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

Jennifer Anders
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Richard Devlin
Oregon

November 6, 2018

DECISION MEMORANDUM

TO: Council members

FROM: Laura Robinson, Tony Grover, Leslie Bach, and Erik Merrill

SUBJECT: Council decision to request the ISAB and Council-selected economists to conduct a science and economic review of predation and predator management

PROPOSED ACTION: Review and approve draft letter and questions to the ISAB and Council-identified economists for a science review of predation throughout the Basin with a particular focus on predatory fish, and an associated economic review of the impact of Northern Pike in the Basin.

SIGNIFICANCE: In September, the Fish and Wildlife Committee recommended to move forward with scoping a science and economic review of predation in the Basin. At the November Council meeting, the Committee recommendation for the review and the staff draft questions and letter will be discussed with the members. Staff anticipates that this review will be informative for the Program amendments and requests the ISAB and economists to complete their review by the May 2019 Council meeting.

BUDGETARY/ECONOMIC IMPACTS

Staff will seek the services of an economist or economists through either a sole source justification or Request for Proposal (RFP) not to exceed \$25,000 USD.

The ISAB operates on an annual budget, independent of the Council's budget, funded by the Bonneville Power Administration through the Fish and Wildlife Program. No additional funds are requested. Depending on the final scope of the review and based on costs of similar assignments in the past, the ISAB costs should range from \$80,000 to \$150,000.

BACKGROUND

At the September Fish and Wildlife Committee meeting, staff discussed with the Committee members options and a staff recommendation for a predation review. Many Council members had expressed interest in a science review of predation impacts in the Basin and some showed support for a Northern Pike-focused economic review. Additionally, the ISAB's draft 2019 Work Plan includes a potential review of predation management effectiveness to inform the 2014 Fish and Wildlife Program's measure to "determine the effectiveness of predator-management actions." Also, the [Pacific Northwest Economic Region \(PNWER\)](#) and the [Washington Recreation and Conservation Office](#) sent letters of support to Fish and Wildlife Chairman Norman and the Council for an economic review of the impact of Northern Pike in the Columbia River Basin.

The Fish and Wildlife Committee supported a staff recommendation to request the ISAB to review predation throughout the Basin with a particular focus on predatory fish, and to contract with one or two natural resource economists to partner with the ISAB in producing an economic analysis of the impact of Northern Pike in the Basin. Staff developed a draft letter to the ISAB and proposed review-scoping questions (see attachment 1). State and central staff have jointly developed the questions presented in the letter.

The economics-related questions in attachment 1 will form the economic review task to inform a sole source justification or RFP seeking the services of one or more natural resource economists. Staff is currently working with partners in the region to identify potential candidates to conduct the economic portion of the review.

ANALYSIS

The letter provides context for the need for the science and economics review and builds from the ISAB and ISRP reports and Council documents that have provided insight and direction on predation. The draft letter and questions were provided via email to the Fish and Wildlife Committee members on September 27 and October 25 and input was provided by members via email.

ALTERNATIVES

Staff recommends that the letter and questions be finalized, and that the Council submit a formal letter to the ISAB by mid-November.

ATTACHMENTS

See the attachment for the draft letter and questions.

Attachment 1

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Northwest Power and Conservation Council

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Vice Chair
Montana

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[Date]

DRAFT

Dear Dr. Alec Maule,

The Council requests the Independent Science Advisory Board's (ISAB) assistance in a review of the biological and economic impacts of predators and non-native species, the effectiveness of predator management control efforts currently implemented, and specifically the potential impacts that the introduction and spread of Northern Pike can have on the Columbia River Basin (Basin).

We request that the ISAB and economists complete this review by the May Council meeting (May 7-8, 2019). We understand that the ISAB's review approach and product will reflect the time available and appreciate the quick turnaround as the Council prepares for the amendments to the Fish and Wildlife Program. The Council is working to obtain the services of one or more natural resource economists, with relevant experience in predation and invasive species. Our hope is the economist(s) will work closely with the ISAB to respond to the economic-focused questions below and produce a related economic analysis on the impact of Northern Pike.

This review should help the Council address the 2014 Fish and Wildlife Program measures to, "determine the effectiveness of predator-management actions," "prevent non-native and invasive species introductions," and monitor and remove them where they have been introduced. The Council, in the 2014 Program, developed a set of priorities, one of which is to, "preserve program effectiveness by supporting expanded management of predators... and aggressively addressing non-native and invasive species." The 2014 Program's [Predator Management Strategy](#) acknowledges the natural, dynamic, and complex process of predation, particularly in the hybrid ecosystem of the current Basin, and the need for best available science to manage predation to improve salmon and steelhead survival. Additionally, the [Non-native and Invasive Species Strategy](#) aims to prevent introduction of non-natives and invasive species as they imperil native species in the Pacific Northwest ecosystems through predation, competition, interbreeding, disease transmission, food web disruption, and physical habitat alteration.

