

Appendix H: U.S. Forest Service Region 2 Sensitive Plant Species Known from the Black Hills with Rationale for Further Analysis

Scientific Name/ Common Name/ Plant Code	Global rank; SD State rank; WY State rank	Black Hills Distribution and Habitat	Known to Occur in Project Area	Suitable Habitat in Project Area	Analyzed Further
<p><i>Botrychium campestre</i>/ prairie moonwort, Iowa moonwort/ BOCA5</p>	<p>G3/G4; SD-S1; WY-S1</p>	<p><i>Botrychium campestre</i> ranges from the Great Lakes, across Iowa and Nebraska to eastern Colorado and northward to Alberta and Saskatchewan. Rangelwide the species occurs primarily on well-drained soils in non-forested habitats, occasionally under shrubs in or at the margins of these habitats. Seven occurrences have been confirmed on BKF lands. Additional sites exist on private land and at Wind Cave National Park. <i>Botrychium campestre</i> is extremely inconspicuous. Rangelwide, it is considered a grassland species associated with sandy grassland habitats in prairies, dunes, railroad sidings, and fields over limestone. Black Hills sites occur on substrates with at least some component of limestone and are primarily in open grassland habitats usually with high forb diversity and sometimes with a high percentage of bare and rocky soils. Little bluestem (<i>Schizachyrium scoparium</i>) and western snowberry (<i>Symphoricarpos occidentalis</i>) occur at the majority of sites. Black Hills occurrences range in elevation from 3,870 to 5,640 feet.</p>	<p>Yes</p>	<p>Unknown because suitable habitat is not yet defined; analyzed in effects analysis</p>	<p>Yes</p>

<p><i>Botrychium lineare</i>/ narrowleaf grapefern, slender moonwort/ BOLI7</p>	<p>G2?; SD-S1; WY-S1</p>	<p><i>Botrychium lineare</i> is historically known from California and Utah and currently from Colorado northward to Washington and Montana and Alaska and the Yukon Territory. Western populations of the species occur primarily on limestone substrates in a variety of habitats including heavily forested sites and grassy meadows, fen-like seeps and gravelly roadsides. Five occurrences have been confirmed on BKF lands. All sites occur in open conditions on limestone substrate. Two sites are located on old (estimated 15-25 years) native surface roadbeds. A third site is located adjacent to a gravel roadbed in open grassland. A fourth site, located on a large, open, north-facing, little bluestem dominated hillside, is not associated with any road development. A fifth site, also not associated with any road development, is located in an open forb dominated area on the bank of a small perennial stream. Elsewhere in its range, this species has often been documented in areas of road disturbances and other human and natural disturbances. Black Hills occurrences range in elevation from 4,200 (in Wind Cave National Park) to 6,160 feet.</p>	<p>Yes</p>	<p>Unknown because suitable habitat is not yet defined; analyzed in effects analysis</p>	<p>Yes</p>
<p><i>Carex alopecoidea</i>/ foxtail sedge/ CAAL8</p>	<p>G5; SD-S2; WY-S2</p>	<p><i>Carex alopecoidea</i> is widely distributed from eastern to central Canada, the northeastern United States, the Great Lakes region south to Tennessee, and west to North Dakota and the Black Hills of South Dakota and Wyoming. Rangewide, habitat includes seasonally saturated meadows and openings in alluvial woods and stream banks, usually over calcareous substrates. In the Black Hills, <i>Carex alopecoidea</i> is currently known from two general areas: The Cement Ridge area along the South Dakota-Wyoming border, and in the Bear Lodge Mountains in Wyoming. <i>Carex alopecoidea</i> is primarily found along open, perennial streams, often with old beaver dams or ponds. Occurrences have also been found in spruce dominated riparian areas and in drainages with dense shrub cover. Plants are primarily documented in the transitional areas between saturated soils and the more mesic upland areas. Black Hills occurrences range in elevation from 3,840 to 5,900 feet.</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>

<p><i>Cypripedium parviflorum</i>/ lesser yellow lady's slipper/ CYPA19</p>	<p>G5; SD-S3; WY-S2</p>	<p><i>Cypripedium parviflorum</i> is primarily circumboreal in distribution and rangewide is generally found in shady deciduous and mixed woodlands near streams, shrublands, swamps, bogs, and wet forests. Habitat in the Black Hills includes stream banks under both spruce and deciduous overstories, moist cliffs (usually north-facing), and moist areas/seeps under white spruce (<i>Picea glauca</i>) or mixed conifer forest. Occasionally, found on upper mesic forest slopes. Black Hills occurrences range in elevation from 3,500 to 6,500 feet.</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>
<p><i>Epipactis gigantea</i>/ giant helleborine/ EPGI</p>	<p>G4; SD-S1; WY-S1</p>	<p><i>Epipactis gigantea</i> occurs in western North America from British Columbia south to California, and east to Texas. Rangewide, <i>Epipactis gigantea</i> is known from wet meadows, seepage slopes, and the base of cliffs along streams and rivers. In the colder northern portions of its range, the species may be confined to warm springs habitats. In the Black Hills it is known only from Cascade Springs in Fall River County, South Dakota, at 3,400 feet. It is likely dependent upon the constant moisture and warmth provided by the springs. No other warm springs are known on Forest Service-administered land in the Black Hills.</p>	<p>Yes</p>	<p>No</p>	<p>No – there are no proposed routes in the Cascade area. Habitat elsewhere is highly unlikely due to the lack of warm springs.</p>
<p><i>Lycopodium complanatum</i>/ trailing clubmoss/ LYCO3</p>	<p>G5; SD-S1; WY-S1</p>	<p><i>Lycopodium complanatum</i> is circumboreal and common across northern latitudes, but disjunct or sparse at the southern limits of the species' distribution, such as in the Black Hills. Rangewide, it is restricted to moist (not saturated) microhabitats within boreal plant communities in ravines, steep drainages, and on moist streamside benches. Nine known occurrences on BKF lands. These occurrences are located in the northern Black Hills on shaded, north-facing, white spruce dominated slopes often with paper birch (<i>Betula papyrifera</i>) or quaking aspen (<i>Populus tremuloides</i>). Black Hills occurrences range in elevation from 4,960 to 6,340 feet.</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>
<p><i>Platanthera orbiculata</i>/ lesser roundleaved orchid/ PLOR4</p>	<p>G5; SD-S2; WY-S1</p>	<p><i>Platanthera orbiculata</i> is endemic to the boreal regions of northern North America, with a more southern distribution in the eastern United States. Black Hills occurrences are found primarily on shady, north-facing slopes in paper birch/hardwood or white spruce forests on moist, rich, humus soil. Black Hills occurrences range in elevation from 4,350 to 6,150 feet.</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>

