



Independent Scientific Review Panel

for the Northwest Power & Conservation Council
851 SW 6th Avenue, Suite 1100
Portland, Oregon 97204
www.nwcouncil.org/fw/isrp

Memorandum (ISRP 2010-26)

August 6, 2010

To: Tony Grover, Fish and Wildlife Director, Northwest Power and Conservation Council

From: Eric Loudenslager, ISRP Chair

Subject: Response Request for BiOp proposal, Columbia Land Trust Estuarine Restoration (#2010-073-00)

Background

At the Council's June 25 request, the ISRP reviewed the proposal by the Columbia Land Trust (hereafter the Trust) titled *Columbia Land Trust Estuarine Restoration* (#2010-073-00). This new proposal outlines a plan to develop, design, and construct on-the-ground restoration habitat actions intended to benefit threatened and endangered salmonid species in lower river/estuary mainstem and tributary tidal habitats that promote the diverse estuarine life histories of wild salmonids. The proposal is also intended to provide survival benefits to meet targets required under the 2008 Biological Opinion for the Federal Columbia River Power System.

The ISRP's review follows below.

Recommendation

Does not meet scientific review criteria. A response is requested in the form of a revised proposal.

The following are needed in an adequate response:

1. In the technical justification, program significance, and project relationships sections clarify the specific role of the Trust in the process of BPA-funded habitat restoration.
2. Include quantitative environmental and biological objectives consistent with the 2009 Fish and Wildlife Program. The objectives given are very general and not amendable to technical review.

3. For tasks 1, 2, and 3 provide a level of detail that will enable the ISRP to adequately evaluate the potential of this proposal/project to provide benefits to juvenile salmonids. (see comments below for these tasks).

4. Provide details on specific monitoring methods and data management.

ISRP Comments

This is a proposal to support the Trust infrastructure (administrative, financial, and management staff) for routine activities such as management of subcontracts and production of compliance documentation, annual reports, and status reports.

The ISRP recognizes restoration projects proposed are driven by the BiOp for particular salmonid species. However, there is also the larger issue of an overall management plan for the estuary and how work done with this plan will benefit fish and wildlife. While the framework for the rationale and planning of habitat restoration is generally well done, the proposal stops far short of providing any specifics, including the scientific basis of how actual locations to restore were chosen, a specific study design, or measurable objectives with specified metrics. In general, ISRP expects each proposal to have the following key elements: an assessment; a vision (objectives); a prescription (strategies); development of implementation tasks; and monitoring of the outcome.

The Trust has provided a good description of their planned work in support of estuary components of the BiOp and they have a good track record of facilitating restoration. The Trust also has important and strong connections with the estuarine researchers. However, the Trust appears to assume that ISRP will consult the Estuary Module for the scientific justification of specific projects, but the Council's Fish and Wildlife Program and ISRP require the proponents to include information from assessments, analyses of benefits to fish and wildlife, and strategies for achieving biological and environmental objectives to be included in proposals. In addition at the time of this review, the Estuary Module is not a finalized, published document.¹

1. Technical Justification, Program Significance and Consistency, and Project Relationships (sections B-D)

The Trust has an impressive record of getting habitat restoration projects initiated and coordinating with others in the region. However, the ISRP did not find any evidence in the proposal that results or survival benefits for juvenile salmonids have come about from any of these projects. The proponent states they have conducted applied research over the past 10 years, but no references to publications or reports arising are provided with the proposal.

The ISRP is concerned that the proposed procedures for scientific review of Trust projects

¹ See also ISAB, 2008. Review of the Estuary Recovery Module. [ISAB 2008-2](#). 16 p.

bypass the ISRP process and that, as the proponents state, their projects will continue to be vetted by Estuary Partnership Science Workgroup (EPSW) for technical merit and BPA Expert Regional Technical Group (ERTG) for assignment of survival benefits. In the current instance, the request is to implement four projects that have yet to be reviewed by either the EPSW or ERTG.

The proponents rely extensively on scientific guidance from the Estuary Module but do not provide any details on specifics. The ISRP concluded that inclusion of specifics is required to effectively review the scientific content in the proposal. Numerous “actions” or “metrics” under the Estuary Module that are proposed (e.g., Subtask a under Task 2: CRE 1.3 –protection with future restoration of 75 acres of tidally influenced floodplain) are only generally described and lack sufficient technical detail.

The stated intent of this project is to “develop, design and construct on-the-ground restoration habitat actions that provide high survival benefits to meet targets required under the 2008 BiOp” in particular in tidally influenced areas from the Columbia River mouth to Bonneville Dam, including tributary tidal habitats. The projects on land acquired by the Trust will involve primarily tidal reconnections.

The brief history of past Trust projects provided is insufficient to evaluate the benefits to fish and wildlife of the 4,000 acres of land acquired and developed over the past 9 years. The primary metric is number of acres, and apparently there has been little direct scientific monitoring and evaluation of benefits to fish and wildlife. An objective and critical scientific review of past results and proposed objectives and hypotheses is needed. For example, what scientific evidence is there to support the hypothesis that restoration of tidal habitats to estimated historical levels will increase the current productivity (growth and survival) of Columbia River chum and ocean-type Chinook salmon? What limiting factors at other life stages might influence the success of this approach? What are the scientific bases for hypothesized relations among river and floodplain connectivity, salmonid food webs, and productivity and life history diversity of Columbia River salmon?

Only a few brief examples of observed changes in Trust restoration and restoration sites were provided. The only evidence cited for benefits to salmon is stomach contents data for juvenile salmon at two restored sites. Stomach content data are only a weak indicator linking the habitat to salmon productivity and life history diversity. For example, it is not known if prey were consumed in the habitat where the salmon were caught.

