Application of Natural Origin Spawner Abundance information to Strategy Performance Indicators

The NPCC 2020 Program Addendum contains strategy performance indicators that were recommended by the region. One of these- indicator S1-3- describes reporting on adult abundance escapement data for groups of populations defined by NOAA's MAFAC Columbia Basin Partnership Task Force. This will be done using the Natural Origin Spawner Abundance (NOSA) data StreamNet compiles as part of the CAP Fish HLIs. Because existing NOSA data are collected at potentially different biological scales than the MAFAC groupings, summarizing data at that MAFAC level requires some statistical decisions to be made about the existing data. There also may be instances where data is not available for particular MAFAC groups. To inform this work the FMWG MAFAC and NPCC SPI Task group was formed and co-lead by Kris Homel (NPCC) and Lara Erikson (PSMFC).

Two related tasks were originally identified (see Task Group webpage for details), however, with the Columbia Basin Collaborative creating technical teams, the NPCC requested that this work be limited to the below Task 1 pending further understanding of the work to be undertaken by the Columbia Basin Collaborative:

Task 1. Provide the following information about the population estimates that can be included in each rolled up MAFAC stock NOSA value.

1. Number of populations included within a stock that contain a whole population NOSA estimate.
    - For each population, specify if jacks are included/not included in the estimate.
    - If population does not have spawner abundance, does it have escapement abundance instead?
2. Number of populations included within a stock with a partial population NOSA estimate.
    - For each population, specify if jacks are included/not included in the estimates.
3. Number of populations that have no NOSA estimate available at this time, and specify the data status for each population, specifically if:
    - Time series data (trends – related data) are available in the Fish Monitoring Data system.
    - Data exists but are only available from the original data collector at this time.
    - No data exists as these are not monitored.
    - No data exists because it is an extirpated population with no reintroduced population.

This draft document reports on the approach and results for task 1 of this request. These results were not reviewed by the broader task group members or with Columbia River Basin salmon and steelhead managers.

Approach

This exercise considered a hierarchy of information pertinent to the CBPTF abundance estimation exercise (Figure 1).

Stocks were defined by the CBPTF as basic units of accounting corresponding to salmon and steelhead species, run type and area of the basin. They are translatable into both ESA listing and fishery management units. They are similar to ESU/DPSs except they use finer breakdowns where ESUs combine multiple run types. CBPTF stocks were also defined for listed and unlisted groups of salmon and steelhead. The CBPTF reported total current and historical abundance of natural-origin spawners, and low, medium, and high goals for each stock.

Populations, varying in numbers, rolled into defined stocks. The CBPTF identified all current and historical salmon and steelhead populations in the basin (including blocked areas) and developed numbers for each. Stock totals were the sum of values for all included populations.

Estimation methods refer to the basis for population abundance estimates. Estimates are available based on a variety of methods depending on population. Different methods can have substantial implications in options for developing high level indicators of fish status at the stock scale.

