common burdock
Arctium minus (Hill) Bernh.

Synonyms: *Lappa minor* Hill
Other common names: beggar's buttons, burdock, lesser burdock, small burdock, wild burdock, wild rhubarb
Family: Asteraceae

Invasiveness Rank: **49** 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
Common burdock is a biennial plant that grows 50 to 150 cm tall from a taproot. Flowering stems arise from overwintering rosettes. Stems are erect, grooved, hollow, and roughly hairy. Petioles of the basal leaves are hollow and 15 to 50 cm long. Blades of the basal leaves are coarsely toothed, ovate or heart-shaped, 30 to 60 cm long, and 15 to 35 cm wide with green, sparsely hairy upper surfaces and short-hairy lower surfaces. Stem leaves are similar to basal leaves but are alternate and become progressively smaller up the stem. Flower heads are arranged in long, terminal or axillary racemes. Each flower head is sessile or has a short peduncle. Involucres are spherical and 15 to 25 mm in diameter. Involucral bracts are arranged in several rows. They are linear with finely toothed margins and inwardly hooked tips. Flower heads consist of 30 or more disc florets. Disc florets are 7.5 to 12 mm long and pink, purple, or white. Seeds are dark brown, oblong, glabrous, three-angled, several-ribbed, and 5 to 8 mm long. Each seed has a pappus of bristles that are 1 to 3.5 mm long (Gross et al. 1980, Keil 2006, Klinkenberg 2010, NatureGate 2010).

Flower heads with hooked involucral bracts on *Arctium minus* (Hill) Bernh. Photo by T. Webster.

Similar species: Great burdock (*Arctium lappa*) and woolly burdock (*A. tomentosum*) are non-native species expected to occur in Alaska. Both species can be distinguished from common burdock by their long peduncles and flower heads that are arranged in corymbs rather than racemes (Keil 2006).

Arctium minus (Hill) Bernh. Photo by R. Old.

Ecological Impact
Impact on community composition, structure, and interactions: Common burdock may increase the density of vegetation in disturbed areas. The broad, long-petiolated leaves can overtop and outshade surrounding herbaceous vegetation, thereby suppressing the growth of native species in disturbed areas. By outshading surrounding vegetation, common burdock creates bare patches of soil that facilitate the establishment of its seedlings (Gross et al. 1980) and may facilitate the establishment of other non-native species. The burred flower heads have been known to hook and immobilize

small birds in North America, although the effects of entanglement on avian populations are negligible (Nealen and Nealen 2000, Hager et al. 2009). Common burdock contains diuretic chemicals, and it taints the milk of cows when grazed in large quantities. It is associated with several harmful nematode species, insect pests, and plant diseases. Many species of pollinating insects are associated with common burdock (Gross et al. 1980). The presence of this species may alter native plant-pollinator interactions.

Impact on ecosystem processes: Common burdock grows primarily in disturbed areas, dry roadsides, abandoned fields, disturbed woodlands, and pastures (Gross et al. 1980, Keil 2006, Klinkeberg 2010), where it may reduce the amount of soil moisture, nutrients, and light available to native species.

Biology and Invasive Potential

Reproductive potential: Common burdock reproduces by seeds only. It often produces from 6,000 to 17,000 seeds per plant, and isolated plants can produce up to 30,000 seeds each (Hawthorn and Hayne 1978, Gross et al. 1980). Indirect evidence suggests that seeds do not remain viable for more than three years. In Waterloo, Ontario, the densities of seed banks were recorded from 435 to 558 viable seeds per square meter (Gross et al. 1980).

Role of disturbance in establishment: In North America, common burdock grows in disturbed areas, dry roadsides, abandoned fields, disturbed woodlands, and pastures (Gross et al. 1980, Keil 2006, Klinkeberg 2010). In Canada, it most commonly establishes on previously cultivated or heavily grazed lands. The success of colonization largely depends on the presence of open soil (Gross et al. 1980). The emergence and survival of seedlings are reduced by the presence of organic litter and vegetation (Gross and Werner 1983). All recorded infestations in Alaska are associated with anthropogenic disturbances (AKEPIC 2010).

