

## The Bear Trap Wilderness Invasive Weed Management Project or How to succeed with a little help from your friends

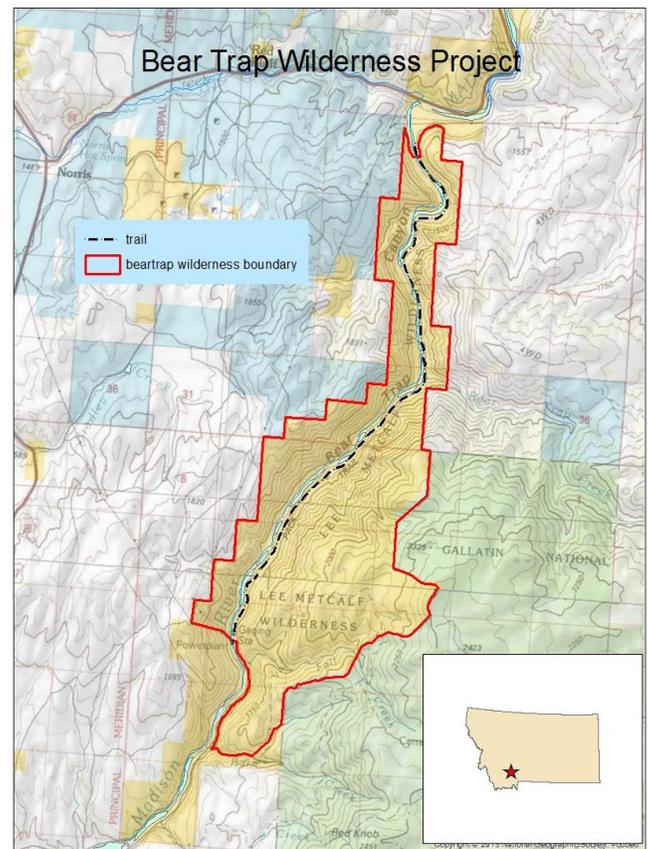
*(by Michael Mooney, Range Technician (IWM Program Manager), Bureau of Land Management - Dillon Field Office)*

**Introduction:** The Bear Trap Wilderness encompasses the area along the Madison River contained within the boundaries of the Lee Metcalf Wilderness and was the first designated wilderness area on Bureau of Land Management (BLM) lands. Consisting of approximately 6000 acres, the area is bounded by the power station at the dam on Ennis Lake to the south and Warm Springs day use area to the north and is located approximately 45 miles southwest of Bozeman, Montana. The Bear Trap Wilderness is made up solely of public lands managed by BLM, and because of its wilderness designation there are no motorized vehicles or equipment allowed inside its boundaries. The only access routes into the area are a foot trail along the east side of the river, an incomplete trail on the west side of the river and the river itself.

In April 2001 members of the BLM, Montana Wilderness Society, Madison County weed board, U.S. Forest Service, Greater Yellowstone Coalition, Gallatin County weed district and other interested individuals floated through the Bear Trap Wilderness. They determined that due to the size, density and location of spotted knapweed and leafy spurge infestations, eradication was no longer an option but rather a long- term plan of control and containment would be more practical and cost-effective. A second float trip was conducted in August 2001 to devise a plan of action.

**Management:** Spotted knapweed and leafy spurge control was initiated in late September 2001 using both biological control agents and herbicide, applied by backpack sprayer. Biological control agents were released in the more inaccessible areas and above the hiking trails, while herbicide was used along the trails and from the trails to the river, where public use is the highest. Herbicide application was done as a joint effort between the BLM and the Madison County weed board with joint spray days held twice yearly, one in spring and the other in fall. A minimum of three float trips per year have allowed access to some infestations of leafy spurge that are inaccessible by land.

During the past fifteen years, the number of volunteers has varied between 20 and 55 with participation primarily from the BLM Dillon Field Office, permanent and seasonal staff and Madison County; Beaverhead County helped in spring 2002 after a fire burned a section of the trail and left the area prime for invasion. In 2006 funding was acquired for two summer seasonal employees whose main duty is to treat weeds on public lands around and within the wilderness. The Montana Youth Challenge program has provided from four to six cadets since 2010, when the project expanded to include the west side trail that begins at the Warm Springs day use area. Gallatin County Weed District joined the project in 2013 after a large fire went through part of the project area in July 2012. A Montana Conservation Corps crew assisted in 2015 and 2016 for two weeks in June to help with some of the more inaccessible areas that have been missed during other volunteer days.



**Results:** After the first year of treatment, we were surprised at how the native grasses came back and competed with spotted knapweed (photos below). Throughout the project, infestation levels have decreased with a few spikes during years with more precipitation.

- Biological controls that were released on spotted knapweed have spread throughout the project area, but population numbers haven't increased to the levels needed for effective control.
- Biological controls that have been released on leafy spurge have shown similar results as those for spotted knapweed except in areas that burned in 2012. These areas were augmented with new releases in 2013 because of fears that populations were reduced due to the fire. Control of leafy spurge in these areas has increased dramatically over the last three years.
- Due to the use of herbicides that are more effective on leafy spurge and spotted knapweed but have little effect on mustards, hoary alyssum has started to become a weed of concern.



*Spotted knapweed along trail in September 2001 (left); same location along trail in September 2006 (right)*

**Management implications:** Controlling noxious weeds in the Bear Trap Wilderness has shown that even if you have large infestations that are hard to access, control can be achieved with help from others and persistence. Even though the number of volunteers over the years has gradually increased, the amount of herbicide applied has significantly decreased. The use of BLM staff helps to educate everyone on the impacts of noxious weeds and the methods of control. It has also given the people that have taken part over the years a sense of accomplishment by being able to see that their efforts have made a difference. Future challenges include treatment of hoary alyssum and infestations of spotted knapweed, leafy spurge and cheatgrass that are on the canyon walls.

For more information about this project or to volunteer for future spray days contact the BLM – Dillon Field Office at (406) 683 – 8000.

