

Skeena 2024 Pre-Season Conditions & Forecast

May 2024

Let's take a look at what we're expecting to see with salmon returns to the Skeena this summer. Here we cover pre-season forecasts, as well as some of the marine and freshwater conditions from the past five years that may influence this year's salmon returns. In general, pre-season forecasting has become less accurate in recent years due to greater environmental variability - which is why we at SkeenaWild continue to advocate for sustainable fisheries with in-season monitoring and adaptability to in-season abundances and conditions.

DFO Pre-season salmon forecasts

The 2024 Skeena sockeye return is estimated to be below average at 1.54 million (long term average ~ 2.4 million), with a first to fourth quartile range estimate of 1.04 - 2.28 million. Similar to the last several years, a low return of ~26,000 Chinook is expected, far below the long-term average of 100,000. Chum salmon have been low abundance in the Skeena for several decades and a continued low return is expected; however, 2023 saw a slightly better return. For both coho and pink salmon, average to good returns are expected for 2024. There is no pre-season forecast for Skeena steelhead, and we hope to see an improvement from the past 5 years of low returns.

Preliminary Outlook Summary

Yukon/Transboundary		North Coast/Central Coast		South Coast		Fraser River/BC Interior	
Chinook		Chinook		Chinook		Chinook	
ALSEK CHINOOK	3	CENTRAL COAST CHINOOK	2	LOWER GST CHINOOK	4	FRASER FALL RUN 41 CHINOOK	2 4
PORCUPINE CHINOOK	1	HAIDA GWAI CHINOOK	Data Deficient	MAINLAND INLET CHINOOK	Data Deficient	FRASER SPRING RUN 42 CHINOOK	2
STIKINE CHINOOK	1	NASS CHINOOK	2	MIDDLE GST CHINOOK	2 4	FRASER SPRING RUN 52 CHINOOK	2
TAKU CHINOOK	2	SKEENA CHINOOK	2	UPPER GST CHINOOK	3 to 4	FRASER SUMMER RUN 41 CHINOOK	1 4
YUKON CHINOOK	1	Chum		WCVI CHINOOK	1 4	FRASER SUMMER RUN 52 CHINOOK	2
Chum		CENTRAL COAST CHUM	2 DD	Chum		OKANAGAN CHINOOK	1
PORCUPINE CHUM	1 to 2	HAIDA GWAI CHUM	1	INNER SOUTH COAST CHUM	1 to 2	Chum	
Data Deficient		SKEENA/NASS CHUM	1 2 3	WCVI CHUM	2	FRASER CHUM	2
TRANSBOUNDARY CHUM	Deficient	Coho		Coho		Coho	
YUKON CHUM	1 to 2	CENTRAL COAST COHO	Data Deficient	JST/MAINLAND INLET COHO	3	INTERIOR FRASER COHO	2
Coho		HAIDA GWAI COHO	Data Deficient	STRAIT OF GEORGIA COHO	3	LOWER FRASER COHO	Data Deficient
ALSEK COHO	2	NASS COHO	4	WCVI COHO	3	Pink	
Data Deficient		SKEENA COHO	3 DD	Pink		FRASER PINK - ODD	
STIKINE COHO	Data Deficient	Pink		ECVI/MAINLAND PINK - EVEN	2 to 3	Sockeye	
TAKU COHO	3	CENTRAL COAST PINK	2 to 3	ECVI/MAINLAND PINK - ODD	na	FRASER SOCKEYE - EARLY STUART	1
Data Deficient		HAIDA GWAI PINK	2 to 3	WCVI PINK	Data Deficient	FRASER SOCKEYE - EARLY SUMMER	1 2 4
YUKON COHO	Deficient	NASS PINK	3 to 4	Sockeye		FRASER SOCKEYE - LATE	1
Sockeye		SKEENA PINK	3 to 4	ECVI/MAINLAND SOCKEYE	2	FRASER SOCKEYE - SUMMER	1 2 3
ALSEK SOCKEYE	3	Sockeye		WCVI - BARKLEY SOCKEYE	2 3	OKANAGAN SOCKEYE	3
STIKINE SOCKEYE	2 to 3	CENTRAL COAST SOCKEYE	2	WCVI - OTHER SOCKEYE	Data Deficient		
TAKU SOCKEYE	3	HAIDA GWAI SOCKEYE	2				
		NASS SOCKEYE	4				
		RIVERS/SMITH SOCKEYE	1				
		SKEENA SOCKEYE	2				