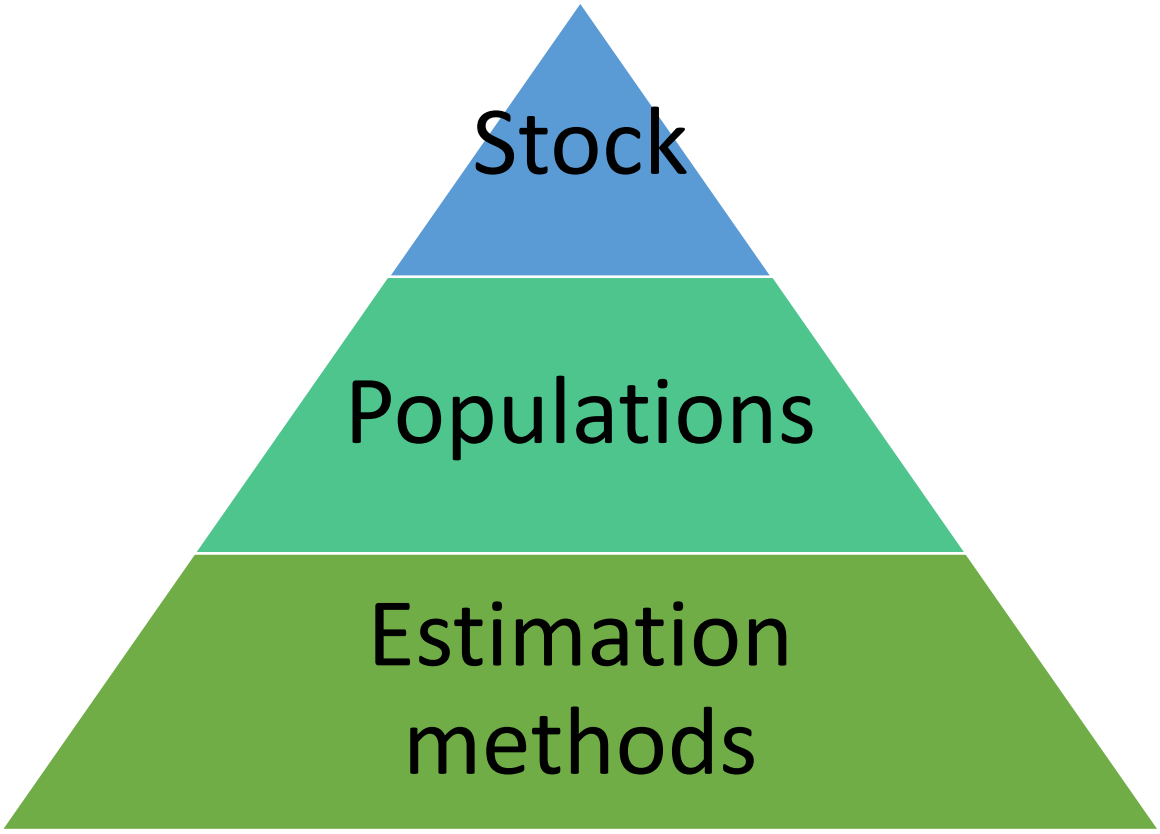

Figure 1. Hierarchy of information pertinent to MAFAC CBP abundance estimation.

Task 1 - Data Inventory

Natural escapement and trend data for many Columbia Basin salmon and steelhead populations have previously been compiled by StreamNet's Coordinated Assessment Partnership (CAP). Project staff

summarized the available information by: 1) identifying CBPTF stocks associated with each population and 2) identifying whether NOSA, Escapement or trend data were available for each population (see Table 1 for definitions and Table 2 for the categories assigned to the population inventory). Table 3 identifies the number of populations in each stock and type of data available. Table 4 provides an example of more detailed data summarized for each population in CAP on the type of data available, which years are available, whether the numbers represent a whole or partial population, and whether jacks are included or excluded from estimates. The CAP dataset also identifies 1) the "best" data for each when multiple methods for estimates are available (for instance when different entities are doing monitoring work; 2) statistical confidence intervals, where available, on estimates of spawner abundance or escapement; and 3) references to the assessment methodology for each record.

Table 1. Data type definitions.

Term	Definition
Natural Origin Spawner Abundance (NOSA)	NOSA is the number of natural-origin fish that actually spawn, not necessarily the number of fish returning to a spawning area. In CAP data, escapement estimates are provided when calculating NOSA is not feasible.
Spawner escapement	Spawner escapement is the number of natural-origin fish returning to spawn that pass upstream of a specified location during a specified time period. Spawner escapement estimates may include pre-spawn mortality due to harvest or other causes that occurred after passing the specified location.
Trend	Trend data includes a variety of fish monitoring categories such as fish abundance estimates, dam counts or other abundance indices. It is used to assess changes in the status of a group of fish over time but may not provide an absolute estimate of the abundance for a specific spawning population.

The CBPTF identified estimated, inferred or assumed current numbers of natural-origin spawners for every Columbia River population based on the best available information for each. This included many populations which were not included in the CAP database or for which trend rather than full census was reported by project cooperators. Therefore, the second step of the data inventory involved marrying the full list of Columbia Basin salmon and steelhead populations compiled by the CBPTF with the subset of populations where data was available from the CAP.

The source, type and quality of monitoring data was summarized for every CBPTF population where estimates of NOSA were available. Sources were labeled as either StreamNet (i.e., Coordinated Assessments) or other (for populations with suitable data not currently included in Coordinated Assessments). Data type including natural-origin spawner abundance, hatchery-origin spawner abundance and total spawner abundance was identified for each population. Whether population data represents a whole or partial population, includes or excludes jacks from estimates and is accompanied by confidence intervals was denoted. Estimation method was identified (e.g., redd count expansion, weir count, dam count, mark-recapture, etc.). Finally, the number of sample years available from 2000 to present was also displayed. Where multiple methods for estimates were available for a population, the summary used the best estimates as denoted in the source data documentation.[1]

[1] Additional details on multiple estimation methods may be found in the CA dataset.

