Valles Caldera National Preserve
Stewardship Register
Noxious Weed Control and Eradication Project

Stewardship Action:	Noxious Weed Control and Eradication Project	File Number:	60800
Target Start Date:	Sept. 8, 2003	Actual Start Date:	8_2_2004
Target Completion Date:	Until Revised or Rescinded	Actual Completion Date:	Ongoing

Location: The invasive weed species: Canada; musk; and bull thistle have been found along primary and secondary Preserve roads within road right-of-ways or within a few yards of the road prisms. Surveys over the last two years have encountered these weeds in disturbed areas along Preserve roads and in turnouts. The infestations are near 5 acres in total area and range from less than 1/10th to 1 acre. The infestations occur in a dispersed pattern adjacent to 70 miles of Preserve roads as depicted in the attached map (Exhibit A). The locations and size of these infestations have increased over the last two years.

Purpose and Need: The New Mexico State Department of Agriculture Noxious Weed Act of 1998 lists the Canada thistle a Class 'A' weed whose limited distribution in the State sets eradication as the highest priority. Musk thistle is a New Mexico Class 'B' weed. Statewide management priority is to contain infestations to current areas, preventing new infestations. Bull thistle is a Class 'C' weed recognized by the State as widespread. Suppression is encouraged. The Federal Noxious Weed Act of 1974 encourages elimination or containment of each of these weeds.

Canada thistle is a deep-rooted perennial plant that regenerates successfully from root sprouts. Entire plants can re-grow from only a fragment of root. Dense patches can form and the plant produces photo toxins that inhibit the growth of other plants. Canada thistle is an aggressive colonizer that can cover a 6-foot diameter area within one to two years.

Musk thistle and bull thistle are typically biennial plants, but they may also complete their life cycle in one year as opposed to two years. These plants depend on seed production for reproduction and spread. An average size plant can produce as many as 10,000 seeds in any given year. Thus, these weeds have the ability to quickly colonize areas that have been disturbed and where there are few native plants to prevent germination.

These weed infestations occur along primary and secondary road systems. Traveling Preserve visitors or working personnel can increase the transport of plant seeds and parts to other areas in the Preserve or to adjacent lands. Control and eradication of these occurrences before they spread is important to protecting native plant communities.

Hand cutting, pulling or grubbing are not effective methods to eradicate Canada thistle, musk thistle, or bull thistle. The BLM (Bureau of Land Management) has experienced excellent success using clopyralid to eradicate these weeds in other locations in New Mexico.

The unchecked weed infestations risk expansion of these plants and damage to the natural plant and animal communities within the Preserve. Considering the management principles adopted by the Board of Trustees; goals 1, 4, and 8 are addressed by the proposal. These goals are:

(1) We will administer the Preserve with the long view in mind, directing our efforts toward the benefit of future generations;

(4) We will exercise restraint in the implementation of all programs, basing them on sound science and adjusting them consistent with the principles of adaptive management; and

(8) Recognizing that the Preserve is part of a larger ecological whole, we will cooperate with adjacent landowners and managers to achieve a healthy regional ecosystem.

Description:

Over a three-year period, the Valles Caldera Trust proposes to control the spread and ultimately eradicate infestations of the noxious weeds: Canada thistle (*Cirsium arvense*); musk thistle (*Carduus nutans*); and bull thistle (*Cirsium vulgare*) along roadways and adjacent areas within the Preserve. Hand application of liquid clopyralid (trade name Transline) with the surfactant LI 700 and colorant Hi-Light is proposed to control and ultimately eliminate weed infestations.

Objective: Eliminate 70 % or more of the infestations of noxious weeds at the conclusion of the first year's weed control program. Eradication of these three invasive weed species within the Preserve is sought at the conclusion of the control program in November 2006.

Performance Requirements: The following requirements must be fulfilled in completing the proposed project:

1. Applications to weed infestations must be by backpack sprayer and a hand-held spray nozzle or by a portable sprayer transported by a small, four-track, utility vehicle. Target plants are to be sprayed by wetting exposed surfaces and avoiding non-target plants. Personnel from the Bureau of Land Management office in Cuba are available to apply the registered herbicide and are licensed by the State of New Mexico**.** Only licensed personnel may spray plants.
2. Contract and Federal workers are required to meet Federal Worker Protection Standards (40 CFR Part 170) and existing State of New Mexico Regulations, including the use of protective clothing. Safety procedures and Material Safety Data Sheets must be reviewed by personnel prior to herbicide applications.

3. All applications must adhere to label directions as well as Federal and State application regulations.
4. Transline is to be applied at a rate up to, but not over, 0.5 pound of acid equivalent per acre (1.33 pints per acre). Clopyralid, the active ingredient in Transline, is a systemic herbicide absorbed by leaf- and stem-surfaces and translocated into stem and root systems. The herbicide, mixed with water, will consist of no more than 100 gallons of diluted solution dispersed on weed infested areas during each year of use.
5. Transline is mixed with the surfactant LI 700 to thoroughly wet the weeds. To ensure effective penetration into the plant leaves and root system, two pints of surfactant per 100 gallons of water is mixed with the herbicide. The spray colorant, Hi-Light, is to be included in the mix to identify where the herbicide is applied. The colorant maximizes coverage and minimizes use. One-half to one pint of colorant per 100 gallons of water is to be mixed with the herbicide.
6. Spray drift is minimized by targeting individual plants with spot applications and avoiding non-target plants. Weeds may be sprayed only if wind speed averages less than 5 miles per hour. To reduce the potential for volatilization, weeds may not be sprayed if the air temperature exceeds 85°F.
7. The spray dries on weed surfaces within six hours. To reduce the potential for runoff during a rain storm, applications may be made only if rain is not anticipated within six hours after weeds are sprayed.
8. All storage, mixing, or backpack refilling of herbicides must be located away from open water in a central location. Individual spray containers must be filled from a single source and may be transported to the weed infestation sites by motor vehicle if secured in transport.
9. Procedures for spill cleanup and emergencies must be established by the project leader and conveyed to each applicator prior to field work.
10. The area must be posted during application, restricting human access to the treatment area until the spray solution has completely dried.