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February 5, 2019

MEMORANDUM

TO: Fish and Wildlife Committee members

FROM: Patty O'Toole

SUBJECT: Fish and Wildlife program amendment work session

BACKGROUND:

Presenter: Staff

Summary: Staff will brief the Fish and Wildlife Committee on the amendment schedule and review and discuss recommendations to amend the Columbia River Basin Fish and Wildlife Program.

Relevance: The Council called for recommendations to amend its Program in May of last year. Recommendations were due on December 13th, 2018.

On February 12th, the Fish and Wildlife Committee will have its first program amendment work session. Work sessions support opportunities for more in depth discussion between Committee members and staff about the recommendations and comments on the recommendations, which are due February 8th.

Since the recommendations were received in December, the staff has been organizing and summarizing the recommendations. At the February work session, the staff will review the current program amendment schedule and tasks. Staff anticipates that most of the work session will focus on discussion of the recommendations, using preliminary staff summaries as a starting point. The summaries are organized into blocks of related themes. Staff proposes that the February meeting focus on three program areas:

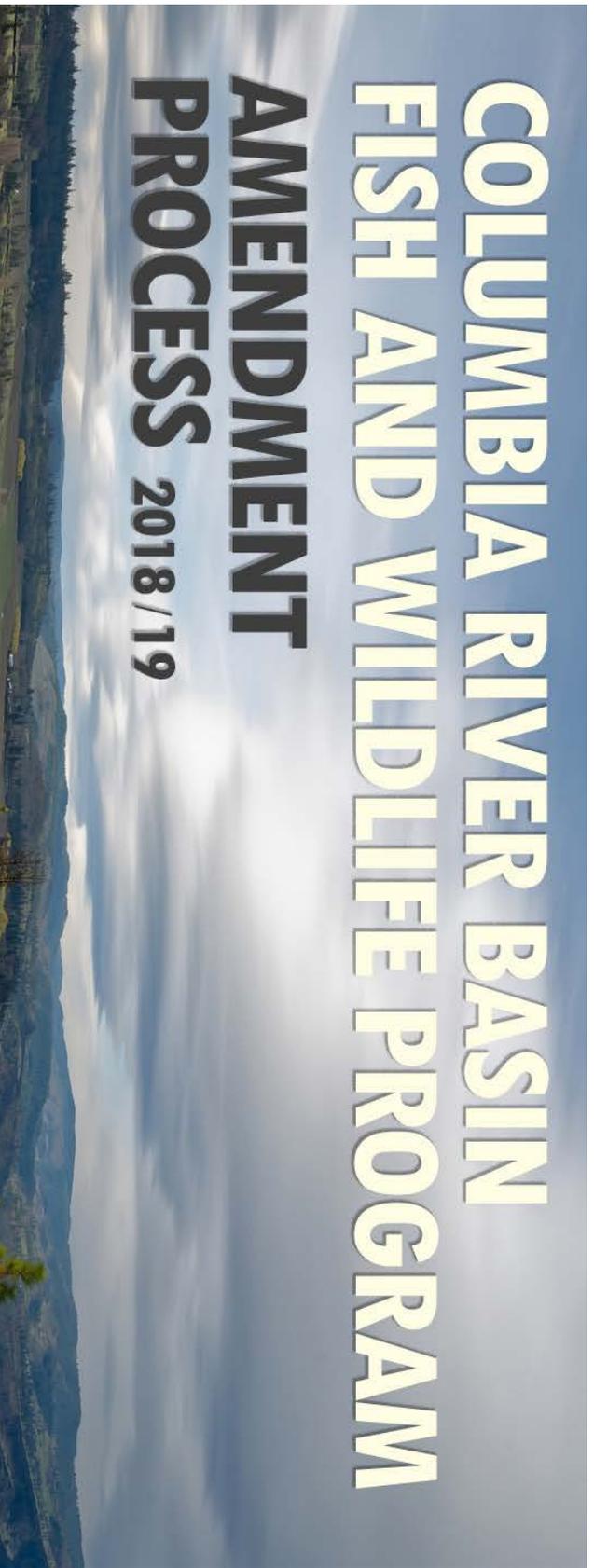
- Part Two: Introduction: program framework, geographic structure, legal and social context, program progress
- Part Three: Basinwide Vision, Scientific Foundation, Goals, and Objectives
- Part Four: Adaptive Management

Staff summaries are a way for staff to synthesize recommendations to aid in discussion; they are not a comprehensive restatement of recommendations and don't reflect detailed differences between recommendations. Members are encouraged to continue to read the [original recommendations](#) for complete review. Comments will be posted on the [Council's website](#) soon after February 8th. Staff anticipates continuing discussion of the recommendations by webinar on February 21, 2019.

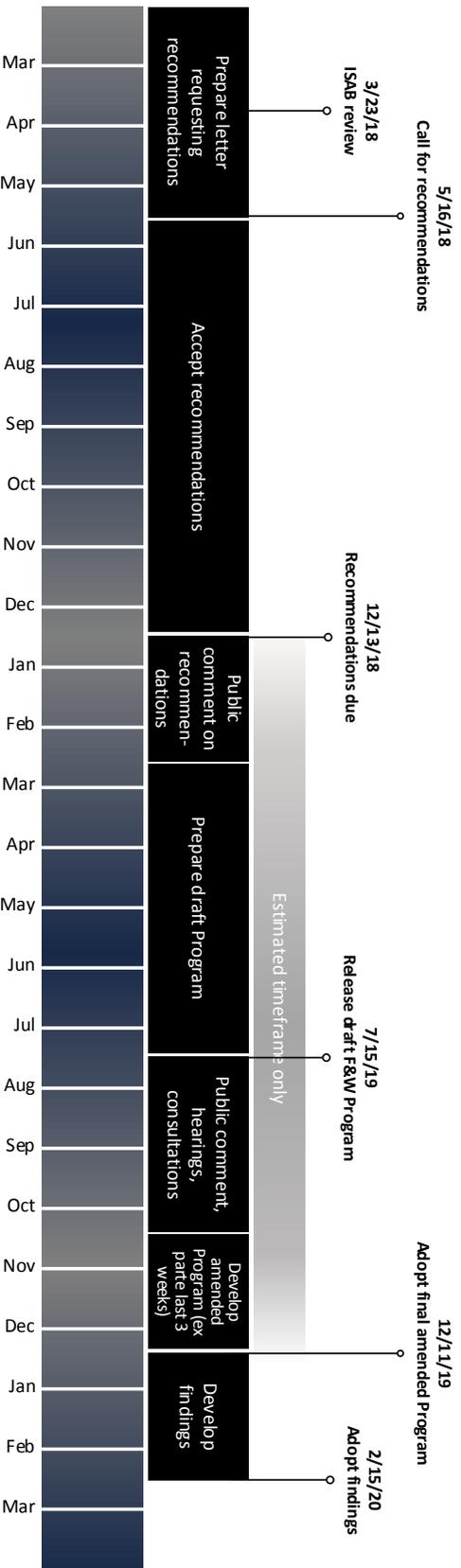
As a reminder for Council members and staff, with the amendment process well underway, *any communication informal or formal* (verbal conversations, meetings, email, or other written form) regarding the program amendments or *issues* relevant to the amendment process needs to be submitted into the amendment administrative record. If you are unsure whether something should be in the administrative record, assume that it should, send it to Kendra, and the legal division can decide if it should be included.

Attachments:

Attachment 1 Page 3	Schedule
Attachment 2 Page 4	Preliminary draft summary of recommendations relevant to Part Two (including the program framework, geographical structure, legal and social context of the program, program progress).
Attachment 3 Page 7	Preliminary draft summary relevant to Part Three (including the basinwide vision, scientific foundation and principles, goals and objectives).
Attachment 4 Page 11	Preliminary draft summary relevant to Part Four (adaptive management).



DRAFT TIMELINE



Attachment 2

**Staff summary of issues and recommendations
2014 Program Part Two: Introduction**

2014 Fish and Wildlife Program Sections

Part Two: Introduction

- I. The program framework
 - a. Geographic structure
- II. Legal and social context of the program
- III. Assuring the Pacific Northwest an adequate, efficient, economic, and reliable power supply
- IV. Program progress
 - a. Program successes
 - b. Program challenges
- V. Tracking the status of the basin's fish and wildlife resources

Overview

Although the Council received recommendations to change some elements of the structure of the 2014 Program, most fish and wildlife managers support retaining the 2014 Program and amending specific areas.

Some focus on the adaptive management strategy for revision; this will be described in more detail in other summaries. Some call for additions to the program's structure – for example, an action plan.

Many recommendations describe frustration with program implementation, recommending review of authorities and obligations under the Northwest Power Act and attention to areas where the recommendations suggest inadequate mitigation has occurred.

I. Staff summary of issues and recommendations

A. Program Framework and overall Program construction

Several entities recommend to largely retain the 2014 Program, without major revision, and incorporate the accord extensions (IDFG, OSC, CRITFC, CSKT, CTCR, CTUIR, CTWSRO, USFWS, BPA). Additionally, many recommend that the 2014 Program should be the basis for any needed amendment, such as restructuring the program to better address adaptive management (IDFG, MFW&P, ODFW, WDFW, BPT, UCSRB, CDA Tribe, CTUIR, CTGR, Kalispel Tribe, KTOI, NPT, SBT, STI, USRTF, YNF, NOAA Fisheries, American Rivers).

Several entities recommend developing an action plan to identify priority actions in the next five years (UCSRB, STI, USGS, American Rivers).

B. Geographic structure

Several recommendations highlight geographic areas for enhanced focus and/or implementation to mitigate for the hydropower system such as the Lower Columbia, estuary, plume, and ocean (LCFRB, Lower Columbia Estuary Partnership); the upper Columbia including the blocked areas (CDA Tribe, Kalispel Tribe, STI, UCSRB); the Willamette River Subbasin (CTGR); and the Snake River (BPT, NPT).

The CTGR recommend including a written description of the identification and structure of the Columbia Basin provinces and a description of the mainstem Columbia River with associated maps.

One recommender said that the Council should initiate a high-level review to investigate whether continued modification of the freshwater ecosystem really can result in recovery of Columbia River basin salmon stocks (Kintama).

Staff note: Recommendations for a shift in funding allocation or geographic priorities will be captured in the Implementation summary.

C. Legal and social context

Several recommendations call out the legal authority and obligation of the Council, Bonneville, and the fish and wildlife managers and suggest refocusing and clarifying those roles through implementation (ODFW, WDFW, BPT, NPT, STI). The STI further recommend that there is an immediate need for the Council to utilize its authority under the Act (section 839b(i)) and review the actions of the Administration to determine whether implementation by Bonneville is consistent with the plan and program. The BPT recommends that the Program not take on new objectives or measures until all current measures are implemented to address current objectives.

Several recommendations discuss the Program's focus on resident and anadromous fish and wildlife. NOAA Fisheries and USFWS recommend that the Program prioritize ESA stocks, and Snohomish PUD recommends that the Council support activities directly related to impacts of the hydrosystem and demonstrate how each activity supports rebuilding goals. Others remind the Council that the Program is broader than ESA and should address all areas and species, whether or not there are long term funding commitments through ESA or the fish accords (ODFW, WDFW, BPT, NPT). Bluefish.org recommends that the Council consider its ability to oversee the various agencies that are to report to the RIOG (or other such oversight groups as future language creates).

Several recommendations state that the Program has not fully implemented for hydrosystem impacts and needs to focus on areas that continue to be under-mitigated (BPT, CDA Tribe, CTGR Kalispel Tribe, STI). Many of these entities suggest that program policies, such as traditional funding allocation policies and others, have resulted in under-mitigation for hydrosystem impacts.

D. Program Progress

Successes:

Recommendations note that the Program needs to recognize what has been accomplished (Bonneville). The fish accord extension agreements highlight accomplishments from 2008-2018, and several entities recommend incorporating the accords into the Program (CTCR, CTUIR, CTWSRO, YNF).

Challenges:

Several recommendations note there are continued challenges for the Program and recommend the Council recognize threats such as climate change, non-native species, and aging infrastructure (WDFW, BPT, CRITFC, NPT, YNF).

E. Comments submitted with the recommendations that address the Council's AEERPS analysis. Section III: Assuring the Pacific Northwest an adequate, efficient, economical and reliable power supply.

