

Response to ISRP Review of Project Proposal # 33011 – Implementing Land Use for Resource and Community Sustainability at the County and Regional Level

Provide an illustration of mathematical formula that would be developed as well as predictor and response variables.

Development of algorithms, rules, and categorizations within the decision support model will depend greatly on the number of variables chosen for the model and the accuracy of the information for individual variables. There are multiple spatial scale and thematic ranges, scale dependent model artifacts and uncertainty of predictions that need to be considered in the development on the model(s). For example, road and housing development locations will be definitive and can be directly associated with known response curves related to the effects of access on some species. Existing models response models for elk and grizzly bears relationships to roads could be used (Servheen et al. 1997, USFWS 1993). For other species, habitats, areas of importance, linkage areas, etc; we may have to use a categorization and weighting techniques to define a level of response/effect for model variables. These model responses and predictions may have to be both negotiated and received.

A Biodiversity Expert Systems Tool (BEST) (Crist, pers. Comm.) used land impacts categories and biotic sensitivity rankings to connect ecologically meaningful responses to land use types. Land cover alteration was defined by 5 categories based on proportion of area disturbed, type of disturbance, and intensity of disturbance as related to land cover structure, species composition, dominant species, hydrologic regime, and natural disturbance regime. Impact levels were categorized into 5 categories based on level of alteration and human conflict was described in the model based on the intensity, frequency, and duration of human activity with a total of 5 categories of human impacts.

How will the model be verified or ground-truthed?

Data collected during the project will be ground-trusted to an accuracy suitable for county planning purposes. This is provided for within the proposed budget. Information such as vegetation structure, species habitats, and land use will be initially identified by remote sensing information such as GAP2 models, etc. Subsequent ground truthing will include site verifications to confirm or correct information. We will not only do our own ground-truthing but will depend on local resource agency knowledge such as NRCS, Farm Service Administration, U.S. Forest Service, etc. Because access on private lands may not be possible in some cases, aerial truthing may be used including digital still and video tools. We may use aerial photography using black and white, color, or infrared film to collect land cover information and process the raw photos to ortho-rectified images using Erdas Orthobase software. This work may be contracted. The amount of ground truthing effort will depend on which variables appear most important to the decision support system. This will be based on collaboration of project proponents, county planners, and others involved in land use issues in the region (see letters of support).

How will this information be transferred to other watersheds?

The information developed in this project will be specific to the Henry's fork subbasin and the 3 counties. However, models, sub models, and associated rules for particular physical, resource, or community variables and responses developed during this project will facilitate and expedite similar efforts in other subbasins and counties.

What is the tie to the Fish and Wildlife Program and the upcoming Council's subbasin planning effort?

This project's approach provides a multispecies framework for land use and land use planning that mimics the Council's approach. The project uses scientific and ecologic information on fish and wildlife species abundance, distribution, and biology developed by the agencies, states, Tribes, and non-government organizations. Some of this information results from BPA-funded efforts including projects # 199505700, 199800200, and 198810814.

The intention of the Council's subbasin planning effort is to define the environmental and biological goals specific to fish and wildlife within the Columbia River Basin. The subbasin plans will provide the guidance and priority for implementing actions in the future. These may include: restore fish runs, maintain genetic integrity, protect and restore wildlife habitat, increase harvestable populations of fish increase escapement to the spawning grounds, rebuild fish runs to achieve ESA delisting.

This project will benefit from the efforts of subbasin planning, particularly the information assembled in subbasin assessments and the goals outlined for fish and wildlife. However, unlike subbasin plans and assessments that aid the Council's and BPA's funding and BiOp implementation, the results of this project will provide the counties a framework for implementing legally defensible and consistent decisions on land use planning within their authority. Therefore, this project involves both management direction and implementation rather than serving as a guidance for Council and BPA funding and priorities, as subbasin plans are intended. This project also uses quantifiable community information from survey and mapping efforts and assembled in GIS and database format.

Essentially while both efforts will use much of the same data and information, subbasin plans will use only existing data while this project will use existing data and develop its own data and provide for implementation of a land use plan within county authority.

Is this a positive fit with local planning efforts ?

We have met with and coordinated with local leaders involved in ongoing efforts in the subbasin. All believe the project, if funded, would benefit their efforts. We recognize the ongoing efforts within the area of the project proposal and believe it is essential to the projects success that the project be implemented only with full involvement and participation of those already active in the project area. See attached letters of support for the project.

Why should BPA fund a project that seeks to affect local planning?

County planning and its associated laws, rules, allocations, and ordinances are the smallest and most local unit where legal authority and control can affect ongoing and future development. The majority of counties in the Columbia basin are rural, with nearly half of the population in the basin is located in 12 of 100 counties. These rural and undeveloped conditions in the majority of Columbia basin support significant habitats and populations of listed and sensitive fish and wildlife species and their habitats.

During the 1990's, 96 percent of counties in the Columbia basin increased in population. Counties that demonstrated large increases were counties in which recreation and tourism played a large role in the economy. Predictions are for greatly increased growth in these same areas during the next 20-40 years. Increasing growth and development in rural counties will not only directly impact fish and wildlife habitats but also increases the regional demand for mesoscale resources such as water, power, and transportation. With these projected anthropogenic increases will come more impacts to hydrologic and floodplain function, impacts from development-related rural septic and road systems, migration and linkage habitat disconnect, disruption of fire-associated processes in adjacent public lands, and related recreation and human use pressures in adjacent public land reserves.

Therefore, we believe the largest potential for affecting long-term species and habitat recovery and sustainability is through determination of the direction of human population growth on private lands in the basin. This issue is squarely in the lap of county government through comprehensive plans, impact assessment, and land use ordinances, laws, restrictions, and development mitigation.

This project proposes to put scientifically defensible and consistent decision support tools in the hands of county planners to aid their ability to determine future development direction, assess associated resource and community impacts, and use scientific information related to community, biotic, and abiotic resources. At the county and regional level, this system will mesh with information and ecological science used on adjacent public lands while helping communities fairly and equitably direct development. It therefore provides a seamless use of scientific and ecologic information on public and private lands while providing local decision makers the ability to direct development and the short and long term sustainability of local, regional, and basin wide fish and wildlife and rural communities.

Servheen, G.S., S. Blair, D. Davis, M. Gratson, K. Leidenfrost, B. Stotts, J. White, and J. Bell. 1997. Interagency guidelines for managing elk habitats and populations on U.S. Forest Service lands in Central Idaho. Idaho Dept. of Fish and Game Report. 73 pp.

U.S. Fish and Wildlife Service. 1993, Grizzly Bear Recovery Plan. Missoula, MT 181 pp.