



Fisheries and Oceans
Canada

Pêches et Océans
Canada

**PACIFIC SALMON OUTLOOK
PACIFIC REGION
2014**

Canada 

2014 SALMON OUTLOOK

Since 2002, Pacific Region (BC & Yukon) Stock Assessment staff has provided a categorical outlook for the next year's salmon returns. The Outlook is intended to provide an objective and consistent context within which to initiate fisheries planning. In particular, it provides a preliminary indication of salmon production and associated fishing opportunities by geographic area and species stock groups called an Outlook Unit. The Conservation Units covered by each Outlook Unit are listed in Appendix 1. For each Outlook Unit, an Outlook Category is provided on a scale of 1 to 4 (table below). The category reflects the current interpretation of available quantitative and qualitative information, including pre-season forecasts if available, and the opinion of DFO Stock Assessment staff. Where management targets for stocks have not been formally described, interim targets were either based on historical return levels or, if necessary, opinion of local staff. The Department is currently defining methods to determine benchmarks of status under the Wild Salmon Policy.

Outlook Categories may have consequences to fisheries where an Outlook Unit is caught directly or incidentally. In the context of this outlook the probable fishery consequences associated with each of the four Outlook Categories are identified in the table. Outlook Units forecast in category "2" are considered "sensitive" and fisheries should be planned to reduce impacts on these groups.

Outlook Category	Category Definition	Criteria	Fishery Consequences
1	Stock of Concern	Stock is (or is forecast to be) less than 25% of target or is declining rapidly.	Directed fisheries are unlikely and there may be a requirement to avoid indirect catch of the stock.
2	Low	Stock is (or is forecast to be) well below target or below target and declining.	Directed fisheries are uncertain and likely to be small if permitted. Allocation policy will determine harvest opportunities.
3	Near Target	Stock is (or is forecast to be) within 25% of target and stable or increasing.	Directed fisheries subject to allocation policy.
4	Abundant	Stock is (or is forecast to be) well above target.	Directed fisheries subject to allocation policy.
ND	No Data	Insufficient data to determine an outlook category.	

It is important to note that the fishery consequences implied by any of the Outlook Categories do not include interactions with stocks in other Outlook Units. Consequently, conservation requirements for stocks in Outlook Units with Outlook Categories 1 and 2 may limit fishing opportunities for Outlook Units for which there are no concerns. Where possible the comments associated with each Outlook Unit identify such potential constraints. A range of Outlook Categories indicates significant geographic variation in outlook within the Outlook Unit and fisheries may be shaped in response to that variation.

This version of the 2014 outlook should be regarded as an early scan of salmon production, and as subject to change as more information becomes available. This final version of the document replaces the preliminary version which was released in November 2013. However, individual outlooks may be periodically updated as statistical forecasts and assessments are completed and reviewed.

Summary of Pacific Salmon Outlook Units for 2014

A total of **91** Outlook Units were considered and outlooks categorized for **84**. Six units were data deficient (ND), and one pink unit was not applicable (NA). Thirty-four (**34**) Outlook Units are likely to be at or above target abundance (categories 3, 4, 3/4), while **27** are expected to be of some conservation concern (categories 1, 2, 1/2). The remaining **23** Outlook Units have mixed outlook levels (categories 1/3, 1/4, 2/3, 2/4). The Fraser chinook Outlook Units were re-aligned from nine units down to five units in order to match the stock groupings used for fisheries management purposes. Overall, the outlook for 2014 has increased relative to the previous outlook (2013 for most species but 2012 for pink). Twenty-two (**22**) Outlook Units improved in category (Early Stuart, Early Summer North Thompson, Summer Nechako, Summer Quesnel, Fall Portage, Fall South Thompson, Somass, Areas 11 to 13, Babine Lake and Skeena sockeye; Fraser Summer 41, WCVI Hatchery, Areas 9 & 10, and Skeena chinook; Mid / Upper Fraser, Thompson, Area 13, Georgia Strait and Alsek coho; Areas 11 to 13 and Areas 3 to 6 pink; Yukon chum). Nine units declined in category (Early Summer Lower Fraser, Summer Raft and Henderson sockeye; Fraser Spring 42, Fraser Summer 52 and Stikine chinook; Georgia Strait West pink; Georgia Strait and Porcupine chum).

Outlook Unit	2014 Outlook Category	Comments
Sockeye		
1. Okanagan	3	<p>The 2010 brood year escapement of 97,000 (peak terminal count) was approximately triple the Canadian domestic target for this CU, continuing a multiyear trend for above average escapements followed by above average smolt production. Historically, application of a sibling model has been the basis for the most reliable forecast and it suggests 282,200 Okanagan sockeye will return in 2014. The majority of these (>75%) are expected to be Osoyoos Lake, wild-origin fish while the remainder will be Skaha Lake, hatchery-origin fish. Consequently, total returns in 2014 may be about double the 2010 brood year and similar to strong returns observed in 2010 and 2013. Returns in 2014 should be sufficient to support FSC and recreational fisheries while meeting the current Canadian escapement objective of roughly 60,000 at Wells Dam or 36,000 as peak live plus dead in the terminal spawning area. An important complicating factor will be the extent to which fish-passage problems at Wanapum and Rocky Reach Dams are resolved before the bulk of sockeye reach these locations in June and July. Reservoir levels behind Wanapum Dam were lowered to relieve pressure on a 20 m long crack that developed along the face of one of that dam's spillways in late winter. Fishways at both Wanapum and Rock Island Dams have been modified to facilitate adult salmon passage at the reduced reservoir level. However, it is unknown how effective these modifications will be in passing more than 200,000 sockeye adults during their few weeks of active migration. Trap and transport around the dams is under consideration but failure to ease passage has the potential to affect achievement of catch and escapement goals for Canadian and US participants in 2014. (2013 Outlook Category was 3.)</p>

Outlook Unit	2014 Outlook Category	Comments
Fraser Sockeye	Overview	<p>Quantitative forecasts for Fraser sockeye stocks are published annually through the Canadian Science Advisory Secretariat (CSAS) process. The 2014 forecasts are published as a Science Response at the following link: http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/index-eng.asp#ScR.</p> <p>The results of the November 2011 workshop to develop guidelines for integration of WSP biological status indicators and their application to Fraser River Sockeye CUs have recently been published. The Science Advisory Report is available at the following link: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2012/2012_056-eng.html and the Research Document is available at the following link: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2012/2012_106-eng.html.</p> <p>Indicators of survival explored to date have not reduced uncertainty in Fraser sockeye return forecasts and remain an active area of research. The uncertainty in survival mechanisms for Fraser sockeye stocks is attributed to the broad range of environments (freshwater & marine) these stocks occupy throughout their life-history. For the 2014 forecasts, given the exceptional brood year escapements in 2010 for Shuswap stocks in particular, a supplement paper was produced as part of the 2014 forecast process and is published as a second Science Response on the following website: http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/index-eng.asp#ScR.</p> <p>This supplement provides additional information on the condition and abundance of various stocks from the 2010 brood year escapement through to 2013 jack returns. Generally, the proportional contributions of major stocks (Late Shuswap, Early Shuswap, Chilko, Quesnel and Stellako) were consistent across the various life-history stages assessed, including the adult escapements in 2010, downstream migration of smolts at Mission from April to May 2012, and Strait of Georgia, and Johnstone Strait juvenile sampling from May to July 2012. The only exception was an increase in the proportion of Quesnel Sockeye in the smolt and juvenile samples, over what was observed on the spawning grounds. The abundance of jacks that returned in 2013 was on the higher end of previously observed jack abundances; however, forecasts generated using jacks as a predictor variable were similar (10% to 90% distributions) to DFO's official forecasts for key stocks (Shuswap and Chilko).</p>
2. Early Stuart (CU: Takla-Trembleur-Early Stuart)	2	Above average returns are expected in 2014 relative to the cycle average of 126,000 (1954-2006). The 2010 brood year escapement for Early Stuart (34,200 effective female spawners: EFS) was double the cycle average (17,400 EFS). (2013 Outlook Category was 1.)
3. Early Summer – North Thompson (CU: North Barriere-ES)	3	Upper Barriere River (previously identified as Fennell Creek): Near average (close to average) returns are expected for 2014 relative to the cycle average of 20,000 (1974-2006). The 2010 brood year escapement for Fennell (5,500 EFS) was almost double the cycle average (3,200 EFS). <u>Note change to CU composition in last two years; Raft has moved into the Summer Run.</u> (2013 Outlook Category was 2.)

