**Rush Skeletonweed (*Chondrilla juncea*)** 5/16/05

Herbicides will not work any quicker than non-chemical methods for this weed, and they involve the unnecessary addition of toxic chemicals into natural ecosystems. Patience, persistence, and integration of non-chemical treatment methods will yield the best long-term results. Fear of invasive populations turning into "Godzilla" should not override responsible toxic-free vegetation management practices. Too often impatience and fear lead to unnecessary and unsafe pesticide applications. This quick fix weed solution often equates with long-term problems. Regardless of the treatment method chosen, scientific literature states that successful skeletonweed control is a long-term effort.

The USDA Forest Service sources recommend the following control methods for rush skeletonweed: Diligent hand pulling or grubbing two to three times per year for **6 to 10 years** is effective for small infestations. Competitive legume plantings, such as alfalfa, can reduce rush skeletonweed populations through increased soil fertility and competition for soil moisture, as well as shading out the rush skeletonweed plants. Continuous moderate grazing by sheep can reduce skeletonweed densities. Several biological control agents are available, including a rust (disease), a mite, and a midge. Hot fires can kill plants, roots, and seeds. (http://www.fs.fed.us/ipnf/eco/yourforest/noxiousweeds/rushskeletonweed.html and http://www.fs.fed.us/rm/ecology/studies/biocontrol/rsw/)

The California Department of Food and Agriculture (CDFA) Encycloweedia website (http://www.cdfa.ca.gov/phpps/ipc/weedinfo/chondrilla-juncea.htm) also provides some important insight for controlling rush skeletonweed. It recommends using cattle or sheep to "graze the rosettes and shoots until the stems become lignified. Grazing will reduce seed production, and few viable seed will pass through a ruminant digestive system. Subterranean clover (*Trifolium subterraneum*), forms dense stands, which prevent skeletonweed seedling establishment." The CDFA also recommends three biological control agents including skeletonweed rust (Puccinia chondrillina), skeletonweed gall mite (Eriophyes chondrillae), and the skeletonweed gall midge (Cystiphora schmidti).

The CDFA reports that single herbicide treatments won't provide control for the long-term. It also warns that herbicide use will kill other desirable and necessary competitive vegetation such as annual and perennial legumes, and other broadleaves. The CDFA recommends using an integrated weed management approach, using the rust fungus in combination with subterranean clover has been shown to be compatible and effective in reducing rush skeletonweed populations.

Noxious weed experts, in a publication of the University of Idaho, warn against chemical controls as often impractical, due to, among other reasons, environmental sensitivity of the areas infested. They recommend using an "aggressive vegetation management program that incorporates biological controls." (http://info.ag.uidaho.edu/resources/pdfs/BUL0782.pdf)

The British Columbia Ministry of Agriculture and Food, in a guide to weeds in B.C. (www.weedsbc.ca/pdf/rush_skeletonweed.pdf), also recommends the integration of bio-controls and grazing. "Rotational grazing with sheep can control rush skeletonweed if the weeds are

grazed at a moderate level while desirable plants are grazed lightly." It also advocates for mechanical and hand pulling efforts on small infestations, but reminds that patience is required as "repeated treatments will likely be required because of the plant's extensive root system." It also warns that for herbicides to be effective, applications must be repeated, and must be done with chemical combinations, over the long-term.

Covering with weed cloths has also been shown to be effective on localized and smaller skeletonweed infestations (Personal communication, Julie Nelson). CATs suspects that large weed cloths, large enough to cover whole sections and clumps of weeds, especially when used after pulling, burning, or mowing efforts, can be very effective. Use ground covers and mulching to prevent regrowth, reduce the seed bank, and set the stage for revegetating efforts with desired plants.

Other less traditional options include the use of hot foam, super hot burns, steaming, torching, flaming, and the use of organically approved non-toxic herbicides.

References

British Columbia, Ministry of Agriculture, Food and Fisheries. Weeds BC, identification and management. A Guide to Weeds in British Columbia. Rush skeletonweed. Chondrilla juncea L. http://www.weedsbc.ca/pdf/rush_skeletonweed.pdf.

California Department of Food and Agriculture. Integrated Pest Control Branch. Encycloweedia website. Weed Information Sheet. Rush skeletonweed. http://www.cdfa.ca.gov/phpps/ipc/weedinfo/chondrillia-juncea.htm.

Harris, P. 2003. Classical Biological Control of Weeds, Biology of Target Weeds. Rush Skeletonweed Chondrilla juncea L. Lethbridge Research Center, Canada. http://res2.agr.ca/lethbridge/weedbio/plant/brshskel_e.htm.

McCaffrey, Joseph P., Gary L. Piper, Robert L. Callihan, Eric M. Coombs. 1996. Collection and Redistribution of Biological Control Agents of Rush Skeletonweed. University of Idaho Cooperative Extension System publication BUL 782. http://info.ag.uidaho.edu/resources/pdfs/BUL0782.pdf.

Nelson, Julie. Forest Botanist, Shasta-Trinity National Forest. Personal communication. March 18, 2005.

USDA Forest Service, Idaho Panhandle National Forest. Noxious Weeds. Rush Skleletonweed (Chondrilla juncea). 2000. http://www.fs.fed.us/ipnf/eco/yourforest/noxiousweeds/rushskeletonweed.html.

USDA Forest Service, Rocky Mountain Research Work Unit 4151. RM-4151: Ecology & Management of Northern Rocky Mountain Forests. Rush Skeletonweed. 2003. http://www.fs.fed.us/rm/ecology/studies/biocontrol/rsw/.