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August 3, 2006

MEMORANDUM

TO: Council Members

FROM: John Shurts and Lynn Palensky

SUBJECT: Release of Issue Paper for Provincial Objectives

Council Action: Release of the Issue Paper for public comment through October.

At the July meeting, staff presented the Fish and Wildlife Committee with a draft issue paper on developing biological objectives for ecological provinces under the program. The plan is to release the paper for public comment at this meeting, with Council approval.

The primary objectives for the issue paper are to:

1. Describe the current state of affairs influencing the timing and approach for developing the objectives
2. Review the need and use for provincial objectives; and to
3. Ask for public comment on the planned course, schedule and general approach

The committee members raised a few questions and were overall supportive in proceeding with release of the issue paper. For several reasons, we think we are in a much better position now than we were in May 2005 when the Council first saw the full proposal. Since the subbasin plans were completed in 2004 and 2005, the underlying assessment data has been consistently picked up and used in recovery plans and for the hatchery review data. The primary tool used to complete the assessments -- EDT -- has been mined to populate the All-H-Analyzer tool for the hatchery review process. The Council has supported the development and application of both tools that have played a key role in where NOAA is now with the Waldo-facilitated hatchery review process and recovery planning. We feel like this places the Council in a much better position in terms of coordination with other processes. Our proposed process should conclude with much more consistent and accurate data by which to derive provincial objectives. Additionally, this work is being done using the refined versions of EDT and AHA tools should be of great value to the Council process when we next update the subbasin plans.

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**Staff Issue Paper:
Columbia River Basin Fish and Wildlife Program
Biological Objectives for the Ecological Provinces**

To Interested Parties:

The Council invites your review and comment on the proposal explained in this paper for how to add biological objectives of a certain type to the Council's *Columbia River Basin Fish and Wildlife Program*, objectives that will express in quantitative terms the nature of the changes the program seeks to achieve in key fish and wildlife populations and their habitats in the different ecological provinces of the basin. Objectives of this type would add significantly to the Council's ability to guide program expenditures in the most efficient direction and evaluate the success of the program's activities over the long-term.

In May 2005 the Council staff presented a plan for getting to and then through a process to amend the fish and wildlife program to add quantitative biological objectives of this type. The plan has two parts: a period of technical preparation to organize and integrate all of the information on populations and habitat conditions generated in the last few years, and then a policy process to develop biological objectives on top of that technical platform.

The Council staff still believes in the concepts and steps in the May 2005 plan, for all the reasons stated in the plan. What has changed -- substantially -- is the schedule, as the technical preparation has been delayed for reasons explained below. The Council's purpose with this paper is to remind people of the premises under which the effort began, explain why the staff believes these premises remain valid, and also explain why following this approach carefully will put this program amendment initiative on a much longer time-line than originally intended. **The Council invites your comments as to whether it should follow the course described in the paper or should chart a different course and schedule to develop biological objectives for the fish and wildlife program.**

The next two sections summarize briefly two main points: (1) why the technical integration work has been delayed, as well as the recent events that indicate it will occur; and (2) how the staff proposes to accommodate these developments into the approach described in the plan for developing biological objectives, with the resulting schedule. That is followed by a brief section identifying the key questions the Council seeks comment on and another providing directions for how to comment. Attached after that is a slightly revised version of the overarching plan described above, revised to bring it up to date.

Present context

To reiterate, the May 2005 plan described an approach and schedule intended to result ultimately in an amendment process under Section 4(h) of the Northwest Power Act to add biological objectives to the program for the ecological provinces. All of this is described in the plan attached. The schedule the Council hoped to be on changed substantially, for this reason:

A central premise of the plan was that “the effort to add biological objectives of this type and scale to the program will be successful only if we engage in some technical preparation first.” The Council staff continues to believe that a technical platform is necessary from which to launch an amendment process of this type. To that end the Council invested in 2005 in the development and use of the All-H Analyzer (AHA) integration and aggregation tool that moved the effort down the path. Then early in 2006 the Council approved funding for contract assistance to try to complete that work. Even this represented a slip in the time projected in the May 2005 plan, although not significant.