Comments submitted state that the analysis must start with an evaluation of those fish and wildlife measures that will provide the most complete mitigation possible for the adverse effects of the development and operation of the hydrosystem, even if all these measures cannot be fully implemented during the 2019 Program. (Sierra Club et al.)

Comments note that the AEERPS analysis should describe and analyze the opportunities, if any, to optimize mitigation for power generation impacts from lower Snake River dam removal. This should be done in a timeframe that accounts for the need to plan and implement this action while recognizing the current and projected future availability of other resources like energy efficiency, demand response, or the acquisition of additional clean, renewable power supplies in order to provide the region an adequate, efficient, economical and reliable power supply. Comments further state that the analysis should describe the opportunities, if any, to mitigate power generation impacts from increased spring or summer spill operations through the use of energy efficiency, demand response, or the acquisition of additional clean, renewable power supplies to the extent necessary to provide the region an adequate, efficient, economical and reliable power supply. (Sierra Club et al.)

Bonneville also provides comment regarding the AEERPS analysis. Bonneville comments that future AEERPS analyses look beyond the incremental costs anticipated from new program amendments. Bonneville states that the energy market has changed, the law governing operation of the Columbia River System has changed, and Bonneville's financial condition has changed. Bonneville further states that the Council should take into account Bonneville's need to manage to the Strategic Plan objective of holding overall program costs at or below the rate of inflation through 2023.

II. Excerpts of the recommendations

View the [document linked here](#) for the excerpts of the recommendations referring to the 2014 Program Part Two: Introduction

Attachment 3

**Staff summary of issues and recommendations
2014 Program Part Three: Basinwide Vision, Scientific Foundation, Goals,
Objectives, and Strategies**

2014 Fish and Wildlife Program Sections

Part Three:

- I. Vision for the Columbia River Basin
- II. Scientific foundation and principles of the program
- III. Goals and Objectives – the changes we want to achieve

Overview

Recommendations were submitted supporting the program's vision to address hydrosystem impacts across the basin. Some are concerned that program implementation doesn't reflect this commitment; others recommend narrowing the vision to link more to hydrosystem impacts.

No recommendations were submitted on the program's scientific principles.

There were numerous recommendations for goals and objectives. Recommendations for identifying and refining goals and objectives ranged from having the Council propose a set of objectives to convening technically qualified individuals.

Many suggest improving the organization and scale of goals and objectives, including condensing existing ones to reduce redundancies; organizing them to convey the geographic aspect of program implementation; connecting them to program strategies and indicators, and improving their temporal aspect by splitting them into short and long-term timeframes.

Recommendations also note the need to establish a baseline for comparison; prioritize hydrosystem goals and objectives; address non-ESA species; and consider climate change, the availability of data, and the feasibility of achieving the goals and objectives. More specific recommendations support maintaining current goals and objectives; clarifying the existing goals and objectives; and adding topics to the new program's goals and objectives.

III. Staff summary of issues and recommendations

A. Vision

- Vision is well suited to accomplish equitably addressing impacts of the hydropower across the basin. (CTGR, Kalispel Tribe)
- Narrow the vision statement to focus the actions of the Program to the nexus with the hydroelectric system (Snohomish PUD)

B. Scientific principles

- No recommendations received addressing this portion of the Program

C. Goals and objectives

**Preliminary draft, please refer to full recommendations for complete review*

Update/Expand the Program's process for Refining/Identifying Goals and Objectives

- Propose in draft program and adopt in final program a set of quantitative objectives, based on recommendations and any other relevant information, (Sierra Club et al.)
 - Implement the ISAB's remedial recommendations for objectives (TU)
- Apply refinement process for other objectives to hatchery mitigation and production goals and determine if can convert to an "adult equivalent" indicator at the mouth of the Columbia River (IDFG, OSC).
- Convene technically qualified individuals (IDFG, OSC, CTGR, YN, TU) to develop, review, and update goals/objectives; specific entities are suggested (TU, Sierra Club et al.) including CBPTG provisional goals (IDFG, OSC, CTGR)
- Review progress of 2014 Program's refining program goals and quantitative objectives tasks (IDFG, OSC)

Restructure Biological Objectives to Condense, Clarify Levels, Connections to Program Strategies, Geographic Coverage, and Temporal Aspects.

- *Condense* by removing redundancies in appendix D goals (TU; PPC et al.)
- *Develop objectives at multiple scales*, such as basin, subbasin and watershed, lifecycle (ODFW, WDFW, CTGR, NPT, YNF, NOAA Fisheries, USGS, Sierra Club et al., TU, Freshwater Trust). Objectives can be aggregated to derive more over-arching goals (TU, USGS)
- *Connect* goals, objectives, strategy/measure; and indicators (PPC et al., IDFG, ODFW, WDFW, CTGR, NPT, TU, Freshwater Trust)
- *Geographical* objectives to ensure that mitigation work is distributed across the basin equitably with respect to impact (Lower Columbia Estuary Partnership, Kalispel Tribe)
- *Short-term and long-term* goals and objectives should be developed (TU, Freshwater Trust, (PPC et al., Sierra Club et al., Freshwater Trust)
- *Establish time frames* for objectives (a specific year, not "within X years") (TU)
- *Rolling* five-year basis for reporting (ODFW, WDFW, NPT, TU)

Scope/Priority/Data Availability/Feasibility/Assess Progress of Goals and Objectives

- Goals should reflect that Program is broader than ESA BiOps (ODFW, WDFW)
- Prioritize goals with a direct hydro linkage. (PPC et al.)
- Consider impacts of climate change into biological objectives (Sierra Club et al.), and other underlying factors (IDFG, OSC, TU)
- Consider availability of data for regular reporting on objectives (ODFW, WDFW, NPT, Sierra Club et al., TU)
- Evaluate feasibility of attaining 2%-6% target SAR rebuilding rates. (Kintama)
- Assess gaps between status and Program objectives (WDFW, NPT, YNF, NOAA Fisheries); why 5 million salmon and steelhead goal not achieved (The Conservation Angler)

**Preliminary draft, please refer to full recommendations for complete review*

Baseline

- Establish quantitative baselines against which to measure the rate and amount of progress in restoring fish populations (ODFW, WDFW, NPT, YN, NOAA Fisheries, USGS)

Maintain Existing Goals and Objectives

- Maintain basinwide objectives (ODFW, WDFW, LCRG, NPT, Sierra Club et al.)
- Focus on achieving existing goals and objectives; wait for program funding to expand before adding new strategies, goals, objectives (BPT)

Refine Existing Goals and Objectives

- Clarify measure of success (PPC et al.)
- Specific suggestions provided to improve Goal 3 to 18 and Goal 20 to 21 (TU)
- Specify 2-6% Smolt to Adult Return (SAR) goal is a 5-year average (TU)
- Clarify and split into two objectives the “Achieving 5 million salmon and steelhead by 2025” objective (IDFG, OSC, Conservation Angler, TU)
- Pre-dam losses of salmon and steelhead may be less than thought, given the new run estimates from the Density-Dependence report (ISAB 2015-1) (TU)

Add New Goals and Objectives

- *Develop, identify, expand* objectives (YNF), for focal species (TU, CTGR), to promote resilience to climate change (WDFW, ODFW), address key Program goals (TU), and in context of non-native and invasive species (LCRG)
- *Viability* quantitative *salmon/steelhead* goals such as genetic diversity, spatial structure, diversity, and productivity (TU, Sierra Club et al.)
- *Escapement* quantitative goals (IDFG, OSC); Dam-based escapement for upriver stocks (TU)
- *Hells Canyon Complex Fisheries Resource Management Plan* salmon and steelhead goals (BPT, SBT, USRT)
- *Lamprey* objectives such as specific abundance levels for lamprey reaching locations where lamprey can be counted. could include targets for lamprey abundances in the future, such as, 20% increase in 10 years (TU)
- *Hydrosystem* quantitative goals (CTGR) such as low powerhouse encounter rates, minimal fish travel times, and better reach survival outcomes (ODFW, WDFW, NPT)
- *Total Dissolved Gas* standard of 110% for for Albeni Falls Dam (Kalispel Tribe)
- *Mid-C HCPs* performance standards as baseline objectives (Chelan PUD)
- Wildlife operational losses for Libby (35,571 acres) and Hungry Horse (26,321 acres) dams (MFW&P, KTOI)
- *Harvest* quantitative objectives set with stakeholder input. (TU)
- *Ecosystem/Habitat* quantitative objectives. (CTGR, STI, TU) and for habitat actions (Sierra Club et al.).
- *Hatchery fish objectives* by hatchery and species (TU) such as numbers of fish spawned and released, returning hatchery adults, recruits per spawner (IDFG, OSC); and be consistent with *United States v. Oregon* production goals (NOAA Fisheries)

**Preliminary draft, please refer to full recommendations for complete review*

- *Columbia Basin Task Force Partnership* provisional quantitative goals to be used or adopted (IDFG, OSC, ODFW, WDFW, NPT, USRT, NOAA Fisheries, Sierra Club et al., TU).

IV. Excerpts of the recommendations

View the [document linked here](#) for the excerpts of the recommendations referring to the 2014 Program Part Three: Basinwide Vision, Scientific Foundation, Goals, Objectives, and Strategies.

Attachment 4

**Staff summary of issues and recommendations
2014 Program Part Four: Adaptive Management**

2014 Program Sections

Part Four: Adaptive Management

Includes monitoring, effectiveness, research, data management, reporting, evaluation

Appendix L: Reporting

Overview

Numerous entities recommend restructuring the adaptive management section and the individual strategies to identify and evaluate specific objectives for the program. Other recommendations focus on adaptive management principles at the project level. Many entities support the ongoing collaborative efforts to develop a research, monitoring and evaluation strategy (RM&E) and to have the Council (with others) lead the effort. The recommendations also support continued funding for RM&E, including status and trend monitoring.

Managers support efforts for data collection and regular reporting. Recommendations support funding the Coordinated Data Exchange, as well as a single, centralized public website. The recommendations also stressed the need to fund regional monitoring and data management programs.

Research was noted in several recommendations, including developing a distinction between research and monitoring; developing reporting templates; and developing criteria for research projects. There were recommendations supporting continued life-cycle modeling and offering specific research topics.

Managers also support expanded monitoring efforts in the ocean and within the basin to feed data-driven evaluation processes. Recommendations for hatcheries include the need to address critical uncertainties and improve coordination in hatchery research and monitoring.

I. Summary of Issues and Recommendations

A. Adaptive Management

Numerous entities recommend restructuring the adaptive management section of the Program and the individual strategies to identify specific objectives:

- “It is very difficult to find a useful adaptive management logic path in the current document. Nowhere can you find (in one location) a goal with associated quantitative objectives, the strategy/measures to meet the objective(s), the monitoring required for the strategy/measures and the plan for reporting progress

**Preliminary draft, please refer to full recommendations for complete review*

toward meeting the goal/objective(s)." (IDFG, ODFW, WDFW, OSC, CTGR, NPT)

- Establish quantitative baselines against which to measure the rate and amount of progress in restoring fish populations. Adopt population-scale objectives and use those objectives as a measure for Program progress over time. (IDFG, ODFW, WDFW, OSC, YNF, CTUIR, NPT, NOAA Fisheries)
- Develop guidance for adaptive management for projects; develop rigorous decision-making processes based on regional strategies, address quantitative project objectives, develop coordinated monitoring and evaluation, and incorporate outcomes (i.e., lessons learned) into decision-making cycles that include project leaders, regional technical teams, and local stakeholders. (CTGR, USGS, TU)
- Emphasize the importance and provide the programmatic guidance needed to implement adaptive management processes at the project level as recommended by the Independent Science Advisory Board 2014 Review (ISAB 2018-3 p. 20). (IWRB)

The LCFRB recommends that the Council provide leadership and resources for coordinated Basin-wide and local monitoring and adaptive management efforts.

IDFG and OSC suggest that the Council recognize that "monitoring, research, data management, evaluation, and reporting are essential tools of adaptive management for assessing successes and failures of measures that implement the Program". The differences between research, action and effectiveness monitoring, and status and trend monitoring need to be better defined and the means for identifying and tracking these different types of evaluations by Bonneville and the Council need to be better defined.

IDFG and OSC also state that it is important for the Council to...insist that hatchery programs have clearly stated goals and objectives. Furthermore, a set of indicators (e.g., quantitative objectives for hatchery fish, numbers of fish spawned and released, returning hatchery adults, recruits per spawner) should be defined and incorporated into the adaptive framework for hatchery programs.

