

Oregon Status Factors

Elcode IMGAS80150
Gname PRISTILOMA ARCTICUM CRATERIS
Gcomname CRATER LAKE TIGHTCOIL

Number of Occurrences

A = 1 - 5

Comments At present, very few *Pristiloma arcticum crateris* have been found. The Known Site Database indicates that two specimens were found in the Henderson collection in the Academy of Natural Sciences of Philadelphia, collected from the type locality in 1928, and the Smith collection at the California Academy of Sciences contains two records, collected from the Metolius River site two years apart, 1968 and 1970. Four specimens (1 sub-adult; 3 small juveniles) were found under the same piece of bark at the Bull Run Site (Burke et al., 1999). Pilsbry (1946) suggested that there might be other specimens of Henderson's, from the type locality, in the collection at the University of Colorado.

Number of Occurrences with Good Viability

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

Comments Three localities, including about 8 sites, are currently known to be occupied by the Crater Lake Tightcoil as of December 1998 (Burke et al., 1999). Frest and Johannes (2000) have recollected this species in the Rogue River National Forest at the border with Crater Lake National Park, in Winema National Forest, and along the Upper Klamath Lake.

Population Size

U = Unknown

Comments

Range Extent

D = 1,000-5,000 km² (about 400-2,000 square miles)

Comments Known from south of Crater Lake, Klamath County, Oregon. There has also been an occurrence in Jefferson County, Oregon. This species is also suspected to occur on the Winema, Umpqua, and Willamette National Forests and parts of BLM districts adjacent to these forests east of Interstate 5. It may occur throughout the Oregon Cascades in widely scattered populations (Kelley et al., 1999). *Pristiloma arcticum crateris* may occur locally throughout the Oregon Cascades. Although, it has been found in only 3 localities (including about 8 sites), these areas are widespread (Burke et al., 1999). Note this is the undescribed species from Henderson (1929).

Area of Occupancy

C = 4-20 km² (about 1,000-5,000 acres)

LC = 40-200 km (about 25-125 miles)

Comments Frest and Johannes (2000) have recollected this species in the Rogue River National Forest at the border with Crater Lake National Park, in Winema National Forest, and along the Upper Klamath Lake.

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 Unknown

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 Activities that compact soils, reduce litter and/or vegetative cover, or impact potential food sources (i.e., livestock grazing, heavy equipment use, ORVs, and camping on occupied habitats) would be deleterious to the survival and productivity of this and similar species. Natural porous soils and litter provide cover necessary for protection against temperature and humidity extremes, as well as for hiding or escape from predators. While the microclimate ranges tolerated by this species are not known, it is apparent that without suitable habitat, those ranges would be exceeded. Depending on specific site characteristics, removal of ground shading overstory would also impact this species by allowing excessive fluctuations in ground temperature and humidity. These effects may be less extreme at higher elevations and on wetter sites, but no studies have been done to evaluate such a theory, or to determine under what conditions the overstory might be less important. These snails appear to occur on wetter sites than in general forest conditions, so activities that would lower the water table or reduce soil moisture would degrade the habitat. Intense fire that burns through the litter and duff layers is devastating to most gastropods, and even light burns during seasons when these animals are active can be expected to have more serious impacts than burns during their dormant periods. Effects of fire retardant chemicals on small snails are not known and may be deleterious. Removal of logs and woody debris from occupied habitats for firewood gathering for campfires, or by a burn would degrade the habitat. Snowmobiling or skiing would impact these snails if snow, over their occupied habitats, is compacted, losing its insulative properties and allowing the litter or ground to freeze (Burke et al., 1999). Many spring meadows around Upper Klamath Lake have been channelized, diverted for irrigation, and/or are heavily grazed (Frest and Johannes, 2000).

Number of Appropriately Protected and Managed Occurrences

B = Few (1-3) occurrences appropriately protected and managed

Comments There is one protected site in Bull Run, Mt. Hood National Forest (Oregon) and one possible protected site on the border of Crater Lake National Park.

Intrinsic Vulnerability

B = Moderately Vulnerable. Species exhibits moderate age of maturity, frequency of reproduction, and/or fecundity such that populations generally tend to recover from decreases in abundance over a period of several years (on the order of 5-20 years or 2-5 generations); or species has moderate dispersal capability such that extirpated populations generally become reestablished through natural recolonization (unaided by humans). Ecological community occurrences may be susceptible to changes in composition and structure but tend to recover through natural processes given reasonable time (10-100 years).

Comments The species is vulnerable to some activities, such as grazing, prescribed fire, possibly salvage or other silvicultural activities, and recreation activities that might establish high use (dispersed or developed) campsites on the occupied habitat of a small population (Burke et al., 1999).

Environmental Specificity

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

Comments No information specific to the ecology of *Pristiloma arcticum crateris* was available as of December 1998. Found above 610 meters elevation in moist conifer forests and among mosses and other vegetation near wetlands, springs, seeps, and riparian areas. Specimens may be found on logs, among sedges, attached to decaying leaf surfaces, in litter, or inside other shells (Kelley et al., 1999). Appears to be an annual taxon which occurs in Ponderosa pine/ Douglas fir forest openings of two sorts: spring-fed meadows with abundant sedges and grasses; and along mountain streams; with considerable elevation range (Frest and Johannes, 2000).

Other Considerations

ORNHIC List 1

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Reasons

At present, very few *Pristiloma arcticum crateris* have been found. There appear to be many possible threats to its existence.

BCD Sources

New Sources

Burke, T.E., J.S. Applegarth, and T.R. Weasma. 1999. Management recommendations of survey and manage terrestrial mollusks. Ver. 2.0. Report submitted to USDI Bureau of Land Management, Salem, Oregon, October 1999. Unpaginated.

Henderson, J. 1929. The non-marine Mollusca of Oregon and Washington. University of Colorado Studies, 17: 47-190.

Kelley, R., S. Dowlan, N. Duncan, and T. Burks. 1999. Field Guide to Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan. Bureau of Land Management, Oregon State Office, Portland, Oregon. 114 pp.

Pilsbry, H.A. 1946. Land Mollusca of North America (north of Mexico). Academy of Natural Sciences of Philadelphia, Monograph 3, volume 2, part 1: 1-520.