

## **ARIZONA 319(h) DEMONSTRATION PROJECT SUMMARY**

**PROJECT NO:** 95-002

**CONTRACT NO:** 960018

**PROJECT TITLE:** Pratt Allotment - Demonstration of Ungulate Action In Southwestern Climatic Sagebrush Watersheds To Improve Vegetative Diversity And Water Quality

**PROJECT LEAD:** Fredonia Natural Resource Conservation District

**PROJECT LOCATION:** Kanab Creek Watershed  
Fredonia, Arizona

<b>PROJECT FUNDING:</b>	319(h) funds	\$ 70,800
	In-Kind funds	\$ 84,880
	Total Cost	\$ 155,680

**PROJECT SOLICITATION:** ADEQ

**PROJECT SELECTION and AWARD:** USEPA Region 9

### **PROJECT PURPOSE:**

To demonstrate the effectiveness of livestock impact as a Best Management Practice (BMP) to improve watershed condition and reduce nonpoint source pollutant discharges of sediment from climax stage Western Wyoming Sagebrush watersheds.

### **PROJECT DESCRIPTION:**

The project demonstrated use of livestock hoof trampling as an alternative to chemical herbicide control and or burning control of climax Wyoming Sagebrush in a western watershed. Shifting the vegetative cover from a climax Wyoming Sagebrush community characterized by high sheet and rill erosion potential, to a lesser serial stage consisting of a higher percentage of annual and perennial grasses, herbs and forbes

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would reduce soil crusting and erosional soil losses and thereby improve water quality.

Large numbers of livestock were enclosed and fed in relatively small fenced pastures characterized by the following vegetation communities:

1. A climax area dominated Wyoming Sagebrush;
2. A grass land dominated by introduced grass species with moderate invasion of Wyoming Sagebrush; and
3. An established grass land area dominated by introduced grass species.

Monitoring was conducted at 2 locations within each treatment to assess changes in ground cover. Pace /frequency, dry weight, and rank transect methods were used to collect ground cover and plant community data.

### **PROJECT FINDINGS:**

Estimated sheet and rill erosion were reduced by 50% over the duration of the project. Biodiversity was not affected in any of the three treatments. However, increased frequency of cheatgrass was noted in all treatment areas. This shift in plant frequency may represent an early serial stage of succession to be followed later by higher successional stages.

Drought was a significant factor throughout the duration of demo project implementation. Precipitation varied over the project area from 34-61% of mean annual rainfall. This appears to account for the relatively poor results in attempting to increase ground cover in the seeded areas.

Cost of animal impact non-chemical treatment was approximately 5 times higher than that of traditional herbicidal treatment. This economic constraint will limit utilization of this BMP technique to areas where chemical treatment is inappropriate or ineffective due to slope or soil type.

### **PROJECT OUTPUTS:**

1. Final Report