Outlook Unit	2014 Outlook Category	Comments
<p>4. Early Summer South Thompson</p> <p>(CU: Shuswap-ES)</p>	3	<p>Scotch: Above average returns are expected in 2014 relative to the cycle average of 390,000 (1984-2006). However, given the exceptional brood year escapements for this stock, predictions of 2014 returns are extremely uncertain. The 2010 brood year escapement for Scotch (273,900 EFS) was unprecedented and almost an order of magnitude larger than the cycle average (30,700 EFS). Given previous maximum escapements on Scotch was 73,000, survival is uncertain for this unprecedented brood year escapement in 2010.</p> <p>Seymour: Above average returns are expected in 2014 relative to the cycle average of 358,000 (1954-2006). However, given the exceptional brood year escapements for this stock, predictions of 2014 returns are extremely uncertain. The 2010 brood year escapement for Seymour (including McNomee) (287,500 EFS) was unprecedented and almost an order of magnitude larger than the cycle average (33,400 EFS). Given previous maximum escapements on Seymour was 108K, survival is uncertain for this unprecedented brood year escapement in 2010. (2013 Outlook Category was 3.)</p>
<p>5. Early Summer – Mid & Upper Fraser</p> <p>(CUs: Anderson-Seton-ES; Nadina-Francois-ES (new mixed); Bowron-ES; Taseko-ES)</p>	1/3	<p>Gates: Above average returns are expected in 2014 relative to the cycle average of 18,000 (1974-2006). The 2010 brood year escapement for Gates (5,900 EFS) was almost 5 times larger than the cycle average (1,300 EFS). The individual 2014 Outlook Category is 3.</p> <p>Nadina: Above average returns are expected in 2014 relative to the cycle average of 26,000 (1978-2006). The 2010 brood year escapement for Nadina (11,900 EFS) was almost 6 times larger than the cycle average (2,100 EFS). The individual 2014 Outlook Category is 2.</p> <p>Bowron: Average returns are expected in 2014 relative to the cycle average of 26,000 (1954-2006). The 2010 brood year escapement for Bowron (4,400 EFS) was slightly larger than the cycle average (3,000 EFS). The individual 2014 Outlook Category is 2.</p> <p>Taseko: Return data are not available for this Outlook Unit; only escapements can be compared to the time series average. The brood year escapement index for Taseko (360 EFS) fell below the cycle average of 1,900 EFS (1950-1966 & 1994-2010); note that Taseko escapement assessments are an index of abundance only. The individual 2014 Outlook Category is 1. (2013 Outlook Category was 1/3.)</p>
<p>6. Early Summer – Lower Fraser</p> <p>(CU: Pitt-ES; Chilliwack-ES; Nahatlach-ES)</p>	1/3	<p>Pitt: Average returns are expected in 2014 relative to the average of 71,000 (1954-2010). The age-5 brood year escapement for Pitt (18,800 EFS) was above average, while the age-4 brood year escapement (8,800 EFS) was below the average across all cycles (13,900 EFS). Pitt has a higher proportion of age-5 recruits (~70%) relative to age-4 recruits. The individual 2014 Outlook Category is 3.</p> <p>Chilliwack Lake/Dolly Varden Creek and Nahatlatch Lake/River: Return data are not available for the two CUs in this Outlook Unit; only escapements can be compared to time series averages. Chilliwack Lake/Dolly Varden Creek brood year escapement in 2010 (1,500 EFS) was well below the recent time series average (12,200 EFS from 2002-2012 when both sites were assessed) across all cycles. The individual 2014 Outlook Category is 1.</p> <p>Nahatlatch Lake/River brood year escapement (2,900 EFS) was similar to the cycle average (2,700 EFS). The individual 2014 Outlook Category is 1. (2013 Outlook Category was 2.)</p>

Outlook Unit	2014 Outlook Category	Comments
7. Summer – Chilko (CUs: Chilko-S; Chilko-ES)	4	Above average returns are expected in 2014 relative to the cycle average of 1.48 million (1954-2006). Escapement in the 2010 brood year (1.2 million EFS) was unprecedented and was an order of magnitude larger than the cycle average (164,000 EFS) for Chilko. However, Chilko freshwater survival was well below average in the 2010 brood year, and as a result, smolt abundances (used to generate 2014 forecasts) fell within the observed smolt data range, although at the high end. <i>(2013 Outlook Category was 4.)</i>
8. Summer – Late Stuart (CUs: Takla-Trembleur-Stuart-S)	2	Above average returns are expected in 2014 relative to the cycle average of 232,000 (1954-2006). The 2010 brood year escapement for Late Stuart (43,500 EFS) was double the cycle average (22,000 EFS). <i>(2013 Outlook Category was 2.)</i>
9. Summer – Nechako (CU: Francois-Fraser-S)	3	Above average returns are expected in 2014 relative to the cycle average of 548,000 (1954-2006). The 2010 brood year escapement for Stellako (110,300 EFS) was larger than the cycle average (63,000 EFS). <i>(2013 Outlook Category was 2.)</i>
10. Summer – Quesnel (CU: Quesnel-S)	3	Above average returns are expected in 2014 relative to the cycle average of 1.05 million (1954-2006). The 2010 brood year escapement for Quesnel (133,000 EFS) was smaller than, but similar to, the cycle average (178,600 EFS). Although there has been recent poor survival for Quesnel Sockeye, in contrast to other Fraser Sockeye stocks, there is supplemental information in their early life-history that indicates survival could be average to above average. In their freshwater rearing lake, Quesnel Sockeye early freshwater survival, fry abundances, and sizes were average. During their downstream migration as smolts in 2012 (as assessed at Mission B.C.) and in Strait of Georgia and Johnstone Strait surveys in 2012, proportions of Quesnel Sockeye were greater than proportions observed in the escapement programs conducted in 2010. Data are not available for this stock for the second winter at sea, so this component of their survival remains uncertain. <i>(2013 Outlook Category was 2.)</i>
94. Summer-Harrison (CU: Harrison-River Type)	4	This CU moved from the Fall to Summer management group in 2012. Above average returns are expected in 2014 relative to the cycle average of 83,000 (1954-2006). However, given the exceptional escapements for this stock, predictions of returns are extremely uncertain. Escapement for Harrison was 399,700 EFS in the 2010 brood year (age-4 recruits in 2014) and 387,100 EFS in the 2011 brood year (age-3 recruits in 2014), both falling well above the long term average across cycles (19,600 EFS). In contrast to most other Fraser sockeye stocks, productivity for Harrison has increased in recent years. <i>(2013 Outlook Category was 4.)</i>
95. Summer-Raft (CU: Kamloops-ES)	2	This CU moved from the Early Summer to the Summer management group in 2012. Above average returns are expected in 2014 relative to the cycle average of 22,000 (1954-2006). The 2010 brood year escapement for Raft (2,400 EFS) was slightly below the cycle average (2,900 EFS). <i>(2013 Outlook Category was 3.)</i>
11. Fall – Cultus (CU: Cultus-L)	1	Well below average returns are expected in 2014 relative to the cycle average of 36,000 (1953-2009). Juvenile production of 318,000 smolts (41% hatchery marked) fell well below the cycle average (988,000 smolts). <i>(2013 Outlook Category was 1.)</i>