For every population, the availability of abundance estimates was then assessed from the CAP dataset, documentation from the CBPTF, and references from the entities responsible for collecting specific information. Each population was categorized according to one of five categories (Table 2).

Table 2. Data categories assigned to the population inventory.

Category	Explanation
NOSA/Esc CA	Data for Natural-origin spawner abundance (NOSA) or escapement consistent with NOSA for population currently identified in Coordinated Assessments database
NOSA/Esc OTHER	Data for Natural-origin spawner abundance (NOSA) or escapement for population identified in other source
Blocked/No fish present	No current passage of anadromous salmon or steelhead
Extirpated or nearly so	Historical area partially or potentially accessible but population is extirpated or nearly so (generally not currently monitored)
Index or trend available	Annual monitoring data exists for population status but population-scale NOSA is not estimated (includes unexpanded index counts, partial population surveys and total abundance estimates where hatchery/natural portions are not identified)
Not currently monitored	A population exists but NOSA, escapement or trend data are not currently being collected.

Table 3. Initial data summary for MAFAC CBP stocks from Coordinated Assessments (CA) Project (PSMFC 9/9/21 StreamNet Executive Committee Meeting presentation). A single population can have more than one type of data and therefore, appear under more than one column.

MAFAC CBPTF 24 Groups	Populations in Group	Number of pop without data	Number of pop with data	Count of populations with NOSA / Escapement	Count of populations with trend data	Count of populations with both	Comment
CBPTF Lower Columbia Chum group	17	12	5	4	3	2	StreamNet splits Cowlitz into fall & SU
CBPTF Lower Columbia Coho group	25	2	23	23	13	13	Includes Willamette.
CBPTF Lower Columbia Fall Chinook (late bright) grp	2	0	2	2	2	2	
CBPTF Lower Columbia Fall Chinook (tules) group	21	1	20	19	17	16	
CBPTF Lower Columbia Spring Chinook group	9	3	6	6	5	5	
CBPTF Lower Columbia Steelhead group	30	4	26	24	18	16	
CBPTF Mid Columbia Coho	5	5	0	0	0	0	Reintroduced Hatchery Fish
CBPTF Mid Columbia Sockeye	2	2	0	0	0	0	Historical/Reintroduced Hatchery Fish
CBPTF Mid-Columbia Spring Chinook group	12	6	6	3	3	0	
CBPTF Mid-Columbia Summer Steelhead group	20	3	17	17	11	11	
CBPTF Mid-Columbia Summer/Fall Chinook group	1	1	0	0	0	0	Mid-C Deschutes R.
CBPTF Snake River Coho	5	5	0	0	0	0	Reintroduced Hatchery Fish
CBPTF Snake River Fall Chinook group	2	1	1	0	1	0	
CBPTF Snake River Sockeye group	6	5	1	1	1	1	
CBPTF Snake River Spring/Summer Chinook group	52	15	37	35	35	33	
CBPTF Snake River Summer Steelhead group	26	3	23	22	12	11	
CBPTF Upper Columbia Coho	4	4	0	0	0	0	Reintroduced Hatchery Fish
CBPTF Upper Columbia Fall Chinook group	1	1	0	0	0	0	Hanford, Yakima R, PRD-CJD, and Blocked Area pops
CBPTF Upper Columbia Sockeye group	2	2	0	0	0	0	Wenatchee, Okanogan, Blocked area
CBPTF Upper Columbia Spring Chinook group	5	2	3	3	3	3	StreamNet splits Okanogan into native and reintroduced.
CBPTF Upper Columbia Summer Chinook group	4	1	3	2	3	2	
CBPTF Upper Columbia Summer Steelhead group	5	1	4	4	3	3	
CBPTF Willamette Spring Chinook group	7	0	7	5	7	5	
CBPTF Willamette Winter Steelhead group	4	0	4	4	4	4	
Total	**267**	**79**	**188**				

Details provided:

NOSA
- Whole w/ jacks
- Whole w/o jacks
- Partial w/ jacks
- Partial w/o jacks

Escapement
- Whole w/ jacks
- Whole w/o jacks
- Partial w/ jacks
- Partial w/o jacks

Trends
- Spawner Abund. Est.
- Spawner Counts
- Dam / Weir Counts
- Redd Counts
- Fish Counts
- Freshwater Harvest
- Fish Abundance Est.