Figure 1. DFO 2024 Salmon Outlook. Outlook categories: 1 (red) = well below average, 2 (orange / yellow) = below average, 3 (light green) = near average, 4 (dark green) = abundant, Grey = insufficient information. [Source: Department of Fisheries & Oceans]

Marine Conditions

Salmon returning this year may have benefitted from the triple La Niña (cooler) conditions from 2020 through 2022, which saw a shift to larger zooplankton (more nutritious food for salmon) in the Northeast

Pacific in 2021 and 2022. However, productivity associated with La Niña is less certain with the overall rise in ocean temperature. While there was a shift to El Niño in the spring and summer of 2023, which is associated with the warm and dry conditions observed over the fall/winter and lower survival of Pacific salmon populations, this is currently shifting into a neutral phase (Figure 2) and is predicted to continue shifting into La Niña (cooler, wetter) again in July-September (69% chance) and persist through the winter.

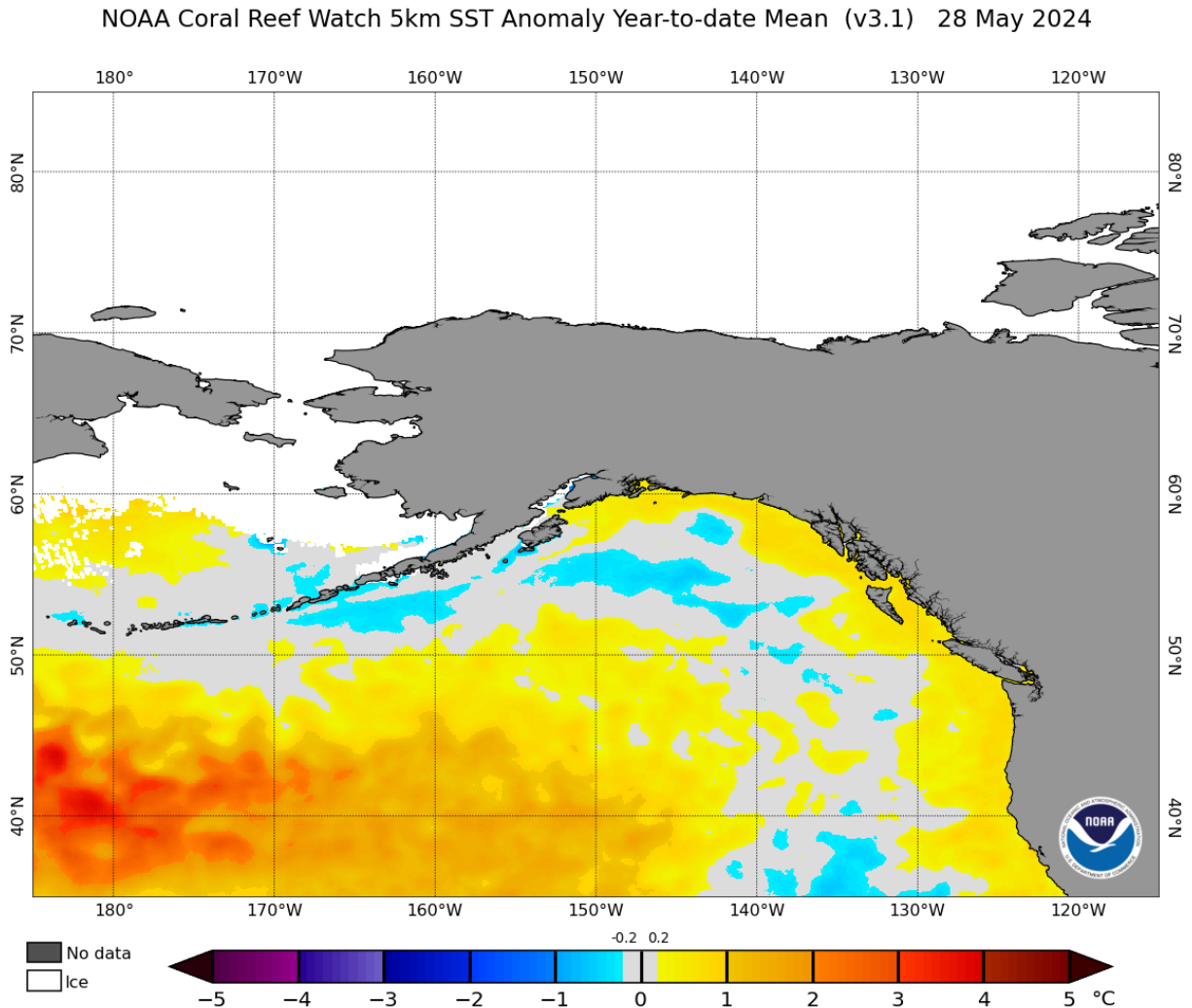


Figure 2. Sea surface temperature (SST) anomalies (difference from the long-term average, in degrees Celsius) in the Northeast Pacific on May 28, 2024. [Source: NOAA Coral Reef Watch]

Freshwater Conditions

