

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

Edith's Checkerspot *taylori* ssp. (*Euphydryas editha taylori*)

Global: G5T1, Provincial: S1, COSEWIC: E, BC List: Red



Notes on *Euphydryas editha taylori*. A member of the family Nymphalidae (“Brush-footed butterflies”). The “Checkerspot” butterflies are a diverse group whose name is derived from the checkerboard pattern on the wings. Males of the genus *Euphydryas* in BC are somewhat unique in having varying numbers of small spines on a component of their genitalia. *E. e. taylori* is one of two subspecies of Edith’s Checkerspot in BC, the other *E. e. beani* occurs in the Southern Interior. This subspecies is also referred to as “Taylor’s” or “Whulge” Checkerspot.

Description

Wingspan: 3.2-5.1 cm. A medium sized, brightly patterned butterfly, the *taylori* subspecies is the darkest of the two *E. editha* subspecies and has the stubbiest and roundest wings. The ventral surface of the wings are primarily orange with bands of white cells and black outlines creating a ‘stained glass’ appearance. The dorsal surface of the wings has a proportionate mix of black, orange and white. The dorsal surface of the wings have more black separating the spot-bands than other subspecies. The antennae clubs (tips) are straight and golden coloured. Males are slightly smaller than females. Eggs are amber coloured and laid in clusters. Late instars are black with orange dorsal and lateral bands. Coarse bristles cover the body.

Diet

Adults will utilize nectar sources from a variety of flowering species including wild strawberry and common camas. Historically spring gold, a species of *Lomatium* in the “carrot” family was closely associated as an adult nectar plant for BC populations. Larvae have been documented feeding on members of the figwort family including harsh Indian paintbrush, as well as several species of native and introduced plantain (including lance-leaved water-plantain). Larvae of the Denman Island population exploit species of “speedwell” in the genus *Veronica*.

Look’s Like?

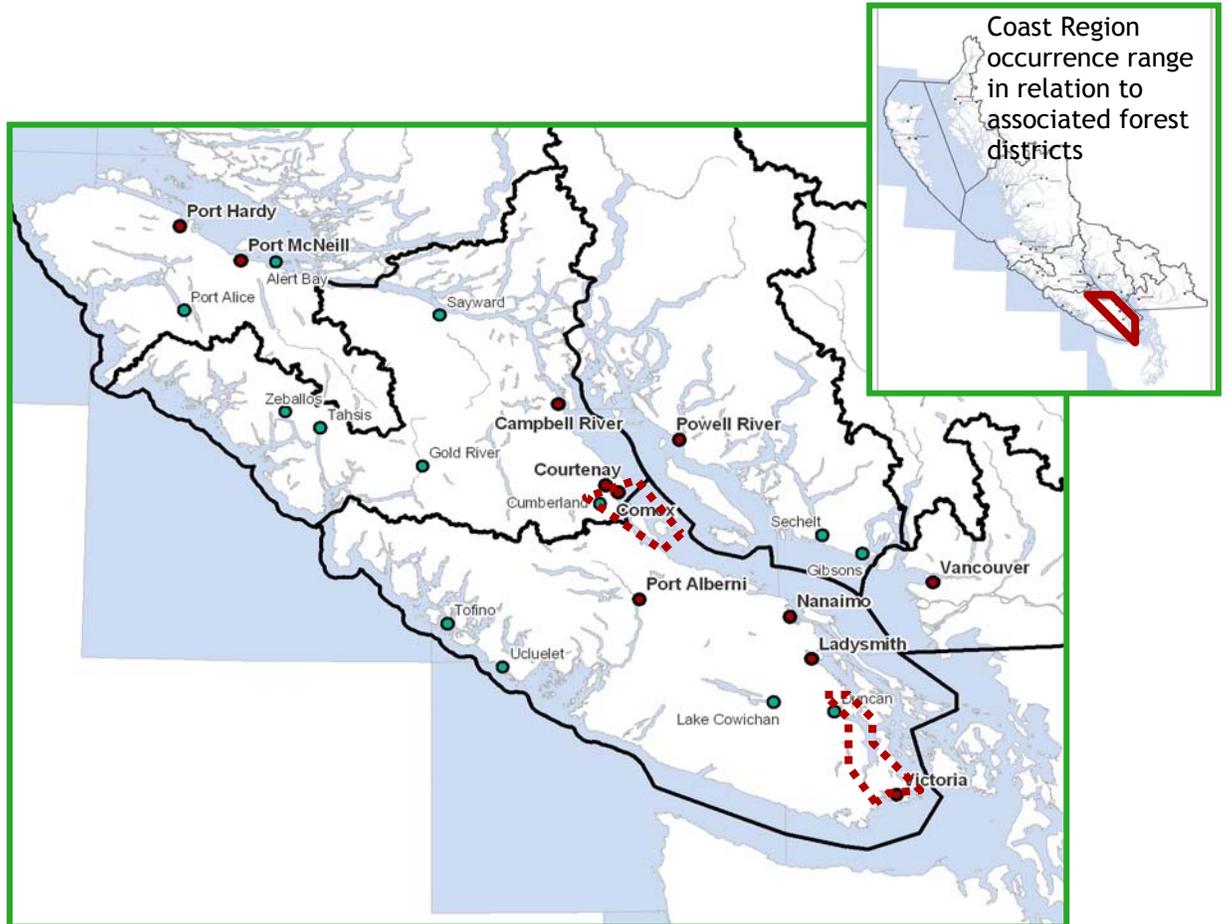
The *taylori* subspecies is darker and more brightly patterned than the species form of Edith’s Checkerspot. However in flight the species and subspecies may be hard to distinguish. Larvae of both the species and subspecies are similar with the dorsal bands of the subspecies being closer together and the body covered in denser bristles.



