ISRP INDEPENDENT SCIENTIFIC REVIEW PANEL

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

Memorandum (ISRP 2026-1) **May 4, 2026**

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

From: Pat Connolly and Tom Turner, ISRP Co-Chairs

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

Background

In response to the Northwest Power and Conservation Council's request on March 17, 2026, the ISRP completed a follow-up review regarding the Spokane Tribe of Indians (STOI) new project, *Upland Wildlife Habitat Management* (BPA project #2024-004-00). This ISRP follow-up review evaluates a point-by-point response and supporting appendices provided by the STOI in response to eleven points raised by the ISRP during our 2025 review of the project's original proposal (ISRP document 2025-1). Based on our 2025 review, the Council supported the project for implementation conditioned on the STOI addressing our eleven points (see the Council's August 14, 2025 letter).

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 has two primary elements. One element assesses current big game populations (mule deer, whitetail deer, elk, and moose) and habitat conditions by using regionally standardized data collection methodologies, with an ultimate goal of managing ungulate species at sustainable population and herd composition levels to allow for subsistence hunting by tribal members.

A second project element focuses 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 supplies 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 to benefit grouse as well as game species.

ISRP Recommendation and Summary Comments

The ISRP appreciates and commends the effort the proponents put into the response, monitoring resources documentation, and supporting appendices. We also recognize that the Council did not specifically request a revised proposal although we did. Overall, the response was comprehensive and addressed many of the issues we identified. The response provided revised goals, objectives, and subobjectives, which included the formulation of SMART objectives, providing much clearer desired outcomes for all project elements. The expanded data collection and analytical methods for habitat assessment for all species addressed the weaknesses in the proposal.

Responses were particularly attentive to our queries about the management of habitat restoration and Columbian sharp-tailed grouse reintroduction. A comprehensive stepwise process and timeline were provided for assessing habitat conditions and developing a translocation management plan for sharp-tailed grouse. Aspects of ungulate population sustainability and harvest objectives were much improved. The response included some information about ungulate monitoring and harvest management, but ungulate objectives, methods, and analytical frameworks could be better aligned. A more comprehensive and clearer description of the adaptive management process for project adjustments and management decisions was an important addition to the project description. Further clarity on the procedures for adaptive decision-making will benefit the program and help achieve short- and long-term program objectives.

Based on the original proposal, response comments, appendices, and expanded monitoring resources documentation, we conclude that the proposed project **meets scientific review criteria**, and we offer several additional recommendations to improve the project's methods and documentation. We do not see the need for further ISRP review until the next scheduled

ISRP project review. There remain issues that we believe are important to address that we identify in the following recommendations:

1. We recommend that the improved information provided in the response comments and appendices be incorporated into the Wildlife Program's planning documents, annual reports, and future proposals. An impressive amount of detail was provided in the expanded background, revised goals and objectives, enhanced methods descriptions, updated timelines, and improved adaptive management descriptions. These improvements will benefit the Wildlife Program moving forward. Consideration should be given to revising the original proposal; a comprehensive proposal would serve well for long-term guidance of the project and for future project reviews.

2. Extensive information was provided in the response that addressed issues related to the habitat assessment sample designs and analytical and statistical methods. However, the response was unbalanced, with greater effort put towards the habitat work and sharp-tailed grouse reintroduction, and less effort towards ungulate monitoring and population modeling. We strongly recommend that the proponents work to refine their ungulate program to better align the objectives, methods, and analytic framework. We also suggest that the proponents consider additional objectives for wildlife monitoring that not only rely on demographic information (i.e., counts of ungulates from aerial surveys) and population dynamics modeling but also include criteria that align with community and cultural values and the long-term objective to maintain harvesting opportunities for tribal members. For example, it may be possible to track other biological indicators such as the health of harvested species or hunter and community satisfaction by tracking perspectives on hunting experiences.

In the Response Review Dialogue sections below, we provide detailed feedback on the proponents' responses to our eleven points.

ISRP and STOI Response Review Dialogue

Comment 1: Deer, elk, and moose harvest status and goals and habitat use

ISRP 2025 request: *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.

STOI 2026 Response:

Concerning big game species on the Spokane Indian Reservation (SIR), there is no desired level of harvest, only that we maintain populations that can provide hunting opportunities for Tribal membership and do not set targets to remove a specific number of animals. The Spokane Tribe of Indians (STOI) Wildlife Program works with the Tribal Wildlife Committee to develop seasons and regulations that are presented to the Tribal Business Council, all hunting regulations are ultimately decided and approved through resolution adopted by the Business Council.

