

Appendix A. Plant Community Monitoring Protocol Description

Sampling structure: Nested quadrat method located within each macroplot.

Sampling Unit: 1 10 m radius macroplot containing four 1 x 1 m herbaceous quadrats, two 11.7 foot radius shrub plots and one 10 m radius tree plot (Figure 1).

Pre-monitoring background work: Identify plant communities and desired ecological conditions for each community.

Placement of Plots: 4 herbaceous plots, 2 shrub plots and 1 tree plot are nested in each macroplot. Herbaceous plots will be located at southern portion of plot circle at 0°, 120°, 180°, and 240° off the macroplot center. Shrub plots will be located at northern portion of plot circle at 60° and 300° off the macroplot center. The center point of the tree plot will be marked by a metal t-post. The herbaceous and shrub plots will be marked by a bent rebar at the inner corner of the plot.

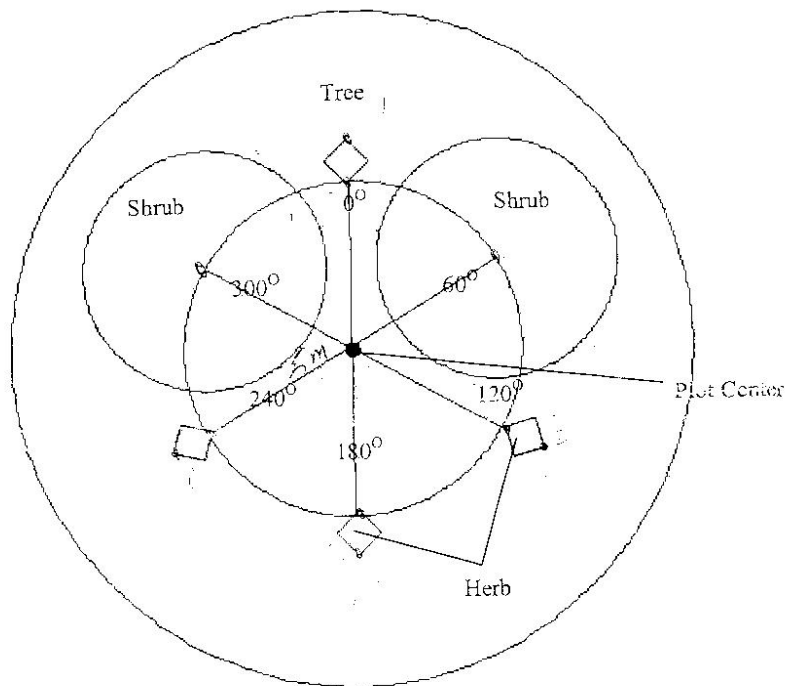


Figure 1. Macroplot design for vegetation sampling.

Data Collected: Within each herbaceous plot, all herbaceous plant species and all woody species < 1 m tall rooted within the plot will be identified to species, recorded and assigned a modified Daubenmire cover class. Within each shrub plot, all woody species > 1 m tall and < 2 cm diameter breast height will be identified to species and recorded. Within each tree plot, all woody species > 2 cm diameter breast height will be identified to species, measured, and recorded. Snags will also be measured and recorded from tree plots.

Table 1. Cover classes, class ranges, and class midpoints used in herbaceous vegetation sampling.

<u>Cover Class</u>	<u>Cover range</u>	<u>Range midpoint</u>
Class 1	0 - 1 %	0.5 %
Class 2	1 - 5%	3.0 %
Class 3	5 - 25%	15.0%
Class 4	25 - 50%	37.5%
Class 5	50 - 75%	62.5%
Class 6	75 - 95%	85%
Class 7	95 - 100%	97.5%

Frequency of Collection: Prior to project activities, year two, year five, and then every five years.

Time of Collection: Early-June to Middle July.

Data analysis: Species and range mid points will be entered in excel spreadsheets. First year sampling results will be summarized in tables by site, management unit and/or plant community. The species identified will be ranked by importance value [Importance Value = (relative frequency + relative cover)/ 2 for herbs; relative frequency + relative density)/ 2 for shrubs; Importance Value = (relative frequency + relative density + relative basal area)/ 3 for trees]. Future plant community sampling will be compared to previous year's sampling to identify changes in species diversity and abundance. Changes in species abundance will be compared to identified environmental factors or management actions.

Photopoints: Two photos are taken at each plot: one from the 180° herb plot facing north (contains whole plot) and one photo taken of the herb plot at 0°. A photoboard should be used for labeling.