BC's Coast Region: Species & Ecosystems of Conservation Concern
Nooksack Dace (*Rhinichthys cataractae - Chehalis lineage*)
Global: G3 Provincial: S1 COSEWIC: E BC List: Red

Notes on *Rhinichthys cataractae - Chehalis lineage*: This member of the family Cyprinidae ("carps, true minnows") is considered a subspecies of the widespread and common Longnose Dace. An artefact of geographic isolation, the *Chehalis lineage* form evolved in Washington State's Chehalis River Valley sometime during the Pleistocene glaciations later spreading into other watersheds that opened up as ice retreated.

Description Nooksack Dace are a small (<10.5 cm) streamlined fish, with a sub-terminal mouth (the snout overhangs the mouth), sometimes with a black stripe in front of the eyes. Scales are small with pale markings visible at the back and front of the dorsal fin when viewed from above. The tail is forked. The rounded back is olive-grey; the belly is silvery-white with a dull brassy stripe along the sides. Lower sides often splashed with dusky speckles. Sexes are alike, but males tend to have longer and darker pectoral fins. Juveniles have a very conspicuous black line on their sides, from snout to base of tail.

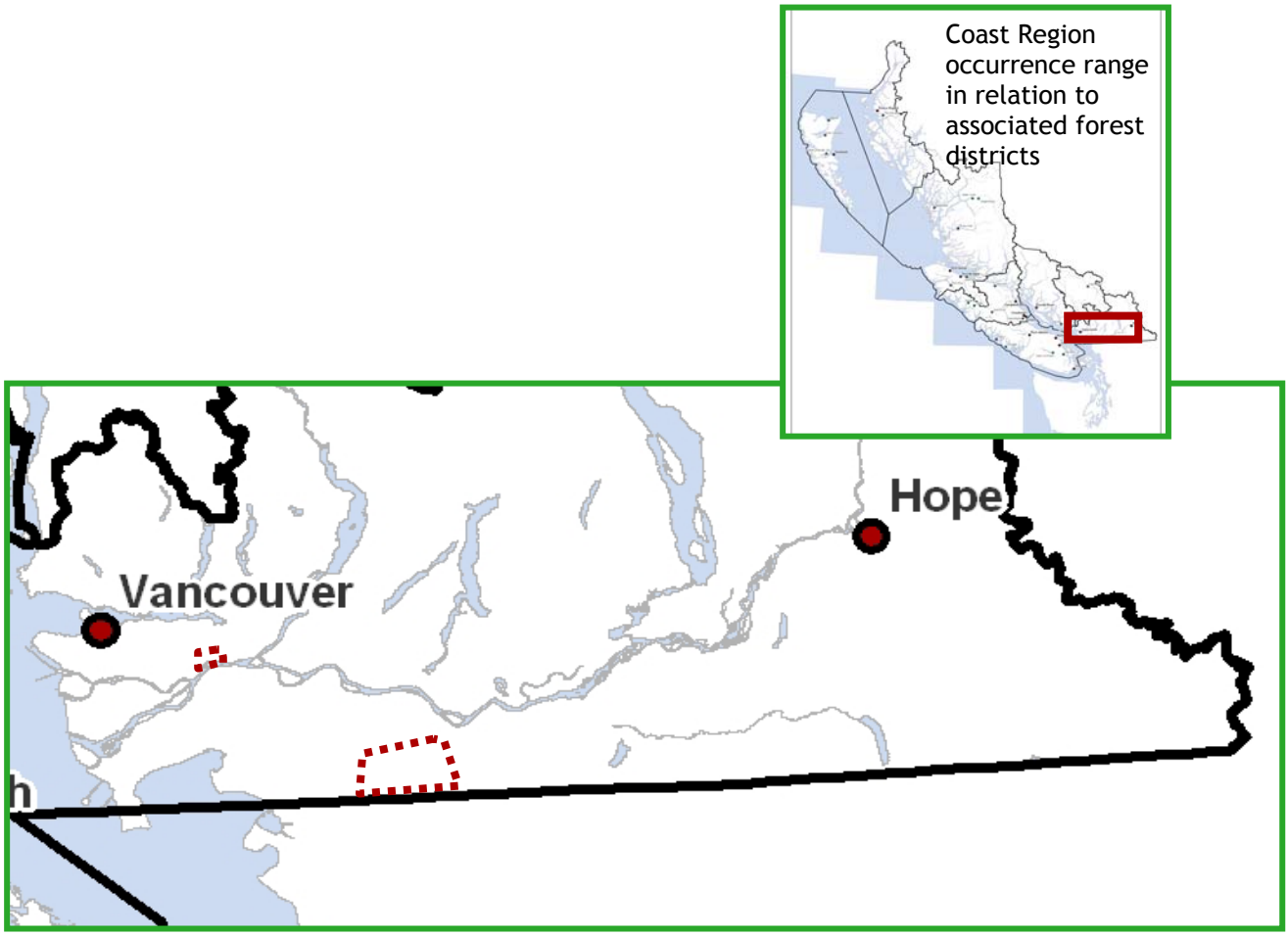
Diet This subspecies forages on benthic macroinvertebrates associated with flowing waters such as the larvae of caddis, mayfly, midges and adult riffle beetle as well as annelids (worms).

