

Sage grouse habitat conditions
Mapping exercise - Sheldon PMU

The refuge has a vegetation map on GIS. Existing vegetation was mapped between 1992 and 1996. 1:24,000 topo quads were used as the base, with orthophoto quads and aerial photos used for interpretation. Map units were coded to seral stage within vegetation type. However, most of the shrub communities on the refuge were mature stage, so very few areas were mapped as low or mid-seral.

The steps taken to develop the sage grouse restoration habitat map are outlined below.

- Step 1)** Vegetation was classified into one of three categories for the sage grouse plan
- 1) YES - sagebrush habitat types
 - 2) NO - habitat type not used by sage grouse. Habitat type is generally not intermixed with sagebrush. This includes desert shrub and aquatic types
 - 3) OTHER - habitat types interspersed with sagebrush, usually in small inclusions, or habitat type used a minor amount by sage grouse (i.e. herbaceous riparian).

Table 1. Habitat types grouped by sage grouse use on Sheldon PMU.

YES	NO	OTHER
Wyoming big sagebrush	salt desert shrub	mountain mahogany
low sagebrush	black greasewood	juniper
mountain big sagebrush	bud sagebrush	aspen
mountain big sage/bitterbrush	spiny hopsage	herbaceous riparian
basin big sagebrush	winterfat	mixed deciduous shrub
mountain shrub	cattail-bulrush	willow
silver sagebrush	pondweed	squirreltail
black sagebrush	open water	wheatgrass
		terrestrial non-vegetated

The distribution of the broad habitat categories were used to adjust the boundaries of the PMU. Large expanses of habitat not used by sage grouse were excluded from the PMU.

The PMU is dominated by sagebrush habitats, which cover 89% of the area.

Step 2): The vegetation map was useful for identifying R3 habitats, but not R1 and R2 habitats.

R3 - Habitats mapped as juniper tree/shrub/grass on our vegetation coverage were identified as R3. Habitats classed as mature tree were mapped as "OTHER" habitats for the sage grouse plan. Juniper stands are confined to the west edge of the refuge, along Massacre Rim.

Other resources were used to identify R1 and R2 habitats.

Step 3): R1 - The fire history coverage was used to map R1 habitats. The fire history coverage was overlain on the vegetation map. Burns where monitoring data shows sagebrush has recovered to at least 10% canopy cover were removed. All other burns were identified as R1 habitat. Refuge monitoring shows native plant species dominate after burning. Habitats classed as grassland on the vegetation map were mapped as R1 as well.

Step 4): R2 - Our vegetation map did not classify understory withing sagebrush stands. However, over 900 vegetation plots were run between 1992 and 2001. These plots were used to help identify areas to classify as R2. The locations of the veg plots were plotted and plots with less then 15% total herbaceous cover (excluding cheatgrass) highlighted. Using knowledge of refuge staff and areas where highlight vegetation plots dominated, R2 habitat was delineated.

R4 - The refuge has no large sites that are dominated by annual plants or bare ground. No seedings occur on the refuge and monitoring shows little cheat grass on burned areas. Cheat grass is present, but it occurs in small patches (<0.1 acre) or is scattered within sites dominated by native herbaceous species. Refuge staff are not aware of any burns that are dominated by cheatgrass. No R4 habitats were identified.

Step 5): All sagebrush habitats not identified as R1, R2, or R3, types were considered to be key (R0).

SUMMARY OF ACREAGES:

Sheldon PMU - 476,267

R0 - 264,125

R1 - 68,039

R2 - 85,008

R3 - 5,740

R4 - 0