Habitat surveys conducted during 2025 were primarily focused on Columbian sharp-tailed grouse habitat areas, however much of this area overlapped with big game winter range as listed in our Integrated Resource Management Plan (IRMP). We found an extensive presence of noxious weeds across surveyed sites. Noxious weeds may out-compete native plants for resources such as nutrients and sunlight, resulting in decreased overall plant species diversity, increased rates of soil erosion, and reduced water quality, among other negative effects, which results in a degraded wildlife habitat condition (USDA 2025).[1] Additionally, we know that many areas of habitat were damaged during the Cayuse (2016) and Carpenter Road (2015) fires. A portion of habitat surveys conducted in the following years will be concentrated in these areas to determine the composition and quality of vegetation present, and future habitat management decisions for big game will be based on these findings.

Data collected from collaring efforts for big game species (deer, elk, and moose) will be used to assist the Wildlife Program in determining the habitats for calving grounds and fawning, seasonal movement, and high-use habitat areas. We hope to determine migration patterns of all ungulate species on the SIR, as this data has not yet been collected, and there is a gap in knowledge. In January 2026, GPS collars were deployed on mule deer (*Odocoileus hemionus*), elk (*Cervus canadensis*), and moose (*Alces alces*) via aerial capture to begin collecting data that can answer

[1] For full citations from the STOI's 2026 Response, see the response's citation section, pages 11 and 12.

some of these questions. Additional collars will be deployed on white-tailed deer (*Odocoileus virginianus*) using clover trapping as weather conditions allow. Resident and migratory herds would not be managed differently; big game herds are managed based on overall estimated population by species. There is no non-tribal harvest of any animals on the reservation, and there is hunting in areas adjacent to the reservation where nontribal harvest may occur under state regulations. The primary predators of our focal ungulate species are currently unknown; we could only speculate based on predator species present in the area. Potential predators found in the area include gray wolf (*Canis lupus*), mountain lion (*Felis concolor*), bobcat (*Lynx rufus*), coyote (*Canis latrans)*, and American black bear (*Ursus americanus*).

Winter aerial surveys will be used to assess post-harvest ratios of males to females and young to females for all four ungulate species present on the SIR. Sightability modeling can be applied to all species to provide an index count that can be positively correlated with true abundance rather than as a population estimate and age and sex ratios (Harris et al. 2015). Other techniques, such as ground surveys, may be used to supplement these assessments for moose and white-tailed deer as they are found in smaller groups or solitary in denser forested areas (Harris et al. 2015). How each species is managed from a hunting perspective is discussed with the Wildlife Committee, but ultimately decided by our Tribal Business Council, but more abundant species would likely have longer seasons, more tag drawings, or higher limits, whereas a species like moose may have a lottery tag drawing. The Wildlife Program conducted one winter aerial survey but has not yet analyzed any of the data from it. Annual harvest data has been documented in the past for elk and moose; however, this is proprietary knowledge that is kept internally and will not be shared. From a Program perspective, each species will be evaluated based on GPS collar data and winter aerial surveys to determine what management practices would be best suited to the situation. Regardless of specific ecology, management practices would focus on maintaining the population at levels that allow for hunter harvest. There is very little known at this point outside of initial habitat surveys conducted in 2025, the first winter aerial survey, and historical harvest data of elk and moose.

The area identified for Colombian sharp-tail grouse (CSTG) habitat management (Map 1) overlaps with 12,521.5 acres of Big Game Winter Range within the Riverbreaks and Mid-Elevation Pine Resource Management Zones on the SIR, as identified in the Integrated Resource Management Plan (IRMP). Additionally, the Riverbreaks zone is listed in the IRMP as a management emphasis area for mule deer. Restoration activities that will improve CSTG habitat, such as native grass and forb seeding and tree and

shrub planting, will also directly benefit elk, mule deer, and white-tailed deer on the SIR.

