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# Recovery of Terrestrial Gastropods in British Columbia

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**Extended Abstract:** Four species of terrestrial gastropods from British Columbia are listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2004). The Puget Oregonian snail (*Cryptomastix devia*) is listed as Extirpated, the Oregon forestsnail (*Allogona townsendiana*) is Endangered, the dromedary jumping-slug (*Hemphillia dromedarius*) is Threatened, and the warty jumping-slug (*H. glandulosa*) is of Special Concern. Other rare species from the province that are still to be assessed include the recently discovered blue-gray tailedropper slug (*Prophysaon coeruleum*) and an undescribed genus of semi-slug related to the jumping-slugs that is endemic to Haida Gwaii (Queen Charlotte Islands). Research on all these species is still at the alpha-level and consists of documenting distributions, habitat use patterns, and, in some cases, taxonomic relationships. Recovery strategies exist or are in preparation for the Puget Oregonian snail, Oregon forestsnail, and dromedary jumping-slug.

In Canada, the Puget Oregonian snail is known from only three old (1850–1905) records. The most reliable of these records is now within the city of Victoria, where habitats have been heavily modified. In the United States, this species is an associate of older forests that have a deciduous component, often of bigleaf maple (*Acer macrophyllum*). The species' distribution in Washington and Oregon has contracted over the past century, especially in the north, and is patchy throughout its present range; however, new populations continue to be discovered with intensified survey effort. The possibility that the species still survives in British Columbia is remote but cannot be ruled out without further surveys.

The Oregon forestsnail occurs in remnant patches of mixed-wood forest at low elevations within the lower Fraser Valley and southern Vancouver Island, and its habitats are under severe threat from urban development and agriculture. Prior to 1984, the species was known from about 16 sites (only general locality information is associated with several old records), all but one of which are in the lower Fraser Valley. Several of the historic sites no longer contain suitable habitat for the species due to land conversions. In 2000–2001 and 2003, we found the species at 17 additional sites within the core of the species' Canadian range in this area on the mainland (localities less than 2 km apart were considered the same site). Most of the sites were in remnant forest stands on hillsides and along the edges of remnant forests on the valley bottom. The species

is known from a single 1903 locality on southeastern Vancouver Island. One hundred years later, we confirmed the presence of the species at this site within a small forest patch surrounded by agricultural and residential developments. These snails require moist forest habitats with abundant herbaceous vegetation and soft soils, and although their distribution is restricted, they appear to be able to tolerate some degree of human disturbance.

The dromedary jumping-slug occurs on Vancouver Island within older coniferous forests, which are rapidly diminishing. In 1999, we documented the species for the first time in Canada. From 2000 to 2003 we have located the species at five additional sites on southern and western Vancouver Island, at elevations from near sea level to about 1060 m on mountain tops. Delineating the distribution of this species is difficult due to its cryptic habits and apparently low densities. This species is often associated with coarse woody debris and a sparsely vegetated understorey, and may require copious amounts of decaying wood, including large diameter pieces, for egg laying and shelter. Detailed habitat requirements and responses of the species to logging are unknown.

For all the above species, better delineation of distributions and filling in knowledge gaps about habitat requirements and basic life history are priorities. Once key habitats are identified, the protection of relatively small amounts of land could be used as a tool to maintain the viability of populations. Recommended habitat management measures include (1) maintaining habitat structure and moisture regime on the forest floor, (2) maintaining key habitat features (cover such as large coarse woody debris, and overwintering and egg-laying sites), (3) monitoring impacts and preventing the spread of exotic gastropods and other introduced competitors/predators, (4) protecting key habitats from vegetation removal, soil compaction, trampling, and other human disturbances, and (5) enhancing habitat connectivity, for example, through the protection of riparian zones or greenbelts. For low-profile groups, such as terrestrial gastropods, strategies that emphasize the protection of ecosystems that contain multiple species at risk (vertebrates and invertebrates) are more likely to be implemented than those focusing on single species.

## References

- Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2004. Canadian Species at Risk, May 2004. Committee on the Status of Endangered Wildlife in Canada, Ottawa, Ontario. Available from [http://www.cosewic.gc.ca/eng/sct0/sar\\_2004\\_05\\_e.cfm](http://www.cosewic.gc.ca/eng/sct0/sar_2004_05_e.cfm)