The goal of estuarine habitat restoration espoused by the Trust is consistent with the 2008 FCRPS BiOp (RPA#37), the Fish and Wildlife Program’s Lower Columbia River Subbasin Plan (2004), and LCREP’s 1999 management plan. The proposal needs to identify the specific actions/projects in the latter three plans that the Trust’s plans relate to rather than giving general statements.

2. Objectives, Work Elements, and Methods (section F)

General comments

Work elements primarily involve routine administrative and management activities like subcontracting and compliance reporting. The objectives given are very general. As drafted, this proposal is a plan to develop a plan. The methods and work elements in the proposal do not contain a level of detail that enables the ISRP to evaluate the potential of this proposal/project to provide benefits to juvenile salmonids. The proposal would be improved by more ecological information, over and above affirmations that the proponents are aware of specific methods, approved metrics, and RPA requirements.

Specific comments

Task 1: Identify and prioritize mainstem and tidal tributary projects in a scientific and systematic manner which will directly benefit ocean- and stream-type salmonids

Specific objectives for Task 1 and 2 are to: “1) Restore connectivity between river and floodplain, as well as in-river habitats; 2) Increase shallow water peripheral and side channel habitats toward historic levels.” Justification for Objective 2 is specifically linked to juvenile fall Chinook and chum salmon. However, no data are provided on historic rearing capacity of these species or the scientific relation between shallow water habitat and salmon productivity (growth and survival). The justification for this action needs to be based on an assessment of benefits to salmon from increasing this habitat type, and a quantitative objective for the needed additional acreage of shallow water habitat. Increasing toward historic levels is too ambiguous for scientific review. The ISRP needs a statement on how many new acres are required and what is the anticipated benefit to salmon in terms of viable salmonid population (VSP) parameters from implementing the actions. Several sites are listed for pre-acquisition or “under development” (proponent’s wording page 15) activities (e.g., Chinook River, Crooked Creek, Walluski River, Elochoman River), but information on specific activities is insufficient for scientific and technical review.

An explanation is needed to identify the assessment data that will be used to prioritize sites and project types; who is to conduct the prioritization analysis with the assessment data; and how sites will be recruited into the potential pool of candidates for prioritization and analysis. Is there going to be an open public “request” or will the Trust target eligible and potentially willing landowners? There is no explanation of the purpose of this task or what is hoped to be accomplished.

Task 2. Engage with willing land owners to secure restoration land base in restoration

The proposal requires further details on the scientific basis of the land acquisition steps. A Gantt graph or similar plot would be useful to get an impression of where the various properties (Chinook River, Crooked Creek, Walluski River, Lower Elochoman) are in the planning

process. According to Point # 9 (page 20) at least five groups are involved in the review of a specific site. Information on the following would be helpful: what is the anticipated ecological value of each site; how is the ecological value scored; which group does the final scoring; and what is the process involved?

Task 3. Develop construction designs and implement tidal reconnection projects which follow best available science and provide most benefit to species, while being cost-effective and constructible.

See above comments on Task 2. The ISRP asks for information on how the Trust chose the four sites (Chinook River, Haven Island, Crooked Creek, and Walluski River) as places to develop restoration plans. The ISRP realizes restoration projects need reviewing from “multiple angles” (proponents wording p. 29), but our mandate requires review of the scientific criteria used to select them. After that the Panel needs to review the science required to implement the project and a monitoring strategy.

All four subtasks require specific information on benefits to salmonids only available in the Estuary Module. The Panel concluded that a fuller explanation of the metrics involved in each of the “Anticipated Estuary Module Management Actions (Reach A)” is required. Are there specific survival benefits associated with each action and if so what are they? The ISRP should not have to consult cited documents to obtain such information.

The proposal would be improved by an explanation of how the Tasks are organized – there is no Task 4 listed but Task 5 is listed under Section G on monitoring.

3. M&E (section G, and F)

According to the proposal, the Trust will conduct M&E using standard protocols (Roegner et al. 2009) and at a minimum will “strive to perform one year of pre-project monitoring and two years of post-project effectiveness monitoring.” The Panel concluded these protocols need further explanation and justification. For example, what justification is there for the assumption that the major controlling factors of Columbia River salmon productivity are local physical factors in tidal habitats (tidal flow, salinity, and temperature)? Since salmon have to pass through tidal habitats on their way to and from the ocean, the proposed metrics to be measured (presence/absence, size/age structure, species) are weak.

The minimum short-term M&E proposed (one or two years of pre- and post-project monitoring) is insufficient to evaluate benefits to long-lived species such as chum and Chinook salmon. Minimum sampling frequencies of juvenile salmon (one day per month from March through October) are insufficient to explain variation in the proposed metrics in these dynamic tidal habitats.

The proponents state specific plans for M&E will be developed and reviewed by the EPSW and the ERTG. Will these groups re-review the Roegner et al. (2009) methods or choose methods from the document, or select from the list given in the proposal:

“At a minimum, Columbia Land Trust strives to perform one year of pre-project monitoring and two years of post-project effectiveness monitoring with an emphasis the following metrics: for hydrology (water surface elevation); water quality (temperature, salinity, dissolved oxygen); elevation (bathymetry, topography); plant community (composition and cover); vegetation plantings (success); and fish (temporal presence, size/age structure, species). “?

The proposal would be improved by inclusion of monitoring data from estuary restoration projects previously implemented by the Trust. The proponents have been conducting projects for 10 years, but there are no monitoring reports referenced.

WE 119 implies that the Trust is facilitating and managing restoration contracts, not implementing them as a lead entity. Protocols for monitoring and evaluating the effectiveness of management programs should be specified. Development of indicators may be a worthwhile approach (see the ISRP report, Input on Evaluation of Regional Coordination Projects, [ISRP 2007-14](#)).