Northwest **Power** and **Conservation** Council

April 4, 2017

MEMORANDUM

TO: **Fish and Wildlife Committee members**

FROM: **Nancy Leonard**

SUBJECT: **StreamNet Annual Update**

BACKGROUND:

Presenter: Chris Wheaton, StreamNet Program Manager

Summary: The Committee will learn about progress made by StreamNet and the Coordinated Assessments (CA) effort in sharing salmon and steelhead population indicator data in 2016, as well as predictions for CA data flow in 2017. The continued development of the salmon and steelhead population mapper tool and connection with the Council's Salmon and Steelhead Natural Origin Objective mapper tool will be discussed. A summary of StreamNet Executive and BPA task priorities for the StreamNet project and Coordinated Assessments will be provided.

Relevance: This update supports *Adaptive Management* of the Program by facilitating access of fish data (trend data and population estimates). It is ongoing work to automate flow and improve access to salmon and steelhead data through the Coordinated Assessment of Salmon and Steelhead. This update also informs progress towards the Fish and Wildlife Program salmon and steelhead natural origin objectives and improves reporting of salmon and steelhead Program indicators. It contributes to Program Emerging Priority 2: "Implement adaptive management (including prioritized research on critical uncertainties) throughout the program by

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

assessing the effectiveness of ongoing projects, developing program objectives when appropriate and taking into account the effects of climate change."

Workplan: This task is tracked in the Fish and Wildlife division work plan under Adaptive Management, and in the Council's Annual work plan under priority #2.

Background: StreamNet is a cooperative information management and data dissemination, project focused on fisheries and aquatic related data and data related services in the Columbia River basin and the Pacific Northwest. The primary focus of StreamNet since 2013 has been the Coordinated Assessments (CA) effort, with a focus on sharing high level salmon and steelhead population indicator data. Coordinated Assessments may also shift to the sharing of other regionally significant high level indicators in the future, as directed by the StreamNet Executive Committee. Current plans are to begin focus on hatchery indicators and a preliminary assessment of bull trout data sharing needs in 2017. Fish trend data from StreamNet partners support the Council's dashboards and indicators, and the Fish Data project helps to coordinate data flow through StreamNet to the Council's developing web pages.

More Info: http://www.streamnet.org/

Overview of StreamNet and Coordinated Assessments

APRIL 11, 2017

NORTHWEST POWER & CONSERVATION COUNCIL

FISH & WILDLIFE COMMITTEE

US Fish and Wildlife Service

Idaho Department of Fish and Game

Oregon Department of Fish and Wildlife

Montana Fish, Wildlife, and Parks

Washington Department of Fish and Wildlife

The Confederated Tribes of the Colville Reservation

Columbia River Inter-Tribal Fish Commission

StreamNet is funded by:

Bonneville Power Administration

In support of:

Northwest Power and Conservation Council

A Fisheries Data Project of:

The Pacific States Marine Fisheries Commission

StreamNet

- Funded By Bonneville and supports NPCC Fish and Wildlife Program
- Project started in 1988 –In 2012 started to re-focus StreamNet to concentrate on Coordinated Assessments
- In 2013 made further adjustments to try and add value to the project;
  - Added an Executive Committee of Regional F&W Managers
  - Adopted a Strategic Plan and a 5 year plan for the CA Project
- Current focus is High level indicators for natural origin salmon & steelhead populations
  - Support to states and tribes thru funding data professionals
  - Support display of high level data (Council, States & Tribes, StreamNet)

Five Year Budget History

	FY 2014	FY 2015	FY 2016	FY 2017	Proposed: FY 2018
CCT	$90,000	$90,002	$90,000	$90,000	$87,960
IDFG	$265,580	$301,638	$331,288	$331,288	$323,779
MFWP	$153,115	$168,877	$168,877	$168,877	$165,049
ODFW	$421,859	$474,461	$474,458	$474,458	$463,704
USFWS	$18,200	$18,200	$78,248	$78,248	$0
WDFW	$387,759	$402,961	$470,530	$470,530	$459,865
PSMFC	$748,062	$628,437	$595,649	$581,840	$585,126
Total	$2,084,575	$2,084,576	$2,209,050	$2,195,241	$2,085,483

Most funding (72% in 2018) goes to states and tribes to support data mgmt. infrastructure
USFWS will remain a partner, but be funded separately by BPA in 2018
Relatively flat funding; as costs have increased for partners, opportunities reduced
PSMFC has reduced costs and allocated savings to partners

Current StreamNet Focus

- Coordinated Assessments (CA) is our highest priority
- This includes updates to certain data associated with populations, which are now called “Related Data”
- StreamNet also serves as a regional coordination forum for existing and new Data Management issues (e.g. Electronic Devices for Field Data Collection)
- In addition to CA, data priorities include Fish Distribution, Facilities Dataset, maintaining the Data Store as a Secure Data Repository
- Maintain legacy datasets (Protected Areas, HEP…)

Coordinated Assessments - CA

- Coordinated Assessments Project started in 2010 with the goal of improving the timeliness, reliability and transparency of the data necessary for regional assessments and management decisions
- At that time the project identified specific actions and activities for sharing three Viable Salmonid Population (VSP) indicators in the Columbia River Basin. Important to note that sharing data was for a common goal: to provide data to NOAA for their 5 year status review
- In 2015 – we started sharing data on first five VSP indicators;
  - Natural Origin Spawner Abundance
  - Recruits per Spawner
  - Smolt to Adult Ratio
  - Juvenile Abundance: Outmigrants
  - Presmolt Abundance
- In 2016 – BPA asked specifically for assistance in maximizing data flow for 18 Tier 1 and 51 Tier 2 priority populations

Continuing Focus: Getting Data for Priority Populations Identified by BPA

- BPA requested assistance from StreamNet and the region's fish managers to maximize data flow for these populations– especially NOSA and juvenile indicators in 2016
- Continued interest from Bonneville in getting as much data as possible for these populations – remains a CA focus
- If Data is not available at the population level, we work with the data providers to obtain the best available data for these populations into the database.
- Important to keep in mind that non-population scale data is often available;
  - "SuperPopulations" – aggregates of multiple populations (e.g. SARs at dams)
  - "Related data" – long term datasets such as redd surveys, trap counts that represent populations, etc.

Data Flow; 2016 Results & 2017 Predictions

Coordinated Assessments Publishable* Tier 1 & 2 Priority Data with FY 2017 Data Predictions

