Looking Forward: 2017 Salmon Fisheries

Preliminary Pre-season Planning Considerations

FN Forum on Conservation and Harvest Planning

January 25, 2017

Outline

- Species Prospects:
  - Southern chinook
  - Southern coho
  - Southern chum
  - Southern sockeye
  - Southern pink
- IFMP process timelines

Southern BC Chinook

- **Fraser Spring 4_2:** Expectations for continued depressed abundance due to low parental escapements in 2013 and ongoing unfavorable and highly variable marine survival conditions.
  - Expect continuation of fisheries restrictions.
- **Fraser Spring 5_2 and Summer 5_2** : Expectation for continued overall low escapements due to depressed parental abundance and continuing unfavourable marine conditions.
  - Fisheries based on pre-season cautious (Zone 1) management approach with possibility to update approach inseason based on Albion test fishery.
- **Fraser Summer 4_1 (South Thompson):** Brood year spawners in 2013 over two-fold higher than 2012 brood that returned in 2016. However, instability in smolt to adult survival rates, combined with highly variable escapement tempers outlook. If marine survival conditions improve, abundance may be average.

Southern BC Chinook

Fraser Fall Run 4_1 (Harrison): Low parental escapement in 2013 and current marine conditions appear unfavorable; high uncertainty about returns. Quantitative forecast available in early Spring; additional management actions may be considered if returns are below escapement goal range given recent trends.

Georgia Strait Fall (incl. Cowichan) chinook: Continued rebuilding with 2016 return higher than previous year; may reach maximum sustained yield (MSY) target.

AABM Forecasts and coded wire tag (CWT) based total mortality distributions available in late March / early April.

- Ongoing work to seek feedback on draft integrated strategic plan for Southern BC chinook populations and initiate review of management approach for Fraser River chinook

Southern BC Coho

- Survival rates remain variable and are still below historic highs in most areas; still in *low productivity regime* requiring low exploitation rates
- **Interior Fraser coho** – Continued low abundance due to unfavourable marine conditions
  - Preliminary information indicates escapements in 2016 better than observed in 2014 and 2015. Preliminary 2016 spawner abundance estimate of 60K (similar to 59K, 2013).
  - For 2017, expect continuation of cautious management approach in place in 2016.
- **Lower Fraser -** continued low abundance due to current marine conditions. Sustained improvement in marine conditions will be required to improve outlook.
- **Georgia Strait** – Preliminary 2016 spawning surveys indicate variability between systems; higher returns to Cowichan River and Black Creek. 2017 expectations uncertain due to low/variable marine survival (continues below the long term avg.)
- Forecasts expected for these units in spring of 2017.

Southern Chum

Johnstone Strait –Expectations based on relatively good brood year spawners (2013-2015) but expectation of poor marine survival rates. Chum returns remain highly variable.

Strait of Georgia - For 2017, returns should be greater than 2016 for the Cowichan, Goldstream and Jervis Inlet stocks, and similar for the Nanaimo and Mid-Island stocks, based on brood year escapement in 2013.

- Management plan based on 20% exploitation rate in mixed-stock Johnstone Strait fishery.
- In other areas, harvest opportunities primarily in terminal areas based on decision rules and escapement targets.

Fraser Chum

Fraser chum - 2013 escapement approx. 1 million (well above escapement goal). Final in-season escapement for 2016 was forecast at 2.0M; 2016 escapement available by March 2017.

- Expectation for returns that can support fisheries for all groups
- Management approach similar to recent years anticipated using information from Albion test fishery to estimate in-season return abundance.
  - 800,000 escapement target for the Fraser River chum
  - Fisheries constrained by stocks of concern including IFR coho and steelhead

Fraser River Sockeye

- Below average survival for many but not all stocks in 2016. However, direct links to environmental conditions have not been made; unclear if below average survivals will persist and influence survival of four year olds returning in 2017.
- Total returns of Fraser sockeye have generally been less than the forecast median (p50) over the last 3 cycles with some exceptions (e.g. 2010). Total returns in 2015 and 2016 have been near the p10 level of forecast abundance.
- In 2017, below average returns expected for most Fraser sockeye populations. Summer runs sockeye populations are expected to comprise the majority of the total Fraser sockeye returns.
- Harvest opportunities are uncertain.
- Quantitative forecasts will be available in February 2017.