Outlook Unit	2014 Outlook Category	Comments
12. Fall – Portage (CU: Seton-L)	4	Above average returns are expected in 2014 relative to the cycle average of 76,000 (1958-2006). However, given the exceptional brood year escapements for this stock, predictions of 2014 returns are extremely uncertain. The 2010 brood year escapement for Portage (26,700 EFS) was unprecedented and almost 3 times larger than the cycle average (7,000 EFS). <i>(2013 Outlook Category was 2.)</i>
13. Fall – South Thompson (CU: Shuswap-L)	4	Above average returns are expected in 2014 relative to the cycle average of 7.8 million (1954-2006). However, given the exceptional brood year escapements for this stock, predictions of 2014 returns are extremely uncertain. The 2010 brood year escapement for Late Shuswap (3.1 million EFS) was unprecedented and well above the cycle average (1.1 million EFS). <i>(2013 Outlook Category was 3.)</i>
14. Fall – Birkenhead (CU: Lillooet-Harrison-L)	3	Average returns are expected in 2014 relative to the cycle average of 488,000 (1954-2006). The 2010 brood year escapement for Birkenhead (67,800 EFS) was similar to the cycle average (69,600 EFS). <i>(2013 Outlook Category was 3.)</i>
15. Fall – Lower Fraser CUs: Harrison (U/S)-L; Harrison (D/S)-L; Harrison (River-Type); Widgeon (River-Type)	1/3	Weaver (including miscellaneous Harrison Lake-rearing stocks): Below average returns are expected in 2014 relative to the cycle average of 576,100 (1974-2006); although across all cycles (average: 361,000), average returns are expected. The 2010 brood year escapement for Weaver (25,300 EFS) was close to the cycle average (32,800 EFS). Individual 2014 Outlook Category is 3. Widgeon Creek: CU return data are not available, instead only escapements are compared to time series averages. Brood year escapement (450 EFS) was above the cycle average (330 EFS). Individual 2014 Outlook Category is 1. <i>(2013 Outlook Category was 1/3.)</i>
16. Somass	4	Returns in 2014 are expected to be abundant due to high production from the 2010 brood year that returns as 4-year olds in 2014. For that brood, there were abundant spawners and smolt production from both Great Central and Sproat Lake and leading indicators (coho survival rate and age 3 return of Somass sockeye in 2013) suggest marine conditions for the corresponding sea entry year were also very favourable. The management forecast for 2014 is 1.6M. <i>(2013 Outlook Category was 3.)</i>
17. Henderson	2	Returns are expected to be low (i.e. 10,000 or less) due to an apparent failure of one of the contributing brood years. Although 2010 brood year spawners were near average, the resulting smolt production was apparently very low. <i>(2013 Outlook Category was 3.)</i>
18. WCVI - Other	2	Assessment data are not available to forecast others systems. However, limited assessment data suggests moderate increases in abundance in recent years. <i>(2013 Outlook Category was 2.)</i>

Outlook Unit	2014 Outlook Category	Comments
19. Areas 11 to 13	2/3	Preliminary information for 2013 sockeye from Nimpkish River has shown a near average return. Survival over the last four years has shown a dramatic improvement relative to the low stable returns observed prior. Other monitored systems such as Heydon Creek replaced its brood year and the Quatse River appears to have had another reasonable return (4th highest since the inception of the intensive program in 2006). Sockeye returns to the Phillips River were below average. Brood year escapements that will contribute to the 2014 return were strong for most area sockeye stocks. It is still early in assessing the outmigration conditions they encountered in 2012, and whether that will equate to another strong return in 2014; however, returns of pink and coho in 2013 are showing improved survivals, indicating outmigration conditions may have been favourable in 2012. Based on good marine conditions, continued improved survival trend and strength of brood years, our expectations for 2014 sockeye are to be low to near target. <i>(2013 Outlook Category was 2.)</i>
20. Sakinaw	1	115 adult and 25 jack sockeye were enumerated in 2013, coming from a smolt count of 32,900 in 2011. This group is comprised of progeny from captive brood, held at Rosewall and Ouilette hatcheries. The expectation for 2014 is for a greater number of adults due to a larger number of smolts (162,900). No female broodstock will be collected and existing captive brood will be used to augment natural spawning production. <i>(2013 Outlook Category was 1.)</i>
21. Areas 7 to 10	1/2	Returns are expected to be poor based on very low brood year escapements and continuing poor return rates. <i>(2013 Outlook Category was 1/2.)</i>
22. Coastal Areas 3 to 6	2/4	Status is uncertain. Indications are escapements are improving in the last cycle. Limited assessment data for evaluation. <i>(2013 Outlook Category was 2/4.)</i>
23. Babine Lake - Enhanced	4	Above average abundance forecast for age-4 sockeye based on 2013 jack returns. Poor age-5 return expected based on age-4 returns in 2013. <i>(2013 Outlook Category was 3/4.)</i>
24. Skeena - Wild	1/4	Expect well below average survival for sockeye that went to sea in 2011 (returning as 5 year olds in 2014). The survival for sockeye that went to sea in 2012 (returning as 4 year olds in 2014) is expected to be above average based on the very large 2013 Babine jack sockeye return. Returns of middle and lower Skeena sockeye stocks had improved over the last cycle, but declined in 2013. <i>(2013 Outlook Category was 1/3.)</i>
25. Nass	1/4	Average returns are expected. Kwinageese had extremely poor brood year escapements. <i>(2013 Outlook Category was 1/4.)</i>
26. Haida Gwaii	2/4	Status uncertain for some systems; limited assessment work indicates improved returns over the last cycle. <i>(2013 Outlook Category was 2/4.)</i>
27. Alesk	2/3	Based on brood year escapements outside (above and below) of the MSY target range and stock-recruitment relations from historical records, an average run is expected. However the 2013 run was well below expectations. <i>(2013 Outlook Category was 2/3.)</i>
28. Stikine - Wild	3	Stikine sockeye production has varied widely since 1985. Low production periods occurred in the mid 1980s to early 1990s. From 2003 through 2006 production improved, believed due to improved marine survival. Returns since 2007, however, were below forecast suggesting a downturn in marine survival. The 2013 return was weak and well below forecast. For 2014, the Tahltan Lake component is predicted to be slightly above average due to the above average number of smolts which emigrated from the lake in 2011. The main stem component is also expected to be slightly above average. Fishing opportunities are expected within the confines of conservation and PST harvest sharing arrangements. <i>(2013 Outlook Category was 3.)</i>