Many ungulates inhabiting the western part of the United States rely on sagebrush steppe habitat throughout a portion of the year, with shrubsteppe associated vegetation providing thermal refugia and important seasonal food sources (especially emergent vegetation in early spring) (Kurt et al. 2025). Ungulates such as deer and elk are considered habitat and dietary generalists that depend on a variety of seasonal forage sources to provide variable levels of different critical nutrients at different times of the year (Berry et al, 2019; Holecheck 1984). Moose are not known to utilize shrubsteppe habitat, as dietary specialists they depend heavily on willow (Salix spp.) which make up 75-91% of their diet in western North America (Shipley 2010).

Seasonal changes in diet selection are based on availability and phenology of forage species. In spring, elk tend to eat grasses because many exhibit growth early in the season (Innes, R. 2011). Forb and shrub consumption increases in late spring and summer, with their diet shifting to mostly grasses and shrubs in fall and winter (Innes, R., 2011). One study found that 60% of elk diet consisted of grasses, such as Bluebunch wheatgrass, Western needle grass, and Idaho fescue, all of which can be found within shrub steppe habitat on the SIR (Stewart et al. 2011). Mule deer may rely heavily on grass throughout the year, with forbs being eaten mostly in the summer, and browse (shoots, leaves, twigs of trees and shrubs) becoming more important during fall and winter (Innes, R. 2013). In Northern California, browse made up 48% of mule deer annual diets, graminoids 24%, and forbs 28% (Innes, R., 2013). Diets of sympatric mule deer and white-tailed deer are generally similar, with dietary overlap ranging from 50-90%, although white-tailed deer may rely more heavily on forbs, mast (berries, acorns, nuts), and agricultural crops when available (Berry et al. 2019; Innes, R., 2013). Some commonly occurring shrub browse species present on the SIR that are preferred by one or all three ungulate species (white-tailed deer, mule deer, elk) are Saskatoon serviceberry (*Amelanchier alnifolia*), ceanothus (*Ceanothus sp.*), chokecherry (P*runus viginiana)*, kinnikinnick (*Arctostaphylos uva-urs*i), common snowberry (*Symphoricarpos albus*), antelope bitterbrush (*Purshia tridentate*), and sagebrush (*Artemisia sp.*).

Deer and elk are known to preferentially feed on plants that provide high nutritional value (Turner et al. 2025). Native forage species, often preferentially selected by ungulates due to their high nutrient content, may be out competed by invasion (Trammell and Butler 1995). Declines in native plant communities may reduce the carrying capacity for wildlife that are reliant on them (Trammell and Butler 1995). Populations having limited access to high quality food often exhibit lower reproductive

rates, increased reproductive delay, and delayed age of sexual maturation (Parker et al. 2009; Morano et al. 2016). The quality and quantity of forage available has direct effects on body composition, survival, and reproduction in wildlife populations (Morano et al., 2019). Deer have been found to obtain a larger size and have higher reproductive rates in areas with a variety of high-quality forage sources (Turner et al. 2025).

Habitat surveys conducted during 2025 found an extensive presence of noxious weeds across surveyed sites. Noxious weeds are a major threat to plant community composition and habitat quality in shrubsteppe ecosystems (Denis et al. 2026). Due to the extremely high rates of proliferation seen with many invasives species, areas infiltrated by these species tend to see a decline in overall plant species diversity decreasing the quality and quantity of nutritive sources available to ungulates and other wildlife (USGS 2025; Kurt et al. 2025). Shrubsteppe restoration will directly benefit elk, mule deer, and white-tailed deer on the SIR by restoring native plant community diversity and composition, increasing the availability and variety of high-quality forage sources.

ISRP 2026 Follow-up Comment:

The proponents provide more detailed background information about the natural history of each of the target species including their habits, habitats, and predators. They also clarify that direct information concerning the abundance and movements of ungulates on the SIR are largely lacking, thus providing the rationale for the proposed project. The proponents further clarify the specific gaps in knowledge that their project aims to address.

The ISRP understands the sensitivity associated with harvest levels of big game animals, which is considered "proprietary knowledge that is kept internally and will not be shared" by STOI. Could there be alternative metrics of harvest that would not impinge on propriety knowledge? For example, the proponents may want to consider qualitative information about the current size and/or health of ungulate populations or harvest on the SIR (e.g., perceptions that they are increasing, steady, or decreasing).

Comment 2: Goals and objectives

ISRP 2025 Request: *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.

STOI 2026 Response:

See Appendix A for updated goals and objectives.

