

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

Grappletail (*Octogomphus specularis*)

Global: G4 Provincial: S2 COSEWIC: N/A BC List: Red



Notes on *Octogomphus specularis*: A member of the family Gomphidae (“Clubtail” dragonflies). The name is derived from the club-like widening of the end of the abdomen (though this feature is not as pronounced in females and may be absent from some species). The abdominal tip of *O. specularis* resembles a small pair of grappling hooks, from which the species derives its name. Another feature of this family is the widely separated eyes, a feature shared with “Petaltail” dragonflies. Dragonflies regulate body temperature through sunlight and can often be seen basking on rocks or logs in the morning. Clubtails are more sensitive to cooler temperatures and tend not to fly on cool or overcast days.

Description

Length: males 4.6–5.0 cm, females 4.4–4.5 cm. Males and females similar in colour pattern. The face is yellow-green striped with black, the eyes greenish-black or black and yellow. The top and sides of the thorax are pale green to green-yellow with a broad black lateral stripe on each side. The abdomen is nearly all black and narrow, with the tenth segment being the widest. Males have a broad, spiky abdominal tip. Females have slightly more yellow patterning on the abdomen (mid-dorsal line extends down to the seventh abdominal segment and lateral spotting is more extensive). The pterostigma (coloured, thickened cell on the leading edge of each wing membrane near the tip), is narrow and black. The 2.4 cm larvae (“nymphs”), have antennae with four segments, the third segment being half as wide as long. The abdomen is oval with a rounded, upturned tip and short lateral spines on the abdominal segments. Larvae burrow into substrate with just the abdominal tip protruding, using it to breathe by pumping water in and out through it.

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). Grappletail are perchers. Dragonfly larvae can prey on a range of organisms (e.g. small fish, amphibian larvae, other aquatic invertebrates - including their own species or those of other dragonflies or damselflies).

Look's Like?

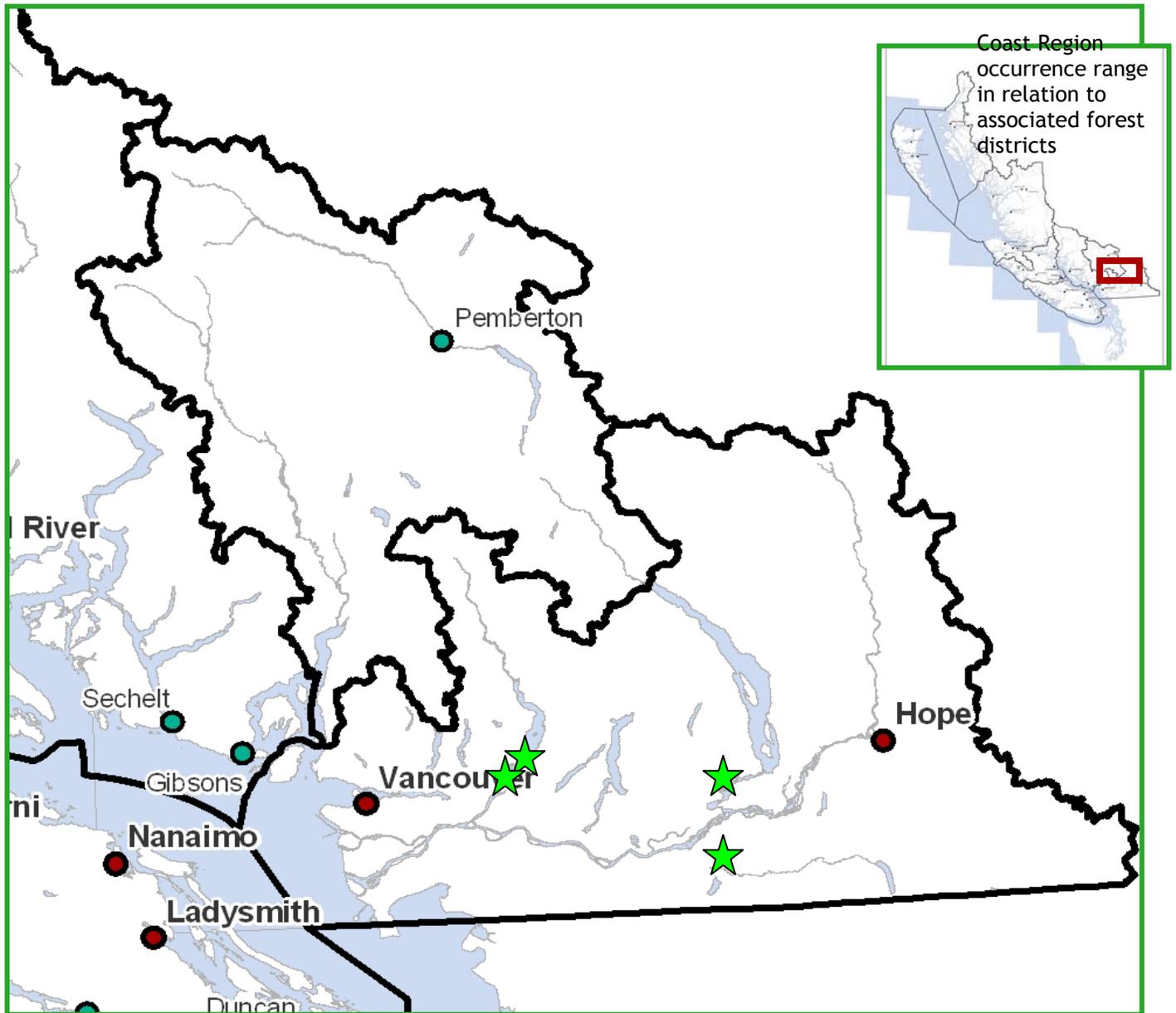
Grappletail are vaguely similar to several other black and yellow Odonata and might be confused with Black Petaltail or Western River Cruiser, both of which are known to occur in the Fraser Lowlands (see Black Petaltail and Western River Cruiser Factsheets). The main differences is the amount of colouration on the abdominal segments. Western River Cruisers have one strong yellow stripe on the side of the thorax while the Black Petaltail has two. Unlike the other two species, the cruiser has eyes that meet on the top of the head. Black Petaltail prefer still waters (bogs) and spring-fed seeps and have larvae that utilize more terrestrial habitats.