Edith’s Checkerspot (species form)

Distribution

Found at low elevations near sea level. Known from west of the Cascades in Oregon (Willamette Valley) north along the coast through Washington State (Puget Lowlands), historically to southern Vancouver Island (Greater Victoria, Mill Bay to Duncan and one site near Courtney), and Hornby Island. Both the species and *taylori* subspecies occur on the Coast Region, however the subspecies appears to have been historically restricted to disjunct Garry Oak communities. The subspecies was believed extirpated from its last location on Hornby Island in 2001. In 2005 a population was discovered on Denman Island. This remaining population appears stable and is persisting in a number of subpopulations. The subspecies of Edith's Checkerspot is also in sharp decline in the US, where it is restricted to twelve sites in Washington State and two in Oregon. A captive breeding and habitat acquisition program has been underway in Oregon for several years.



Edith's Checkerspot *taylori* subspecies (*Euphydryas editha taylori*), known occurrence range (historic and recent occurrences), for the Coast Region.

Habitat Preferences

Historically the *E.e. taylori* subspecies was found in dry lowland meadows and grasslands, especially those associated with open Garry Oak woodlands. The subspecies will utilize anthropogenically created sites such as fields and pastures as well as moister habitats such as wet meadows. The main Denman Island population group has exploited the creation of short-term habitat created by a clearcut and is also found in adjacent ephemeral sedge wetlands.



This subspecies, typically dependent on Garry Oak meadow communities was thought extirpated. A population has managed to persist on Denman Island .

Critical Features

Larvae are highly vulnerable to loss of larval host plants due to drought. While dispersal capabilities of the *E.e. taylori* subspecies is better than other Edith's Checkerspot subspecies, maintenance and connectivity of habitat may be important for populations to persist.

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. Dormancy continues on from summer diapause throughout the winter. Larvae emerge in the spring (April-May), mature, pupate and emerge as adults.											

Adult flight is from April to May. One brood is produced each year. Larvae feed until the fourth or fifth instar and then go into a dormant state (“diapause”) in mid-late summer during periods of high temperature.

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

Threats

- ◆ Loss of adult nectar food plants may have contributed to the extirpation of local populations on the Coast Region. The preferred ecological associations (e.g. Garry oak meadows), throughout the subspecies historic range remains geographically limited and fragmented. 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.
- ◆ Competition and extirpation impacts to larval host plant species as well as changes to host plant communities from introduced plant species.
- ◆ 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 and their food plants within application areas.

Conservation & Management Objectives

- ◆ Apply conservation and management objectives set out in the “Recovery Strategy for Multi-species at Risk in Maritime Meadows Associated with Garry Oak Ecosystems in Canada.” Investigate potential complimentary conservation approaches found in the “Status of Five Butterflies and Skippers in British Columbia” and “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 methods¹ should be investigated.

¹ Contact the provincial invertebrate specialist in Victoria.

Specific activities should include:

- ◆ Conduct outreach to raise awareness of this species. 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 land use 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.
- ◆ 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 vascular plants (e.g. invasive shrubs such as Scotch broom and grasses), is required. 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 subspecies is listed under the Federal Species at Risk Act (SARA), and may be subject to protections and prohibitions under the BC Wildlife Act. Habitat for this subspecies 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 April 14 2009]. Cons. Status Report: *Euphydryas editha taylori*. B.C. MoE. E-Fauna. 2010. [Internet] Electronic Atlas of the Wildlife of British Columbia. *Euphydryas editha taylori*
- Garry Oak Ecosystem Recovery Team. 2003. [Internet] Species at Risk in Garry Oak and Associated Ecosystems in British Columbia *Euphydryas editha taylori*
- 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.
- Heron, Jennifer. 2004. [Internet] A Summary of Terrestrial and Freshwater Invertebrate Conservation in British Columbia. Proceedings of the Species at Risk 2004 Pathways to Recovery Conference. Victoria, B.C.
- Kerr, J. T. 2001. Butterfly species richness patterns in Canada: energy, heterogeneity, and the potential consequences of climate change. Conservation Ecology 5(1): 10.
- Kondla, Norbert G. et al. 1999. [Internet] Butterflies of Conservation Interest in Alberta, British Columbia, and Yukon. Proceedings of a Conference on the Biology and Management of Species and Habitats at Risk, Kamloops, B.C. Volume 490pp.
- 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.
- 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).

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

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