B. Monitoring and Evaluation

Many entities support collaborative efforts to develop a research, monitoring and evaluation strategy (RM&E) and to have the Council (with others) lead the effort:

- Continue collaborative efforts, such as the 2009 Anadromous Salmonid Monitoring Strategy to improve coordination of research monitoring and evaluation. Outcomes from collaborative efforts should identify, prioritize and fund monitoring strategies. (IDFG, ODFW, WDFW, OSC, YNF, CTGR, CTUIR, NPT, NOAA)
- Provide an explicit monitoring and evaluation framework that identifies what measures and information will be reported on regular basis to inform decision making and evaluate Program performance. (IDFG, ODFW, WDFW, OSC, YNF, CTGR, CTUIR, NPT, NOAA, USGS, BPA, TU)

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- Develop well-coordinated M&E plans and strategies with Bonneville Power Administration and NOAA Fisheries. (UCSRB)
- Work with regional technical partners to define measures for specific types of projects that can be analyzed and reported in a consistent manner at appropriate scales. (UCSRB)
- Provide leadership and resources for coordinated Basin-wide and local monitoring and adaptive management efforts (LCFRB)
- We agree with the ISAB that the topic of fish and wildlife “Monitoring, evaluation, reporting, research and data management” is the most important issue for the NWPCC to consider during the amendment process. The FWP could become more effective and efficient by implementing a dedicated research, monitoring, and evaluation component that can provide the basis for learning and support adaptive management. (USGS)
- The RME portion of the Program would also benefit from an economic analysis. There is a need to determine if and where RME funding fails to yield a sufficient return-on-investment in terms of informing resource management decisions that create positive biological impacts, and particularly where funded research data is unavailable or unused. (BPA)

Many recommendations support continued funding for RM&E, or identify specific types of monitoring needs:

- Continue support (programmatic and financial) for RM&E (ODFW, MFW&P, WDFW, OSC, IWRB, LCFRB, UCSRB, YNF, CTGR, NPT, USGS, TU, BPA, AR).
- Fund habitat status and trend monitoring for priority subbasins. (IDFG, ODFW, WDFW, OSC, YNF, CTGR, CTUIR, NPT, NOAA)
- We recommend that consistent, repeatable, monitoring of “fish in and fish out” be achieved through a commitment of support, coordination, and continuous education. (USGS)
- The need for routine status and trend monitoring, which provide baseline data on abundance, productivity, and survival needs to be more directly written in the Fish and Wildlife Plan, with associated Principles. (IDFG, OSC)
- Support/fund addressing key data gaps for the adaptive management process associated with *Recovery Plan* implementation. (UCSRB)
- Fund Mainstem and subbasin monitoring strategies that have successfully been vetted through the NPCC implementation review process. (CTGR)
- Encourage collaborative efforts to improve coordination of hatchery research, monitoring and evaluation and develop and manage accessible data repositories; support the use of genetic tools such as parentage- based tagging and genetic stock identification (IDFG, OSC)
- Monitoring to support relative reproductive success and integrated broodstock supplementation programs should be routine elements of responsibly managed hatchery programs and not viewed as

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redundant and unnecessary. (IDFG, OSC)

- Continue monitoring juvenile salmonid use in the estuary, ocean, plume as well as environmental conditions that can affect this use. (LCEP)
- Continue to support annual wildlife monitoring and evaluation activities on lands that are acquired as partial mitigation for the construction and inundation losses for Grand Coulee Dam. The Upper Columbia Ecoregion requires a robust, well-funded monitoring and evaluation and data management programs to ensure that long-term anadromous, resident fish and wildlife projects are achieving the established biological benchmarks over time. (STI)
- Better understand the relationships between physical and biological factors, so that we could improve our predictive capacity and inform deployment of new restoration projects in the most effective way. (USGS)
- Create a program to equip commercial and recreational (charter) boats (at sea) along the west coast with hand held PIT tag readers. (CTA)

C. Data Management

Numerous entities discuss specific data management structures:

- The role of programmatic projects that support the adaptive management portion of the Program including the Fish Passage Center, Comparative Smolt Survival Study, Smolt Monitoring Program, StreamNet, StreamNet Library, Inter-Tribal Monitoring Data Project, Pacific Northwest Aquatic Monitoring Partnership, and others needs to be identified. The Council should adopt and Bonneville fund full implementation of the Coordinated Assessments Data Exchange. Establish the Coordinated Assessments Data Exchange as the database of record for the Program. (IDFG, ODFW, WDFW, OSC, YNF, NPT, NOAA)
- Bonneville, in partnership with the Council and the region, should ensure that summarized data associated with broad categories of information (fish abundance, productivity, genetic diversity, geographic distribution, habitat conditions) are identified and accessible from a single, centralized website. Data users should be able to find references, data descriptions, and links to all the data collected in the Program on fish abundance in a publicly- available website. (IDFG, ODFW, WDFW, OSC, YNF, NPT, NOAA)
- Continued support for efforts to coordinate and implement a consistent, sustainable regional direction, including StreamNet, PNAMP, Inter-Tribal Data Management, the CRITFC StreamNet Library, and the Regional Coordination forum, is invaluable and deserves the Council's support. (CRITFC)

Various entities also mentioned supporting data management efforts across the region:

- Bonneville should provide support to ensure that all managers have the capacity to collect data and should support regional processes that standardize the data, facilitate reporting, and make this data publicly accessible. (IDFG, OSC)

**Preliminary draft, please refer to full recommendations for complete review*

- Fund the salmon and steelhead co-managers to establish and maintain a reliable, sustainable, and transparent data exchange for salmon and steelhead data. (IDFG, ODFW, WDFW, OSC, YNF, NPT, NOAA)
- BPA should fund adequate data management projects and data stewards within the agencies and tribes to support regional reporting requirements for evaluation of Program activities that are additional to the agencies and tribes' routine data management activities. (ODFW, WDFW, NPT)
- The Upper Columbia Ecoregion requires a robust, well-funded monitoring and evaluation and data management programs to ensure that long-term anadromous, resident fish and wildlife projects are achieving the established biological benchmarks over time. The strategy relies on 1) adequate funding for long-term monitoring and evaluation elements; 2) proper linkages to data sharing and data management; and 3) investments in appropriate infrastructure. (STI)
- A threshold issue would be to address data management issues, to ensure that research work that receives funding yields accessible data in a universally useful form. (BPA)

D. Reporting

Many entities recommend retaining the reporting measures that are currently in the 2014 Program. These include:

- Continue to develop and implement a concise, useful template for annual reports for research and monitoring projects and provide clear direction on how to identify projects and types of research, monitoring and evaluation. (IDFG, ODFW, WDFW, OSC, YNF, NPT)
- Require all research, monitoring, and evaluation projects, including hatchery programs, to report annually, providing an electronic summary of their results and interim findings, as well as the benefits to fish and wildlife. (ODFW, WDFW, NPT)
- A high priority is to separate research reports from monitoring reports. The former should address hypotheses and critical uncertainties and the latter should provide important data about implementation, status, and trends. As appropriate, action effectiveness should be reported as part of research and monitoring reports. (IDFG, ODFW, WDFW, OSC, NPT)
- Require the project sponsors to provide information on the condition of the populations and/or watersheds at least every five years in a format that can be used by the Council. (ODFW, WDFW, NPT)
- Ensure that summarized data associated with broad categories of information (fish abundance, productivity, genetic diversity, geographic distribution, habitat conditions) are identified and accessible from a single, centralized website. (IDFG, ODFW, WDFW, OSC, NPT)
- Ensure that all information about anadromous fish is summarized by sub-region, subbasin, subwatershed, specific life-stage and made accessible from a single gateway location. (ODFW, WDFW, NPT)
- Contract for complete data products that inform high-level indicators and not

**Preliminary draft, please refer to full recommendations for complete review*

only collaborative processes and preliminary collection of raw data. (ODFW, WDFW, NPT)

One additional measure was added:

- All status and trend data should be made publicly available within one year of either when the data were collected (Fish data) or after the models have been run (habitat data).

Snohomish PUD suggested a framework for evaluating proposed projects that included a brief quarterly report in addition to the annual reporting requirement

E. Research

Some recommendations focused on clarity between research and monitoring, or how research will be used to further the Program and regional efforts:

- Delineate research from ongoing monitoring; Establish a policy framework to prioritize and recommend RM&E projects based on an evaluation of cost, risk, and certainty; Ensure research is: 1) based on the best available science, 2) has appropriate study designs, 3) is subject to review by the independent science panels, 4) addresses issues raised by independent scientific review and peer review, 5) meets the necessary regulatory approvals consistent with all federal and state laws, 6) has a clearly defined scope and duration, and 7) is compatible with other research in the Columbia Basin, (PPC)
- Place greater emphasis on demonstrating how new information that is gained from applied research will be used by managers and policy-makers to advance biological goals and objectives in the Program. (MFW&P)
- More discussion needs to occur and direction provided on how to manage projects or parts of projects that move from research to implementation or projects that incorporate smaller research elements that come and go in response the need to answer project- specific questions through the adaptive management process. (IDFG)

Some recommendations specified specific research areas or topics:

- Applied research in the areas of artificial production, genetic conservation, non-native species control, and mitigating ongoing operational impacts are likely to be most useful for informing adaptive management. (MFW&P)
- Recognize the need for and take a stronger stand to support continued relative reproductive success and integrated broodstock management program evaluations. Support the use of genetic tools such as parentage-based tagging and genetic stock identification. (IDFG, OSC)
- Support the development of standardized tools, in close coordination with regional efforts, which can be used assess and model habitat capacity across the Columbia River subbasins. (UCSRB)
- Support RSS of natural and hatchery-origin fish the Upper Columbia region.

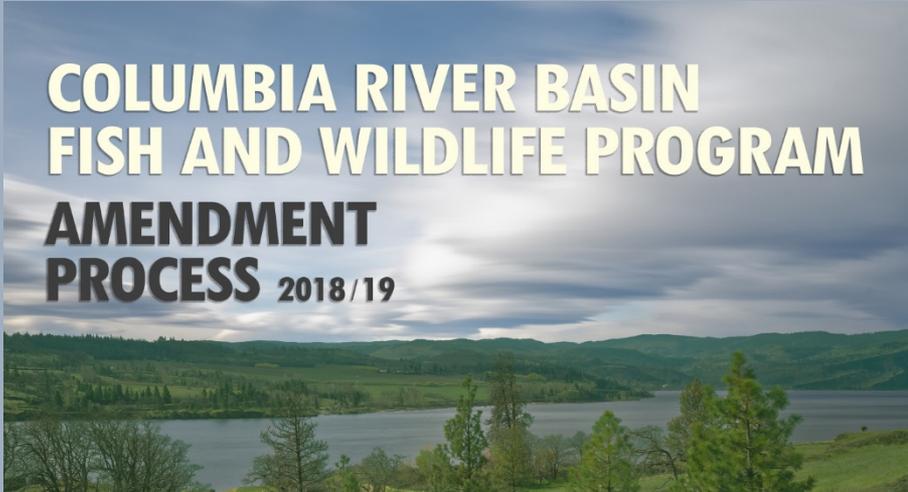
**Preliminary draft, please refer to full recommendations for complete review*

(UCSRB)

- Continue to recognize the importance of and advancement in Life-cycle models and their results in the 2019 FWP. (NOAA, USGS, TU)
- The FWP should incorporate a mechanism for associating VSP, habitat condition, and population status in relation to some neutral decision criteria that transcends local or state preferences. Incorporation of remote-sensing data into the research, monitoring, and evaluation of restoration activities would provide an important technological boost to the capacity to assess the response of key habitat-forming processes at the basin scale that is relevant to fish and the increasing size of restoration project sites. (USGS)
- Assess whether further actions in freshwater can improve Columbia River smolt survival (Kintama)

II. Excerpts of the recommendations

View the [document linked here](#) for the excerpts of the recommendations referring to the 2014 Program Part Four: Adaptive Management

A banner image showing a scenic view of a river valley with green hills and a cloudy sky. The text is overlaid on the top left of the image.

