

Heritage Rank Status Factors

Elcode AAAAD09030
Gname HYDROMANTES SHASTAE
Gcomname SHASTA SALAMANDER

Number of Occurrences

B = 6 - 20

Comments As of around 1990, there were a dozen known populations (California DF&G 1990).

Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

Comments

Population Size

U = Unknown

Comments Total adult population size is unknown.

Range Extent

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

B = 100-250 km² (about 40-100 square miles)

Comments Restricted to small area in northern California, in headwaters of Shasta Reservoir drainage, Shasta County, California. As of 1990, there were 12 known populations (California Department of Fish and Game 1990), including those at Backbone Ridge, Mammoth Butte, Hirz Mountain, Potter and Low Pass creeks, McCloud River, Brock Mountain, Samwell Cave, and near Ingot; elevational range 1,000-3,000 ft (300-910 m) (Stebbins 1985, Bury et al. 1980).

Area of Occupancy

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

B = 0.4-4 km² (about 100-1,000 acres)

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

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

Comments Discontinuous distribution within range.

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

E = Relatively Stable ($\pm 25\%$ change)

Comments Likely relatively stable in extent of occurrence, probably less than 25% decline in population size, area of occurrence, and number/condition of occurrences.

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

D = Declining. Decline of 10-30% in population, range, area occupied, and/or number or condition of occurrences

E = Stable. Population, range, area occupied, and/or number or condition of occurrences unchanged or remaining within $\pm 10\%$ fluctuation

Comments Likely stable in extent of occurrence, uncertain trend in population size.

Threats

B = Moderate and imminent threat. Threat is moderate to severe and imminent for a significant proportion (20-60%) of the population, occurrences, or area. Ecological community occurrences are directly impacted over a moderate area, either causing irreversible damage or requiring a long-term recovery.

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

Comments Road construction, quarrying for limestone, and raising the elevation of Lake Shasta are potential threats (California Department of Fish and Game 1990). Impoundment of Lake Shasta has destroyed some habitat; a rise in water level could wipe out some some genetically distinct extant populations.

Number of Appropriately Protected and Managed Occurrences

C = Several (4-12) occurrences appropriately protected and managed

Comments Nine of the twelve known populations occur on U.S. Forest Service land, one is on BLM land, and two are on private property (California DF&G 1990). Since 1979, under special management plan of the U. S. Forest Service, which protects habitat from disturbance and revegetates exposed habitat to keep ground temperatures cool enough to support the salamander (Papenfuss and Brouha 1979). A 300 ft. buffer zone around limestone deposits has been proposed to protect habitat (Hansen and Papenfuss 1994).

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 Common on surface during moist periods.

Environmental Specificity

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

Comments Limestone outcrops; usually in cool, wet ravines and valleys; in moist limestone fissures or caves, sometimes under nearby logs and talus in wet weather (Bury et al. 1980).

Other Considerations

NRANK: N1

Edition 11/19/2002 **Edauthor** Macey, J. R., T. J. Papenfuss, G. Hammerson, and E. Scheuring

Grank G1 **Grank Date** 11/19/2002

Reasons

Small number of occurrences within a restricted range. Species exhibits a narrow ecological amplitude. Moderate threats present.

BCD Sources

Bury, R. B., C. K. Dodd, Jr., and G. M. Fellers. 1980. Conservation of the Amphibia of the United States: a review. U.S. Fish and Wildlife Service, Washington, D.C., Resource Publication 134. 34 pp.

California Department of Fish and Game. 1990. 1989 annual report on the status of California's state listed threatened and endangered plants and animals. 188 pp.

Stebbins, R. C. 1985. A Field Guide to Western Reptiles and Amphibians. Second Edition. Houghton Mifflin Company, Boston, Massachusetts. xiv + 336 pp.

New Sources

Hansen, R. W. and Papenfuss, T. J. 1994. "Shasta Salamander." Life on the Edge: A Guide to California's Endangered Natural Resources Volume I: Wildlife. Thelander, C. G., eds., Biosystems Books, Santa Cruz, California., 256-257.

Papenfuss, T. and Brouha, P. 1979. "The status of the Shasta salamander (*Hydromantes shastae*): Shasta-Trinity National Forest comprehensive species management plan and a species status report."