ISRP INDEPENDENT SCIENTIFIC REVIEW PANEL

FOR THE NORTHWEST POWER AND CONSERVATION COUNCIL PORTLAND · NWCOUNCIL.ORG/ISRP

Memorandum (ISRP 2025-1) **May 30, 2025**

To: Mike Milburn, Chair, Northwest Power and Conservation Council

From: Richard Carmichael, ISRP Chair

Subject: ISRP Review of Spokane Tribe of Indians new proposal, *Upland Wildlife Habitat Management* (#2024-004-00) – Response Requested

Background

In response to the Northwest Power and Conservation Council's request on March 18, 2025, the ISRP reviewed a new proposal from the Spokane Tribe of Indians, titled *Upland Wildlife Habitat Management* (BPA project #2024-004-00). This new project is called for in a Ten-year Memorandum of Agreement between the Tribe and Bonneville Power Administration. The project's purpose is to inform management needs for historically and culturally significant wildlife and plant species through prioritization of research, management, restoration, and land acquisition activities on and around the Spokane Tribe of Indian's reservation. The project supports the regional priorities outlined in the Council's Fish and Wildlife Program and the Spokane Intermountain Subbasin Management Plan by addressing wildlife and wildlife habitat losses due to hydroelectric development. The project seeks to compensate for the loss of anadromous fish; the Tribe has increasingly relied on subsistence hunting of big game species such as deer (*Odocoileus spp.*), elk (*Cervus canadensis*), and moose (*Alces alces*) as a protein replacement.

The project has two primary elements. One element will assess current big game populations of elk, moose, whitetail deer, and mule deer and habitat conditions by using regionally standardized data collection methodologies, with the ultimate goal of managing these ungulate populations at sustainable abundance and herd composition levels to allow for subsistence hunting by tribal members.

A second project element will focus on the reintroduction of the culturally important Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus)*, an upland bird species. The project intends to improve and restore sharp-tailed grouse habitat and enhance

connectivity within their historical range in preparation for tribal reintroduction and population supplementation efforts. The proponents describe that shrub-steppe habitat is vital to grouse throughout their lifecycle and important forage to many other wildlife species, but shrub-steppe has diminished on the reservation. The project intends to prioritize areas for shrub-steppe restoration efforts as needed for increased forage, cover, and habitat diversity in relation to data collection on identified grouse habitat areas as well as seasonal movement of game species.

In addition to the new proposal, the ISRP also considered for the review the Final EIS for the Spokane Tribe's Integrated Resource Management Plan (IRMP) for the Spokane Indian Reservation.

ISRP Recommendation

Recommendation: Response Requested

We appreciate the Spokane Tribe of Indians' effort in completing the complex proposal and using the format and guidance provided. The proposal serves as a sound starting point to build from. The development and posting of methods in Monitoring Resources is important and much appreciated. The proposal demonstrates progress in developing big game assessment protocols and preliminary planning for Columbia sharp-tailed grouse reintroduction assessments. However, additional details are needed for a number of items before the ISRP can make a final recommendation on the proposal's scientific soundness.

Successful wildlife mitigation requires some demonstration of benefits to wildlife and their habitats. While many BPA-funded projects measure benefits by focusing on the amount of high-quality wildlife habitat acquired or restored, this project aims to do both: assess and monitor wildlife populations and the critical habitats that support them. The Project has the potential to benefit wildlife through the targeted restoration of critical habitat for big game (large ungulates) and Columbian sharp-tailed grouse. These targeted wildlife species are culturally important to the Spokane Tribe, but baseline data to inform harvest management, wildlife habitat restoration, and Columbia sharp-tailed grouse reintroduction are lacking.

The Project proposes to establish a Wildlife Program to plan and implement habitat and wildlife monitoring and has laid out several implementation objectives along with associated methods and timelines. However, the biological benefits, while identified at a general level, have not been distilled into distinct biological objectives. For example, what is the project's desired level of increased harvest and contribution to subsistence? What are the timelines for the expected harvest benefits? What are the desired habitat conditions and expected habitat improvement responses, both temporally and spatially? A key recommendation is that quantitative biological objectives be specified to track progress towards the realization of biological benefits.

Moreover, project monitoring and evaluation should be better linked to an overall adaptive management strategy for adjusting the project objectives.