Table 4. Example of detailed data summary for Coordinated Assessments (CA) Project in <MAFAC Columbia Basin Partnership - CA populations with data 2021-08-26> provided by Mike Banach (Lower Columbia River Coho). Expanded detail for the NOSA column in Table 3 displayed for two stocks.

			Geographic scale: Whole Population						Geographic scale: Partial Population					
MAFAC Group	CA Population Name	Total Records	Estimate Type	From Year	To Year	Total Records	Including Jacks	Excluding Jacks	Estimate Type	From Year	To Year	Total Records	Including Jacks	Excluding Jacks
CBPTF Lower Columbia Chum group	Big Creek - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Clackamas River - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Clatskanie River - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Cowlitz River - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Cowlitz River - summer Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Elochoman River - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Grays and Chinook Rivers - fall Chum salmon	19	NOSA	2001	2019	19	0	19	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Kalama River - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Lewis River - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Lower Gorge Tributaries - fall Chum salmon	20	NOSA	2000	2019	20	0	20	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Mill, Abernathy, and Germany Creeks - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Salmon Creek - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Sandy River - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Scappoose Creek - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Upper Gorge Tributaries - fall Chum salmon	82	NOSA	1938	2019	82	0	82	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Washougal River - fall Chum salmon	18	NOSA	2002	2019	18	0	18	--	--	--	0	0	0
CBPTF Lower Columbia Chum group	Youngs Bay - fall Chum salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Big Creek - late Coho salmon	19	NOSA	2002	2012	11	0	11	Escapement	2013	2020	8	0	8
CBPTF Lower Columbia Coho group	Cispus River - early and late Coho salmon	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Clackamas River - early and late Coho salmon	47	NOSA	1974	2019	46	0	46	Escapement	2020	2020	1	0	1
CBPTF Lower Columbia Coho group	Clatskanie River - late Coho salmon	19	NOSA	2002	2020	19	0	19	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Coweeman River - late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	East Fork Lewis River - early and late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Elochoman River - late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Grays and Chinook Rivers - late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Kalama River - late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Lower Cowlitz River - late Coho salmon	9	--	--	--	0	0	0	NOSA	2010	2018	9	0	9
CBPTF Lower Columbia Coho group	Lower Gorge Tributaries - late Coho salmon	24	--	--	--	0	0	0	NOSA	2002	2019	24	0	24
CBPTF Lower Columbia Coho group	Mill, Abernathy, and Germany Creeks - late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	North Fork Lewis River - early and late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	North Fork Toutle River - early and late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Oregon Upper Gorge Tributaries and Hood River - early Coho salmon	17	--	--	--	0	0	0	Mixture	2002	2019	17	0	17
CBPTF Lower Columbia Coho group	Salmon Creek - late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Sandy River - early and late Coho salmon	47	NOSA	2002	2019	18	0	18	Escapement	1974	2020	29	0	29
CBPTF Lower Columbia Coho group	Scappoose Creek - late Coho salmon	18	NOSA	2002	2019	18	0	18	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	South Fork Toutle River - early and late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Tilton River - early and late Coho salmon	23	NOSA	1996	2018	23	0	23	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Upper Cowlitz River - early and late Coho salmon	23	NOSA	1996	2018	23	0	23	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Washington Upper Gorge Tributaries and White Salmon River - late Coho salmon	13	--	--	--	0	0	0	NOSA	2007	2019	13	0	13
CBPTF Lower Columbia Coho group	Washougal River - late Coho salmon	9	NOSA	2010	2018	9	0	9	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Willamette coho salmon [undefined. MAFAC Col. Basin Partnership Task Force]	0	--	--	--	0	0	0	--	--	--	0	0	0
CBPTF Lower Columbia Coho group	Youngs Bay - late Coho salmon	18	NOSA	2002	2012	11	0	11	Escapement	2013	2019	7	0	7

Results

Task 1 - Data Inventory

A total of 334 Columbia Basin salmon and steelhead populations were identified.[2] Of these, about half (Figure 2) are represented by population-level estimates of NOSA or spawning escapement in the existing CAP dataset. NOSA or escapement data is available for an additional 31 populations not currently included in the CAP dataset. After accounting for extirpated populations due to blockages or other factors, only 15% of extant populations are either not monitored or are represented only by index or trend data.

