

Columbia River Basin

Fish and Wildlife Program:

Questions and considerations from the

Program categorical assessments

For additional context, please refer to nwcouncil.org/amend for recorded presentations, slides, and documentation.

Overarching Program considerations and questions

The Fish and Wildlife Program has grown considerably over 40 years, consisting of hundreds, if not thousands, of measures and objectives that range from general to very specific. These measures have led to the ongoing implementation of a substantial set of hydrosystem operations and offsite habitat and production mitigation actions.

Adaptive management has helped reshape the program over time by responding to new information, especially regarding hydrosystem operations. Emerging priorities and needs have also been partially integrated into the Program and its implementation in recent years.

At the same time, the physical environment, human activities affecting fish and wildlife in the river, and hydrosystem operations have been constantly changing and will continue to change in the future. These include environmental changes such as climate variation, drought, fire frequency, earlier runoff and increasing precipitation as rain, changes in species composition and abundance, and human changes such as increasing population levels and associated development, changing power system needs and arrangements, and different demands and arrangements for water supply.

Given these circumstances, how should the Program – as written and in implementation – be adapting to these changes, as well as anticipating future changes? As the staff completed a series of assessments on categories of major program strategies in 2024, they developed a set of questions that can be helpful in thinking about this. A set of overarching questions for your consideration are below, followed by more technical questions for various key program strategies.

1. As the basin changes and priorities evolve, are existing implementation approaches and priorities adaptable, and what type of adaptations are needed?
2. How could goals and objectives be responsive to future change in order to support a resilient program?
3. In cases of incomplete implementation of existing program measures, which measures should be given additional focus?
4. Does the Program need to be updated to create better alignment between current priorities and Program measures? What should be updated to accurately reflect current program implementation?
5. The basin-wide program measures often do not include specific implementation priorities, but rather draw on other plans such as water management plans, subbasin plans, biological opinions, etc. Is this sufficient or should the Program include more specific priorities for implementation?

Hydrosystem operations and passage

General questions:

- Are the Program's measures in need of revision to reflect recent developments?
- We have learned that not all Program measures have been implemented and that there may not be sufficient water to implement all measures targeting salmon, steelhead, and sturgeon. Should the Program be amended to account for these facts, and how?

Specific questions – How should the Program address:

- that every hydrosystem measure in the Program has not been fully implemented or in some cases implemented at all?
- potential additional opportunities to increase survival through existing operations?
- prioritization of operations and species needs when there is insufficient water to meet all operations at the target levels? How should this be balanced between anadromous and resident fish?
- meeting spring and summer salmon and steelhead flow targets in the future given potential changes in seasonal flow patterns?
- shifting climate conditions that lead to less predictable runoff forecasts?
- variable implementation of chum operations, considering uncertainties around climate, water, future hydrosystem operations and the timing of chum flows?
- flow and passage measures for sturgeon that are not currently implemented?
- potential development of Integrated Rule Curves for more reservoirs?

- the possible effects of the revised Columbia River Treaty and new flood risk management on operations at storage reservoirs?
- Downstream passage for pacific lamprey?
- warming temperatures May-July that may result in fewer days within biological optimum temperature/flow target range for sturgeon in the lower and mid-Columbia?
- updated flow operations for both bull trout and prey production in the Kootenai River?

Artificial Production

General questions:

- What metrics are most important to understand if the Program's hatcheries are meeting facility and Program mitigation goals, and should the Program be revised accordingly?
- Should the Program's Artificial Production strategy be amended - and if so, how - given that we have learned that operations and maintenance funding levels are a concern?

Specific questions – How should the Program address:

- identifying the appropriate metrics and information to understand if and how the Program is achieving hatchery mitigation goals as a comprehensive Program?
- potential changes in the artificial production facilities or production programs based on shifting regional priorities, climate change or aging infrastructure?
- challenges in meeting production objectives with current annual operations and maintenance funding for recurring maintenance?
- certainty of funding for asset management plans to address long-term non-recurring maintenance needs?

Habitat: Restoration

General questions:

- Should the Program's habitat goals, objectives or measures be amended?
- Given challenges of limited data availability and reporting, how can we better identify current and future habitat restoration needs?

Specific questions – How should the Program address:

- habitat restoration goals, objectives or priorities in the Program?

- habitat restoration planning and prioritization?
- determining the effects of habitat restoration at different spatial and temporal scales and whether the program should include specific restoration targets at these different scales?
- whether to identify high priority locations and types of restoration actions given current conditions and potential future conditions?
- the need for better coordination/collaboration so that larger-scale or more complex projects can be implemented throughout the basin?
- multi-year funding needs for larger, more complex restoration projects?
- improving the ability to track the program-level restoration implementation, considering the size and diversity of the habitat restoration effort, the limitations in data availability and data quality, and the challenges in data management?

Habitat: Protection, Screens

General question:

- Given the significant investment in fish screen construction and operation, how should the Council address long term maintenance into the future to ensure the screens continued to meet their intended purpose?

Specific questions – How should the Program address:

- certainty of funding for asset management plans to address long-term non-recurring maintenance needs?

Habitat: Wildlife

General question:

- What should be the focus of the Wildlife mitigation strategy over the next 5-10 years?

Specific questions – How should the Program address:

- completing and tracking the remaining mitigation?
- annual operations and maintenance funding adequacy to ensure goals and objectives of the investment are maintained?
- the rising costs of acquiring and restoring land which may impact the ability to meet mitigation goals and objectives?
- addressing the uneven distribution of funding to entities in mitigating losses?

- additional efforts by the Council to ensure that the value of wildlife properties are maintained and tracked given that just over half of parcels have land management plans accounted for in records?
- the value of developing a database including all relevant information on parcels, land management plans, and continued maintenance of conservation value?
- challenges with data management, data quality and quantity and ledger tracking for wildlife mitigation?

Habitat: Non-native and Invasive Species

General question:

- How should the Program address non-native and invasive species impacts in the basin in the next 5-10 years given climate conditions and shifting human demands on the landscape?

Specific questions – How should the Program address:

- issues related to the introduction and spread of non-native and invasive species?
- potential changes in non-native and invasive species populations and distributions in response to climate change and other environmental impacts?
- the potential effects of changes in hydrosystem operations on the impacts of non-native and invasive species on the Program's focal species?
- invasive plant and animal species that need attention but are not currently being tracked or addressed?

Habitat: Predator Management

General question:

- How should the program address predator management in the basin in the next 5-10 years given climate conditions and shifting human demands on the landscape?

Specific questions – How should the Program address:

- regional needs for monitoring predator species?
- preparing for the effects of predator species that may be able to capitalize on shifting climate conditions?

- the impacts of predator species such as bass and walleye that may influence the survival of focal species?
- uncertainties, like whether predation by these species on sensitive fish and wildlife offset gains made by other predator management actions?