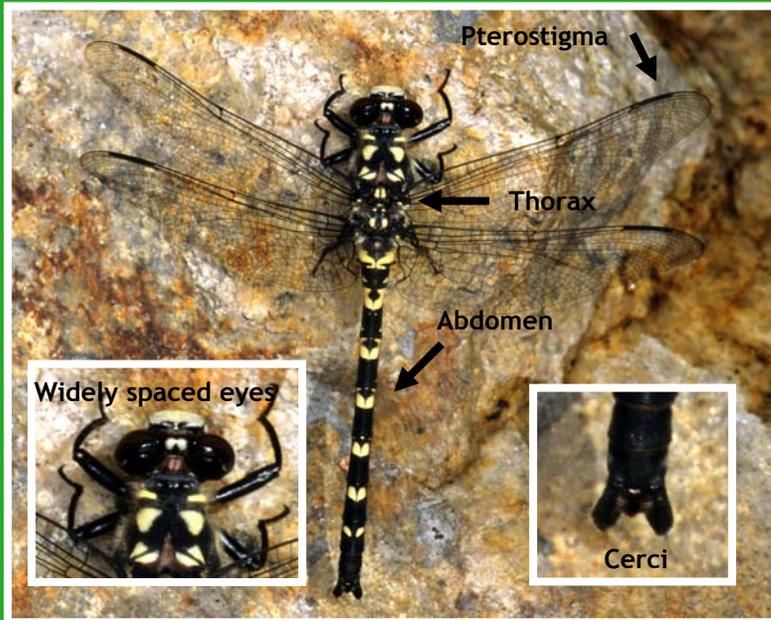


BC's Coast Region: Species & Ecosystems of Conservation Concern

Black Petaltail (*Tanypteryx hageni*)

Global: G4 Provincial: S3 COSEWIC: N/A BC List: Blue



Notes on *Tanypteryx hageni*: a member of the family Petaluridae (“Petaltail” dragonflies) this group derives its name from the robust, flat “cerci” (appendages on the tip of the abdomen), which resemble the petals of flowers. Although the family is widely distributed globally, only 11 species persist in widely scattered regions, relicts of a once much larger fauna. The Black Petaltail is the only *Tanypteryx* species in North America.

Description

Length: males 5.5–5.9 cm, females 5.3–5.5 cm. Males and females are similar (females slightly larger).

This distinctive dragonfly is black with yellow patterning on the head, thorax and abdomen. The face is yellow and the eyes are well separated (more reminiscent of damselflies) with two yellow spots in between. The pterostigma (coloured, thickened cell on the leading edge of each wing membrane near the tip), is black, long and narrow. Females have a short, curved ovipositor (appendage used to place and lay eggs). The 2.6-3.1 cm larvae (“nymphs”) are squat, black with hairy antennae and hair tufts on the abdominal segments. Larvae are unique in having an amphibious existence (not fully aquatic the way other dragonflies are), and excavate burrows in the wet mud of sloping seeps and saturated areas. Larvae can be observed sitting at the entrance to burrows as night falls waiting for prey items and may also make short foraging trips to find prey.

Diet

Members of the Order Odonata (dragonflies and damselflies), are carnivorous. Adults capture prey (a range of insects from mosquitoes to moths as well as other dragonflies or damselflies), through hawking (flying back and forth over open areas), or perching (“salliers” who dart out from perch and grab prey or glean off nearby vegetation). Black Petaltail are perchers. Their larvae, which have a somewhat more unique terrestrial existence than other dragonflies, likely prey on larvae or adult forms of semi aquatic and terrestrial insects near their burrows.

Look's Like?

