



Fisheries and Oceans
Canada

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Canada

PACIFIC SALMON OUTLOOK

PACIFIC REGION

2025

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Canada

2025 SALMON OUTLOOK - PACIFIC REGION

PURPOSE

The purpose of this document is to provide an 'Outlook' of expected abundance of salmon in 2025 to inform the harvest planning process.

The Outlook provides either an expected abundance for those stocks with statistical forecasts or a categorical abundance expectation based expert opinion.

OUTLOOK FORMAT

The Outlook document contains:

1. CU groupings with stock management units (SMUs) to better inform decision-making consistent with *Fishery Act* and IFMP requirements.
2. SMUs with statistical forecasts, which are consolidated and reported in the Outlook Document.
3. SMUs without statistical forecasts, have a standardized interpretation of SMU status in relation to outlook categories.
4. Information on SMU biological benchmarks and management references (where defined) for additional context.

BACKGROUND

Stock Management Units

For the 2025 Outlook, 'Stock Management Units' (SMUs) are used to describe stock aggregates that inform development of Integrated Fisheries Management Plans (IFMPs) for salmon. This is required for implementation of the fisheries-related revisions to the *Fishery Act*.

For salmon, the working definition of a 'stock management unit' (SMU) is a 'group of one or more conservation units (CUs) that are managed together with the objective of achieving a joint status', meaning harvest control rules would apply to the aggregate, at least in a coarse sense. Use of SMUs does not preclude considerations related to conserving CU-level diversity, but rather is a practical aggregation of CUs for harvest planning and reporting purposes. That is, it is the scale at which harvest management plans, or better, management and assessment procedures, are developed in Integrated Fisheries Management Plans (IFMPs). In many cases, elements of the Precautionary Approach are implemented at finer scales of organization within a SMU.

Biological and Management References

The purpose of a stock forecast or outlook is to provide information to harvest managers to potentially adjust harvest plans according to the expected stock abundance. Ideally in that regard, the status of the stock management unit (or sub-unit) is assessed against specified limits and targets and pre-defined harvest strategies (or harvest control rules) are in place that define the actions required to meet targets and avoid limits.

Therefore, where biological benchmarks and/or limit reference points are defined for CUs or SMUs, respectively, they are noted in the Outlook/Forecast tables below. Similarly, if

management targets are in place they are identified. Lack of these references is a gap and work is on-going to develop methods and complete the analyses to define these references. The summary below describes how these biological and management references are applied and interpreted.

WSP Lower Biological Benchmarks and Limit Reference Points (LRPs)

For implementation of the Wild Salmon Policy, the status of salmon Conservation Units (CU) is assessed against ‘biological benchmarks’. The lower biological benchmark allows for substantial buffer between it and the level of abundance at which the stock would be considered at risk of extinction and is generally estimated as S_{GEN} . The upper biological benchmark delineates the ‘amber’ from ‘green’ WSP status zone and is generally estimated as $.80 S_{MSY}$. For more data-limited systems (i.e. where it is not possible to numerically estimate stock-recruit parameters), proxies for lower and upper biological benchmarks may be applied. For example, the lower and upper biological benchmarks are estimated as .25 and .60 percentiles of the long-term observed spawning abundance.

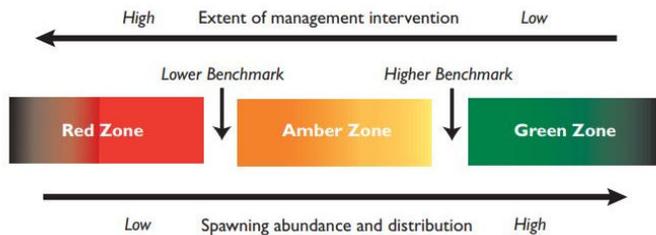


Figure 1. Benchmarks and biological status zones for CU assessments.

Under DFO’s Precautionary Approach (PA), the stock management unit (SMU) limit reference point (LRP) is a biologically defined reference that delineates the ‘critical zone’ from the ‘cautious zone’ for harvest management. It represents the status below which serious harm is occurring to the stock. There may also be resultant impacts to the ecosystem, associated species and a long-term loss of harvest opportunities.

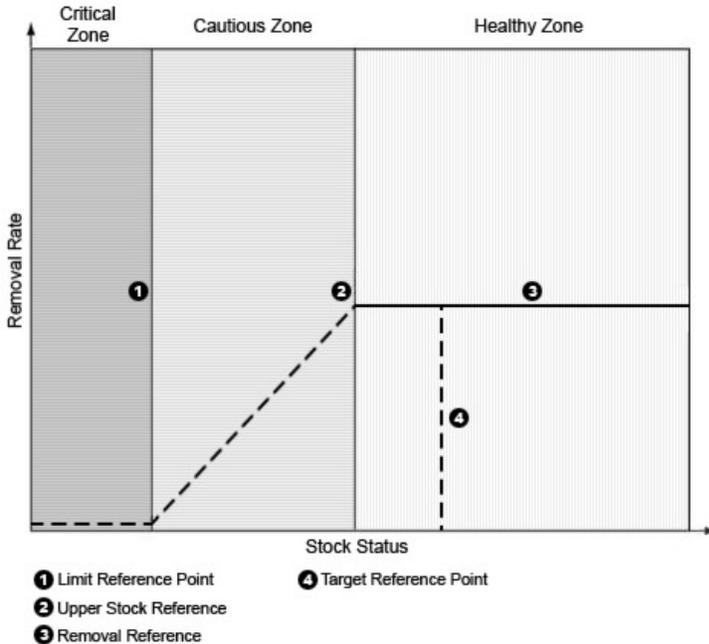


Figure 2. Schematic of a generalized harvest strategy under DFO's PA.

Given the intent is similar between the WSP and DFO's PA, it is practical to equate the SMU LRPs with lower biological benchmarks at the CU level. However, the WSP recognizes that serious harm to species occurs when CUs are depleted or lost. Therefore, to be consistent with the WSP, LRPs at the SMU scale should consider CU-scale biodiversity. Methodological approaches for defining LRPs are being developed to ensure CU-level biodiversity is considered and for both data-rich and data-limited assessment systems.

Management Targets and Operational Control Points

While management targets or operational control points are often informed by biological benchmarks and stock-recruit reference points, they also consider other objectives such as maximizing sustainable harvest, avoiding over-fishing, maintaining stable access and opportunity, allocation objectives such as how catch is distributed among harvesters, etc. As such, they are tightly linked to the harvest strategy and fishery management measures.

In some cases, the management target may be a simple trigger such as when a 'surplus-to-escapement-target' harvest control rule is in place. In other cases, there may be multiple management targets (or operational control points) used to adjust the harvest control rule at different levels of abundance.

Note that an SMU can be below its management target (and therefore subject to some level of harvest restriction as per the harvest control strategy), but well above levels that represent a serious conservation concern (i.e. the LRP or LBB). In other situations, an SMU may be well above its target but subject to harvest restrictions because the stock rears or co-migrates in mixed-stock fishing areas with other SMUs (or CUs) that are near or below their LRP (or LBB).

STOCK OUTLOOKS

Categorical stock outlooks

For the 'Preliminary Outlook' and for those SMUs for which statistical forecasts are not produced, either because the SMU is not intensively managed and/or is more data limited, categorical 'outlooks' are assigned. These outlooks are based on expert opinion qualified with information from monitoring programs. For each stock grouping an outlook of expected spawning abundance is assigned based on a scale of 1 to 4.

For CUs or SMUs with references in place (i.e. either lower (LBB) and upper biological benchmarks (UBB) and/or lower reference points (LRP) and upper stock references (USR) and Target Reference Point (TRP), these references are used to assign Outlook category. For more data-limited CUs or SMUs (i.e. those without defined stock or management references), expected spawning abundance is compared to average or median abundance based on available information.

SMUs for which insufficient data area available to determine an Outlook are noted as 'Data Deficient'.

Outlook Category	CUs or SMUs with references		Data Limited CUs or SMUs	
	Wild Salmon Policy (CU Level)	Precautionary Approach (SMU Level)	Category Definition	Expected spawning abundance
1	Red Zone (i.e. below the LBB)	Critical Zone (i.e. below the LRP)	Well below average	<25 th percentile
2	Amber Zone (i.e. below the LBB, below the UBB)	Cautious Zone (i.e. above the LRP below the USR)	Below Average	25 to 40 th percentile
3	Green Zone (i.e. above the UBB)	Healthy Zone (i.e. above the USR)	Near Average	40 to 60 th percentile
4	Green Zone (i.e. at or above the TRP)	Healthy Zone (at or above the TRP)	Abundant	>60 th percentile
Data Deficient			Insufficient information	Unknown

YUKON RIVER AND TRANSBOUNDARY

YUKON RIVER

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast /Outlook
YUKON CHINOOK	Aggregate includes 9 CUs	55,000 (ESC. AVG. 2005+)		71,000 Rebuilding Target (S _{MSR})	<p>Total 30,000</p> <p>Border passage estimate 18,000</p> <p>Outlook Category 1</p>
PORCUPINE CHINOOK	Porcupine Aggregate 3 CUs	Data Deficient (Mainstem as indicator)		N/A	
<p>The spawning escapement of Canadian-origin Yukon River mainstem Chinook salmon in 2024 was well below average at 24,183. The recent rebuilding target of 71,000 Mainstem Chinook endorsed by the Alaska Department of Fish and Game and Fisheries and Oceans under the newly signed Agreement of April 1, 2024 regarding Canadian-origin Yukon River Chinook Salmon for 2024 through 2030 was not met. In five and six year old fish dominate returns. Recent total production observed in Canadian-origin Yukon River Chinook salmon stocks is well below past years, averaging around 66,000 over the last ten years, compared to 150,000 in the 1980s and 1990s.</p> <p>Recent (2020 to 2023) forecast accuracy of escapement into Canada has been poor, likely due to on route mortality. 2024 escapement fell within pre-season range of 19,000 to 28,000). Assessment of Porcupine Chinook continues however with limited data. Outlook Category 1</p>					
PORCUPINE COHO	Porcupine CU	Data Deficient (US stocks as indicator)			Data Deficient
	<p>Very little is known about Coho Salmon stock status within Canadian portions of the Yukon River drainage. Data from the U.S. portion of the drainage suggest runs to the drainage have been below average in three of the past five years, with a declining trend. No assessment programs are currently undertaken in Canada and the current stock status is unknown. It is known that coho salmon primarily return as 4-year-olds and overlap with the tail end of the fall chum run.</p>				
YUKON CHUM	Mainstem – includes 6 CUs	182,000 (ESC. AVG 2006+)		87,000 (70,000 - 104,000) Escapement Target (S _{MSY})	<p>22,000</p> <p>Outlook Category 1</p>
	<p>The spawning escapement of Canadian-origin Yukon River mainstem Chum salmon in 2024 was the lowest on record, at 16,204. The run is typically dominated by four year old fish. The current mainstem spawning escapement goal endorsed by the Yukon River Panel is 70,000 – 104,000 Chum salmon, which has been met every year in the past decade except the last 5 years 2020 through 2024, where escapement into Canada has reached historical low values. Outlook Category 1.</p>				
PORCUPINE CHUM	Porcupine	46,000 (ESC. 1972 – 2020 AVG) 22,000 (ESC. 5-year AVG)		35,500 (22,000 - 49,000) Escapement Target (S _{MSY})	<p>9,000</p> <p>Outlook Category 1</p>
	<p>The spawning escapement of Fishing Branch River Chum salmon in 2024 was 5,933, well below last year’s low value of 11,528, and well below the minimum escapement objective of 22,000. The current spawning escapement goal for the Porcupine River (as assessed at the Fishing Branch River) endorsed by the U.S./Canada Yukon River Panel is 22,000-49,000 Chum salmon. Runs over the last decade have been well below expected, failing to meet the escapement goal in seven of the past ten</p>				

	years. Recent past 4 years have seen unprecedented low returns. Outlook Category 1.	
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TRANSBOUNDARY AREA

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
ALSEK SOCKEYE	Alek (Neskatathin / Blanchard)	76,500 (ESC. 10-year Avg.)		29,700 (esc. Goal range 24,000 – 33,500)	72,400
	Klukshu	14,000 (TR, 10-year Avg.)		9,700 (esc. Goal range 7,500 – 11,000)	19,000 TR
	Based on brood year escapements that were both above and below the MSY target range and stock-recruitment relations from historical records, a below average, but within the escapement goal range run is expected. This aggregate stock is dominated by lake and river type age 5 fish.				Outlook Category 3
ALSEK CHINOOK	Alek	5,000 (ESC. 10-year Avg.)		4,700 (esc. Goal range 3,500 – 5,300)	6,100
	Klukshu	1,100 (TR. 10-year Avg.)		1,000 (esc. Goal range 800 – 1,200)	1,500 TR
	Alek CU (CK-67) includes 5 rivers (Alek, Blanchard, Goat, Klukshu and Takhanne). Based on brood year escapements that were both above average and near the MSY target range and recent sibling survival data, an average run within the escapement goal range is expected. Alek Chinook are stream type dominated by 5- and 6-year olds.				Outlook Category 3
ALSEK COHO	Alek CU				Outlook Category 3
	Only a partial weir count is carried out. Brood year counts were slightly below average. Run is dominated by 4 year olds				
STIKINE SOCKEYE	Tahltan CU	67,000: 33,000 (wild) 34,000 (enhanced) (TR. 10-year Avg.)		22,600 (11,000 to 25,000) Escapement Target (S _{MSY})	101,000 wild 33,000 enhanced Outlook Category 3
	Mainstem (Christina and Chutine CUs)	38,000 (TR. 10-year Avg.)		21,000 (13,000 to 33,000) Escapement Target (S _{MSY})	41,000 Outlook Category 2
	Based on a combination of primary brood year smolt counts and sibling-based predictions, an average run is anticipated for 2025 and it is expected escapement objectives will be achieved. This is an aggregate stock of lake and river type 5 year olds.				
STIKINE CHINOOK	Aggregate includes 2 CUs	14,47500 (TR. 10-year Avg.)		17,400 (14,000 - 28,000) Escapement Target (S _{MSY})	10,000 Outlook Category 1
	The 2025 run is forecast to be well below the 10-year average of 14,475 and below the escapement goal range of 14,000 – 28,000. The anticipated run size does not provide for directed fisheries. Stikine Chinook are stream type dominated by 5- and 6-year olds.				
STIKINE COHO	Lower Stikine CU				Data Deficient

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
	Reliable brood year escapement data are limited, and ancillary observations are sometimes contradictory.				
TAKU SOCKEYE	Aggregate includes 4 CUs	170,000 (TR. 10-year Avg.)		58,000 (Esc. Goal Range 40,000 - 75,000)	172,000 Outlook Category 4
	Enhanced (Tatsamenie)	8,500 (TR. 10-year Avg.)	n/a		9,000 Outlook Category 3
	Enhanced (Trapper)	500 (TR. 10-year Avg.)			1,000 Data Deficient
	Based on stock-recruitment data, we anticipate the 2025 run will be near the 10 year average of 170,000 and well over the management objective of 58,000. This is an aggregate stock of lake and river type 4 and 5 year olds.				
TAKU CHINOOK (Large >660 MEF)	Aggregate includes 3 CUs	14,700 (TR. 10-year Avg.)		25,500 (19,000 - 36,000) Escapement Target (S _{MSY})	40,000 (SE = 5,900)
	The 2025 terminal run is expected to be well above the 10-year average of 15,000 and above the escapement goal range of 19,000-36,000. The anticipated run size does not provide for directed fisheries as it falls below the management objective of 25,500. Taku chinook are stream type dominated by 5 year olds.				Outlook Category 4
TAKU COHO	Aggregate includes 3 CUs	91,600 (TR. 10-year Avg.)		70,000 (50,000 - 90,000) Escapement Target (S _{MSY})	137,000 121,000 TR
	Based on preliminary smolt abundance in 2024 combined with recent smolt-to-adult survival rates, an average run above the management target of 70,000 is expected for 2025. Run is an even split of 3 and 4 year olds.				Outlook Category 3
TRANSBOUNDARY CHUM	Taku Chum CU				Data Deficient

NORTH COAST AREA

HAIDA GWAI

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast\ Outlook
HAIDA GWAI SOCKEYE	Aggregate includes 10 CUs	1990-present avg. spawners ~ 25000	None		Outlook Category 3 / Data Deficient
	Escapement to Naden have been below average, Copper, Yakoun, and Awun River escapements have been above average. All other CUs are Data Deficient.				
HAIDA GWAI PINK – ODD	Aggregate includes 6 CUs (even and odd year)				Data Deficient
	Due to historically consistent low abundance, there is not a lot of data that is collected on Haida Gwaii odd-year Pinks. 2024 Even-year Pink escapement returns were above average for Area 1 and 2E and data deficient in 2W.				
HAIDA GWAI CHINOOK	Aggregate includes 2 CUs				Data Deficient
	A multi-species sonar assessment program commenced on the Yakoun in 2021 but Chinook estimates remain uncertain.				
HAIDA GWAI COHO	Aggregate includes 3 CUs				Data Deficient
	Limited assessments since 2002. Coho returns to the Tlell were above average in 2023 and below average in 2024.				
HAIDA GWAI CHUM	Aggregate includes 5 CUs				Outlook Category 1-2
	Poor productivity has been observed for the past decade. East Haida Gwaii, West Haida Gwaii, and North Haida Gwaii CUs are expected to continue to have below average escapements.				

