

## BC's Coast Region: Species & Ecosystems of Conservation Concern

### Propertius Duskywing (*Erynnis propertius*)

Global: G5 Provincial: S2S3 COSEWIC: N/A BC List: Red



Notes on *Erynnis propertius*: A member of the family Hesperiiidae (“Skippers”). Skippers derive their name from their rapid, darting flight patterns. Skippers are typically a small to medium sized butterfly with limited colour variation (usually orange, grey, brown or black with white patterning), though a few species have brighter iridescent colouration. The genus *Erynnis* is distinguished by the mottled background of the wings, from which the name “Duskywing” is derived. The largest species of the genus *Erynnis* in BC, *E. propertius*, like other rare butterflies may be dependent on a very limited range of larval host plants in BC.

#### Description

**Wingspan:** 3-3.8 cm. Adults are brown to purplish, to dark grey, with an array of white spots across both sets of wings. Female wing colour is lighter than males, with larger spots across the middle of both sets of wings than males. Males have characteristic folds on the front edge of the fore wings (“costal grooves”), which hold pheromone producing scales (“stigma”). Both sexes have distinctive hooked antennae clubs (tips). Early and late phase instars (developmental stages between molts), are sage green, with yellow sub-dorsal lines and rings midway between each body segment and white lateral pores (“spiracles”). The large, flesh-coloured heads have orange spots on each side, covered with fine hair.

#### Diet

In Canada, the only known host plant for *E. propertius*’ larvae is Garry oak. Other species of Duskywing exploit other tree species such as willow and cottonwood. It is unknown what larval host plant some of the more recently documented Fraser Lowland populations utilize, as Garry oak has limited distribution on the South Coast. Adults exploit a range of flowering plants associated with Garry Oak meadows including common camas, species of vetch and Hooker’s onion. On the mainland, adult nectar plants likely include a range of native and introduced species.

#### Look’s Like?

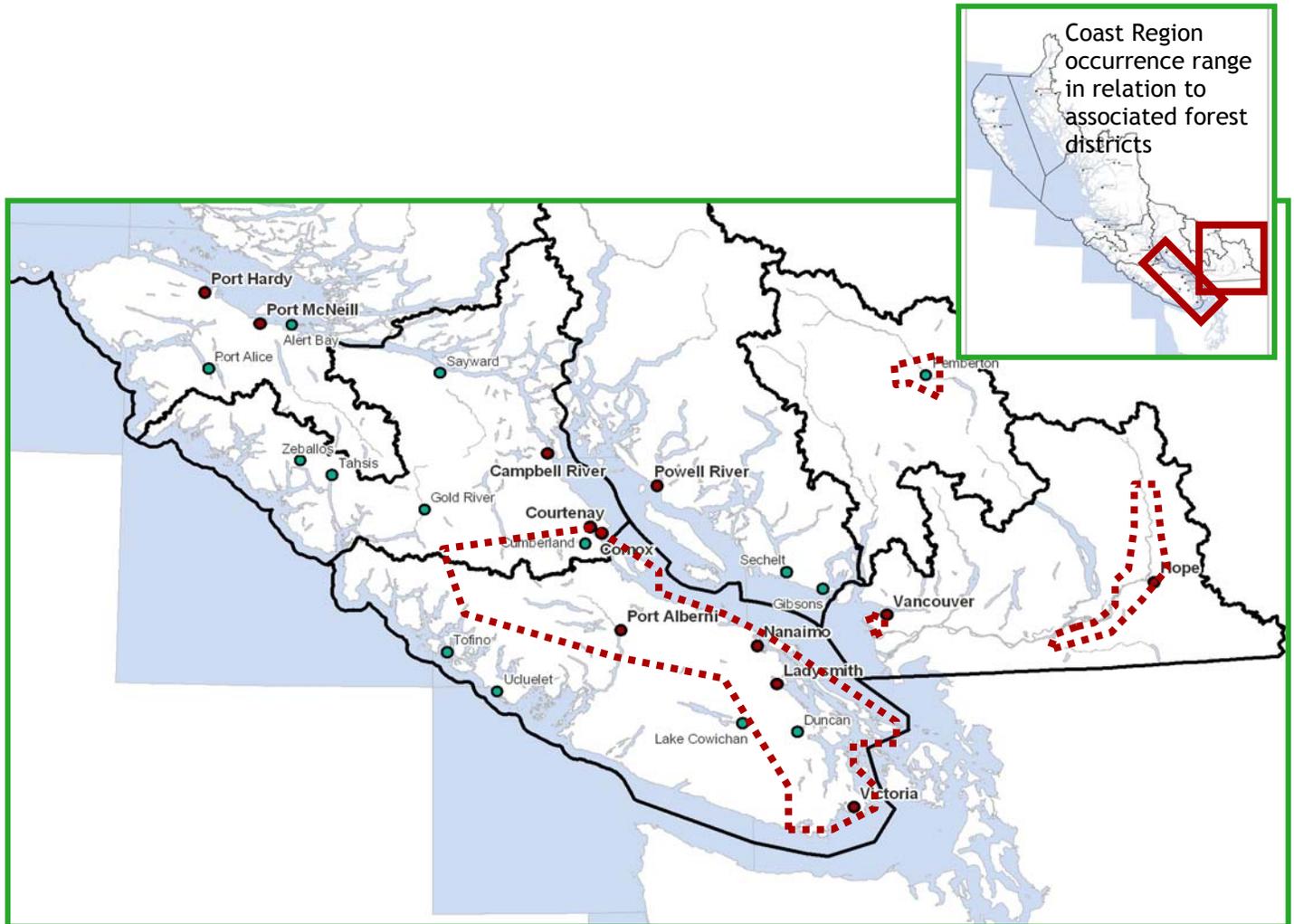
Several species of Duskywing overlap with the Propertius species including Persius Duskywing (wingspan 2.4-3.1 cm), and Dreamy Duskywing (wingspan 2.3-3.0 cm). Size is a key differentiating characteristic, with the Propertius species being the largest and also more frequently found in Garry oak communities. Still identification is difficult when several species may occur in similar habitats. A high resolution image of the dorsal side of the wings and body is usually needed for comparison.