Look's Like? As a subspecies of Longnose Dace, close scrutiny is required to distinguish the two. Nooksack Dace has approximately 54 scales along the lateral line and 24 around the caudal peduncle (muscle area just before the tailfin), compared to 67 and 31, respectively, for Longnose Dace. Juveniles of the two forms are harder to distinguish with both having a dark line extending from nose to tail. However adult Longnose Dace are generally an olive-green colour interspersed with brassy or gold scales, especially on the head and ventral area.

Longnose Dace

Distribution

Elevations: 50-75 m. This subspecies occurs in ~24 waterbodies between northwest Washington State and Canada. It is extirpated from some tributaries within Canadian (BC) watersheds where it was abundant in the 1960's. Presently it is restricted to 3 small streams within the Nooksack River drainage system (Pepin Brook, Fishtrap and Bertrand Creeks), in the Abbotsford, Aldergrove and Clearbrook areas and one other river system, the Brunette River in the Brunette Basin in Burnaby.



Nooksack Dace (*Rhinichthys cataractae - Chehalis lineage*), known occurrence range for the Coast Region

Habitat Preferences

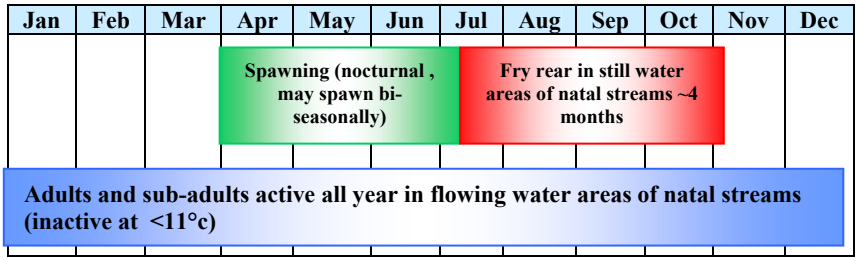
Adults inhabit riffles and fast glides with loose substrates where they feed on benthic invertebrates. Juveniles prefer shallow, slow flowing pools with mud or sand bottoms, near riffles. Though Nooksack Dace prefers high quality riffle areas with cool temperatures and adequate riparian cover, it can be found in sections of stream with poor vegetative or instream cover (e.g. where streams flow through agricultural or industrial areas).

Critical Features

Adult Nooksack Dace prefer shallow, turbulent, waters and rarely occur in reaches with less than 10 percent riffle by length, or in reaches where long stretches of deep pool habitat separate riffles. This subspecies has high home range fidelity, most adults appear to range less than 50 m annually.

The species is considered a habitat specialist dependent on stream riffles with loose gravel, cobble or boulder substrate. This species can be found in both larger mainstem as well as smaller tributary systems.

Seasonal Life Cycle



Sexually mature by end of second summer (live 4-6 yrs.).

