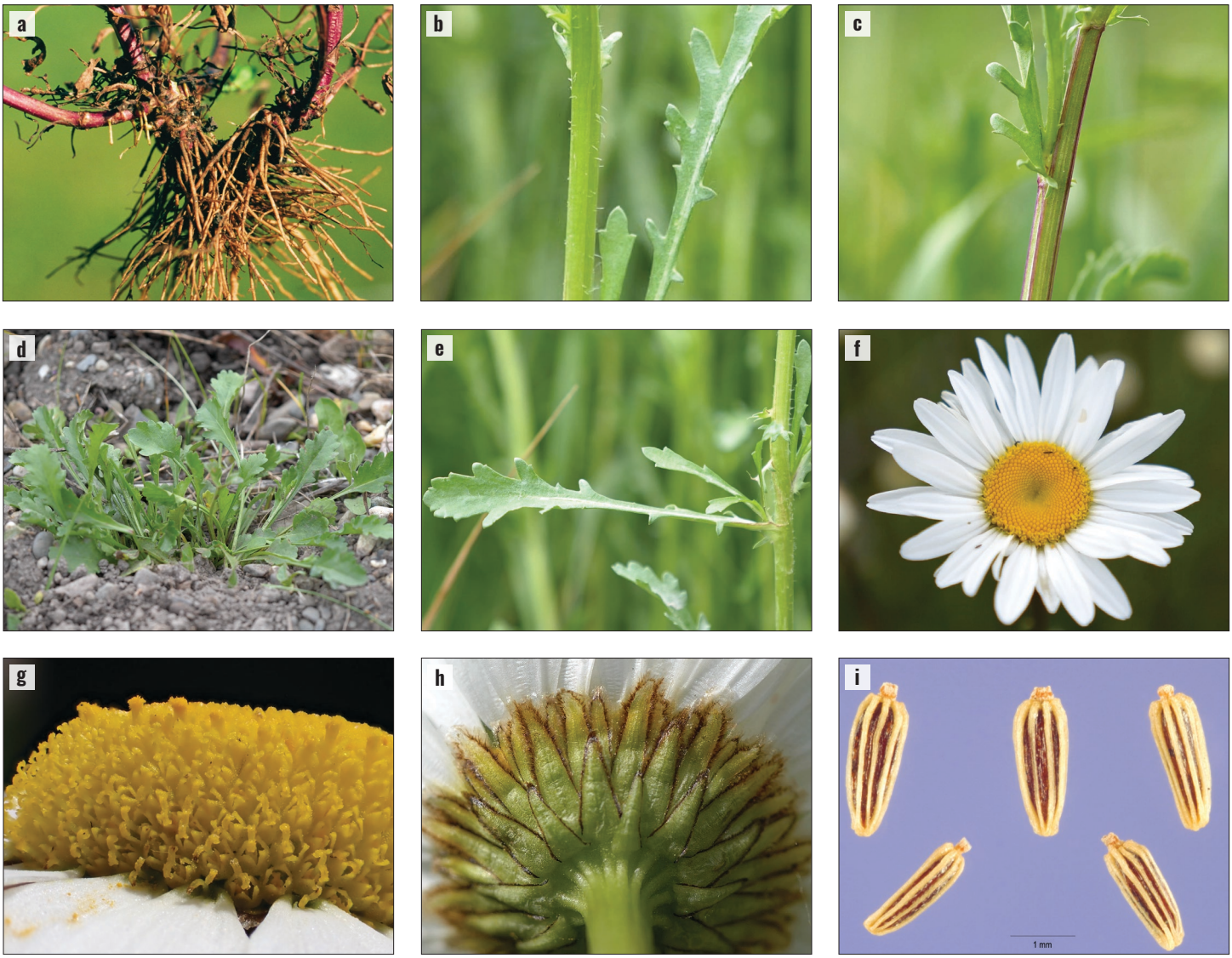

Figure 3. Oxeye daisy has (a) short, creeping rhizomes that produce fibrous roots. Its stems are (b) often green, slightly ribbed, and with tiny sparse hairs, but they may be (c) tinged with purple at maturity. Rosette leaves (d) are spoon-shaped with narrow stalks and rounded teeth while stem leaves (e) clasp the stem, have irregular lobes, and become smaller up the stem. Flower heads (f) are daisy-like with white outer ray florets and yellow inner disc florets that are (g) tiny, narrow, and tubular. Bracts at the base of the flower head (h) are green edged in brown. Seeds (i) are cylindrical, have several ribs, and lack pappus. (a: Steve Dewey, Utah State University, Bugwood.org CC BY 3.0 US; b–f,h: Travis McMahon, MIA Consulting; g: Luca Hickey, iNaturalist.org CC BY-NC 4.0; i: Steve Hurst, USDA NRCS PLANTS Database, CC BY-NC 3.0 US)

than rosette leaves, clasp the stem, and have irregular lobes or teeth (**Fig. 3e**). When crushed, leaves and stems have a disagreeable, sour odor.

Flowers

Oxeye daisy produces flower heads singly at the ends of stem tips (**Fig. 2**). Each head is 1–3 in (2½–7½ cm) in diameter with 15–30 white ray florets around the periphery (**Fig. 3f**) and a few hundred disc florets in the center that are tiny, yellow, and tube-like (**Fig. 3g**). The bracts at the base of the flower head are green in the center and edged with brown (**Fig. 3h**).

Fruits and Seeds

Each floret produces a single seed. At maturity, seeds are cylindrical with numerous ribs and have no pappus (**Fig. 3i**).

ECOLOGY

Oxeye daisy spreads by seed, as well as its short rhizomes. Basal rosettes are formed after seed germination. Plants remain as rosettes their first year. In their second and subsequent years, they bolt in late spring and flower throughout summer. Above-ground plant parts typically die back with hard autumn frosts, and the plant re-sprouts from overwintered rhizomes and the rooted crowns of large plants the following spring. In areas with mild winters, some plants retain green leaves throughout winter. Because seeds lack a pappus, they aren't transported by the wind, and most fall to the ground around the parent plant. Seeds may be spread in runoff water, as seed or grain contaminants, or in soil attached to farm machinery or vehicles. Seeds do not exhibit dormancy, and most germinate when conditions are optimal,

either in the autumn or following spring. Some may remain viable in the soil for up to 39 years.

HABITAT

Oxeye daisy rapidly capitalizes on disturbance and does best in full sun to partial shade, but it can thrive under a variety of conditions. It is frequently found in meadows and fields, under scrub and open-canopy forests, along roadsides and streams, and in lawns (**Fig. 4**).