Fraser River Sockeye

Early Stuart – *stock of concern*. Very low returns expected in 2017; 2013 effective female spawners (approx. 40K) less than half the cycle average.

Early Summer –*stock of concern to near target*. Larger than average returns: for Seymour, Scotch, Gates; average returns for North Barriere, Nadina, and Pitt; below average returns for: Bowron and Nahatlatch; and, Chilliwack had largest escapement on record (2012) but below average for 2013) - returns in past have been highly variable.

Summer – *low to abundant*. Average to above average returns expected for Chilko, Harrison, Stellako and Raft. Late Stuart below average returns; effective female spawners were less than ½ of cycle average. Quesnel – well below average returns given effective female spawners (96K) vs. cycle avg. (450K).

Lates – *stock of concern to near target.* Cultus - very low returns (110K smolts vs. 254K cycle avg.) and below avg. returns for Weaver (effective female spawners 15.5K below 20K cycle avg). Average returns for Portage (45K cycle average) and Birkenhead (296K cycle avg.) Larger than 200K cycle average for Shuswap (effective female spawners were 10X cycle avg.)

- Quantitative forecasts will be available by February 2017.

Fraser Sockeye Escapement Plan

- Management approach based on abundance based harvest rules for 4 management units: Early Stuart, Early Summer, Summer and Late run.
- Work planning for FRSSI model/process to inform performance of harvest rules, low abundance exploitation rate (LAER) limits, caps on total allowable mortality rates and/or other issues is ongoing.
- Escapement plan options will be included in the draft IFMP.
- Harvests will be constrained by stocks of concern, including Cultus Lake and Sakinaw Lake sockeye.
- Expected poor returns of *Early Stuart* and other Fraser populations will require discussion of window closure period and other management constraints.
- Actual fishery opportunities based on in-season assessment of abundance information including test fisheries, hydro acoustics, and stock identification sampling.

Southern Pink

- **Fraser River pink:** - Pink salmon return to the Fraser River in odd numbered years; below average returns expected due to low fry abundance in Spring 2016 (230 million fry vs. 450 million average). (Average return over1959-2013 was 13.4 million). Opportunities for directed harvest will be based on in season information and subject to measures to protect stock /species of concern.
- **Other southern BC pink**: Average to below average returns are expected for other Southern British Columbia populations
  - Areas 11 to 13 and Georgia Strait –Local pink abundances may provide opportunities for directed harvest.
  - Squamish pink salmon –No quantitative assessment information is available.

Marine Conditions-General Observations

- Marine survival conditions at ocean entry year:
  - **2012** ocean indicators: sea surface cooler than 2010 and 2011
  - **2013** ocean indicators: sea surface variable but warmer than 2012 on average
  - **2014** ocean indicators: 1st half 2014, BC coast cooler water, but in 2nd half of 2014 record warm temperatures continuing
  - **2015**; sea surface Gulf Alaska 3°C above normal; "warm blob"
  - **2016**; ocean indicators: seas surface variable but warmer than average for 1st half of 2016.

Relating Ocean Conditions to Salmon Returns

Ocean entry years of interest for returns in 2017:

- **2013** ocean entry for age 5_1 ocean type chinook
- **2014** ocean entry for age 4_1 ocean type chinook, age 5_2 sockeye, and age 5_2 chinook.
- **2015** ocean entry for age 4_2 sockeye and upper Fraser 4_2 chinook (and most other yearling chinook)
- **2016** ocean entry for age 3 coho and age 2 odd-year pink salmon (e.g. Fraser)

