RUSH SKELETONWEED

Chondrilla juncea L.

Family: *Asteraceae* (Sunflower).

Other Scientific Names: None.

Other Common Names: Skeletonweed, gum succory, devil's-grass, naked weed, hog-bite.

Legal Status: Provincial Noxious.

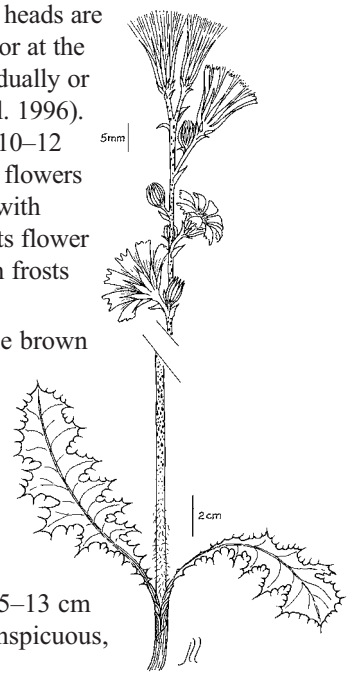
Identification

Growth form: Perennial forb.

Flower: Flower heads are produced along or at the ends of stems, either individually or in groups of 2–3 (Rees et al. 1996). Each flower head contains 10–12 strap-shaped, bright yellow flowers that are flat across the end with distinct lobes or teeth. Plants flower in midsummer until autumn frosts (Powell et al. 1994).

Seeds/Fruit: Seeds are pale brown to nearly black and have a white pappus.

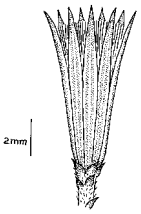
Leaves: Leaves form in a basal rosette, are sharply toothed, and wither as the flower stem develops. Rosette leaves are lance-shaped, deeply lobed, and 5–13 cm long. Stem leaves are inconspicuous, narrow, and entire (Whitson et al. 1996).



Stems: Mature plants are 0.4–1.0 m tall. Lower stems have short, downwardly bent, coarse hairs. Upper stems are smooth.

Roots: Deep, extensive root system.

Seedling: No information available.



Similar Species

Exotics: There are 3 forms of rush skeletonweed in the US, each differing in the morphology of their inflorescence and their susceptibility to control measures (Sheley et al. 1999). It has not been clearly established if all 3 forms occur in BC.

Natives: Sometimes confused with rushlike skeleton-plant (*Lygodesmia juncea*), which has pink (occasionally white) flowers and grows in the southern Interior.

Impacts

Agricultural: Infestations of rush skeletonweed can reduce livestock and wildlife forage (Sheley et al. 1999). The extensive and deep root system makes the plant difficult to manage (Whitson et al. 1996).

The latex the plant produces can cause serious problems with crop harvest machinery when the plant establishes on cropland (Rees et al. 1996). Rush skeletonweed can provide limited value as forage during a drought. Rosette leaves and pre-flowering stems are palatable and nutritious.

Ecological: In the US, rush skeletonweed has formed dense monocultures that displace native plants, but it rarely invades healthy native communities (Sheley et al. 1999).

Human: No information available.

Habitat and Ecology

General requirements: Rush skeletonweed occupies rangelands, roadsides, and disturbed habitats at mid-elevations in the dry grassland zone of the province (Powell et al. 1994). It generally inhabits well-drained, light-textured soils. It is capable of growing in a wide range of conditions but appears best adapted to areas that have cool winters, warm summers, and a predominance of winter and spring rainfall (Rees et al. 1996). This species grows in disturbed habitats and in overgrazed rangeland, especially in the US Pacific Northwest and California (Sheley et al. 1999).

Distribution: Infestations occur in the Vernon area, Crescent Valley, Kimberley, Windermere, and Creston. Rush skeletonweed presently is regarded as a major concern in the Kootenay and Okanagan agricultural reporting regions.

Historical: Introduced from southern Europe.

Life cycle: A tap-rooted perennial forb.