A sound scientific proposal is essential for guiding successful project implementation and serves a key role in future project reviews. The ISRP requests the proponents to address the following points in a revised proposal, and to provide a brief point-by-point response to explain how and where each issue is addressed in the revised proposal:

1. In the proposal background section, describe the current and desired levels of harvest by species and summarize what is already known about the habitat use on the Spokane Indian Reservation by the focal ungulate species. For example, are there resident and migratory herds, or is this a gap in knowledge? Would resident and migratory herds need to be managed and monitored differently? Does harvest of deer, elk, or moose from the herds occur by individuals that are non-tribal members on or off the reservation? What are the main predator species? What is known about the existing quantity and quality of habitat for ungulates on the reservation? Is shrub-steppe restoration expected to benefit the ungulates? What are the major differences in the ecology of the focal species that are relevant to how they are assessed and managed? In relation to hunting and harvest, the background should describe what data has been recorded in the past, how it is used, and the current levels of harvest by species. In general, it is unclear what is already known and how this body of knowledge informs the proposed objectives and methods.

2. Clarify the project goal, objectives, and subobjectives (and the flow chart) to ensure continuity and clear linkages among them. In the goal, clarify the qualitative desired outcomes for the distinct components and – as a recommendation – refer explicitly to Columbia sharp-tailed grouse. In the objective and subobjectives, it would be useful to provide more distinctions between biological, implementation, and monitoring and evaluation objectives. To the extent it applies to objectives, ensure they are SMART (Specific, Measurable, Actionable, Relevant, and Time-bound). In light of the previous bullet point, clarify if the objectives and subobjectives for the ungulates apply to all big game – elk, moose, and we assume both white-tailed and mule deer. Considering that these species have very different habits and habitats, species-specific objectives and subobjectives may be necessary and desirable.

3. Please clarify the elements and characteristics of a population that determine its "sustainability." In addition, clarify how the monitoring data will be analyzed to assess population status and sustainability.

4. It is unclear if this proposal is focused on the assessments needed to identify and develop restoration actions or if restoration actions will be initiated immediately. Please clarify the objectives that relate to habitat restoration and provide the scientific basis for any restoration work that begins in the first year. Consider whether it makes sense

to implement this project in a more stepwise manner, completing the assessments first and using those to inform the restoration actions.

5. The proposal aims to assess and plan for Columbian sharp-tailed grouse reintroduction. Please clarify if the proposal also aims to ultimately *implement* reintroduction, as there is some ambiguity.

6. Include SMART objectives for 1) archiving and sharing the data, 2) reporting and synthesizing the results, and 3) public outreach and education.

7. Subobjectives and data collection methods are provided for the ungulate and sharp-tailed grouse assessments, but the proposal needs to describe how the data will be analyzed and used to achieve sustainable harvest of ungulates, guide and prioritize habitat restoration actions, and facilitate the reintroduction of sharp-tailed grouse.

8. Include an objective to develop integrated population dynamic models for deer, elk, and moose to assess status and health of the herds and determine annual levels of sustainable harvest.

9. Specific methodological details are not fully provided in the supplementary study plans and protocols. Implementation objectives involving field work begin in year one, and we would expect comprehensive study plans and protocols to be in place prior to implementation. These could be subject to revision on an annual basis once the Wildlife Program is launched and as part of an adaptive management process. As noted above, there is a need to modify and expand the methods section to address added objectives for development of integrated population dynamics models.

10. Clarify the specific "adaptive management" process for adjusting the project's objectives, actions, monitoring methods and harvest plans. While some information is provided, please elaborate on who will be involved in the decision processes, whether structured decision processes will be used, the time frame for decision-making, how information will be shared, and how decisions will be documented.

11. Clarify the degree to which, if any, aspects of monitoring and evaluation or restoration to meet this project's objectives are covered by the complementary Spokane Wildlife Areas Operations and Maintenance Project (1998-003-00). Indicate the extent of integration with any other programs or projects that conduct monitoring and evaluation related to this project.

The ISRP would welcome a discussion to clarify any elements in our review, if requested. We look forward to receiving and reviewing the revised proposal.

More details on these response requests are provided in the section below.