Freshwater conditions were quite variable between 2019 and 2022, but there is a general trend of summer stream water temperatures exceeding 18-20°C more frequently, which can negatively affect the survival of adult salmon returning to spawn. In 2019, there was low snowpack over the winter with early spring melt due to dry, warm conditions which persisted through the summer, returning to normal mid-

September. 2020 similarly saw a relatively low snowpack with early melt, but the summer was mild with no, or low, drought conditions. While 2021 began with a large snowpack and neutral spring, much of the province experienced a heat dome in the summer with periods of high stream water temperatures. Drought conditions were very mild in the Skeena compared to most of B.C. through the summer. 2022 also began with a high snowpack and cold spring, which delayed snowmelt. The summer was neutral but extreme drought in the fall may have affected spawning salmon and egg survival, which applies to pink salmon returning this year. Conditions from 2019-2021 are most relevant for sockeye, Chinook, chum, and coho returns this year.

2024 Outlook

Conditions this summer and fall will of course affect this year's salmon returns as well. El Niño over the winter likely contributed to the warm conditions and the extremely low snowpack this year. The snow came late in the season, and a cool early spring held the snow a bit longer, but as of May 15 the snowpack in the Skeena-Nass region was at 55% of it's average for mid May (Figure 3).

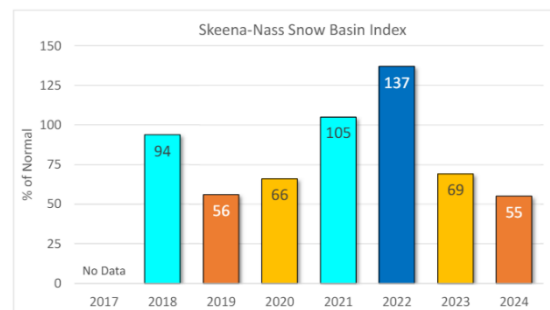
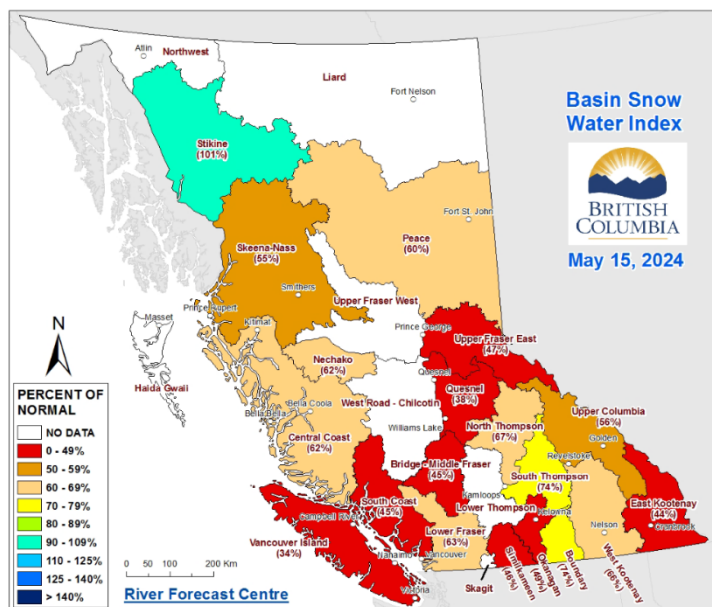