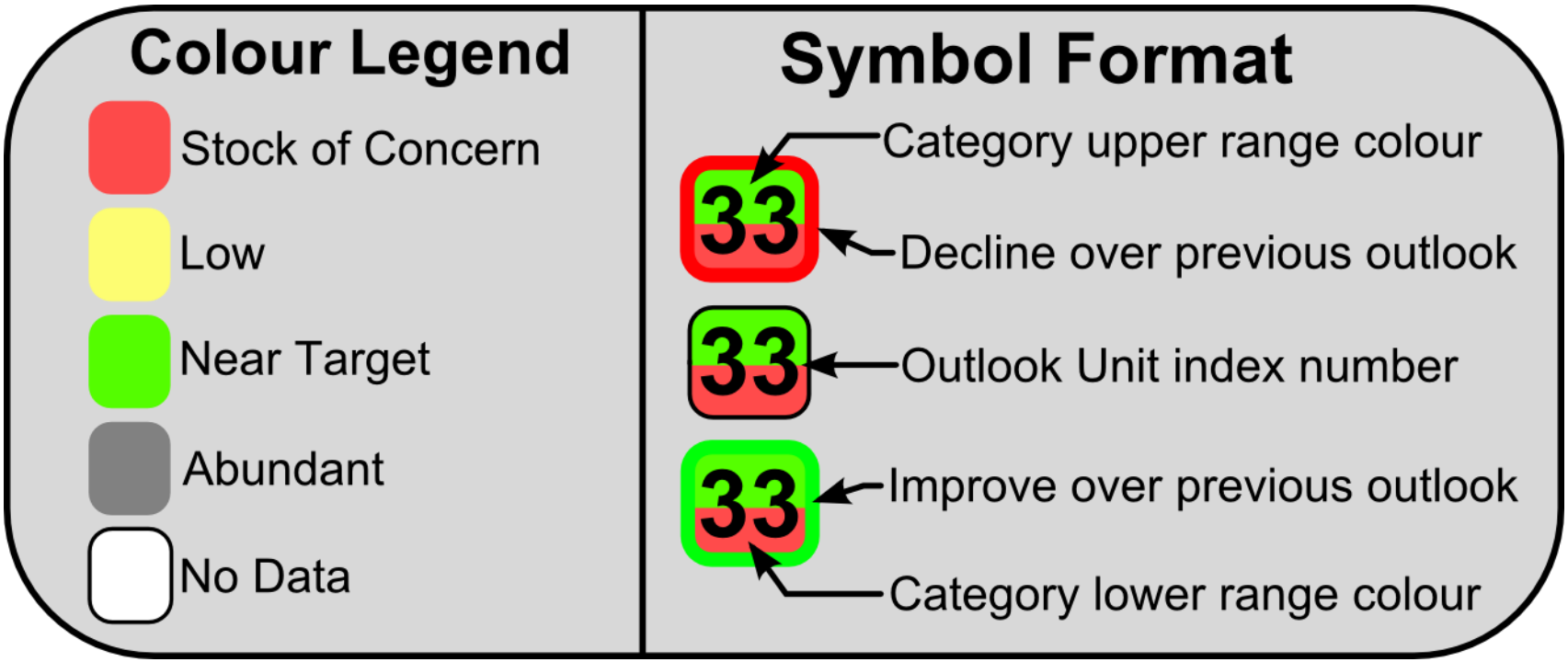
Very warm conditions during 2014 to 2016 sea entry years are expected to influence most species returning in 2017; however, there is high uncertainty about impacts on salmon returns / survival rates.

2017 IFMP Timelines:

Activity	2016/2017 Proposed Timeline
Salmon Outlook report for 2017	December 12, 2016
Post Season Meetings for North and South Coasts	NC – December 1-2, 2016 SC – December 9, 2016
NEW –DFO to provide first draft of the proposed Section 13 Species Fishing Plans of the 2017/2018 IFMPs to advisory groups for review. Changes/edits to Section 13 Species Fishing Plans and other key areas of interest will be sought from First Nations and advisory groups to inform subsequent IFMP planning meetings.	Mid-December, 2016
Deadline for written submissions from advisory groups to identify additional discussion items for the 2017/2018 Salmon IFMPs building on the DFO's summary of key IFMP changes provided.	February 6, 2017
Integrated Harvest Planning Committee Meeting/First Nation meetings to discuss the summary of key IFMP updates and other suggested changes that require consultation and/or science work.	February, 2017 NC and SC IHPC meetings – February 8 & 9, 2017
Release of draft IFMP for review & comment	First week of March 2017
IHPC/First Nation meetings to review draft IFMP	March 2017 NC and SC IHPC meetings – March 29 & 31, 2017
Deadline to submit comments on draft IFMP (30 day public comment period)	April 13, 2017
Final IHPC Meeting	May 3-4th, 2017
Target for public release of 2017/18 salmon IFMP (current IFMP in place June 1, 2016 to May 31, 2017)	June 2017