**COLUMBIA RIVER BASIN
FISH AND WILDLIFE PROGRAM
AMENDMENT
PROCESS 2018/19**

Fish and Wildlife Committee Work session

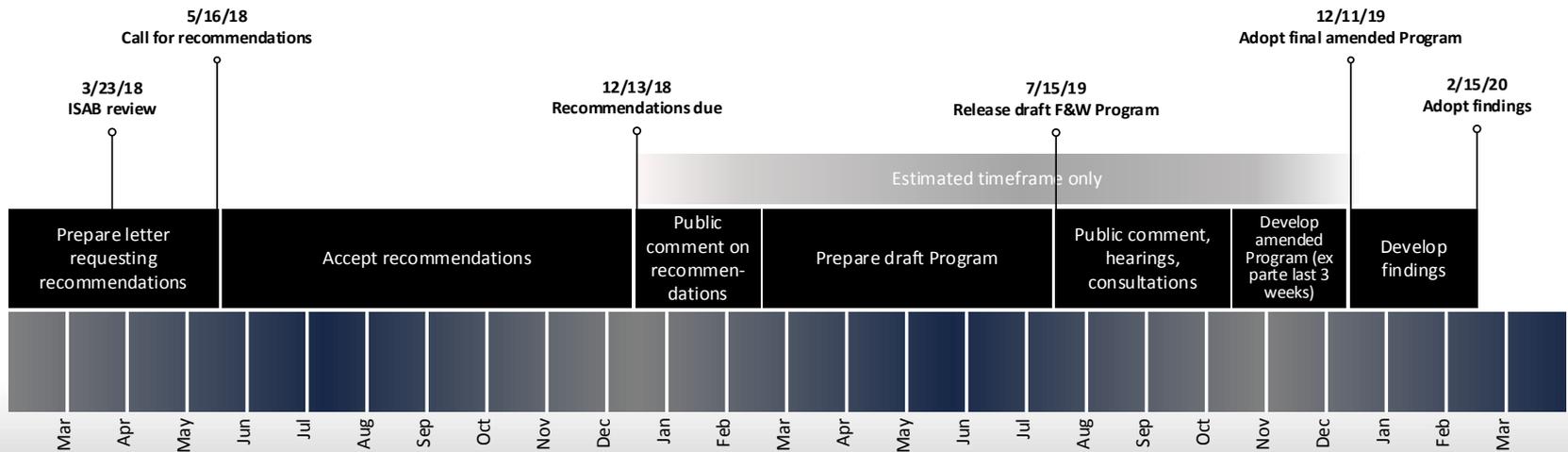
February 12, 2019

- Schedule, tasks
- 2014 Program orientation
- Recommendations
 - History, current, recommendations

COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM

AMENDMENT PROCESS 2018/19

DRAFT TIMELINE



Amendment tasks

What to expect in the coming months <i>(C) = All Council Members</i> <i>(c) = Fish and Wildlife Committee Members</i>	Fish and Wildlife Committee <i>*times and work items are approximate and subject to change if needed</i>	Full Council <i>*times and work items are approximate and subject to change if needed</i>
November	15 minutes at Committee meeting: <ul style="list-style-type: none"> Receive an overview from staff on amendment process schedule, work flow, upcoming tasks, and how our work links with the Program framework 	
December ✓ Recommendations are posted online Dec 13 <i>(C) Prep: read recommendations</i>	30 minutes at Committee meeting: <ul style="list-style-type: none"> Receive an update from staff on amendment process schedule, upcoming tasks, and staff tools 	30 minutes at Council meeting: <ul style="list-style-type: none"> Receive a briefing from staff on amendment approach and upcoming tasks
January <i>(C) Prep: read recommendations</i>	2 hours at Committee meeting: <ul style="list-style-type: none"> Receive an overview of recommendations from staff Begin to identify main issues in recommendations with staff 	45 minutes at Council meeting: <ul style="list-style-type: none"> Receive an overview of recommendations from staff Receive public comment at Council meeting
February ✓ Comments period closes February 8 <i>(C) Prep: read comments</i> <i>(c) Central and state staff collaborate to schedule additional committee meetings for this month</i>	2 hours at Committee meeting + 1 additional work day (Feb 21): <ul style="list-style-type: none"> Review and discuss recommendations in further detail 	75 minutes at Council meeting: <ul style="list-style-type: none"> Review recommendations with staff Receive a briefing from staff on the AERPS analysis Receive public comment at Council meeting
March <i>(C) Prep: work with other state member on draft amendment language</i> <i>(c) Central and state staff collaborate to schedule additional committee meetings for this month</i>	2 hours at Committee meeting + 3 additional work days (Mar 13, 14 & 26): <ul style="list-style-type: none"> Continue discussion with staff on recommendations and comments and refine main issues Begin to draft amendment language Receive an update from staff on outreach plan 	30 minutes at Council meeting: <ul style="list-style-type: none"> Receive an update from staff on amendment process schedule and outreach plan Receive public comment at Council meeting

DRAFT

Outline of 2014 Program

- Part One: Overview
- Part Two: Introduction
- Part Three: Vision, Scientific Foundation, Goals, Objectives, Strategies
- Part Four: Adaptive Management
- Part Five: Subbasin Plans
- Part Six: How the Program is Implemented
- Part Seven: Appendices

Part One: Overview

- I. The Columbia River Basin
- II. The Northwest Power and Conservation Council and the Columbia River Basin Fish and Wildlife Program

Outline of 2014 Program

- Part One: Overview
- **Part Two: Introduction**
- Part Three: Vision, Scientific Foundation, Goals, Objectives, Strategies
- Part Four: Adaptive Management
- Part Five: Subbasin Plans
- Part Six: How the Program is Implemented
- Part Seven: Appendices

Part Two: Introduction

- I. The program framework
 - A. Geographic structure
- II. Legal and social context of the program
- III. Assuring the Pacific Northwest an adequate, efficient, economic and reliable power supply
- IV. Program progress
 - A. Program successes
 - B. Program challenges

Outline of 2014 Program

- Part One: Overview
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- Part Five: Subbasin Plans
- Part Six: How the Program is Implemented
- Part Seven: Appendices

Program Strategies

- **Ecosystem function**
 - Habitat, strongholds, non-native and invasive species, predator management, protected areas, water quality, climate change, mainstem hydrosystem flow and passage operations, estuary, plume and nearshore ocean, wildlife mitigation
- **Fish propagation**
- **Other**
 - Wild fish, use of hatcheries for reintroduction, anadromous fish mitigation in block areas, resident fish mitigation, sturgeon, lamprey, eulachon, public engagement

Outline of 2014 Program

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- Part Five: Subbasin Plans
- Part Six: How the Program is Implemented
- Part Seven: Appendices

Part Four: Adaptive Management

- Monitoring
- Effectiveness
- Research
- Data management
- Reporting
- Evaluation

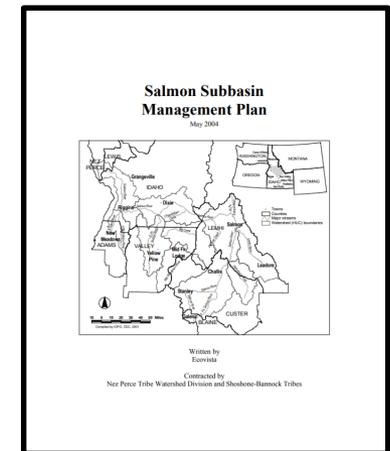
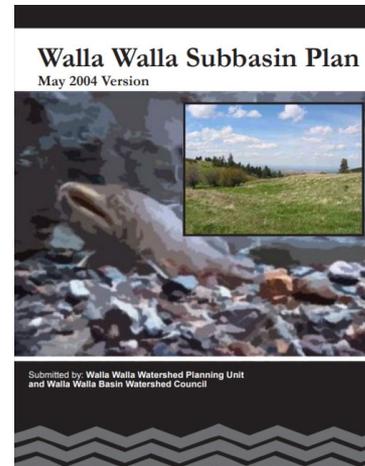
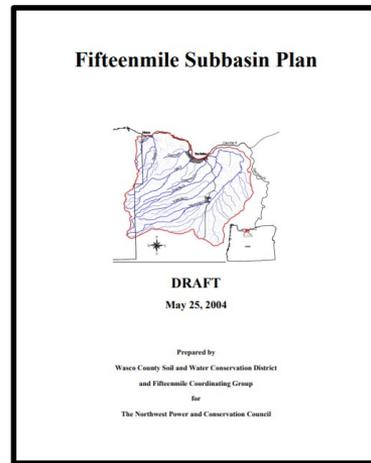
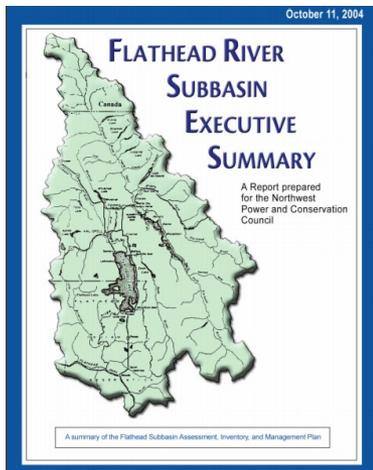


Outline of 2014 Program

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- **Part Five: Subbasin Plans**
- Part Six: How the Program is Implemented
- Part Seven: Appendices

Part Five: Subbasin Plans

- 59 subbasin management plans adopted between 2004-2011



Outline of 2014 Program

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- Part Four: Adaptive Management
- Part Five: Subbasin Plans
- **Part Six: How the Program is Implemented**
- Part Seven: Appendices

Part Six: Implementation

- I. Program measures
- II. Investment strategy
- III. Implementation procedures
 - A. Project review process
 - 1. Elements of project review
 - 2. Step review process
 - B. Program coordination
 - C. Independent scientific and economic review

Outline of 2014 Program

- Part One: Overview
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- Part Five: Subbasin Plans
- Part Six: How the Program is Implemented
- **Part Seven: Appendices**

Part Seven: Appendices

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7.4I Umatilla Production Facilities

The fish and wildlife agencies and tribes have constructed and are operating acclimation ponds on the Umatilla Reservation. Smolts would be transported to these ponds from hatchery facilities for imprinting before release into the upper Umatilla River. Returning adults would provide an improved fishery for the Umatilla tribes and other fishers.

Bonneville

7.4I.1 Fund the Confederated Tribes of the Umatilla Reservation of Oregon to operate and maintain the Bonifer and Minthorn juvenile release and adult collection and holding facilities on the reservation. Also fund the operation and maintenance of the Umatilla Hatchery to demonstrate the use of oxygen supplementation hatchery techniques, and to produce summer steelhead and chinook salmon smolts for release in the Umatilla River.

7.4I.2 Fund the construction and operation of planned juvenile release and adult collection and holding facilities for outplanting in the upper Umatilla River to enhance natural and hatchery production.

1994-1995 program amendments

Level of detail has varied

B. Fish Propagation Including Hatchery Programs Strategy

Use hatchery programs as tools to help meet the mitigation requirements of the Northwest Power Act.

General measures for comprehensive research, monitoring, assessment and reporting on hatchery effectiveness

- For Bonneville-funded hatchery programs, Bonneville shall locate and operate propagation actions to complement the present and future management activities of the region's agencies and appropriate Indian tribes, including complements to habitat improvements by supplementing native fish populations.

2014 program amendments

Recommended Artificial Propagation Strategies and Actions for the Umatilla Program
Strategy 1: Continue to supplement the recently reintroduced spring chinook population with a hatchery program utilizing Carson stock brood returning to the Umatilla River to provide for natural production and harvest.