StreamNet
Fish Data for the Pacific Northwest

		PopFit = Same (i.e. HLI was reported for the entire TRT population)									Includes PopFit <> Same		FY17 Data Predictions for BPA Priority 1 & 2 TRT populations			
		Tier 1			Tier 2			Tiers 1 & 2			Tiers 1 & 2		FY17 Data			
High Level Indicator	Agency	TRT Pop.s Reported with HLIs	Years with HLIs	% of 18 Priority 1 Pop.s	TRT Pop.s Reported with HLIs	Years with HLIs	% of 51 Priority 2 Pop.s	TRT Pop.s Reported with HLIs	Years with HLIs	% of 69 Priority 1&2 Pops	TRT Populations Reported with HLIs &	% of 69	# of Tier 1&2 Populations			
													Yes	No	X	Total
Natural Origin Spawner Abundance	ODFW	2	125	11%	15	693	29%	17	818	25%	19	28%	17	2	2	21
	IDFG	1	57	6%	10	509	20%	11	566	16%	11	16%	18	4	1	23
	WDFW	8	360	44%	3	75	6%	11	435	16%	15	22%	12		1	13
	CCT	1	11	6%			0%	1	11	1%	1	1%	1		1	2
	NPT													6		6
	YNF													1	3	4
	All Agencies	11	553	61%	27	1,277	53%	38	1, 830	55%	44	64%	48	13	8	69
Recruits per Spawner	ODFW	2	251	11%	15	761	29%	17	1,012	25%	17	25%	17	2	2	21
	IDFG	1	50	6%	9	443	18%	10	493	14%	10	14%	9	13	1	23
	WDFW	8	142	44%	2	33	4%	10	175	14%	12	17%	11		2	13
	CCT	1	2	6%				1	2	1%	1	1%	1		1	2
	NPT													3	3	6
	YNF														4	4
	All Agencies	11	445	61%	26	1,237	51%	37	1,682	54%	39	57%	38	18	13	69
Smolt to Adult Ratios	CRITFC	1	6	6%	1	14	2%	2	20	3%	4	6%				
	ODFW	2	31	11%	1	11	2%	3	42	4%	3	4%	5	3	13	21
	WDFW	2	14	11%	1	10	2%	3	24	4%	3	4%	1	9	3	13
	IDFG												1	20	2	23
	CCT	1	7	6%				1	7	1%	1	1%	1		1	2
	NPT													3	3	6
	YNF														4	4
	All Agencies	6	58	33%	3	35	6%	9	93	13%	11	16%	8	35	26	69
Juvenile Outmigrants	WDFW	7	101	39%	4	57	8%	11	158	16%	11	16%	10		3	13
	IDFG	2	16	11%	3	68	6%	5	84	7%	5	7%	5	18		23
	ODFW	2	37	11%	1	14	2%	3	51	4%	4	6%	5	3	13	21
	CCT	1	9	6%				1	9	1%	1	1%	1		1	2
	NPT													6		6
	YNF														4	4
	All Agencies	12	163	67%	8	139	16%	20	302	29%	21	30%	21	27	21	69
Presmolt Abundance	ODFW										4	6%	4		17	21
	WDFW	2	20	11%				2	20	3.0%	2	3%	2	1	10	13
	IDFG													21	2	23
	CCT												1		1	2
	NPT														6	6
	YNF														4	4
	All Agencies	2	20	11%				2	20	3.0%	6	9%	7	22	40	69

*Publishable records are validated and have Publish='Yes'.

Yes = We can calculate this indicator and will be providing data in FY 2017.

No = Indicator calculation for this population is at least theoretically possible, but we will be unable to provide data in FY 2017.

X = It is not possible to calculate this indicator for this population.

Population totals for All Agencies may be less than column sum due to shared populations.

The 69 Priority Tier 1 & 2 TRT Populations are in 'Interior Columbia' & 'Willamette/Lower Columbia' Recovery Domains, and exclude extirpated populations.

March 22, 2017

StreamNet
Fish Data for the Pacific Northwest

Publishable HLI Data* in 2016 from all Agencies for BPA's 69 Tier 1 & 2 Populations

High Level Indicator	# of TRT Priority 1 & 2 Populations Reported with HLIs for Full Population	% of Priority 1&2 Populations with HLIs for Full Population
Natural Origin Spawner Abundance	38	55%
Recruits per Spawner	37	54%
Smolt to Adult Ratios	9	13%
Juvenile Outmigrants	20	29%
Presmolt Abundance	2	3%

*Publishable records are validated and have Publish='Yes'.

March 27, 2017

The 69 Priority Tier 1 & 2 TRT Populations are in 'Interior Columbia' & 'Willamette/Lower Columbia' Recovery Domains, & exclude extirpated populations.

2016 Data Flow – all Populations

StreamNet Fish Data for the Pacific Northwest	All Coordinated Assessments Populations		200 TRT Populations		
High Level Indicator	**Reported with HLIs**	**Years with HLIs**	**Reported with HLIs**	**Years with HLIs**	**% of TRT Populations w/HLIs Submitted**
Natural Origin Spawner Abundance	155	3,908	112	3,290	56%
Recruits per Spawner	86	2,652	65	2,295	33%
Smolt to Adult Ratios	33	449	12	120	6%
Juvenile Outmigrants	33	476	32	451	16%
Presmolt Abundance	6	78	6	78	3%
All HLIs	313	7,563	227	6,234	

200 TRT Populations are in 'Interior Columbia' & 'Willamette/Lower Columbia' Recovery Domains, and exclude extirpated populations.

March 30, 2017

*Publishable records are validated and have Publish='Yes'.

Last Year we asked states and tribes to qualitatively evaluate CA data flow for all extant TRT populations in the Columbia basin and report as follows;

WE CAN CALCULATE THIS INDICATOR AND WILL BE PROVIDING DATA IN FY 2017 = YES

INDICATOR CALCULATION FOR THIS POPULATION IS AT LEAST THEORETICALLY POSSIBLE, HOWEVER, WE WILL BE UNABLE TO PROVIDE DATA IN FY 2017 = NO

IT IS NOT POSSIBLE TO CALCULATE THIS INDICATOR FOR THIS POPULATION = X

Note that these responses were for population-level indicators only

StreamNet
Fish Data for the Pacific Northwest

Predicted HLI Data* for 2017 from all Agencies for BPA's 69 Tier 1 & 2 Populations

High Level Indicator	Populations			Percentage of Total		
	Yes	No	Not Possible	Yes	No	Not Possible
Natural Origin Spawner Abundance	48	13	8	70%	19%	11%
Recruits per Spawner	38	18	13	55%	26%	19%
Smolt to Adult Ratios	8	35	26	11%	51%	38%
Juvenile Outmigrants	21	27	21	31%	39%	30%
Presmolt Abundance	7	22	40	10%	32%	58%

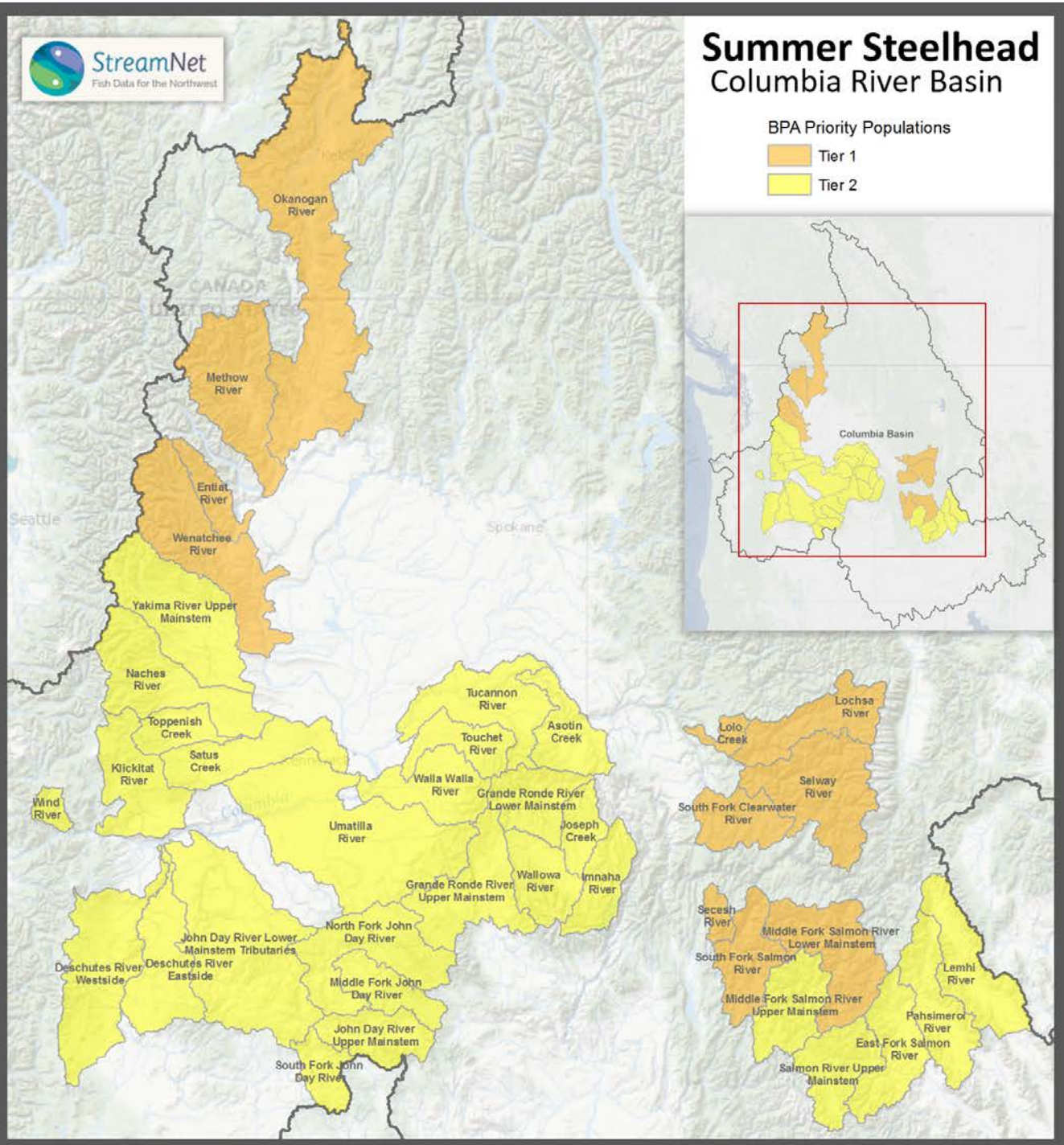
69 Priority TRT Populations are in 'Interior Columbia' & 'Willamette/Lower Columbia' Recovery Domains, and exclude extirpated populations.