Background Slides

Outlook Map Legend



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Sockeye 2017 Outlook

Category	Count
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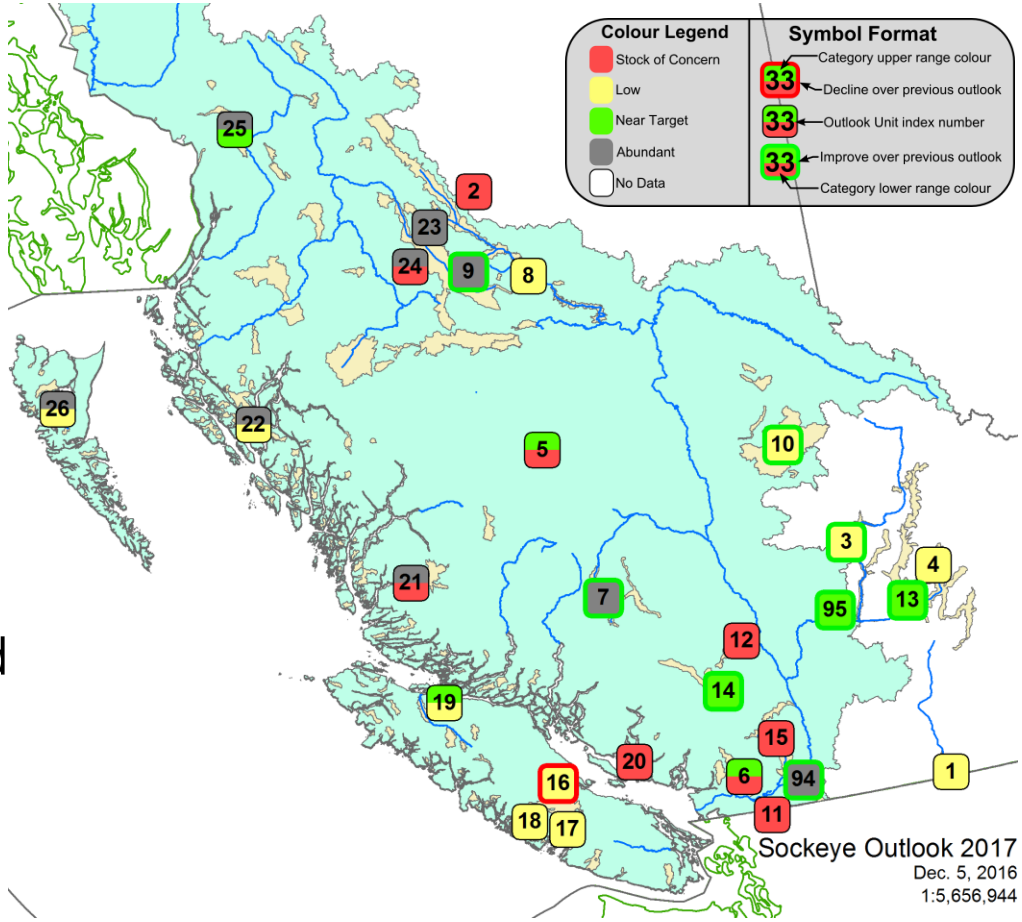
2, 2/3, 2/4	11
3 & 3/4	5
4	6