Potential for long-distance dispersal: Seeds are attached to hooked involucral bracts that cling strongly to fur. Animals can disperse seeds long distances (Gross et al. 1980, Keil 2006, Kulbaba et al. 2009). Seed heads can be transported by water or blown across snow (Gross et al. 1980).

Potential to be spread by human activity: The hooked involucral bracts can attach seeds to fabric (Gross et al. 1980, Keil 2006). They attach especially well to pants (Kulbaba et al. 2009).

Germination requirements: In Michigan, most seeds germinate in mid-April. Seeds do not require cold stratification, but germination is greatest with alternating diurnal temperatures (Gross et al. 1980).

Growth requirements: Plants usually grow slowly during the first year. Although common burdock is biennial, plants will not reproduce until conditions are favorable. Large rosettes can be several years old (Gross et al. 1980, Gross and Werner 1983). Leaves die over winter and new leaves grow in spring. This species grows best in moist, high nitrogen conditions, but can grow on sterile clay as well. Because plants may require several years before they can reproduce, they do not usually grow well in areas that are disturbed annually (Gross et al. 1980).

Congeneric weeds: Great burdock (*Arctium lappa*) and woolly burdock (*A. tomentosum*) are considered noxious weeds in Manitoba. All *Arctium* species are considered noxious weeds in British Columbia and Quebec (Invaders 2010).

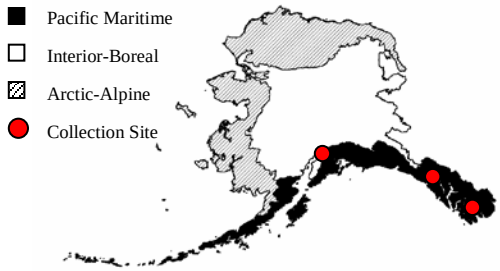
Legal Listings

- ☐ Has not been declared noxious
- ☐ Listed noxious in Alaska
- ☒ Listed noxious by other states (CO, WY)
- ☐ Federal noxious weed
- ☒ Listed noxious in Canada or other countries (*Arctium minus*: MB; all *Arctium* species: BC, QC)

Distribution and Abundance

Common burdock is generally not a serious weed in agricultural fields because it is controlled by cultivation. However, the seeds cling to fur and can reduce the value of wool (Gross et al. 1980). This species has been cultivated as a medicinal herb (Gross et al. 1980, Plants for a Future 2010). It is known to grow in riparian communities in the western U.S., especially in North and South Dakota (Ringold et al. 2008).

Native and current distribution: Common burdock is native to Europe and western Asia (Gross et al. 1980, Keil 2006). It is common throughout North America (USDA 2010), and it has been introduced to South America, Australia, and New Zealand (GBIF New Zealand 2010, NSW Flora Online 2010, Tropicos Specimen Database 2010). It grows in 48 states of the U.S. (USDA 2010). This species does not grow further north than 64º13'N in Scandinavia, and it has not been recorded from arctic or subarctic regions (Gross et al. 1980). Common burdock has been documented from Glacier Bay National Park and Ketchikan the Pacific Maritime ecogeographic region of Alaska and from Anchorage in the Interior-Boreal ecogeographic region (AKEPIC 2010).



Distribution of common burdock in Alaska

Management

Common burdock can be controlled by the application of several types of herbicides, including atrazine, silvex, 2,4-D-amine, 2,4,5-T, and MCPA-salt. This species can produce seeds after being mown early in the growing season (Gross et al. 1980). Mowing or cutting can effectively eliminate seed production when repeated multiple times per growing season. Infestations can be controlled by digging to remove the plant and as much of the taproot as possible (Good Oak LLC 2010). Plants will resprout unless the taproot is removed (Van Vleet 2009).