Currently, the Bonneville Power Administration, through the Council's Fish and Wildlife Program, is providing funds for predator monitoring, suppression, and management efforts throughout the Basin. Avian predation on juvenile salmonids is monitored and suppressed in the ocean, estuary, and lower river (see project [1997-024-00](#)). Non-lethal hazing of sea lions is conducted in the estuary and lower river (see project [2008-004-00](#)). Northern pikeminnow, a native predatory species, are suppressed via a rewards fishery in the lower and mid-Columbia River (see project [1990-077-00](#)). And in the upper Columbia, a variety of predator management efforts are underway concerning, for example, Northern Pike (see project [1994-043-00](#) and proposed project [2017-004-00](#)) and non-native trout (see projects [199700400](#), [199404700](#), [199101903](#), and [199101901](#)). Additionally, many other entities are conducting management actions on predatory species, monitoring the effects of those actions, and researching the impacts of introduced predators on the ecosystem.

We seek an overall evaluation of predator impacts and predation management effectiveness in the Basin with a particular focus on piscivorous fish. While conducting this review, we ask that the ISAB consider aspects and gaps within all areas of predation, including avian and marine mammal predation, which may need a deeper investigation during follow-up ISAB reports. For this review, we ask the ISAB and Council-selected economists to consider the following questions:

Science questions:

- 1) Given the Basin's current predation control efforts and the ISAB's predation metrics report ([ISAB 2016-1](#)), what information is needed to develop a common metric to assess the impact of predation across all predator species?
- 2) If current predation efforts are not sufficient to contribute toward protecting focal species, what type and level of effort are needed?
- 3) Would concentrating additional efforts on predator management as opposed to hydrosystem actions, habitat enhancement or other management actions be more effective in improving focal species survival?
- 4) Can we rank (from low to high) predator impacts on focal species, and then rank (from low to high) which current management activities would be most effective in reducing the "higher" ranking predation impacts?
- 5) In consideration of [ISRP 2018-3](#) regarding Northern Pike, do we know what level of suppression (exploitation) through gill net removal, angler removal or other methods is needed to reduce the population in Lake Roosevelt to a level sufficient to reduce risk of emigration from the lake or risk to other focal management species?
- 6) What are the likely ecological impacts of Northern Pike should they enter the Basin's anadromous waters?

Economic questions:

Initial review:

- 1) What information is needed to assess the economic impacts to natural resources in the Basin should Northern Pike spread throughout the anadromous and non-anadromous zones? If such information exists, can you estimate the economic impacts of the spread of Northern Pike?

- 2) For the related ISAB question regarding level of Northern Pike suppression needed (question 5, above), can you calculate the costs associated with that?

Subsequent review (optional):¹

- 1) What are the current economic costs for direct expenditures of current predation management efforts in the Columbia Basin and are those costs (and efforts) sufficient for protecting focal species? Please consider all significant funding entities such as the Council Program, Bonneville Power Administration, US Army Corps of Engineers, US Bureau of Reclamation, states, Public Utility Districts, etc.
- 2) If there is not sufficient information to answer these questions, what additional data/information do we need?

To address these questions, we ask the ISAB and Council-selected economists to review current monitoring and suppression projects, information, management plans, and analysis to provide their expertise regarding the above questions as they relate to predation impacts and predator management effectiveness in the Basin.

We encourage the ISAB to work with its ex-officio members to identify the most relevant documents to review. We also encourage the ISAB to seek information from project sponsors, researchers, and predation management experts (particularly those working on Northern Pike) throughout the Basin and throughout North America including the Confederated Tribes of the Colville Reservation; the Spokane Tribe of Indians; the Kalispel Tribe of Indians; the Coeur d'Alene Tribe; the Okanagan Nation Alliance; Washington Department of Fish and Wildlife; National Park Service; Chelan, Douglas, and Grant County Public Utility Districts; US Forest Service; Alaska Department of Fish and Game; British Columbia Ministry of Environment and Climate Change Strategy; the Washington Invasive Species Council; and the Great Lakes Fishery Commission.

Several recent and upcoming ISRP and ISAB reviews are related to this request. The ISAB's 2016 [Predation Metrics Report](#) reviewed and recommended alternative metrics to evaluate the consequences of predation on the Basin's salmonid populations. Many of the questions posed in this letter are from the ISRP/ISAB's 2016 [Critical Uncertainties Report](#) and the Council's [2017 Research Plan](#). In March, the ISAB [reviewed the 2014 Fish and Wildlife Program](#) and in September the ISRP completed their [review of the Program's research projects](#) and will soon review the mainstem projects, both of which cover predation projects in the Basin.

[Note: we are currently communicating with the Oversight Panel on this and awaiting their approval.] The ISAB Administrative Oversight Panel and Ex Officio representatives provided input on the request letter and approved the ISAB assignment.

Sincerely,

¹ Should the Council decide that an additional economics review be needed to include other predator species in the Basin.

Jim Yost, Chair

Cc: Jaime Pinkham, Columbia River Inter-Tribal Fish Commission
Kevin Werner, NOAA Fisheries