Figure 3. Skeena-Nass snow basin index (percent of long-term average) on May 15, 2024 (55%), compared to other regions in B.C. (left) and to the previous six years for Skeena-Nass (above). [Source: British Columbia River Forecast Centre]

We are also beginning the season in a persistent drought from previous years (Figure 4). The coastal region of the Skeena is now at drought level 2, while interior areas remain at drought level 3 (British Columbia Drought Information Portal). The low snowpack this year will likely contribute to drought conditions over this summer, but hopefully a transition to La Niña this year will bring some relief with cooler, wetter conditions into the fall.

British Columbia Drought Levels May 23, 2024

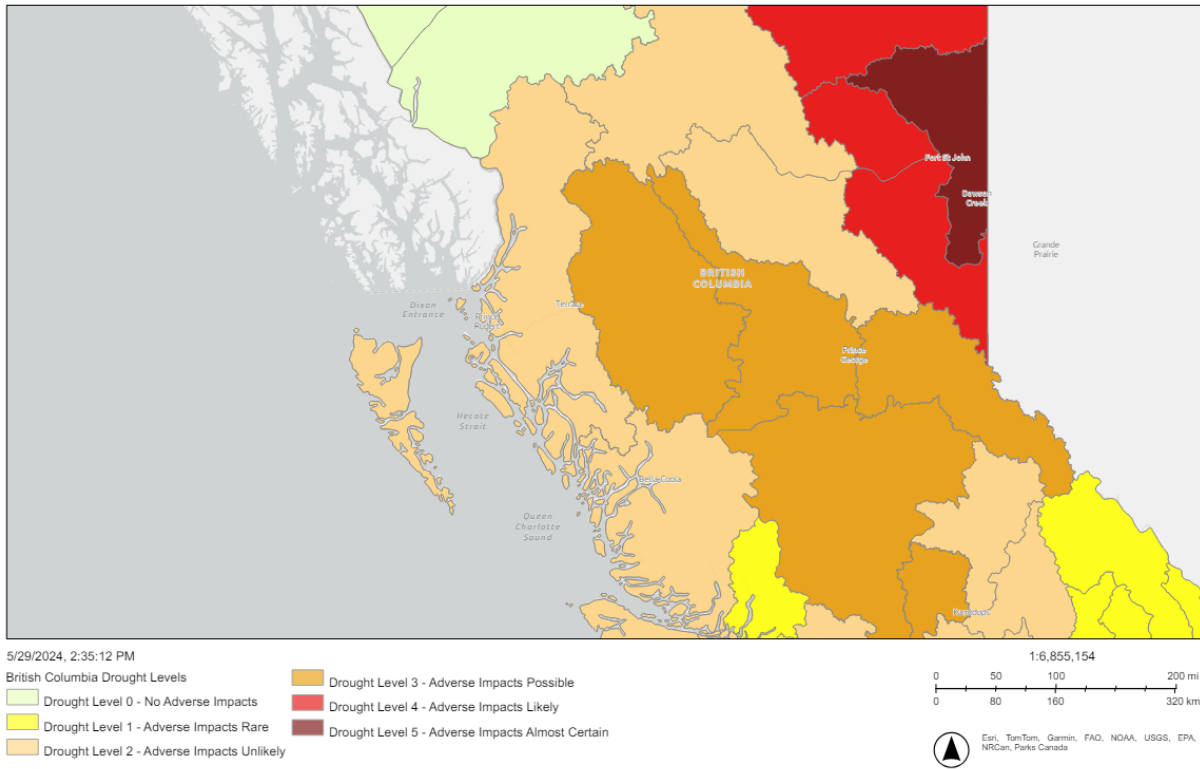


Figure 4. British Columbia regional drought levels as of May 13, 2024. [Source: British Columbia Drought Information Portal]