

## California Status Factors

**Elcode** IMGASG3170  
**Gname** FLUMINICOLA SP 1  
**Gcomname** KLAMATH PEBBLESNAIL

### Number of Occurrences

B = 6 - 20

**Comments** Known from eight sites as of 1996 (Furnish et al., 1997).

### Number of Occurrences with Good Viability

A = No (A- or B- ranked) occurrences with good viability

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

**Comments** Rank unknown, but based on a few sites.

### Population Size

U = Unknown

**Comments**

### Range Extent

B = 100-250 km<sup>2</sup> (about 40-100 square miles)

**Comments** Occurs sporadically in the middle and upper sections of the Klamath River, Siskiyou County, California; and suspected to occur in the BLM Redding District and Klamath National Forest (Furnish et al., 1997; Furnish and Monthey, 1999).

### Area of Occupancy

B = 0.4-4 km<sup>2</sup> (about 100-1,000 acres)

C = 4-20 km<sup>2</sup> (about 1,000-5,000 acres)

LB = 4-40 km (about 2.5-25 miles)

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

**Comments** Distribution in the middle and upper Klamath River now very sporadic, because absent from impoundments and polluted stretches (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**

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

C = Rapidly Declining. Decline of 30-50% in population, range, area occupied, and/or number or condition of occurrences

**Comments** Declining in numbers and in number of sites; once very widespread (Frest and Johannes, 1995c, 1996).

## 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** High                      **Immediacy** High

**Comments** Threats include nutrient enrichment resulting in eutrophication, especially of Upper Klamath Lake, disruption of bottom substrates of Upper Klamath Lake, reduced oxygen levels of Upper Klamath Lake at periodic intervals, water pollution, decreases in water flow or above average fluctuations in lake levels, excessive sedimentation and eutrophication of springs, and channeling for irrigation systems and log transport (Furnish and Monthey, 1999).

## Number of Appropriately Protected and Managed Occurrences

A = None. No occurrences appropriately protected and managed

**Comments** No known protected sites in California. Occurs sporadically in the middle and upper sections of the Klamath River, Siskiyou County, California; and suspected to occur in the BLM Redding District and Klamath National Forest (Furnish et al., 1997; Furnish and Monthey, 1999).

## 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** Moderately vulnerable.

## Environmental Specificity

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

C = Moderate. Generalist or community with some key requirements scarce.

**Comments** Found in areas with gravel-boulder substrates and flowing water; this species prefers cold, oligotrophic water with high dissolved oxygen. It is found rarely in springs and avoids areas with dense macrophyte beds (Furnish et al., 1997; Furnish and Monthey, 1999).

## Other Considerations

Formerly *Fluminicola* sp 5 in BCD.

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## Reasons

Limited number of occurrences. No known protected sites in California.

## BCD Sources

## **New Sources**

Frest, T.J. and E.J. Johannes. 1995c. Interior Columbia Basin mollusk species of special concern. Report to Interior Columbia Basin Ecosystem Management Project. 274 pp.

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.

Frest, T.J. and E.J. Johannes. 1996b. Taxonomic report for ROD mollusk species. Report to U.S.D.I Bureau of Land Management, Oregon State Office and Salem District Office, Portland, Oregon, contract order number 1422H952-P5-4298. 55 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.