2004 Program amendment – subbasin plans

Recommendations



Today

- Part One: Overview
- Part Two: Introduction
- Part Three: Vision, Scientific Foundation, Goals, Objectives, Strategies
- Part Four: Adaptive Management
- Part Five: Subbasin Plans
- Part Six: How the Program is Implemented

Part two: Introduction

I. The program framework

A. Geographic structure

II. Legal and social context of the program

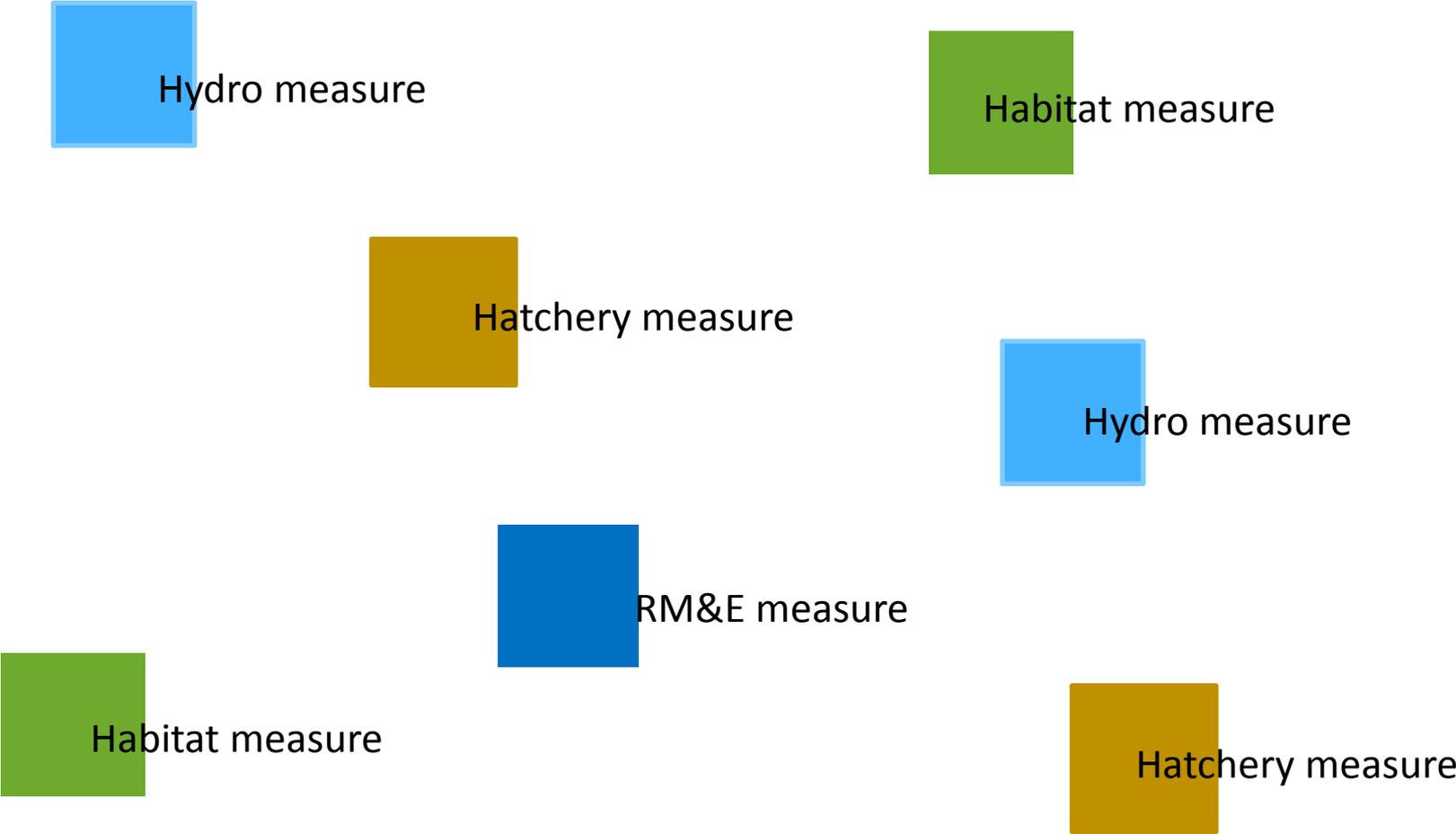
III. Assuring the Pacific Northwest an adequate, efficient, economic and reliable power supply

IV. Program progress

A. Program successes

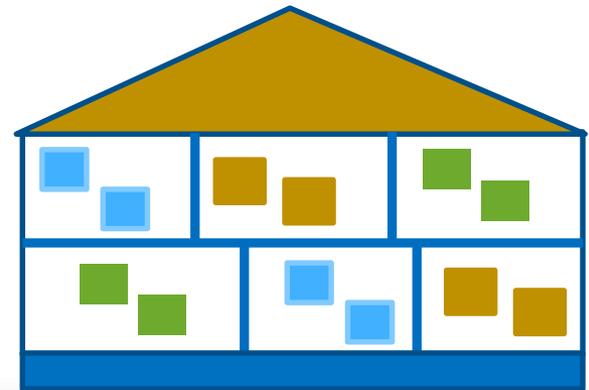
B. Program challenges

F&W Program before 2000



Program Framework

- A conceptual framework is analogous to the frame of a house
- Just as the foundation supports a house, a conceptual framework provides a rationale for assumptions/relationship among elements of the program



Origin of the Program Framework (2)

- **Scientific critique had two parts:**

(1) Structure: Need for an explicit conceptual foundation linking actions to immediate objectives/effects to broader and less immediate program goals

(2) Content: Many possible conceptual foundations; scientists recommended a habitat-based foundation rooted in conservation biology principles

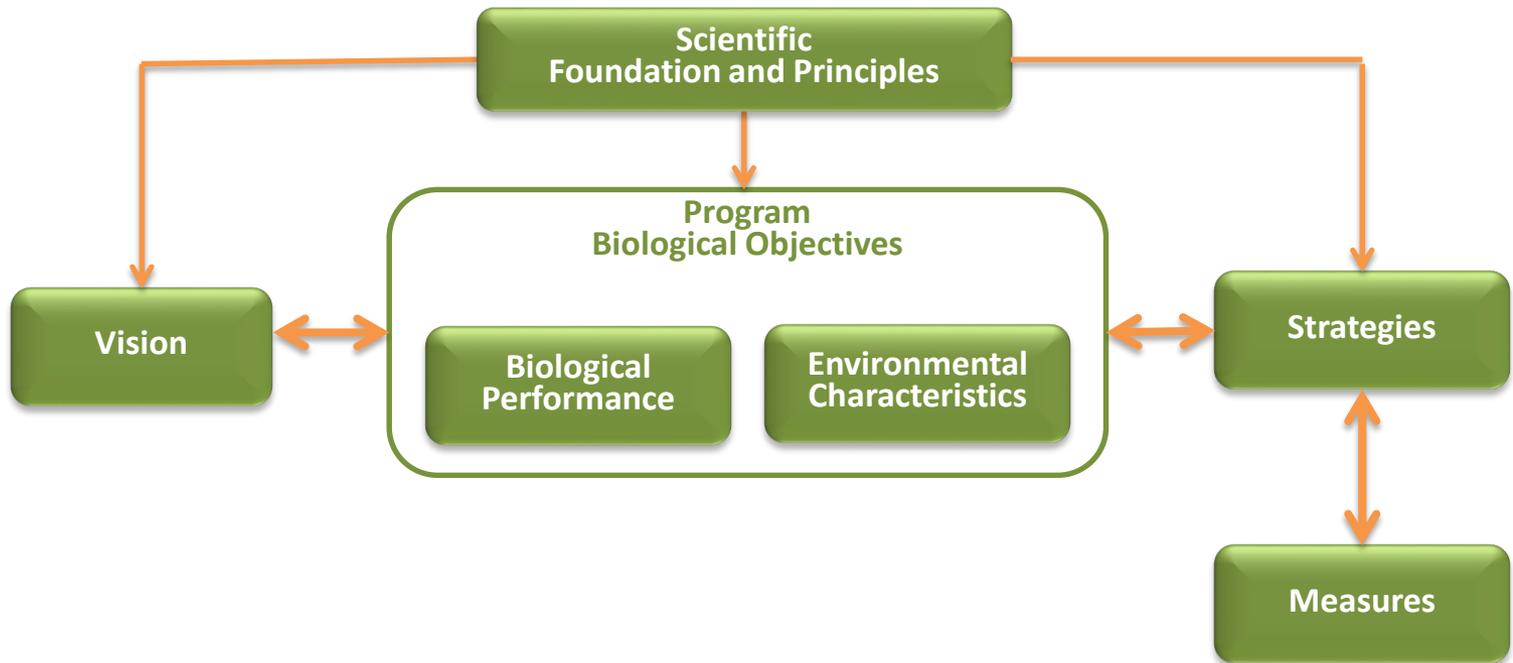
- **How critique was addressed:**

From 1996-99 the Council worked with regional partners to develop a new program framework (staff issue paper; Ecological Working Group, the “multi-species framework process”)

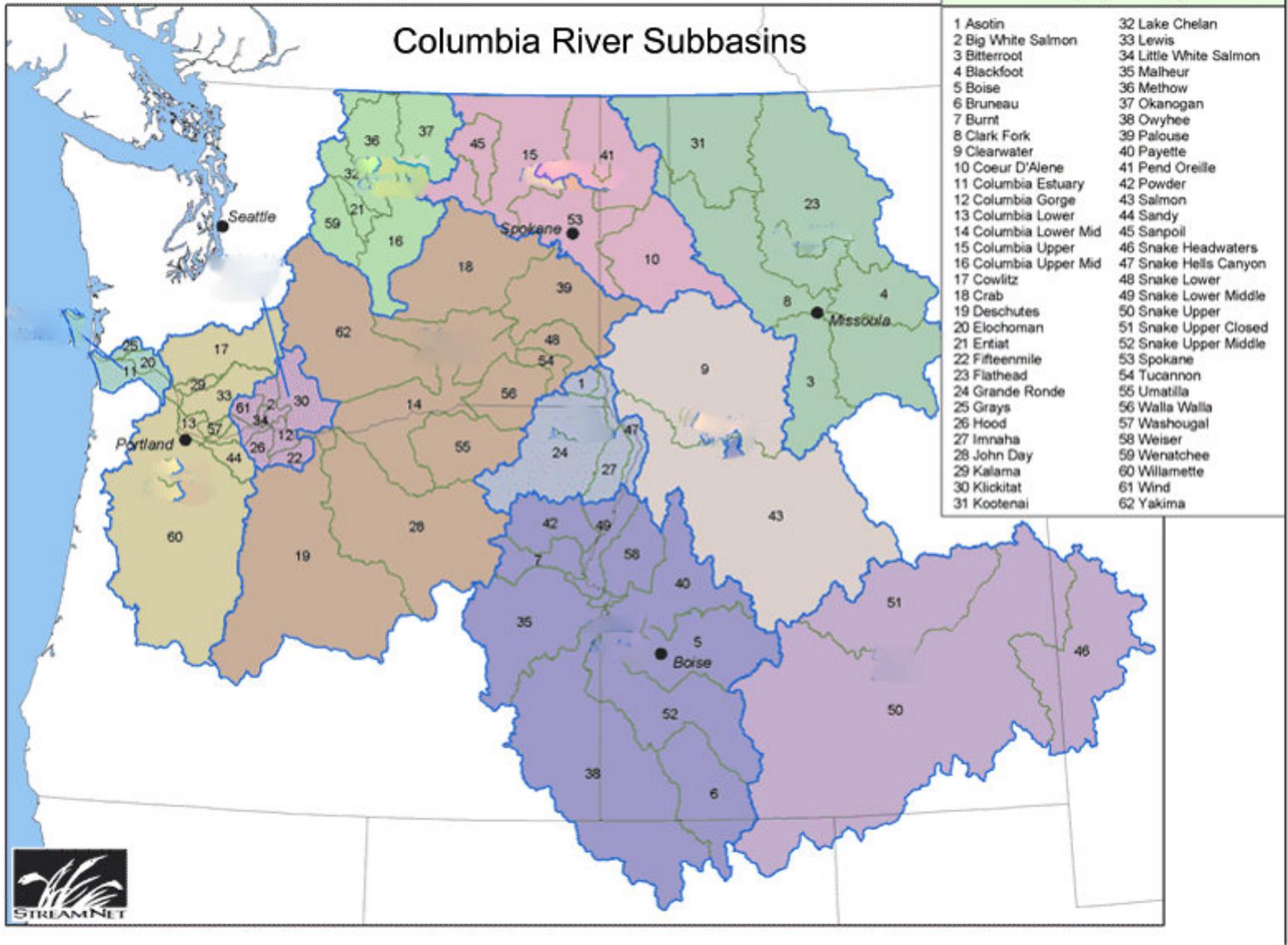
Used 2000 Fish and Wildlife Program to incorporate the new framework and begin a comprehensive revision of the F&W Program (completed in 2005)