Yes = We can calculate this indicator and will be providing data in FY 2017.

No = Indicator calculation for this population is at least theoretically possible, but we will be unable to provide data in FY 2017.

Not Possible = It is not possible to calculate this indicator for this population.

March 27, 2017

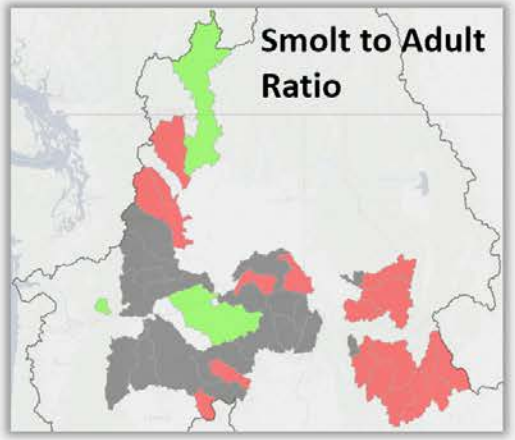


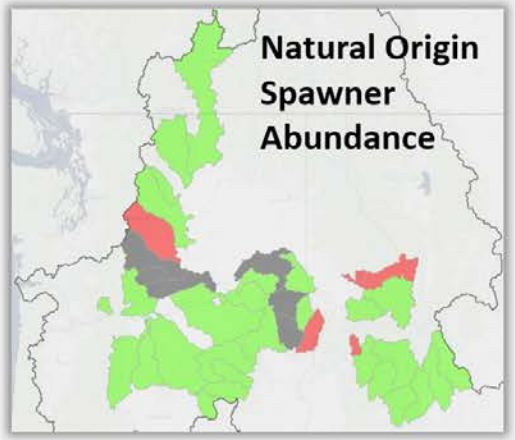
Coordinated Assessments

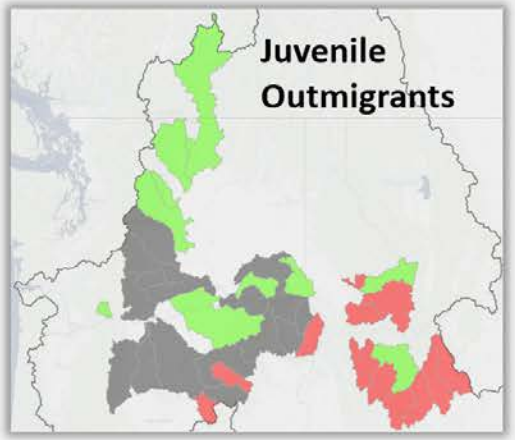
FY17 Data Flow Predictions

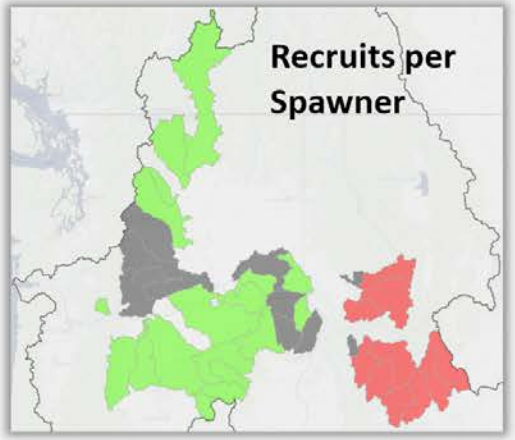
- Yes in 2017
- Not expected in 2017
- Indicator is not possible to calculate

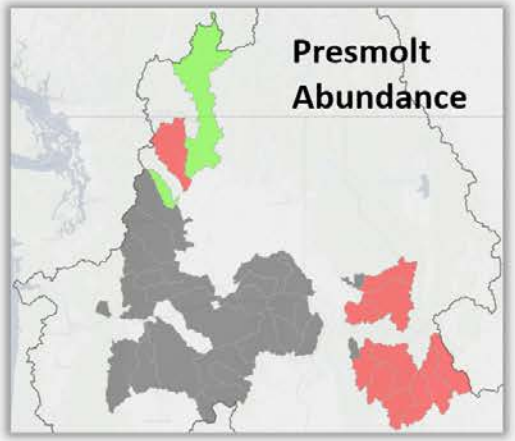
*This map series identifies the predicted indicator data to be submitted by project partners in FY 2017 based on survey results from March 2017. Results are limited to extant populations that have been identified as Tier 1 or 2 priorities by BPA.