> ***ISRP 2026 Follow-up Comment:***
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> The revised goals, objectives, and subobjectives are much improved. There is better connectivity and continuity from the goals to the objectives with relatively clear distinction between biological, implementation, and monitoring and evaluation with SMART objectives provided where appropriate. Goals and objectives were specified separately for white-tailed deer, mule deer, elk, moose, and sharp-tailed grouse. The revised goals and objectives effectively addressed our general and specific points of concern.
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> As reflected in our summary recommendations, we see some misalignment between the ungulate objectives and the methods, and lack of specificity in the status and sustainability assessment methods. Improving that alignment may require refinement of the ungulate objectives.

Comment 3: Sustainability Definition and Population Status Assessment

ISRP 2025 Request: *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.*

STOI 2026 Response:

We are defining a sustainable population as one that maintains long-term stability and persistence, with the mortality rate being offset by birth rate, and no consistent decline overtime. Population assessments for reintroduced populations of

CSTG will be used to assess population growth, stability, persistence, and long-term population viability. We are currently in the beginning phases of writing the translocation and reintroduction plan for Columbian sharp-tailed grouse on to the SIR. Detailed methods for conducting and analyzing population assessment data will be finalized and included in the relocation plan set to be finalized by year 5 of the project. We are defining a sustainable population of Colombian sharp-tailed grouse as having a minimum number of 280 birds based on a population viability assessment conducted by the Montana Department of Fish, Wildlife, and Parks in 2017 (Mcnew et al. 2017).

ISRP 2026 Follow-up Comment:

The response partially addressed one key issue of clarifying elements and characteristics of population sustainability. However, the working definition of population sustainability is still somewhat vague, and it remains unclear how it will be measured in ungulates, but from the revised goal, objectives, and subobjectives, it is clear that the proponents aim to conserve and manage populations of ungulates for subsistence hunting. In the absence of formal, species-specific population models to track population numbers (which are recommended), it may be more achievable to initially focus on metrics of population status, health, or harvest success. In addition, the proponents could consider metrics that evaluate the use of restored land by ungulates.

A wide range of demographic and biological indicators can be used to monitor ungulate populations, and these should be considered (e.g., see Boulanger et al. 2017[2]).

There may be additional harvest metrics that could be tracked to suit the SIR. For inspiration, the SIKU app (https://siku.org/about), a "free mobile app and web platform by and for Indigenous Communities and Harvesters" may provide ideas and connections to communities with similar challenges.

With regards to Columbian sharp-tailed grouse, a minimum number of 280 birds may be unattainable. Not only may the area of restored habitat be insufficient, but there may also be additional limiting factors at play. We recommend that the proponents critically evaluate numbers gained from other reintroduction attempts and – if warranted – temper their expectations.

[2] Boulanger, J., K. Poole, C. DeMars. 2017. Review of Bison Monitoring Program for the Northwest Territories. Manuscript Report No. 269. Government of the Northwest Territories. Available online: (link)

Comment 4: Sequence of assessment and restoration actions

ISRP 2025 Request: *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.*

STOI 2026 Response:

While we agree that a robust habitat database is needed to guide decision making, there is a strong case for implementing projects while we work on generating a habitat database for the reservation. The intent was to implement small habitat restoration projects to develop best management practices and implementation methodologies that are tailored to the habitats on the SIR. There are several disturbed areas such as abandoned agriculture fields which are now weedy fields on the SIR where habitat projects could have been implemented in Year 1. While they may not be the singular best locations to increase habitat suitability for a specific species, replacing noxious weeds with native vegetation remains beneficial to wildlife habitat, especially in areas previously identified as important for wildlife on the SIR (Big Game Winter Range and Wildlife Emphasis Areas).

Despite this, no habitat restoration projects were implemented in Year 1, and proposed projects were pushed back to Year 2. While the data analysis for 2025 habitat surveys is ongoing, STOI staff found several areas where small scale projects (< 10 acres) could be implemented, including abandoned agricultural fields, a heavy cheatgrass and knapweed site adjacent to the Peaks Wildlife Management Area (chosen to prevent weeds spreading into the WMA and build off of the habitat work they have completed in the WMA), and a reclaimed mine site with minimal vegetative cover. These sites were pivotal for establishing best management practices and implementation protocols for herbicide applications, mowing, site preparation, seeding native bunchgrasses, planting container trees and shrubs, project maintenance, and project monitoring. Additionally, we tracked the total labor hours per acre for each task which is needed to set realistic work elements in future annual scopes of work. These early projects will also be used to generate timelines for expected habitat responses to restoration actions, which will then be used to adjust timelines of the goals and objectives for this project. Because of Year 2 implementations, our staff is now prepared to implement all aspects of habitat restoration on the SIR.