Stock-specific breakdowns of these major categories of abundance data availability are identified in Table 5. More details on population data are summarized for each stock in Table 6.

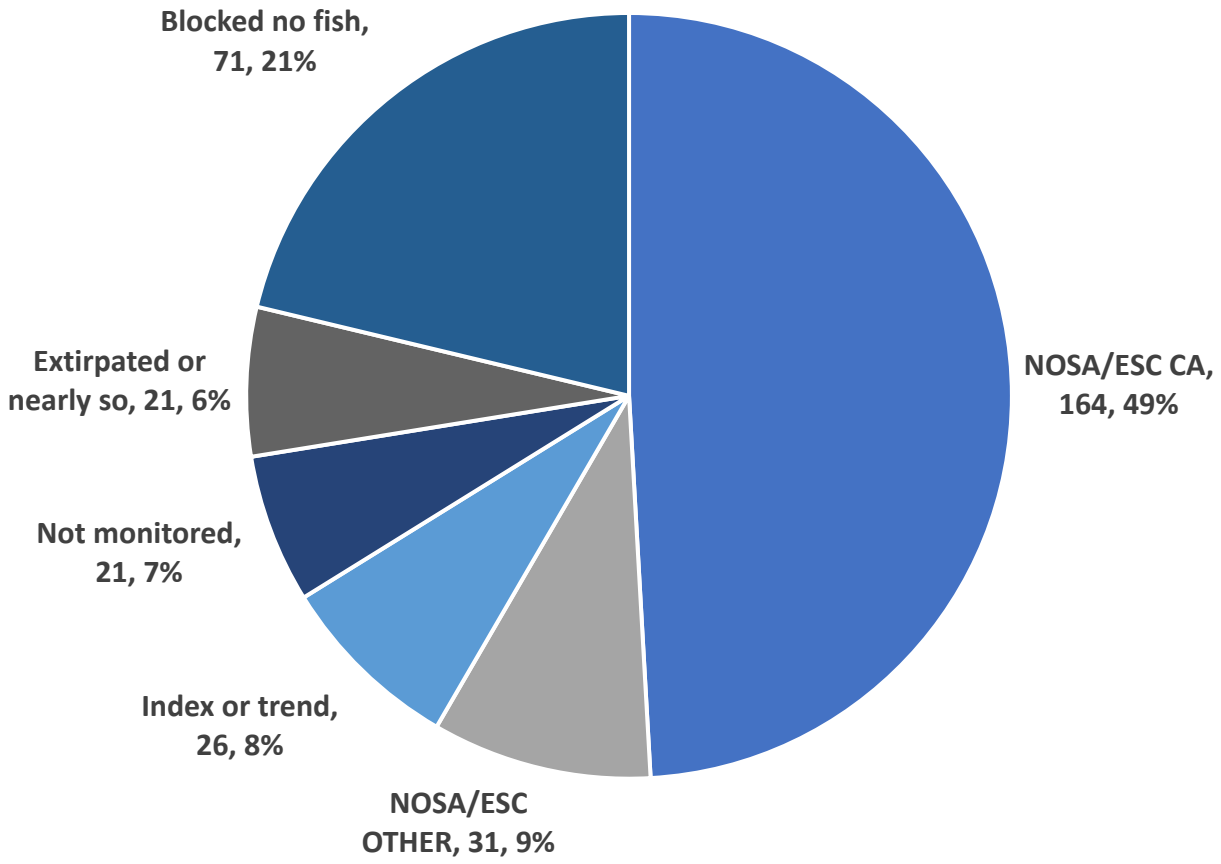

Figure 2. Inventory of abundance data availability for Columbia Basin salmon and steelhead populations identified by the MAFAC CBP and/or Coordinated Assessments (CA) Project.

[2] The CBPTF identified 333 populations. The extra population results from separation of Naches and American River Spring Chinook (upper Yakima system) in the CAP dataset - these areas were combined in the CBPTF exercise.

Table 5. Inventory of abundance data availability by stock for Columbia Basin salmon and steelhead populations identified by the MAFAC CBP and/or Coordinated Assessments (CA) Project includes populations not previously captured in Table 3. Extirpated as currently designated by CBP-NOAA and not monitored such that the population is not currently actively monitored.