Current Framework in the 2014 Program

Fish and Wildlife Program Framework



Columbia River Subbasins

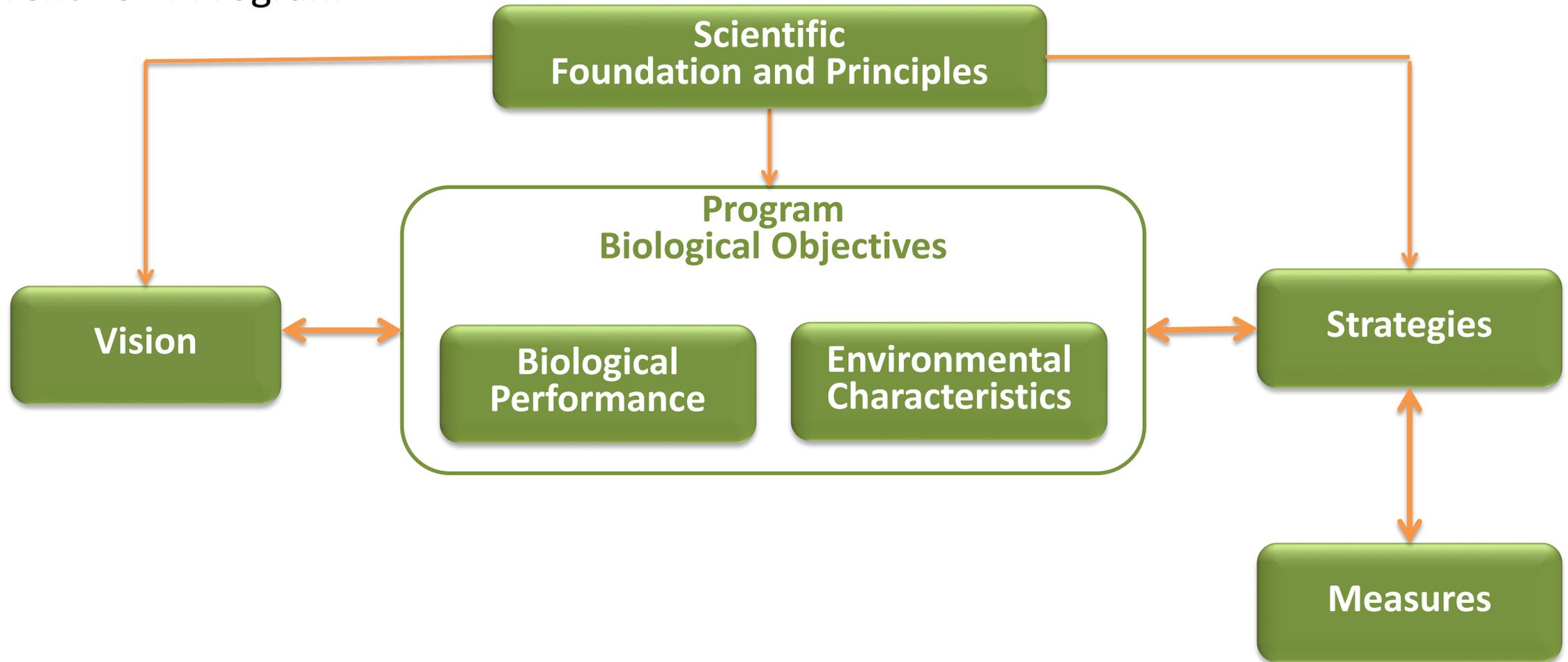


Questions?



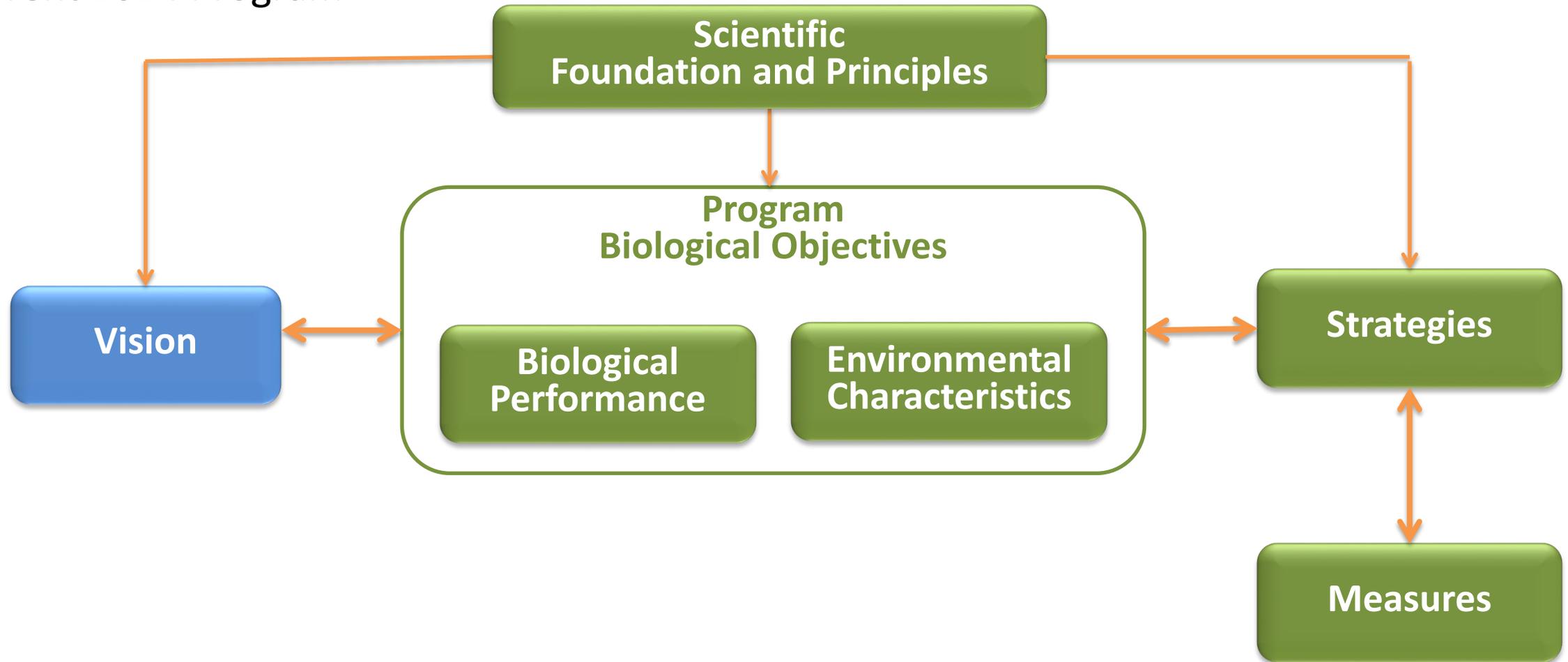
Fish and Wildlife Program Framework

Current 2014 Program



Fish and Wildlife Program Framework

Current 2014 Program



Vision

From Past to Present



First 4 Programs (1982, '84, '87, '92)

- No explicit vision statement.
- Sections describing 'Purpose' and 'Problems' targeted by Program measures



1994/95 Programs

- Vision-like Systemwide Goal: A HEALTHY COLUMBIA RIVER BASIN (abbreviated)
 - supports human settlement and long-term sustainability of native fish and wildlife species in native habitats where possible
 - where impacts have irrevocably changed the ecosystem, we must protect what remains



Last 3 Programs (2000, 2009, 2014)

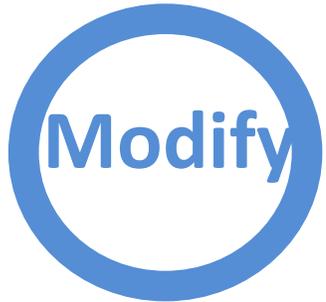
- Vision statement (abbreviated)
 - ecosystem sustains an abundant, productive, and diverse community of fish and wildlife
 - mitigating across the basin
 - providing benefits from fish and wildlife valued by the people of the region
 - abundant tribal trust, treaty right, and nontribal harvest opportunities; conditions for recovery

Vision

2018-2019 Recommendations (draft summary)



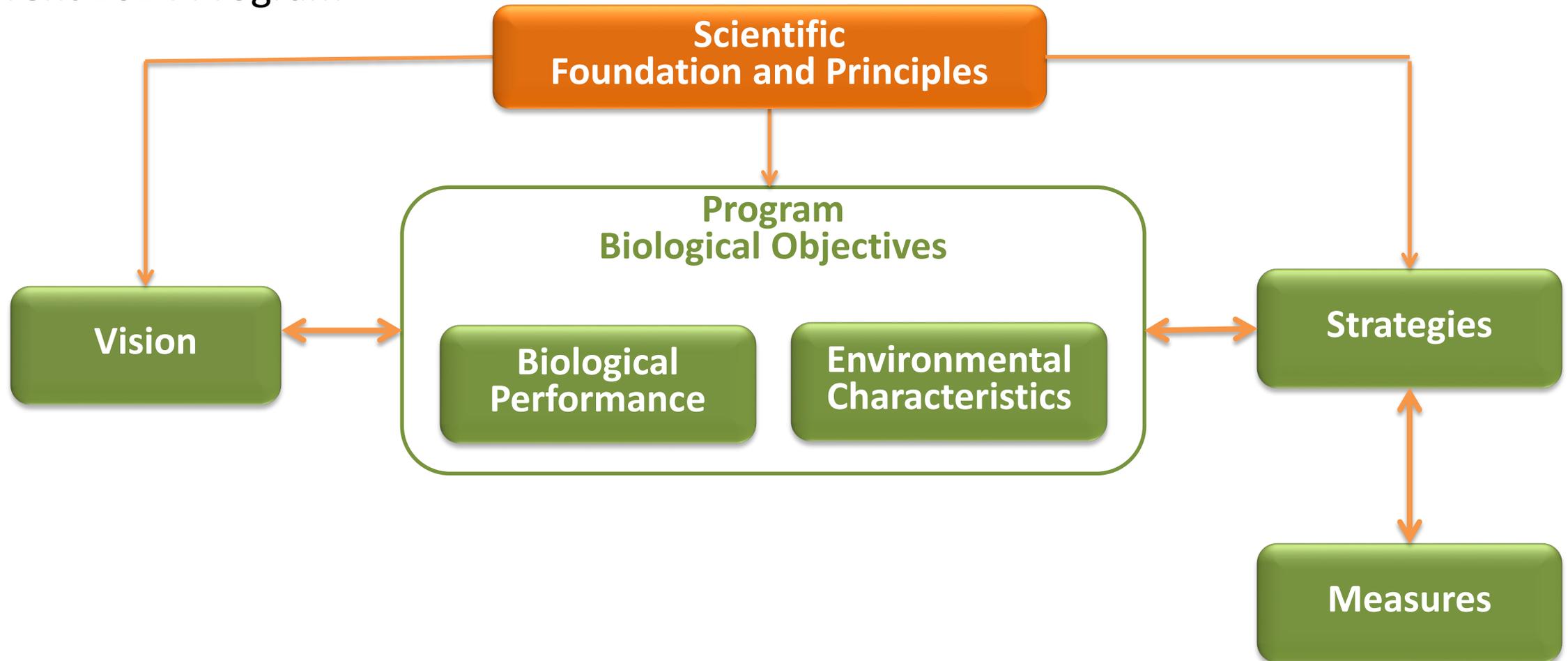
- Vision is well suited to accomplish addressing impacts of the hydropower across the basin in an equitable manner



- Narrow the vision statement to focus Program actions to the nexus with the hydroelectric system
- Concern that implementation doesn't reflect the 'across the basin' of the vision

Fish and Wildlife Program Framework

Current 2014 Program



Scientific Principles

From Past to Present



X

First 4 Programs (1982, '84, '87, '92, 94-95)

- No explicit scientific principle



1996-1997
ISG

Independent Science Group's (ISG) Return to the River

- Need a comprehensive foundation



Staff

1997, *Integrated Framework for Fish and Wildlife Management in the Columbia River Basin* (doc 97-2)

- Describes elements and structure of a scientifically based framework

1998 , Development of a regional framework for fish and wildlife restoration in the Columbia River Basin (doc 98-16)

- Proposes a scientific foundation and 8 scientific principles. (reviewed by ISAB 98-6)

Scientific Principles

From Past to Present



adopt

2000 & 2009 Program

- 8 scientific principles slightly reworded version of the 1988 document reviewed by ISAB (abbreviated)

Abundance, productivity and diversity of organisms are linked to their ecosystems	Ecosystems are dynamic, resilient & develop over time
Biological systems can be organized hierarchically	Ecological management is adaptive & experimental
Species play key roles in ecological conditions.	Biological diversity allows ecosystems to persist
Habitats develop/ maintained, by physical and biological processes	Ecosystem function, habitat structure and biological performance are affected by human actions.



