Heritage Ranking Form - Global Rank

Scientific Name: Kalmiopsis fragrans

Common Name: North Umpqua kalmiopsis

Classification: Vascular Plant

Range Extent: C = 250-1,000 sq km (~100-400 sq mi)

571 km2 calculated using convex hull, in the North Umpqua River area in Oregon.

Population Size: F = 10,000 - 100,000 individuals

Comments: Latest counts from 2000-2010 total about 30,000 plants.

Number of Occurrences: B = 6 - 20

Comments: Twelve occurrences using 1 km separation distance.

Area of Occupancy: D = 6-25 4-km2 grid cells

Comments: 15 4km2 grid cells occupied with extant EOs.

Good Viability: C = Few (4-12) occurrences with excellent or good viability or ecological integrity

Comments: 5 EOs with good viability, using 1 km separation distance.

Environmental Specificity: A = Very narrow. Specialist or community with key requirements scarce

Comments: Associated with a specific, uncommon rock type and requires particular light conditions for flowering and fruiting.

Short Term Trends: G = Relatively Stable (<=10% change)

Comments: Appears to be stable.

Long Term Trends:

U = Unknown

Comments: None

Threat Impact:

C = Medium

Comments: (1) Potential threat from timber harvest practices and road-building. The rocky and often steep nature of K. fragrans sites, its Sensitive status, the location of several occurrences within a Research Natural Area, and the occasional co-occurrence of K. fragrans with federally-managed peregrine falcons all afford it some degree of protection from direct impacts. However, Forest Service surveys in advance of both logging and road building projects have uncovered K. fragrans populations, demonstrating that the surrounding forest is often believed suitable for these activities, and that indirect impacts are therefore a risk for at least some sites. Habitat disturbance that results in reduced soil moisture and increased sunlight has been observed to cause population decline, including increased anthocyanic pigmentation, greater disease susceptibility, and higher mortality; further studies are underway to assess how the removal of forest overstory along the edges of tuffaceous outcrops might impact K. fragrans (Meinke and Kaye 2007).

(2) Forest wildfires had also been suggested as a threat. A study of the recovery of two K. fragrans sites from fire (Amsberry et al. 2007) showed that, although fire significantly reduced the standing cover of K. fragrans plants compared to an unburned site, a portion of the plants within each of the burned populations survived, resprouted, and grew slightly faster than those at the unburned site, though with relatively slow regrowth overall. Plants at the burned sites also flowered more profusely than those at the unburned site; the sporadic creation of canopy openings by fire (or other disturbance) may be a critical process facilitating sexual reproduction in this species (Amsberry et al. 2007). Overall, the results of this study seem to suggest that, while fire may pose a short-term risk to the persistence of individual K. fragrans populations by reducing standing biomass, it appears to be an ultimately tolerable and perhaps even necessary process for this species over the longer term.

(3) Herbivory, presumably by deer, impacted significant numbers of plants at one of the sites monitored by Amsberry et al. (2007). The degree to which such herbivory may be a rangewide threat should be further investigated.

(4) There is no record of K. fragrans being mass collected in the wild, and wild collection does not appear to be a significant current threat. K. fragrans is relatively easily grown from seed and commercially-grown plants are available in the horticultural trade (Meinke and Kaye 2007).

(5) Calculated as moderately vulnerable to climate change.

Intrinsic Vulnerability:

B = Moderately vulnerable

Comments: Mature plants (shrubs) are probably fairly resistant whereas seedlings are probably very vulnerable.

Heritage Rank:

G2

Comments: The number of known populations has increased since this species was first ranked, and those populations appear to be stable. However, reproduction seems to be primarily vegetative and only one seedling has ever been seen in the wild. Threats appear to be moderate, but high-intensity fires or logging activities could put populations at risk. The potential impact of herbivory is not yet well understood.

Rank Notes: Calculator Rank (unrevised)=G3. Sexual reproduction of this species appears to be quite low, and most population expansion is vegetative. Plant counts may not accurately reflect the number of genetically distinct individuals. Since this species was only recently described, long-term trends are unknown.

Reference: Amsberry, Mitchell, Martin, and Meinke. 2007. Evaluating population viability and effects of fire on Kalmiopsis fragrans. Prepared for U.S. Forest Service, Umpqua National Forest. 47 pp. Meinke, R.J. and T.N. Kaye. 2007. Kalmiopsis fragrans (Ericaceae), a new distylous species from the southern Cascade Mountains of Oregon. Journal of the Botanical Research Institute of Texas 1: 9-19.

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