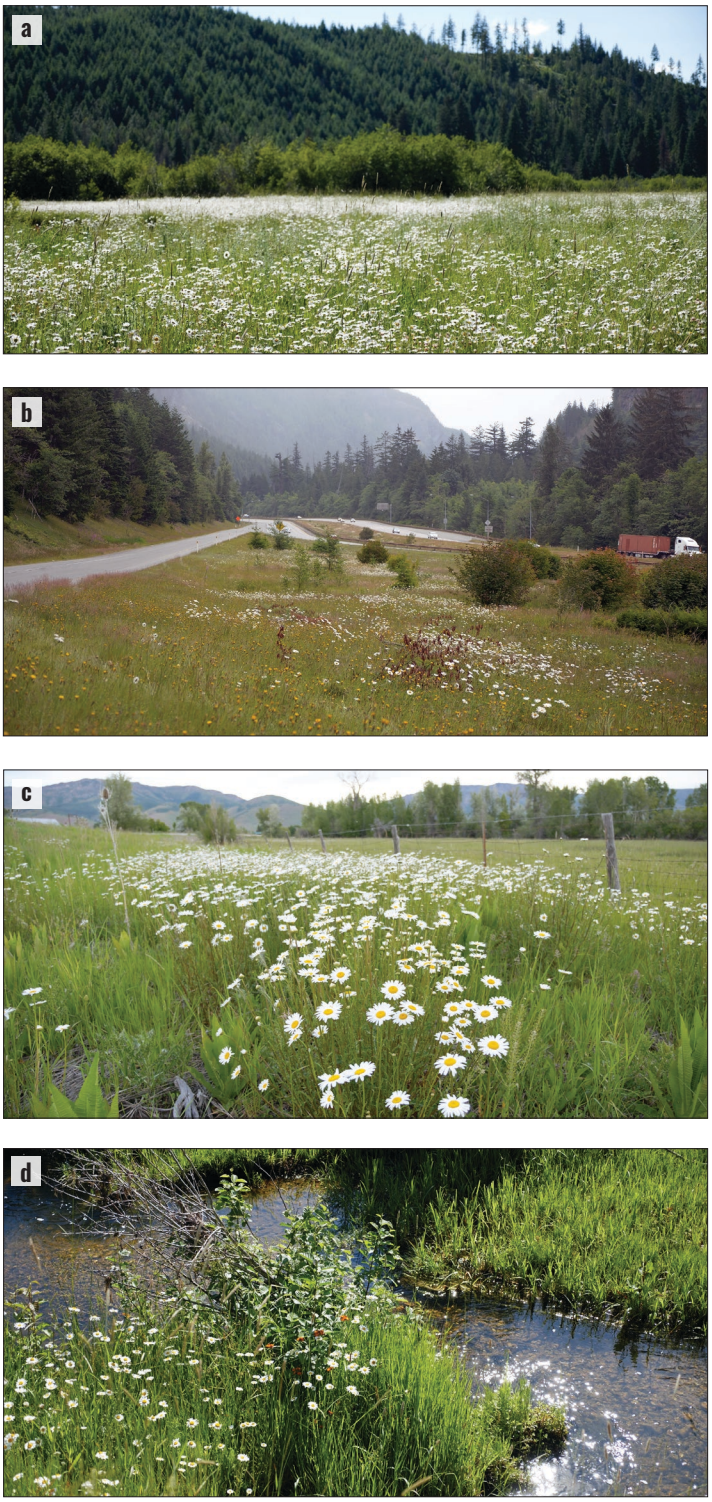

Figure 4. Oxeye daisy growing (a) in a mountain meadow, (b) along a disturbed, mountain roadside, (c) in a pasture, (d) along a stream (a–d: Travis McMahon, MIA Consulting)

SIMILAR SPECIES

Because the sunflower family (Asteraceae) is one of the largest in the world, there are numerous related species in North America that have many features similar to oxeye daisy, including flower heads with long ray florets on the periphery and hundreds of disc florets in the center. Many of these have different-colored ray florets or leaves that are not as irregularly lobed. Oxeye daisy is most frequently confused with other daisy-like flowers, of which there are several exotic species that have been introduced to North America, including Shasta daisy (*Leucanthemum* × *superbum*), creeping daisy (*Mauranthemum paludosum*), German chamomile (*Matricaria chamomilla*), scentless chamomile (*Tripleurospermum inodorum*), stinking chamomile (*Anthemis cotula*), and sea mayweed (*Tripleurospermum maritimum*). Shasta daisy is perhaps most similar, which is to be expected because it is an artificial horticultural hybrid with one of the original parent species being oxeye daisy. Shasta daisy differs from oxeye daisy in that it tends to have larger flower heads, and its leaves are not divided or lobed. The horticultural creeping daisy grows much smaller, and its leaves have more pointed lobes. Chamomiles and sea mayweed all differ from oxeye daisy by having very finely divided leaves. **Table 1** lists key characteristics useful for differentiating these species from oxeye daisy and from each other.

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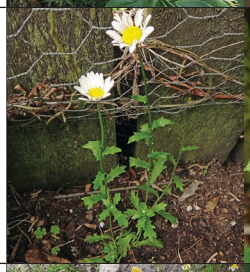
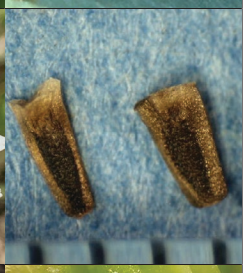
Table 1. Key traits for differentiating oxeye daisy from similar related species established in North America.

