

## oxeye daisy

### *Leucanthemum vulgare* Lam.

Synonyms: *Chrysanthemum leucanthemum* L., *C. leucanthemum* var. *boecheri* Boivin, *C. leucanthemum* var. *pinnatifidum* Lecoq & Lamotte, *Leucanthemum leucanthemum* (L.) Rydb., *L. vulgare* var. *pinnatifidum* (Lecoq & Lamotte) Moldenke

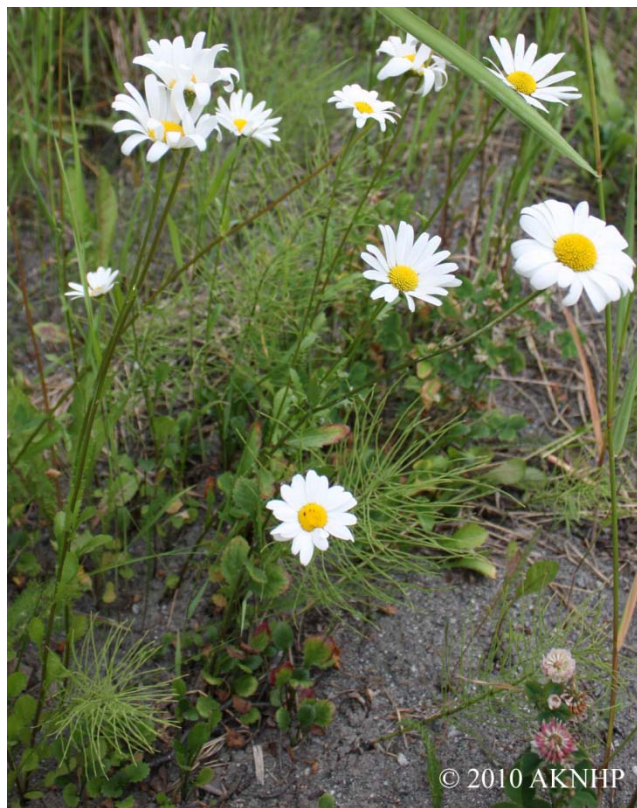
Other common names: white daisy

Family: Asteraceae (Compositae)

**Invasiveness Rank:** 61 The invasiveness rank is calculated based on a species' ecological impacts, biological attributes, distribution, and response to control measures. The ranks are scaled from 0 to 100, with 0 representing a plant that poses no threat to native ecosystems and 100 representing a plant that poses a major threat to native ecosystems.

#### Description

Oxeye daisy is a shallow-rooted, perennial plant with numerous stems that grow from 30 ½ to 91 cm tall. Basal leaves are petiolated, spatula-shaped, broadly toothed, 5 to 13 cm long, and 5 cm wide. Stem leaves are alternate, smooth, and glossy with short leaf stalks that clasp the stem. The flower heads are composed of white ray florets and yellow disc florets. They are 2 ½ to 5 cm in diameter and solitary at the ends of stems. The seeds lack bristles (Hultén 1968, Royer and Dickinson 1999, Whitson et al. 2000).



*Leucanthemum vulgare* Lam.

**Similar species:** The native arctic daisy (*Dendranthema arcticum*) could be confused with oxeye daisy in Alaska. Arctic daisy is confined to rocky seashores and

estuaries throughout coastal Alaska. It is more low-growing than oxeye daisy and has wedge-shaped, rather than spatula-shaped, basal leaves. All other Alaskan Asteraceae species with white ray flowers either have entire leaves or highly dissected leaves.



Spatula-shaped, broadly toothed leaves of *Leucanthemum vulgare* Lam.

#### Ecological Impact

**Impact on community composition, structure, and interactions:** Oxeye daisy forms dense colonies that decrease overall plant species diversity. It can quickly replace up to 50% of the grass species in pastures. The entire plant has a disagreeable odor, and grazing animals avoid it. Oxeye daisy contains polyacetylenes and thiophenes that are highly toxic to insect herbivores. It is known to host chrysanthemum stunt virus, aster yellows virus, and tomato aspermy virus. It has also been associated with several nematode species (Royer and Dickinson 1999). Oxeye daisy is not known to be allelopathic.