ISRP 2026 Follow-up Comment:

The response clarified the stepwise process of collecting and analyzing habitat data to build a database while concurrently implementing small-scale projects to address known and immediate threats (noxious weeds). The stepwise process is also designed to provide experience in developing and implementing best practices and protocols for restoration implementation actions as well as monitoring and evaluation. The pilot process to document operational and material costs and expected response timelines will prove valuable, and we support these pilot project efforts. An additional recommendation is to consider whether control strategies need to be species-specific.

Comment 5: Columbian sharp-tailed grouse reintroduction implementation?

ISRP 2025 Request: *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.*

STOI 2026 Response:

An ultimate goal of this project is to release Columbian sharp-tailed grouse on to the Spokane Indian Reservation (Appendix A). Prior to an eventual release, we need to determine the number of suitable acres for CSTG on the SIR, prioritize potential release sites, and implement habitat management projects to increase the number of suitable acres. The Wildlife Program is currently working to develop a translocation and management plan for CSTG, locate potential source populations, and develop agreements for trapping and relocating CSTG. The final CSTG translocation and management plan will include more detailed goals, objectives, and timelines for population management and habitat management post release.

ISRP 2026 Follow-up Comment:

The response, along with revised goals and objectives, clarified the goals for reintroduction of sharp-tailed grouse and provided a clear stepwise plan and timeline for assessing habitat conditions, implementing habitat restoration, and developing translocation and management plans.

Comment 6: SMART objectives for data management and public outreach

ISRP 2025 Request: *Include SMART objectives for 1) archiving and sharing the data, 2) reporting and synthesizing the results, and 3) public outreach and education.*

STOI 2026 Response:

See Objectives 10 – 13 in Appendix A.

ISRP 2026 Follow-up Comment:

The response addressed our concerns, and we commend the STOI for developing SMART objectives for data storage and sharing, reporting results, and public outreach and education. We consider these objectives to be important for tracking success of the project. Regarding fulfillment of Objective 12.3, consider inviting youth to participate in the wildlife surveys.

Comment 7: Application of data to management

ISRP 2025 Request: *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.*

STOI 2026 Response:

Areas will be prioritized for habitat restoration projects by following the CSTG Habitat Project Decision Tree (Appendix B). The habitat data will be used to facilitate the translocation of Columbian sharp-tailed grouse to the SIR by calculating the HSI (Appendix D) of each site and generating a mean HSI value for each CSTG management area (Map 1). Areas will only be considered for translocation if the HSI value is greater than 0.75 (Meints et. al. 1992). Further details related to the reintroduction and specifically how this data will be used to guide and prioritize potential release locations will be included in the CSTG management and translocation plan (Appendix A, Objectives 2 and 3).

ISRP 2026 Follow-up Comment:

The response focused on habitat restoration for sharp-tailed grouse. Appendices provided additional details on how data will be analyzed to assess habitat conditions for white-tailed deer, mule deer, elk, and moose. The request was much broader in scope

and included the need to describe how data would be analyzed to assess sustainable harvest levels for white-tailed deer, mule deer, elk, and moose. Our summary recommendations include the need to consider how survey data (counts and ratios) and other ungulate data (movements, health) will be used to inform harvest objectives. Given the goal to increase harvest opportunities, it will be important to define and measure population status in terms of abundance – even if qualitative.

Comment 8: Population dynamics model for deer, elk, and moose

ISRP 2025 Request: *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.*

STOI 2026 Response:

Considering the steps in the internal decision-making process about determining big game seasons on the STOI's reservation, the Wildlife Program will make scientifically sound recommendations to the Tribal Wildlife Committee, which is appointed by the Spokane Tribe's Business Council. After regulations have been agreed upon by both Wildlife Program staff and the Wildlife Committee, they are passed by tribal resolution once approved by the Tribal Business Council.

