

Heritage Rank Status Factors

Elcode IMGASN2042
Gname VORTICIFEX KLAMATHENSIS SINITSINI
Gcomname SINITSIN RAMS-HORN

Number of Occurrences

A = 1 - 5

Comments Known to occur only in Barkley Spring (type locality), Upper Klamath Lake, Klamath County, Oregon (Furnish et al., 1997; Furnish and Monthey, 1999).

Number of Occurrences with Good Viability

B = Very few (1-3) occurrences with good viability

Comments Known to occur only in Barkley Spring (type locality), Upper Klamath Lake, Klamath County, Oregon (Furnish et al., 1997; Furnish and Monthey, 1999).

Population Size

U = Unknown

Comments

Range Extent

A = <100 km² (less than about 40 square miles)

Comments Known to occur only in Barkley Spring (type locality), Upper Klamath Lake, Klamath County, Oregon. There is probable occurrence on adjoining public lands in the Winema National Forest and Upper Klamath Lake National Wildlife Refuge (Frest and Johannes, 1996a; Furnish et al., 1997; Furnish and Monthey, 1999).

Area of Occupancy

A = <0.4 km² (less than about 100 acres)

LA = <4 km (less than about 2.5 miles)

Comments Known to occur only in Barkley Spring (type locality), Upper Klamath Lake, Klamath County, Oregon (Frest and Johannes, 1996a; Furnish et al., 1997; Furnish and Monthey, 1999).

Long-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

U = Unknown. Long-term trend in population, range, area occupied, or number or condition of occurrences unknown

Comments Unknown

Short-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

U = Unknown. Short-term trend in population, range, area occupied, and number and condition of occurrences

unknown.

Comments Single population has not been studied long enough.

Threats

A = Substantial, imminent threat. Threat is moderate to severe and imminent for most (> 60%) of the population, occurrences, or area. Ecological community occurrences are directly impacted over a widespread area, either causing irreversible damage or requiring long term recovery

Scope High **Severity** Moderate **Immediacy** High

Comments Cold springs in the Klamath lake basin in southwestern Oregon have all been affected by grazing, water diversions, and road building (Furnish and Monthey, 1999). The single definite remaining site is threatened by eutrophication, urban, agricultural, and industrial pollution, and habitat modification to accommodate Endangered sucker fish species spawning grounds (Frest and Johannes, 1996a).

Number of Appropriately Protected and Managed Occurrences

A = None. No occurrences appropriately protected and managed

Comments There are no known protected occurrences. The single site is on private land at Barkley Springs (Furnish and Monthey, 1999).

Intrinsic Vulnerability

U = Unknown

Comments This local endemic may occur on adjoining public lands, but little is known about its reproductive characters or potential.

Environmental Specificity

A = Very Narrow. Specialist or community with key requirements scarce.

B = Narrow. Specialist or community with key requirements common.

Comments Barkley Springs is a large, cold spring complex with coarse substrates and rapid current velocities, with water depth ranges from a few inches to 2 feet (Furnish and Monthey, 1999). The species is a crenophile, preferring cold springs with coarse substrates, in water depth from a few inches to 2 feet in moderately rapid flow (Frest and Johannes, 1996a).

Other Considerations

NRANK: N1. Note Burch (1989) asserts there is a tremendous amount of variability in the genus *Vorticifex*. As such, this taxon is not recognized in Turgeon et al. (1998).

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Grank G1T1Q **Grank Date** 11/27/2002

Reasons

Limited number of occurrences, with restricted range. Known to occur only in Barkley Spring (type locality), Upper Klamath Lake, Klamath County, Oregon (Furnish et al., 1997; Furnish and Monthey, 1999). This single occurrence is not protected.

BCD Sources

New Sources

Frest, T.J. and E.J. Johannes. 1996a. Freshwater mollusks of the Upper Klamath drainage, Oregon. Yearly report to Oregon Natural Heritage Program, Deixis Consultants, Seattle, Washington. 72 pp.

Furnish, J., R. Monthey, and J. Applegarth. 1997. Survey protocol for terrestrial mollusk species from the Northwest Forest Plan. Version 2.0. Report to the USDI Bureau of Land Management, Salem, Oregon, October 29, 1997. Unpaginated.

Furnish, J.L. and R. Monthey. 1999. Management recommendations for aquatic mollusks. Ver. 2.0. Report submitted to USDI Bureau of Land Management, Salem, Oregon, December 1998. Unpaginated.