Outlook Unit	2014 Outlook Category	Comments
29. Taku - Wild	3	The 2013 run was lower than that forecasted. Regarding the outlook for 2014, the dominant and sub-dominant brood year escapements were within the range associated with good production; however the return of 4-year old Sockeye in 2013 was below average. Taking into account both information sources an average return is expected in 2014. Fishing opportunities are expected within those of conservation levels and PST harvest sharing arrangements. (2013 Outlook Category was 3.)
Chinook		
96. Fraser River Spring Run 4 ₂	1	Escapements in 2013 continued to be low, although aggregate escapement exceeded parental brood level. Concerns continue for Louis Creek, Coldwater River and Spius Creek. Expectations for 2014 are for modest improvements over 2010 parental brood escapements but continued overall low abundance levels resulting from persistently depressed parental abundance and low survival rates. (2013 Outlook Category was 1.)
97. Fraser River Spring Run 5 ₂	1	Escapements in 2013 continued to be low, although aggregate escapement just exceeded parental brood level. Individual escapements varied dramatically ranging from 40% of brood escapement to over 150% of parent brood. Populations of concern continue to include the Westroad River system, the Upper Chilcotin River, and the Birkenhead River in the lower Fraser. Expectations are for modest improvements but continued overall low escapements in 2014, related to depressed parental abundance and low survival rates. (2013 Outlook Category was 1.)
98. Fraser River Summer Run 5 ₂	1	Escapements in 2013 continued to be low, with escapement to individual rivers exhibiting high variability relative to parental escapements. Overall, the aggregate escapement failed to achieve the parent brood escapement level. Returns to the Nechako and North Thompson tributaries (Clearwater system and Raft) were poor; Raft and Nechako escaped at less than 40% of parental abundance, while escapement to the Quesnel River was double the parental brood. Expectations are for modest improvements over parental brood levels, but overall continued low escapements in 2014, related to ongoing depressed parental abundance and low survival rates. (2013 Outlook Category was 1/3.)
99. Fraser River Summer Run 4 ₁	3	Aggregate escapement in 2013 recovered sharply following the poor escapements in 2012. Uncertainty associated with smolt to adult survival continues to temper the outlook for this aggregate. If favourable marine conditions experienced by the 2009 brood continue, abundance in 2014 should be high based on parental levels. However, if the conditions that resulted in the 2012 decline return, escapement could trend lower again. (2013 Outlook Category was 3.)
100. Fraser River Fall Run 4 ₁	2/3	Average returns are expected in 2014. The 2013 returns to Harrison were poor (~43,000) and below goal, but many of those that returned were 3-yr-olds, suggesting that escapements may improve in 2014. The forecast return to the Harrison River for 2014 is 72,484, just below the lower bound of the escapement goal range. Although there are significant hatchery releases of Harrison fall-run chinook stock into the Harrison & Stave Rivers, lower Fraser River fall-run hatchery chinook consists mainly of Chilliwack Hatchery releases. . 2013 adult escapements to Chilliwack were above average (47,700). The forecast return to the Chilliwack River for 2014 is 45,877, above the long term average return of ~42,000. (2013 Outlook Category was 2/3.)

Outlook Unit	2014 Outlook Category	Comments
39. WCVI - Hatchery	3/4	Returns in 2014 to WCVI hatchery systems are expected to be variable and similar to last year. Overall, forecast returns of the entire WCVI chinook hatchery unit are expected to increase relative to 2013. The major contribution is expected from terminal abundances in Nootka (Conuma Hatchery) and Nitinat; which are forecast to return at record abundances unlike the Somass/RCH forecast which remains low. Forecast terminal returns to Somass/RCH (Area 23), Conuma (Area 25) and Nitinat are about 30,000, 90,000 and 56,000, respectively. <i>(2013 Outlook Category was 3.)</i>
40. WCVI-Wild	1	Wild populations have either been well below target and/or declining for several generations. In recent years, stocks in the NWVI CU showed moderate improvements; however this trend is not generally observed in SWVI. Expectations are for continued low abundance in 2014. <i>(2013 Outlook Category was .1)</i>
41. Johnstone Strait Area (including mainland inlets)	2/3	Preliminary 2013 return levels to the Campbell/Quinsam are slightly lower than 2012. Escapement monitoring is still underway, however early information suggests a return of approximately 4,000 chinook to the combined system, a continuation of the below average trend for this indicator. Data are sparse for most of the Mainland Inlet chinook stocks, but of those surveyed, most were well below historic abundances. The Phillips River has produced another strong return, similar to 2012, and well above the historic average. Outlook is similar to 2013 with wild stocks at low level (category 2) and hatchery stocks likely near or above target (category 3). <i>(2013 Outlook Category was 2/3.)</i>
42. Georgia Strait Fall (wild and small hatchery operations)	2	Spawner levels are below escapement goal but are improving from historic lows in 2009. The returns in 2013 were slightly higher than the previous year suggesting that the rebuilding seen recently is continuing. For Nanaimo, returns were again similar to 2012 and represent a slowing in recent year recoveries. <i>(2013 Outlook Category was 2.)</i>
43. Georgia Strait Fall (large hatchery operations)	2	Returns in 2013 to rivers with major hatcheries (Big Qualicum, Little Qualicum and Puntledge) are similar to last year's (2012) returns and are stable over last 10 years. <i>(2013 Outlook Category was 2.)</i>
44. Georgia Strait Spring and Summer	2	Nanaimo Springs and Summers were not monitored in 2013. Returns to Puntledge (summer) hatchery are similar to near term average and below target escapements. Rebuilding efforts are continuing. <i>(2013 Outlook Category was 2.)</i>
45. Areas 7 and 8	3/4	Bella Coola returns are expected to be average based on the 2013 returns. Dean chinook are expected to be below average. <i>(2013 Outlook Category was 3/4.)</i>
46. Areas 9 and 10	2/4	Wannock River chinook returns are expected to be average. The spring-run stocks including the Owikeno tributary stocks and Chuckwalla/Kilbella are expected to be below average based on recent trends. <i>(2013 Outlook Category was 2/3.)</i>
47. Coastal Areas 3 to 6	2/3	Stocks are generally depressed and variable and this pattern is expected to continue. Poor quality assessments. <i>(2013 Outlook Category was 2/3.)</i>
48. Nass	3/4	Average return expected (pending detailed review of the 2013 return age structure). <i>(2013 Outlook Category was 3/4.)</i>
49. Haida Gwaii	ND	No recent assessments of Yakoun chinook. <i>(2013 Outlook Category was 3/4.)</i>
50. Skeena	3/4	Average returns expected, subject to adjustment once the 2013 age structure is understood. <i>(2013 Outlook Category was 2/4.)</i>

Outlook Unit	2014 Outlook Category	Comments
51. Alsek	2/3	Brood year escapements were outside (above and below) the established optimal range. Based on stock recruitment relation using historical records, a below average run will be expected. <i>(2013 Outlook Category was 2/3.)</i>
52. Stikine	1	A bilaterally developed run outlook is not yet available but is required by December 01. This stock has been subjected to directed commercial fisheries since 2005 due to new provisions under the Pacific Salmon Treaty (PST). Under the Treaty, directed fisheries are allowed if the preseason forecast is greater than 28,100 large chinook (chinook > 659 mm MEF) and in-season projections are >24,500 large chinook. The preliminary pre-season sibling-based forecast is <28,000 large chinook suggesting production will be below the pre-season trigger for conducting a directed fishery in Canada. Since 2011 the run sizes were well below predictions. This outlook will be updated after the Trans-boundary Technical Committee (TTC) analysis is done (by December 01). <i>(2013 Outlook Category was 2.)</i>
53. Taku	2	Taku chinook salmon have been managed under a PST fishing regime implemented in 2005 and renewed for 2009 to 2018 with minor modifications. In 2009 the escapement goal was revised to 25,500 large Chinook (range: 19,000-36,000). The previous goal was 36,000 (range: 30,000-55,000). A bilaterally developed run outlook (based on preliminary estimates of the 2013 return and historical sibling relationships) was discounted by 29% to account for forecast error over the past five years. Based on this the 2014 run will be well below the average of 41,500 large Chinook and will not support directed fishing in Canada or the US. <i>(2013 Outlook Category was 2.)</i>
54. Yukon	2	A below average run is expected in 2014. An escapement goal of 42,500 to 55,000 was agreed to in 2010. Given sonar-based estimates of the total upper Yukon spawning escapements in 2008-09, the primary brood years expected to contribute to the 2014 return is well below target. Total production is well below pre-1998 periods. The runs since 2007 have been weak. If conditions contributing to the recent weak runs persist, fishing opportunities may again be limited in 2014. <i>(2013 Outlook Category was 2.)</i>
Coho		
55. Mid and Upper - Fraser	2	Escapements to the aggregate in 2013 exceeded parental brood levels again. Rebuilding will continue to be affected by freshwater and marine conditions. The 2014 outlook is for increasing escapement abundance, the result of improved escapement in 2011 and a trend toward moderately more favourable conditions affecting coho survival. Sustained improvement in marine conditions will be required to improve outlook. A formal forecast will be presented in spring 2014. <i>(2013 Outlook Category was 1.)</i>
56. Thompson	2	Escapements to the aggregate in 2013 exceeded parental brood levels again. Rebuilding will continue to be affected by freshwater and marine conditions. The 2014 outlook is for improving abundance, the result of improved escapement in 2011 and a trend toward moderately more favourable conditions affecting coho survival. Sustained improvement in marine conditions will be required to improve outlook. A formal forecast will be presented in spring 2014. <i>(2013 Outlook Category was 1.)</i>
57. Lower Fraser	2	Escapements last fall and winter were stronger than seen in recent years, and again, generally well above those of the parental brood year. Parental brood escapements in 2011 were moderate. Sustained improvements in smolt to adult survival will be required to improve outlook further. A formal forecast will be presented in spring 2014. <i>(2013 Outlook Category was 2.)</i>