ISRP Review Comments

1. Clearly defined objectives and outcomes

The Upland Wildlife Habitat Project will support a new Wildlife Program to inform the sustainable management of important wildlife species and their habitats on the Spokane Indian Reservation. The project aims to address information needs for two objectives: 1) manage ungulate populations at sustainable levels while allowing for subsistence harvesting by tribal members, and 2) improve and restore habitat for the culturally significant Columbian sharp-tailed grouse in preparation for reintroduction. However, the stated goal – to conserve and manage sustainable populations of big game for subsistence hunting, culturally significant species, and the habitats that support them – is somewhat unclear and leads to several questions that were not adequately addressed elsewhere in the proposal. In particular, does the goal include the intent to harvest other culturally significant species, aside from deer, elk, and moose? Or is the goal for culturally significant species only to conserve, manage, and restore habitat? Will culturally significant species other than Columbian sharp-tailed grouse be a focus of the habitat restoration work? Further, what characteristics define a sustainable population?

Each objective is comprised of a hierarchy of shorter term, time-bound (e.g., annual) objectives. In general, these objectives are qualitative in nature, with timelines that focus on implementation of the Wildlife Program. On the whole, the proponents do not specify quantitative biological objectives that could be used to assess the benefits to wildlife and thus gauge progress towards achieving the goals. The nature of the project appears much broader than just supporting a new wildlife project, and objectives need to address all project elements. In terms of SMART attributes, therefore, the stated objectives are less “measurable” (i.e., quantitative) and more qualitative desires. Without SMART objectives at this planning stage, the specific objectives for implementing the program and establishing work plans that address the needs for specificity, achievability, and timeliness, would have to be completed on an annual basis, which is not desirable.

The proposal would be improved if there was better distinction between biological, implementation, and monitoring objectives. In other words, what are the specific biological objectives and what specific actions will be taken to achieve them? What are the monitoring objectives, and what specific uncertainties and biological objectives do they address? Currently, these different types of objectives appear to be intertwined. Moreover, it appears that one important objective is missing: to develop integrated population dynamics models for deer, elk, and moose that can be used to assess population status and health and determine sustainable annual harvest levels. Specific objectives are needed for data archiving and sharing, and also for the reporting and synthesis of results. Further, there should be specific objectives for public outreach and education, given that one of the job descriptions (work elements) indicates this

activity. The refined and additional objectives should be included in the flow chart and the timelines.

The Wildlife Program will be newly launched, so the proponents have the opportunity to develop fully SMART objectives and sub-objectives from the outset in order to allow better tracking and adaptive management of the program. For example, Objective 2.1a is to conduct habitat surveys in areas historically occupied by Columbian sharp-tailed grouse. To catalyze ideas, we suggest, as a purely hypothetical example, that an alternative specification may be to survey 80% of the Spokane Indian Reservation for Columbian sharp-tailed grouse habitat suitability. Progress towards that goal could then be tracked and the goal refined as new information is collected. This goal would be relevant to a reintroduction strategy, because if 30 km^2 of contiguous suitable habitat is required to support this species (Connelly et al. 2024), large tracts of land will need to be evaluated.

The proponents provide background and historical information to support the need for the proposed project, which is part of a larger initiative to mitigate for lost wildlife habitat due to inundation caused by the construction of the Grand Coulee Dam. It complements the ongoing Spokane Wildlife Areas Operations & Maintenance Project (1998-003-00), which followed the acquisition of 8403 acres via the Spokane Tribe Wildlife Mitigation Project (1991-062-00). At the level of the Spokane Indian Reservation, the proponents highlight significant knowledge gaps concerning the status and trends of wildlife populations and habitat conditions, and that more broadly, few data exist on the long-term effects of hydroelectric facilities on wildlife. That being said, it would be useful to summarize what is already known about the habitat quantity and quality, the use of the Spokane Indian Reservation by the focal ungulate species, the degree to which they are harvested, and their main predators.

2. Methods (based on sound science principles)

To implement the Tribes' Wildlife Program, the project will apply standardized and regionally relevant methodologies for habitat assessment and wildlife monitoring. We commend the proponents for including drafts of these methods in MonitoringRescources.org. However, the proposal should stand alone and needs a much more complete methods section that conveys an integrated approach to achieving the biological, implementation, and monitoring objectives through targeted actions.

Habitat assessments will use the Spokane Tribe of Indians' Vegetation and Habitat Survey Monitoring protocol, which is a modified Habitat Evaluation Procedure (HEP) survey, and Habitat Suitability Index (HSI) calculators from the Washington Department of Fish and Wildlife (WDFW). Given the spatial scales involved, it will be important to undertake pilot studies to inform the optimal sampling effort, spatial scale, and spatial resolution.