Various details regarding big game, habitat, carrying capacity, seasonal movement, and transboundary herd movement are still unknown and are vital in determining things like maximum sustainable yield of big game herds. However annual post-harvest aerial surveys or ground surveys can be used to monitor trends in young of the year and sex ratios in big game. The Wildlife Program can then use intrinsic growth rate models to evaluate the applicability of integrated modeling approaches (either maximum likelihood or Bayesian approaches), based on population abundance, trends, survival, and recruitment. This would be used to create recommendations to the Wildlife Committee and Tribal Business Council for annual sustainable harvest hunting seasons and dates to not negatively impact big game populations.

ISRP 2026 Follow-up Comment:

The response along with the enhanced methods provided in monitoring resources and appendices partially addressed our request. However, the revised objectives and subobjectives do not include the development of population models for ungulates. It is unclear if this is due to uncertainty about the value of modeling, uncertainty about the

best modeling approach, uncertainty about assumptions and parameters, or logistic constraints. We recommend further reflection on the pros and cons of modeling, and whether subobjectives could be refined to address information gaps or overcome constraints (e.g., new Objectives 4.3, 5.3, 6.3, and 7.3).

The ungulate subobjectives refer to population trend indices, but it is not clear what these are and how they are calculated from survey data. The reliance on metrics such as number of bulls per 100 cows and calf-cow ratios will not likely suffice to sustain long-term harvest management. Ideally, these indices would need to be paired with population trend estimates garnered from adequate intensity of effort and modeling to gain an acceptable level of precision; in addition, movements of ungulates into and out of the SIR would need to be quantified.

Comment 9: Methods

ISRP 2025 Request: *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.*

STOI 2026 Response:

Any methods or plans not entered into monitoring resources are included as an Appendix.

Monitoring Resources Links
Big Game and Predator
Study Plans
Spokane Tribe of Indians Big Game Home Ranges and GPS Location Summarization v2.0
Spokane Tribe of Indians Animal Surveys v2.0
Spokane Tribe of Indians Big Game Population Monitoring v1.0
Methods

Ungulate winter aerial surveys v1.0
Elk embryo measurements v1.0
Chronic Wasting Disease sample collection v1.0
Clover trapping cervids v1.0
Aerial net gun capture of large mammals v1.0
Field necropsy to determine cause of mortality v1.0
Aerial capture and immobilization v1.0
Blood collection of large mammals v1.0
Collection of scat or hair samples for DNA analysis v1.0
Cervid tooth extraction for aging v1.0
Age and sex ratio estimation of ungulates v1.0
Habitat
Study Plans
Spokane Tribe Vegetation and Habitat Monitoring v1.0
Protocol
Vegetation and Habitat Monitoring v1.0
Methods
Down Woody Debris v1.0
Establishing Photo Points v1.0
Establishing Transects for Habitat Measurements v1.0
Herbaceous Measurements - Percent Cover v1.0
Stand Density v1.0
Shrub Height v1.0
Shrub Measurements - Percent Cover v1.0
Tree Measurements - Diameter Breast Height (DBH) v1.0
Tree Measurements - Percent Canopy Cover v1.0
Visual Obstruction Readings (VOR) v1.0

Avian
Methods
Corvid and Raptor Surveillance v1.0
Avian Surveys v1.0

Habitat Survey Location Selection: Appendix C

Draft Habitat Data Analysis Protocol: Appendix D (Method and protocol in development, will upload into monitoring resources once completed)

ISRP 2026 Follow-up Comment:

The additional information provided in monitoring resources covered the field methods comprehensively. Appendix D provided sound methodologies for habitat assessments for all species including habitat data preparation, HSI, data analyses, power analyses, and statistical analyses. We were unable to find analytical or statistical methods in monitoring resources or in the response documents. There remains the need to develop and describe analytical and statistical methods for the home range, population status, and population dynamics for deer, elk, and moose at a level similar to that provided for the habitat assessment objectives.

The avian survey protocols seem to differ from standard protocols (e.g., the North American Breeding Bird Survey). It may be more straightforward to follow standard protocols. If deviations are required, these should be described and justified.

Comment 10: Adaptive management process

ISRP 2025 Request: *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.*

STOI 2026 Response:

Wildlife and habitat management require an integrated approach, and adaptive management provides a framework for continuous evaluation and adjustment needed to meet project goals (Figure 1).

There are annual opportunities for adaptive management of habitat monitoring and for habitat restoration implementation. Habitat surveys are imperative to determine management needs and to prioritize areas for treatment. Once these areas are identified, a site-specific restoration plan can be developed, and implementation can begin.