<i>Salix candida</i> / sage willow/ SACA4	G5; SD-S1; WY-S2	<i>Salix candida</i> is an obligate wetland species known to occur from eastern Canada to Alaska and across the northern United States. In the Black Hills it is limited to one verified extant occurrence west of Deerfield (McIntosh Fen, 6,000 feet). There is also a historical collection for the general area "from Loring Siding to Minnekahta" (unknown if the historical collection is from private or Forest Service land). Habitat includes cold seep or spring-fed saturated substrates produced by unusual hydrologic conditions where sedimentary layers of the Limestone Plateau intersect impermeable schist or shale of the crystalline Central Core. Community type associated with the occurrence is wet meadow/fen.	Yes	Yes	Yes
<i>Salix serissima</i> / autumn willow/ SASE2	G4; SD-S1; WY-S1	<i>Salix serissima</i> occurs primarily in northern boreal bogs throughout its range and is a disjunct relic in the Black Hills. Four known occurrences on BKF lands in fens and wet meadows often dominated by <i>Carex</i> spp. and other <i>Salix</i> spp. Known from McIntosh Fen, Middle Fork of Boxelder Creek, Nahant and Silver Creek. Appears to occur in the same unique hydrologic conditions as <i>Salix candida</i> . Black Hills occurrences range in elevation from 5,620 to 6,000 feet.	Yes	Yes	Yes
<i>Sanguinaria canadensis</i> / bloodroot/ SACA13	G5; SD-S4; WY-N/A	<i>Sanguinaria canadensis</i> occurs in moist forests from Nova Scotia south to Florida and west to Manitoba and Kansas. In the Black Hills it occupies floodplains, forested terraces, drainage bottoms, and north-facing footslopes in open, rich hardwood plant communities. The currently known range in the Black Hills is limited to the northeast portion of the Black Hills, from the east side of Spearfish Canyon to west of Tilford. Black Hills occurrences range in elevation from 3,940 to 5,000 feet.	Yes	Yes	Yes
<i>Viburnum opulus</i> var. <i>americanum</i> / highbush cranberry/ VIOPA2	G5T5; SD-SNR/SU; WY-S2	<i>Viburnum opulus</i> var. <i>americanum</i> is widely distributed across north central North America. In the Black Hills it occurs at mid-elevations in wet, shaded habitats along streams, springs and canyon bottoms. The large majority of documented Black Hills occurrences are in drainage bottoms or low slopes with moist soil conditions with partial shading. Currently known sites are primarily associated with paper birch/ironwood (<i>Ostrya virginiana</i>) and paper birch/hazelnut (<i>Corylus cornuta</i>) communities, with or without white spruce or quaking aspen. A few sites are in ponderosa pine/oak (<i>Pinus ponderosa/Quercus macrocarpa</i>). Paper birch is present at almost all currently known sites. Black Hills occurrences range in elevation from 3,800 to 5,700 feet.	Yes	Yes	Yes

<p><i>Viola selkirkii</i> great-spurred violet/ VISE2</p>	<p>G5?; SD-S1; WY-N/A</p>	<p><i>Viola selkirkii</i> is a circumboreal herbaceous species, and rangewide it is locally abundant in specialized microsites in coniferous and deciduous forests. Thirteen known occurrences on BKF lands with additional occurrences documented from Custer State Park and Mt. Rushmore National Monument. Black Hills occurrences are restricted to a concentrated area (about 36 square miles) of the central core on igneous or metamorphic bedrock. Microhabitats are often moist, cold air drainages, in shaded to open areas, and often in the vicinity of granitic rock outcrops. White spruce is usually the dominant overstory with a variable understory. All currently known occurrences on Forest Service lands are located within the Black Elk Wilderness and/or the Norbeck Wildlife Preserve. Black Hills occurrences range in elevation from 5,240 to 7,000 feet.</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>
<p><i>Note:</i> Codes are from the PLANTS Database at http://plants.usda.gov/ Rank is from Natureserve at http://www.natureserve.org Distribution and Habitat is from the following sources: USDA Forest Service. 2008. Black Hills National Forest Plant Database. Unpublished Database. Updated April 2008. USDA Forest Service. 2005. Phase II Amendment and Final Environmental Impact Statement for the 1997 Land and Resource Management Plan. Black Hills National Forest. Custer, South Dakota. Available on-line at http://www.fs.fed.us/r2/blackhills/projects/planning/index.shtml</p>					