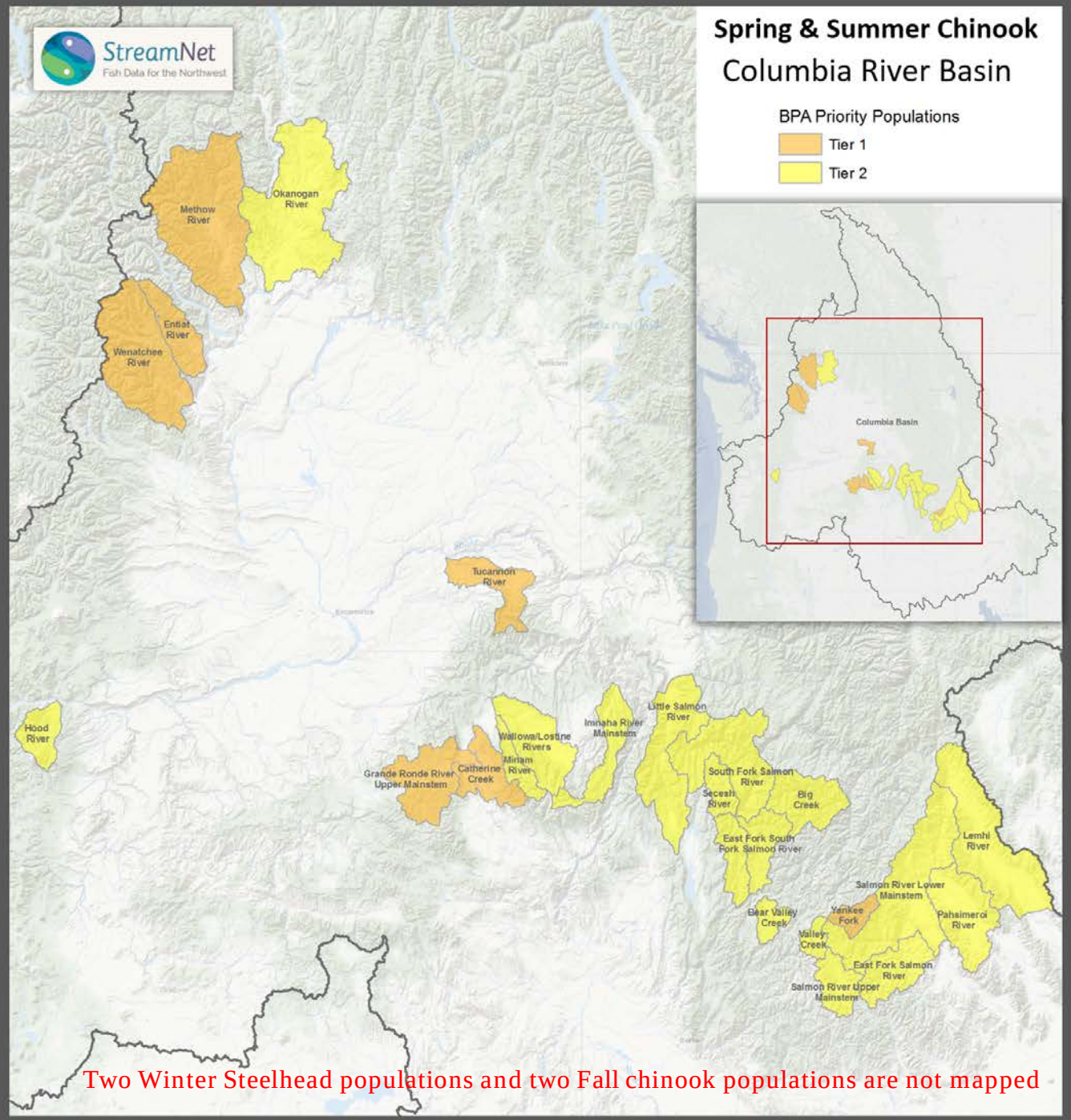












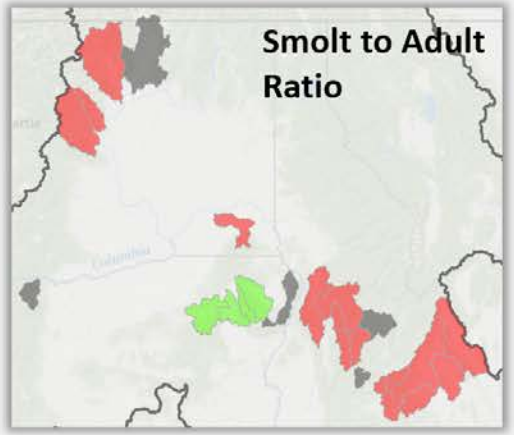
Two Winter Steelhead populations and two Fall chinook populations are not mapped

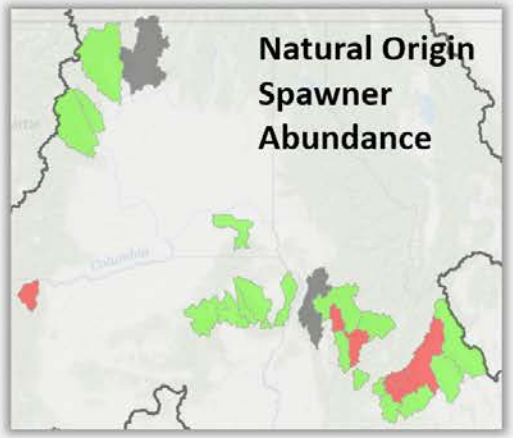
Coordinated Assessments

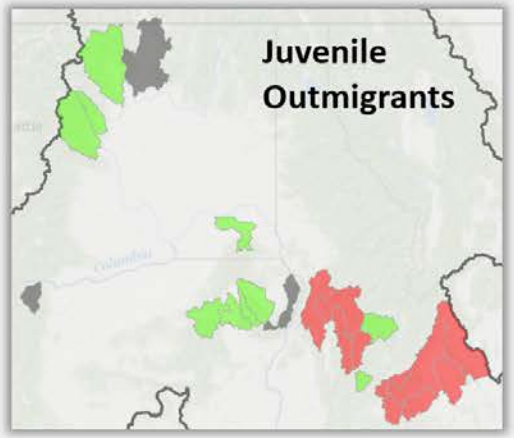
FY17 Data Flow Predictions

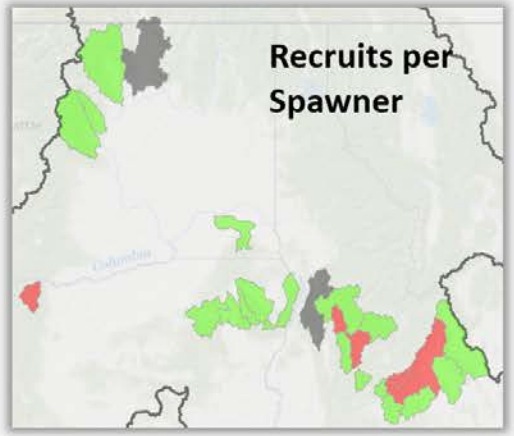
- Yes in 2017
- Not expected in 2017
- Indicator is not possible to calculate

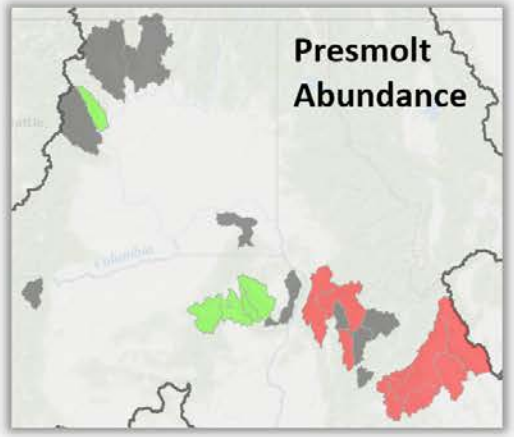
*This map series identifies the predicted indicator data to be submitted by project partners in FY 2017 based on survey results from March 2017. Results are limited to extant populations that have been identified as Tier 1 or 2 priorities by BPA.











2017 Predicted Data Flow – Extant TRT Populations

StreamNet
Fish Data for the Pacific Northwest

TRT Populations Predicted to have HLI Data in FY 17

High Level Indicator	Populations				Percentage of Total		
	Yes	No	Not Possible	Total	Yes	No	Not Possible
Natural Origin Spawner Abundance	124	38	38	200	62%	19%	19%
Recruits per Spawner	63	56	81	200	32%	28%	41%
Smolt to Adult Ratios	9	58	133	200	5%	29%	67%
Juvenile Outmigrants	33	47	120	200	17%	24%	60%
Presmolt Abundance	7	40	153	200	4%	20%	77%

200 TRT Populations are in 'Interior Columbia' & 'Willamette/Lower Columbia' Recovery Domains, and exclude extirpated populations.

Yes = We can calculate this indicator and will be providing data in FY 2017.

No = Indicator calculation for this population is at least theoretically possible, but we will be unable to provide data in FY 2017.

Not Possible = It is not possible to calculate this indicator for this population.

