

THOMPSON- OKANAGAN REGION

Fish and Drought Interactions at-a-glance



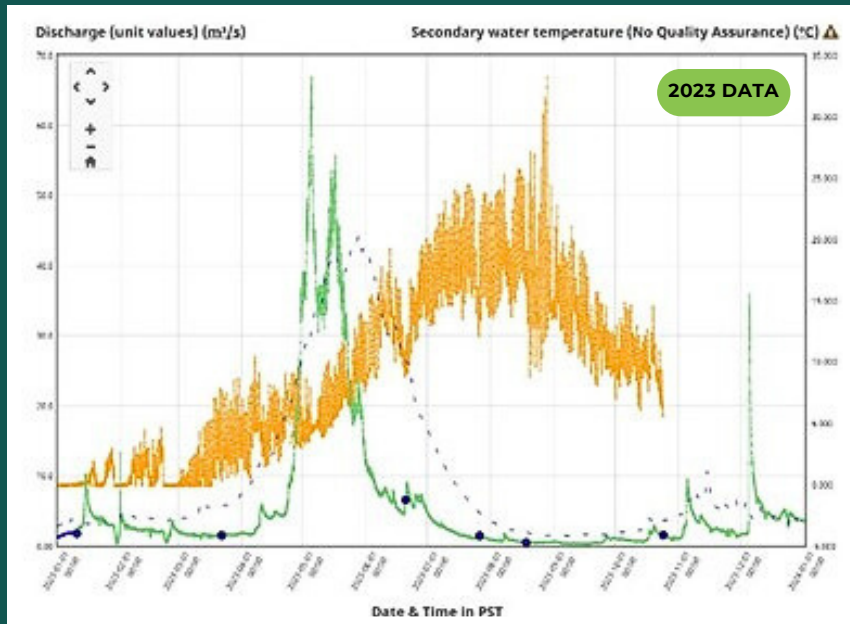
Photo: Thompson River



Stream temperatures during drought that average above **20** degrees Celsius for a week can be harmful to salmonids.

FISH LIFE STAGES IMPACTED BY DROUGHT

- **Rearing** fish may be affected by low stream flows and high water temperatures in late summer, decreases in available habitat (e.g. pools, riffles), a decline in invertebrate drift and food production, lack of groundwater input to maintain cold water refuge habitat, and changes in water quality (e.g. dissolved oxygen), resulting in stranding in isolated pools, side channels and tributary streams, increased stress, and fish mortality.
- High water temperatures in mid-summer months may affect **egg incubation** for steelhead and run timing for **adult** chinook in the Salmon and Coldwater rivers.
- Fall **spawning** species (e.g. coho, chinook, chum, pink, sockeye salmon, kokanee, bull trout, whitefish) may experience thermal or flow related barriers to migration, blocking access to critical spawning habitat in rivers and tributary streams. Fish may also be subject to stress from increased water temperatures and low dissolved oxygen levels.



→ HYDROGRAPH

Spilus Creek near Canford (08LG008) 2023 data showing a climb in water temperature (**yellow line**) related to low flows July into September.

- In hydrographs dominated by snowpack, freshet flows occur in May-June. Flows can vary according to regulated systems, such as dams that may release water to augment flows.
- Cool groundwater inputs are critical to provide refuge areas for fish.

REGIONAL STREAM HIGHLIGHTS

Streams are prioritized for monitoring during drought for water management and ecosystem values.

- TOR monitors multiple streams in the hydrometric monitoring network. Monitoring includes downloading real-time data from Water Survey of Canada hydrometric stations, as well as measuring groundwater level, stream temperature and stream flow in the field.
- An example of streams monitored during drought include: Coldwater River, Upper Nicola River, Salmon River, Barriere River, Shuttleworth Creek, Bessette Creek, Louis Creek, Lemieux Creek, Equis Creek, Shingle Creek and Vaseux Creek.

REGIONAL FISH HIGHLIGHTS

- The Thompson River watershed (including Bonaparte River, Coldwater River, Deadman River, and Nicola River) provides habitat for Interior Fraser River Steelhead, which are considered Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
- Many rivers and streams in TOR provide habitat for salmon, including Interior Fraser coho, chinook, pink, and sockeye salmon, as well as rainbow trout, bull trout, whitefish, and listed species at risk including mountain sucker, columbia sculpin, speckled dace and umatilla dace.
- The region's lakes support rainbow trout, kokanee, and bull trout which spawn in lake tributary streams.