Group	NOSA/Esc		Index or	Not	Extirpated	Blocked	Total
	CA	Other	trend	monitored	or nearly so	no fish	populations
CBPTF Lower Columbia / SW Washington Winter Steelhead group	5	0	2	0	0	0	**7**
CBPTF Lower Columbia Chum group	4	0	4	8	2	0	**18**
CBPTF Lower Columbia Coho group	22	3	0	0	0	0	**25**
CBPTF Lower Columbia Fall Chinook (bright) group	0	1	0	0	0	0	**1**
CBPTF Lower Columbia Fall Chinook (late bright) group	2	0	0	0	0	0	**2**
CBPTF Lower Columbia Fall Chinook (tules) group	16	0	4	1	0	0	**21**
CBPTF Lower Columbia Spring Chinook group	4	2	1	1	0	1	**9**
CBPTF Lower Columbia Summer Steelhead group	5	0	0	1	0	0	**6**
CBPTF Lower Columbia Winter Steelhead group	9	2	2	4	0	0	**17**
CBPTF Mid-Columbia Coho group	0	2	1	0	2	0	**5**
CBPTF Mid-Columbia Sockeye group	0	2	0	0	0	0	**2**
CBPTF Mid-Columbia Spring Chinook group	3	11	1	0	0	0	**15**
CBPTF Mid-Columbia Summer Steelhead group	17	0	1	0	1	1	**20**
CBPTF Mid-Columbia Summer/Fall Chinook group	0	1	0	0	0	0	**1**
CBPTF Snake River Coho group	0	0	2	0	3	0	**5**
CBPTF Snake River Fall Chinook group	0	1	0	0	0	1	**2**
CBPTF Snake River Sockeye group	1	0	0	0	5	3	**9**
CBPTF Snake River Spring/Summer Chinook group	34	0	3	1	5	25	**68**
CBPTF Snake River Summer Steelhead group	22	0	1	1	0	16	**40**
CBPTF Upper Columbia Coho group	0	2	0	0	2	1	**5**
CBPTF Upper Columbia Fall Chinook group	0	2	1	1	0	1	**5**
CBPTF Upper Columbia Sockeye group	0	1	1	0	0	3	**5**
CBPTF Upper Columbia Spring Chinook group	3	0	0	1	0	6	**10**
CBPTF Upper Columbia Summer Chinook group	2	1	3	1	0	7	**14**
CBPTF Upper Columbia Summer Steelhead group	4	0	0	1	0	6	**11**
CBPTF Willamette Spring Chinook group	5	0	1	0	1	0	**7**
CBPTF Willamette Winter Steelhead group	4	0	0	0	0	0	**4**
Total	**162**	**31**	**28**	**21**	**21**	**71**	**334**

Table 6. Type of data available for populations where whole-population natural origin abundance is identified by the Coordinated Assessments (CA) Project as indicated by whole versus other. Populations with NOSA, HOSA and TSA are enumerated under spawner abundance data and a population may have more than one of these indicators. Lastly, populations with estimates including or excluding jacks are accounted.

Group	Number of pops	Pop represented		Spawner abundance data			Jacks	
		Whole[a]	Other[b]	Natural (NOSA)	Hatchery (HOSA)	Total (TSA)	Included	Excluded
CBPTF Lower Columbia / SW Washington Winter Steelhead group	7	5	2	7	1	7	7	0
CBPTF Lower Columbia Chum group	4	4	0	4	3	4	0	4
CBPTF Lower Columbia Coho group	23	18	5	23	23	23	0	23
CBPTF Lower Columbia Fall Chinook (late bright) group	2	2	0	2	0	2	0	2
CBPTF Lower Columbia Fall Chinook (tules) group	19	16	3	18	18	18	1	18
CBPTF Lower Columbia Spring Chinook group	5	3	2	4	4	5	0	5
CBPTF Lower Columbia Summer Steelhead group	5	4	1	5	2	5	5	0
CBPTF Lower Columbia Winter Steelhead group	11	10	1	10	4	11	11	0
CBPTF Mid-Columbia Spring Chinook group	3	3	0	3	3	3	3	0
CBPTF Mid-Columbia Summer Steelhead group	17	17	0	17	16	17	17	0
CBPTF Snake River Sockeye group	1	1	0	1	1	1	1	0
CBPTF Snake River Spring/Summer Chinook group	35	32	3	35	15	28	7	28
CBPTF Snake River Summer Steelhead group	23	18	5	23	4	11	23	0
CBPTF Upper Columbia Spring Chinook group	3	3	0	3	3	3	0	3
CBPTF Upper Columbia Summer Chinook group	3	3	0	3	3	3	0	3
CBPTF Upper Columbia Summer Steelhead group	4	4	0	4	4	4	0	4
CBPTF Willamette Spring Chinook group	5	5	0	5	5	5	4	1
CBPTF Willamette Winter Steelhead group	4	4	0	4	3	4	4	0
Grand Total	**174**	**152**	**22**	**171**	**112**	**154**	**83**	**91**