Outlook Unit	2014 Outlook Category	Comments
58. WCVI	4	Most adults returning in 2014 are from the 2011 brood year that smolted in 2013. There were abundant spawners in 2011 and the marine indicators for the 2013 sea entry year are positive. Therefore, the outlook for 2014 is for an abundant return. <i>(2013 Outlook Category was 4.)</i>
59. Area 12	2/3	Monitoring of key indicator streams (e.g. Keogh) is still ongoing, but preliminary data suggest returns are showing continued improved survival for 2013. Return levels in 2014 will be influenced by: 1) below average brood year escapement in 2011, 2) apparent high freshwater survival (at least in the Keogh indicator stream where there was record coho smolt production), and 3) apparent good marine conditions in much of the inside south coast marine waters. Expect continued improvement over the last 3 years but with high uncertainty. <i>(2013 Outlook Category was 2/3.)</i>
60. Area 13 - North	2/3	Escapement monitoring for 2013 is ongoing and to this point has indicated variable returns to the area. There has been little to no precipitation this fall, and many of the returning coho may still be holding in the approach waters. Early estimates for the Quinsam River indicator are showing an improved return compared to the past several years, and possibly the largest since 2009. Improved marine survival was evident in both pink and coho returns to the area in 2013, based on a 2012 outmigration. If marine conditions continue to improve in 2013, 2014 returns will benefit. 2014 expectations are for returns similar to the last 3 years but are highly uncertain. <i>(2013 Outlook Category was 2.)</i>
61. Georgia Strait	3	The 2013 marine survivals were 1.4% for hatchery stocks and 2.4% for wild stocks. The 2013 observations of returns in southern Georgia Strait exceeded the forecasted levels. <i>(2013 Outlook Category was 2/3.)</i>
62. Areas 7 to 10	3/4	Survivals have been relatively good in recent years, after very poor returns in 2006 to 2008. Returns are uncertain and depend on the survivals of the juveniles to sea in 2013. <i>(2013 Outlook Category was 3/4.)</i>
63. Areas 5 and 6	3/4	Survivals have been relatively good in recent years, after very poor returns in 2006 to 2008. Returns are uncertain and depend on the survivals of the juveniles to sea in 2013. <i>(2013 Outlook Category was 3/4.)</i>
64. Area 3	3/4	Average return is expected, but depends on the survivals of the juveniles to sea in 2013. <i>(2013 Outlook Category was 3/4.)</i>
65. Haida Gwaii -E (Area 2 East)	3/4	Limited assessments since 2002. Recent returns have been relatively good. <i>(2013 Outlook Category was 3/4.)</i>
66. Haida Gwaii -N (Area 1)	ND	No recent assessments. <i>(2013 Outlook Category was ND.)</i>
67. Haida Gwaii -W (Area 2 West)	ND	No recent assessments. <i>(2013 Outlook Category was ND.)</i>
68. Skeena	3/4	Returns are uncertain and depend on the survivals of the juveniles to sea in 2013. <i>(2013 Outlook Category was 3/4.)</i>
69. Skeena – High Interior	3/4	Returns are uncertain and depend on the survivals of the juveniles to sea in 2013. <i>(2013 Outlook Category was 3/4.)</i>
70. Alsek	3	An above average run is expected based on an average weir count in the Klukshu River for the 2010 brood year, and a very strong return in 2013. <i>(2013 Outlook Category was 2/3.)</i>
71. Stikine	3	Reliable brood year escapement data are limited and ancillary observations are sometimes contradictory: extrapolated test fishing indices were average but results from limited aerial surveys were below average for brood years contributing to the 2014 return as in 2013. Based on data of limited quality, the 2014 return is expected to be below average. <i>(2013 Outlook Category was 3.)</i>

Outlook Unit	2014 Outlook Category	Comments
72. Taku	3	For 2014, a below average run is expected based on a preliminary smolt abundance in 2013 combined with recent smolt-to-adult survival rates. It is anticipated that the run will be sufficient for directed harvest levels comparable to recent years. <i>(2013 Outlook Category was 3.)</i>
73. Yukon	ND	Very little is known about the stock status within Canadian portions of the Yukon River drainage. Data from the US portion of the drainage indicate returns to the drainage in the last five years have been near the long term average. The general sense in Alaska is that exploitation is influenced by actions taken to manage co-migrating fall chum. This may have resulted in reduced spawning escapement in 2013, but those in Canadian tributaries have never been quantified for lack of funding and logistic difficulties (e.g. under ice movement). <i>(2013 Outlook Category was ND.)</i>
Pink		
74. Fraser - Odd only(CU: Fraser River)	NA	Relative to the odd numbered years, insignificant abundance of pink salmon return to the Fraser River in even numbered years. <i>(2012 Outlook Category was NA; 2013 Outlook Category was 4.)</i>
75. Squamish - Odd only	ND	No quantitative assessment information is available. <i>(2012 Outlook Category was ND; 2013 Outlook Category was ND.)</i>
76. WCVI - Odd & Even	ND	No quantitative assessment information is available. <i>(2012 Outlook Category was ND; 2013 Outlook Category was ND.)</i>
77. Areas 11 to 13 - Odd & Even	2/3	Returns in 2013 showed a continued increase in abundance for this cycle line over the 2011 brood year. Indications of improved survival for pink were evident throughout this area. There has been a steadily improving trend in abundance of the odd year cycle since 2003. The even year cycle has also encountered an improving trend in abundance since 2002 but at a much lower rate than the odd year cycle. With possible improved marine conditions, demonstrated by the strong survivals seen in 2013 and the improved brood year returns in 2012, expectations are for average to below average returns again in 2014. Historically pink returns to this area have been highly variable and expectations are highly uncertain. <i>(2012 Outlook Category was 2; 2013 Outlook Category was 2/3.)</i>
78. Georgia Strait - West - Odd & Even	2	Preliminary information suggests returns in 2013 are less than or equal to the 2011 brood year but are still above average. Seapen returns in 2013 were good in Nanaimo and natural spawning returns to Cowichan were good. Outlook is for highly variable returns, (natural returns low, seapen returns average to good). The expectation for 2014 is for below average escapements to natural stocks in this on cycle year. <i>(2012 Outlook Category was 2/3; 2013 Outlook Category was 2/3.)</i>
79. Georgia Strait - East - Odd & Even	2	Assessment information on pink salmon in this area is limited. Generally, pink salmon have been reported in small numbers across a broad range of systems. Enhancement is limited to Chapman and Lang Creeks. The expectation for 2014 is for low escapements. <i>(2012 Outlook Category was 2; 2013 Outlook Category was 2.)</i>
80. Areas 7 to 10 - Odd & Even	2/3	Returns are highly dependent on pink return rates. Poor returns are expected based on poor 2012 brood year escapements. <i>(2012 Outlook Category was 2/3; 2013 Outlook Category was 3/4.)</i>
81. North Coast Areas 3 to 6 - Odd & Even	3/4	Returns are highly dependent on pink return rates. Brood year escapements were relatively good in Areas 3 and 6, poor in Area4. <i>(2012 Outlook Category was 2/3; 2013 Outlook Category was 2/4.)</i>
82. Haida Gwaii - Odd & Even	3/4	Returns are highly dependent on pink return rates. Brood year escapements were relatively good in 2E and 2W. <i>(2012 Outlook Category was 3/4; 2013 Outlook Category was NA.)</i>