SKEENA AND NASS RIVERS

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast\ Outlook
NASS SOCKEYE	Aggregate includes 7 CUs	273,912 (Avg. ESC, 1982+)		250,000 (Escapement Target)	Forecast Currently Unknown
	There are no data deficiencies for the major stocks. Several of these CUs are stable at low abundance.				Outlook Category 4
SKEENA SOCKEYE	Aggregate (wild and hatchery)	2,584,000 (Avg. Return 1973+)	Under review	Under review, esc target is 900,000, 400,000 lower operational control point	2.7 Million Outlook Category 4
	Skeena – Wild Aggregate includes 30 CUs	Variable	Under review	Included in Skeena aggregate, under review	
	The 2025 preliminary pre-season forecast for the Skeena sockeye aggregate ranges from 1.3 – 5.8 million (80% confidence range), with a point estimate				

	<p>(p50) of 2.7 million. Based on the preseason sibling forecast model, we expect an average return of age-4s, based on an above average return of age-3s (128,500), and a strong return of age-5's, based on a good return of age-4 sockeye in 2024.</p> <p>The Skeena Sockeye aggregate consists of 90% Pinkut and Fulton spawning channel returns plus all wild stocks.</p> <p>Uncertainty continues with run timing estimates, the in-season forecast, and wild sockeye abundance.</p>			
	Babine Lake - Enhanced		Under review	Spawning channel capacity = 470,000
MAINLAND COASTAL SOCKEYE	Areas 3 Coastal: Data Deficient			
	Area 4 Coastal: Data Deficient.			
	Area 5 Coastal (18 streams): Recent annual Escapements to Deer Lake Creek & Tsimtack Lake Creek are below the 1998 to 2019 average. Escapements to the Lowe Inlet System is Above Average. The remaining streams are data deficient.			
	Area 6 Coastal (63 streams): Recent annual escapements to Evelyn Creek, Hartley Bay Creek, Hunter Creek, and Canoona River are below the 1998 to 2019 average. The remaining streams are data deficient.			
NASS PINK-ODD	Aggregate includes 5 CUs			
	Expected to be abundant (4) based on recent trends. The Upper Nass CU is data deficient, however above average brood year returns reported throughout its other CUs.			Outlook Category 4
SKEENA PINK- ODD	Aggregate includes 3 CUs			
	Above average returns expected.			Outlook Category 4
NASS CHINOOK		30,000 (TRTC 1994-2024)		15,000 (ESC target)
	<p>The 2024 TRTC was 19,000 with 12,000 in escapement. The return was below the TRTC pre-season forecast of 25,000.</p> <p>There is generally low productivity among stream-type stocks in the north-west</p>			<p>20,000 TRTC (range 19,000 25% prob. to 21,000 75% prob.)</p> <p>Outlook Category 2</p>
SKEENA CHINOOK	Aggregate includes 12 CUs	54,000 (median; GSI mark-recapture expansion based on KLM POPAN estimates 1984-2024)		
	Kitsumkalum (KLM) Indicator Stock	9,400 (1984-2024 POPAN estimate; Smsy = 5214)		
	<p>The 2024 KLM return was 5,452, which is above Smsy. There are currently no reference points for the Skeena aggregate. The 2025 terminal run forecast of 27,000 is <25th percentile of the historical terminal run (35,000; 1984-2024)</p> <p>Low brood year escapements continue. The 2025 return is uncertain after low escapements in 2019-2021.</p>			<p>Skeena terminal run forecast 27,000 (range 17,000 25% prob. to 35,000 75% prob.)</p> <p>Outlook Category 1</p>
NASS COHO	Aggregate includes 3 CUs (Lower Nass, Upper Nass and	171,000 (Based on mark-recapture and habitat		60,000 (Esc target)
				Outlook Category 4

	Portland Sound-Observatory Inlet)	expansion model 1992-2023)			
	An aggregate escapement estimate of the three CUs is currently achieved through a mark-recapture program in conjunction with a habitat expansion model. Total returns to Canada have been above average since 2021. The TRTC in 2024 was 326,000 and the 2024 escapement was 173,000.				
SKEENA COHO	Aggregate includes 4 CUs				
	Skeena Estuary				Data Deficient
	Lower Skeena	TBD (Zymacord Creek Indicator)			Data Deficient
	Middle Skeena	3,501 (Toboggan Creek Indicator 1987-2023)			Outlook Category 2
	Upper Skeena				Data Deficient
	Middle Skeena Toboggan Creek indicator counts were above average in 2022 and 2023. In 2024, there was a below average return of 2099 coho. 2024 Babine River Counts were also below average in 2024. The Skeena Estuary and Upper Skeena CUs are data deficient. Methods to estimate escapement all Skeena CUs using genetics are currently under review.				
SKEENA - NASS CHUM	Portland Canal/Observatory CU = Outlook Category 4 Portland Inlet CU = Outlook Category 3 The Skeena Estuary, Lower Nass, and Skeena River CUs are Data Deficient, with some data suggestive of recent annual improvements from historically low productivity.				Outlook Category 1-4

CENTRAL COAST

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
CENTRAL COAST SOCKEYE Excluding Rivers/Smith	Areas 7: 2020 to 2023 escapement returns to the Kadjudis, Kwakusdis, and Tinkey Rivers were above the 2000 to 2019 average, Kainet River returns were below average, ~20 other streams are data deficient.				Data Deficient
	Area 8: Namu is below average, and Atnarko River and Lakes are well below historic returns and the population has a recovery plan. ~10 other streams are data deficient.				
RIVERS / SMITH SOCKEYE	Rivers – Aggregate includes 2 CUs (Wannock River and Owikeno Lake)	272,000 (Avg. ESC, 2000+)	Under development	None	Outlook Category 1
	Low returns are expected in Areas 9 and 10. The Owikeno Lake productivity based on the Clear Streams Index continues to below average.				
	Smith: Long Lake CU	62,000 (Avg. ESC, 2000+)			

	Docee Fence (Area 10/Smith Inlet/Long Lake) sockeye is currently under review . The 2023 return to Smith Inlet based on un-reviewed sonar information from the GNN was low.				
CENTRAL COAST PINK - ODD	Area 6 (PKE-5/PKO-12)				Outlook Category 3
	Area 7 (PKE-6/PKO-13)				Outlook Category 2
	Area 8 (PKO-8)				Outlook Category 2
	Area 9 (PKO-8)				Data Deficient
	Area 10 (PKO-8)				Data Deficient
CENTRAL COAST CHINOOK	Area 8 Atnarko Indicator Stock Bella Coola-Bentinck CU	17,000 (Maximum likelihood model 1990-2022)		5009 (Atnarko wild) Escapement Target (SMSY)	Forecast currently unknown
	Bella Coola returns are expected to be below average based on returns in recent years. The 2024 Atnarko River Wild & Enhanced Maximum likelihood model escapement is not yet available but the Peterson escapement estimate was 17, 210. Specific escapement estimates to the Nusatsum, and Saloompt are data deficient.				Outlook Category 2
	Areas 7 and 8 3 CUs – Dean River				Data Deficient
	Areas 9 and 10 – Aggregate includes 3 CUs				Data Deficient/ Outlook Category 1/
	Owikeno tributary, Wannock River and Docee Chinook returns are unknown. There are multi-species sonar assessments on both the Wannock and Docee Rivers but estimates are data deficient. Recent Chuckwalla/Kilbella returns are well below average based on recent trends.				
CENTRAL COAST COHO	Area 6 – Aggregate includes 3 CUs				Outlook Category 3
	Areas 7 to 10				Data Deficient
CENTRAL COAST CHUM	Portions of Areas 5, 6, & 7 1 CU (CM-18: Hecate Lowlands,				Outlook Category 3
	Portions of Area 6 & 7 2 CU (CM-19: Mussel-Kynoch) & CM-20: Douglas- Gardner)				Outlook Category 2
	Portions of Area 7& 8 1 CU (CM-15: Spiller-Fitz Hugh Burke				Outlook Category 2
	Portions of Area 8 2 CUs (CM-16: Bella Coola - Dean, CM-17: Bella Coola River -Late)	Bella Coola aggregate of Wild & Enhanced Chum = Outlook Category 4. Dean & Bella Coola River Late CUs are Data Deficient. Aside from the Kimsquit River, smaller wild chum streams within this CU have been less productive (2).			Outlook Category 2-3
	Area 9 2 CUs				Data Deficient

	(CM-13: Rivers Inlet, CM-14: Wannock)				
	Area 10 1 CU (CM-12: Smith Inlet)				Data Deficient

SOUTH COAST AREA

WEST COAST VANCOUVER ISLAND

Stock Management Unit	Conservation Unit /Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
WCVI - BARKLEY SOCKEYE	Somass Aggregate (GCL + SPL)	663,000 (Avg. Run Size 1977+)		170,000 Run Size – lower operational control point	500,000-700,000
	Great Central Lake CU	322,000 (Avg. Run Size 1977+)	29,290 LBB		Outlook Category 3
	Sproat Lake CU	235,000 (Avg. Run Size 1977+)	41,350 LBB		Outlook Category 3
	The two main contributing brood years to the 2025 run are 2020 and 2021 and the two main contributing smolt years are 2022 and 2023. Brood abundances were below average in 2020 and 2021 particularly in Great Central Lake, but improved relative to 2019. Smolt abundances were low in both Great Central Lake and Sproat Lake in 2022 and 2023. Based on ocean indicators and returns to date, marine survival rates for the 2022 and 2023 smolt years are - good. Given the considerations above, expectations are for an average Somass Sockeye return in 2025.				
	Henderson Lake CU	34,000 (Avg. Run Size 1978+)	5000 LBB	9% max. harvest rate at run sizes <15,000	Outlook Category 2
	For the 2025 return, the two main contributing brood years are 2020 and 2021 and the two main contributing smolt years are 2022 and 2023. Brood abundance was low in 2020 but improved in 2021. Based on ocean indicators, marine survival rates for the 2022 and 2023 smolt years are likely average in 2023. The 2024 Henderson adult return, however, was low and the age composition data showed similar abundances of 42s and 52s. this may bias the outlook downward to a below-average return.				
WCVI - OTHER SOCKEYE	22 CUs are associated with this stock management unit.				Data Deficient
	Assessment data are not available to forecast others systems. Anecdotal information indicates some populations (e.g. Kennedy Lake) are greatly depressed, while others (e.g. Bedwell) are seeing moderate returns in recent years.				

Stock Management Unit	Conservation Unit /Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
WCVI PINK	3 CUs are associated with this stock management unit.				Data Deficient
	Since the collapse of WCVI pinks in the mid-1960s there has been negligible catch and only opportunistic assessment of returns during assessment of other species. The available data suggest WCVI pink salmon populations continue to persist at very low relative to historic levels with high variability.				
WCVI CHINOOK	Southwest Vancouver Island CU, CK-31			10 – 15% maximum exploitation rate in key 'pre-terminal' CDN fisheries	Outlook Category 1
	Nootka and Kyuquot CU,CK-32				
	Northwest Vancouver Island CU,CK-33				
	Escapements of WCVI Chinook natural populations remain low. There has been improvement in Kyuquot (NWVI wild indicators) in recent years. The Clayoquot area (SWVI wild indicators), which remains the biggest concern, saw a drop in 2024 relative to the slight improvement over the previous two years. It is assumed survival rates of natural-origin Chinook are well below those of hatchery-origin Chinook and this discrepancy may be related to the much smaller sizes of natural out-migrating smolts; productivity is therefore anticipated to remain low. WCVI wild Chinook remain a stock of concern.				
	Somass/Robertson (Hatchery)	68,000 (Avg terminal run 1995-2020)	n/a	7M eggs to Robertson Creek Hatchery and 14600 spawners to the Stamp River	83,000 (65,000-105,000) Outlook Category 4
	Conuma Hatchery	37,000 (Avg terminal run 1995-2020)	n/a	10,000 ESC target but varies to ensure escapement of eggs associated with an average 10,000 escapement.	33,000 (22,000-47,000) Outlook Category 4
	Nitinat Hatchery	25,000 (Avg terminal run 1995-2010)	n/a	10,000 ESC including brood stock	21,000 (16,000-28,000) Outlook Category 4
	WCVI Other Hatchery Supplemented (e.g. Burman R, Sarita R.)	Varies by individual river; see local plans for details.	Work is underway to develop lower bench marks (C. Holt lead).	Varies by individual river; see local plans for details.	23,000 (13,000-40,000) Outlook Category 3-4
	Returns of hatchery Chinook stocks to the WCVI were strong in 2024, consistent with the favourable ocean-entry conditions observed in 2021 and fair in 2022. Conditions in the 2022 and 2023 ocean-entry year appear fair; therefore, expectations are for an average return in 2025.				

Stock Management Unit	Conservation Unit /Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
WCVI COHO	3 CUs are associated with this stock management unit.				Outlook Category 3
	Information to forecast Coho returns is limited. Therefore, there is considerable uncertainty in this assessment. Data suggests average Coho marine survival relative to recent years. Preliminary escapement through Stamp Falls Fishway in 2024 is in line with the 2023 count. The 2024 escapement to Carnation Creek wild indicator stock (97 adults and 84 jacks) was close to the 12-year average and is an improvement over the 2020 brood (56 adults and 24 jacks). For 2025, most of the return will originate from the 2022 brood year that went to sea in 2024. Final escapement estimates are still being processed, but preliminary observations suggest that Robertson Hatchery Coho jacks in 2024 were similar to 2023 Jacks and remain higher than the 2010-2022 average, suggesting improvement in 2025 with average returns expected. Prior to 2021, most WCVI Coho spawning populations had seen declines in productivity.				
WCVI CHUM	Area 23 (Barkley) – Southwest Vancouver Island CU	59,000 (Avg. Return, 1995+)		48,000 Run size – lower operational control point, 15% max harvest rate	Forecast Currently Unknown
	Area 24 (Clayoquot) – Southwest Vancouver Island CU	54,000 (Avg. Return, 1995+)		42,000 Run size – lower operational control point, 15% max harvest rate	Forecast Currently Unknown
	Area 25 (Nootka) – Southwest Vancouver Island CU	39,000 (Avg. Return, 1995+)		26,000 Run size – lower operational control point, 20% max harvest rate	Forecast Currently Unknown
	Area 25 (Esperanza Inlet) – Southwest Vancouver Island Cu	37,000 (Avg. Return, 1995+)		24,000 Run size – lower operational control point, 15% max harvest rate	Forecast Currently Unknown
	Area 26 (Kyuquot) – Southwest Vancouver Island CU	38,000 (Avg. Return, 1995+)		25,000 Run size – lower operational control point, 15% max harvest rate	Forecast Currently Unknown
	Area 27 (Quatsino Sound) – Northwest Vancouver Island CU				Forecast Currently Unknown
	Area 25 (Conuma Hatchery) – Southwest Vancouver Island CU	84,000 (Avg. Return, 1995+)			Forecast Currently Unknown
	Nitinat Hatchery	464,135 (Avg. Return, 1995+)	n/a	225,000 Run size – lower operational control point	Forecast Currently Unknown

Stock Management Unit	Conservation Unit /Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast\ Outlook
	<p>Preliminary 2024 returns of WCVI Chum to most systems were improved compared to recent years. Below average brood years 2020, 2021, and 2022 will contribute to the 2025 return as age 5, 4 and 3, respectively. Poor brood performance appears to be buffered by substantial improvements in marine survival for the 2019-2022 ocean entry years. We anticipate that these improvements in productivity will continue for 2025, although the magnitude of improvement in abundance will be limited by the poor brood performance for years contributing to the return. In addition, hatchery production has declined in recent years. 2025 Outlook Category 3</p>				Outlook Category 3

EAST COAST VANCOUVER ISLAND/MAINLAND INLETS

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast\ Outlook
ECVI / MAINLAND SOCKEYE	Nimpkish	60,000 median spawners			Outlook Category 2
	<p>For the 2025 return, the two main contributing brood years are 2020 (24,749) and 2021 (24,978). The abundance in 2021 is unknown as high precipitation in the spring prevented installation of the DIDSON during the sockeye migration. Sockeye returning in 2025 will have entered the ocean in 2022 and 2023. We have seen evidence of improved marine survival for these ocean entry years for Pink and Coho Salmon returning to nearby systems. Nimpkish Sockeye typically return as 4-year-old fish (57%), but the 5-year component can also be strong. Given the considerations above, and a stronger than expected return in 2024, we anticipate that escapement will be below average but improving in 2025. Outlook category 2</p>				
	Area 16 (Sakinaw)	121 (Avg. Return, 1995+)	2,440	4,470	Outlook Category 1
	<p>Of the 68,036 smolts that left Sakinaw Lake in 2022 a total of 183 adult Sockeye returned in 2024. Marine survival continues to be low; for the 2022 ocean entry year the smolt-to-adult survival was 0.27% for hatchery origin fish while too few natural-origin smolts were present in 2022 to generate an estimate. Returns from an experimental release of Sakinaw smolts at Big Qualicum were approximately 2.5x higher at 0.65% suggesting a localized survival bottleneck may exist. Smolt production in 2023 was average at 138,479. If marine survival is near the 6-year average, a total of 379 adults are expected in 2025.</p>				
	Other (Areas 11 to 13)	Heydon: 2,600 median spawners Quaste: 2,200 median spawners			
Expectations for other populations such as Quatse, Heydon and Phillips are similar to Nimpkish.					Outlook Category 2
ECVI / MAINLAND PINK	Areas 11 to 13	Reconstructed Median Returns			

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
		Southern Fjords (Even): 1.6 million Southern Fjords (Odd): 613K Nahwitti (Odd): 12K			Mainland Inlets)
	Georgia Strait	Strait of Georgia (Odd): 536K Strait of Georgia (Even): 142K			Outlook Category 3 (Southern portion of area on ECVI)
	<p>Even Year: 2024 saw improved returns throughout the South Coast with returns approaching or exceeding the long-term average for systems on Vancouver Island and in the Mainland Inlets. Returns were somewhat below the long-term average for the mainland, but most systems exceeded the recent (3 cycle) generational average.</p> <p>Expectations for 2026 are for a stabilization of abundance for Pink Salmon returning to ECVI and the mainland. Pink returns are highly variable, and confidence in the forecasted return in 2026 is low, but average returns to this region are expected in 2026</p> <p>Odd Year: 2023 saw varied returns throughout South Coast, but generally abundance increased over the brood year. Returns to Northern Vancouver Island were below the historical adult abundance, although with clear signs of improvement since escapement hit its lowest point in 2016/2017. The mainland inlets in Area 12 saw continued poor escapement of Pink Salmon, but again with improvements over the brood year. Expectations north of Adam River are for continued improvements in 2025, with potential to approach the long-term average escapement. Particularly strong returns were observed in 2023 to major systems including Adam, Quinsam, Tsolum and Jervis Inlet while unenhanced returns to Big Qualicum continue to grow. Above average escapements to these systems and promising fry counts from the Quinsam River suggest that we will see average to above average escapements for systems south of Adam River in 2025.</p>				
MAINLAND INLET CHINOOK	This aggregate includes 4 CUs				Data Deficient
	Includes Homathko and Klinaklini. DFO is working to expand our programs into the Mainland Inlets. Since 2021, a video counter was installed on Devereux Creek and average annual returns are 850, although additional data review is required. Since 2022, an intensive mark-recapture project has been undertaken on the Southgate River in Bute Inlet and estimated returns have ranged from 832 to 5,175. Although still data deficient, efforts are underway to understand population abundance and trends in these areas.				
UPPER GEORGIA STRAIT CHINOOK	Quinsam River Fall Run	7,072 (AVG. Terminal Run Index, 1979+)			11,170 Outlook Category 3

