APPENDIX H HABITAT DESCRIPTIONS

This appendix summarizes information on the five management indicator species selected for the Dakota Prairie Grasslands: western prairie fringed orchid, plains sharp-tailed grouse, greater prairie chicken, sage grouse, and black-tailed prairie dog. The habitat needs for the three grouse species were used to help define vegetative structure categories for each National Grassland. These definitions are based on existing information, and are expressed as autumn visual obstruction readings (VOR), in inches. Monitoring data collected over several years will be used to refine these definitions (see Chapter 4), as we learn more about local site potential, the impact of over-winter loss on residual vegetation, and management indicator species population response. Definition changes would be documented through the amendment process.

TALLGRASS PRAIRIE WETLANDS

Management Indicator Species: Western Prairie Fringed Orchid *(Platanthera praeclara)*

The western prairie fringed orchid (threatened species) is the management indicator species for the biological community associated with wetlands on the Sheyenne National Grassland. A list of other plant species commonly found in association with this species is provided in the supporting FEIS.

The orchid is associated with graminoid wetlands within the Hummocky Sandhills and Deltaic Plain habitat associations on the SNG. These habitats are primarily classified as palustrine emergent temporarily or seasonally flooded wetlands. Extreme yearly and seasonal fluctuations in water depth are characteristic of these prairie wetlands. These water depth fluctuations frequently result in significant plant composition shifts within these habitats. Orchid populations shift in time and space in response to water dynamics. The orchid is commonly associated with the basins and margins of shallow wetlands, the wet-mesic margin of deeper wetlands, and waterway margins. Common plant species of this habitat include northern reedgrass, wooly sedge, switchgrass, Baltic rush, and hedge nettle.

The orchid and its associated species rely on a natural disturbance regime that includes periodic fires, drought, flooding, grazing, and rest. For this species, these ecological processes are the driving force in the maintenance and enhancement of quality habitat.

Burning may directly impact orchids through mortality of individual plants, and indirectly through effects on the orchid's habitat. The tallgrass prairie of this region is believed to have a fire return interval of 1 to 5 years. It is unlikely, however, that the periodically flooded wetlands associated with orchids burned as frequently. Because dry conditions are more inclined to occur late in the growing season, fall burning may be a better management tool than spring burning for the orchid and its habitat. However, the fire regime of this region was highly variable in the past, so management should avoid uniformity in timing of burns or in intervals between burns that artificially simplifies the fire regime.

Grazing was historically an important process within this prairie ecosystem. Properly timed and spatially managed grazing can help create seral conditions that are advantageous to orchid establishment. However, repeated grazing throughout the growing season may be detrimental to individual orchids, both in terms of reducing carbohydrate reserves, and in preventing plants

HIGH STRUCTURE GRASSLANDS

Management Indicator Species: Greater Prairie Chicken (*Tympanuchus cupido pinnatus*)

The prairie chicken is the management indicator species for high structure grasslands without scattered shrubs on the Sheyenne National Grassland. Other species associated with greater prairie chicken habitat are bobolink and Argos skipper.

In the northwestern part of the species range, such as on the Sheyenne National Grassland, most greater prairie chicken hens select undisturbed (no livestock present) and relatively tall and dense cover for nest sites. VORs at nest sites in the spring average approximately 10 inches. Like sharp-tailed grouse, prairie chicken hens frequently select clumps of herbaceous cover taller than the surrounding vegetation for their nest sites. Average VORs of 6 or 8 inches is recommended as the standard in the spring to provide suitable cover for nest-sites. On the Sheyenne National Grassland, high structure will be defined as areas with average VOR transect readings greater than 6.0 inches. It is recognized that some over-winter loss in vegetative height-density will occur, the extent of which will be quantified through monitoring (see Chapter 4).

A range of 30 to 50% of the habitat around display grounds should be managed as quality nesting cover to establish or maintain populations. Individual patch sizes of quality nesting cover across pastures or range sites should be a minimum of 160 acres.

Nesting cover for early nests is initially provided by residual herbaceous cover but quality nesting cover, both residual and current year, is important throughout the nesting and brooding season. Prairie chicken hens select midland sites within the hummocky sandhills habitat association for nesting. The midland sites provide the tallest and densest cover that is not subject to regular flooding. The amount of use of upland sites and other habitat types for nesting that might occur if quality nesting cover was available on those sites is unknown.

Midland and lowland sites that are grazed or burned the previous year but idled during the current year and that have average VORs exceeding 10 inches through the summer brooding season provide quality brooding habitat. A diversity of plant species composition and cover levels across the landscape helps provide quality brooding habitat. This diversity should include conditions that favor forb production and a full range of cover levels within pastures or grazing allotments, including substantial areas with relatively high, vertical grassland structure remaining through August as escape cover from predators, especially raptors.

To provide quality nesting and brooding habitats, herbaceous vegetation and litter should be allowed to accumulate over a period of years. However, to maintain optimum breeding and foraging habitats over time requires periodic burning or intensive grazing once every 3 to 5 years to maintain vigor of native grasses and forbs. This interval should be extended when drought conditions occur.

High-structure grasslands near croplands are preferred winter habitats. Winter foods for prairie chickens include high-energy crops like corn, sunflower, and soybean supplemented with some grass and forb seeds. Shrubs (fruit) and tree buds are also consumed but generally to a lesser extent.

Black-tailed prairie dogs occupy prairies (shortgrass and mixed grass) and shrublands dominated by sagebrush on the northern plains. Most soils on the NFS lands in the planning area are suitable for prairie dog burrowing. Even soils with shallow bedrock are known to support prairie dog colonies. Prairie dogs may prefer some soils but few soils in the planning area preclude prairie dog burrowing.

Slopes with suitable soils and vegetation that are less than 10 percent slope are considered preferred habitat. Slopes ranging from 10 to 30 percent are classified as secondary or suitable habitat. Areas with average slopes exceeding 30 percent are identified as unsuitable.

All water and wetlands are classified as unsuitable for prairie dog colonization. Areas with shallow water tables are also classified as unsuitable.

Heavily grazed sites where livestock concentrate are more likely to be colonized by prairie dogs. Soil disturbances in the form of water developments, pipelines, range ripping and furrowing, and past cultivation are also good predictors of suitable prairie dog habitat and potential sites likely to be colonized by prairie dogs.

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