Continuous monitoring of implementation projects is necessary to determine if project objectives are being met. In the case that they are not, management actions must be reassessed and necessary adjustments made (Table 1).

The adaptive management process for habitat monitoring may include changes to the monitoring protocol and determining locations for additional survey sites. Changes to the monitoring protocol are expected to be minimal but could include adding additional measurements and variables. For example, adding additional measurements such as plant species density might be necessary to detect short-term changes to the noxious weed population in response to herbicide application. During Year 1 surveys, STOI staff realized that the stratified method used for randomly generating habitat survey points locations did not adequately sample hardwood stands which CSTG use for cover and forage during winter months. Our adjusted objectives for CSTG habitat survey efforts include assessing geospatial products for wintering habitat presence, delineating winter habitat into polygons, and generating survey points for the polygon centers (Appendix A, Objective 1.1d). This point layer will be used for conducting CSTG winter habitat surveys in Year 2 of the project.

Each winter, the habitat database will be assessed and used to dictate the following year's habitat survey needs. Early in the project, this will mostly be assessing the statistical power of our habitat survey and determining where additional survey sites are needed for CSTG specific habitat assessments. A few years into the project, this process will transition to target ungulate sites from wildlife surveys and to include resurveying areas where habitat restoration projects have been implemented. Timelines for resurveying sites will depend on the specific methods used (spraying, tilling, planting, etc.), and early projects will be monitored closely to determine what these timelines will be.

ISRP 2026 Follow-up Comment:

The response and revised objectives clarified the adaptive management process for adjusting habitat surveys. Additionally, responses one and four provided information relevant to adaptive management processes for big game harvest and habitat management. There is still a need to address the specific questions about the decision process, including: who will be involved, whether structured decision processes will be used, how information will be shared, and how decisions will be documented.

Given the relationship between the Wildlife Committee and Tribal Business Council, what happens if there is disagreement over the biology-based recommendation for annual sustainable harvest or other hunting regulations? Also, what happens when and if the biology-based (or Tribal Business Council-based) harvest level is not met or is exceeded? These annual nuances may well be important to track (planned vs actual) and report.

Comment 11: Collaboration with other projects

ISRP 2025 Request: *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.*

STOI 2026 Response:

We plan to and already have begun collaborating with the Spokane Wildlife Area Operations and Maintenance Project (1998-003-00). This new project aims to create a habitat database of the SIR, which includes the O&M managed areas. Data collected from the O&M parcels is needed for prioritizing habitat restoration project locations and for comparing potential CSTG release locations. To have a current and robust habitat database that is useful for decision making related to CSTG reintroduction and big game management, we need to implement the STOI Vegetation and Habitat Monitoring protocol on lands managed by the O&M project. There is an ongoing habitat and wildlife data collection effort through the Upper Columbia United Tribes Monitoring and Evaluation Program (2008-007-00), and while this project will

benefit from that data, we need a higher resolution dataset for decision making with many more survey sites on lands managed by the O&M Project.

Because the O&M project has been working to conserve and restore the habitats they manage, we plan to target lands adjacent or near O&M managed parcels for habitat restoration projects as this strategy will increase the continuity of suitable habitats on the SIR. We will not implement any projects on O&M lands as a part of this project. If we determine that any habitat restoration projects should be implemented on a parcel managed by the O&M project, then this information will be submitted to the O&M Project Manager as a recommendation.

ISRP 2026 Follow-up Comment:

The response comment effectively clarified the degree to which this project will be integrated and collaborate with the Wildlife Areas O&M project (1998-003-00). The proposed integration process to share data and provide recommendations to the O&M project for restoration actions is sound.

Figures and Tables from STOI Response

Figure 1. Adaptive Management Flow Chart (retrieved from 2021 Integrated Weed Management Plan for the Spokane Indian Reservation).