adopt

2014 Program

- 6 scientific principles slightly reworded version of the ISAB version from ISAB 2013-1(abbreviated)

Healthy ecosystems ... diverse and broadly distributed species	Biological diversity allows adaptation to change	Ecosystem conditions affect all species including humans
Cultural and biological diversity is the key to surviving changes	Ecosystem management should be adaptive and experimental	Ecosystem management can only succeed by considering people

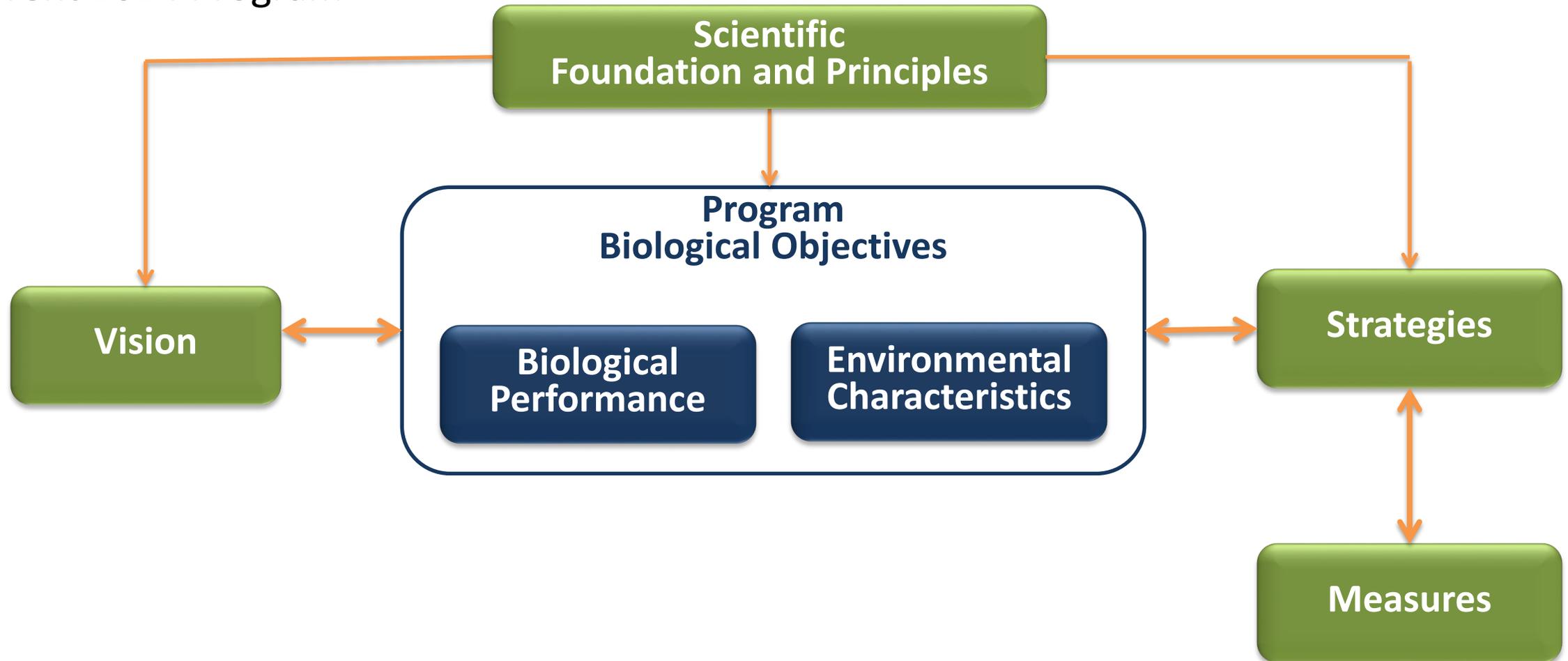
Scientific Principles

2018-2019 Recommendations (draft summary)

No recommendations submitted

Fish and Wildlife Program Framework

Current 2014 Program



Goals and Objectives

From Past to Present: 1980s

1980 Act

Terms not defined

- Objective: usage indicate focused on hydrosystem development and operation
- Biological objective: usage is less specific/technical

In
development

1982 & 1984 Programs

- Bonneville funded effort to assess salmon and steelhead losses to develop Program goal
- [Compilation of Information on Salmon and Steelhead Losses in Columbia River Basin](#) (10-16m)
- and [Numerical Estimates of Hydropower-Related Losses](#) (5-11m)

Adopted

1987 Program

- Doubling as an interim salmon & steelhead goal of increasing existing runs from 2.5 to 5 million
- 2.5m is based on 5yr-average number of adult salmon and steelhead pre-program (1977-1981)

1989 Program Wildlife Mitigation Rule (amendment)

- Interim goal, mitigation of approximately 35 percent of the lost habitat units over 10 years

Goals and Objectives

From Past to Present: 1990s

Adopted

1992 Program

- Refined doubling goal, accomplish with no appreciable risk to biodiversity of fish populations
- Rebuilding goals for Snake River spring, summer, fall chinook

1994/95 Program

- Program Goals, Rebuilding Targets, Performance Standards
- Adopted some for each category & called for further development to complete:

System wide goal	
Mainstem (e.g., biological/operational objectives, and performance standards)	Resident fish (e.g. Call for losses/gains assessments)
	Wildlife (e.g. determine construction/operation losses)
Salmon and steelhead habitat (e.g., limit fine sediments to 20%)	Salmon and steelhead fish (e.g., doubling goal; SR chinook rebuilding targets, diversity perf. stds)
Salmon harvest (e.g., escapement)	

Goals and Objectives

From Past to Present: Major Drivers of Change

1994 NRIC v.
Council

Court guidance

- Goals and targets without timelines are inadequate when more specific objectives are recommended, especially from agencies and tribes
- Give deference to agencies and tribes in identification of biological objectives

1996-1997
ISG

Independent Science Group's (ISG) Return to the River

- Clarify goals & expectations
- Link goals to actions (currently too general, no guidance or rationale for measures)
- Develop indices and provisions to evaluate success and goals

Staff

1997, *Integrated Framework for Fish and Wildlife Management in the Columbia River Basin* (doc 97-2)

- Describes elements and structure of a scientifically based framework that intends to embrace and unite goals and mandates of past Programs and regional goals

Goals and Objectives

From Past to Present: 2000s

Adopted

2000 Program

- New program framework
- Program objectives (e.g., 5 million salmon and steelhead)
- Intent to establish biological objectives at Province & Subbasin scale

Adopted

2003 Mainstem Program Amendment

- Mainstem objectives (2-6% SAR), and performance standards

Adopted

2005 Subbasin Plans (and 2010,2011)

Adopted

2009 Program Amendment

- Biological Objectives slightly revised from 2000 program
- *Note: no province level objectives adopted*

2009 Program	
2000 Program	Vision
	Scientific Foundation
	Scientific Principles
	<u>Biological Objectives</u> Overarching
2003 Mainstem	Population Performance Objectives
	Environmental Characteristics Objectives
	Strategies & Measures
Subbasin Plans	Overarching Objectives
	Population Performance Objectives
	Environmental Characteristics Objectives
	Strategies & Measures
	Objectives for habitat, species, harvest, hatchery etc

Goals and Objectives

From Past to Present: Provincial Objectives



Staff

2005-2007 Provincial Objectives

- 2005 developed a 2-phase plan for developing objectives per 2002 work ([document](#))
 - 1) a period to organize and integrate recent information on populations and habitat conditions
 - 2) a policy process to develop the objectives and amend them into the program
- 2006 sought regional input on 2005 phase approach for adding Provincial Objectives ([Document 2006-15](#)). This approach stalled in 2006 due to other ongoing processes (NOAA hatcheries analysis & FCRPS BiOP)
- 2007 led regional meeting to discuss Program objectives resulting on agreement about future state of biological objectives & criteria objectives such as measurable

Goals and Objectives

From Past to Present: 2010s

Staff & ISAB

2010-2013

- Staff proposes options for refining Program Biological Objectives
- ISAB suggests Biological objectives be reexamined for consistency with the Scientific Principle

Adopted

2014 Program Amendment

- Described hierarchy
- Merged program and mainstem objectives into Appendix D;
- Some refinement to the 2009 goals and objectives text
- Adopted a multistep goals and objectives refinement process
- *Note: no province level objectives adopted*



Goals and Objectives

2018-2019 Recommendations (draft summary)



Goals and Objectives

2018-2019 Recommendations (draft summary)

Process

- Update 2014 refinement process to reflect progress
- Apply 2014 refinement process to hatchery objectives
- Use recommendations and other information to propose objectives in draft program
- Convene technically qualified individuals (entities suggested) to inform goals and objectives

Assess

- Consider availability of data for regular reporting of objectives
- Evaluate feasibility of attaining 2-6% Smolt:Adult target
- Assess gaps between status and objectives
- Use 5-year rolling estimate for reporting on salmon and steelhead
- Doubling goal of 5 million assess
 - why goal is not yet achieved
 - if need to revise given dam-losses may be less than thought, see ISAB 2015-1

Priority

- Prioritize goals with a direct hydro linkage

Goals and Objectives

2018-2019 Recommendations (draft summary)

Maintain

- Maintain basinwide objectives
- Focus on achieving existing goals and objectives
- *Note: objectives serve to assess program progress and not serve to limit mitigation measures*

Scale

- Develop objectives at multiple scales: basin, watershed, lifecycle
- Short-term and long-term goals and objectives
- Aggregate objectives to derive over-arching goals

Improve

- Connect goals, objectives, strategy/measure, indicators
- Goals should reflect that Program is broader than ESA BiOPs
- Clarify measure of success
- Comprehensive set of indicators used in reporting to reflect scope of program are needed
- Condense existing goals to remove redundancies
- Consider climate change impacts in objectives
- Specific improvements for Appendix D goals 3 to 18 provided
- 2-6% Smolt:Adult: specify this is a 5-year average
- Doubling goal of 5 million salmon and steelhead: split into hatchery fish & natural origin fish

Goals and Objectives

2018-2019 Recommendations (draft summary)

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Add New

- Geographic objectives to ensure mitigation work distributed across basin
- Develop, identify and expand focal species (trout, P. lamprey, kokanee, chub, eulachon) objectives considering impacts of climate change, non-native, and invasive species
- Establish fish population quantitative baselines to use for progress assessment
- Ecosystem/Habitat
 - develop quantitative objectives for ecosystem function, habitat (2014 refining task)
 - develop objectives for habitat actions, effectiveness
- Wildlife
 - operational losses for Libby (35,571 acres) and Hungry Horse (26,321 acres) dams
- Hydrosystem
 - develop quantitative objectives for hydrosystem
 - such as lower powerhouse encounter rates, minimum fish travel times, reach survival
 - total dissolved gas standard of 110% for Albeni Falls Dam
 - as baseline objectives use Mid Columbia HCPs performance standards, mainstem spill and bypass provisions (was recognized in 2009 Program)
- Harvest
 - set objectives with stakeholder input

Goals and Objectives

2018-2019 Recommendations (draft summary)