A number of things intervened that put the effort on hold, two in particular. One was the initiation of what is called the NOAA Hatchery Review and the uncertainty as to how the same AHA integration and analysis work would unfold as part of that effort. The second is the way the FCRPS Biological Opinion remand and associated recovery planning work has sapped the region’s time and energy, when the Council will need the cooperation and involvement of many of the same people to complete this effort

The technical integration landscape is clearing again. The NOAA Hatchery Review will indeed include what looks to be a comprehensive AHA analysis of the stocks and production programs in the anadromous basins, with help from the U.S. Fish and Wildlife Service, the Council, the state and tribal fish and wildlife agencies and others. The schedule will take two years (to April 2008), and it will not get to the basins above Bonneville Dam (of most interest to our program) until mid-2007. The US Fish and Wildlife Service will also be pursuing an AHA analysis of their production programs over that time frame, ultimately coordinated in some way with the NOAA review and recommendations. The BiOp remand and recovery planning will not complete until well into 2007, if then. But one result of that latter work is likely to be a useful set of population status analyses and potential recovery criteria or targets based in the work of the Technical Recovery Teams.

Premises, steps and proposed schedule

Given this context, and given the fact that the staff believes that the underlying premises and steps for developing these biological objectives remain valid, the end result is the following proposed approach and schedule. **This staff proposal for moving forward on this topic is what the Council particularly invites interested parties to consider and comment on.**

- 1) The concept of adding biological objectives to the program at the ecological province scale remains valid, for the reasons spelled out in the May 2005 memorandum (updated in the following. This does not mean that the Council is formally committing to the amendment process; that would not happen until the Council subsequently decides to

request recommendations for program amendments under Section 4(h) of the Power Act. It does mean that the concept remains sufficiently valid to continue working toward preparing the Council to make that decision.

- 2) Serious technical preparation remains an essential prerequisite from which to convene the policy/amendment process of setting these objectives. By technical work we continue to mean gathering, organizing, integrating, aggregating and analyzing the disparate information the region has recently generated (from subbasin plans, the APRE, the Technical Recovery Team work, etc.) on population status, habitat and population conditions, and current and planned program objectives and actions across the life cycle of anadromous fish and key species of resident fish.
- 3) For anadromous fish, the best available sources of this analytical or synthetic information should be the completion of the AHA analyses and the TRT population status information and associated recovery criteria or targets. Neither of these sources will be developed to the level desired for well more than a year. *The key Council staff recommendation is that better for the proposed amendment process to wait until these products are ready than to proceed without them. We particularly invite your comments as to whether you agree or disagree with this point.*
- 4) If so, this would mean not initiating the policy-setting program amendment process nature until well into 2007 at the earliest and most likely into 2008. This would coincide with the time period under the Power Act for the Council to revisit the fish and wildlife program in any event.
- 5) The Council and its partners have work they can be doing in the interim in preparation:
 - Assist the NOAA Hatchery Review over the next year to work further on the AHA data verification and integration effort for the programs and stocks above Bonneville, to prepare the way for when the NOAA review process comes that way after April 2007. The Council staff will be meeting further with the people leading that effort to better understand their plans and where the Council's assistance might be most efficient, and shape for the Council a proposal at a future meeting. Assistance might come in the form of staff involvement, or contract assistance, or both. The Council's participation may be particularly important or even necessary to make sure the analysis includes key stocks not affected by production programs.
 - The Council staff proposes to work with people involved in the resident fish and wildlife parts of the program to sharpen what types of biological objectives make sense for those areas and what technical preparation would be useful, if any. There is plenty of information from the subbasin plans, from sturgeon and bull trout recovery plans, etc., to draw from. It is unclear at this time what is the right way to do that.
 - The Council would engage in ongoing discussions with other entities about the concept of adding biological objectives to the program at the scale proposed, especially seeking guidance as to which of the categories of possible objectives would be of most benefit to the program and best interrelate to what others are doing. Also

the Council would continue to work with its regional partners on the associated monitoring and evaluation and data management frameworks.

