

# Need Financial Assistance to Improve your Land or Operation?

By Jeff Schick, NRCS District Conservationist

The Natural Resources Conservation Service (NRCS) has a program that may be able to help you. The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides financial assistance to improve your operation in ways that will also provide environmental benefits. The benefits of this program will improve and enhance Box Elder County's soil health, water quality and quantity, air quality, and wildlife habitat and increase the ability of producers to maintain a sustainable agriculture operation.

Over the past ten years, many of the county's producers have already participated in this program. Almost \$17 million dollars have been utilized to improve Box Elder's natural resources and make local agriculture, dairies, livestock producers, farms, orchards, and ranches more sustainable.

If you want to improve your operation, large or small, you can apply for this program here at the USDA Service Center in Tremonton at any time. There are batching periods during each year when funding selections are made and projects are selected to be funded for the year.

When you apply, the staff here will use their expertise to help you to analyze your operation and develop a plan to help you to:

- increase crop yields,
- make range and pastures produce better and more forage,
- build soil instead of deplete it,
- manage animal waste to meet current regulations,
- conserve water by applying it more effectively and efficiently,
- extend vegetable harvest season, and
- improve your operation in many other ways.

It is our objective to endeavor to make your operation more sustainable for you and your family and the generations to follow. Please come into the office and visit with us.



## Lessons learned from the EBIPM large-scale cheatgrass control and revegetation project in Park Valley, Utah

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### Adopting the EBIPM Framework

Efforts to control invasive weeds often fail to achieve lasting results if they do not impact the underlying causes of weed dominance and invasion. For this reason, the USDA-Agricultural Research Service has teamed up with universities and land management agencies in the western U.S. to develop and demonstrate how the adoption of Ecologically Based Invasive Plant Management (see [www.EBIPM.org](http://www.EBIPM.org)), can lead to systematic land improvements. Adopting EBIPM can help producers maximize productivity and improve economic viability in five simple steps (see table below). Here, we briefly describe the outcome of adopting the EBIPM Framework in Park Valley, Utah.

### Management Goal

We've all seen it, thousands of acres of rangelands in Box Elder County infested with cheatgrass. Although this annual grass may be productive in early spring, it is not a reliable source of forage in low precipitation years. The promise of something better, and the fear of letting an invasive annual grass take over rangelands, has prompted renewed interest in ways to successfully and economically convert grazed lands to perennial grass pastures (Figure 1). When successful, this conversion is a win-win for both the ecosystem and producers. For example, producers will enjoy a more stable and reliable forage base than that provided by cheatgrass, while our shared ecosystem will be left in better shape than it was found. Our goal in Park Valley was simple – increase forage production, reduce wildfire frequency, and better understand how to similarly convert cheatgrass pastures to perennial grass pastures in the future.

### Project Implementation

In 2008-2009, we completed EBIPM Steps 1 and 2 and determined that cheatgrass dominance across large-scale study pastures was due to abundant dry litter production, frequent wildfire disturbance, hyper-abundance of cheatgrass seed on the soil surface, and the absence of desirable plant species to compete with cheatgrass. Consulting the available list of EBIPM principles in Step 3 to guide our management decisions, we reasoned that disturbance must be modified, even if only temporarily, to reduce cheatgrass litter and seeds and to allow seeded perennial

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grasses to gain a foothold. Thus, in EBIPM Step 4, with the cooperation and insights of producers, we determined that fire and herbicide application could be used strategically to reduce cheatgrass litter and seed production and improve soil surface conditions prior to seeding desirable perennial grasses. In essence, this management strategy was deemed appropriate because it was capable of simultaneously altering site conditions, plant species availability, and plant species performance.

In Fall 2009, replicated pastures owned by two different producers in Park Valley, Utah were assigned to one of four treatment combinations – untreated, burned-only (early November), herbicide application-only (mid-November, Plateau® applied at the rate of 40oz/acre), and burned+herbicide application. In early December, all pastures were drill-seeded with a seed mix that consisted of both native and introduced perennial grasses (total = 9 lbs of seed/acre). The average cost for applying these treatments was as follows: fire, \$30/acre; herbicide, \$40/acre; and seeding, \$30 acre. It is important to note that these costs reflect professional contracts, which are expected to be much lower if a producer is capable of applying their own cheatgrass control and revegetation treatments.

### Initial Outcomes

Two years after treatment (2011), burning and herbicide, especially when combined, effectively reduced soil surface litter and cheatgrass seed on the soil surface. In the same token, perennial grass establishment was significantly greater in all treatments when compared to untreated pastures. For example, fire-only resulted in over three seeded plants per square yard, while herbicide-only resulted in just over two seeded plants per square yard. In contrast, when fire and herbicide were combined, there averaged five seeded plants per square yard. A particularly promising aspect of these results is that perennial

The Five EBIPM Steps	
1.	Complete Rangeland Health Assessment with an USDA-NRCS specialist.
2.	Identify causes of weed invasion and the associated processes in need of modification.
3.	Use ecological principles to guide decision making.
4.	Choose appropriate tools and strategies based on ecological principles.
5.	Design and execute a plan using adaptive management.

Cheatgrass-dominated



Perennial grass-dominated



Figure 1. Management goal of project in Park Valley, Utah included reducing wildfire threat and improving forage production in dry years.

grasses successfully established even though cheatgrass within pastures increased due to higher-than-average precipitation in both 2010 and 2011. However, livestock grazing in 2012 will hopefully reduce the threat of wildfire occurrence during what appears to be a season of considerable wildfire risk, given drought conditions and high litter production during both 2010 and 2011.

### Lessons Learned and Future Opportunities

Using the EBIPM framework helped define the underlying causes of cheatgrass dominance and guided the implementation of an ecologically appropriate management strategy. We are encouraged by the results of this pasture-level study and hope that it inspires additional producers to adopt the EBIPM framework when choosing to convert cheatgrass pastures to perennial grass pastures. A few points warrant consideration when adopting this ecologically based approach. First, although cheatgrass will likely continue to be a pest into the future, pastures invaded by this grass will not “right-themselves” over time without active interventions to trigger the desired conversion. Second, it appears that perennial grass establishment is essential for pasture sustainability and to prevent re-invasion by cheatgrass. Finally, pasture conversion is a process that likely requires more than three years and depends on whether cheatgrass is effectively impacted by treatments and the initial establishment of perennial grasses. During this conversion period, we advocate the use of adaptive management approaches as outlined in Step 5 of the EBIPM framework to further help producers protect their investments in weed control and revegetation and realize economic gains that are anticipated due to improved forage production. In this vein, it may be necessary to carefully consider future grazing practices that will weaken cheatgrass while strengthening the spread and performance of perennial grasses.