

## 2007 IPM & Sustainable Agriculture Mini Grant Proposal

### **Title:**

Biological Weed Control - Using Goats to Control Noxious Weeds

### **Project Personnel:**

Project Leader - Sterling Banks, USU/Summit County Extension Agent

Cooperators - Jack Marchant, Summit County Weed Supervisor  
Mindy Wheeler, Summit County Cooperative Weed  
Management Area Coordinator  
Boyd Willoughby, Mountain States Meat Goat Association  
Private or Public Landowner (to be determined at a later time)

### **Situation Statement:**

Summit County, Utah is known for its beautiful native mountain landscape particularly around the Park City area. Over the past fifteen to twenty (15 - 20) years noxious weeds have invaded a large part of this area. Over the years Summit County has spent thousands of dollars in chemicals trying to control noxious weeds in this area. The public perception (Park City area) about using chemicals to control noxious weeds has made it very difficult for the county to develop a weed control program for this area. As a result the Summit County Cooperative Weed Management Area (CWMA) was organized three years ago to help address the noxious weed problem, particularly in the Park City area. The CWMA and Summit County have joined forces to develop a weed control program for this area. Through their efforts a variety of activities have been conducted, such as, weed pull days, bag a woad program, public educational meetings, fliers, newspaper articles, weed spray equipment loan program, on site visits, writing new county ordinances addressing weed control efforts, etc.. These efforts have had a major impact with the public about controlling noxious weeds, but the majority of them still do not want chemicals used to control noxious weeds. The county has utilized a variety of biological control agents (insects and dyers woad rust) in this area with some success, but the noxious weeds keep spreading. Also, large landowners (ie. ski resorts) are not very cooperative in controlling noxious weeds on their property because of the cost associated with it. Therefore, everyone is looking for a low cost, environmentally friendly, weed control method to reduce the noxious weeds in Summit County. This is where goat grazing maybe the answer for this situation.

A review of literature on goat grazing to control noxious weeds suggests the following:

- Goats can help reduce the seed head on many noxious weeds, thus reducing the spread of weed seeds.
- Goats grazing noxious weeds can stress plants to the point where they will not come back.
- Goats will eat a wide variety of noxious weeds.
- A well planned/timed grazing system using goats can reduce noxious weeds comparable with some herbicide treatments.
- Goats can utilize many noxious weeds in their diet and gain weight.
- Goats are environmentally friendly.
- Goats can improve range land grazing for other species of livestock and wildlife.
- Goats can be used effectively as part of a total integrated weed management program.

### **Objectives:**

The following objectives for this proposal are:

1. Determine if goat grazing can be an effective weed control option for landowners.
2. Establish a weed control goat grazing demonstration site for landowners, agency personnel, livestock producers and the public to view.
3. Determine what type of grazing system is the most effective in controlling specific target weeds.
4. Compare the cost and effectiveness of goat grazing to traditional herbicide treatments for controlling specific target weeds.
5. Provide the public, landowners, agency personnel the research results of this project.

### **Procedures:**

The following procedures will be implemented as listed below:

1. February, 2007 - Planning meeting with all cooperators to determine demonstration site location, how demonstration will be setup and implemented, grazing plan determined, schedule of activities, etc.. Sterling Banks will organize planning meeting.
2. May, 2007 - Establish demonstration site by fencing area and introducing goats to area. Monitor goats during 30 day grazing period Boyd Willoughby and Sterling Banks will establish site and monitor goats.
3. June, 2007 - Remove goats from demonstration site. Evaluate site for grazing and weed control results. Record and photograph results. Sterling Banks, Jack Marchant and Mindy Wheeler will evaluate site.

4. August 2007 - Reintroduce goats to demonstrate site. Monitor goats during second grazing period. Monitor goats during 30 day grazing period. Boyd Willoughby will monitor goats.
5. September 2007 - Remove goats from demonstration site. Evaluate site for grazing and weed control results. Record and photograph results. Sterling Banks, Jack Marchant and Mindy Wheeler will evaluate site.
6. September 2007 - Conduct weed grazing demonstration tour of site for public, extension personnel, and local landowners. Conduct tour just before goats are removed the second time. Sterling Banks will organize tour.
7. September 2007 - Apply fall herbicide treatment on part of demonstration grazing site for comparison of untreated grazing weed control to herbicide treated grazing combination weed control. Jack Marchant will apply treatment.
8. Early Spring 2008 - Evaluation of grazing demonstration site will be made to determine effectiveness of weed control options conducted the previous year. Results will be recorded and photographed. Extension fact sheet and power point presentation will be made of entire project. Sterling Banks will develop a fact sheet and power point presentation.
9. Spring/Summer 2008 - Presentation on goat grazing project will be presented to extension personnel and landowners at various weed control meetings during the year. Sterling Banks, Jack Marchant and Mindy Wheeler will do presentations.

#### **Data Analyses and Presentation of Results:**

Weed control results will be recorded on a percent control basis compared to an untreated (un-grazed) area within the demonstration site. Specific plot design will be determined during the first planning meeting held in February of 2007 based on site location.. Design will include un-grazed treatment, single grazed treatment, double grazed treatment and herbicide and grazed treatment combination. Maximum size of entire demonstration site will be five (5) acres. The procedure section outlines how and when the results will be presented to those interested in the study.

#### **Evaluation:**

Once results are summarized and introduced to extension personnel, landowners and the public. An evaluation/survey will be made by the Summit County Weed Department and USU Extension Service to determine the number of acres and landowners using grazing goats as a weed control option, particularly in the Park City area.

**Budget:**

Requested funding for this project is outlined below:

Fencing supplies:	\$900.00
Goat Lease Fee/Part time help (includes monitoring of goats, setup and maintaining electric net fence, hauling water to site, use of goats and hauling goats back and forth during grazing study.):	\$1300.00
Mileage:	\$ 150.00
Herbicide Treatment:	\$ 50.00
Printed educational material costs:	\$ 100.00
 Total Request:	 \$2500.00

**Contact Person:**

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