

STATUS OF SPOTTED KNAPWEED INVASIONS IN WILDLIFE HABITAT

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Spotted knapweed (*Centaurea stoebe micranthos*) is a widespread noxious weed in the western U.S. and Canada. Spotted knapweed can be controlled using herbicides, mowing, grazing, cultivation, and biological control (natural insect enemies introduced from the native range of the plant). We are beginning to see reduction of knapweed density in rangeland wildlife habitat, which we can attribute at least in part to biological control insects. Some recent findings are summarized. The root weevil (*Cyphocleonus achates*) kills knapweed plants and reduces thriftiness of surviving plants. At two sites where *C. achates* was released and weevil populations and knapweed density subsequently measured, dramatic increases in weevil populations were followed by equally dramatic declines of knapweed density (77 and 99% decline after 11 yrs). In field releases of *C. achates* that incorporated control plots, declining biomass of knapweed could be attributed to effects of weevil attack within 4 years of their release. Knapweed density was also impacted by flooding, drought, and grazing by white-tailed deer. Although drought reduces survival and vigor in knapweed plants, *C. achates* effects are demonstrable and additive. Finally, larval development of some biological control agents, and evidence of accelerated development over the last 7 yrs were discussed.