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
	<p>We saw below average escapement in 2024 for the Quinsam/Campbell River, but improved returns elsewhere. Although escapement estimates were lower than average, ancillary information suggests estimates are biased low, due to increased predator (bear) activity that targeted fresh carcasses before they could be recruited into the mark-recapture study. Average to above average returns for the brood years contributing to the return in 2024, continuing restrictions on early timed Fraser Chinook, and relatively stable marine survival in recent years suggests we will see average returns in 2025. Outlook category 3.</p>				
MIDDLE GEORGIA STRAIT CHINOOK	Puntledge and Big Qualicum Rivers Fall Run Enhanced	15,507 (AVG. Terminal Run Index, 1995+)	7,193		19,323 Outlook Category 4
	<p>The Puntledge River saw a below long term average return of 6,662 fall Chinook in 2024, while the Big Qualicum River had an above average return at 13,156. Stable production levels and modest survivals for several hatchery indicators combined with above average returns of 3-year olds suggests average to above average returns are likely for 2025. 2024 Outlook Category 4.</p>				
	Nanaimo and Puntledge Spring Summer Enhanced CK-83	1,669 AVG. Terminal Run Index, 2004+)			Nanaimo: Outlook Category 2-3
	<p>A combination of additional snorkel surveys and a DIDSON project in the Nanaimo River produced an estimate of 954 fish in 2024, which was up from 350 in 2023 and above the 4-year average of 680. Puntledge summer Chinook were below the 4-year average of 390 fish at 89. Most of the reduction can be attributed to reduced smolt releases in preceding years. Rebuilding efforts for these populations are continuing with recovery potential assessments underway. At these levels, rebuilding will take several generations even with improved survival. 2024 Outlook Category 2-3.</p>				Puntledge: 117 Outlook Category 1
LOWER GEORGIA STRAIT CHINOOK	Cowichan River Fall Run Unenhanced (<20% hatchery origin)	8,266 (AVG. Terminal Run Index, 1982+)	3,413	6500 (Cowichan) Adult Escapement Target (S _{MSY})	24,975 Outlook Category 4
	<p>Adult Chinook returns to the Cowichan River in 2024 exceeded the target escapement of 6,500 naturally spawning adults for the ninth consecutive year, recovering from a low of 540 natural spawners in 2009. Preliminary 2024 returns were above the 90th percentile, estimated at 25,487 adults and 16,653 Jacks. Wild production continues to drive escapement with the proportion of hatchery fish in the population estimated at less than 10% for adult age classes in 2024. The 2025 outlook is for average to above average returns. A similar rebuilding trend has not been observed in the Nanaimo River. 2024 counts were below the 4 year average with 6,440. Expectations for 2025 are for average returns. 2024 Outlook Category 4.</p>				
JOHNSTONE STRAIT / MAINLAND INLET COHO	Area 12	2,700 AVG Terminal Run Index (1998+)			Outlook Category 2

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast\ Outlook
	<p>Area 12 Coho returns have improved substantially against the extremely poor escapement in 2016, but 2024 returns to the Keogh River wild indicator (1753) will fall below the long term average (2,818). Throughout the downturn in abundance, smolt production has remained strong, although smolt abundance in 2024 was 52,546, which was the lowest juvenile outmigration since 2006. It is possible the extensive drought in 2022 negatively impacted spawning success and the number of juveniles produced was lower as a result. Periods of poor marine survival remain a significant risk.</p> <p>The return in 2024 stems from a strong smolt abundance of 92,907, indicating that marine survival was poor. We expect below average returns in 2025 due to the poor outmigration in 2024, combined with stubbornly poor marine survival</p>				
	Area 13 - North				Outlook Category 2
<p>Hatchery indicators for this outlook unit are Quinsam and Big Qualicum. Adult returns to the Quinsam were well above average. The wild Coho indicator at Black Creek also saw well above average adult (9,500) and higher jack (4,500) returns than average. General observations to date suggest the 2024 forecast under-estimated returns. Unfortunately, after several years of above average smolt production, we saw the lowest smolt outmigration (~39,000) since 2017. Expectations for 2025 are for below average to average escapement, following low smolt abundance in 2024.</p>					
STRAIT OF GEORGIA COHO	Quinsam				Outlook Category 3
	Big Qualicum	<p>4,612 (Avg. 1966-present)</p>			
	Black Creek				
	<p>Hatchery indicators for this Outlook Unit are the Quinsam and Big Qualicum rivers. 2023 adult returns of 16,495 to the Big Qualicum were above the short and long term averages of 12-15K. Production levels are stable and 2024 returns are expected to be near average. Quinsam River adult returns in 2024 were slightly above the long term average while jack returns were significantly above average.</p> <p>The wild indicator is Black Creek. This year's preliminary estimate of 9,500 adults is above the long-term average. Jack returns were significantly above the long term average with a preliminary estimate of 4,000. The preliminary marine survival estimate for the 2023 ocean entry cohort is significantly above the recent average.</p>				
INNER SOUTH COAST CHUM - Non-Fraser	Johnstone Strait Area and Mainland Inlets (Areas 11 to 13)				Outlook Category 2-3
	<p>Summer run Chum Salmon stocks in 2024 appear to have mixed performance. Some systems saw returns approaching the long term average, while others saw continued low abundance. We anticipate similar conditions in 2025 due to historically low brood abundance, coupled with improving marine survival.</p> <p>Fall run Chum returns in 2024 appear to be below average but dramatically improved in most systems surveyed. Productivity of these stocks has been poor since around 2017, and so the improved returns in 2024 is encouraging. Unlike in 2023 where Age-3 Chum dominated the returns, we saw more normal age composition in 2024, with Age-4 Chum most prevalent, followed by Age-3 and Age-5 returns respectively.</p>				

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
	For the 2025 return, below average parental brood abundances in both 2020, 2021 and 2022 likely mean below average return of fall Chum, although with potential improvement stemming from improved marine survival.				
	Jervis/Narrows Inlet (CM-04) (Brittian, Deserted, Skwawka, Tzoonie, Vancouver)	50,505 (Avg. Return, 2004+)		85,000	8,000 (Normal Forecast) 16,700 (Like Last Year Model)
	Mid-Vancouver Island (CM-04) (Puntledge, Big Qualicum, Little Qualicum)	66,176 (Avg. Return, 1995+)		230,000	50,400 (Normal Forecast) 75,000 (Like Last Year Model)
	Nanaimo River (CM-04)	56,320 (Avg. Return, 2004+)		40,000	53,600 (Normal Forecast) 58,800 (Like Last Year Model)
	Cowichan River (CM-04)	154,965 (Avg. Return, 2006+)		160,000	58,400 (Normal Forecast) 96,100 (Like Last Year Model)
	Goldstream River (CM-04)	25,527 (Avg. Return, 2000+)		15,000	17,600 (Normal Forecast) 23,400 (Like Last Year Model)
	2024 results indicate above forecast escapements for systems in mid to northern Georgia Strait and Jervis/Narrows Inlets. Returns to Nanaimo, Cowichan and Goldstream were strong, with all three systems exceeding targets. Productivity for all stocks is above long term averages.				Outlook Category 2-3

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast/ Outlook
	For 2025, mid-Island systems (Puntledge, Little Qualicum, Big Qualicum) are expected to remain well below target levels. Abundance of stocks in the southern Georgia Strait such as Cowichan, Nanaimo, and Goldstream is uncertain: expectations are for well below target returns if survival is low, or will be near target if survival continues above normal. Jervis/Narrows Inlet stocks are forecast to be below target abundance.				

FRASER AND INTERIOR AREA

FRASER SOCKEYE SALMON

Quantitative forecasts for Fraser Sockeye and Pink salmon are produced annually and biannually (odd years), respectively. The 2025 forecasts will be presented to the Fraser River Panel at the Pacific Salmon Treaty meeting in February. This document provides a precursory look at the upcoming 2025 Fraser River Sockeye and Pink forecast. The dominant age-of-maturity for most Fraser Sockeye stocks is four years, so Sockeye returning in 2025 as four-year-olds originate from the 2021 brood year. Five-year-olds returning in 2025 originate from the 2020 brood year which was the lowest return on record. The Outlook is intended to provide a categorical assessment of brood year escapements relative to Wild Salmon Policy (WSP) benchmarks and historic escapements. Categorical Outlook status ranges from poor return (1) to good return (4). Definitions of the technical terms used in this document and descriptions of how each metric is calculated are provided in Appendix 1.

The forecast focuses on the expected total return to the Fraser River. However, the data that are used to determine Outlook status are brood EFS (effective female spawners) and brood ETS (effective total spawners); both of which are derivatives of spawning escapement. Long term mean EFS is calculated across the length of the time series, or the length of the time series on the cycle line for cyclic stocks. Recent mean EFS is calculated as the mean across the last 4 years, or the last 4 cycle line returns for cyclic stocks.

AVERAGE AGGREGATE RETURN (ALL CYCLES, ALL STOCKS): 7,001,823

Stock management Unit: EARLY STUART

Average aggregate return (all cycles): 261,069

Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
Early Stuart (CU: <i>Takla-Trembleur-EStu</i>) - Cyclical: Yes	679,330 (cycle-year average; 1952-2021)			WSP – RED COSEWIC – END	116,000 Outlook Category 1
Poor return is expected in 2025. The 2021 brood year effective total spawners (ETS; 47,357) and effective female spawners (EFS; 25,904) are below all metrics, including the WSP lower benchmark for ETS (86,738), and the long-term and recent cycle line average EFS (91,224 and 23,646, respectively)..					

Stock management Unit: EARLY SUMMER

Average aggregate return (all cycles): 322,889

Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
LOWER FRASER					
Upper Pitt River (CU: Pitt-ES) - Cyclical: No	65,206 (1952-2021)			WSP – Green COSEWIC – NAR	46,000 Outlook Category 1-3
	An above-average return is expected in 2025 relative to the long-term average (65,206). Upper Pitt has a higher proportion of five-year-old recruits (~78%) relative to four-year-old recruits. However, an above average return from the 2021 brood year may bolster returns this year. . The 2020 brood year ETS (4,202) is well below the WSP lower benchmark (10,627), and EFS (1,825) is below both the long-term and recent averages (12,895 and 3,547, respectively). The 2021 brood year ETS and EFS are 14,513 and 6,669, respectively, larger than all the aforementioned metrics. Note: these comparisons include escapements to the Upper Pitt River spawning channel to be consistent with Grant et al (2020).				
Chilliwack (CU: Chilliwack-ES) - Cyclical: Yes*	2,769 (cycle-year average 2000-2021)			WSP – AM/GR COSEWIC – NAR	15,000 Outlook Category 1-4
	While this stock exhibits cyclical returns, limited data preclude cycle-specific benchmarks (Grant et al 2020). The uncertainty in both the age structure and relevant benchmarks for comparison is reflected in the Outlook status. The 2021 brood year ETS is 1,803. The 2021 EFS (883) is below the long term and recent averages for this cycle line (4,436 and 2,802, respectively).				
Nahatlatch River (CU: Nahatlatch-ES) - Cyclical: No	8,748			WSP – Amber COSEWIC – SC	7,000 NA
	Reliable recruitment data are not available for this CU, thus no WSP benchmarks are available for comparison (see Appendix 1). An above - average return is expected in 2025, as the 2021 brood year EFS was 3,053, which is above both the long term average (2,066), and recent average (1,518).				
SOUTH THOMPSON					
Seymour and Scotch¹ (CU: Shuswap-ES) – Cyclical: Yes & Yes	Seymour: 23,953 (1952-2021); Scotch: 19,724 (1980-2021; cycle-year average)			WSP – Amber COSEWIC – NAR	Seymour: 21,000 Scotch: 47,000 Outlook Category 1
	Poor returns are expected for this CU given that the Seymour River and Scotch Creek combined four-year old brood year ETS (22,054) is below the WSP lower benchmark (39,741). Seymour River brood year EFS (4,730) is modestly higher than the long-term average (3,750). EFS for Scotch Creek (7,543) is well above the long-term average (1,850) and modestly above the recent average (5,880). Although brood year escapements are above recent and long term averages, they still fall below the lower stock reference point for this cyclic CU.				

Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
¹ These 2 sites are treated separately in annual forecasts, but they share one set of benchmarks as the dominant components of the Shuswap-ES CU under the WSP.					
NORTH THOMPSON					
Upper Barriere (incl. Fennell Creek) (CU: North Barriere-ES) Cyclical: No	19,615 (1971-2021)			WSP – Amber COSEWIC – Threat.	2,000
	The 2025 return is expected to be similar to brood. The 2021 brood year ETS (873) is above the lower WSP benchmark of 640, while the brood year EFS (483) is similar to the average for recent years (688), and much lower than the long-term average (3,602).				Outlook Category 2
MID AND UPPER FRASER					
Gates (CU: Anderson-Seton-ES) - Cyclical: No	48,427 (1972-2021)			WSP – AM/GR COSEWIC – NAR	29,000
	Above-average return is expected for this CU. The 2021 brood year ETS (31,376) is well above the WSP upper benchmark (22,534). Brood year EFS (16,287) is above the long-term average (4,462) and the recent average (6,530). Note that these comparisons included the Gates River spawning channel, but, as of January 2020, the channel has not been operational, which will influence interpretation of these trends moving forward (Grant et al. 2020).				Outlook Category 4
Nadina (CU: Nadina-Francois-ES) - Cyclical: No	84,894 (1977-2021)			WSP – AM/GR COSEWIC – NAR	37,000
	The 2025 return is expected to be below the historic average of 84,894. The 2020 and 2021 ETS (29,128 and 11,834, respectively) are slightly above and lower than the lower WSP benchmark of 21,694, respectively. EFS in 2020 and 2021 (15,909 and 6,906, respectively) are above and below the long term average (10,489), respectively, but both are below the recent average (22,298). This stock experienced substantial en-route loss and migration delays associated high Fraser River discharge in 2020. Note: These comparisons include the Nadina spawning channel escapement estimates to be consistent with Grant et al (2020).				Outlook Category 1-2
Bowron River CU: Bowron-ES) - Cyclical: No	32,787 (1952-2021)			WSP – RED COSEWIC – END	5,000
	The 2025 return is expected to be well below the historic average of 32,787. This stock can have a large five-year-old component in some years. The 2021 brood year ETS (2,887) was below the WSP lower benchmark of 5,249. The 2020 brood year ETS (344) was also low. EFS for 2020 (172) is well below the long term and recent averages (3,866 and 1,628, respectively) while the 2021 EFS (1,609) was similar to the those averages. This stock was impacted by high Fraser discharge in 2020.				Outlook Category 1
Taseko (CU: Taseko-ES) - Cyclical: No	1,259			WSP – RED COSEWIC – END	1,000
	Reliable return data are not available for this CU, thus no WSP benchmarks are available (see Appendix 1). Low returns are typically expected for this CU. In 2021, estimated ETS and EFS were 1,327 and 664, respectively. By comparison, long term and recent average EFS values were 1,170 and 185, respectively. Limited sample size precludes analysis of the age structure of				

Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast Outlook
	Taseko Sockeye. Escapements to this CU were presumably heavily impacted by high discharge in the Fraser River in 2020.				

Stock management Unit: SUMMER RUN

Average aggregate return (all cycles): 3,509,685

Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast Outlook
Harrison River <i>(CU: Harrison River-Type)-S)</i> - Cyclical: No	114,955 (1952-2022)			WSP – Green COSEWIC – NAR	46,000 Outlook Category 1-2
Below-average to average returns are expected for this CU, but this will strongly depend not only on survival, but also the maturation rate for the 2021 and 2022 broods. This stock has an different life history (river-type) and age structure (predominately three- and four-year olds) relative to other Fraser populations. 2021 ETS (55,499) is above the WSP lower benchmark (38,928), and 2022 ETS (29,966) is below the lower benchmark. However, 2021 and 2022 ETS are both still below the upper benchmark of 122,165. The long term and recent averages for EFS are 29,683 and 25,300 respectively; the 2021 brood year EFS exceed these values (40,628) while the 2022 brood year EFS is below these values (18,778).					
Raft River <i>(CU: Kamloops-ES)</i> - Cyclical: No	28,660 (1948-2021)			WSP – Amber COSEWIC – SC	13,000 Outlook Category 1
The 2025 return is expected to be below the long-term average (28,660). The 2021 ETS (3,288) is below the WSP lower benchmark of 4,958. 2021 EFS (1,555) is below the long-term average (4,139), but similar to the recent average (1,599). This stock can have a five-year-old component (2020 brood year) of up to 30% in some years, but it is variable and inconsistent, thus only four-year-olds were considered.					
Quesnel <i>(CU: Quesnel-S)</i> - Cyclical: Yes	1,166,094 (1952-2021; cycle year average)			WSP – RED/AM COSEWIC – END	260,000 Outlook Category 1
A poor return is expected for this cyclical CU in 2025. The 2021 brood year ETS of 100,566 was lower than the WSP lower benchmark of 172,260. EFS in the 2021 (54,756) was well below the long term average (421,644) and slightly below the recent average (72,725) for this cycle line. This stock was impacted by the Big Bar landslide in 2019 and high Fraser River discharge in 2020, resulting in higher en-route mortality associated with the additional effort in reaching their spawning grounds. Note that these comparisons include escapements to the Horsefly River spawning channel to be consistent with Grant et al (2020).					
Stellako River <i>(CU: Francois-Fraser-S)</i> - Cyclical: No	416,666 (1952-2021)			WSP – AM/GR COSEWIC – SC	281,000 Outlook Category 4
Above average returns are expected in 2025. The 2021 brood year ETS (117,666) was well above the WSP lower benchmark (24,256), but slightly below the upper benchmark of 122,612. Brood year EFS (62,122) was similar to the long-term (55,240) and recent (51,736) averages. This stock was likely impacted by high Fraser discharge in 2020.					
Chilko <i>(CUs: Chilko-S and Chilko-ES)</i> - Cyclical: No	1,313,214 (1952-2021)			WSP – Green COSEWIC – NAR	928,000 Outlook Category 4
Above-average returns are expected in 2025 relative to the historical average (1,313,214). The 2021 brood year ETS of 899,785 is well above the upper (353,863) benchmarks. Brood EFS (539,551) is above both the long-term (225,836) and recent (257,495) averages. The smolt out-migrant estimate in 2023 was 61.5 million, which is almost three times the historic					

	average of 22.4 million. The 5 year old component of this stock was impacted by high Fraser River discharge in 2020.				
Late Stuart (CU: <i>Stuart-S</i>) - Cyclical: Yes	1,477,447 (1952-2021; Cyc-year average)			WSP – RED/AM COSEWIC – END	608,000
	An average return is expected for this CU in 2025. The 2021 brood year ETS of 379,351 is above the WSP lower benchmark (132,547), but below the upper benchmark (563,123). Brood year EFS (190,927) is below the long-term (218,775) average and above the recent (96,306) average for this cycle line. The 5 year old component of this stock would have been affected by the high Fraser River discharge in 2020.				Outlook Category 3