Threats

- Physical destruction of habitat from floodplain dyking, stream dredging, channelization and infilling.
- Seasonal low flows in late summer often exacerbated by reduced recharge capability or disruption of groundwater from development reduce useable wetted habitat and increase temperature stress.
- Sediment deposition from agricultural or development runoff degrades habitat and infill's riffle areas.
- Beaver dams impound flows eliminating riffle habitat.
- Artificial barriers (culverts, diversions) prevent or inhibit fish from traversing some stream reaches. This restricts access to usable habitats and isolates individual populations increasing vulnerability to extirpation.
- Contaminants and pollution events from point or non-point sources.
- Episodes of extreme low oxygen (hypoxia) from low flows or contaminated runoff cause direct mortality or reduced fitness.
- Enhancement of or introduction/colonization of competitive, invasive or predacious fish species (e.g. Salmon, Bass, Sunfishes, Brown Bullhead species).

Conservation & Management Objectives

- Apply conservation and management objectives as set out in the "Recovery Strategy for the Nooksack Dace (*Rhinichthys cataractae spp.*) in Canada" and "An Assessment of Potential Critical Habitat for Nooksack Dace (*Rhinichthys cataractae ssp.*) and Salish Sucker (*Catostomus sp.*)."
- Assess and inventory using methodology setout in "Guidelines for the Collection of Nooksack Dace (*Rhinichthys cataractae spp.*)."

Specific activities should include:

- Beaver management needs to integrate a natural balance approach in Nooksack Dace watersheds that include specific measures for controlling beavers and their dams in critical stream reaches.
- Recovery planning and implementation should occur at the scale of individual watersheds as Nooksack Dace populations are isolated from one another and face differing suites of threats in each watershed.
- Monitoring and evaluation of a subset of populations is required each year with the status of each population and watershed being evaluated every five years at minimum.
- Habitat degradation should be mitigated through creation and enhancement of riffle habitat in stream reaches with high potential and productivity.
- Minimize impacts of introduced competitive and predacious fish species and undertake invasive species control and management programs.
- Maintain septic fields and other potential sources of contamination to surface and ground water.
- Stormwater should be appropriately managed to attenuate and intercept runoff and pollution that may enter receiving waters. Reduce sediment entry and minimize loading of contaminants into ground and surface waters.
- Adequate base flow in all habitats with high potential productivity must be established or maintained. Protect vulnerable aquifers that may be sustaining useable habitat and watershed hydrology.
- Clear-span crossings are preferred. Culvert crossings should be a minimum 2 m diameter with open bottoms with natural substrate, no longer than 30 m and should not have large drops that would impede small mammal (or fish) movement. On long culverts that are dark in the middle, consider the use of grates that will allow light and rain to enter.
- Encourage stewardship and awareness of this subspecies with private landowners, the general public and through land use decision making and associated maintenance activities.

This species is listed under the Federal Species at Risk Act (SARA) and is subject to protections and prohibitions under the BC Wildlife Act. Habitat for this species is also governed under other provincial and federal regulations including the Fish Protection Act and Federal Fisheries Act and potentially Regional and local municipal bylaws.

Content for this Factsheet has been derived from the following sources

B.C. Conservation Data Centre. 2010. [Internet] [Updated February 28 2005] Conservation Status Report: *Rhinichthys cataractae - Chehalis lineage*

Pearson, Mike. 2009. [Internet] Guidelines for the Collection of Nooksack Dace (*Rhinichthys cataractae spp.*). Prepared for the Non-Game Freshwater Fishes Recovery Team (BC).

Pearson, M.P., T. Hatfield, J.D. McPhail, J.S. Richardson, J.S. Rosenfeld, H. Schreier, D. Schluter, D.J. Sneep, M. Stejpovic, E.B. Taylor, and P.M. Wood. 2008. [Internet] Recovery Strategy for the Nooksack Dace (Rhinichthys cataractae) in Canada. Species at Risk Act Recovery Strategy Series, Fisheries and Oceans Canada, Vancouver. vi + 31 pp.

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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).

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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 August 2010.

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