In terms of wildlife, ungulates will be enumerated by aerial surveys to acquire estimates of population size and productivity (e.g., bull-to-cow and calf-to-cow ratios). Tissue samples will

be collected from harvested elk (e.g., embryos from females, and teeth) to estimate pregnancy rate, rut duration, and age. Field necropsies will aid in identifying mortality agents. Ungulates will be trapped by clover traps and outfitted with GPS collars for tracking to estimate seasonal movement and survival parameters. The proposal does not identify specific knowledge gaps, targeted biological objectives, or methodological approaches by species of ungulate. If specific knowledge gaps could be identified by species, this would better inform the choice of methodological approach. Regarding Columbian sharp-tailed grouse, potential lek sites for Columbian sharp-tailed grouse will be identified and monitored. This is a standard approach for population monitoring for this species.

Specific methodological details are not provided in the supplementary study plans and protocols. Even though the aim of the project is to launch a Wildlife Program, implementation objectives involving field work begin in year one, and we would expect comprehensive study plans and protocols to be in place prior to implementation. These could be subject to revision on an annual basis once the Wildlife Program is launched and as part of an adaptive management process. In addition, there is a need to specify methods for developing integrated population dynamics models and clearly describe what variables will be used in model development. The expected timelines for model development and application should be specified.

There is a vast literature in wildlife biology on quantitative methods for estimating survival, movement, abundance, and occupancy. Some practical resources for applying these methods include Cooch and White (2021) for mark-recapture analysis in Program MARK, Royle et al. (2014) for spatial capture-recapture, and MacKenzie et al. (2018) for occupancy analysis. Wildlife professionals at regional universities and wildlife agencies also could be consulted for specific and current information (see Gould et al. 2024 and Coltrane et al. 2024). The methods of choice should be cited, and the proponents may want to ensure that at least one of their wildlife biologists has received training – or plans to take workshops – in one or more of these quantitative methods.

During planning, the proponents may want to consider additional survey methodologies to better assess the use of shrub-steppe habitat. For example, bird surveys could be done to assess occupancy by shrub-steppe dependent species (e.g., Burrowing Owl, Ferruginous Hawk, Greater Sage-Grouse, Sage Thrasher, and Sagebrush Sparrow). Bird surveys could be done by point counts or through automated recording units (ARUs). Moreover, provisions could be included to monitor other culturally important upland game species as identified in the Final EIS for the Spokane Tribe's Integrated Resource Management Plan.

The proponents indicate that all data will be stored in Spokane Tribe of Indians Department of Natural Resource databases. Additional detail is needed on how the data and results will be reported and shared.

3. Provisions for monitoring and evaluation of results and project adjustment process

The extent of monitoring and evaluation within a project adjustment framework is difficult to ascertain from the proposal. Certainly, the proponents acknowledge the importance of adaptive management and anticipate that annual work plans will be adjusted based on monitoring results. For example, seeding of native vegetation and supplemental planting will be implemented based on monitoring results, and habitat associations of ungulates will inform the location of habitat and vegetation surveys. On the other hand, it is not clear how monitoring data will feed back to assess and adjust project objectives or how information will be used for higher level decisions such as annual harvest levels and seasons. With the adoption of quantitative biological objectives, there would be an opportunity to adjust higher-level objectives. For example, if progress towards estimating habitat suitability at 80% coverage (our hypothetical example) was behind schedule, then resources could be reallocated to this objective, or perhaps the objective could be modified. Hypothetically, habitat suitability could still be evaluated at 80% coverage but at a coarse spatial resolution, with finer-scale surveys completed at 80% of all shrub-steppe habitat.

As a suggestion, the proponents could consider using a risk uncertainty framework (ISAB/ISRP 2016-1) to prioritize their research and monitoring efforts. This framework has three factors that must be balanced: the expected biological, socioeconomic, and cultural benefits, the value of new information in terms of the rate of reducing uncertainty (the difference between current knowledge and required knowledge), and cost.

4. Results: benefits to fish and wildlife

This is a new proposal, so reporting of project results is not applicable, and thus the proposal does not include information under the section "Progress to Date."

Literature cited

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