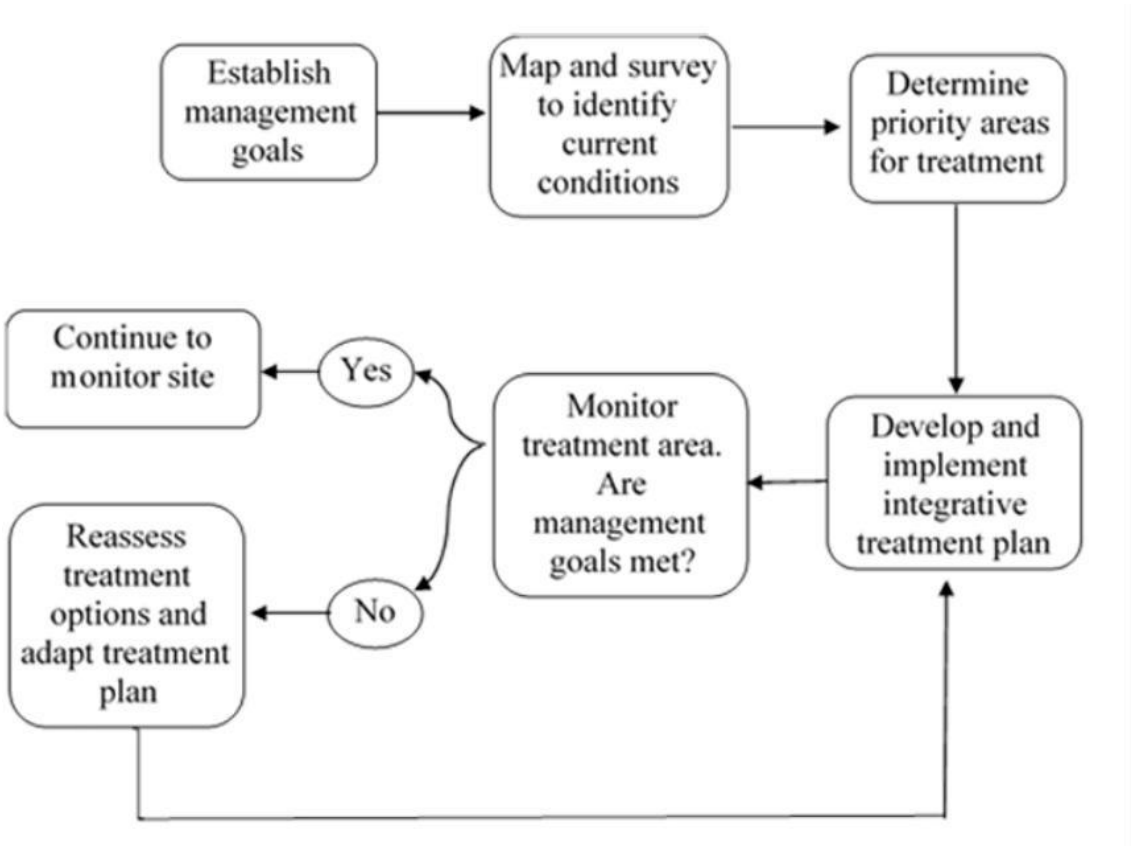

Table 1. Example of what habitat adaptive management may look like.

Habitat Restoration Adaptive Management Framework					
Goal Setting	Design and planning	Implementation	Monitoring	Evaluation	Adjustment
Increase Native bunchgrass cover	Determine planting methods, seed mixture, acreage desired etc.	Plant seed mixtures using predetermined planting methods	Short term: Do we see germination and emergence of seedlings? Long term: Evaluate if we achieved target percent cover.	Was the action considered successful? Could the success rate be improved? Are the factors affecting success within our control (i.e. weather/climate)?	Potential factors to adjust-tilling method, planting depth, seed mixture composition, add soil amendments, etc.
Tree planting	Determine species desired and specific needs of that species (i.e., amount cover, soil type, water availability). Plan site location and planting method.	Plant trees using predetermined planting methods.	Short term: Evaluate survival Long term: Measure tree and shrub cover percent and recruitment rate.	Was the action considered successful? Could the success rate be improved? Are the factors affecting success within our control (i.e. weather/climate)?	Adjust planting depth, use enclosures or repellents to reduce browse, look at other nurseries for better stock, reduce or increase watering etc.
Herbicide Application to reduce noxious weeds	Determine appropriate products, application rates, and application timing to meet specific management goals.	Apply product using proper procedure and specified protocols.	Ex. Is there a reduction in weed cover (20% or greater), increase native plant cover	Was the action considered successful? Could the success rate be improved? Are the factors affecting success within our control (i.e., weather/climate)?	Re-evaluate product used, application rate, or application timing (season, weather, etc.).