Stock management Unit: LATE RUN

Average aggregate return (all cycles): **2,661,884**

Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast\ Outlook
Cultus Lake (CU: <i>Cultus-L</i>) - Cyclical: No	31,971 (1952-2021)			WSP – RED COSEWIC – END	700 Outlook Category 1
	A poor return is expected for this CU. Brood year ETS is only 139, extremely small relative to the WSP lower benchmark (15,454). Brood year EFS (72) is also far below the long-term average (799), but is similar to the recent average (66). The smolt out-migrant estimate in 2023 was 39,994, well below the average of 111,427 (2001-2020).				
Portage Creek (CU: <i>Seton-L</i>) - Cyclical: No	37,769 cycle line (1953-2017): 7,335,9199 (1953-2021)			WSP – RED COSEWIC – END	13,000 Outlook Category 2
	Below-average returns are expected for this CU. The brood year ETS of 2,865 is above the WSP lower benchmark of 2,193 and below the WSP upper benchmark of 13,453. The brood year EFS (1,939) is below both the long-term (4,172) and recent averages (6,151).				
South Thompson (CU: <i>Shuswap-L</i>) - Cyclical: Yes	47,459 (1952-2021; Cyc-year average)			WSP – AM/GR COSEWIC – NAR	60,000 Outlook Category 1
	A poor return is expected for this CU. Brood year ETS (29,606) is far below the cycle-specific WSP lower benchmark (429,435). Brood year EFS (19,673) is above the long-term (9,768), but below the recent average EFS (34,068).				
Birkenhead River (CU: <i>Lillooet-L</i>) - Cyclical: No	292,640 (1952-2021)			WSP – Amber COSEWIC – SC	96,000
	A low return is expected for this CU. This stock has a considerable five-year-old component historically (~40%). The 2020 and 2021 brood year ETS were 3,328 and 45,018, respectively, below and above the WSP lower benchmark of 15,685. The 2020 and 2021 brood year EFS (1,635 and 23,510, respectively) are both below the long-term (39,032), but the 2021 brood year EFS (23,510) is above the recent average (8,591).				Outlook Category 1-3
Weaver Creek	288,914 (1966-2021)			WSP – RED COSEWIC – END	297,000

Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast\ Outlook
(CU: Harrison (U/S)-L) - Cyclical: No	Above-average returns are expected for this CU. The 2021 brood year ETS (72,357) is above the WSP lower benchmark (10,731) but below the WSP upper benchmark (84,597). Brood year EFS (36,453) is below the long-term (20,397) but above the recent average (11,513). These comparisons include escapement to the Weaver Creek spawning channel to be consistent with Grant et al (2020).				Outlook Category 4
Big Silver Creek (CU: Harrison (D/S)-L) - Cyclical: No	6,814			WSP – AM/GR COSEWIC – SC	NA
	Reliable return data are not available for this CU, thus no WSP benchmarks are available (see Appendix 1). Poor returns are expected for this stock, since the 2021 brood year EFS (962) was low compared to the long-term (1,597) and recent average EFS (389).				
Widgeon Slough (CU: Widgeon (River-Type)) - Cyclical: No	804			WSP – RED COSEWIC – Threat.	70 NA
	Reliable return data are not available for this CU, thus no WSP benchmarks are available (see Appendix 1). This stock has a different life history (river-type) and age structure (predominately three- and four-year olds) relative to other Fraser populations). The expected contribution of 3-year-olds is uncertain due to small population size and resultant small sample sizes for age analysis. A poor return is expected in 2025 based on low 2021 and 2022 escapements (EFS: 62 and 66, respectively) relative to the long-term average (310). However, these values are similar to the recent EFS average of 78.				

FRASER PINK

Conservation Unit	Average Return	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast\ Outlook
Fraser Pink - Odd (CU: Fraser River)	12,350,000 (1959-2023)				26,965,000 Outlook Category 4
	Above-average returns are expected in 2025 relative to the historic average returns of 12.35 million. Total spawning escapement in 2023 (9,575,760) was above the long-term average (6,459,181; 1957-2023). Additionally, an estimated 1.35 billion Pink Salmon smolts out-migrated from the Fraser River in spring 2024, which is the highest outmigration on record, roughly three times the historic average of 427 million (1968-2022). Although this value is very high, it is not completely unprecedented, as the estimate in 2010 was 1.06 billion, which resulted in a return of 21.3 million adults in 2011. Wild Salmon Policy escapement benchmarks were recently (2024) estimated to be 1.7 million (LRP) and 4.6 million (USR) for Fraser Pinks (Glaser et al., in press). Given the large spawning escapement in 2023 relative to the USR, and the record high smolt outmigration, we should expect a strong return in 2025.				

FRASER CHINOOK

Stock Management Unit	Conservation Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
SPRING RUN 4₂ CHINOOK SALMON	Aggregate SMU	10,275 (CTC ESC ¹ 1975-2023)	Critical (one CU CK-16 in RED zone)	22,100 Escapement Target (S _{MSY})		9,482 Outlook Category 1
	CK-17 Lower Thompson	10,100 (ESC 1975-2023) 8,900 (Last Gen)	4000		WSP – Red COSEWIC – END.	
	CK-16 South Thompson-Bessette Creek	115 (ESC 1975-2023) 15 (Last Gen)	1000		WSP – Red	
	The 2024 field based escapement estimates were below the long-term average, the 2020 parental brood escapement, and the escapement target. Expectations are for continued low abundance in 2025 due to below-average parental escapements in 2021, the November 2021 flooding impacts on eggs (age-4) and parr (age-5), and uncertainty around marine survival and productivity. (2024 Outlook Category 2)					
SPRING RUN 5₂ CHINOOK SALMON	Aggregate SMU	24,400 (CTC ESC ^{Error!} 1975-2023) <small>Bookmark not defined.</small>	Critical (multiple CUs in the RED zone)	42,200 Escapement Target (S _{MSY})		14,329 Outlook Category 2
	CK-04 Lower Fraser	450 (ESC 1975-2023) 230 (Last Gen)	1,000		COSEWIC – Special Concern	
	CK-08 Middle Fraser- Fraser Canyon	60 (ESC 1975-2023) 75 (Last Gen)	1,000		WSP – Data D. COSEWIC – END	
	CK-10 Middle Fraser	7,800 (ESC 1975-2023) 4,050 (Last Gen)	5,300		WSP – Red COSEWIC – Threat.	
	CK-12 Upper Fraser	17,600 (ESC 1975-2023) 10,600 (Last Gen)	5,300		WSP – Red COSEWIC – END	
	CK-18 North Thompson	700 (ESC 1975-2023) 400 (Last Gen)	1,000		WSP – Red COSEWIC – END	

¹ Average aggregate escapement is based on the set of systems used for analysis by the CTC which does not always include every system in each CU due to data standard requirements for consistent methodology and complete or near complete time series.

Stock Management Unit	Conservation Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
	<p>There continues to be considerable escapement variation among and within these conservation units. On average, the 2024 field based escapement estimates were below the long-term average and escapement target, but above the 2019 parental brood escapement. The 5-year-old component of the 2024 escapement for CK-10 and CK-12 was affected by the 2019 Big Bar landslide. There was also a landslide on the Chilcotin River in late July 2024 that partially impacted the migration of Lower and Upper Chilcotin from CK-10. Expectations for 2025 are for continued low abundance compared to the escapement targets due to uncertainty around marine survival and productivity. (2024 Outlook Category 2).</p>					
SUMMER RUN 5₂ CHINOOK SALMON	Aggregate SMU	19,700 (CTC ESC Error! Bookmark not defined. 1975-2023)	Critical (three CUs in the RED zone)	23,600 Escapement Target (S _{MSY})		12,256 Outlook Category 2
	CK-05 Lower Fraser – Upper Pitt	235 (ESC 1975-2023) 45 (Last Gen)	1,000		WSP – Data D. COSEWIC – END	
	CK-06 Lower Fraser	60 (ESC 1975-2023) 50 (Last Gen)	1,000		WSP – Data D. COSEWIC – Threat.	
	CK-09 Middle Fraser - Portage	130 (ESC 1975-2023) 80 (Last Gen)	1,000		WSP – Red COSEWIC – END	
	CK-11 Middle Fraser	14,900 (ESC 1975-2023) 11,100 (Last Gen)	5,800		WSP – Amber COSEWIC – Threat.	
	CK-14 South Thompson	1,300 (ESC 1975-2023) 1,500 (Last Gen)	1,000		WSP – Amber COSEWIC – END	
	CK-19 North Thompson	4,300 (ESC 1975-2023) 3,900 (Last Gen)	1,800		WSP – Red COSEWIC – END	
	<p>There continues to be considerable escapement variation among and within these conservation units. On average the 2024 field based escapement estimates were below the long-term average and did not meet the escapement target but were above 2019 parental escapements. The 5-year-old component of the 2024 escapement will be the final escapement directly affected by the 2019 Big Bar landslide. There was also a landslide on the Chilcotin River in late July 2024 that partially impacted the migration of Chilko, Elkin and Taseko from CK-11. Expectations for the 2025 return are for continued low abundance and high variation due to uncertainty around marine survival and productivity. (2024 Outlook Category 2)</p>					

Stock Management Unit	Conservation Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
SUMMER RUN 4₁ CHINOOK SALMON		79,400 (CTC ESC ^{Error!} Bookmark not defined. 1975-2023)	Critical (one CU in the RED zone)	120,300 Escapement Target (S _{MSY})		
	CK-13 South Thompson	55,600 (ESC 1975-2023) 225,600 (Last Gen)	23,600		WSP – Green COSEWIC – Not at Risk	210,040 Outlook Category 4
	CK-15 Shuswap River	27,200 (ESC 1975-2023) 43,200 (Last Gen)	2,100		COSEWIC – Not at Risk	
	CK-07 Maria Slough	270 (ESC 1975-2023) 40 (Last Gen)	1,000		WSP-Not assessed COSEWIC – END.	Outlook Category 1
	<p>The 2023 escapement estimate for the aggregate was the highest on record, tripling the previous high escapement, with the exception of CK-07. The 2024 field-based escapement estimates indicate a high overall return with varied results across the CUs, but substantially reduced from 2023 for CUs 13 and 15. Overall, the aggregate is expected to meet the management target in 2024.</p> <p>The Lower Shuswap indicator 2024 escapement estimate is above the PST management objective of 12,300 spawners, making 2024 the 8th consecutive year the target has been met. A similar trend is expected for 2025 with continued high abundance for CUs 13 and 15 and low escapement for CU-07). (2024 Outlook Category 1 (Maria) / 4)</p>					
FALL RUN 4₁ CHINOOK SALMON	Aggregate	127,600 (ESC 1984-2023)	Cautious			
	(P) Chilliwack Hatchery Exclusion	36,900 (ESC 1984-2023) 56,600 (Last Gen)	n/a (hatchery stock)		Not assessed.	53,042 Outlook Category 4
	CK-03 Lower Fraser River-fall timing (white) - Harrison	90,700 (ESC 1984-2023) 76,900 (Last Gen)	15,300	75,100 Escapement Target (S _{MSY})	WSP – Green COSEWIC – Threat.	109,014 Outlook Category 3
	<p>The 2024 Harrison field based escapement estimate is above the long-term average and the 2020 parental escapement. This very preliminary estimate would also exceed the escapement goal for the third consecutive year. Expectations for 2025 are for moderate abundance based on the low brood year escapement and stronger returns from 2022-2024. (2024 Outlook Category 4)</p>					

Stock Management Unit	Conservation Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
	Chilliwack hatchery production, marine survival, and fishery exploitation are expected to return sufficient abundance to achieve hatchery production objectives. (2024 Outlook Category 4)					

FRASER COHO

STOCK MANAGEMENT UNIT	Conservation Unit / Sub Unit	Average Return	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast/ Outlook
Interior Fraser Coho	Aggregate	38,000 (ESC 1998 – 2023)	Cautious	~34,100 + 3 years of survival >3%	COSEWIC - Threat	107,107 (93,279-121,057) Outlook Category 2
	Fraser Canyon	3,500 (ESC 1998 – 2023) 4,900 (Last Gen)	1,000			
	Interior Fraser	5,900 (ESC 1998 – 2023) 14,300 (Last Gen)	1,800			
	North Thompson	13,800 (ESC 1998 – 2023) 24,700 (Last Gen)	2,600			
	Lower Thompson	7,500 (ESC 1998 – 2023) 15,200 (Last Gen)	1,400			
	South Thompson	7,300 (ESC 1998 – 2023) 10,400 (Last Gen)	2,300			
The PST MU status will remain Low in 2025, as the Moderate status reference point survival target has not been met; three consecutive years of survival over 3% are required for a change in status (the preliminary 2023 survival estimate was 2.2%). Recent escapements exceed Canadian Fish Stock Provision limit reference points and total pre-fisheries abundance has improved but remains well below historical averages. (2024 Outlook Category 2)						
Lower Fraser Coho	Aggregate – includes 2 CUs	280,000 (ESC 2021-2023)	Not available	Not available	Not Available	Data Deficient
	Lower Fraser CU Hatchery component	115,000 (ESC 2021-2023)	n/a (hatchery stock)		Not available	Outlook Category 4

	<p>2023 was the third successful year of estimating the aggregate terminal run and escapement for this PST MU. The average terminal run estimate for natural-origin LFC (165,000) exceeds the average for the hatchery-origin component (115,000). Currently, the Outlook Category cannot be determined for the natural component (only 3 years of data available, no LRP or management targets).</p> <p>Inch Creek Coho smolt-adult survival is a proxy for change in relative abundance for the MU. The 2024 forecast for marine survival for this indicator stock was 8.3%, which is a 13% increase relative to the 2023 survival estimate (7.2%). Lower Fraser Coho hatchery production, marine survival, and fishery exploitation are expected to return sufficient abundance to achieve hatchery production objectives.(2024 Outlook Category 4)</p>	
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FRASER CHUM

Stock Management Unit	Conservation Unit	Average Return (all cycles)	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast\ Outlook
Inner South Coast Chum - Fraser	Lower Fraser CU			There is a management goal of 800,000 wild spawners.		Outlook Category 2
	<p>Fraser River Chum Salmon spawning escapement has failed to reach the management target in six of the last eight years (2017-2021, 2023). Spawning escapements failed to outperform brood for 2017-2021, while spawning escapements outperformed brood in the most recent three years (2022-2024).</p> <p>The 2024 in-season terminal run estimate was 1,126,000 fish and the 2024 spawning escapement estimate (including age data) will be available by May 2025.</p> <p>Returns in 2025 will be dominated by 4-year-old brood from the 2021 escapement of 533,000 spawners. 2021 saw a historic flooding event during the Chum spawning period that will likely have a negative impact on recruitment. The Lower Fraser Chum CU is assigned an Outlook Category 2 for 2025. (2024 Outlook Category was 2)</p>					

BOUNDARY BAY

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	2025 Forecast\ Outlook
CHINOOK	CK-01 Boundary Bay	213 (Little Campbell ESC 1980-2023)	1,000	2,100	Outlook Category 1
	<p>In the last five years, escapements have been above the long-term average, but below the SMU target. Escapement data for 2024 are still pending and were impacted by a high flow event. Returns in 2025 are expected to follow the same. CK-01 is currently undergoing review for listing under the <i>Species at Risk Act</i>.</p>				
COHO	Boundary Bay CU				Data Deficient
INNER SOUTH COAST CHUM - Non-Fraser	Boundary Bay CU				

OKANAGAN

Stock Management Unit	Conservation Unit / Sub-Unit	Average Run / Avg. Spawners	LRP / LBB	Management Target	WSP / COSEWIC Status	2025 Forecast Outlook
OKANAGAN SOCKEYE	Okanagan Sockeye CU (i.e., Osoyoos, Skaha and Okanagan lakes)	270,655 (even year mean - 366,677; odd year mean - 174,633)	28,603 spawners	Fisheries Management will determine a candidate target from a range of 182,000—231,000 spawners	WSP - Amber with High Confidence	82,000 Outlook Category 2
	<p>Okanagan Sockeye returns have a two-year cycle with odd years being low. The preliminary forecast for Okanagan Sockeye returning to the Columbia River mouth in 2025, prior to harvest, has a median estimate of 82,000. Depending on upstream migration mortality, this may put the number of spawners below the LRP, but we have classified the outlook category as 2 because it is a low year of the cycle. The forecast includes the following credible intervals:</p> <ul style="list-style-type: none"> • 50% credible interval: 61,000-112,000 • 80% credible interval: 345,000-156,000 • 95% credible interval: 34,000-246,000 <p>This preliminary forecast suggests a below-average return year, primarily due to:</p> <ol style="list-style-type: none"> 1. A lower-than-average estimated number of smolts out-migrating in 2023 (odd-numbered return years typically have lower-than-average returns because of reduced smolt numbers in the dominant returning age class). 2. Regional climate conditions that are likely resulting in below-average marine conditions for Okanagan Sockeye. <p>In comparison, 2024 had the highest returns for this SMU since at least the 1930s, and this was likely due to higher-than-average smolt numbers in the dominant returning age class and better-than-average marine conditions. This preliminary forecast is based on a Bayesian smolts-to-adult-recruits model for Osoyoos lake fish that includes a suite of environmental covariates including regional climate indices, ocean entry conditions (zooplankton, sea surface temperature, salinity, upwelling), and an index of pink salmon abundance, as well as temperature and flow experienced in the downstream migration. The model structure was developed using causal inference theory to account for the interrelationships among these covariates and their collective influence on sockeye survival. The model does not directly estimate smolt to adult recruit (SAR) survival for Skaha and Okanagan Lake. For these lakes, estimates of smolt abundance were multiplied by the estimated SAR for Osoyoos lake in each year. Thus, the contribution of Skaha and Okanagan Lake to the returns is an additional source of uncertainty that is not accounted for in our forecast uncertainty.</p>					
OKANAGAN CHINOOK	Okanagan Summer	35 (ESC 2006- 2023)	1,000	4,600	COSEWIC - END	Outlook Category 1
	The escapement estimate for 2024 is still pending.. Expectations for 2025 are for continued depressed abundance related to low parental escapements, low marine and freshwater survival, low productivity, and low hatchery production. (2024 Outlook Category was 1)					

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APPENDIX - SOCKEYE

When considering the term “target” used for defining outlook categories, we considered upper WSP benchmarks to be the target (not the lower benchmark).

- Outlook status 1: population/CU is below the lower WSP benchmark
- Outlook status 2: population/CU is above the lower benchmark, but less than 50% of the upper benchmark
- Outlook status 3: population/CU is between 50-75% of the upper benchmark
- Outlook status 4: population/CU is over 75% of the upper benchmark

Details on how each metric was calculated or obtained for comparison.