March 31, 2017

Lessons Learned:

It takes a lot of coordination to get data reported in the same way across agency and state boundaries, but the effort is paying off (NOAA appreciation)

It remains difficult to “automate” calculation of indicators, due to changing conditions and high level of analysis that goes into estimating parameters at the population scale

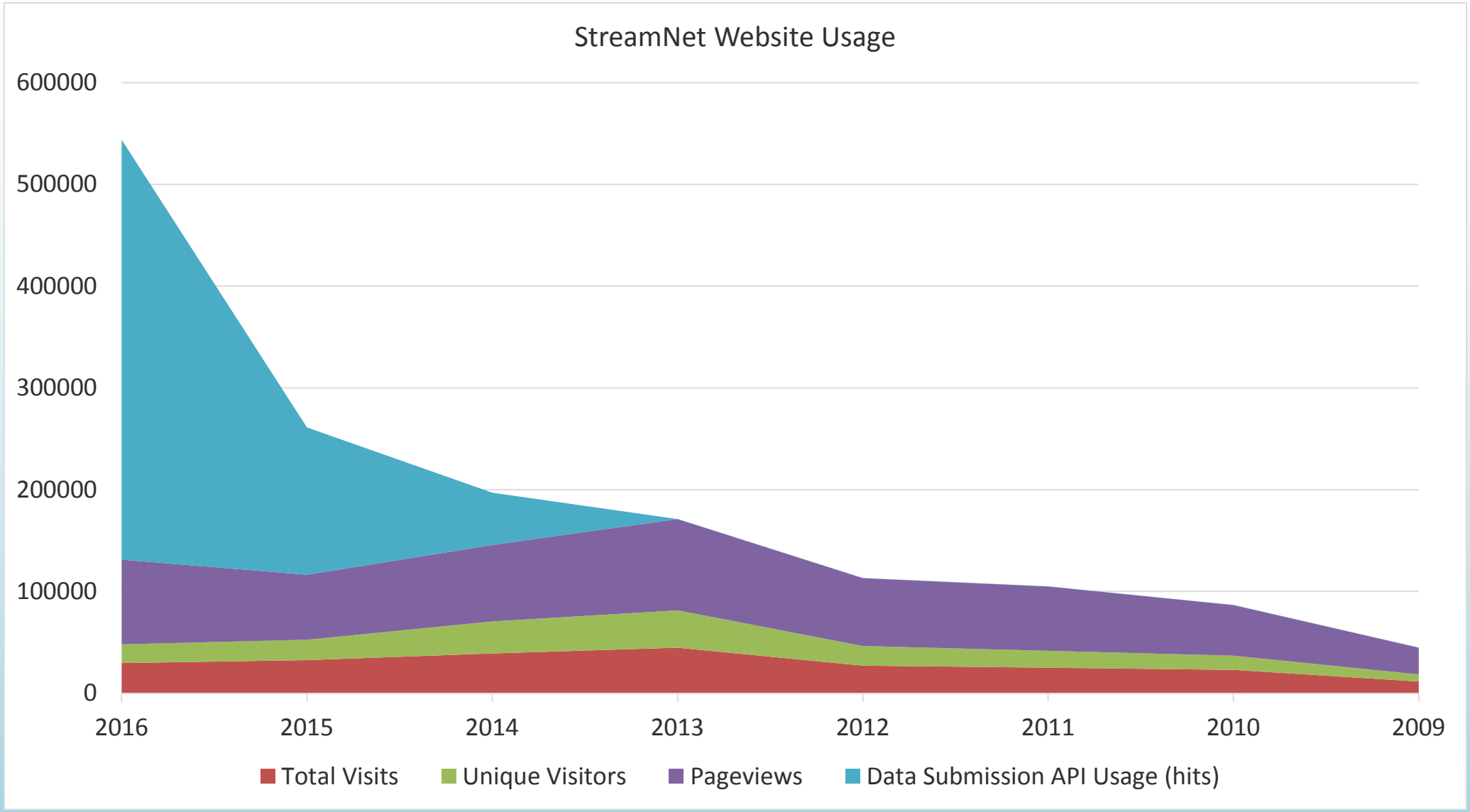
More resources provided would result in more population-level indictors (e.g. 77% of populations “could” calculate presmolt abundance). Tribes in particular are constrained by lack of resources, but have been incredibly helpful and cooperative nonetheless

Sets up a future discussion by managers about the how much and where population-scale monitoring should be prioritized – it’s probably not “every population – every indicator”.

Data Display & Attribution

Publicly Accessible Data

- StreamNet staff and data support agency websites such as MFWP's **Montana Fisheries Information System (MFISH)** ODFW's **Salmon Recovery Tracker** IDFG's **Idaho Fish and Wildlife Information System (IFWIS)** and WDFW's **SCoRE** and **SalmonScape**
- Information is also available directly from StreamNet through the online CA database query, traditional data query, interactive maps, the Data Store, or by custom request
- StreamNet public use statistics for 2016: 18,399 unique visits, 83,182 page views. Number of page views and average time on site increasing. API usage increased 182% in 2015 and 185% again in 2016 (412,504 hits). Includes data being "harvested" and used in Council dashboards and indicator websites
- API = Application Programming Interface



“Traditional” website use is fairly stable, but automated sharing and consumption of data increasing rapidly