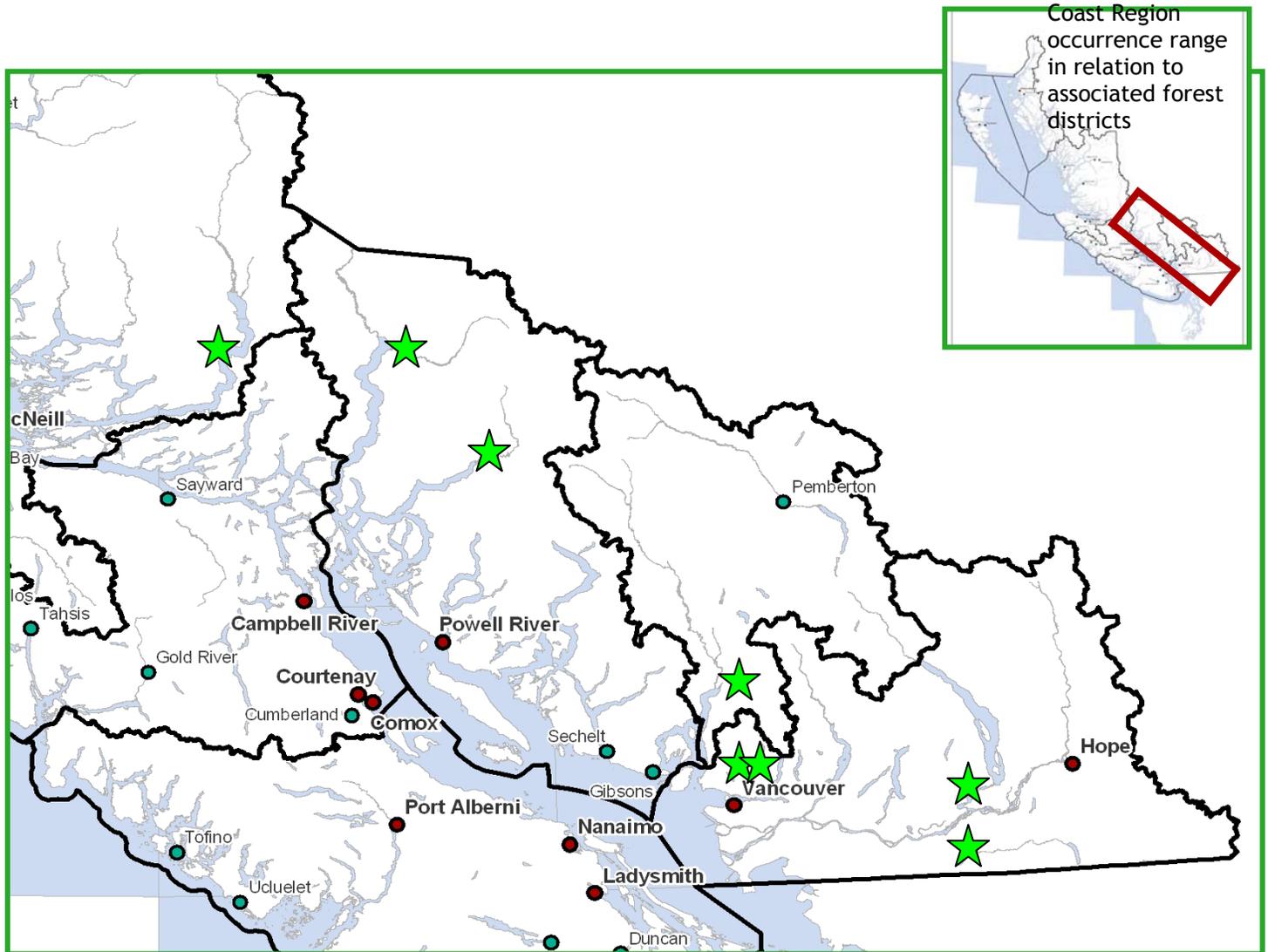
Pacific Spiketail, Grappletail and Western River Cruiser are three other black and yellow dragonflies that live in south coastal BC. These species have differences in the structure of the eyes and in the pattern of yellow markings on the body. Both Black Petaltail and Grappletail have widely separated eyes; Pacific Spiketail's eyes meet at a single point on top of the head and Western River Cruiser's eyes meet broadly at the top. Both Black Petaltail and Pacific Spiketail have two strong yellow stripes on the side of the thorax; Western River cruiser has one. The side of thorax on Grappletail is yellow-green divided by a thin black line; there is a wide dark stripe above and a dark blotch below.