Outlook Unit	2014 Outlook Category	Comments
Chum		
83. Fraser River (CUs: Fraser Canyon and Lower Fraser)	3	Fraser chum salmon escapement trended downward from 1998 to 2010. The escapement decline was halted and reversed with an estimated 1.1 million spawners reported in 2011. The increasing trend continued in 2012 with an estimated 1.4 million spawners. . In 2013, the final in-season estimate of the terminal return was 1.6 million. The preliminary 2013 spawning escapement estimate is approximately 1.0 million; a final estimate will be available in summer 2014. Body size in 2013 was reported as “average” to “above average” unlike the smaller bodied chum reported in 2011. <i>(2013 Outlook Category was 3.)</i>
84. WCVI	2/3	Overall, some modest improvement might be expected in 2014 over recent years. Although spawner abundances for the two of the contributing brood years were very low (2009 and 2010), 2011 spawner abundance was at or above long-term average levels. In addition, marine conditions have been improving in recent sea entry years - although the benefit is to younger age classes. Hatchery surpluses are likely for enhanced stocks. <i>(2013 Outlook Category was 2/3.)</i>
85. Johnstone Strait Area and Mainland Inlets (Areas 11 to 13)	2/3	Returns in 2013 are still being assessed, however abundance appears to vary greatly from below average to above average; dominated by age-4 fish which out-migrated in 2010 when marine survival conditions were less favourable. Expectations for 2014 are low, to near target. This is based on the well below average parental brood abundance of the 2010 return, the indications of improved marine survival conditions (pink and coho returns in 2012) in 2011 the contributing outmigration year of 2010 brood, and the high variability in chum returns. Summer chum stocks in 2010 were mainly below average throughout the area and will likely stay the same in 2014. <i>(2013 Outlook Category was 2/3.)</i>
86. Georgia Strait	2	Brood year (2010) escapements were below target. Survival rates, although variable, appear average for most stocks. 2013 returns were mixed compared to the forecast with some systems higher than the forecast range and others were lower than the forecast range. For 2014, a below average return is expected for Baynes Sound and Sunshine Coast systems and for southern Strait systems. <i>(2013 Outlook Category was 3.)</i>
87. Coastal Areas 5 & 6	1/4	Extremely poor 2010 brood year escapement. Very poor chum returns in recent years. Kitimat enhanced return strength uncertain; depends on ocean survivals which have been poor in recent years. <i>(2013 Outlook Category was 1/4.)</i>
88. Haida Gwaii	2/4	Generally very poor brood year escapements indicate poor returns. <i>(2013 Outlook Category was 2/4.)</i>
89. Skeena-Nass	1/2	Very poor returns expected from very poor brood year escapements. Recent survivals have been poor. <i>(2013 Outlook Category was 1/2.)</i>
90. Areas 7 to 10	2/4	Wild brood year escapements were generally poor, and were impacted by the flood of 2010. Returns of enhanced stocks are dependent upon ocean survival which has been highly variable in recent years. <i>(2013 Outlook Category was 2/4.)</i>
91. Yukon	3	This stock group includes upper Yukon River populations (excluding Porcupine drainage stocks). Spawning escapements have exceeded targets since 2002 although severe conservation measures were required in Alaska and Canada in 2010. Escapements in 2009-10, the principle brood years contributing to the 2014 run, were over the minimum goal of 80,000 established to rebuild the stock to the long term average of approximately 100,000 chum salmon. Even larger spawning escapements produced returns exceeding replacement levels and were better than anticipated based on stock-recruit relations in 2013. Consequently, an above average run is expected in 2014. <i>(2013 Outlook Category was 2.)</i>

Outlook Unit	2014 Outlook Category	Comments
92. Porcupine (Yukon)	2	An Interim Management Escapement Goal of 22,000 to 49,000 was set for the Fishing Branch River for 2008 to 2010 based on revised analyses. This goal range is substantially less than the longstanding goal of 50,000 to 120,000. Returns over the last five years have been well below expected and the minimum escapement goal was not achieved in two of the five years. Escapements in 2009-10, the principle brood years contributing to the 2014 run, were 26,000 and 16,000 respectively. If conditions contributing to the weak returns persist, a below average run is again expected in 2014. <i>(2013 Outlook Category was 3.)</i>
93. Taku	2	Ancillary observations suggest that escapements have been relatively low since 1991, but no scientifically defensible estimates are available. The in-river run abundance index for the primary brood year was below the recent 10-year average. Non-retention provisions are expected to continue. <i>(2013 Outlook Category was 2.)</i>

Appendix 1. Outlook Units and associated Conservation Units.

No.	Outlook Unit Name	Conservation Unit
Sockeye (sockeye CU types: SEL = lake type, SER = river type)		
1	Okanagan	SEL::Osoyoos
2	Early Stuart	SEL::Takla/Trembleur-Early Stuart timing
3	Early Summer - North Thompson	SEL::North Barriere-Early Summer timing
4	Early Summer South Thompson	SEL::Shuswap-Early Summer timing
5	Early Summer - Mid and Upper Fraser	SEL::Anderson/Seton-Early Summer timing
		SEL::Bowron-Early Summer timing
		SEL::Chilko-Early Summer timing
		SEL::Francois-First Run-Early Summer timing
		SEL::Francois-Second Run-Early Summer timing
		SEL::Indian/Kruger-Early Summer timing
		SEL::Nadina/Francois-Early Summer timing
		SEL::Nahatlatch-Early Summer timing
6	Early Summer - Lower Fraser	SEL::Taseko-Early Summer timing
		SEL::Chilliwack-Early Summer timing
7	Summer - Chilko	SEL::Pitt-Early Summer timing
		SEL::Chilko-Summer timing
8	Summer - Late Stuart	SEL::Takla/Trembleur/Stuart-Summer timing
9	Summer - Nechako	SEL::Francois/Fraser-Summer timing
10	Summer - Quesnel	SEL::Quesnel-Summer timing
94	(new) Summer - Harrison	SER::Harrison River
95	(new) Summer - Raft	SEL::Kamloops-Early Summer timing
11	Fall - Cultus	SEL::Cultus-Late timing
12	Fall - Portage	SEL::Seton-Late timing
13	Fall - South Thompson	SEL::Shuswap Complex-Late timing
14	Fall - Birkenhead	SEL::Lillooet/Harrison-Late timing
15	Fall - Lower Fraser	SEL::Harrison-downstream migrating-Late timing
		SEL::Harrison-upstream migrating-Late timing
16	Somass	SEL::Great Central
		SEL::Sproat
17	Henderson	SEL::Henderson
18	WCVI - Other	SEL::Alice
		SEL::Canoe Creek
		SEL::Cecilia
		SEL::Cheewat
		SEL::Clayoquot
		SEL::Deserted
		SEL::Fairy
		SEL::Hesquiat
		SEL::Hobiton
		SEL::Jansen
		SEL::Kanim
		SEL::Kennedy
		SEL::Maggie
		SEL::Megin
		SEL::Muchalat
SEL::Muriel		
SEL::Nitinat		