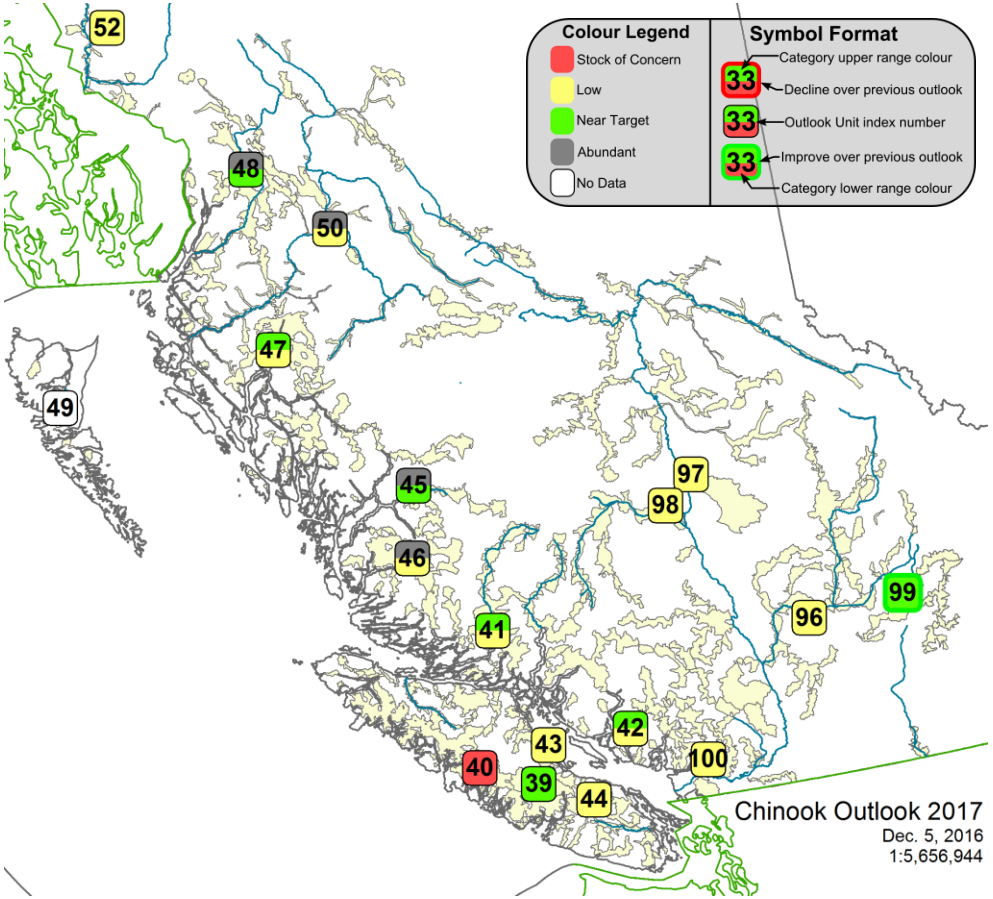
- 31 Outlook Units; 215 CUs
- Fraser: sub-dominant cycle; below average returns; improved summer runs
- Somass: very low returns
- Skeena: poor brood year returns
- Nass: average returns

Canada

Chinook 2017 Outlook

Category	Count
1, 1/2, 1/3, 1/4	1
2, 2/3, 2/4	15
3 & 3/4	4
4	None
No Data	1

- 21 Outlook Units; 74 CUs
- Little change from 2016
- Northern BC: average or variable
- Southern BC: remain low
- Yukon: below average



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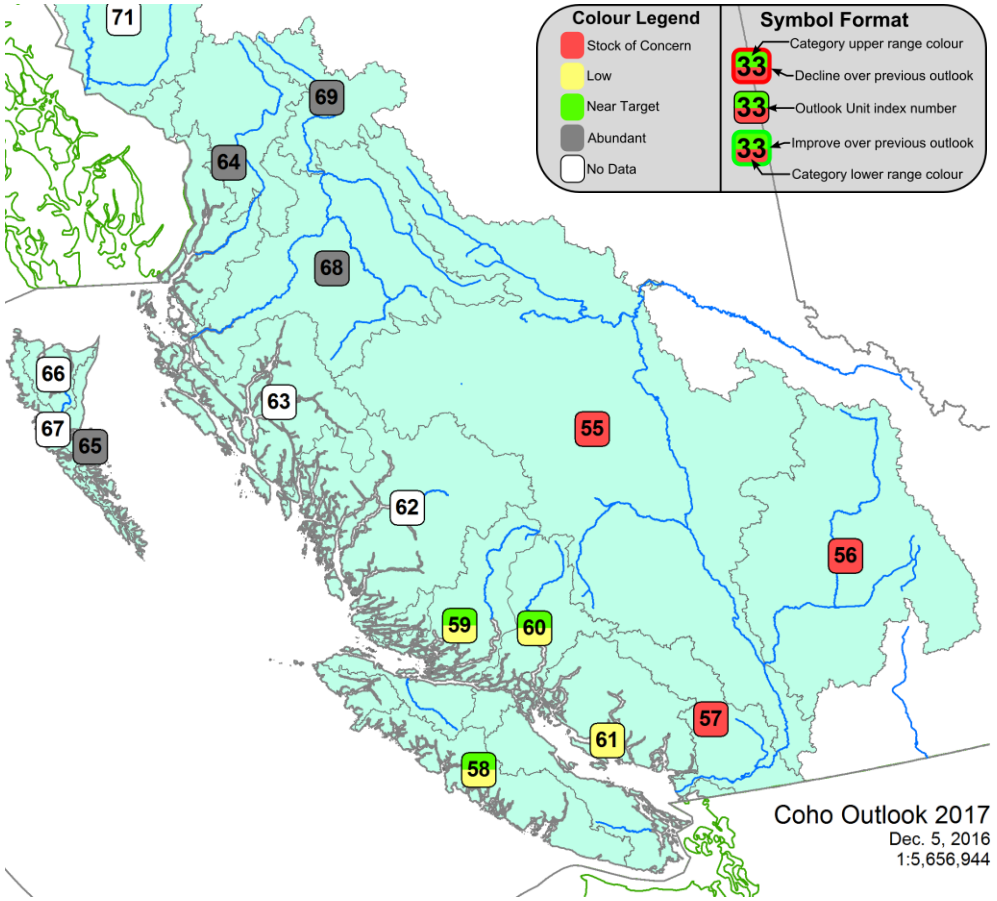
Coho 2017 Outlook