Key Questions for Comment

1. Should the Council continue working toward the goal of adopting quantitative biological objectives as described here into the Fish and Wildlife Program through a program amendment process under Section 4(h) of the Northwest Power Act?
2. Is the premise correct that the effort to add biological objectives of this type and scale to the program is likely to be successful only if the Council and its regional partners first complete the technical preparation described here?
3. More precisely, would the proposed amendment process to add biological objectives to the program benefit from waiting until the products are available from the NOAA Hatchery Review and the NOAA Technical Recovery Team and recovery planning efforts, even if that means a delay until 2008 in the amendment process?
4. Is there a different approach and schedule that makes more sense for the Council to pursue to add objectives of this type to the program?
5. On what basis could the Council pursue objectives if it proceeded without completing the technical work described here?

How to Provide Comment

Please submit written comments by ____, 2006, to Doug Marker, Fish and Wildlife Director, Northwest Power and Conservation Council, 851 SW Sixth Avenue, Suite 1100, Portland, Oregon, 97204, or by e-mail at comments@nwcouncil.org. The Council will make an opportunity available to present oral comments at the Council's meeting in ____ on ____, 2006. The Council staff also plans to schedule a number of staff consultations on this topic with interested parties.

Attachment

Plan for an amendment process to add biological objectives to the Council's fish and wildlife program at the ecological province level *(updated version of May 2005 plan presented by Council staff to the Council)*

Part 1: The What

Adopting quantitative biological objectives into the program for the ecological provinces would be the last contemplated step in the comprehensive revision of the Fish and Wildlife Program. The Council began that wholesale revision in the 2000 program amendments with a complete reorganization of the program framework. In 2003 the Council adopted its mainstem amendments, and in 2005 the Council completed adoption of subbasin plans into the program. These were monumental steps in revising the framework of the program, but they were not the intended finale.

As contemplated in the 2000 Program, the Council and the region need to stand back and assess what is the meaning of all this mass of plans and information that we have caused to be developed and adopted into the program. Combined with other activities and conditions in the basin that affect fish and wildlife, these need to be added or rolled up in terms of what the Council, the program and the region are really trying to accomplish. Adopting into the program quantitative biological objectives for population performance and associated habitat improvements should function to:

- provide a framework and the benchmarks for measuring and evaluating the performance of the program;
- provide insights and context to resource allocation decisions and broad policy decisions (such as on artificial production policy); and
- provide guidance over time for necessary revisions to the other parts of the program, at the basin and subbasin levels.

The central purpose -- the main reason why the Council would do this -- is this: *To provide quantitative objectives at the most useful scale for measuring the performance of the fish and wildlife program in improving conditions for fish and wildlife adversely affected by the Columbia hydrosystem, with all this implies for improving decisions over the long-term based on the performance information.* Objectives are especially needed to fit into the population- and program-scale efforts at monitoring and evaluation that the Council is developing in its draft monitoring and evaluation guidance.

The Council's program has many virtues, especially at the broadest scale (the program framework and overarching principles) and the lowest (sound subbasin plans and individual projects). Yet the program lacks the right kind of biological objectives at the right geographic scale in-between, and a cost-effective method to evaluate progress toward those objectives, to be

able to say with confidence (other than anecdotal) that a collective body of very good work is adding up to the results the Council desires. The building blocks to do this work are now in place; the subbasin planning process, the APRE and other efforts have left us with an amount and organization of technical information that is without precedent. Another reason the time is ripe is that the Council would not be doing this in isolation, but instead at the collaborative cutting edge of what appears to be a trend in large-scale biological restoration programs. The Council will be able to tap into and feed off, collaborate with, and provide leadership to parallel efforts across the basin, from the PNAMP protocols, to NMFS' efforts to define population recovery targets, to the Washington Salmon Recovery Office's use of a small set of indicators of watershed health (the "dials" approach), and more.