SPECIES	DIFFERENCES	PLANT	LEAF	FLOWER HEAD	SEEDS
Shasta daisy *Leucanthemum × superbum* Asteraceae Artificial horticultural hybrid perennial	Leaves longer (3–12 in or 7½–30 cm long), with small pointed teeth along margins, not divided or lobed; flower heads larger (3–4 in or 7–10 cm diameter)				
Creeping daisy *Mauranthemum paludosum* Asteraceae Introduced, horticultural annual	Annual; plant shorter (≤10 in or 25 cm tall); leaves more succulent, lobes with pointed tips; flower heads smaller; receptacle bracts more rounded; plant not strongly scented				
German chamomile *Matricaria chamomilla* Asteraceae Introduced annual	Annual; roots not rhizomatous; stems often multi-branched; leaves very finely divided; flower heads smaller; receptacle hollow, more conical; receptacle bracts without brown margins; ray florets shorter, more blunt; plant sweetly scented				
Scentless chamomile *Tripleurospermum inodorum* Asteraceae Introduced annual	Annual; roots not rhizomatous; stems often multi-branched; leaves very finely divided; flower heads often smaller; receptacle cone-shaped in cross section; seeds with 3 ridges separated along entire length, including at bottom; plant not strongly scented				
Sea mayweed *Tripleurospermum maritimum* Asteraceae Native and introduced perennial	Habitat rocky or gravelly, coastal, mainly Arctic; more sprawling; stems often more reddish, slightly woody; leaves finely divided, more succulent; flower heads smaller; seeds with only 3 ribs touching near the base; plant faintly sweet-scented				
Stinking chamomile *Anthemis cotula* Asteraceae Introduced annual	Annual; often grows smaller, more sprawling; leaves finely divided; flower heads smaller; ray florets ≤18, more rounded; receptacle bracts with soft hairs or bristles, without brown margins; has receptacle scales; seeds wrinkled with 10 ridges, small glandular bumps across surface				

Photos: Shasta daisy plant (Ozarkakerzfarm, iNaturalist.org CC BY-NC 4.0), leaf, flower head (Spacelargo, iNaturalist.org CC BY-NC 4.0), seeds (John Alan Elson Wikipedia.org CC BY-SA 4.0); creeping daisy plant, leaf, flower head (Phil Bendle, iNaturalist.org CC BY-NC 4.0), seeds (© americanmeadows.com); German chamomile plant (Alison Vanessa Vaca, iNaturalist.org CC BY-NC 4.0), leaf (Wolfgang Jauch, iNaturalist.org CC BY-NC-SA 4.0), flower head (Eleftherios Katsillis, iNaturalist.org CC BY-NC 4.0), seed (© www.cronodon.com); scentless chamomile plant (K. George Beck and James Sebastian, Colorado State University, Bugwood.org CC BY-3.0 US), leaf (Vladimir Travkin, iNaturalist.org CC BY-NC 4.0), flower head (Fahrenheit_66, iNaturalist.org CC BY-NC-SA 4.0), seeds (Bruce Ackley, Ohio State University, Bugwood.org CC BY-3.0 US); sea mayweed plant (Morihk, iNaturalist.org, CC BY-NC 4.0), leaves (JW, iNaturalist.org, CC BY-NC-SA 4.0), flower head (Mary Ellen (Mel) Harte, Bugwood.org CC BY-3.0 US), immature seeds (Daniel Cahen, iNaturalist.org, CC BY-NC 4.0); stinking chamomile plant (Lena Zentall, iNaturalist.org, CC BY-NC 4.0), leaf (Mary Ellen (Mel) Harte, Bugwood.org CC BY-3.0 US), flower head (James Bailey, iNaturalist.org CC BY-NC 4.0), seeds (D. Walters and C. Southwick, USDA, Bugwood.org CC BY-3.0 US)

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SUGGESTED CITATION

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