**Impact on ecosystem processes:** Heavy infestations of

oxeye daisy increase the potential for soil erosion.

### Biology and Invasive Potential

*Reproductive potential:* Oxeye daisy can spread both vegetatively and by seed. The plant flowers during its second year. It is primarily insect-pollinated by insects from a number of different orders. A plant normally produces 1,300 to 4,000 fruits each year (Howarth and Williams 1968). Bossard et al. (2002) suggests that most oxeye daisy seeds remain viable for 20 years in the soil. Toole (1946) determine the viability of oxeye daisy seeds as 39 years.

*Role of disturbance in establishment:* Cutting, mowing, trampling, and grazing promote the establishment of oxeye daisy.

*Potential for long-distance dispersal:* Seeds are dispersed by wind as well as in dung. They lack elongated bristles and are not specifically adapted for wind dispersal.

*Potential to be spread by human activity:* Seeds can be moved with timber, contaminated forage grass, and legume seed. Oxeye daisy continues to appear for sale in nurseries.

*Germination requirements:* Dense groundcover can prevent the establishment of oxeye daisy. Seedling germination is greater with increased moisture and is inhibited by continuous darkness. Chilling appears to have no effect on germination rates. Seeds do not require cold-stratification to germinate (USDA 2010).

*Growth requirements:* Oxeye daisy is adapted to coarse- and medium-textured soils that have pH between 5.2 and 7. Plants can withstand temperatures as low as -28°F. Oxeye daisy requires 130 frost-free days to grow and reproduce successfully (USDA 2002).

*Congeneric weeds:* Max chrysanthemum (*Leucanthemum maximum*) is known to occur as a non-native plant in Alaska (AKEPIC 2010). It has escaped cultivation in parts of the U.S. (Ditomaso and Healy 2007, USDA 2010).

### Legal Listings

- Has not been declared noxious
- Listed noxious in Alaska
- Listed noxious by other states (CO, IN, KY, MN, MT,

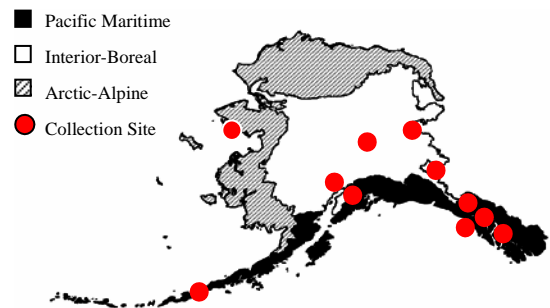
OH, WA, WY)

- Federal noxious weed
- Listed noxious in Canada or other countries (AB, BC, MB, QC)

### Distribution and Abundance

Oxeye daisy was introduced to North America from Europe as an ornamental plant. It has escaped cultivation and is now common in native grasslands, pastures, waste areas, meadows, and roadsides. Oxeye daisy is a serious weed of 13 crops in 40 countries. It was introduced to the Pacific Northwest in the late 1800's.

*Native and current distribution:* Oxeye daisy is native to Siberia and Europe, from the Mediterranean to Scandinavia. Populations have established in East Asia, Iceland, Greenland, North America, South America, Hawaii, Australia, and New Zealand (Hultén 1968). This species grows in every state of the U.S. and most of Canada (USDA 2010). Oxeye daisy has been documented from all three ecogeographic regions of Alaska (AKEPIC 2010, UAM 2010).



Distribution of oxeye daisy in Alaska.

### Management

Oxeye daisy can be killed by intensive cultivation. Herbicide applications have proven successful in controlling this species. Applications of nitrogen fertilizers are almost as effective at reducing canopy cover as herbicides. Effective biological control agents have not been found.

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