The What (cont'd): types of biological objectives

The following display and the notes that follow will guide the discussion as to what it is the staff proposes as possible categories of biological objectives for inclusion into the program for anadromous fish and, at least, resident salmonids in the ecological provinces:

Species Population Objectives

The population characteristics desired for a particular fish species in that province.

- adult abundance contributions to spawning, harvest and broodstock*
- ratio of natural to artificial production*
- life history diversity/population structure*
- population productivity

Values are likely to be expressed in probabilities and averages or ranges -- e.g., an x% probability of achieving and maintaining an average population size of y adult spring chinook in the Columbia Plateau province over a certain number of years.



Species Habitat Potential

The desired change in the potential of the habitat to support the biological performance of the particular species, measured as improvements in:

- habitat productivity*
- habitat capacity*



Environmental Objectives

Changes in key physical characteristics important for achieving the desired habitat condition, so as to support the population objectives. A small set of high-level indicators of desired change, such as:

- increases in streamflow
- improvements in water quality/water quality index
- improvements in channel structure and complexity/removal of barriers

See Notes on next page

NOTES

1. The purpose of the display is both to depict the possible categories of biological objectives for the program *and* to depict the relationships between these categories:

- *population objectives* for a particular species (adult abundance, etc.), which are the ultimate objectives the program is trying to achieve; and then
- as a measure or overall benchmark for the habitat work the program is engaged in to help get to the population objectives, *habitat potential objectives* for the same species, expressed in terms of desired improvements in capacity and productivity; and
- *environmental objectives*, depicting desired changes in physical conditions -- the improvements in water quantity, water quality; channel characteristics, etc. -- that the actual work on the ground is trying to achieve in order to increase the habitat productivity and capacity.

These relationships are embedded in the program framework adopted into the 2000 Program. See 2000 Program pages 9-10, 16-18, Appendix D. There is a famous diagram that is useful for depicting this basic program framework. The diagram did not make it into the final 2000 program amendments, but the concepts did in the words. That diagram and an explanation are included as an appendix to this paper. The Council chose to sequence the development of the program framework by conducting subbasin planning first. This was a choice of a “bottoms up” approach.

2. Five of the categories on the display on the last page are marked with an *. These indicate the categories that seem both most likely to be possible and most useful, and which we should be on the path to provide technical support for through the All H integration work described below, at least for anadromous fish. We are leaving the other categories in for now, however. This includes the entire subject of the environmental objectives. Trying to fill those in with numbers at the province level may not be doable right now, or as useful at that scale as the others, but we may be wrong. Objectives of this type might turn out to be as or more important than the habitat potential objectives. We would like comment on the use of these categories.

3. At the same level as the habitat potential objectives, the Council could also include objectives or explicit expectations or assumptions for artificial production, for harvest rates, for hydrosystem improvements, and/or for ocean survival values, as each of these contribute to the ultimate populations objectives.

4. The Council may not, in the end, be able to or desire to adopt objectives in all of these categories, even the ones with the asterisks. It may make sense instead to define certain categories into the program as potential objectives, fill in with numbers those categories that we are able to or that we clearly see as having value, while putting in place an initiative to complete the other objectives over time as the information and time allows and the need demands. That will be one of the issues for the Council to consider and resolve as it moves towards the amendment process itself -- precisely what categories to aim for in adopting biological objectives into the program.

Part 2: The How and When

The effort to add biological objectives of this type and scale to the program will be successful only with some technical preparation first. It is necessary to understand what current actions and plans appear to add or roll up to before we initiate the policy process of determining what objectives ought to be. We need help to understand better what “is,” to give us the necessary insight for making informed judgments as to what “ought” to be. This section describes first the technical preparation and expected results, and then the steps in the amendment or policymaking process -- and the expected time lines for both.