Pacific Spiketail

Distribution

This species occurs along the coastal mountain ranges of California, Oregon, Washington State and north into the Coast Region in BC where specimens have been observed from mid to high elevations on the South and Central Coast. Absent from Vancouver Island. On the South Coast occurrences have been documented from the Fraser Lowlands (Liumchen Creek in the Chilliwack River Valley and Deer Lake in Sasquatch Provincial Park in the Harrison Lake area). Adults and larvae have been documented from Cypress Provincial Park on Metro Vancouver's North Shore mountains. Adults have been observed from other locations on the North Shore (Hollyburn Mountain and north of Rice Lake, east of upper Lynn Creek) as well as Diamondhead Provincial Park in Squamish. Along the central coast the species has been documented from the head of Toba, Bute and Knight inlets and as far north as the Kitlope area.



Black Petaltail (*Tanypteryx hageni*), known occurrences - green stars (based on historic and recent accounts), for the Coast Region.

Habitat Preferences

Adults utilize tree trunks, logs, rocks and the ground around hillside seeps, wet meadows and bogs for perching and basking. Larvae burrow in mud, moss and low sedge communities saturated by seeps or springs, often near stream edges or bogs.

Critical Features

Larvae have specific requirements for burrow locations (which in turn limits breeding sites), and are concentrated in areas where critical moisture conditions occur. Use of a wider range of habitat types is unknown though likely limited. Shading from colonizing or invading trees and shrubs may make temperatures for ovipositing or larval development unsuitable, prolong snowpack cover over potential oviposition sites, or reduce habitat quality.



This species has a narrow range of habitat associations driven by larval development requirements.

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 (nymphs) have several “instars” (growth periods between each molt), prior to emergence as winged adults.

Larvae may take up to five years to mature. Adult flight period in BC has been documented from early June to early August, in Washington State it has been documented to last into to mid September. *Timing of adult emergence, egg deposition and period for larval maturation may vary throughout this species range.

Threats

- The unique habitat associations of this species are sensitive to disturbance and have limited occurrence throughout this species Coast Region range.
- Suppression of natural or historic maintenance regimes (e.g. fire), along with potential changes from climate change, may increase loss of wetland habitats (e.g. bogs), from succession to shrub thicket and forest.
- Encroachment from development (e.g. hillside or recreational) as well as resource extraction activities (logging and associated roads) and recreational trails can impact breeding site integrity and larval survival.
- Impacts to water quality and aquatic habitats from road building and sedimentation (resource extraction activities) and broadcast spraying for insect pests or for noxious weed control (silviculture management, utility corridor maintenance), may have significant impacts to invertebrate species at all life history stages.
- Spread and colonization of invasive plant species (aquatic and terrestrial), can impact structural diversity and hydrology of breeding habitats and availability and access to prey items.

Conservation & Management Objectives

- Apply conservation and management objectives for this species as identified in resources such as the Royal BC Museum’s “Living Landscapes - Insects and Their Relatives (the Odonata).” Investigate recommendations for conservation for other Odonata species in BC (e.g. those found in provincial or federal status reports for species such as Western River Cruiser or Olive Clubtail).
- Inventory and assessment methods should at a minimum follow those set out in the RISC Standards #40 “Inventory Methods for Terrestrial Arthropods.” More recent survey and assessment guidelines and recommendations as well as identification and inventory resources for Odonata and their habitat have been developed and should be investigated¹.

¹ Contact the provincial invertebrate specialist or the Royal BC Museum. A number of survey and assessment protocols have been developed for Odonata management outside of Canada and are listed at the end of this factsheet. Others like the Wetlandkeepers Handbook and the Wetland Evaluation Guide adopted by the BC Provincial Wetland Working Group focus on habitat associations.

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.
- Improve understanding of larval lifecycle requirements and vulnerabilities.
- Where suitable habitat occurs, work with land managers and land owners to ensure development, resource extraction or recreational activities do not impact local populations.
- Encourage landowners and land use authorities to dedicate conservation covenants and easements to protect and buffer sensitive aquatic habitats. Increase awareness about the role and value that wetlands play locally and internationally.
- Effective long-term control and reduction in competition from invasive or aggressively spreading vascular plants (e.g. invasive aquatic plants, terrestrial 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 restoration of historic maintenance regimes (e.g. fire), that may have reduced spread of grasses, shrubs and tree communities into wetland habitats used by this species.
- Ensure adequate siltation and erosion control for roads and trail systems used for resource extraction and recreational activities.

Habitat for this species may be subject to protections and prohibitions under the BC Wildlife Act and the Forest and Range Practices and the Private Managed Forest Land Act, and 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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