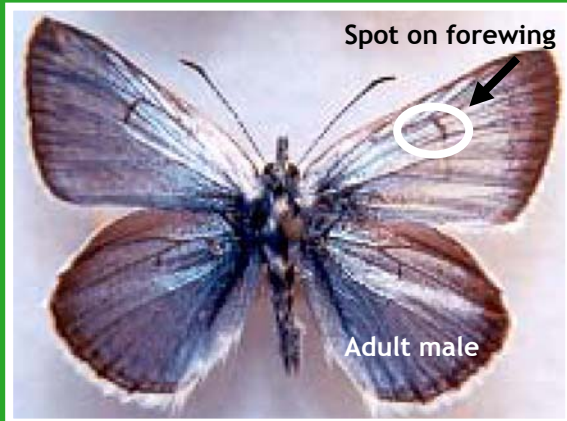


BC's Coast Region: Species & Ecosystems of Conservation Concern

Greenish Blue *insulanus* ssp. (*Plebejus saepiolus insulanus*)

Global: G5TH, Provincial: SH, COSEWIC: E, BC List: Red



Notes on *Plebejus saepiolus insulanus*: A member of the family Lycaenidae (“Gossamer Winged” butterflies), the second largest global family of butterflies. The family is broken down into several subfamilies including “Coppers, Harvesters,” Hairstreaks, Elfins” (and their allies), and “Blues”. The genus *Plebejus* means “plebian” or “common”, denoting how species in the genus are considered common and less colourful than other groups. The *insulanus* subspecies of Greenish Blue is also referred to as “Island” Blue. Much about the biology of the subspecies is derived from the species and related subspecies forms.

Description

Wingspan: 2.1-2.8 cm. Contrary to what its name suggests, adult Greenish Blue do not have any green colouration. The uppersides of the wings of females are brown, sometimes with a bluish sheen at the wing base. The undersides of both sets of wings are pale tan to dark grey. The margins of the undersides of the hindwings have a row of black spots with orange caps. Uppersides of the wings of males are metallic blue with a row of dark spots on the margins of the hindwings. The undersides are bluish toward the wing base, gradually turning to silver-grey toward the margins. Both sets of wings have two rows of black spots. The underside of the hindwings have orange caps on the second row of spots that are directed toward a partial third row of spots. One spot along this row is distinctly larger. Both sexes have a distinct black bar on each forewing. Antennae have a silver beaded appearance with straight, light brown clubs (tips). Eggs of other forms of Greenish Blue are greenish-white and laid in the flower buds of host plants. Larvae are usually reddish-brown to green with two white lines and a parallel row of white dots along the side of the body.

Diet

While the specific host food plants of the *insulanus* subspecies of Greenish Blue are unknown, larvae of other subspecies (i.e. *P.s. amica*), and the species form utilize a number of clover species (native and introduced). Use of *Hedysarum* (species of vetch), have also been documented. On Vancouver Island, species of native *trifolium* (now becoming rare) or other native legumes may have provided larval food sources for the *insulanus* subspecies. Adult Greenish Blue exploit a range of clover species for nectar sources.

Look's Like?

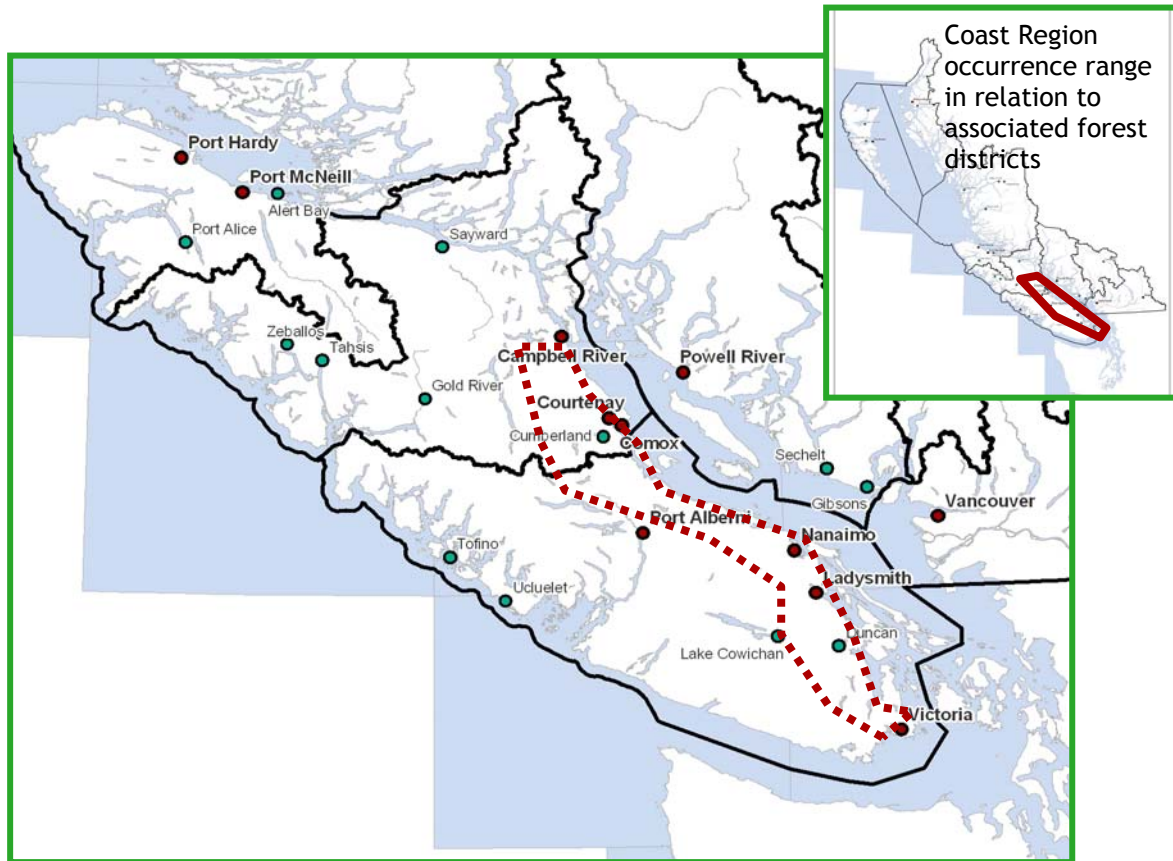
There are a number of similar looking species and subspecies of “Blues” that occur on the Coast Region. The species form of Greenish Blue is quite widespread as is Western Spring Azure. The wing undersides of Western Spring Azure have only a single row of distinct black spots toward the outer margins. These spots are smaller and not as distinct as in subspecies of Greenish Blue. Silvery Blue and Boisduval's Blue are also similar but lack the multiple rows of black spots found in *P.s. insulanus*.