Mode of reproduction: By seed and vegetatively from roots. Plants reach 0.4–1.0 m tall at maturity. Rosettes develop from root buds in the autumn (Powell et al. 1994) or from germinating seed.

Seed production: A single multi-stemmed plant may produce as many as 15,000–20,000 seeds.

Seed bank: No information available.

Dispersal: Seeds are dispersed by wind, water, animals, and humans.

Hybridization: No information available.

Management

Biocontrol: *Aceria chondrillae* (gall mite) and *Puccinia chondrillina* (stem and leaf rust) have been released in BC. The gall mite appears to be effective in distorting the growth of the plant, but no data are available to assess its effect on rush skeletonweed populations. *Puccinia chondrillina* has had impacts on this species in California (Supkoff et al. 1988). Rotational grazing with sheep can control rush skeletonweed if the weeds are grazed at a moderate level while desirable plants are grazed lightly (Sheley et al. 1999).

Mechanical: Hand-pulling can be used on small infestations, but repeated treatments will likely be required because of the plant's extensive root system. Mowing and cultivation are ineffective at controlling rush skeletonweed (Sheley et al. 1999).

Fire: No information available.

Herbicides: Picloram has been effective when applied to rosettes (Sheley et al. 1999). Repeated applications of a mixture of glyphosate and dicamba have also been effective on rush skeletonweed populations in California (Calweed 1997). Similarly, annual applications of a mixture of clopyralid and dicamba provided 95% control of rush skeletonweed in Australia over 3 years (Heap 1993). Herbicides should be applied after the plant has bolted but before it sets seed. Consult the most recent edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations. **Before applying herbicides, read the label for full use and precautionary instructions. Cultural/Preventive:** Prevent establishment of new infestations. Manage land use to maintain vigorous native communities. Seed disturbed areas to desirable perennial species.

Integrated Management Summary

Rush skeletonweed is not widely spread in the province and it is thus important that new infestations be identified early and dealt with immediately. Hand-pulling, cutting to prevent seed-set, and herbicide applications should all be considered for early treatment. Report occurrences of this plant immediately to the weed specialists in the Ministry of Agriculture, Food and Fisheries, the Ministry of Forests, or your Regional District Weed Coordinator.

References

Calweed Database. 1997. Noxious weeds project list. *California Noxious Weed Control Projects Inventory.* Natural Resource Projects Inventory, Information Center for the Environment, University of California, Davis. http://endeavor.des.ucdavis.edu/weeds/ [17 Dec 98].

Heap, J. W. 1993. Control of rush skeletonweed with herbicides. *Weed Technology* 7: 954–959.

Powell, G. W., A. Sturko, B. M. Wikeem, and P. Harris. 1994. *Field Guide to the Biological Control of Weeds in British Columbia.* Land Management Handbook No. 27. BC Ministry of Forests.

Rees, N. E., P. C. Quimby, Jr., G. L. Piper, E. M. Coombs, C. E. Turner, N. R. Spencer, and L. V. Knutson (eds). 1996. *Biological Control of Weeds in the West*. Western Society of Weed Science, in cooperation with USDA Agricultural Research Service, Montana Department of Agriculture, and Montana State University.

Sheley, R. L., J. M. Hudale, and R. T. Grubb. 1999. Rush skeletonweed. In R. L. Sheley and J. K. Petroff, eds. *Biology and Management of Noxious Rangeland Weeds*. Corvallis: Oregon State University Press.

Supkoff, D. M., D. B. Joley, and J. J. Marois. 1988. Effect of introduced biological control organisms on the density of *Chondrilla juncea* in California. Biological Control Services Program, California Department of Food and Agriculture, and Department of Plant Pathology, University of California, Davis.

Whitson, T. D. (ed.), L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, R. Parker. 1996. Rush skeletonweed. *Weeds of the West.* Western Society of Weed Science, in cooperation with the Western United States Land Grant Universities Cooperative Extension Services, Newark, CA.