[a] *Whole means NOSA or an equivalent escapement are estimated at approximately the whole-population level.*

[b] *Other includes partial population representation, lack of differentiation or hatchery and natural spawners, or partial time series (these are identified as index or trend information in this exercise)*

Appendix 1: Memo sent to the StreamNet Executive Committee describing original request. This request was then refined by NPCC in May 2021 following input from the StreamNet Executive Committee to focus on providing the content for a subset of the requested task of which a portion of it informed the FMWG MAFAC and NPCC SPI task group (see email included after the memo).

April 22, 2021

MEMORANDUM

TO: Nancy Leonard, StreamNet Program Manager

FROM: Patty O'Toole, Director, Fish and Wildlife Division

SUBJECT: Data Request to StreamNet for Informing NPCC Program Assessments and Reports: Natural Origin Spawner Abundance

Sent via electronic mail

Justification:
The 2020 Fish and Wildlife Program Addendum (Addendum) identified specific objectives and strategy performance indicators that the Council will be using to track and report on program performance (Part 1.A). Data and information from regional fisheries managers will be used to report on these objectives and strategy performance indicators. The Addendum highlights the Council's intent to rely on centralized databases, such as StreamNet's data systems, to access the needed data (Part 1.B).

Several of the Program objectives and strategy performance indicators are based on the Marine Fisheries Advisory Committee- Columbia Basin Partnership Task Force (MAFAC-CBPTF) "*Salmon and Steelhead Goals to Restore Thriving Salmon and Steelhead to the Columbia River Basin*". This report provides an organizational structure for compiling information on fish numbers based on 27 specific stocks that represent population groups. Compiling and reporting those objectives and indicators as described in the MAFAC report and incorporated in the Council's addendum, requires increased access to and standardization of fisheries data. Given broad interest and significant investment by the region in developing the MAFAC-CBPTF report, we expect

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that our request will be of interest to our partners in the region, including the Columbia Basin Collaborative participants.

Request:
The Council's Fish and Wildlife Division requests, per the Five-Year Plan for Coordinated Assessments Partnership (CAP), that the Executive Committee direct StreamNet to develop derived estimates (i.e. HLIs) of natural origin fish abundance (NOSA) for the 27 Natural origin MAFAC stocks representing the 333 population groups, and summarize information for these groups as described below. Future requests may focus on hatchery fish groups once the Fish HLI (CAX) begins exchanging hatchery fish indicators.

- ***Fish Population Map Layers***: Display the population polygons for the 216 extant populations and 117 extirpated populations, some of which are being reintroduced (total = 333). These are summarized in Table 5 on page 41 of the MAFAC-CRB Phase 2 Report (see 2020-10) and details are in Appendix A of that report. NPCC staff will work with StreamNet staff to provide any needed clarifications.
- ***MAFAC Stocks Map Layers:*** Display the polygons for 27 MAFAC stocks. For each MAFAC stock polygon, embed population polygons of the populations for which data exist.
- ***Rolled up NOSA info for the MAFAC stocks:***
  - Prior to compiling data, provide the below information about the population estimates that can be included in each rolled up MAFAC stock NOSA value:
    - Number of populations included within a stock that contain a whole population NOSA estimate.
      - For each population, specify if jacks are included/not included in the estimate.
      - If population does not have spawner abundance, does it have escapement abundance instead?
    - Number of populations included within a stock with a partial population NOSA estimate.
      - For each population, specify if jacks are included/not included in the estimates.
    - Number of populations that have no NOSA estimate available at this time, and specify the data status for each population, specifically if:
      - Time series data (trends – related data) are available in the Fish Monitoring Data system.
      - Data exist but are only available from the original data collector at this time.
      - No data exists as these are not monitored.
      - No data exists because it is an extirpated population with no reintroduced population.