Greenish Blue (male of the species form)

Distribution

Two subspecies of *P. saepiolus* occur on the Coast Region, *P.s. insulanus* (restricted to Vancouver Island), and *P.s. amica* (a boreal subspecies which just ranges into the eastern and northern boundaries of the Coast Region). The *insulanus* subspecies was generally distributed in small disjunct populations along the eastern and southeastern lowland coastal areas of Vancouver Island (Saratoga Beach near Campbell River to Greater Victoria). The *insulanus* subspecies name has been used to reference populations in the US, but these populations have not been confirmed as *P.s. insulanus*. Because of this the subspecies is still considered to be historically endemic to Vancouver Island. Reported sightings from higher elevation areas (Mount Malahat, Mount Arrowsmith and Mount Finlayson) are likely misidentifications with other species of blues. Although the subspecies has not been recorded since 1979, surveys of potential habitat are incomplete and unconfirmed sightings are still periodically reported.



Greenish Blue *insulanus* ssp. (*Plebejus saepiolus insulanus*), historic occurrence range for the Coast Region.

Habitat Preferences The species form of Greenish blue is known to inhabit open areas and meadows as well as roadside areas, bogs and sedge communities in close proximity to preferred clover host plant species. On Vancouver Island the *insulanus* subspecies of Greenish Blue was historically found in association with Garry Oak communities, maritime meadows, riparian areas, old-field areas as well as disturbed sites (roadsides, old campgrounds).



The *insulanus* subspecies of Greenish Blue has been historically found in a range of Garry oak associations that supported their preferred food plant species

Critical Features The species form of Greenish Blue does not appear to have wide dispersal rates and exhibits a high fidelity to preferred larval host plant locations. This may have been a factor in the decline and possible extirpation of populations of the *insulanus* subspecies. Especially if communities of larval host plants were destroyed and no alternative sources were located nearby.

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 from September to March, with final growth stage and pupation in April.											

The *insulanus* subspecies of Greenish Blue likely has only one brood per year. Greenish Blue larvae hibernate part way through their growth cycle, resuming feeding and development the following year. Adults fly from late May to July, with a few records in early August.

*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 larval host plants is believed to have been the cause of the decline and possible extinction of the *insulanus* subspecies of Greenish Blue in BC. The preferred ecological associations (e.g. Garry oak woodlands and maritime 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 land uses (e.g. livestock grazing), 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 Greenish Blue *insulanus* subspecies (*Plebejus saepiolus insulanus*) in British Columbia. Integrate complimentary measures found 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 subspecies. A targeted inventory is needed to determine if undiscovered populations still exist 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.
- ◆ If populations are discovered, work to protect critical features to recover the subspecies and ensure its persistence.
- ◆ Encourage landowners and land use authorities to dedicate conservation covenants and cultivation/vegetation management easements to protect host plant associations. The larval food plants preferred by the subspecies still occur throughout southeast Vancouver Island, and the species and other subspecies forms will utilize introduced native and introduced clover and vetch species.
- ◆ 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.

Though potentially extinct, this subspecies is listed under the federal Species at Risk Act (SARA, habitat for this subspecies 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

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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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