Independent Scientific Review Panel
for the Northwest Power Planning Council
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December 11, 2001

MEMORANDUM

TO: **Northwest Power Planning Council Members**

FROM: **Rick Williams, ISRP Chair**

RE: **ISRP Review of the Draft Monitoring and Evaluation Plan for the Albeni Falls Wildlife Mitigation Project prepared by the Albeni Falls Interagency Work Group, dated August 2001**

Background

In the Mountain Columbia Provincial Review, April 2001, the ISRP reviewed proposals for the Albeni Falls Wildlife Mitigation Project (199206100) and the Pend Oreille Wetlands Wildlife Mitigation Project - Kalispel (199106100) and found that they provided insufficient detail on monitoring and evaluation (M&E) of project implementation efforts and recommended that they not be funded (see www.nwcouncil.org/library/isrp/isrp2001-4.htm). Subsequently, the Council approved funding for these projects with a condition to revisit the M&E component of the projects

In a related review in September 2001, at the request of the Council the ISRP reviewed the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions (see www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. From the review of the document, it did not appear that an M&E plan would necessarily be in place before collection of baseline data or filling of data gaps on fisheries habitat, wildlife, vegetation, and wetland and riparian areas. The ISRP recommended that for the overall acquisition and restoration plan to be scientifically sound, an interdisciplinary group for development of an M&E strategy and plan should be appointed and M&E strategies and plans prepared before any new field data are collected or gaps in field data are filled.

In response to the ISRP's comments and the Council's recommendations, the Albeni Falls Workgroup prepared a Draft Monitoring and Evaluation Plan for the Albeni Falls Wildlife

Mitigation Project ("Draft Albeni Falls M&E Plan"), dated August 2001 and submitted it for Council and ISRP review. This memo constitutes the ISRP's review of the M&E plan.

General Comments

The ISRP generally endorses the Draft Albeni Falls M&E Plan but recommends that the Workgroup consider intensification of the sampling plan in the Natural Resources Inventory or the use of a systematic sampling plan. Rationale for our recommendation is given in more detail below. We discourage the use of stratified random sampling designs for long-term monitoring in those cases where strata boundaries will change over time. In addition, review of this M&E plan and other efforts in provinces throughout the Columbia Basin emphasizes that the region needs to buy into a top-down, regionwide habitat and land-use monitoring program with consistent sampling procedures across the Columbia Basin and subbasins (if not watersheds) that is then intensified for making inferences to small areas.

Specific Comments

Development of a consensus monitoring and evaluation (M&E) plan is a difficult process because of unknown future land acquisitions and the host of requirements that will be placed on the resulting data. It is important for the sponsors to keep in mind Wayne Fuller's (Iowa State University) adage that more will be required of the data than planned.

The Draft Albeni Falls M&E Plan is acceptable and can serve (with consideration of suggestions indicated below) as a model for other M&E of habitat and other land use in the Columbia Basin. Adaptations will be required in other Provinces and for other target species, but the basic requirements of a good M&E program are present. We particularly encourage the use of sampling schemes and data collection protocols that are compatible with regional, national and international monitoring programs.

The ISRP has suggested in review of wildlife projects in other provinces that M&E on wildlife habitat and land use be made compatible with one of the national terrestrial survey efforts. In particular we have suggested that an intensification of the National Resources Inventory (NRI) survey sites and data collection protocols (Goebel 1998, Nusser and Goebel 1997) would serve the Columbia Basin well. See the Proposals #200002300 and #200020116, the ISRP reviews in the Columbia Plateau, and the NRI web site http://www.nhq.nrcs.usda.gov/NRI/. The Council's Fish and Wildlife Program includes objectives for fish and wildlife habitat in subbasins and in fact for the entire Columbia Basin. It is our understanding that subsets of data collected in the NRI could be utilized at the present time to make statistical inferences (to variables currently measured by the NRI) in the Columbia Basin and in some of the larger subbasins. See Oregon and Washington results from the NRI on the sites: http://www.or.nrcs.usda.gov/nri/index.htm, and http://www.wa.nrcs.usda.gov/NRI/. Monitoring of habitat and other land uses on the scale of subbasins (e.g., the Salmon subbasin) and the Columbia Basin will require development of a systemwide probabilistic sampling plan similar to the NRI or use of the NRI with appropriate variables measured. The ISRP believes that a coordinated "top-down" plan that can be intensified to make inferences to "small areas" (the size of projects in the Albeni Falls Dam Wildlife Mitigation Projects) is the best long-term strategy for the Columbia Basin. The NRI includes a sampling plan that can be intensified to make inferences in small areas and should be considered as an alternative to the proposed stratified random sample.