Category	Count
1, 1/2, 1/3, 1/4	3
2, 2/3, 2/4	4
3 & 3/4	2
4	4
No Data	6

- 19 Outlook Units; 43 CUs
- Northern BC: uncertain but directed harvest expected
- Southern BC: remain low; restrictions for all fisheries

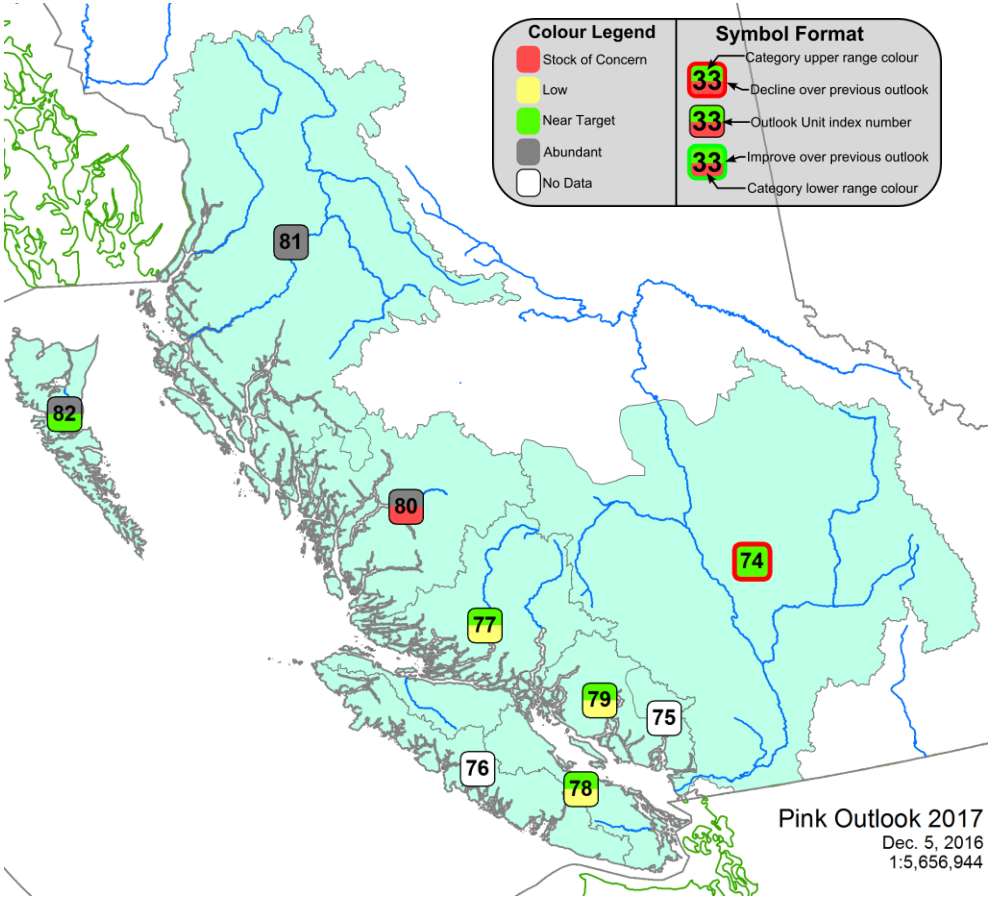


Canada

Pink 2017 Outlook

Category	Count
1, 1/2, 1/3, 1/4	1
2, 2/3, 2/4	3
3 & 3/4	2
4	1
No Data	2
Not Applicable	

- 9 Outlook Units; 31 CUs
- Northern BC: good returns in some areas; directed harvests