No.	Outlook Unit Name	Conservation Unit
		SEL::O'Connell SEL::Owossitsa SEL::Park River SEL::Power SEL::William/Brink
19	Areas 11 to 13	SEL::Fulmore SEL::Heydon SEL::Ida/Bonanza SEL::Kakweiken SEL::Loose SEL::Mackenzie SEL::Nahwitti SEL::Nimpkish SEL::Pack SEL::Phillips SEL::Quatse SEL::Schoen SEL::Shushartie SEL::Tzoonie SEL::Vernon SEL::Village Bay SEL::Woss
20	Sakinaw	SEL::Sakinaw
21	Areas 7 to 10	SEL::Long SEL::Owikeno SEL::Owikeno-Late timing SEL::South Atnarko Lakes SEL::Wannock[Owikeno]
22	Coastal Areas 3 to 6	SEL::Backland SEL::Banks SEL::Bloomfield SEL::Bolton Creek SEL::Bonilla SEL::Borrowman Creek SEL::Busey Creek SEL::Canoona SEL::Cartwright Creek SEL::Chic Chic SEL::Curtis Inlet SEL::Dallain Creek SEL::Deer SEL::Devon SEL::Dome SEL::Douglas Creek SEL::Elizabeth SEL::Elsie/Hoy SEL::End Hill Creek SEL::Evelyn SEL::Evinrude Inlet SEL::Fannie Cove SEL::Freedra/Brodie SEL::Hartley Bay

No.	Outlook Unit Name	Conservation Unit
		SEL::Hevenor Inlet
		SEL::Higgins Lagoon
		SEL::Kadjusdis River
		SEL::Kainet Creek
		SEL::Kdelmashan Creek
		SEL::Keecha
		SEL::Kent Inlet Lagoon Creek
		SEL::Kenzuwash Creeks
		SEL::Keswar Creek
		SEL::Kildidt Creek
		SEL::Kildidt Lagoon Creek
		SEL::Kimsquit
		SEL::Kisameet
		SEL::Kitkiata
		SEL::Kitlope
		SEL::Koeye
		SEL::Kooryet
		SEL::Kunsoot River
		SEL::Kwakwa Creek
		SEL::Lewis Creek
		SEL::Limestone Creek
		SEL::Lowe/Simpson/Weare
		SEL::Mary Cove Creek
		SEL::Mcdonald Creek
		SEL::Mcloughlin
		SEL::Mikado
		SEL::Monckton Inlet Creek
		SEL::Namu
		SEL::Pine River
		SEL::Port John
		SEL::Powles Creek
		SEL::Price Creek
		SEL::Prudhomme
		SEL::Roderick
		SEL::Ryan Creek
		SEL::Salter
		SEL::Scoular/Kilpatrick
		SEL::Shawatlan
		SEL::Sheneeza Inlet
		SEL::Ship Point Creek
		SEL::Sockeye Creek
		SEL::Spencer Creek
		SEL::Stannard Creek
		SEL::Talamoosa Creek
		SEL::Tankeeah River
		SEL::Treneman Creek
		SEL::Tsimtack Lakes
		SEL::Tuno Creek East
		SEL::Tuno Creek West
		SEL::Tuwartz
		SEL::Tyler Creek
		SEL::Wale Creek

No.	Outlook Unit Name	Conservation Unit
		SEL::Watt Bay SEL::West Creek SEL::Whalen SEL::Yaaklele Lagoon SEL::Yeo
23	Babine Lake - Enhanced	SEL::Babine
24	Skeena - Wild	SEL::Alastair SEL::Aldrich SEL::Asitika SEL::Atna SEL::Azuklotz SEL::Bear SEL::Clements SEL::Damshilgwit SEL::Dennis SEL::Ecstall/Lower SEL::Footsore/Hodder SEL::Johanson SEL::Johnston SEL::Kitsumkalum SEL::Kitwancool SEL::Kluatantan SEL::Kluayaz SEL::Lakelse SEL::Maxan SEL::Mcdonell SEL::Morice SEL::Motase SEL::Nilkitkwa SEL::Sicintine SEL::Slamgeesh SEL::Spawning SEL::Split Mountain/Leverson SEL::Stephens SEL::Sustut SEL::Swan SEL::Tahlo/Morrison
25	Nass	SEL::Bowser SEL::Bulkley SEL::Damdochax/Wiminasik SEL::Fred Wright SEL::Kwinageese SEL::Meziadin SEL::Oweege
26	Haida Gwaii	SEL::Ain/Skundale/Ian SEL::Awun SEL::Fairfax SEL::Jalun SEL::Marian/Eden SEL::Marie SEL::Mathers SEL::Mercer

No.	Outlook Unit Name	Conservation Unit
		SEL::Skidegate
		SEL::Yakoun
27	Alsek	SEL::Blanchard
		SEL::Klukshu
		SEL::Neskatahin
28	Stikine - Wild	SEL::Christina
		SEL::Chutine
		SEL::Tahltan
29	Taku - Wild	SEL::King Salmon
		SEL::Kuthai
		SEL::Little Trapper
		SEL::Tatsamenie
Chinook		
96	Fraser River Spring Run 42	CK::South Thompson-Besette Creek
		CK::Lower Thompson-spring timing-age 1.2
97	Fraser River Spring Run 52	CK::Lower Fraser River-spring timing
		CK::Lower Fraser River-Upper Pitt
		CK::Fraser Canyon-Nahatlatch
		CK::Middle Fraser River-spring timing
		CK::Upper Fraser River-spring timing
		CK::North Thompson-spring timing-age 1.3
98	Fraser River Summer Run 52	CK::Lower Fraser River-summer timing
		CK::Middle Fraser River-Portage
		CK::Middle Fraser River-summer timing
		CK::South Thompson-summer timing-age 1.3
		CK::North Thompson-summer timing-age 1.3
99	Fraser River Summer Run 41	CK::Maria Slough
		CK::South Thompson-summer timing-age 0.3
		CK::Shuswap River-summer timing-age 0.3
		CK::Upper Adams River_su_1.x
100	Fraser River Fall Run 41	CK::Lower Fraser River-fall timing (white)
		(P)Hatchery Exclusion-Lower Fraser River
39	WCVI - Hatchery	includes production from major hatchery facilities at Conuma, Stamp, and Nitinat rivers
40	WCVI - Wild	CK::Nootka and Kyuquot
		CK::Northwest Vancouver Island
		CK::Southwest Vancouver Island
41	Johnstone Strait Area (including mainland inlets)	CK::Homathko
		CK::Klinaklini
		CK::Northeast Vancouver Island
		CK::South Coast-southern fjords
42	Georgia Strait Fall (wild and small hatchery operations)	CK::Boundary Bay
		CK::East Vancouver Island-Cowichan and Koksilah
		CK::East Vancouver Island-Goldstream
		CK::East Vancouver Island-Nanaimo and Chemainus-fall timing
		CK::South Coast-Georgia Strait
43	Georgia Strait Fall (large hatchery operations)	CK::East Vancouver Island-Qualicum and Puntledge-fall timing
44	Georgia Strait Spring and Summer	CK::Vancouver Island-Georgia Strait_su_0.3
		CK::East Vancouver Island-Nanaimo-spring timing
45	Areas 7 and 8	CK::Bella Coola-Bentinck

