Species At Risk Fact Sheet - *Nearctula sp. 1*

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cover photo credit: (2010) Andy Teucher, B.C. Conservation Data Centre Image[1]

Nearctula sp. 1

1. Name and classification

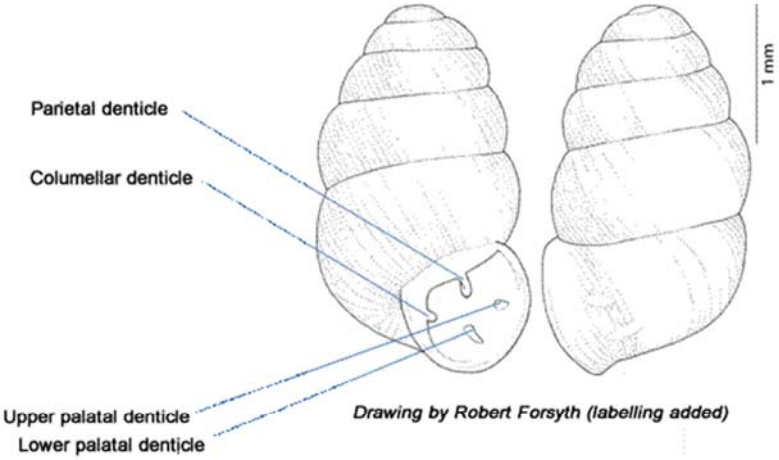
English name: Threaded Vertigo
Scientific name: *Nearctula sp. 1*
Scientific Name Synonyms: *Nearctula rowellii* [1]
Classification of taxonomy: [2]

Kingdom	Phylum	Class	Order	Family	Genus
Animalia	Mollusca	Gastropoda	Stylommatophora	Pupillidae	Nearctula

2. Wildlife species description and identification tips

With its uniquely small size, it is nowhere near easy to spot a Threaded Vertigo around its habitat. This land snail has a high, subcylindrical shell about 2.4-3.3 mm high. The shell has an ovate shape and a blunt apex with close, thread-like riblets and overall presents a coarse surface texture. The shell appears to be a dull, dark brown color and its body appears to be dark grey[3,4].

The most distinguishing feature of Threaded Vertigo is the structure of its aperture(the opening of the shell, see Fig. 1). The apertural lip is thin and flared[1]. There are four white denticles, which are tooth-like protuberances, within the aperture. And the broad, slightly twisted parietal denticle(see Fig.1) is the most prominent. However, the denticles are only present in adult mature shells[3].



Drawing by Robert Forsyth (labelling added)

Fig 1. Shell of the Threaded Vertigo, showing the arrangement of apertural denticles. Photo credit: Robert Forsyth. [3]

3. Significance of species

The social and economic significance of Threaded Vertigo is not yet known. Nor has it received any attention culturally from Aboriginal communities. Nevertheless, it is certain that this species contributes to the great biodiversity of the arboreal forest communities supported by large Big Leaf Maples and epiphytic mosses, liverworts, lichens, ferns and other vascular plants that grow on top, which in turn provide ideal habitat for Threaded Vertigo and other snail species[3].

4. Distribution

Globally, Threaded Vertigo is only found along the Pacific coast in North America from southwestern British Columbia southward through western Washington and Oregon to central California. In Canada, the species occurs only in British Columbia, more specifically, on Vancouver Island, Gulf Islands, and the Sunshine Coast on the mainland[1].

Locally, on Vancouver Island, this species has appeared at several sites within the Greater Victoria Area, including two federal properties (military facilities that operate under the Department of National Defence) and two regional parks, as well as scattered sites along the east coast of the island, from Victoria northward to Courtenay. It also appears in the Gulf Islands National Park on Saturna Island[3].

Fig 2. Canadian distribution of the Threaded Vertigo in southwestern British Columbia

(mark in red dots). [1]

5. Habitat

This species is entirely arboreal, or nearly so[4]. In British Columbia, the snails occur in moist deciduous and deciduous / coniferous mixed wood forests at low elevations, usually below 200 m[1,5]. They are often associated with Big Leaf Maples and an understory of ferns and shrubs characteristic of moist, rich sites, especially with older riparian forests containing large maples[3]. This species is most frequently found on trunks of maples, and occasionally found on other deciduous trees, on fern fronds, or on the ground within the leaf litter[3].

