

APPENDIX C

SKR HMP Vegetation Assessment Protocol

Introduction

A component of the SKR monitoring and management program is maintaining suitable vegetation conditions. SKR prefer habitats with at least 50 percent bare ground. Habitat dominated by native and non-native forbs relative to annual grasslands is more suitable for the SKR because forbs both provide seeds for SKR and dry out and fall apart after the growing season, leaving more bare ground. Dense thatch can build up in areas dominated by annual grasses and effectively preclude SKR occupation over the long term.

As part of the live-trapping program, vegetation monitoring will occur on trapping grids concurrent with trapping. As recommended by Diffendorfer and Deutschman (2003), monitored variables will include percent vegetative cover, percent bare ground, diversity/cover of grasses, and forb/grass ratio. The vegetation monitoring protocol is described here.

Survey Methods

Generally, vegetation information will be collected for quadrats placed along line transects situated between traplines on all trapping grids. The following field methods will be used.

- All transect surveys will be conducted by teams of at least two surveyors.
- A total of six transects are established in a north-south direction between traplines, perpendicular to the southern edge of the trapping grid. Three quadrats are placed along each transect for a total of 18 quadrats per trapping grid.
- A random number generating function of Microsoft Excel program is used to select a number between 1 and 15 to indicate how many meters to walk east of the south-west oriented line of traps to start the transect line. This number is entered as “transect meter” on the transect data sheet (described below).
- A 0.5-meter quadrat is initially placed at a random point along the transect using a random number generating function of Microsoft Excel program. This random number must fall between 1 and 30. This random number is entered as “1st Quad Meter.”
- The second and thirds quadrats along the transect are placed at a distance of 30 meters and 60 meters, respectively, from the first quadrat. This spacing is to maximize the likelihood of independence between the measurements along the transect.
- Each transect is walked with a measuring wheel. When the surveyor arrives at the randomly chosen point for the first quadrat of that transect, the quadrat is placed and

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oriented with its south-west corner on the point. The quadrat is 1 meter by 0.5 meter constructed of PVC pipe.

- All quadrats are labeled 1 to 3 from south to north. One surveyor sets up all quadrats, leaving pin flags to mark where the quadrats should be, and the second surveyor follows along to collect the quadrat data.
- Within each quadrat, surveyors collect the following data:
 - Estimated total vegetation cover
 - Estimated total litter cover. Litter is defined as the detritus of fallen vegetation that is dead, which is distinguished from the standing dead vegetation that is from this year's growing season and has already desiccated.
 - Estimated total cover of rock.
 - Estimated total bare ground.
 - Thatch layer, measured by a narrow measuring device or small ruler that is marked in centimeter increments. Five measurements are taken in each quadrat. They are standardized along the west edge of the quadrat at intervals marked on the quadrat frame and entered on the data sheet as measurements number 1 – 5.
 - Vegetation categories, defined as one of the following three: shrub (all woody vegetation), tall herbaceous (>10 cm), and short herbaceous (< 10 cm).
 - Dominant species within each vegetation category, recorded as the three dominant species for tall and short herbaceous and the two dominant species for the shrub layer, their percent cover, and phenology (flowering, green but not flowering, seed-set, or desiccated).
 - Other relevant miscellaneous notes about the grid.

Site-specific information for each grid will be collected on a single data cover sheet (see attached) to reduce the amount of redundant information that needs to be entered on each data sheet. The data cover sheet includes the names of the surveyors, the unique identifier for the grid (Grid ID), the Grid Name (general name for the grid; e.g., Lake Mathews Reserve), Coordinates (in UTM NAD 83), Source of Coordinates, and the Date. A separate data sheet will be used to cover each transect (see attached data sheet).