No.	Outlook Unit Name	Conservation Unit
		CK::Dean River
46	Areas 9 and 10	CK::Docee
		CK::Rivers Inlet
		CK::Wannock
47	Coastal Areas 3 to 6	CK::North and Central Coast-early timing
		CK::North and Central Coast-late timing
		CK::Portland Sound-Observatory Inlet-Lower Nass
		CK::Skeena Estuary
48	Nass	CK::Upper Nass
49	Haida Gwaii	CK::Haida Gwaii-East
		CK::Haida Gwaii-North
50	Skeena	CK::Ecstall
		CK::Kalum-early timing
		CK::Kalum-late timing
		CK::Lakelse
		CK::Lower Skeena
		CK::Middle Skeena-large lakes
		CK::Middle Skeena-mainstem tributaries
		CK::Sicintine
		CK::Upper Bulkley River
		CK::Upper Skeena
		CK::Zymoetz
51	Alsek	CK::Alsek
52	Stikine	CK::Stikine-early timing
		CK::Stikine-late timing
53	Taku	CK::Taku-early timing
		CK::Taku-late timing
		CK::Taku-mid timing
54	Yukon	CK::Big Salmon
		CK::Middle Yukon River and tributaries
		CK::Nordenskiold
		CK::Northern Yukon River and tributaries
		CK::Old Crow
		CK::Pelly
		CK::Porcupine
		CK::Salmon Fork
		CK::Stewart
		CK::Upper Yukon River
CK::White and tributaries		
CK::Yukon River-Teslin headwaters		
Coho		
55	Mid and Upper - Fraser	CO::Fraser Canyon
		CO::Middle Fraser
56	Thompson	CO::Lower Thompson
		CO::North Thompson
		CO::South Thompson
57	Lower Fraser	CO::Lillooet
		CO::Lower Fraser-A
		CO::Lower Fraser-B
58	WCVI	CO::Clayoquot
		CO::Juan de Fuca-Pachena

No.	Outlook Unit Name	Conservation Unit
		CO::West Vancouver Island
59	Area 12	CO::Homathko-Klinaklini Rivers CO::Nahwitti Lowland
60	Area 13 - North	CO::East Vancouver Island-Johnstone Strait-Southern Fjords CO::Southern Coastal Streams-Queen Charlotte Strait-Johnstone Strait-Southern Fjords
61	Georgia Strait	CO::Boundary Bay CO::East Vancouver Island-Georgia Strait CO::Georgia Strait Mainland CO::Howe Sound-Burrard Inlet
62	Areas 7 to 10	CO::Bella Coola-Dean Rivers CO::Rivers Inlet CO::Smith Inlet
63	Areas 5 and 6	CO::Brim-Wahoo CO::Douglas Channel-Kitimat Arm CO::Hecate Strait Mainland CO::Mussel-Kynoch CO::Northern Coastal Streams
64	Area 3	CO::Lower Nass CO::Portland Sound-Observatory Inlet-Portland Canal CO::Skeena Estuary CO::Upper Nass
65	Haida Gwaii - East (Area 2 East)	CO::Haida Gwaii-East
66	Haida Gwaii - North (Area 1)	CO::Haida Gwaii-Graham Island Lowlands
67	Haida Gwaii - West (Area 2 West)	CO::Haida Gwaii-West
68	Skeena	CO::Lower Skeena CO::Middle Skeena
69	Skeena - High Interior	CO::Upper Skeena
70	Alsek	CO::Alsek River
71	Stikine	CO::Lower Stikine
72	Taku	CO::Taku-early timing CO::Taku-late timing CO::Taku-mid timing
73	Yukon	CO::Porcupine
Pink (pink CU types: PKO = odd year, PKE = even year)		
74	Fraser - Odd only	PKO::Fraser River
75	Squamish - Odd only	PKO::East Howe Sound-Burrard Inlet
76	WCVI - Odd & Even	PKE::Northwest Vancouver Island PKE::West Vancouver Island PKO::West Vancouver Island
77	Areas 11 to 13 - Odd & Even	PKE::Southern Fjords PKO::Nahwitti PKO::Southern Fjords PKO::East Vancouver Island-Johnstone Strait
78	Georgia Strait - West - Odd & Even	not yet defined; includes some seapen releases
79	Georgia Strait - East - Odd & Even	PKE::Georgia Strait PKO::Georgia Strait
80	Areas 7 to 10 - Odd & Even	PKE::Hecate Lowlands PKE::Hecate Strait-Fjords PKO::Hecate Strait-Fjords PKO::Hecate Strait-Lowlands

No.	Outlook Unit Name	Conservation Unit
		PKO::Homathko-Klinaklini-Smith-Rivers-Bella Coola-Dean
81	North Coast Areas 3 to 6 - Odd & Even	PKE::Hecate Lowlands
		PKE::Hecate Strait-Fjords
		PKE::Middle-Upper Skeena
		PKE::Nass-Skeena Estuary
		PKE::Upper Nass
		PKO::Hecate Strait-Fjords
		PKO::Hecate Strait-Lowlands
		PKO::Lower Skeena
		PKO::Middle and Upper Skeena
		PKO::Nass-Portland-Observatory
		PKO::Nass-Skeena Estuary
		PKO::Upper Nass
82	Haida Gwaii - Odd & Even	PKE::East Haida Gwaii
		PKE::North Haida Gwaii
		PKE::West Haida Gwaii
		PKO::East Haida Gwaii
		PKO::North Haida Gwaii
		PKO::West Haida Gwaii
Chum		
83	Fraser River	CM::Fraser Canyon
		CM::Lower Fraser
84	WCVI	CM::Northwest Vancouver Island
		CM::Southwest Vancouver Island
85	Johnstone Strait Area and Mainland Inlets (Areas 11 to 13)	CM::Bute Inlet
		CM::Loughborough
		CM::Northeast Vancouver Island
		CM::Southern Coastal Streams
		CM::Upper Knight
86	Georgia Strait	CM::Georgia Strait
		CM::Howe Sound-Burrard Inlet
87	Coastal Areas 5 & 6	CM::Douglas-Gardner
		CM::Hecate Lowlands
		CM::Mussel-Kynoch
88	Haida Gwaii	CM::East HG
		CM::North Haida Gwaii
		CM::North Haida Gwaii-Stanley Creek
		CM::Skidegate
		CM::West Haida Gwaii
89	Skeena - Nass	CM::Lower Nass
		CM::Lower Skeena
		CM::Middle Skeena
90	Areas 7 to 10	CM::Bella Coola River-Late
		CM::Bella Coola-Dean Rivers
		CM::Rivers Inlet
		CM::Smith Inlet
		CM::Spiller-Fitz Hugh-Burke
		CM::Wannock
91	Yukon	CM::Donjek-Kluane
		CM::Middle Yukon River

No.	Outlook Unit Name	Conservation Unit
		CM::North Yukon River
		CM::Old Crow
		CM::Stewart
		CM::Teslin
		CM::White River
92	Porcupine (Yukon)	CM::Porcupine River
93	Taku	CM::Taku

Appendix 2. Expansion of acronyms used in this document.

Acronym	Expanded Form
CK	Chinook salmon
CM	Chum salmon
CO	Coho salmon
CSAS	Canadian Science Advisory Secretariat
CU	Conservation Unit
EFS	Effective Female Spawners
ENSO	El Niño – Southern Oscillation
IMEG	Interim Management Escapement Goal
MEF	Mid-Eye to Fork (length measurement)
MSY	Maximum Sustainable Yield
NA	Not Applicable
ND	No Data (i.e. data deficient)
OU	Outlook Unit
PKE	Pink salmon – Even year (Conservation Unit type)
PKO	Pink salmon – Odd year (Conservation Unit type)
PST	Pacific Salmon Treaty
SEL	Sockeye salmon – Lake (Conservation Unit type)
SER	Sockeye salmon – River (Conservation Unit type)
TTC	Trans-boundary Technical Committee
WCVI	West Coast Vancouver Island

CITATION

Fisheries and Oceans Canada. 2024. Pacific Salmon Outlook, Pacific Region, 2014. 1-24 pp.

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Cat. No. Fs141-9E-PDF
ISSN 2817-2426