

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: <i>Platanthera orbiculata</i> (Pursh) Lindl. / Lesser roundleaved orchid, Large roundleaved orchid / PLOR4			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	A	<i>Platanthera orbiculata</i> is currently only reported from the Black Hills of South Dakota and Wyoming within Region 2. It is listed as S1 in Wyoming and S2 in South Dakota. Populations in Wyoming and South Dakota are among the southernmost populations in the western half of North America. Occurs as scattered individuals or small colonies in the BlackHills with populations rarely reaching 100 individuals. This type of distribution pattern is similar to how it occurs throughout its range. Region 2 populations are disjunct from the primary range of the species. Confidence in Rank High	<ul style="list-style-type: none"> • PLANTS, NRCS, 2001 • NatureServe, 2001 • Smith, 1993 • BHNH Sensitive Plant Monitoring data, 2000, 2001 • Leshner and Henderson 1998
2 Distribution outside R2	C	Widespread in the Northern 1/3 of the United States and across most of Canada. It extends south to Tennessee and South Carolina in the eastern United States. Often occurs as scattered individuals or small colonies in Minnesota. Confidence in Rank High	<ul style="list-style-type: none"> • PLANTS, NRCS, 2001 • NatureServe, 2001
3 Dispersal Capability	B	Orchids produce small, lightweight seeds that can travel well over 1000 miles, but the appropriate habitats are limited in the Black Hills. Confidence in Rank Medium	<ul style="list-style-type: none"> • Smith, 1993
4 Abundance in R2	B	Currently, over 30 populations of <i>Platanthera orbiculata</i> have been found in the Black Hills on Forest Service administered land. Three of these populations occur in the Bearlodge Mountains of Wyoming, the remainder occurring in South Dakota. The total number of above ground individuals at the currently known sites is over 600. There is additional un-surveyed potential habitat on the Black Hills National Forest. Catastrophic fire due to the build up of fuels could impact individual populations or population clusters. Due to the amount of private property in the northern Black Hills, there are likely additional populations on non-Forest Service administered lands. Confidence in Rank High	<ul style="list-style-type: none"> • BHNH Sensitive Plant Monitoring data, 2000, 2001

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5 Population Trend in R2	D	Population trends are unknown at the present, but monitoring is underway at the present time. Numbers of individuals in monitored populations increased from 2000 – 2001, but this may be due to additional surveyors, more extensive surveys and partially in response to a recent series of wet years that have created better growing conditions. Both the orchid and its associated boreal species likely expand during cool wet periods and contract during extended droughts. Given the unpredictable nature of this species and its dependency on high soil moisture, it would not be unusual for all individuals from many of the sites to disappear or go dormant during dry years. It would require monitoring over many years to establish a population trend for this species. Confidence in Rank High	<ul style="list-style-type: none"> • Smith, 1993 • BHNF Sensitive Plant Monitoring data, 2000, 2001
6 Habitat Trend in R2	A	The habitat trend is not completely clear; however, white spruce is believed to have increased since settlement of the Black Hills, with a corresponding reduction in areas dominated by deciduous trees. <i>Platanthera orbiculata</i> appears to prefer a deciduous overstory, but in the Black Elk Wilderness, it occurs in Spruce dominated areas with very little deciduous component. It is uncertain if these populations are hanging on, or if the species needs the spruce when growing on particular soil types. Confidence in Rank High	<ul style="list-style-type: none"> • Parrish et al, 1996

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<p>7 Habitat Vulnerability or Modification</p>	<p>B</p>	<p>In the Black Hills, the primary risk to large round-leaved orchid is large-scale alterations of cool, moist boreal habitats. The most likely factor to cause such large-scale alterations of boreal habitats is a prolonged drought or persistent warmer and drier climatic conditions. Boreal habitats of the Black Hills have retreated to the coolest settings available; widespread drying and warming could alter orchid habitat by reducing soil moisture levels below those needed to sustain the orchid, its plant associates and its mycorrhizal fungi. Widespread cessation of periodic disturbances that maintain birch/hazelnut forest would be detrimental to the persistence of the orchid and its habitat. Disturbances (especially fire) are important for maintaining the orchid's plant associates, reducing spruce and pine expansion and enhancing available soil moisture at orchid sites. Continued fire suppression will favor the expansion of spruce to the detriment of early and mid-successional fire-dependent species such as paper birch, and increase the probability of large-scale crown fires. Recreational use is a risk factor in the Black Elk Wilderness, where the orchid occurs near trails. Livestock and wildlife use can also negatively affect the species' habitats by impacting soils and altering microclimate. However, most of the large round-leaved orchid sites in the Black Hills are on steep slopes with dense shrub vegetation, both of which deter livestock. Also, the prostrate leaves are probably very difficult for mammalian herbivores to browse (Ode, personal communication). The introduction of invasive weeds by vehicles, animals, or humans is also a risk to the orchid and its habitats. Canada thistle (<i>Cirsium arvense</i>) occurs at a few of the large round-leaved orchid locations but is limited to forest edges created by trails, roads, and other disturbances or openings. Treatment of weed species at these sites could negatively affect adjacent large round-leaved orchid populations. Treatment of insect pests could pose a serious risk to the orchid's moth pollinators, which could not be replaced or restored since their identification, life history, host species, and habitat associations are unknown. Other impacts to its insect pollinators, such as climate change or landscape-scale habitat changes, are also potentially detrimental.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> Parrish et al, 1996

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8 Life History and Demographics	D	<p><i>Platanthera orbiculata</i> reproduces only by seed. No asexual forms of reproduction are known. While orchid seeds have the capacity for long distance dispersal, no information is available about the interactions of populations in the Black Hills. All other locations are distant from the Black Hills populations, so seed from elsewhere establishing new populations in the Hills is unlikely. Some species of <i>Platanthera</i> are known to respond favorably to disturbance, but the ability of <i>Platanthera orbiculata</i> to respond to different disturbances is unknown. Large-scale fires may enhance soil moisture availability in protected orchid sites, but have the potential to alter successional dynamics and degrade habitats of the large round-leaved orchid and/or its species associates. However, in time, mid-seral birch/hazelnut habitat would likely develop on burned sites, especially following high moisture years. Therefore, the maintenance of large and small-scale disturbances, such as fire, is important in creating a shifting mosaic of successional stages and vegetation structures. Activities or stochastic events that interfere with the viability of its species associates or distribution of its habitat are a risk to the species. In particular, impacts (human, stochastic, or climatic) to its pollinators or fungal associates could negatively affect populations. Our understanding of the species' population demography and abundance is confounded by its tendency to go dormant or die during periods of drought.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> • Smith, 1993 • Lesher and Henderson 1998
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National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)¹ to occur:

¹ Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

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<u>Colorado NF/NG</u>		<u>Kansas NF/NG</u>		<u>Nebraska NF/NG</u>		<u>South Dakota NF/NG</u>		<u>Wyoming NF/NG</u>			
Known	Likely	Known	Likely	Known	Likely	Known	Likely	Known	Likely	Known	Likely
Arapaho-Roosevelt NF		Cimarron NG		Samuel R. McKelvie NF		Black Hills NF	X	Shoshone NF			
White River NF				Halsey NF		Buffalo Gap NG		Bighorn NF			
Routt NF				Nebraska NF		Ft. Pierre NG		Black Hills NF	X		
Grand Mesa, Uncompahgre, Gunnison NF				Ogalala NG				Medicine Bow NF			
San Juan NF								Thunder Basin NG			
Rio Grande NF											
Pike-San Isabel NF											
Comanche NG											
Pawnee NG											

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