- Long-term average EFS was calculated from the start date identified in Grant et al (2020) up to and including the brood year of interest (for the 2022 outlook, that would be 2018). This obviously may not hold true for stocks with predominantly 3- or 5-year old cohorts, but it is not expected to change the outcome drastically.
 - For cyclical stocks, long-term average EFS was calculated based on the cycle line average EFS. For example, for Seymour River, the long-term average EFS is the average of the 2022 cycle line escapements from 1950-2018.
 - For non-cyclical stocks, long-term average EFS was calculated across all years in the time series. For example, Harrison River long term average EFS is the average of each year's EFS from 1948-2018.
- Short term average EFS is calculated from the most recent 4 years of escapements. The purpose is to capture brood year relative to recent trends in escapement.
 - For cyclical stocks, this is the most recent 4 years in that cycle line (e.g., for the 2022 outlook, the average is calculated from 2018, 2014, 2010 and 2006 EFS).
 - For non-cyclical stocks, this is the most recent 4 years available up to the brood year of interest (e.g., for the 2022 outlook, it is calculated from 2015-2018, inclusive. Note the most recent year, in this case 2021, is not available at the time the Outlook is calculated).
- Most systems compare the average EFS of the 4 year old component (2018) to the long term average EFS and benchmarks. However, it is prudent to consider 3- and 5-year old components for some stocks. These stocks were identified visually using the PSC Age Composition Comparison App online (Brkic 2020). Note that for some cyclical stocks, this will have to be revisited in future years depending on the cycle line. For example, Mitchell and Horsefly Rivers (Quesnel-Summer) have much lower 4 year old contribution on the 2019 cycle line.
- Escapement benchmarks were manually compiled from Grant et al 2020. Note that this deals with CUs; while Scotch and Seymour are reported separately here, they are part of the same CU and so have the same 4-year median and benchmarks. These need to be updated annually for cyclical stocks as each cycle line has its own benchmarks.
- Effective total spawners (ETS) was calculated to compare to the Wild Salmon Policy (WSP) benchmarks as those are calculated in terms of ETS (apples to apples). Grant et al 2020 outlines

how ETS is calculated; briefly, $ETS = (\text{annual_male_escapement} + \text{annual_female_escapement}) * \text{annual_spawn_success}$, where spawn success is the spawn success of the females (based on egg retention in carcasses).

- Outlook status ranges from 1-4, with 1 being the poorest outlook/lowest return, and 4 being the highest. They are informed by the status definitions in FRAFS (2018) with slight modifications to this specific document. Note some populations/CUs may receive dual statuses to represent uncertainty in data and/or evidence for multiple status categories (including the potential for multiple age classes). Status designation is determined by comparing brood-year effective total spawners (ETS) to the WSP benchmarks for ETS. If no benchmarks are available, it is manually/qualitatively assigned by comparing brood-year effective female spawners (EFS) to long-term and recent average EFS. In a case where benchmark rule is not consistent with brood-year EFS relative to the historical data, the outlook status conforms to the former one.

CITATION

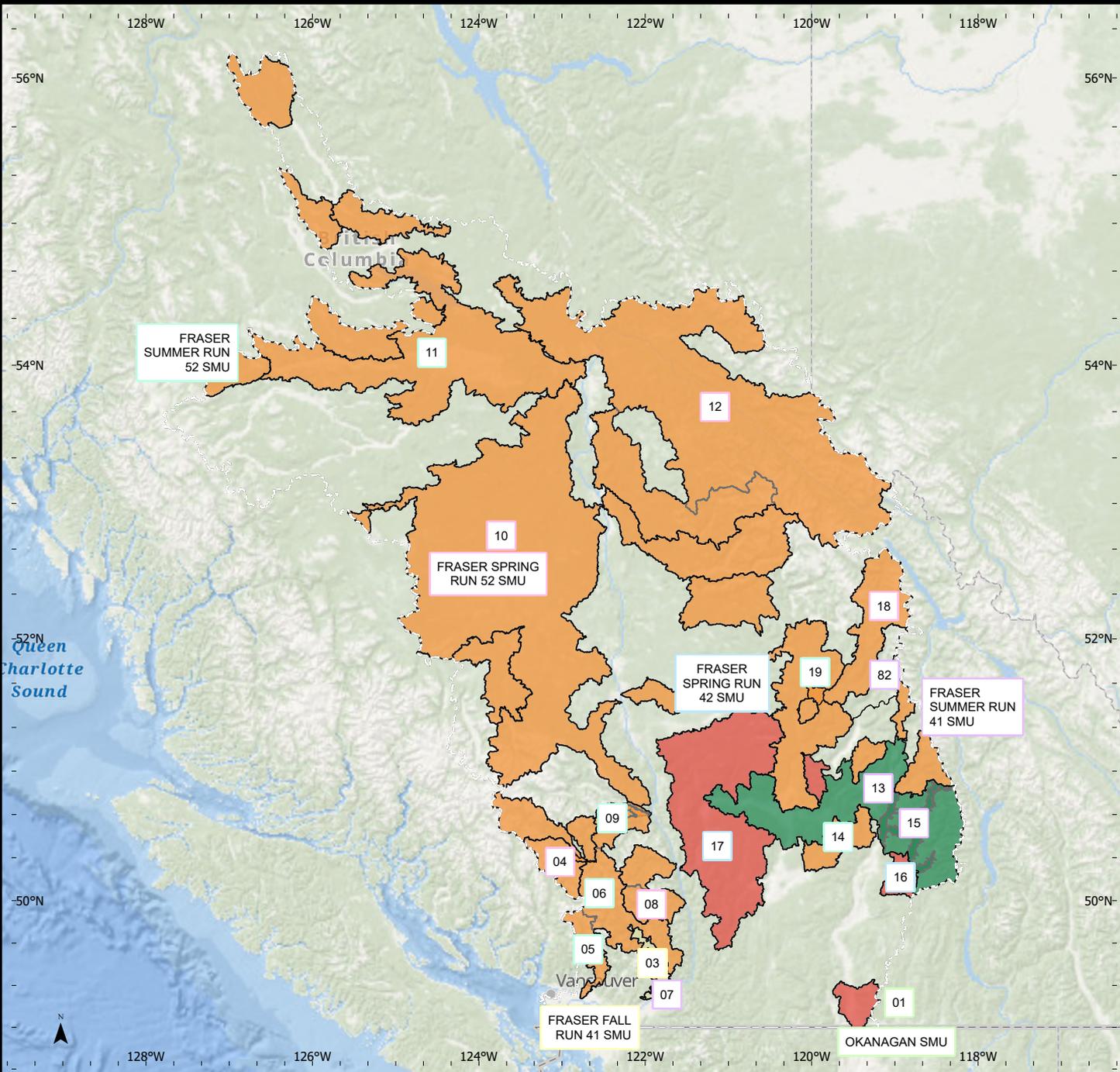
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2025 Salmon Outlook - Pacific Region



CHINOOK SALMON - FRASER AND INTERIOR AREA

Outlook Category

The purpose of the Outlook is to provide the expected abundance of salmon to inform the harvest planning process. The preliminary Outlook provides a categorical abundance expectation based expert opinion and the final outlook replaces 'categorical outlooks' with expected abundance for those stock units with statistical forecasts.



- 1. Poor status.** This category is undesirable because of the risk of extirpation, and the loss of ecological benefits and salmon production. The presence of a SMU/CU in this category will initiate consideration of ways to protect the fish, increase their abundance, and reduce the potential risk of loss.
- 2. Marginal status.** This category status implies caution in the management of the unit. While a unit in this category should be at a low risk of loss, there will be a degree of lost production. Higher management intervention.
- 3. Healthy status.** Near average spawning abundance. Possible management intervention for social and economic considerations.
- 4. Abundant status.** High spawning abundance and distribution. Low management intervention.
- 5. Data Deficient.** SMUs for which insufficient data area available to determine an Outlook are noted as 'Data Deficient'.

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Conservation Unit (CU)

The index number is a code assigned to the CU that when prefixed by the species code becomes the CU index, e.g., Chinook: CK-1, Chum: CM-1, Coho: CO-1, River-Type Sockeye: SER-1, Lake-Type Sockeye: SEL-1, Even Year Pink: PKE-1, Odd Year Pink: PKO-1.

Stock Management Unit (SMU) SMU

For salmon, the working definition of a 'stock management unit' is a 'group of one or more CUs that are managed together with the objective of achieving a joint status'.

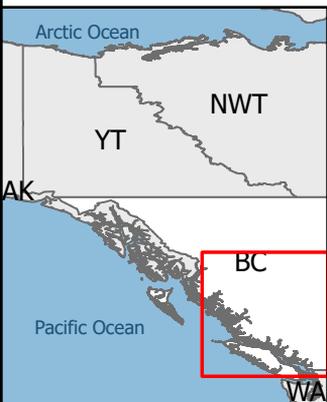
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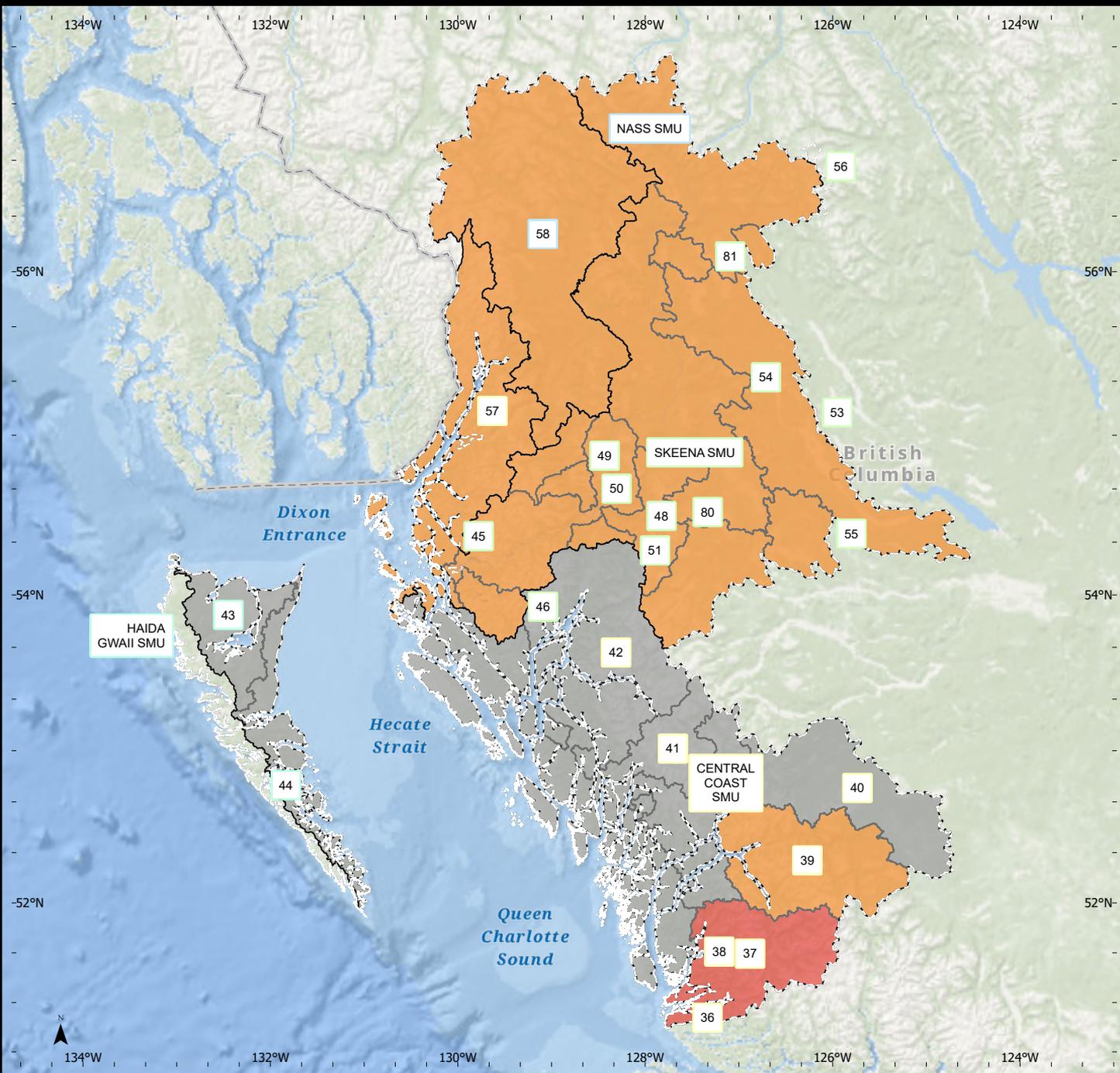
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Production Date: 7/21/2025

Produced By: Chelsea Greenberg for Fisheries



2025 Salmon Outlook - Pacific Region



CHINOOK SALMON - NORTH COAST AREA



Outlook Category

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- Marginal status.** This category status implies caution in the management of the unit. While a unit in this category should be at a low risk of loss, there will be a degree of lost production. Higher management intervention.
- Healthy status.** Near average spawning abundance. Possible management intervention for social and economic considerations.
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For more information visit:

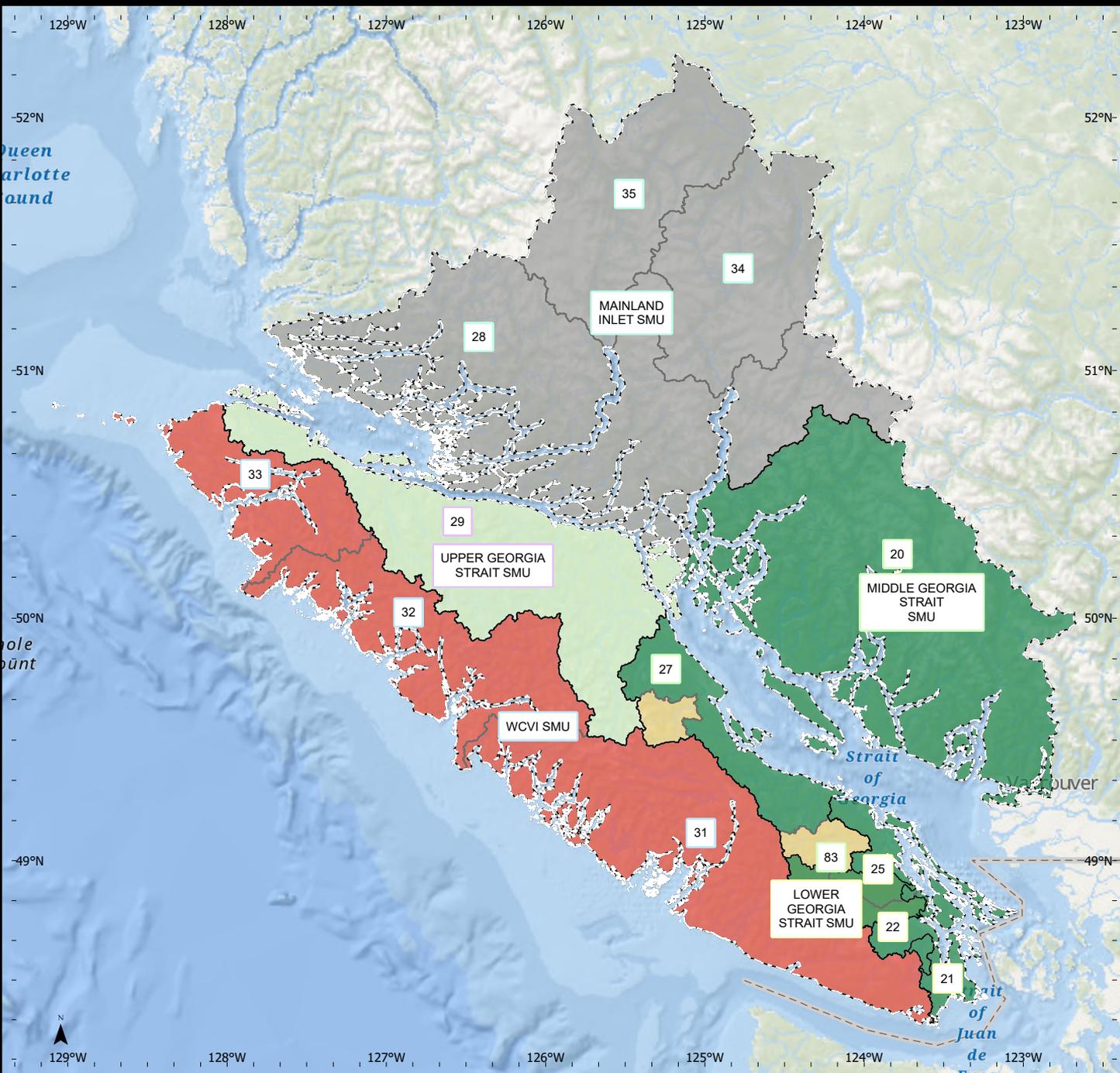
<https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/science/recherche-recherche/smon-summ-somm-eng.html>

Projection: WGS 1984 Web Mercator Auxiliary Sphere

Production Date: 7/21/2025

Produced By: Chelsea Greenberg for Fisheries

2025 Salmon Outlook - Pacific Region



CHINOOK SALMON - SOUTH COAST AREA



Outlook Category

The purpose of the Outlook is to provide the expected abundance of salmon to inform the harvest planning process. The preliminary Outlook provides a categorical abundance expectation based on expert opinion and the final outlook replaces 'categorical outlooks' with expected abundance for those stock units with statistical forecasts.