Step 1: Technical preparation

The purpose of the technical work will be to organize, integrate, aggregate and then assess the information developed in the last few years on conditions, objectives and actions across the life-cycle of anadromous fish, both current and planned.

The staff recommends continuing to use the “All-H Analyzer” (AHA) as a primary tool for the analysis. Developed by Mobrand Biometrics for the Council, the Washington Department of Fish and Wildlife and others, the All-H Analyzer is a tool that will integrate and aggregate habitat assessment information and objectives (from subbasin plans and draft recovery plans), artificial production objectives and activities (from subbasin plans, the APRE data base, production master plans, etc.), harvest information from the harvest forums, hydro impacts from the Biological Opinion work and elsewhere, and ocean effects. More information on the AHA tool may be found at <http://www.mobrand.com/mfs/>. Especially with the development of the subbasin plan technical assessments (mostly focused on habitat conditions) and the APRE data base, we have the information available to do this type of integration and aggregation as never before.

Using the AHA tool means populating the tool with the necessary data for more than 200 “stocks” of salmon and steelhead that make use of the 37 anadromous subbasins and the mainstem reaches of the Columbia. This means input values for each stock as to current and planned conditions and objectives for habitat, artificial production, harvest, and hydrosystem effects, as well as the range of possible ocean survival effects. The Council led an effort in 2005 to incorporate much of this information into the tool. The data has been taken directly from existing sources -- subbasin assessments and plans, APRE, harvest forums, BiOp, etc. -- whenever possible. Some of the necessary information is not in the right form for input into the model -- for example, if a subbasin plan described a set of qualitative objectives and actions to improve habitat over the life of the plan, but did not include a quantitative value for the desired increase in habitat capacity (which is necessary for the analysis); or if the information on a particular hatchery in the APRE data base and relevant subbasin plan does not include quantitative values for clearly planned changes in the operation of that hatchery. When that has occurred, the Council and its partners have had to work directly with the relevant personnel (subbasin planners; hatchery operators) to identify or estimate or verify the appropriate values. The analysis documents the source of *all* data inputs, as well as the analytical method.

Our current expectation is that the Council will assist what is called the NOAA Hatchery Review, the U.S. Fish and Wildlife Service and others to complete the efforts to verify the data inputs into AHA and develop the aggregated results over the next two years.

A second important source of technical information should be the population status and population viability information and analyses expected from NOAA's Technical Recovery Teams. The information should be available in a usable form sometime later in 2006 or in 2007. Because the information from the TRTs will relate only to listed populations, the Council will work to fill in the gaps for important but unlisted populations of anadromous fish.

The end of this technical effort should be results or outputs for anadromous stocks and populations across the basin, and then aggregated to the province level for each anadromous species in that province, in current and planned values for:

- expected adult abundance contributions to spawning, broodstock and harvest
- ratio of natural to artificial production
- population status and possible values for population viability
- some sort of display of population structure or diversity
- habitat productivity
- habitat capacity

The end result should be an efficient way of displaying, in a relatively rough but transparent manner, what population and habitat objectives we appear to be aiming at by default through the cumulative impact of the separate activities we are all doing and planning.

Step 2: Amendment process

The technical effort should provide the information necessary to initiate the amendment process -- the policymaking effort intended to actually result in the setting of program objectives. Here are the steps we envision at this point:

- **Develop Guidance Document.** The staff will develop for Council approval a Guidance Document. This should be a clear explanation of the purpose and scope of the upcoming amendment process to add biological objectives to the program and then a clear, transparent display and explanation of the results and analyses from the technical work described above. The point will be to expose people to the population status and derived population and habitat objectives that result from this way of integrating and aggregating the various information and efforts we are engaged in across the different "Hs."