Western River Cruiser

Distribution

Found from southern California through central and coastal Oregon and Washington State north into the extreme southwest of BC. On the Coast Region (and in BC), the species has been recorded from the Maple Ridge area (UBC Research Forest, Blaney Bog) Chilliwack Valley (Cultus Lake, Sweltzer Creek) and Harrison watersheds (Harrison Bay).



Grappletail (*Octogomphus specularis*), known areas of occurrence - green stars (based on historic and recent accounts), for the Coast Region.

Habitat Preferences

Grappletail prefer small, swift flowing streams emptying lakes in coastal mountains. Males perch on stones, logs or branches along the stream or away from water.

Critical Features

Adults are known to range far from water to forage. Females are typically only seen on the water to deposit eggs. Larvae can be found in woody debris and organic accumulations at the bottom of pools that form below riffles and rapids in streams. Little is known about the connectivity requirements or dispersal range for this species.

This species prefers flowing waters with adequate organic debris cover for larvae.

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 emerge during the day (most dragonfly larvae emerge at night).



Adult flight period in BC has been documented from June to August, but can start as early as May in Washington State. *Timing of adult emergence, egg deposition and period for larval maturation may vary throughout this species range.

Threats

- Overall lack of knowledge on this species’ general biology, habitat needs and specific threats.
- Encroachment from development and agricultural land uses into riparian and lake foreshore areas can impact adult foraging areas and larval habitat.
- 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 (cosmetic pesticide use in urban and rural areas or for agriculture or silviculture management), 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.
- Introduction or enhancement of native or invasive fish species increases predation pressure on local Odonata populations (i.e. larval stages) and can impact aquatic habitat values (e.g. emergent vegetation used for cover).

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 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.

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 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) that impact habitat quality 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. seasonal flooding in lowland wetlands and floodplain off-channel areas, where feasible), that may have sustained wetland communities and species associations.
- Implement integrated stormwater planning and management approaches that reduce and eliminate potential sources for contaminated non-point source runoff entering local wetlands and waterways.

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