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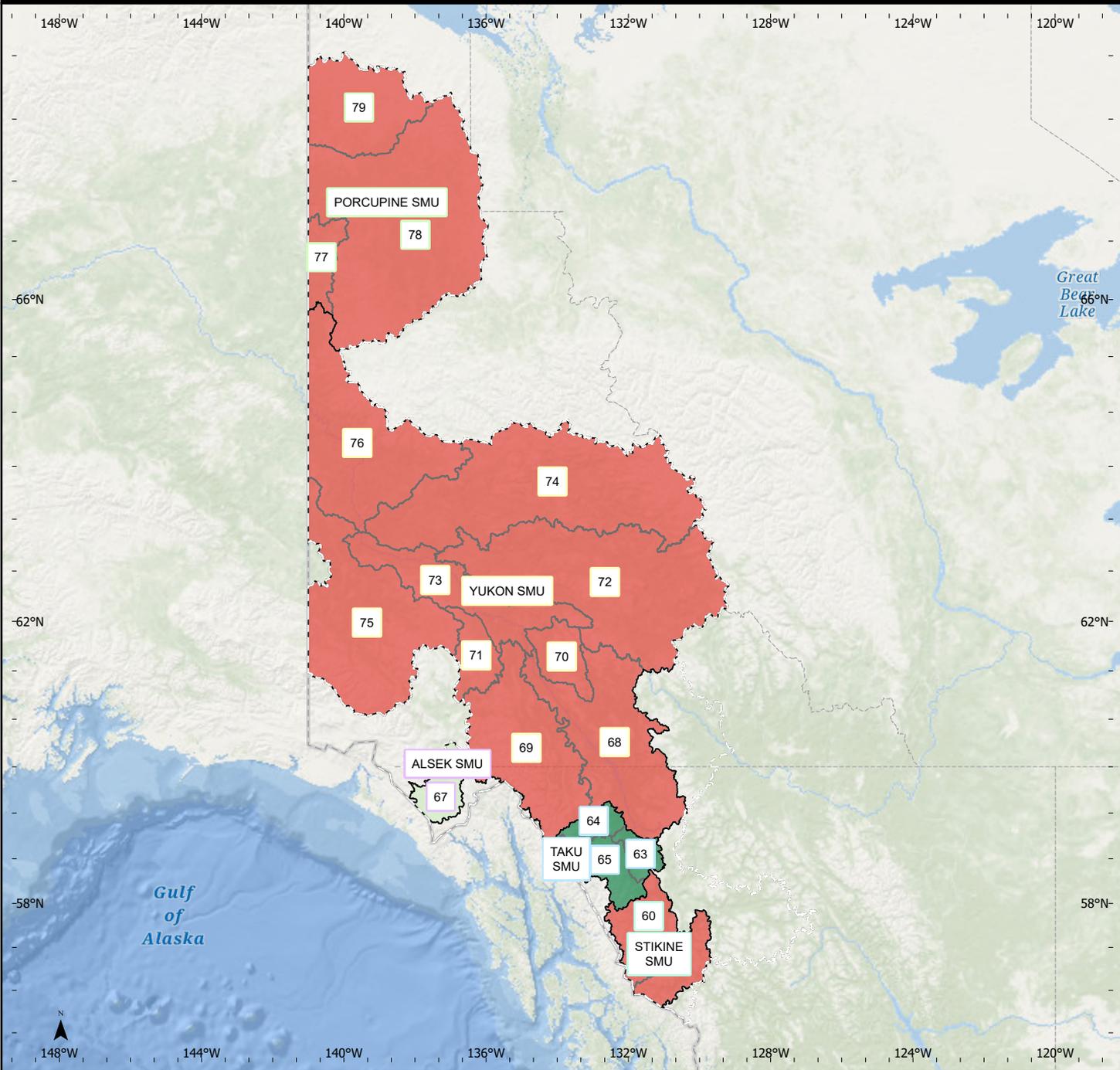
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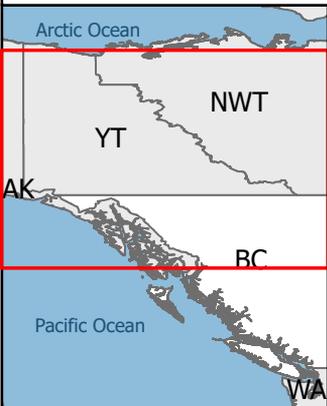
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Produced By: Chelsea Greenberg for Fisheries

2025 Salmon Outlook - Pacific Region



CHINOOK SALMON - YUKON TRANSBOUNDARY AREA



Outlook Category

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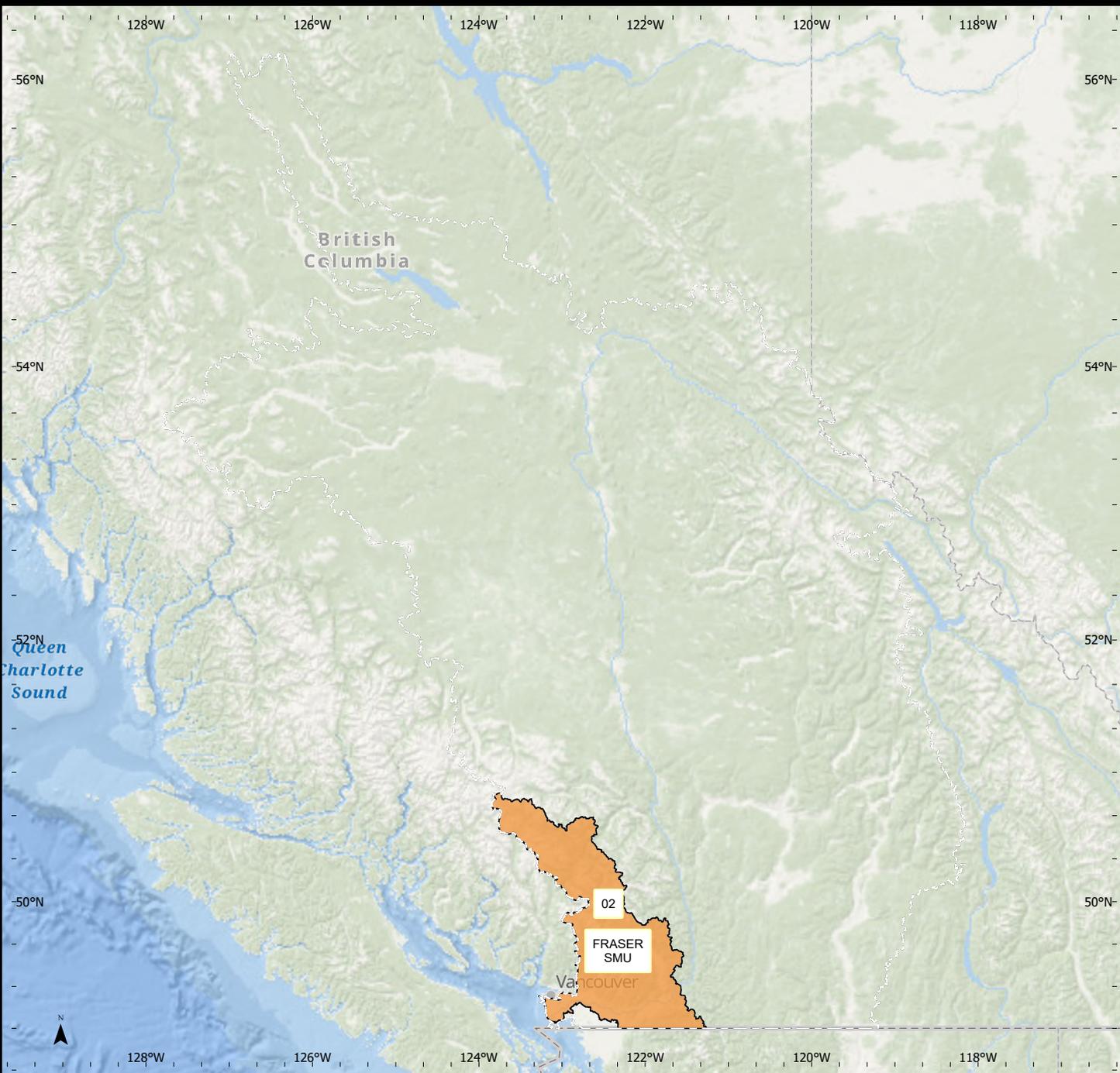
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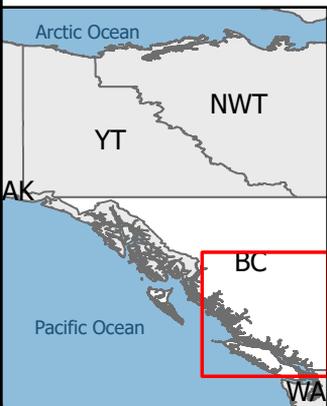
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2025 Salmon Outlook - Pacific Region



CHUM SALMON - FRASER AND INTERIOR AREA



Outlook Category

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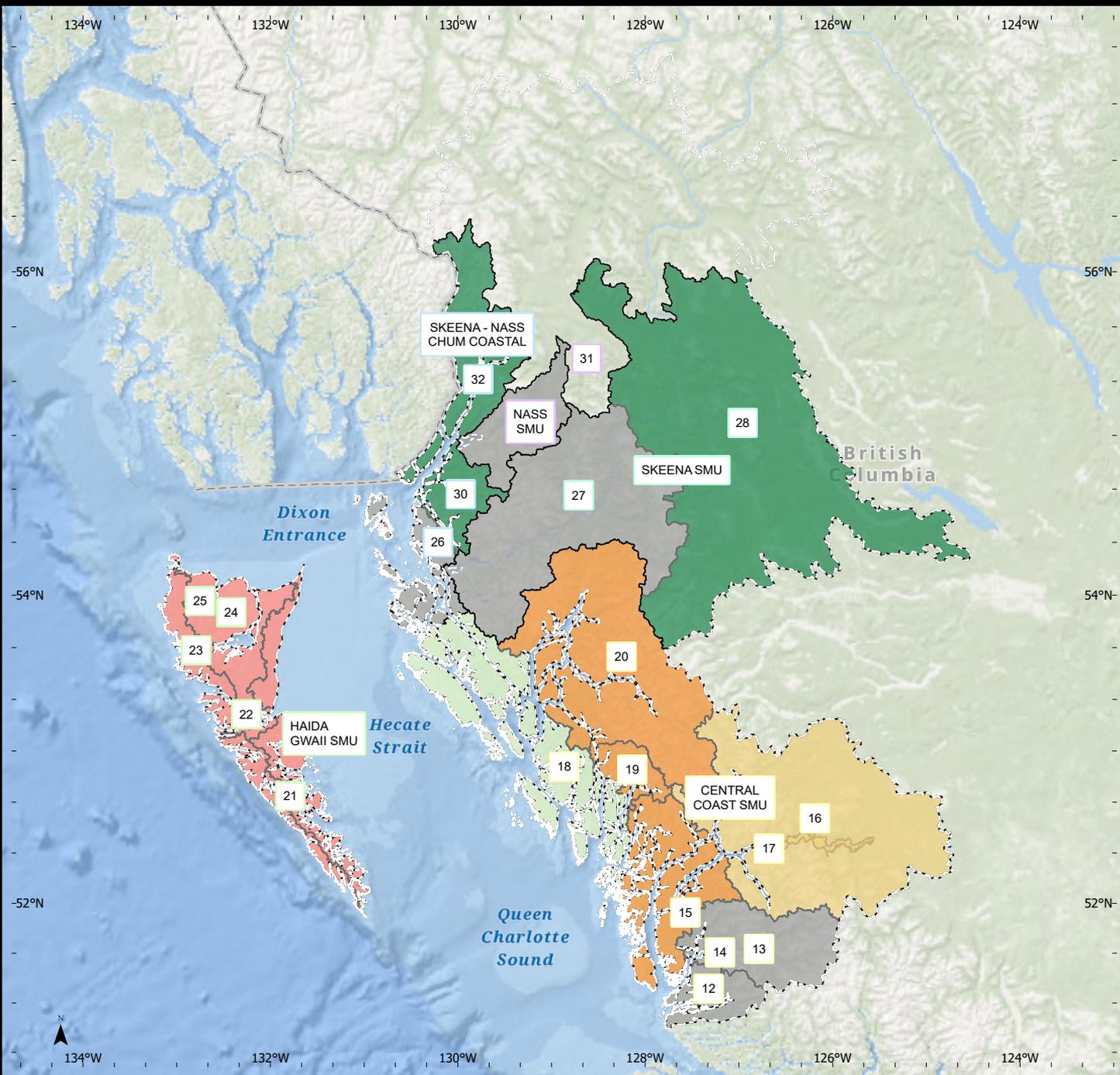
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2025 Salmon Outlook - Pacific Region



CHUM SALMON - NORTH COAST AREA



Outlook Category

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2025 Salmon Outlook - Pacific Region



CHUM SALMON - SOUTH COAST AREA



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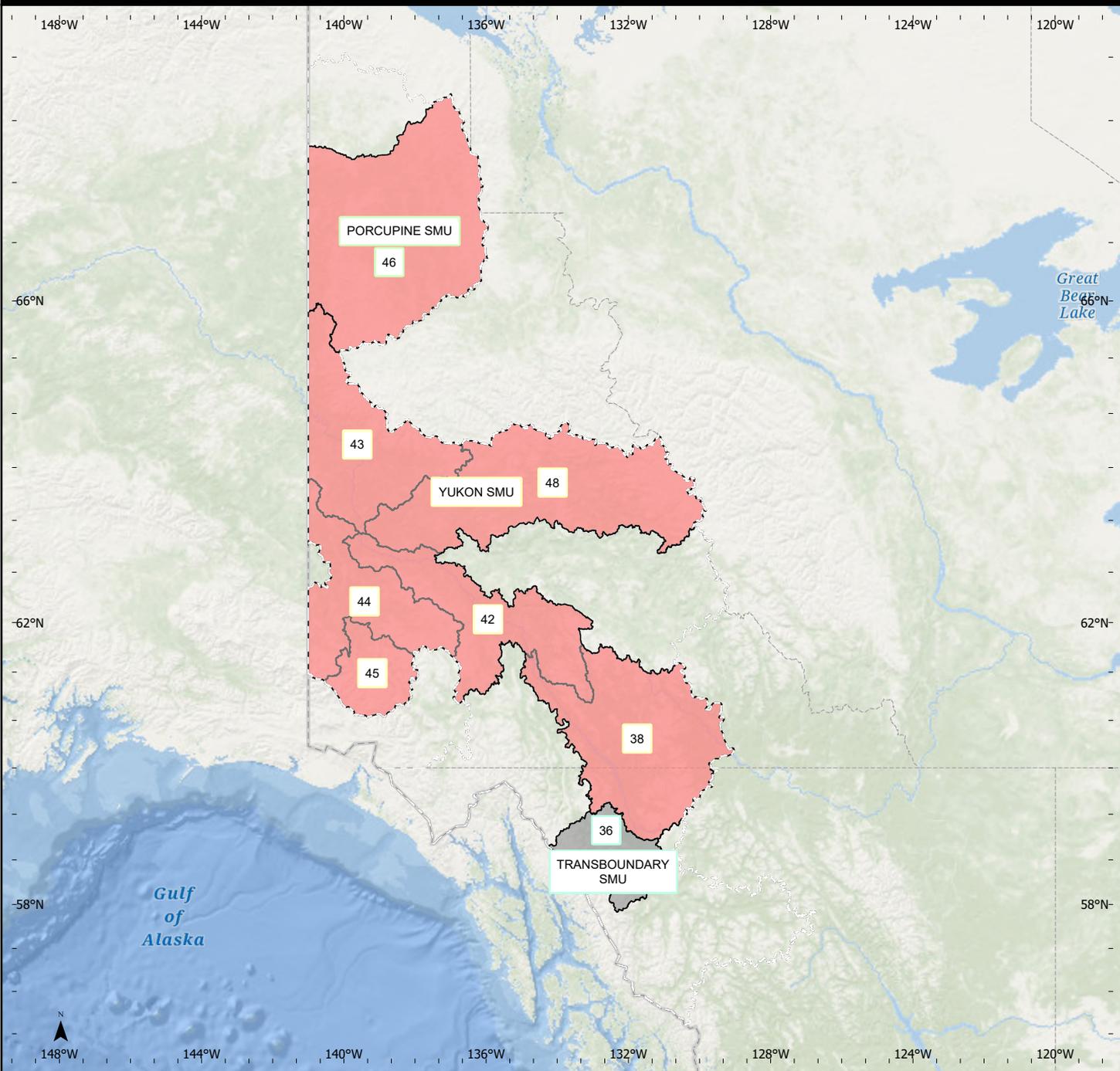
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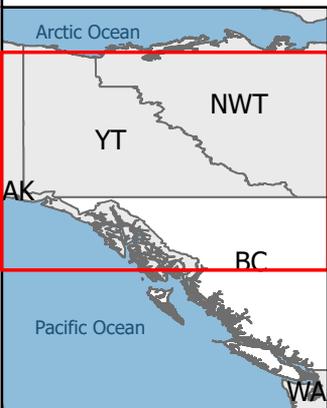
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2025 Salmon Outlook - Pacific Region



CHUM SALMON - YUKON TRANSBOUNDARY AREA



Outlook Category

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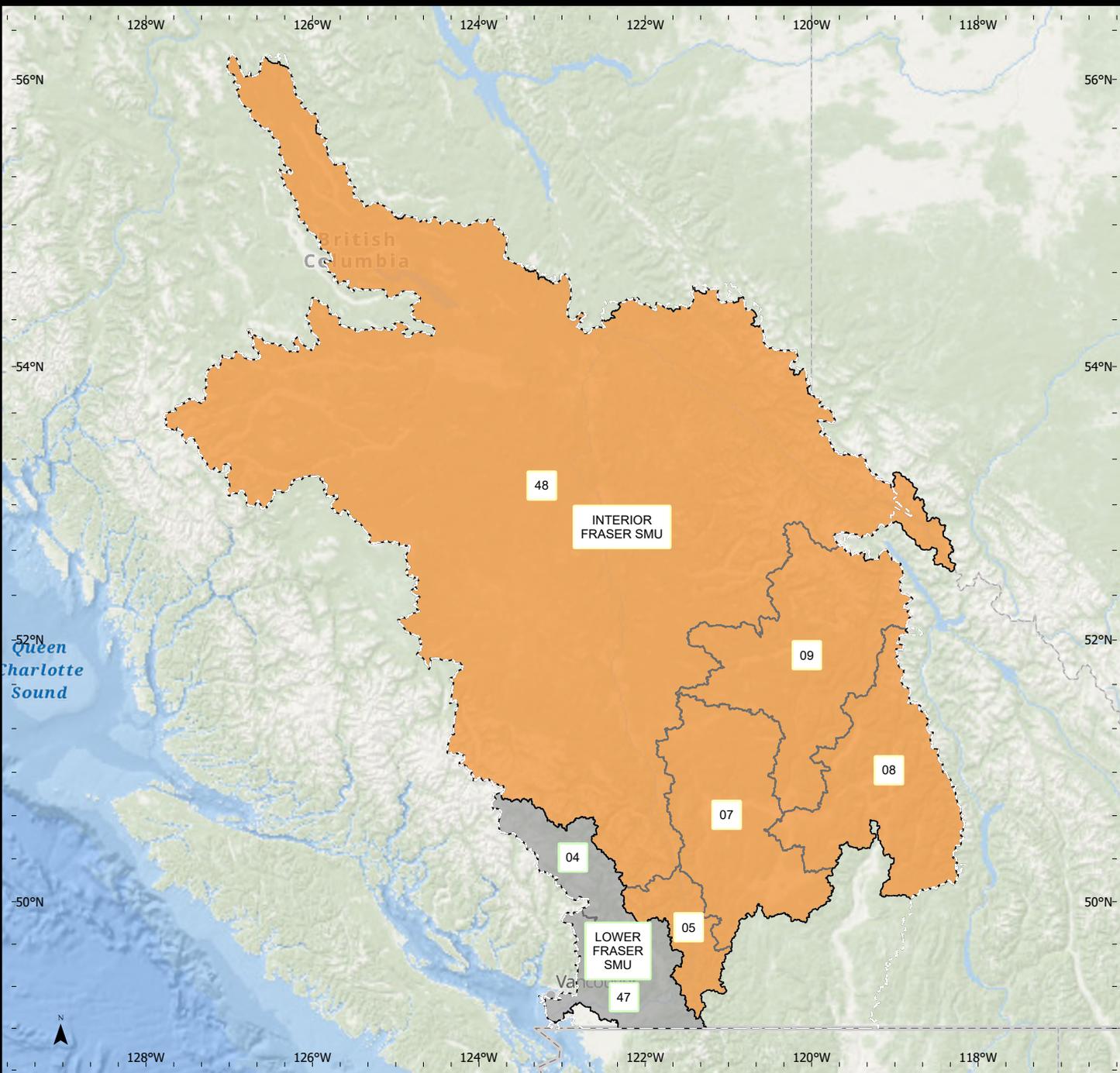
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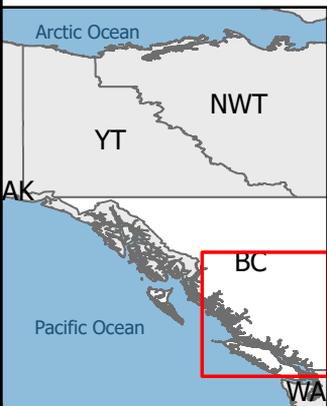
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2025 Salmon Outlook - Pacific Region



