

Endangered Species Act 40th Anniversary Success Stories MacFarlane's Four-o'clock



MacFarlane's four-o'clock, *Mirabilis macfarlanei*, (Figure 1) is found in only a few patches on the grassy slopes of Hells Canyon of the Snake River and the Imnaha River canyon in northeast Oregon and the adjacent Salmon River canyon of western Idaho. Although intrinsically rare, this plant has experienced a decline in both its historical abundance and range since the advent of large-scale sheep grazing during the homestead era of the late 19th and early 20th centuries. Gentler slopes, where sheep grazed frequently, are now dominated by invasive species, especially annual grasses such as cheatgrass. Consequently, MacFarlane's four-o'clock is found almost exclusively on steep slopes that were less intensively grazed and where native bunchgrasses are still present.

Invasive plants are present in four MacFarlane's four-o'clock populations and in proximity to several other populations. A biological control agent, *Mecinus janthinus*, the three-toed stem-boring weevil, has been released in partnership with the Oregon Department of Agriculture at two MacFarlane's four-o'clock populations infested with Dalmatian toadflax (Figure 2).



Figure 1. MacFarlane's four-o'clock bloom visited by the microlepidopteran sun moth, *Lithariapteryx abroniaeella*.



Figure 2. Dan Sharratt of the Oregon Dept. of Agriculture releases biological control agents on Dalmatian toadflax in MacFarlane's Four-o'clock habitat, assisted by Forest Service botanists Jerry Hustafa and Lynne Smith.



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