Species : Chinook salmon

Run : spring

MPG : Grande Ronde/Imnaha

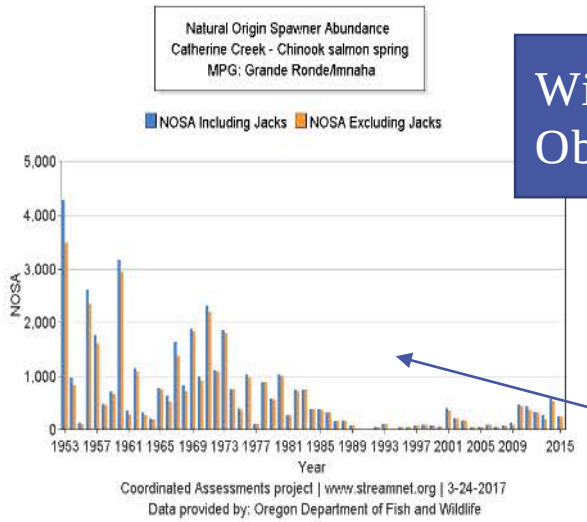
Catherine Creek

View list | Download data

Indicators 297 | Related Data 64 | Objectives 0 | Distribution 0

NOSA 63 | RPerS 131 | SAR 63 | Juv Out 20 | Pre Smolt 20

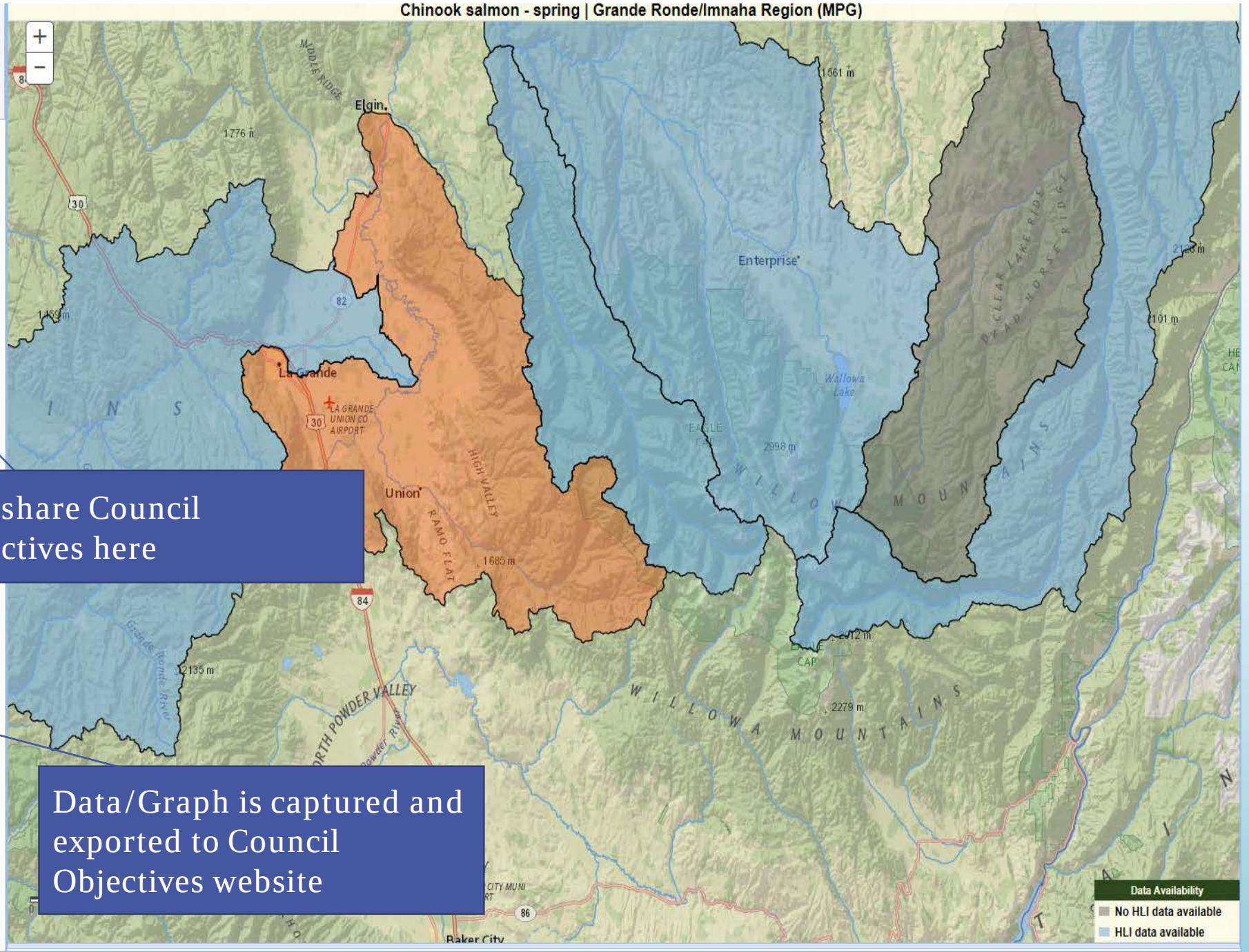
Natural Origin Spawner Abundance



Year	NOSA IJ	NOSA EJ	Agency	Pop Fit	Note
2015	256	242	ODFW	Same	Metrics & Age
2014	570	531	ODFW	Same	Metrics & Age
2013	274	186	ODFW	Same	Metrics & Age

Will share Council Objectives here

Data/Graph is captured and exported to Council Objectives website



Species : Chinook salmon
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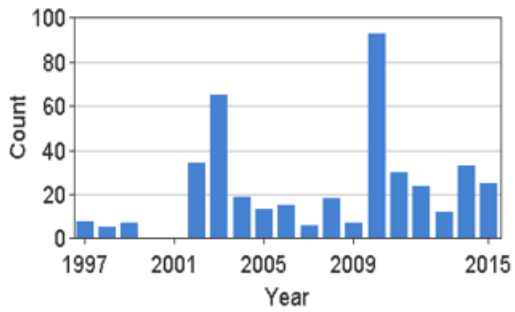
Catherine Creek

View list | Download data

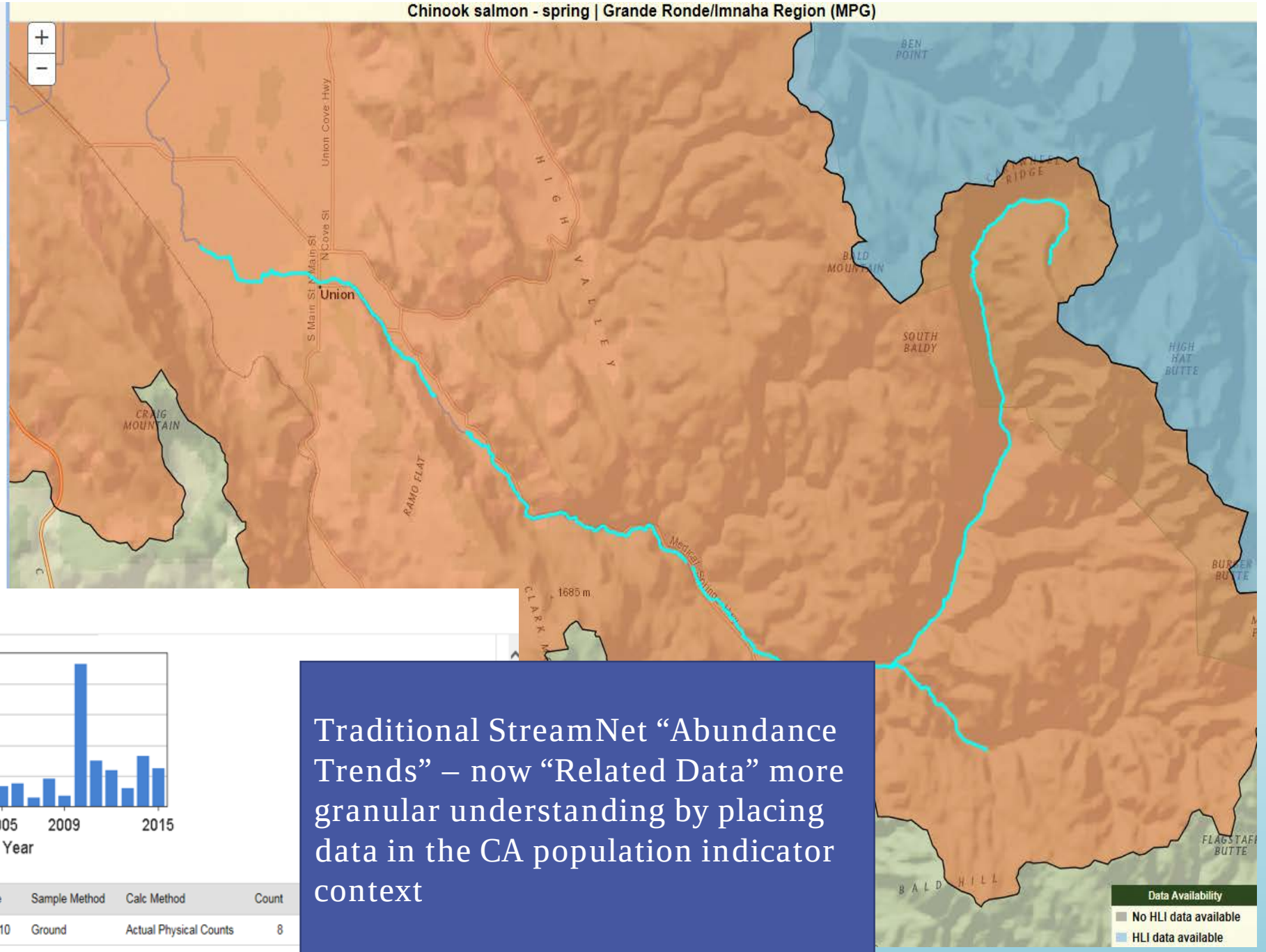
+	Redd Counts	Redd count	ODFW	7	12	1996-2013	Map Data
-	Spawner Counts	Carcass	ODFW	13	190	1996-2015	Map Data

