

ROCKY MOUNTAIN

Three-way Weed Control Program

In its 40-year struggle to control the nonnative, noxious weed leafy spurge (*Euphorbia esula*), Devils Tower National Monument recently completed its most successful and productive year to date. The park is phasing out its traditional heavy use of the broad-leaf herbicide Tordon (Picloram) in favor of herbivorous insects of the genus *Aphthona* that eat the invasive plant exclusively.

Introduced from grain seed stocks brought to the area by eastern European homesteaders, leafy spurge has infested the flood plain of the Belle Fourche River valley in northeastern Wyoming for 50 years. Unfortunately, the natural control predator, the *Aphthona* flea beetle, did not come with the invasion. Instead, the U.S. Department of Agriculture, through its APHIS-PPQ pro-

gram, imported the beetle from Canada in 1990, where the insect had already been introduced. The University of Wyoming, Crook County Weed and Pest District, and the USDA set up a cooperative *insectary* called the “Ike ranch site” in Crook County in 1990 that would in the future produce millions of insects for collection and redistribution around the county and state.

Park field crews collected and distributed 35,000 biological control insects from the insectary in 1994 and 188,000 in 1995. In addition to these, crews gathered and redistributed 41,000 of the flea beetles from insectaries established at Devils Tower in 1991 and 1992 with the help of the same partners. Altogether, field crews have collected some 250,000 biological control insects and released them at 160 sites within the monument.

While the spurge eradication program has shifted its focus to the ecologically sound, long-term, biological control method, herbicide use continues (to a lesser degree), and other herbivores augment the work of the beetle. This year, crews spot treated about 100 acres of spurge using herbicide. At the same time, a flock of 400 Angora goats chewed through an additional 200 acres of thick spurge along the river flood plain.

Only in its second summer, this integrated, tripartite leafy spurge control program has become a model for neighboring cattle ranchers. Initially skeptical, local ranchers now have started using goats and sheep to consume spurge on their lands. To further aid park neighbors, and in the spirit of ecosystem management, the

monument has facilitated two insect collection days and instructed the five participating area landowners in how to manage the insects for the purposes of spurge reduction. Altogether, park neighbors collected 26,000 biological control insects in the two-day activity. Park neighbors and Devils Tower National Monument alike plan to expand the use of goats and insects next year both within and outside the monument.