Dreamy Duskywing

## Distribution

*Propertius Duskywing* is known from Nevada, west along the Pacific coast, from Baja California, north through Oregon, Washington State and into the extreme southwest of BC. Distribution in BC is limited to the southern portion of the Coast Region in conjunction with Garry oak communities on southeast Vancouver Island, the Gulf Islands and the one main Garry oak community found on Sumas Mountain in the Fraser Lowlands of the South Coast. An additional Garry oak community occurs to the east of Sumas Mountain, near Hope, but it is unknown if the butterfly occurs there. Recent occurrences found at Vedder Crossing south of the Chilliwack area, north of Mount Currie near Pemberton, Hope and Ross Lake in the Skagit watershed appear to be resident populations that may be exploiting an unknown larval host plant.



*Propertius Duskywing* (*Erynnis propertius*), potential occurrence range (based on historic and recent occurrences), for the Coast Region.

**Habitat Preferences** This species is associated with sea-level to mid-elevation areas with open Garry Oak stands or mixed woodlands where Garry Oak occurs.

**Critical Features** Little is known about the possible adaptation to other larval host plant species or ecosystems, especially in Fraser Lowland populations on the South Coast. This species is also known to use meadows, forest edges and hillsides. They may also be seen on mud (common for many butterflies), where they ingest essential minerals and salts.



This species is highly specific in its larval host plant preferences in BC (i.e. mainly restricted to Garry oak).

**Seasonal Life Cycle**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Adult emergence, Breeding / Egg Deposition.								
Larval development and maturation stages (larvae mature by late August and overwinter in a nest of host plant leaves. Pupation occurs late spring).											

Properitius Duskywing generally have only one generation per year, second broods occur occasionally if conditions permit. Adults typically take flight April through early July. Males perch on sun exposed aspects and hilltops to find females.

\*Timing of adult emergence, larval maturation, and pupation/hibernation are affected by temperature and elevation and may vary by host plant growth periods.

**Threats**

- ◆ While Properitius Duskywing populations are less imperiled than other butterfly species, their preferred ecological associations (Garry oak ecosystems), are geographically limited. Furthermore these systems have been subject to loss or suppression of natural or historic maintenance regimes (e.g. fire). Along with potential changes from climate change, these factors may increase loss of Garry oak communities and associated meadow habitats from succession to shrub thicket and forest.
- ◆ Habitat loss, encroachment and fragmentation from urban development and agricultural can further exacerbate reduction in larval host plant availability.
- ◆ Impacts to all life stages as well as host plant communities from land management practices (e.g. pesticide application). In particular broadcast spraying for insect pests (e.g. use of Btk), or for noxious weed control may have significant impacts for non target invertebrate species within application areas as well as adult nectar and larval host plants.
- ◆ Competition and extirpation impacts to larval host plant species as well as changes to host plant communities from introduced plant species.

**Conservation & Management Objectives**

- ◆ Though not directly focused on Properitius Duskywing, management objectives set out in the “Recovery Strategy for Multi-species at Risk in Maritime Meadows Associated with Garry Oak Ecosystems in Canada” and “Recovery Strategy for Multi-species at Risk in Vernal Pools and Other Ephemeral Wet Areas in Garry Oak and Associated Ecosystems in Canada” likely provide essential conservation approaches. Investigate potential complimentary approaches found in the “Status of Five Butterflies and Skippers in British Columbia” and objectives identified in “Sentinels on the Wing: The Status and Conservation of Butterflies in Canada.”
- ◆ Inventory and assessment methods should at a minimum follow those set out in the RISC Standards #40 “Inventory Methods for Terrestrial Arthropods.” More recent collection and identification resources such as those found online through the Butterflies and Moths of North America or the Royal BC Museum’s “Living Landscapes: Pend-d Oreille

Butterfly Survey” as well as other Provincial butterfly collection and reconnaissance inventory methods<sup>1</sup> should be investigated.