6. Life history

Like most pulmonate gastropods, Threaded Vertigo is hermaphroditic (possesses both male and female reproductive organs) but probably exchanges gametes with other individuals through copulation. Cross fertilization happens at certain life stage of Threaded Vertigo, as is to most terrestrial gastropods. The life cycle and survival pattern of this species still remains largely unknown. In British Columbia, most records of its occurrences are from fall, but adults of Threaded Vertigo have been spotted in spring and early summer, suggesting its lifespan may be longer than one year. It is also hypothesized that these snails hibernate in winter and aestivate during dry periods in summer[3].

7. Why this species is at risk

In southwest British Columbia, the coastal low elevation areas that Threaded Vertigo prefers are also ideal for human activities, therefore are often highly developed and heavily populated. With ever-growing human population and increased human presence, the habitats of Threaded Vertigo have been constantly threatened by human activities, which include but not limited to housing developments, agriculture, forestry, road / infrastructure construction. Habitats of Threaded Vertigo has been shrinking and fragmented. Even on protected public land, intensive recreational and other uses, as well as introduced plants and animals still pose significant challenge for Threaded Vertigo and other land snails.

On the other hand, snail populations are also suffering from adverse effects of climate change, which not only accelerates habitat fragmentation and degradation, but also has negative impacts on its life cycle. For example, as a species living in moist conditions, drier conditions during its activity period from spring to fall would certainly affect its activities. This will become quite obvious for the populations living at the northern extremity of the species' range in British Columbia where the growing season is already relatively short. Additionally, increased frequency and severity of natural disasters such as flood and fire events would also be detrimental to snails and their habitats.[3]

8. Species status and ranks

According to NatureServe[2], The species is on the British Columbia provincial red list of species at risk. On April 25, 2010, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated Threaded Vertigo as "Special Concern" . Schedule 1 of Canadian Species at Risk Act (SARA) also listed Threaded Vertigo as Special Concern on June 20, 2012.

The species is listed as “apparently secure” globally (G3G5; rounded status G4) with national status in the United States also “apparently secure” (N3N5) but “imperilled” in Canada (N2) and British Columbia (S2).

9. Protection

As stated in Section 7, the major challenges facing Threaded Vertigo are habitat loss, invasive species, natural disasters and climate change. So far in Canada, other than the designation by COSEWIC and SARA, no actual action is being taken in order to protect this species. The habitats on public lands are still relatively intact and under no immediate pressure from development. But these sites are not necessarily safe from invasive species and habitat degradation caused by climate change as well as recreational or other uses. The species and habitats on private lands, however, receive no protection at the moment.[3]

Currently there is no recovery plan for Threaded Vertigo either from the province of British Columbia or the federal government of Canada (under SARA). Fortunately, by referring to the existing recovery plan for other gastropod species a strategy may become clear. In the case of Oregon Forestsnail (*Allogona townsendiana*), the recovery objectives are:
(1) To identify and prioritize important habitat throughout the species’ range in B.C.
(2) To secure protection for habitats within the species’ range.
(3) To assess and reduce threats at all known sites in B.C.
(4) To address knowledge gaps (e.g., population ecology, habitat associations, dispersal) that currently prevents quantitative population and distribution objectives from being established.

In this document, some notable measures include habitat protection and private land stewardship, habitat survey and inventory, revising and enforcing relevant laws and regulations, inter-agency co-operations, identification and reduction of anthropogenic threats, prevention and control of invasive species, public education and so forth.

References

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[3] K. Ovaska and L. Sopuck, COSEWIC Assessment and Status Report on the Threaded Vertigo Nearctula sp. in Canada – 2010. Species at Risk Public Registry, Environment Canada. http://registrelep-sararegistry.gc.ca/default.asp?lang=En&n=AAE23336-1. Last Access: March 20, 2014

[4] R. Forsyth, Threaded Vertigo introduction page, *E-Fauna BC: Electronic Atlas of the Fauna of British Columbia* [efauna.bc.ca]. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. Last Access: March 20, 2014.

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