  - After conferring with Council staff and deciding on the approach, add the available NOSA indicators, by year, for all populations within a MAFAC stock. Review data availability and discuss decisions with NPCC staff and other experts in selecting values to include in the roll-up for questions including:
    - If a whole population estimate is not available, is a partial population estimate acceptable?
    - If spawner abundance is not available, is escapement abundance acceptable?
    - If a population estimate that excludes jacks is not available, should we use the estimate that includes jacks or that doesn't distinguish presence of jacks?
    - Which value to include when: (1) a population has more than one type of abundance estimate based on different data sets or analyses, and (2) a population only has an abundance estimate as part of a non MAFAC stock grouping?
    - Other decisions as needed in selecting which value to include in the roll up.

Timeline:
The Council intends to report annually on the status of work on strategy performance indicators and other components of Part I of the Addendum. Prior to beginning the next Program amendment process, the Council will produce a comprehensive program performance report that assesses and summarizes the status of strategy performance indicators and progress toward the objectives and goals. With this reporting schedule in mind, we would appreciate if 1) the StreamNet FY22-23 BPA Statement of Work would outline an approach and timeframe to achieve the above data request, sequencing as necessary, and 2) the 2021 updated version of the *Five-Year Plan for Coordinated Assessments Partnership* would explicitly state these tasks.

Wed 5/5/2021 7:08 AM

Nancy Leonard

RE: NPCC Request to StreamNet Executive Committee

To: Rodrigo George; Lando,Jody B (BPA) - EWP-4; John Arterburn (john.arterburn@colvilletribes.com); Zach Penney (zpenney@critfc.org); Hebdon,Lance; Don skaar; Greg Sieglitz (greg.sieglitz@noaa.gov); Patty O'Toole; Art Martin (art.c.martin@state.or.us); thomas.stahl@state.or.us; Netto, John; Rawding, Daniel J (DFW); Stan Allen; Randy Fisher

Cc: April.D.Brenden-Locke@state.or.us; Doug Threloff (Doug_Threloff@fws.gov); Mathew T Oeder; Denise Kelsey; sheryn Olson; tom pansky (tepansky@bpa.gov); Russell W Scranton; Matthew Schwartz; 'Tami Wilkerson'; Jacob L Chambers; Sheryn Olson; Mark Fritsch; Kris Homel; mari.williams@noaa.gov; 'P. Brodie Cox (DFW)'; 'Schmidt,Angie'; Evan Brown (evan.brown@idfg.idaho.gov); Dawn Anderson (dawanderson@mt.gov); 'George Batten'; Tom Iverson (t.k.iverson@comcast.net); Jen Bayer; Greg Wilke; Mike Banach; Van Hare; Kate Sherman; Nadine Craft; Leslie Sikora (Leslie.Sikora@dfw.wa.gov); Leslie Bach; Kris Homel

You replied to this message on 5/17/2021 8:21 AM.

20210422_StreamNet Data Request Memo.pdf
176 KB

Dear Executive Committee members,

We have a revised request from the NPCC following their Monday May 3rd Strategy Performance Indicator Workgroup meeting. The revise request is to focus on providing the content for the below tasks at this time (bullets on page 2 of the attached document):

- Fish Population Map Layers: Display the population polygons for the 216 extant populations and 117 extirpated populations, some of which are being reintroduced (total = 333). These are summarized in Table 5 on page 41 of the MAFAC-CRB Phase 2 Report (see 2020-10) and details are in Appendix A of that report. NPCC staff will work with StreamNet staff to provide any needed clarifications.
- MAFAC Stocks Map Layers: Display the polygons for 27 MAFAC stocks. For each MAFAC stock polygon, embed population polygons of the populations for which data exist.
- [first subtask of *Rolled up NOSA info for the MAFAC stocks*]: Prior to compiling data, provide the below information about the population estimates that can be included in each rolled up MAFAC stock NOSA value.

The NPCC is deferring the request for the second subtask under *Rolled up NOSA info for the MAFAC stocks* to after they have reviewed and discussed the population estimate information available for each MAFAC stocks (i.e., subtask *After conferring with Council staff and deciding on the approach, add the available NOSA indicators, by year, for all populations within a MAFAC stock*, bullets on page 3 of the attached document).

Please let me know by May 12th if you have any objection to StreamNet staff addressing this first phase of tasks.

If you have any questions about this task please contact Patty O'Toole (potoole@nwcouncil.org) and Leslie Bach (lbach@nwcouncil.org).

Thank you,

Nancy

Nancy Leonard

StreamNet Program Manager
Pacific States Marine Fisheries Commission