COHO SALMON - FRASER AND INTERIOR AREA



Outlook Category

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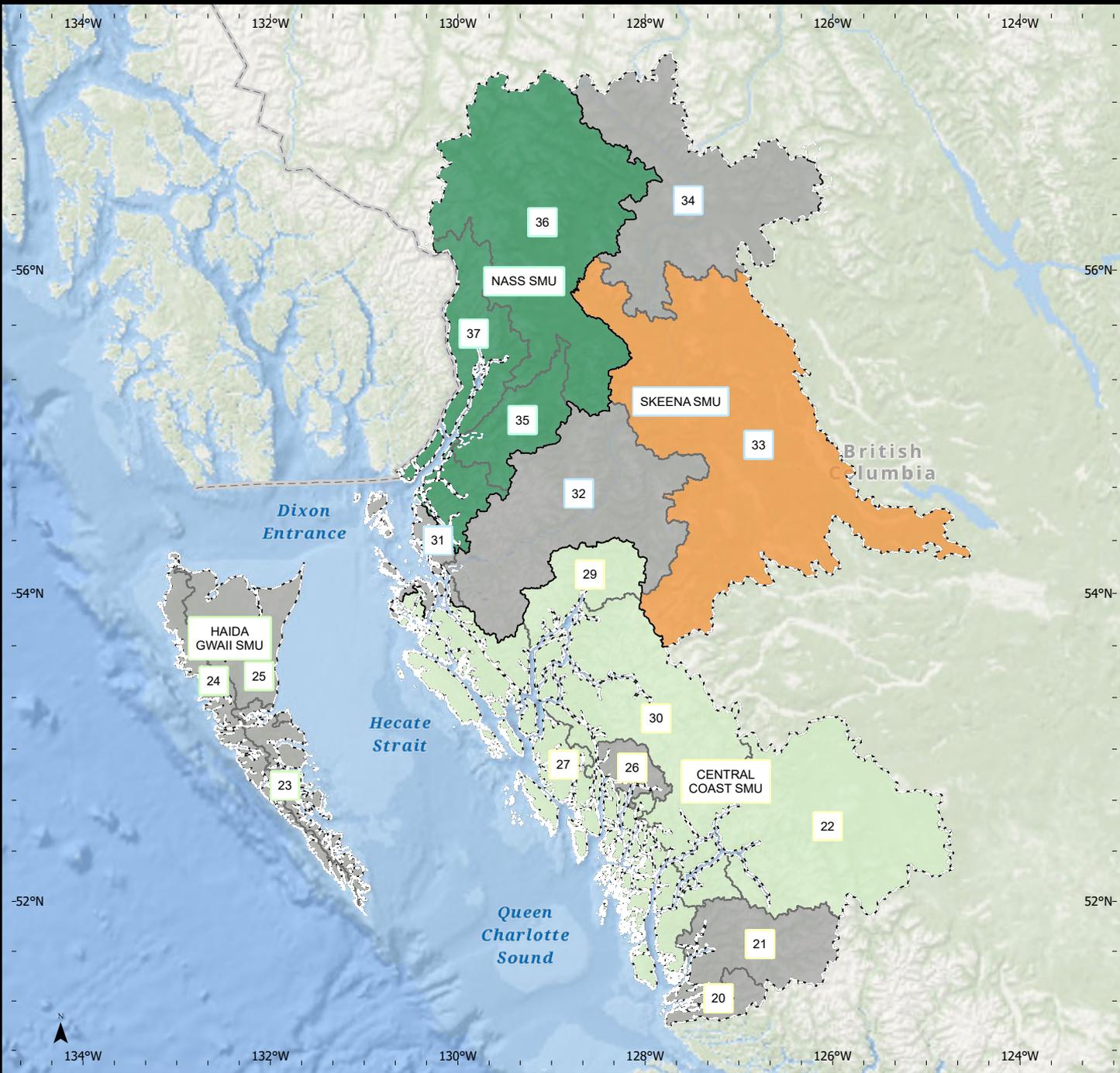
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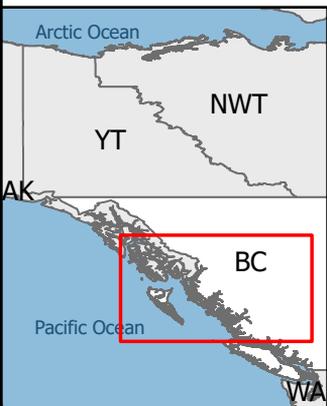
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2025 Salmon Outlook - Pacific Region



COHO SALMON - NORTH COAST AREA



Outlook Category

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2025 Salmon Outlook - Pacific Region



COHO SALMON - SOUTH COAST AREA



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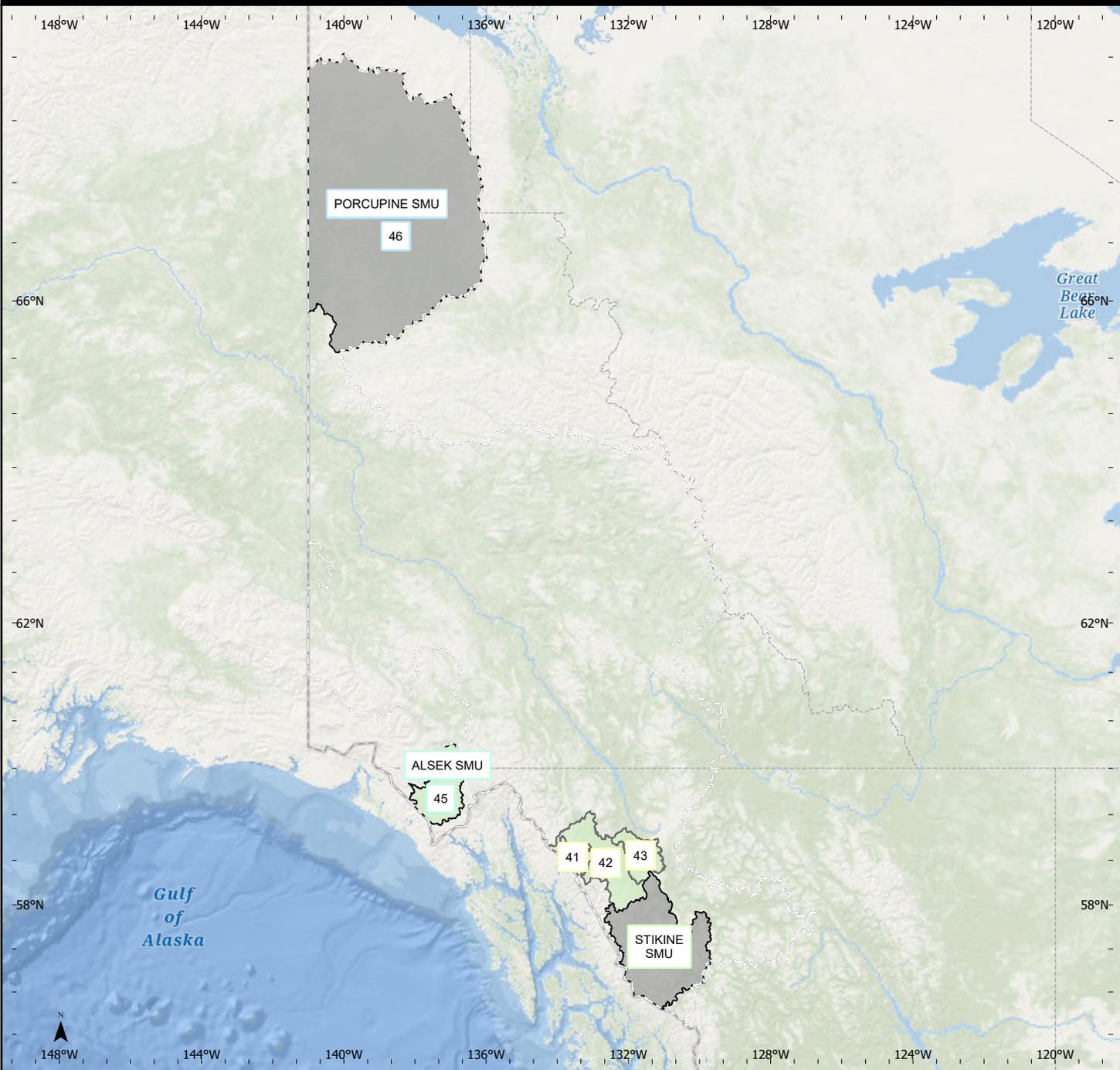
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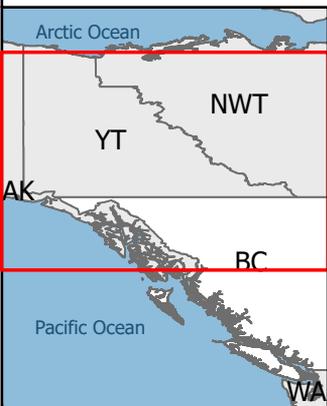
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2025 Salmon Outlook - Pacific Region



COHO SALMON - YUKON TRANSBOUNDARY AREA



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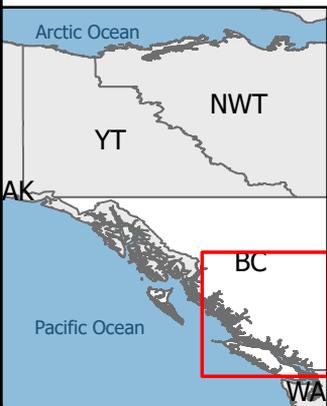
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2025 Salmon Outlook - Pacific Region



ODD YEAR PINK SALMON - FRASER AND INTERIOR AREA



Outlook Category

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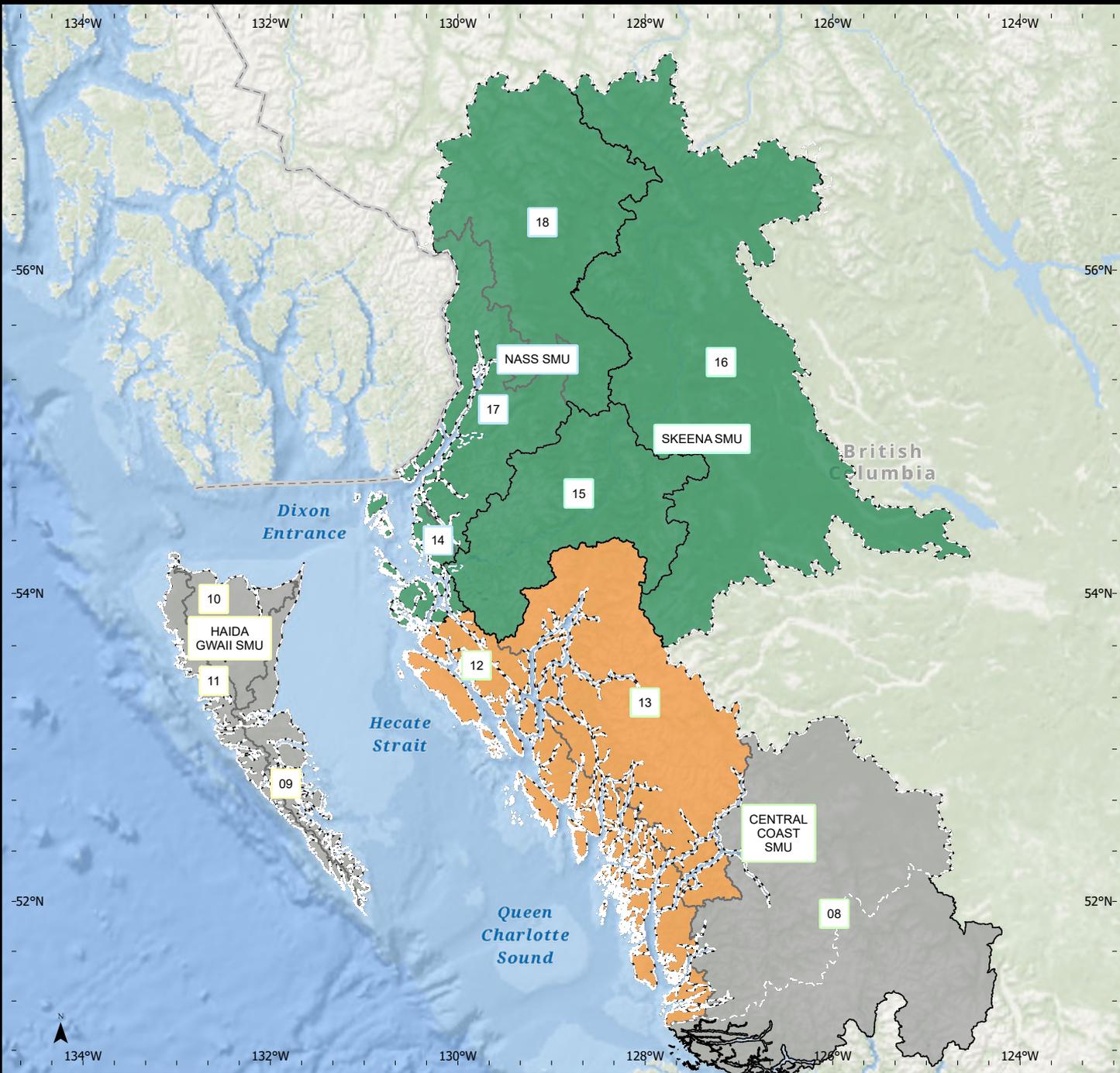
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2025 Salmon Outlook - Pacific Region



ODD YEAR PINK SALMON - NORTH COAST AREA



Outlook Category

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2025 Salmon Outlook - Pacific Region



ODD YEAR PINK SALMON - SOUTH COAST AREA



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Stock Management Unit (SMU) SMU

For salmon, the working definition of a 'stock management unit' is a 'group of one or more CUs that are managed together with the objective of achieving a joint status'.

For more information visit:

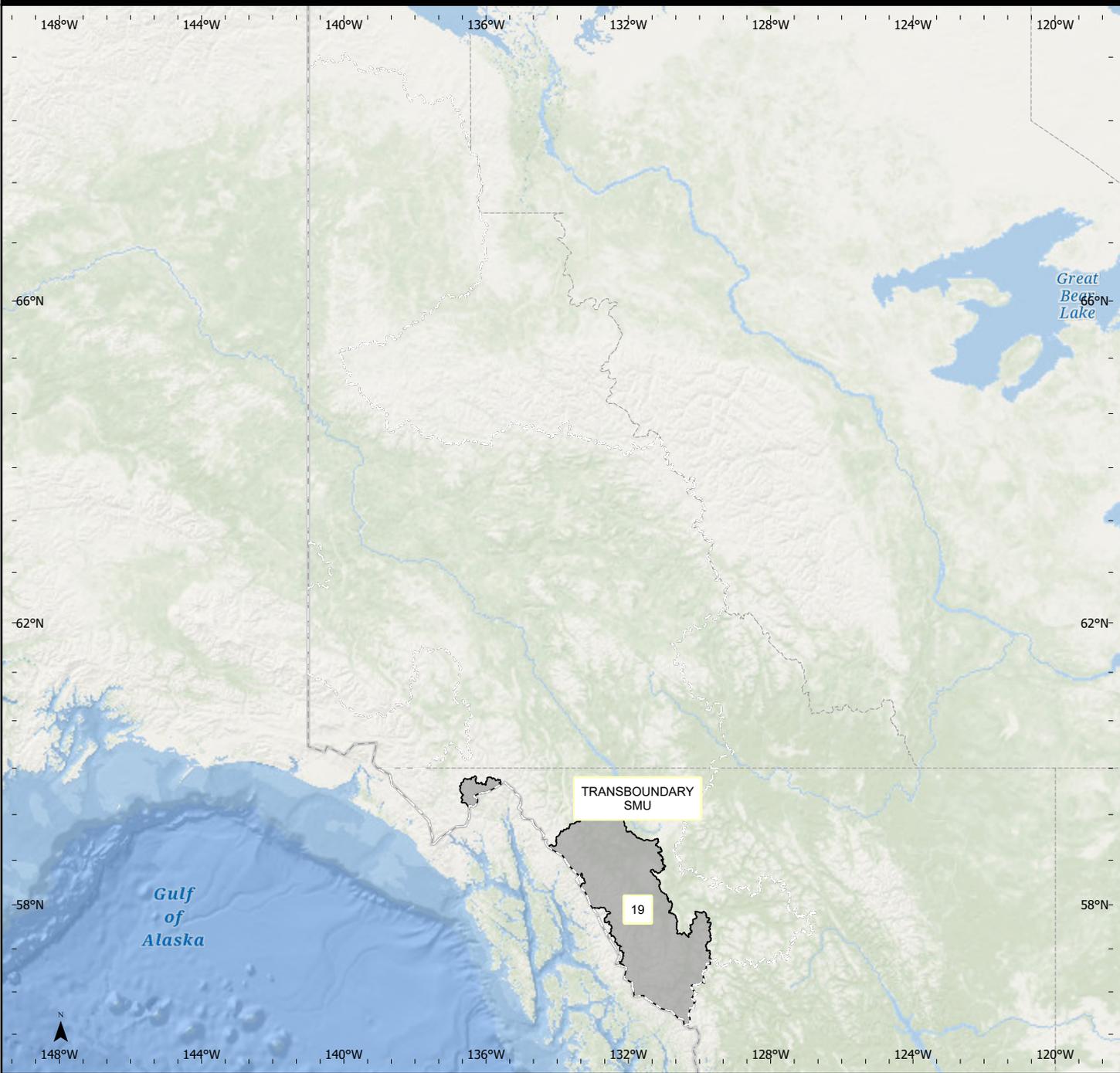
<https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/science/recherche-recherche/smon-summ-somm-eng.html>

Projection: WGS 1984 Web Mercator Auxiliary Sphere

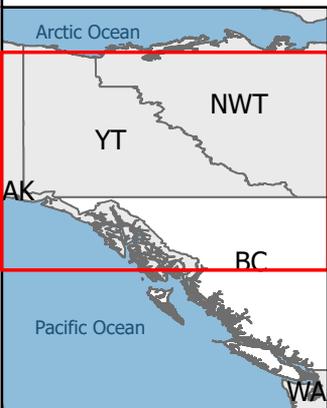
Production Date: 7/21/2025

Produced By: Chelsea Greenberg for Fisheries

2025 Salmon Outlook - Pacific Region



ODD YEAR PINK SALMON - YUKON TRANSBOUNDARY AREA



Outlook Category

The purpose of the Outlook is to provide the expected abundance of salmon to inform the harvest planning process. The preliminary Outlook provides a categorical abundance expectation based expert opinion and the final outlook replaces 'categorical outlooks' with expected abundance for those stock units with statistical forecasts.



