

Step by Step to Building a Succession Demonstration Plot

A field learning demonstration for ecologically-based rangeland management

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Purpose:

A succession demonstration plot is a visual learning tool for land managers who are responsible for implementing conservation practices. The demonstration illustrates how plant communities change in a historical context after disturbance and the current impact of cheatgrass invasion in these communities. Understanding succession and the processes acting upon the system is the basis for ecologically-based management.

Learning Objectives:

- Plant communities are complex and are always changing.
- Land management practices affect plant community change. When one thing changes it affects several.
- There are a number of processes acting on the system.
- Healthy plant communities are the basis for healthy diversity of wildlife species.

Materials needed:

- Flags or materials to mark 10 plots
- Small rototiller
- Shovels
- Rake
- Pruning shears
- Bags or boxes for plants collected
- Plastic spotted knapweed – available for purchase at the Center for Invasive Plant Management. http://www.weedcenter.org/store/weed-models/individual_weed_models.html



Plant List Suggestions for a Wyoming Big Sagebrush Ecological Site

(Listed by functional group)

Shrubs:

Wyoming Big Sagebrush – *Artemisia tridentata ssp. Wyomingensis*

Perennial grasses:

Thurbers needlegrass – *Achnatherum thurberianum*

Bluebunch wheatgrass – *Pseudoroegneria spicata*

Sandberg's bluegrass – *Poa secunda*

Perennial forbs:

Common yarrow – *Achillea millefolium*
(previous year seed heads are versatile to use any time of the year)

Wild onion – *Allium sp.*

Milkvetch – *Astragalus sp.*

Hawksbeard - *Crepis sp.*

Buckwheat - *Eriogonum sp.*

Desert parsley - *Lomatium sp.*

Phlox sp.

Annual forbs:

Prickly lettuce – *Lactuca serriola*

Fiddleneck- *Amsinckia sp.*

Tumble mustard - *Sisymbrium altissimum*

Clasping pepperweed – *Lepidium*

perfoliatum

Invasive species:

Cheatgrass – *Bromus tectorum* (use dried cheatgrass for best effect)

Spotted knapweed – *Centaurea maculosa*

(use artificial plants to prevent spread of this noxious weed)

Steps to Assemble Succession Plots

#1. Choose a site that is disturbed or can be rototilled. We have used roadsides, arenas or bare areas near where plants are easily accessible. Rototill area.

Rototilling improves the ability to “plant” specimens in the plots.

#2. Mark plots. Best size is approximately 1m X 1m with a path between each plot of about ½ m. Plots can be marked with flags on the corners or the ground can be spray painted but it is important to show the delineation of each plot.

#3. Collect plant specimens. The demonstration can be done any time of the year, but it is best to collect dried cheatgrass and annual/ perennial forb seedheads. Perennial grasses can be dug in dormancy or when actively growing. Use pruners to lop sagebrush.

#4. Arrange plants in percentages as listed on the plot map. It is helpful to “plant” the plants so the wind doesn't push them down. Remember to provide for open space in these plant communities.

#5. You are now ready for the demonstration.

Suggested percentage plant composition of succession demonstration plots