- Southern BC: minimal Fraser; some others abundant



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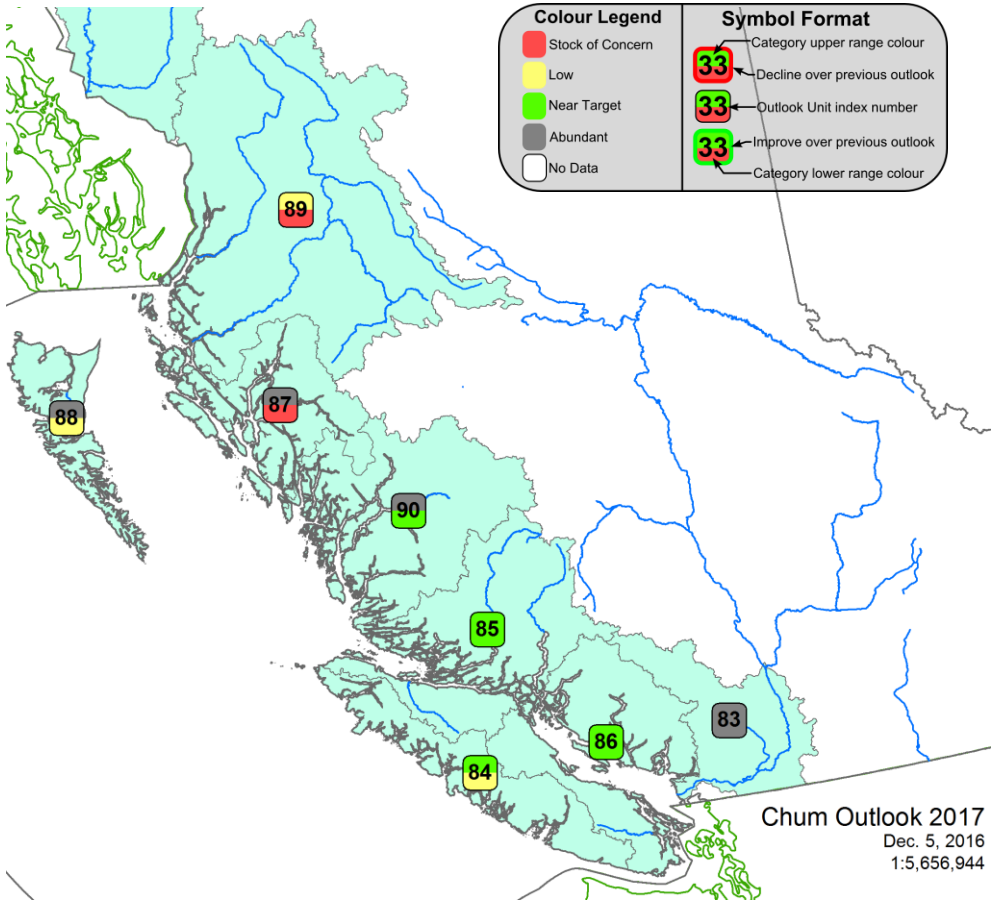
Chum 2017 Outlook

Category	Count
1, 1/2, 1/3, 1/4	2
2, 2/3, 2/4	4
3 & 3/4	4
4	1

- 11 Outlook Units; 37 CUs
- Similar to 2016
- Northern BC: continued poor returns
- Southern BC: some fisheries expected; Fraser abundant



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