Stated another way, our expectations for the Guidance Document is that it will: (1) explain again what function the province-level biological objectives will serve in the adopted program; (2) explain how the subbasin plan and other information has been and should be being used to develop the province objectives; (3) establish a common vocabulary for the amendment process; (4) describe what assumptions have been made for habitat, hydro, harvest and hatchery interactions or effects and how those will be considered as objectives are set, and then; and especially (5) set out the derived or example population and habitat objectives for anadromous fish, and possible example objectives for resident salmonids. The Guidance Document will not be a set of draft or

provisional objectives endorsed by the Council -- it will not be that formal. Rather, its purpose would be to describe the technical work and results and how the Council intends to take the next step to develop the objectives, as a suite of transparent assumptions about “the four H’s” and the relationships between habitat and biological performance. The document should provide all interested parties a common point of reference as they develop recommendations for the formal amendment process.

- **Issue request for recommendations for program amendments, with attached Guidance Document).** Along with or shortly after the development of the Guidance Document, the next step will be for the Council to issue the request for program amendment recommendations as required by Section 4h of the Power Act, calling for quantitative biological objectives at the province level in whatever objective categories we settle on by that time. Our idea is to attach the Guidance Document to the request for recommendations, explicitly asking people: “Do the derived objectives that resulted from the integration exercise actually represent, in your view, what the biological objectives of the program should be? Or, do you recommend that the program adopt different biological objectives for particular species in particular provinces?” Entities that recommend different biological objectives should explain and support with information why they believe the Council should adopt these different objectives into the program, and at least what some of the larger policy implications of the difference might be.
- **Deadline for submitting recommendations.** The Power Act requires that the Council allow at least 90 days for entities to submit recommendations. Prior to the Council issuing the formal call for recommendations, we anticipate working with and making our progress known to many people through the technical work and the work on the Guidance Document. For that reason, 90 days following the formal request ought to be sufficient.
- **Public review of recommendations; staff and Council review of recommendations and comments on recommendations.** The Power Act requires that the Council release program amendment recommendations for public review and comment before proceeding to amendments. The Act does not specify a time for this review, but we try to allow at least 60 days -- more for complex situations. The staff then also needs time to summarize and synthesize the recommendations and comments, and prepare draft amendments.
- **Release draft program amendments for public review.** This would be the document in which the Council proposes to adopt into the program a set of quantitative biological objectives at the ecological province level.
- **Public review of draft program amendments; staff and Council review of comments.** No time line is specified in the Act or the APA for public review of draft amendments. Two months is the basic minimum, with additional time to summarize and synthesize the comments and prepare final amendments.
- **Final adoption into the program of biological objectives at the province level, with findings and responses to comments.**

Part 3: Key Issues to Consider

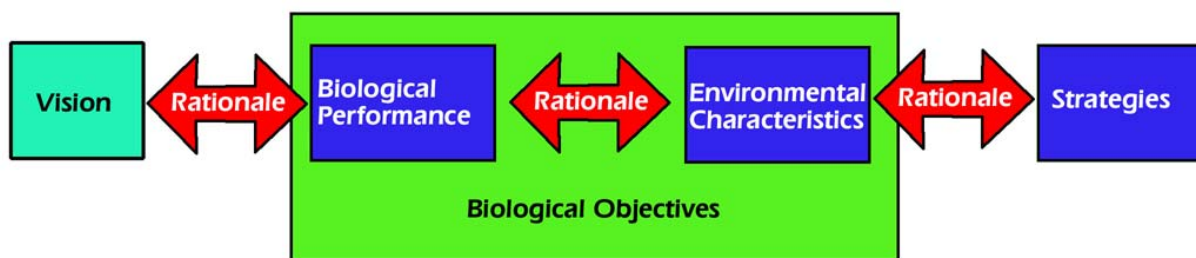
There are a number of issues to consider and work through as we engage in the technical work and prepare for the amendment process. Some are mentioned above, but not all. Here is a summary list of ten key issues:

- Given the range of possible population and habitat objectives, in which categories do we decide in the end to adopt biological objectives for the program?
- Should the biological objectives should have a time frame, and if so, what time frame?
- The technical work focuses exclusively on anadromous fish. The concept in the program is to adopt biological objectives for key resident fish and wildlife species, too. The staff proposal is to seek recommendations for objectives for key resident salmonids, too, and perhaps to defer objectives for wildlife and other resident fish to other times and plans. Is this the right approach? Is there preparation work to do for resident salmonid objectives?
- What is the relationship of the province-level biological objectives envisioned here to Bonneville's protection and mitigation obligations under the Power Act?
- What is the relationship of this effort to ESA recovery planning? We need to make sure the two efforts complement and not conflict with each other.
- What is the relationship of this effort to other activities, such as the development and implementation of a harvest and production management agreement in *US v. Oregon*? Again, we need to make sure these efforts complement and not conflict with each other.
- What is the relationship of this effort to on-going work to develop effective approaches to monitoring and evaluation of populations and the program as a whole? Any objectives the Council adopts should fit with and not be at cross purposes to, m&e developments.
- There is the distinct possibility the Council will receive recommendations for more than province-level biological objectives, especially recommendations for specific implementation plans or actions related to the subbasin plans and/or province objectives. What should the Council do with these recommendations?
- How and when will we deal with the implications of province-level biological objectives for other parts of the program, at both the basin or program level and the subbasin level. And how to best understand the related implications of the objectives for project selection and resource allocations?
- How do we make sure we maintain and are able to continue making use of the All-H data sets, outputs and analytical tool?

Appendix

The relationships between the different types of population and habitat objectives are embedded in the program framework adopted into the 2000 Program. See 2000 Program pages 9-10, 16-18, Appendix D. There is a famous diagram that is useful for depicting this basic program framework. The diagram did not make it into the final 2000 program amendments, but it is a perfect display of the concepts that are in the words:

Basic elements of the Programmatic Framework



As then explained in the 2000 Program:

- The vision describes what the program is trying to accomplish with regard to fish and wildlife and other desired benefits from the river.
- The biological objectives describe the physical and biological changes needed to achieve the vision, based on the information we now have. Biological objectives have two components: (1) biological performance, describing responses of populations to habitat conditions, described in terms of capacity, abundance, productivity and life history diversity, and (2) environmental characteristics, which describe the environmental conditions or changes sought to achieve the desired population characteristics. Where possible, biological objectives are intended to be empirically measurable and based on an explicit scientific rationale. Objectives at the basin level are more qualitative, but objectives should become increasingly quantitative and measurable at the province and subbasin levels. Biological objectives should also help determine the cost effectiveness of program strategies, and provide a basis for monitoring, evaluation and accountability.
- The implementation strategies, procedures and guidelines, guide or describe the actions leading to the desired ecological conditions.

The relationships go both ways: The vision implies the biological objectives, which then guide the selection of strategies. In turn, strategies address biological objectives and fulfill the vision. An explicit set of scientific principles and relationships link and define the components of the framework, explaining why the Council believes or hypothesizes that certain kinds of management actions will result in particular physical habitat conditions, and why these habitat or ecological conditions will affect fish and wildlife populations or communities in the desired way.

These relationships replicate at the different levels of the program -- basin or program-wide; ecological provinces; subbasins. But different levels demand different emphases. The basin or program level has been the appropriate place for broad, mostly qualitative, objectives, strategies, policies and priorities. The subbasin level has been appropriate for great detail about the limiting conditions in each subbasin and the vast array of objectives and strategies possible to address those factors. Neither level has been appropriate for developing the type of quantitative objectives that will allow the Council and others to express in finite terms what the program is trying to accomplish, and then evaluate what it is in fact accomplishing. That is why we are emphasizing only the biological objective component of the program framework at the ecological province level.

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