ID	Production Type	Obs	Years	Stream
500630	Mixed	19	1997-2015	Catherine Creek, trib to Grande Ronde River
500739	Mixed	20	1996-2015	North Fork Catherine Creek, trib to
500742	Mixed	19	1997 2015	
500745	Mixed	19	1997 2015	
500746	Mixed	19	1997 2015	
500748	Mixed	13	2003 2015	
			2003	

Related Data Set Detail: 500742



Agency	Begin Date	End Date	Sample Method	Calc Method	Count
ODFW	1997/08/26	1997/09/10	Ground	Actual Physical Counts	8
ODFW	1998/08/25	1998/09/11	Ground	Actual Physical Counts	5



Traditional StreamNet "Abundance Trends" – now "Related Data" more granular understanding by placing data in the CA population indicator context

Species : Chinook salmon
Run : spring
MPG : Grande Ronde/Imnaha

Chinook salmon - spring | Grande Ronde/Imnaha Region (MPG)

Catherine Creek

View list | Download data

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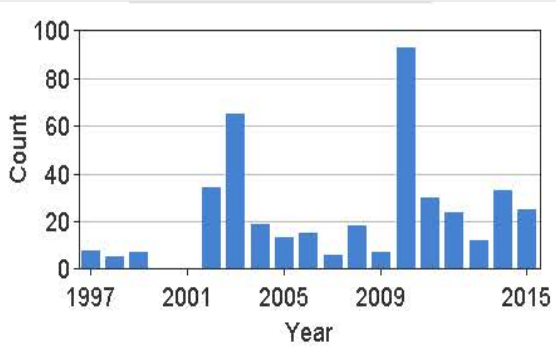
500745	Mixed	19	1997-2015	Catherine Creek, trib to Grande Ronde River
500746	Mixed	19	1997-2015	Catherine Creek, trib to Grande Ronde River
500748	Mixed	13	2003-2015	Catherine Creek, trib to Grande Ronde River
			2003-	Catherine Creek, trib

Related Data Set Detail: 500742



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ODFW	1997/08/26	1997/09/10	Ground	Actual Physical Counts	8	
ODFW	1998/08/25	1998/09/11	Ground	Actual Physical Counts	5	
ODFW	1999/08/31	1999/09/15	Ground	Actual Physical Counts	7	
ODFW	2000/08/29	2000/09/12	Ground	Actual Physical Counts	0	
ODFW	2001/08/28	2001/09/11	Ground	Actual Physical Counts	0	

"Related Data" attribution is project by project, linked to pdf in StreamNet library – traditional bibliographic citation system (though more and more just a reference to data in a database)

OREGON Fish & Wildlife

Memorandum

To: StreamNet Library
From: Kasey Bllesner, Natural Resources Information Management Program, ODFW
Date: April 23, 2009
Re: Reference #51837

Title: Natural Escapement Monitoring of Spring Chinook in the Imnaha and Grande Ronde River Basins, dynamic database.

Format: Source data is stored in electronic format (Excel 2003) as a dynamic database and may be available from the contact person. Summary tables used for data compilation are unpublished. Data contained in the reference spans back to 1998, and was first received in 2000.

Contact Person:

Name/Title: Tim Hoffnagle, Research Biologist, Northeast Region Fish Research
Agency: Oregon Dept. of Fish and Wildlife

Mailing address: 203G Badgley Hall, Eastern Oregon University, La Grande, OR 97850

Phone: (541) 962-3884

Email: thoggnag@eou.edu

Availability
No HLI data available
HLI data available

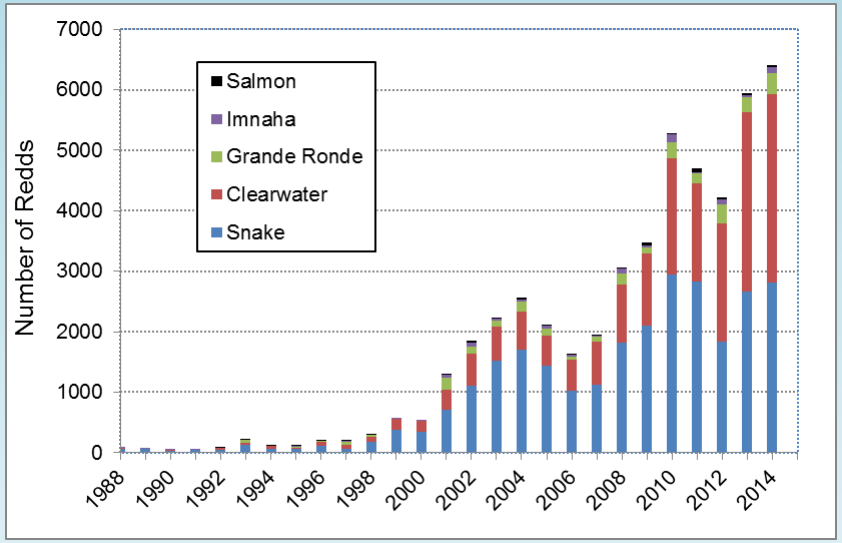
Downloadable Database

Data attribution remains an issue with large, aggregated database
Complex when rolling up large amounts of information to the population indicator level
Working with F&W Managers, PNAMP on standards for attribution
Several partners are concerned and want this issue addressed