References:

AKEPIC database. Alaska Exotic Plant Information Clearinghouse Database. 2010. Available: http://akweeds.uaa.alaska.edu/

GBIF New Zealand, New Zealand National Plant Herbarium (CHR). 2010. Accessed through GBIF (Global Biodiversity Information Facility) data portal (http://data.gbif.org/datasets/resource/474, 2010-12-01).

Good Oak LLC 2010. Weed Identification and Control Sheet: Common Burdock (*Arctium minus*). Good Oak LLC Ecological Services. Madison, WI. [1 December 2010] Available: http://goodoakllc.com/info/weeds/burdock.pdf

Gross, R., and P. Werner. 1983. Probabilities of Survival and Reproduction Relative to Rosette Sizein the Common Burdock (*Arctium minus*: Compositae). American Midland Naturalist. 109(1). 184-193 p.

Gross, R., P. Werner, and W. Hawthorn. 1980. The Biology of Canadian Weeds. 38. *Arctium minus* (Hill) Bernh. and *A. lappa* L. Canadian Journal of Plant Science. 60(2). 621-634 p.

Hager, S., B. Dziadyk, and K. McKay. 2009. Bird-Plant Entanglement: A Review and the Addition of the Least-Flycatcher. The Wilson Journal of Ornithology. 121(3). 648-651 p.

Hawthorn, W., and P. Hayne. 1978. Seed Production and Predispersal Seed Predation in the Biennial Composite Species, *Arctium minus* (Hill) Bernh. and *A. lappa* L. Oecologia. 34(3). 283-295 p.

Invaders Database System. 2010. University of Montana. Missoula, MT. http://invader.dbs.umt.edu/

Keil, D. 2006. *Arctium minus* (Hill) Bernhardi, Syst. Verz., 154. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 12+ vols. New York and Oxford. Vol. 19, p. 170.

Klinkenberg, B. (Editor) 2010. *Arctium minus* L. In: E-Flora BC: Electronic Atlas of the Plants of British Columbia**.** Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia. Vancouver, BC. [30 November 2010] Available: http://www.geog.ubc.ca/biodiversity/eflora/index.shtml

Kulbaba, M., J. Tardif, and R. Staniforth. 2009. Morphological and Ecological Relationships between Burrs and Furs. American Midland Naturalist. 161(2). 380-391 p.

NatureGate. 2010. Finland Nature and Species. Helsinki, Finland. [09 December 2010] Available: http://www.luontoportti.com/suomi/en/

Nealen, H., and P. Nealen. 2000. Ruby-throated Hummingbird Death by Common Burdock (*Arctium minus*). The Wilson Bulletin. 112(3). 421-422 p.

NSW Flora Online. 2010. National Herbarium of New South Wales. Sydney, Australia. [Accessed 1 December 2010]. Available: http://plantnet.rbgsyd.nsw.gov.au/

Plants for a Future. 2010. [30 November 2010] Available: http://www.pfaf.org/user/default.aspx

Ringold, P., T. Magee, and D. Peck. 2008. Twelve invasive plant taxa in US western riparian ecosystems. Journal of the North American Benthological Society. 27(4). 949-966 p.

Tropicos Specimen Database. 2010. Accessed through GBIF (Global Biodiversity Information Facility) data portal (http://data.gbif.org/datasets/resource/621, 2010-12-01) Missouri Botanical Garden. St. Louis, MO.

USDA. 2010. The PLANTS Database. National Plant Data Center, Natural Resources Conservation Service, United States Department of Agriculture. Baton Rouge, LA. http://plants.usda.gov

Van Vleet, S. 2009. Steve's Weed of the Month: Common Burdock. Whitman County

Extension, Washington State University. Colfax, WA. [1 December 2010] Available: http://www.whitman.wsu.edu/weeds/documents/commonburdock.html