- Poor status.** This category is undesirable because of the risk of extirpation, and the loss of ecological benefits and salmon production. The presence of a SMU/CU in this category will initiate consideration of ways to protect the fish, increase their abundance, and reduce the potential risk of loss.
- Marginal status.** This category status implies caution in the management of the unit. While a unit in this category should be at a low risk of loss, there will be a degree of lost production. Higher management intervention.
- Healthy status.** Near average spawning abundance. Possible management intervention for social and economic considerations.
- Abundant status.** High spawning abundance and distribution. Low management intervention.
- Data Deficient.** SMUs for which insufficient data area available to determine an Outlook are noted as 'Data Deficient'.

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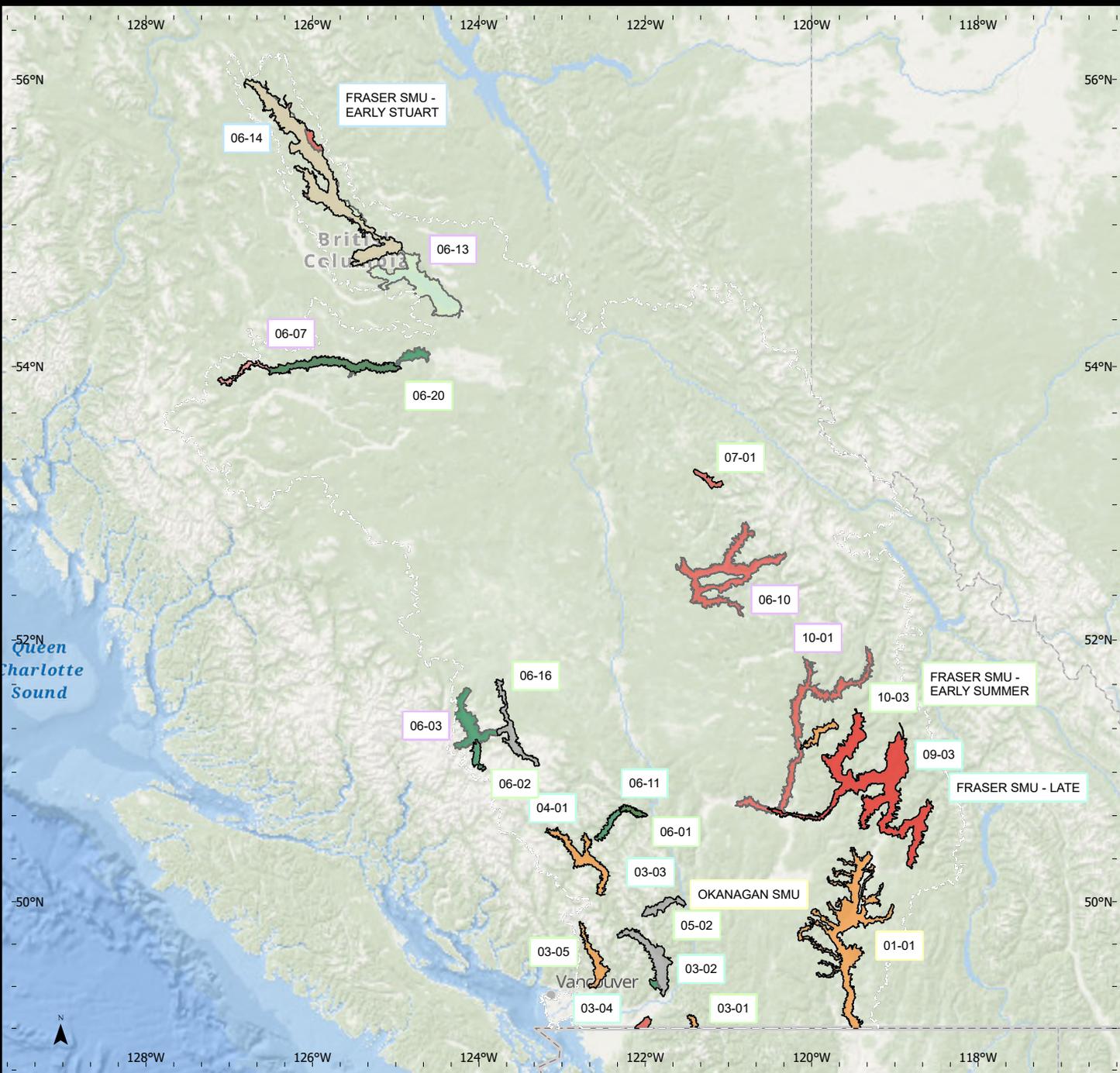
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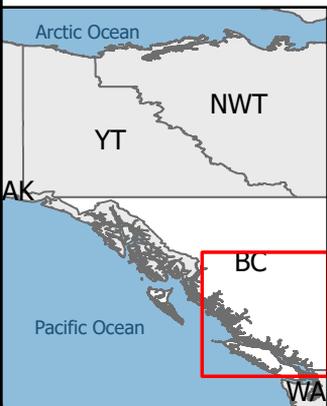
Production Date: 7/21/2025

Produced By: Chelsea Greenberg for Fisheries

2025 Salmon Outlook - Pacific Region



SOCKEYE SALMON - FRASER AND INTERIOR AREA



Outlook Category

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Stock Management Unit (SMU) SMU

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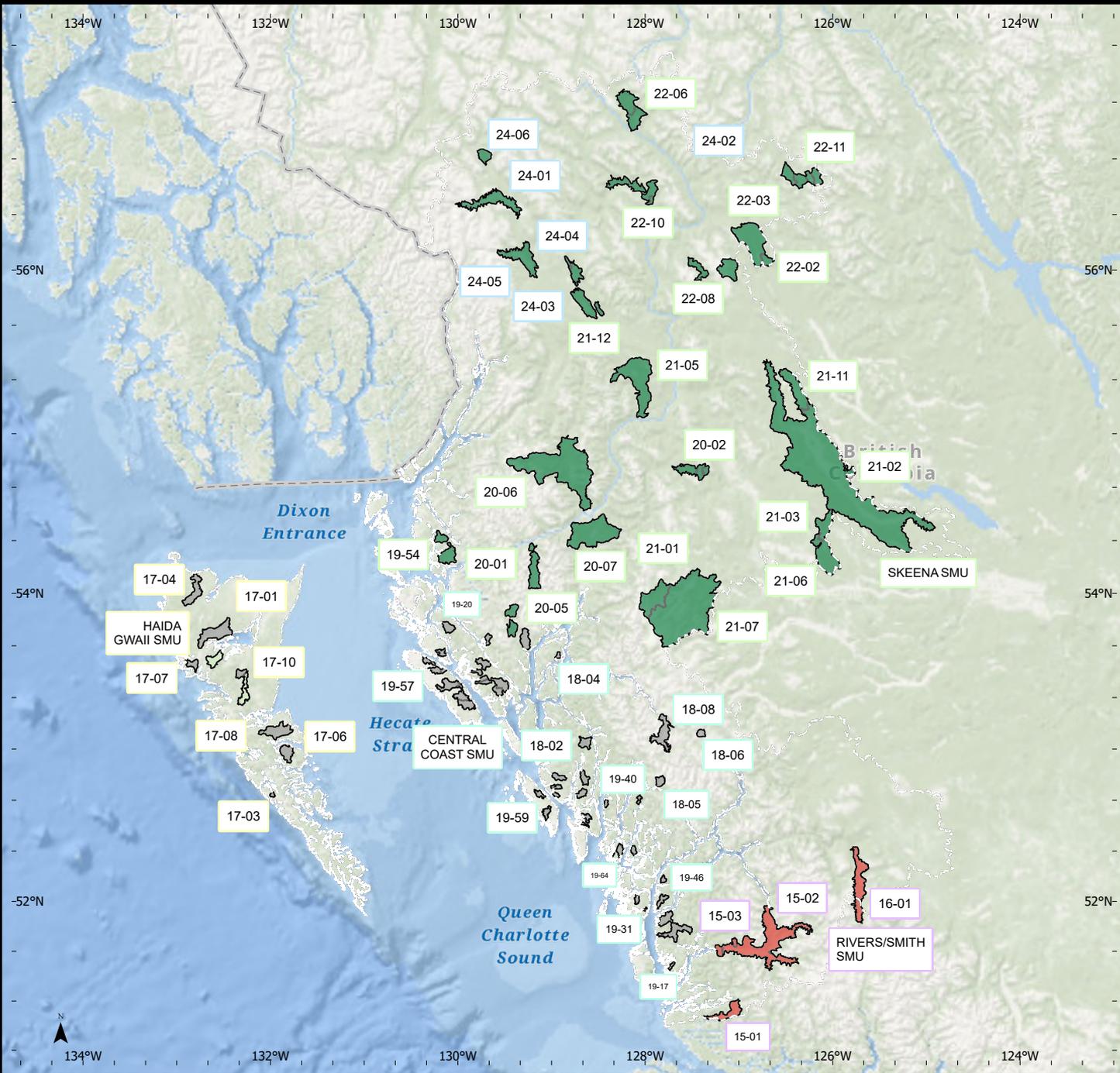
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Projection: WGS 1984 Web Mercator Auxiliary Sphere

Production Date: 7/23/2025

Produced By: Chelsea Greenberg for Fisheries

2025 Salmon Outlook - Pacific Region



SOCKEYE SALMON - NORTH COAST AREA



Outlook Category

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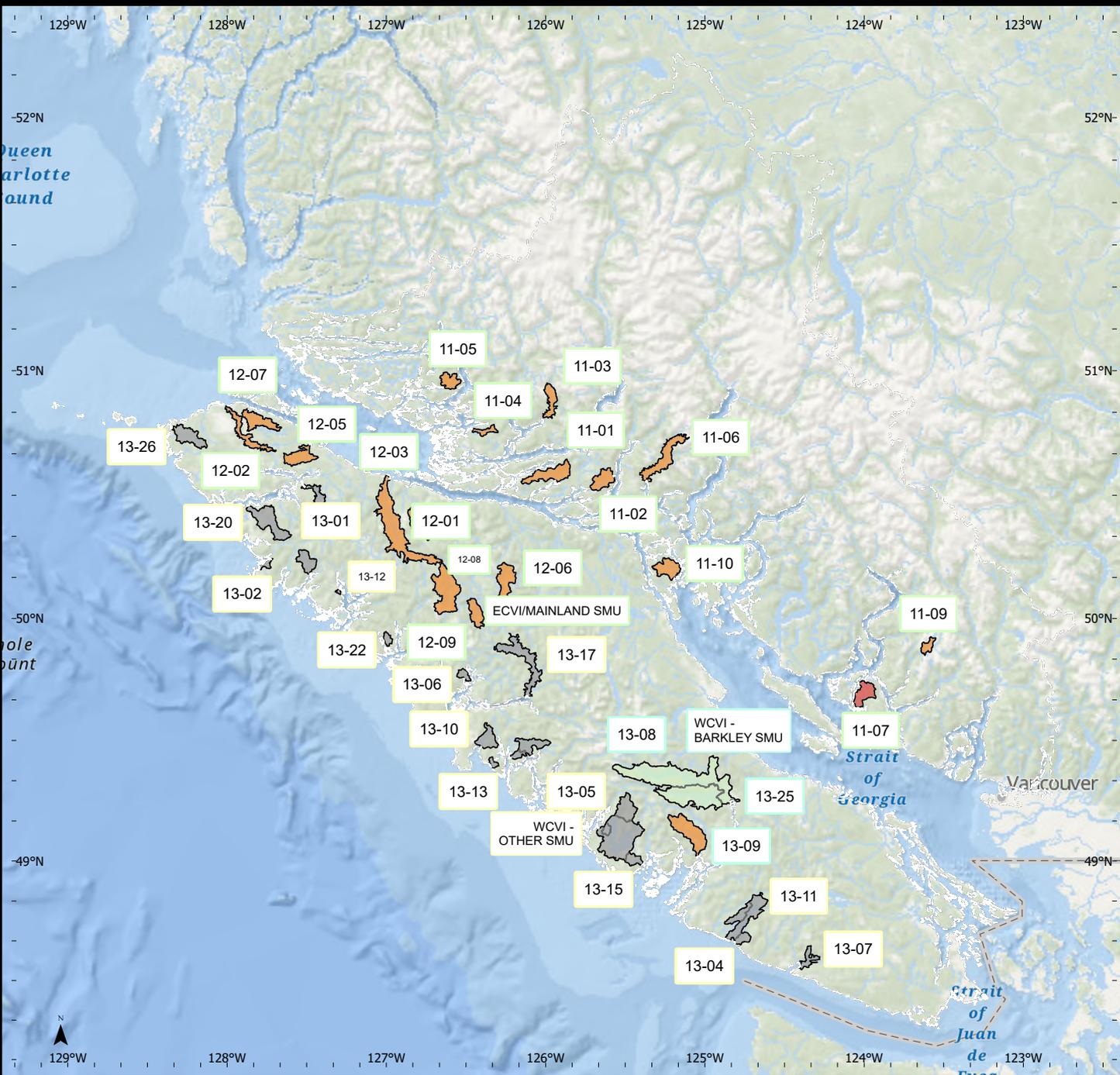
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Projection: WGS 1984 Web Mercator Auxiliary Sphere

Production Date: 7/23/2025

Produced By: Chelsea Greenberg for Fisheries

2025 Salmon Outlook - Pacific Region



SOCKEYE SALMON - SOUTH COAST AREA



Outlook Category

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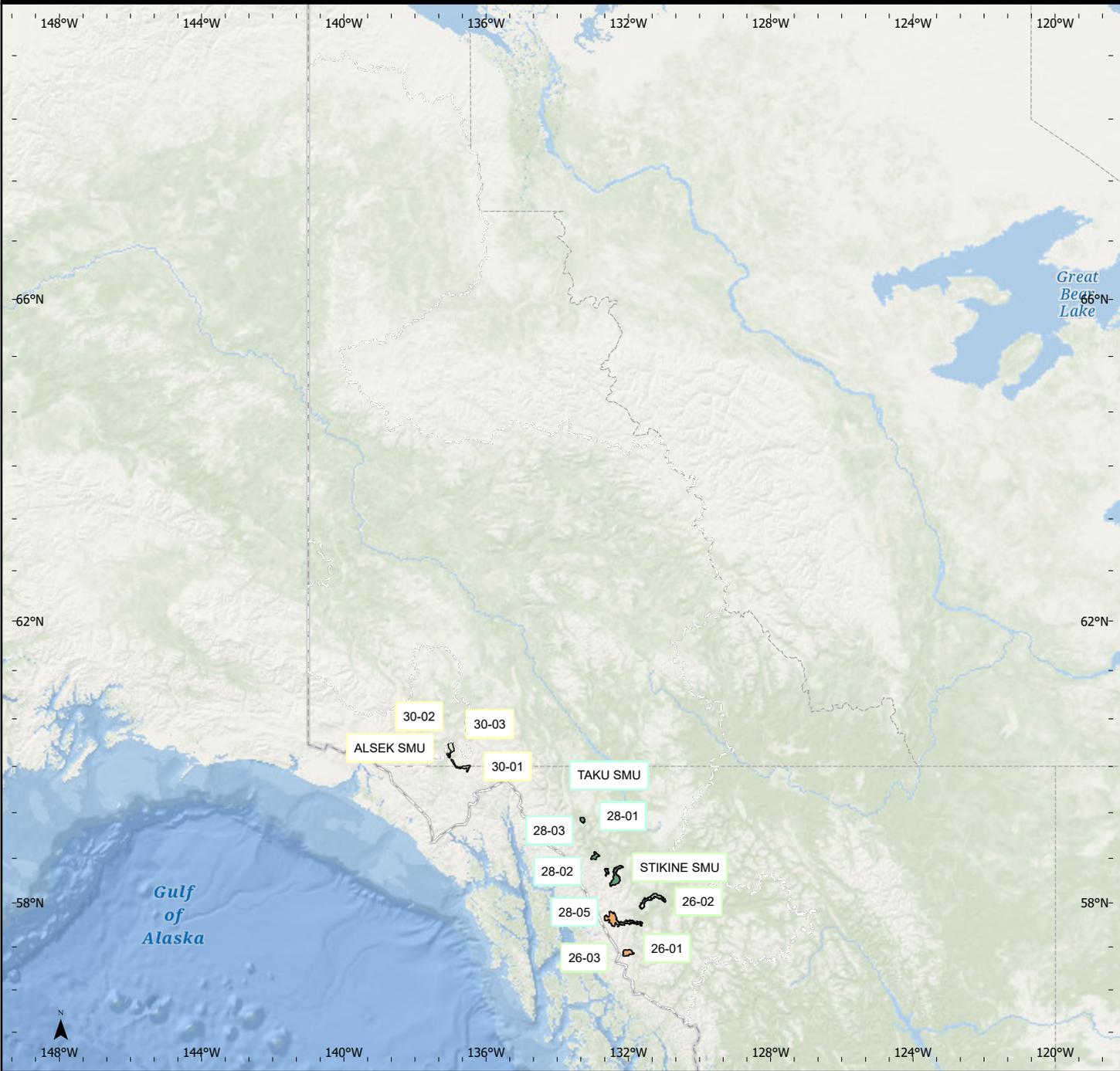
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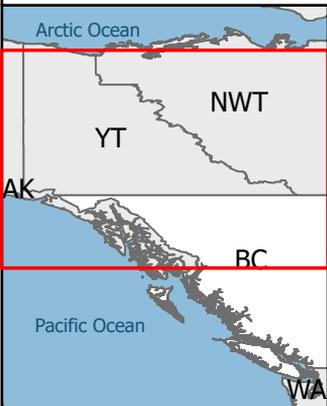
Production Date: 7/23/2025

Produced By: Chelsea Greenberg for Fisheries

2025 Salmon Outlook - Pacific Region



SOCKEYE SALMON - YUKON TRANSBOUNDARY AREA



Outlook Category

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