#### Specific activities should include:

- ◆ Conduct outreach to raise awareness of this species and how to identify it to improve distribution knowledge. A targeted inventory is needed to determine if undiscovered populations exist elsewhere within the Coast Region.
- ◆ Where suitable habitat occurs, work with land managers and land owners to ensure development or recreational activities do not impact or decrease availability of host plants for larvae and nectar sources for adults.
- ◆ Encourage landowners and land use authorities to dedicate conservation covenants and cultivation/vegetation management easements to protect host plant associations. Work to recover populations into areas previously occupied or feasible for colonization.
- ◆ Improve understanding of larval host plant dependencies and ways in which host plants and their communities can be enhanced. Further investigation is needed on Fraser Lowland population larval host plant potential adaptations.
- ◆ Increase awareness about the value that host plant associations provide to other species including other important pollinators such as bees.
- ◆ Effective long-term control and reduction in competition from invasive or aggressively spreading vascular plants (e.g. invasive shrubs and grasses), must form part of strategies to protect and recover populations. Disturbance to native rare plant species and communities must be minimized during control activities.
- ◆ Work to reduce the need for broadcast and cosmetic pesticide use that may be impacting non-target species through instituting integrated pest management programs.
- ◆ Consider implementation of controlled burning (where feasible) or other historic maintenance regimes that may have sustained host plant communities and their associations.

This species habitat may be subject to protections and prohibitions under the BC Wildlife Act. Habitat for this species may also be governed under provincial and federal regulations including the Fish Protection Act and Federal Fisheries Act as well as Regional and local municipal bylaws.

#### Content for this Factsheet has been derived from the following sources

- B.C. Conservation Data Centre. 2010. [Internet] [Updated November 1 2008]. Conservation Status Report: *Erynnis propertius*. B.C. MoE.
- Butterflies and Moths of North America. 2010. [Internet] Propertius Duskywing *Erynnis propertius*
- E-Fauna. 2010. [Internet] Electronic Atlas of the Wildlife of British Columbia. *Erynnis propertius*
- Garry Oak Ecosystem Recovery Team. 2003. [Internet] Species at Risk in Garry Oak and Associated Ecosystems in British Columbia. *Erynnis propertius*
- Guppy, C.S., and J.H. Shepard. 2001. Butterflies of British Columbia. UBC Press in collaboration with Royal B.C. Mus. 414pp.
- Guppy, Crispin. 2010 & 2011. [Personal communication].
- Hall, P.W. 2009. [Internet] Sentinels on the Wing: The Status and Conservation of Butterflies in Canada. NatureServe Canada. Ottawa, Ontario 68 p.
- Kerr, J. T. 2001. Butterfly species richness patterns in Canada: energy, heterogeneity, and the potential consequences of climate change. Conservation Ecology 5(1): 10.
- Parks Canada Agency. 2006. Recovery Strategy for Multi-species at Risk in Maritime Meadows Associated with Garry Oak Ecosystems in Canada. In Species at Risk Act Recovery Strategy Series. Ottawa: Parks Canada Agency. 93 pps.
- Parks Canada Agency. 2006. Recovery Strategy for Multi-species at Risk in Vernal Pools and Other Ephemeral Wet Areas in Garry Oak and Associated Ecosystems in Canada. In Species at Risk Act Recovery Strategy Series. Ottawa: Parks Canada Agency. 73 pps.
- Polster, D. et al. 2006. [Internet] Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia. Prepared for the BC Ministry of Environment. Victoria (BC).
- Proulx, Gilbert et al. 2003. A Field Guide to Species at Risk in the Coast Forest Region of British Columbia. Published by International Forest Products and BC Ministry of Environment. Victoria (BC).
- Royal BC Museum. 2010. [Internet] Living Landscapes: Pend-d Oreille Butterfly Survey.
- Shepard, Jon H. 2000. [Internet] Status of five butterflies and skippers in British Columbia (Wildlife working report ; no. WR-101).

**Prepared by:** Pamela Zevit of Adamah Consultants with Crispin Guppy for the South Coast Conservation Program (SCCP) in partnership with: International Forest Products (Interfor), Capacity Forestry (CapFor) and the BC Ministry of Environment (BC MoE), E-Flora and E-Fauna the Electronic Atlas of the Flora and Fauna of BC, Species at Risk & Local Government: A Primer for BC. Funding for this factsheet was made possible through the Sustainable Forestry Initiative (SFI): <http://www.sfiprogram.org/>

Every effort has been made to ensure content accuracy. Comments or corrections should be directed to the South Coast Conservation Program: [info@sccp.ca](mailto:info@sccp.ca). Content updated March 2011.

**Image Credits:** Propertius Duskywing: Rod Gilbert, Propertius Duskywing Larva: Bob Barber, Dreamy Duskywing: Elizabeth Carey, Habitat: Ecstaticist Flickr. Only images sourced from “creative commons” sources (e.g. Wikipedia, Flickr, U.S. Government) can be used without permission and for non-commercial purposes only. All other images have been contributed for use by the SCCP and its partners/funders only.

<sup>1</sup> Contact the provincial invertebrate specialist in Victoria.