We recommend against stratified sampling for long term monitoring unless the boundaries of the strata will not change with time. It seems probable that the boundaries between emergent herbaceous wetlands, shrub-scrub wetland, and forested wetlands will change over time. Stratified random sampling involves unequal probability sampling and if sample points jump strata boundaries in the future, the analyses become complicated or intractable. We recommend consideration of a systematic sampling plan (e.g., points or plots located on grid points with temporary intensification of grid points in current "domains of interest", e.g. landscape elements that would provide strata/classes to be sampled) or a sampling plan similar to that used in the NRI. The advantages of stratified random sampling to targeted and shorter-term questions can be combined with the advantages of systematic sampling, and the combination can address the important local short-coming of a wide-scale systematic plan: too few points locally to adequately sample habitats, etc, that may need to be analyzed for local evaluation or decision-making. The Monitoring and Evaluation Plan does note that they may supplement their random long-term sample points with other more intensive and targeted samples assigned within specific management practices, etc, and this is the same idea we are suggesting.

We realize that the above recommendations put the Kalispel Tribe and their Natural Resource Department and the Albeni Falls Workgroup in a tough position. They are in no position to impose a top-down Columbia Basin wide sampling scheme for habitat and land use on the region, but we recommend that they lead the way with development of an appropriate plan and help sell it to the rest of the Provinces. No real competition exists in-so-far-as we are aware.

We are not aware of the current literature for data collection protocols on amphibians and encourage the authors to make sure that their protocols are consistent with the national amphibian survey being developed by the USGS (contact Paul H Geissler, U S Geological Survey, 12100 Beech Forest Road, Laurel MD 20708-4038, (301) 497-5780, paul_geissler@usgs.gov.). Dr. Charles Peterson (Idaho State University) is active in designing and implementing herptile sampling and monitoring in the Pacific Northwest and might also be able to offer advice (petechar@isu.edu, (208_282-2933).

Minor comments to be considered in preparation of the final Monitoring and Evaluation Plan for the Albeni Falls Wildlife Mitigation Project:

The ISRP recommends that the names for the different levels of monitoring be made consistent with the terminology used in the section on Monitoring in the ISRP review of project proposals submitted in the Blue Mountain and Mountain Snake Provinces and in the NMFS 2000 BiOp. We suggest the use of "implementation monitoring" to refer to monitoring that the proposed work in the proposal has accomplished (e.g., that X miles of fence is built or maintained). It seems that "Low Intensity" monitoring is more or less equivalent to "Tier I Trend" monitoring, "Moderate Intensity" monitoring is more or less equivalent to "Tier II Statistical" monitoring, and "High Intensity" monitoring is equivalent to "Tier III research" monitoring.

The authors should clarify the level of monitoring required when they use the phrase "site-specific monitoring" in the text, e.g., the next to last paragraph on page 5. We assume they are referring to Tier III research monitoring.

The proposal includes provision for long-term HEP evaluations. We suggest that effort put into long-term repetition of HEP analyses will not be very useful and that use of HEP analyses and their associated Habitat Units (HUs) to guide land management may lead to damaging or counterproductive management practices. HEP is based on the assumption that habitat suitability for a species can be described by a Habitat Suitability Index (HSI). These indices vary in quality and many are based on limited information. Confidence bounds on HSIs are rarely given, but have been found to be very broad. Management to produce or maintain habitat that is predicted by an index of untested quality to provide good habitat for a particular species is not warranted when better and more direct information on wildlife is available, as will be the case with the proposed monitoring program. We urge the program away from continuing emphasis on HEP evaluation as a tool for long-term evaluation or management planning.

We have noted before that the HEP procedure was a reasonable way to assess loss and mitigation, but the continued use of HEP over the life of a land purchase seems to be a poor use of money and effort and a likely route to counterproductive management of land. The Wildlife Program developed with the expectation that Habitat Units (HUs) could provide a proxy for direct wildlife measures and so an increase in HUs could be expected in a well-managed program and could provide a yardstick for measuring recovery. However, the development of good-quality direct monitoring programs will make this coarse approximation obsolete as an evaluation tool. The Albeni Working Group is prudent in allowing that they expect to at least maintain baseline HUs and they will allow a 20% decrease in this before invoking a management response. This is a reasonable approach, but perhaps still too likely to provoke over-management and counterproductive intervention. Lands often will change with time from naturally occurring successions, disturbances, etc, and accepting habitat as in flux may need to become part of long-term regional planning as well as local evaluation of project success. Management based on increasing HUs for a target species is likely to be expensive and ongoing and has the potential to produce habitat less suitable for a diversity of species. A good monitoring program that produces direct data on populations and diversity of wildlife species should make ongoing HEP work unnecessary as a tool for assuring continuing project quality.

References

Goebel, J. J. (1998) "The National Resources Inventory and Its Role in U.S. Agriculture," "Agricultural Statistics 2000", Proceedings of the conference on agricultural statistics organized by the National Agricultural Statistics Service of the US Department of Agriculture, under the auspices of the International Statistical Institute.

Nusser, S. M., and J. J. Goebel (1997) "The National Resources Inventory: A Long-Term Multi-Resource Monitoring Programme," Environmental and Ecological Statistics, 4(3):181- 204