

Browns Park Bottomlands Amendment  
April 7, 2008

In 2007, as part of the Browns Park Bottomlands study, 39 monitoring plots were established in seven vegetation alliances in the bottomlands. The project research activities are focused on 1) vegetative and habitat data collection and 2) management issues. The plots were monitored in the summer of 2007 to establish baseline site characteristics and develop a long-term monitoring protocol for the refuge. BPNWR identified greasewood thinning strategies in their Comprehensive Conservation Plan (CCP, 1999). In addition, some wildlife species also rely on herbaceous production beneath shrubs (ie. forage for large ungulates, insect and seed production and hiding cover for passerines). Manipulative treatments have been proposed to examine potential management activities intended to enhance herbaceous production and structural diversity in bottomland greasewood stands.

Research Objectives:

- 1) develop and test new metrics for quantifying structure on rangelands.
- 2) re-establish understory in the greasewood dominated areas.
- 3) document the impacts of the restoration activities on habitat structure.

Changes from Original Proposed treatments:

After a site visit to Browns Park with Steve Monson in the fall of 2007, we changed the experimental treatment of the greasewood plots from thinning to mowing. After discussion with Steve, we collectively decided that seeding operations would be inhibited if we simply reduced the density of shrubs. Mowing treatments (not followed by herbicide treatment) will allow regeneration via root-sprouting of the greasewood.

In addition, we removed the herbicide & seeding treatments on the three smooth brome plots. When the smooth bloom area was visited in the fall, it contained several bunch grass species and forbs that provided more species and structure variety than originally thought. Our intention had been to return structure to a uniform mono-culture was not necessary given the structural diversity already present.

Current Treatments:

Mowing and herbicide treatments, followed by seeding will be used to return understory vegetation beneath greasewood. The 12 established greasewood plots will be mown in spring 2008. Two thirds of each mown plot will be treated with the herbicide Triclopyr (Garlon 3A) when greasewood re-sprouts from the mowing are actively growing (May and June). If we need to reapply, we will do this by hand to target shrubs. An additional application of herbicide will be applied for cheatgrass as necessary. Based on discussions with Steve Monsen and the literature available, the best time for reseeding is in the fall (late October- early November). We will apply a seed treatments to 2 thirds of the mowed area.

The total area that we are proposing to treat (mow) in the bottomlands is: 9.4 ha (12 plots of 0.78 ha each). As one of the original plots is hard to access on the south side of the refuge, an additional plot will be established in the Grimes area of the refuge and monitored before mowing.

Each of the treatments (seeding and herbicide) will be applied on 2/3 of each plot for a total of 6.3 ha. The resulting treatments are: 1) mowing with herbicide; 2) mowing with herbicide and seeding; and 3) mowing with seeding. Matt will repeat monitoring in summer 2008, analyze these data in winter 2008-9. The seeding will be conducted in the fall of 2008 and the plots will be monitored again in the spring/summer of 2009. A second application of cheatgrass control may be applied in fall of 2008, if needed. The monitoring data from 2007 will be used as baseline/control for evaluation of changes in structure and understory vegetation in the greasewood plots.