



## Nuttall's Sheep Moth



Photo: © Merrill A. Peterson

**Scientific name**  
*Hemileuca nuttalli*

**Taxon**  
Arthropods

**COSEWIC Status**  
Endangered

**Canadian range**  
British Columbia

### Reason for Designation

This large, showy and conspicuous moth is restricted to Antelope-brush habitat in the Okanagan Valley of British Columbia. That habitat type has declined considerably in quality and extent in the past century and remains under threat due to continued conversion to viticulture, residential and commercial development, and impact of wildfires. This is a rare moth in Canada: very few have been observed since the first record in 1920. Potentially large fluctuations in the population size may affect its long-term viability.

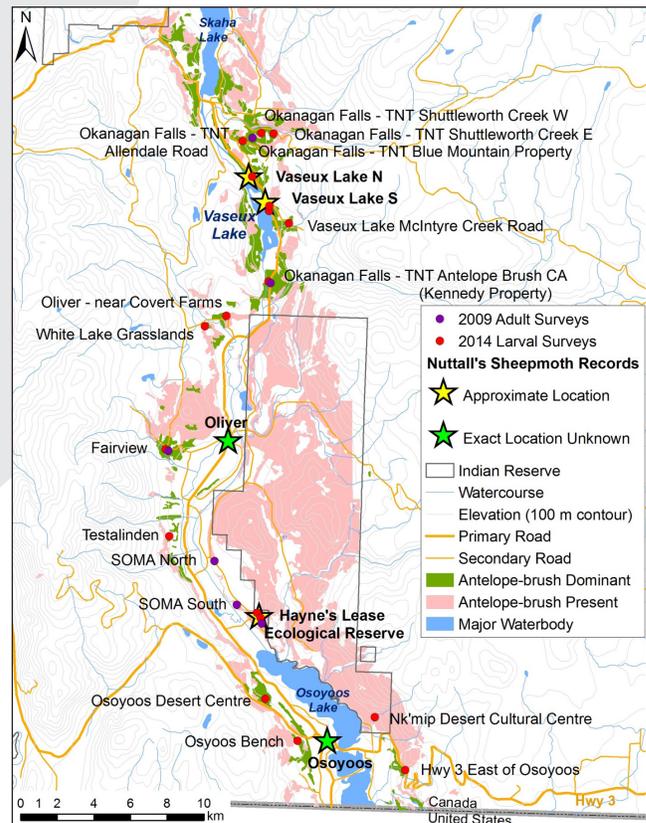
### Wildlife Species Description and Significance

Nuttall's Sheep Moths (*Hemileuca nuttalli*) are large members of the wild or giant silk moth family (Saturniidae). Adults of both sexes have forewing lengths of 32-39 mm with white to pale yellow forewings

and bright yellow hindwings framed by a pattern of thick black markings. Larvae are spiny and black, with the final instars approximately 50 mm in length.

### Distribution

The global range of Nuttall's Sheep Moth is from the extreme southern portion of the Okanagan Valley in British Columbia, southward to northern Arizona and New Mexico. In Canada, it has been recorded from the south Okanagan Valley from three general areas: 1) Osoyoos, 2) Oliver (precise site unknown), and 3) Vaseux Lake. The most recent records for the species are 2002 near Vaseux Lake and 1986 at Haynes' Lease Ecological Reserve (approximately 8 km north of Osoyoos). It is unknown if the Haynes' Lease occurrence is the same location as historical records labelled 'Osoyoos' and the precise location of the Oliver record is unknown. Targeted surveys for adults at six sites in 2009 and for larvae at 16 sites in 2014 were unsuccessful. The targeted searches in 2014 included the 2002 site.



Distribution of Nuttall's Sheep Moth (*Hemileuca nuttalli*) in Canada in relation to Antelope-brush (*Purshia tridentata*) habitat in the Okanagan Valley, British Columbia.

## Habitat

In Canada, Nuttall's Sheep Moth is found in the bunchgrass shrub-steppe on dry, open slopes at low elevations where the only known Canadian larval host plant, Antelope-brush (*Purshia tridentata*), is most abundant. The main habitat is the Antelope-brush/ Needle and Thread Grass plant community, which is fragmented by habitat loss; less than 33% of its historical mapped distribution remains in approximately 3200 ha in the Okanagan Valley.

## Biology

Nuttall's Sheep Moth is univoltine and may have a life cycle that spans 1 – 2 years. The eggs are laid on the host plants in late summer and overwinter, typically hatching in late April or May the following spring. Early instar larvae are gregarious, while later instar larvae are solitary. The 5th instar larva creates a cocoon in leaf litter or a shallow burrow, and the adult emerges later that season or possibly the following year. In Canada, the known flight period is August through early September, although individual moths have shorter life spans (adults do not feed). Adults are diurnal with a peak of activity in the afternoon, and both sexes are rapid, fast fliers. Perched females emit pheromones to attract potential mates.

## Population Sizes and Trends

There is insufficient information to determine Nuttall's Sheep Moth population sizes or trends. Thousands of larvae were observed near Vaseux Lake in 1976, and the species was last observed there in 2002. Nuttall's Sheep Moth was last observed at Haynes' Lease in 1986 despite repeated surveys. No population trend data are available but apparently suitable Antelope-brush habitat in the Okanagan Valley has significantly declined in quality, area and extent.

## Threats and Limiting Factors

Cumulative habitat loss, degradation, and fragmentation from agriculture (mainly vineyards and orchards) as well as residential and commercial development are the most significant threats to Nuttall's Sheep Moth populations in Canada.

## Protection, Status and Ranks

Nuttall's Sheep Moths have no formal protection or status in Canada. It is not ranked by the BC Conservation Data Centre and is considered globally secure.

Source: COSEWIC. 2015. COSEWIC assessment and status report on the Nuttall's Sheep Moth *Hemileuca nuttalli* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 41 pp.

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