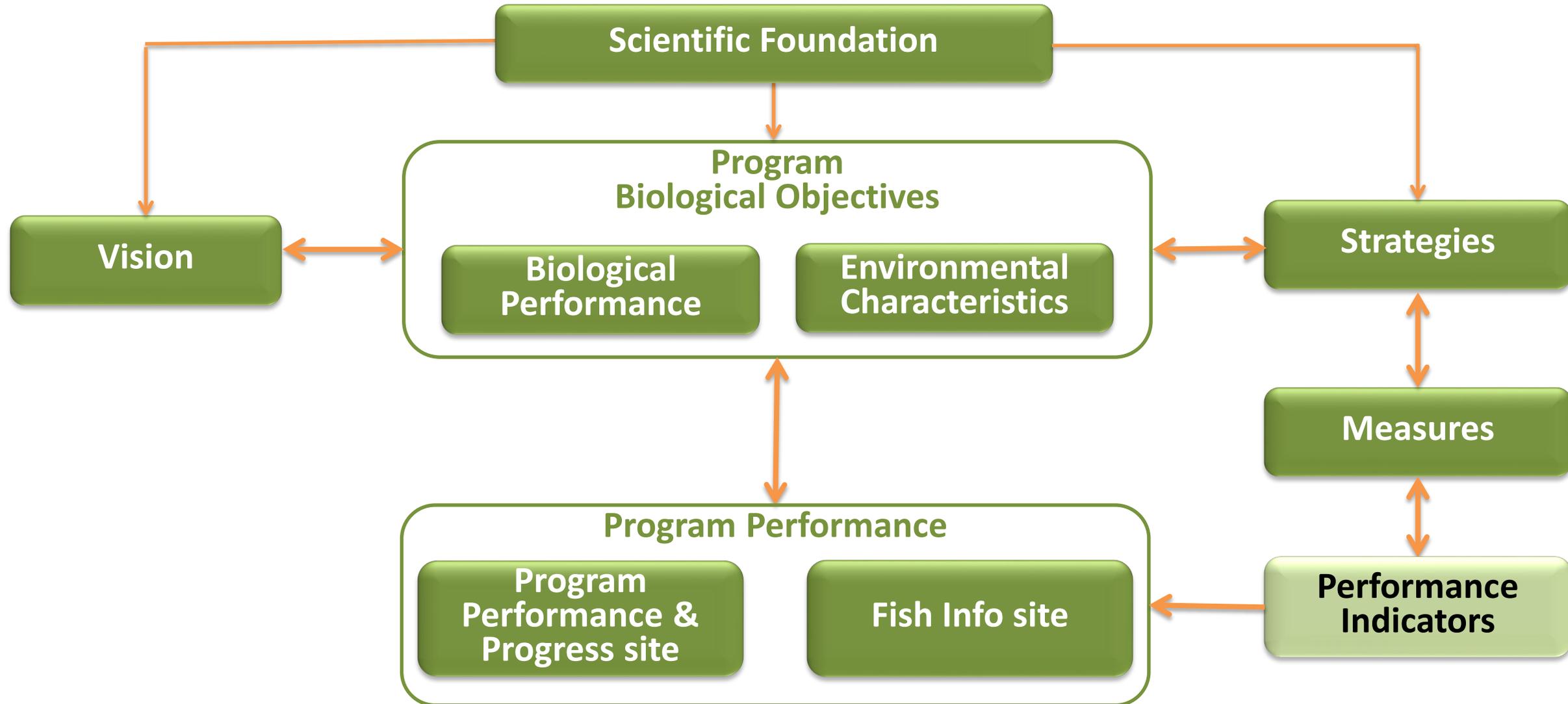
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Add New

- Hatchery
 - objectives by hatchery and species, such as fish spawned, releases, returning hatchery adults, recruits per spawner
 - salmon and steelhead production
 - be consistent with United States v. Oregon production goals
- Lamprey
 - develop objectives such as abundance levels per location where feasible to count
- Salmon and Steelhead
 - viability quantitative goals such as diversity
 - escapement quantitative goals / dam-based escapement for upriver stocks
 - goals from Hells Canyon Complex Fisheries Management Plan
 - use/adopt on provisional goals from Columbia Basin Task Force Partnership
 - conduct outreach on provisional goals from Columbia Basin Task Force Partnership

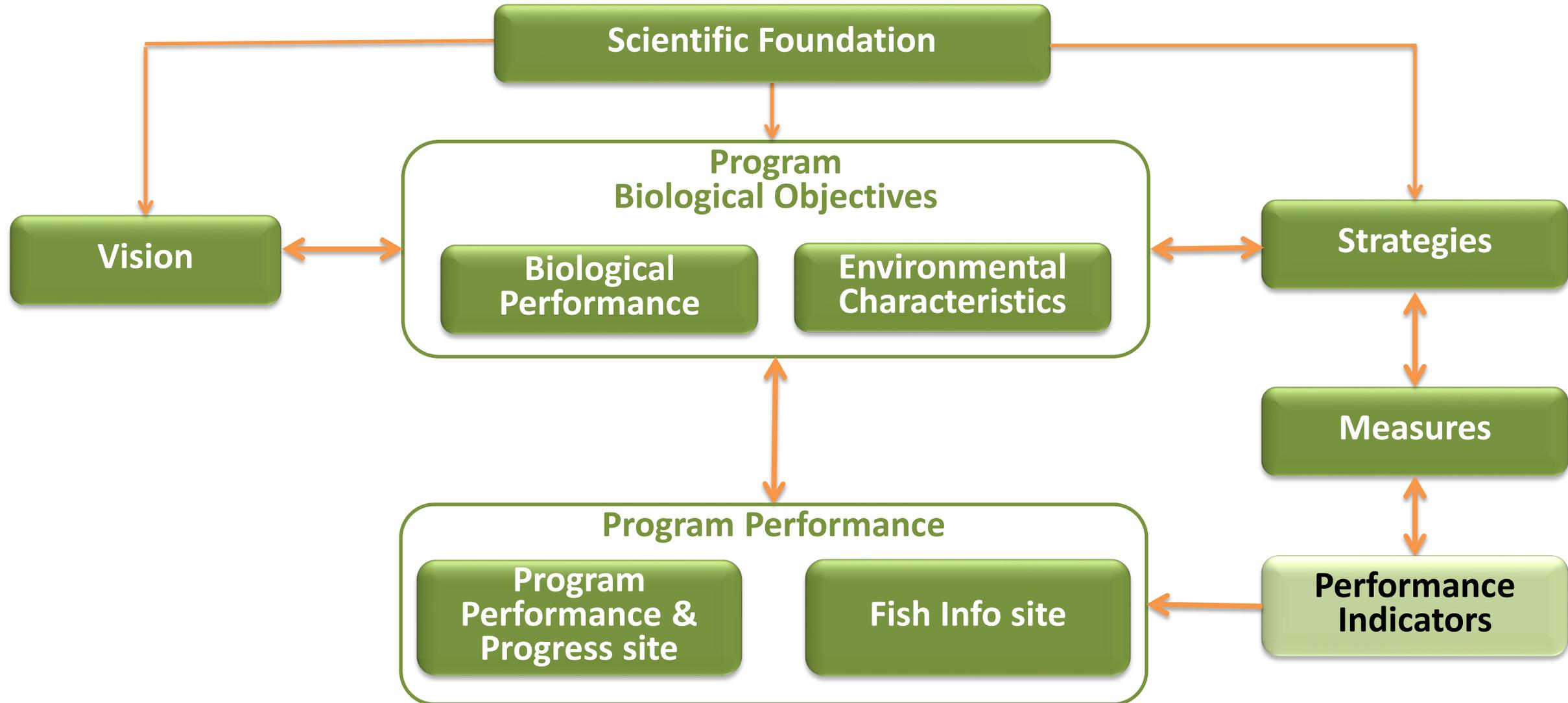
Fish and Wildlife Program Framework

Schematic of Recommendations: Adaptive Management (objectives)



Fish and Wildlife Program Framework

Schematic of Recommendations: Adaptive Management (objectives)



Summary of Recommendations on Adaptive Management: Monitoring and Evaluation

Fish and Wildlife Committee

February 12, 2019

Portland, Oregon

Background

2009 Program:

Basinwide Strategy 9: Monitoring,
Evaluation, Research and Reporting

- M&E guidelines and standards
- Research priorities, access to results, science-policy exchanges
- Data management, reporting metrics and protocols, data dissemination

Background (some examples)

Regional M&E Framework Development:

- Anadromous Salmonid Monitoring Strategy (ASMS)
- Monitoring, Evaluation, Research, Reporting and Data Access Framework (MERR)

M&E Implementation:

- ISEMP
- CHaMP

2014 Program

Part Four: Adaptive Management General for the Program.

Measures for:

- Effectiveness
- Research
- Data Management
- Reporting
- Evaluation

Recommendations: Adaptive Management (AM)

- Restructure the AM section and the individual strategies to link objectives, indicators, strategies, measures, monitoring and reporting for the Program.
- Develop guidance for AM at the project level – address quantitative project objectives, develop coordinated monitoring and evaluation, and incorporate lessons-learned into decision-making cycles.

Recommendations: Monitoring and Evaluation (M&E)

- Continue collaborative efforts to improve coordination of research, monitoring and evaluation.
- Provide an explicit monitoring and evaluation framework and well-coordinated M&E strategies.
- Provide leadership and resources (funding) for M&E, including status and trend monitoring.

Recommendations: Data Management and Reporting

- Adopt the Coordinated Assessments Data Exchange as the database of record for the Program and fund full implementation.
- Identify the role of various programmatic projects that support AM (Fish Passage Center, StreamNet, StreamNet library, etc.).
- Fund the co-managers to establish and maintain a reliable, sustainable, and transparent data exchange.

Recommendations: Reporting

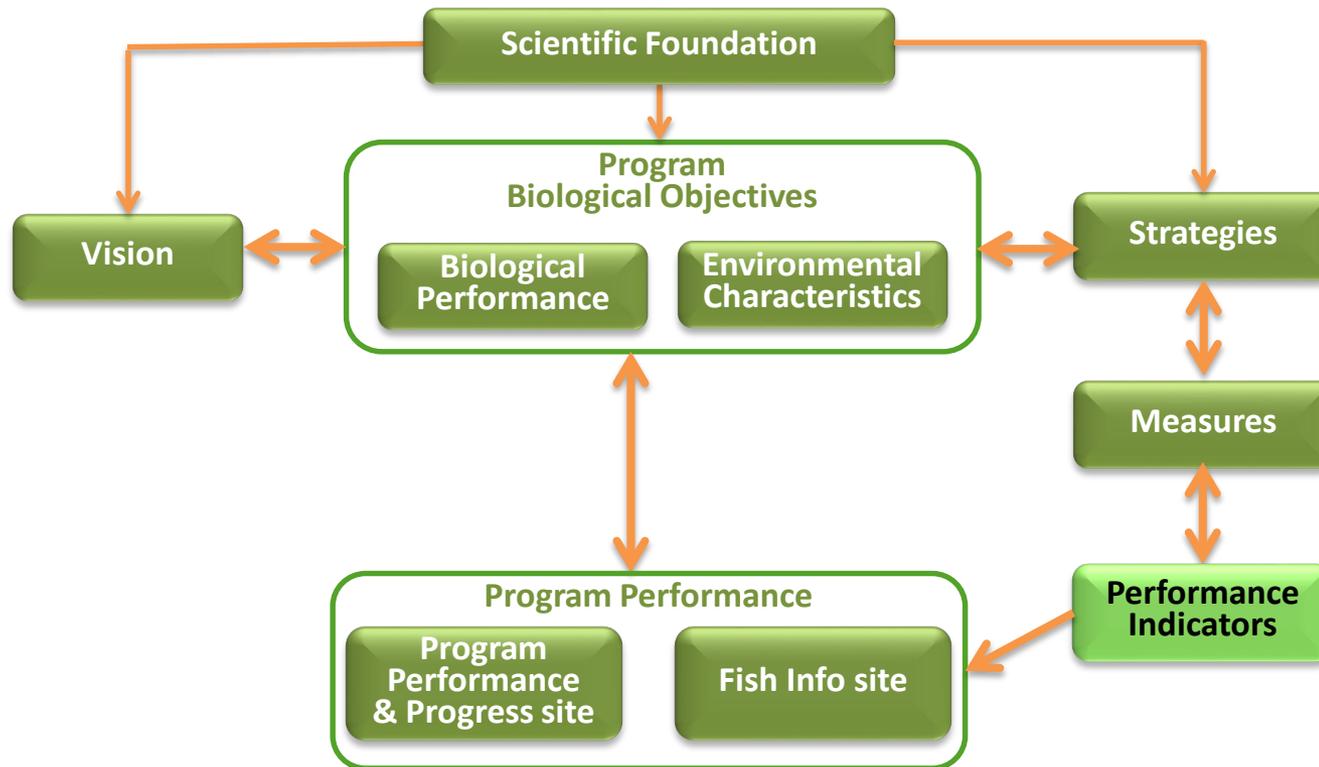
- Continue to develop a concise template for annual reports.
- Separate research from monitoring reports.
- Ensure that summarized data associated with broad categories of information are identified and accessible from a single, centralized website.

Recommendations: Research

- Delineate research from ongoing monitoring. Provide direction for projects that move from research to implementation or incorporate small research elements.
- Ensure research is based on best available science; has appropriate study designs; has clearly defined scope and duration...
- Continue and increase research in a variety of areas.

Schematic of Recommendations: Adaptive Management (objectives)

Fish and Wildlife Program Framework



Schematic of Recommendations: Adaptive Management (monitoring, data management, reporting)