	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1	MAJORPOPGROUP	POPID	NMFS_POPID	LOCATIONNAME	ESAPOPNAME	CBFWAPOPNAME	COMMONPOPNAME	POPFIT	POPFITNOTES	WATERBODY	SPAWNINGYEAR	TRTMETHOD	CONTACTAGENCY	METHODNUMBER	NOSAIJ	NOSAIJLOWERLIMIT	NOSAIJUPPERLIMIT	NOSAIJALPHA	NOSAEJ	NOSAEJLOWI
2	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2015	Yes	Oregon Department of Fish and Wildlife	1	256				242	
3	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2014	Yes	Oregon Department of Fish and Wildlife	1	570				531	
4	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2013	Yes	Oregon Department of Fish and Wildlife	1	274				186	
5	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2012	Yes	Oregon Department of Fish and Wildlife	1	328				316	
6	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2011	Yes	Oregon Department of Fish and Wildlife	1	436				361	
7	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2010	Yes	Oregon Department of Fish and Wildlife	1	463				438	
8	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2009	Yes	Oregon Department of Fish and Wildlife	1	129				92	
9	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2008	Yes	Oregon Department of Fish and Wildlife	1	79				74	
10	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2007	Yes	Oregon Department of Fish and Wildlife	1	51				46	
11	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2006	Yes	Oregon Department of Fish and Wildlife	1	93				84	
12	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2005	Yes	Oregon Department of Fish and Wildlife	1	38				35	
13	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2004	Yes	Oregon Department of Fish and Wildlife	1	38				36	
14	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2003	Yes	Oregon Department of Fish and Wildlife	1	175				175	
15	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2002	Yes	Oregon Department of Fish and Wildlife	1	217				204	
16	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2001	Yes	Oregon Department of Fish and Wildlife	1	396				356	
17	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	2000	Yes	Oregon Department of Fish and Wildlife	1	54				49	
18	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1999	Yes	Oregon Department of Fish and Wildlife	1	80				80	
19	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1998	Yes	Oregon Department of Fish and Wildlife	1	91				91	
20	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1997	Yes	Oregon Department of Fish and Wildlife	1	72				72	
21	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1996	Yes	Oregon Department of Fish and Wildlife	1	35				34	
22	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1995	Yes	Oregon Department of Fish and Wildlife	1	38				34	
23	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1994	Yes	Oregon Department of Fish and Wildlife	1	14				14	
24	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1993	Yes	Oregon Department of Fish and Wildlife	1	107				99	
25	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1992	Yes	Oregon Department of Fish and Wildlife	1	40				40	
26	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1991	Yes	Oregon Department of Fish and Wildlife	1	9				8	
27	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1990	Yes	Oregon Department of Fish and Wildlife	1	0				0	
28	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1989	Yes	Oregon Department of Fish and Wildlife	1	72				72	
29	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1988	Yes	Oregon Department of Fish and Wildlife	1	163				160	
30	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1987	Yes	Oregon Department of Fish and Wildlife	1	152				149	
31	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1986	Yes	Oregon Department of Fish and Wildlife	1	320				310	
32	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1985	Yes	Oregon Department of Fish and Wildlife	1	386				371	
33	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1984	Yes	Oregon Department of Fish and Wildlife	1	378				378	
34	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1983	Yes	Oregon Department of Fish and Wildlife	1	733				733	
35	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1982	Yes	Oregon Department of Fish and Wildlife	1	745				716	
36	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1981	Yes	Oregon Department of Fish and Wildlife	1	275				264	
37	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1980	Yes	Oregon Department of Fish and Wildlife	1	1034				994	
38	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1979	Yes	Oregon Department of Fish and Wildlife	1	579				557	
39	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1978	Yes	Oregon Department of Fish and Wildlife	1	878				878	
40	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1977	Yes	Oregon Department of Fish and Wildlife	1	104				100	
41	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1976	Yes	Oregon Department of Fish and Wildlife	1	1028				973	
42	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1975	Yes	Oregon Department of Fish and Wildlife	1	399				359	
43	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1974	Yes	Oregon Department of Fish and Wildlife	1	753				738	
44	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1973	Yes	Oregon Department of Fish and Wildlife	1	1855				1816	
45	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1972	Yes	Oregon Department of Fish and Wildlife	1	1106				1079	
46	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1971	Yes	Oregon Department of Fish and Wildlife	1	2319				2206	
47	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1970	Yes	Oregon Department of Fish and Wildlife	1	992				910	
48	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1969	Yes	Oregon Department of Fish and Wildlife	1	1882				1819	
49	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1968	Yes	Oregon Department of Fish and Wildlife	1	822				728	
50	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1967	Yes	Oregon Department of Fish and Wildlife	1	1625				1370	
51	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1966	Yes	Oregon Department of Fish and Wildlife	1	626				507	
52	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1965	Yes	Oregon Department of Fish and Wildlife	1	770				739	
53	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1964	Yes	Oregon Department of Fish and Wildlife	1	208				181	
54	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1963	Yes	Oregon Department of Fish and Wildlife	1	313				261	
55	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1962	Yes	Oregon Department of Fish and Wildlife	1	1146				1081	
56	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1961	Yes	Oregon Department of Fish and Wildlife	1	347				285	
57	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1960	Yes	Oregon Department of Fish and Wildlife	1	3161				2947	
58	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1959	Yes	Oregon Department of Fish and Wildlife	1	712				655	
59	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1958	Yes	Oregon Department of Fish and Wildlife	1	486				456	
60	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1957	Yes	Oregon Department of Fish and Wildlife	1	1754				1619	
61	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1956	Yes	Oregon Department of Fish and Wildlife	1	2606				2338	
62	Grande Ronde/Imnaha	7	62	Catherine Creek	Salmon, Chinook (Snake River spring/summer-run ESU) Catherine Creek - spring	Catherine Creek Spring Chinook	Catherine Creek spring Chinook	Same		Catherine Creek	1955	Yes	Oregon Department of Fish and Wildlife	1	122				106	

Seeking to Ensure Entity Acknowledgement (at a minimum)

- PNAMP Effort with Recommendation at Next CA Workshop



Data generated by the Nez Perce Tribe, Washington Department of Fish and Wildlife, Idaho Power Company, and US Fish and Wildlife Service; downloaded from the StreamNet Coordinated Assessment Database (caxstreamnet.org - 4/27/2016).

From Hesse & Wheaton 2015

CA Next Steps

FIVE YEAR PLAN:

1. FOCUS ON DATA FOR NATURAL ORIGIN SALMON & STEELHEAD INDICATORS
2. HATCHERY DATA
3. BULL TROUT – MISSOULA WORKSHOP DISCUSSION
4. LAMPREY, STURGEON, RESIDENT TROUT

Stream Priority List for FY 17:

1. HLIs for 18 Tier 1 Populations
2. HLIs for 51 Tier 2 Populations
3. HLIs for other populations
4. Related data for Tier 1 and Tier 2 Populations
5. Fish Distribution Updates
6. Facilities dataset maintenance
7. Related data for NPCC dashboards
8. Next CA priorities (hatchery & bull trout data)

Questions?

Extra Slides

Types of Data We Share

StreamNet maintains data from projects that monitor fish populations and aquatic habitat throughout the Columbia Basin, as well as specialized datasets requested by regional decision-makers.

DATA QUERY

Query thousands of trends from state, tribal, and federal agency projects in an integrated system that produces tables, maps, and graphs.

FISH DISTRIBUTION

Geo-referenced information on streams occupied by major northwestern fish species is maintained here.

PROTECTED AREAS

The Northwest Power and Conservation Council database of streams protected from hydroelectric development is maintained here.

BPA 18 Tier 1 Priority Populations

Tier 1 | Tier 2 | Other Populations

FCRPS Section	Major Population Group	Pop ID	Population Name	NOSA	RperS	SAR	Juv Out	Pre Smolt	Related Datasets	Obs	Years
8.3 Snake River Spring/Summer Chinook Salmon	Grande Ronde/Imnaha	7	Catherine Creek - spring Chinook salmon	63	131	17	20	20	64	742	1957-2015
		8	Grande Ronde River Upper Mainstem - spring Chinook salmon	62	120	14	17	8	107	627	1960-2015
	Lower Snake	15	Tucannon River - spring Chinook salmon	58	22	0	0	0	3	81	1957-2014
	Upper Salmon	37	Yankee Fork - spring Chinook salmon	57	50	0	0	0	4	40	1987-2013
8.6 Upper Columbia River Spring Chinook Salmon	Wenatchee/Methow	45	Entiat River - spring Chinook salmon	63	16	9	13	10	3	81	1959-2015
		46	Methow River - spring Chinook salmon	29	15	0	0	0	7	298	1960-2015
		47	Wenatchee River - spring Chinook salmon	56	5	6	0	0	19	628	1958-2014
8.5 Snake River Steelhead	Clearwater	78	Lochsa River - summer Steelhead	23	0	0	0	0	0	0	
		79	Lolo Creek - summer Steelhead	0	0	0	0	0	0	0	
		81	Selway River - summer Steelhead	0	0	0	0	0	0	0	
		82	South Fork Clearwater River - summer Steelhead	23	0	0	0	0	2	8	2009-2013
	Salmon	92	Middle Fork Salmon River Lower Mainstem - summer Steelhead	0	0	0	0	0	0	0	
		102	Secesh River - summer Steelhead	0	0	0	0	0	0	0	
		103	South Fork Salmon River - summer Steelhead	0	0	0	0	0	0	0	
8.7 Upper Columbia River Steelhead	Wenatchee/Methow	105	Entiat River - summer Steelhead	25	16	5	11	10	1	10	2006-2015
		106	Methow River - summer Steelhead	28	9	0	0	0	1	34	1982-2015
		107	Okanogan River - summer Steelhead	39	22	7	9	0	39	317	1977-2015
		108	Wenatchee River - summer Steelhead	54	10	0	0	0	29	288	1962-2014

Resuming updates for trends associated with CA populations and NPCC websites. Each partner was asked to identify and maintain;

Specific Trends associated with CA HLIs

Specific Trends for populations where no CA HLIs are available

Trends associated with NPCC Dashboards & Indicators (Currently use over 1,500 StreamNet Trends)

Fish Distribution and Facilities Dataset Updates