TRIBUTARY PLAN
PROJECT SELECTION, IMPLEMENTATION,
AND EVALUATION

1. **General Principles**. Human caused alternations to watersheds in the Tributary Plan's geographic boundary have reduced natural productivity of aquatic- riparian - wetland ecosystems. The effects of these alterations on anadromous salmonids include, but are not limited to, reduced in-stream flows at critical periods of egg incubation and juvenile rearing, loss of in-stream habitat complexity, altered nutrient pathways, barriers to migration, and changes in water quality. However, the extent of these alterations, and the means to rectify them, are not fully understood. Nevertheless, the following general principals should be used by the Tributary Committee as a guide to evaluate the extent of these impacts to productivity, the means to restore productivity, and the relative priority of various measures in a restoration plan:

- ❑ Restoration projects will address the underlying mechanisms causing salmonid abundance to decline. In the long term, projects that address the full range of ecological processes that mediate the exchange of water, nutrients, and organic matter will better achieve the Tributary Plan's purpose.

- ❑ Improvements in tributary habitat conditions will result in increased productivity of anadromous fish. Some of these improvements can be quantified, as measured by population size at selected life stages, others will not be measurable.

- ❑ Individual habitat improvement projects may not necessarily result in a sustainable increase in anadromous fish productivity and stock diversity. Monitoring of the effectiveness of specific types or classes of restoration projects will be required throughout the duration of the Tributary Plan.

- ❑ Similar habitat restoration measures at similar sites may not produce similar results. However, assessing the effectiveness of each action will not be logistically feasible. Representative "index" projects will determine the success of a series of like actions.

- ❑ Natural disturbances to the region's watersheds will invariably occur through the duration of the Tributary Plan. Some of these disturbances may temporarily reduce the biological productivity of these streams. The Tributary Plan's protocol to initiate and evaluate restoration projects must be sufficiently flexible to respond to the dynamic nature of fluvial systems.

- ❑ Recovery of ecosystem functions at large landscape scales will be gradual. Long-term vision is needed to evaluate the results of watershed restoration projects in an adaptive management context.

2. **Project Selection.** The Tributary Compensation Plan Species Account shall be used for projects that focus upon habitat protection and habitat restoration in ways that further the Tributary Plan's purpose. The Tributary Committee may use as a guide the publication *Aquatic Species and Habitat Assessment: Wenatchee, Entiat, Methow, and Okanogan Rivers* (Bugert et al. 1997; hereafter called the *Biological Assessment*).

2.1. Habitat Protection Program. Viable habitat protection projects should address three questions: (1) Does the project help to maintain the health of aquatic, riparian, and wetland ecosystems within the Tributary Plan's geographic boundaries and purpose; (2) Does the project further the Tributary Plans purpose within the watershed; and (3) Is the project coordinated with other projects or programs in the watershed?

Ecological, managerial and policy considerations may guide the Tributary Committee when reviewing proposed projects with the general project selection criteria:

Ecological considerations address the functional nature of aquatic/riparian/wetland systems and incorporate provisions to preserve intact watershed features. They include:

- ❒ Presence of state or federally protected species and their habitats.
- ❒ Habitat loss--the relative abundance of existing habitats compared with their abundance in the past.
- ❑ Species assemblage--indicators of a habitat's plant and animal species diversity.
- ❑ Life history--the relative importance of a given habitat to an assumed critical stage in salmonid life history.
- ❒ Distribution--the spatial arrangement of the habitats within a watershed.
- ❒ Contiguity--the extent that these habitats can be connected with other water bodies and critical lands.
- ❒ Biological support functions--indicators of a habitat's structure and diversity, and the presence of native plant communities.
- ❒ Hydrologic functions--separate indicators of a habitat's ability to stabilize shorelines, control flooding, provide for groundwater exchange, support downstream flows, allow LWD recruitment, and capture and assimilate sediments, nutrients, and pollutants.

Managerial and policy considerations will allow the Tributary Plan to identify aquatic - riparian - wetland systems that are best suited to the Watershed Protection Program needs:

- ❒ Habitat location--the degree of threat to the habitat of development or of the importance placed on the site's surroundings by policy issues.

- ❒ Intra- and intergovernmental coordination--an indicator of existing and needed coordination mechanisms among agencies, jurisdictions, local governments, and private land managers.

- ❒ Community needs and opportunities--considerations of public interest, and consistency with any open space or recreation plans.

- ❒ Public access--evaluations of availability and desirability of public use.

- ❒ Liabilities--the identification of underground storage tanks, toxic wastes, surface water management problems, or other hazards at the site.

- ❒ Management and stewardship costs--all expenses associated with ongoing and on-time activities, including capital improvements, site restoration, maintenance, and development of management plans.

2.2. Habitat Restoration Program. Viable habitat restoration projects should usually fall within one of seven categories: habitat protection, flood plane rehabilitation, channel function, in-stream flow improvement, passage provision, riparian restoration, and water quality improvement. These categories are discussed in detail in the *Biological Assessment*.

The Tributary Committee should review all habitat restoration projects according to the criteria set forth in Table 1. When prioritizing projects, placement of permanent or semipermanent habitat structures in streams should be given low priority, unless it can be clearly shown that no other alternative is available. The preferred action should be directed towards restoration of natural processes that, over time, will create and maintain suitable habitat conditions without human intervention. Removal of existing artificial structures that appear to be impeding natural recovery may be considered as a suitable project.

Table 1. Project planning and design: general considerations (adapted from NRC 1992).

1.	Does the project fall within the Tributary Plan's geographic boundary?
2.	Does the project further the Tributary Plan's purpose?
3.	Has the problem requiring treatment been defined?
4.	Is there general agreement on the objective of the restoration project? Are the performance indicators--the measurable biological, physical, and chemical attributes--directly and appropriately linked to the objective?
5.	Has the restoration been planned with adequate scope and expertise?
6.	How does the specific project fit within a plan for the watershed?
7.	Has a well-defined monitoring and evaluation plan been established (Section 5)? Does the restoration project have an annual or mid-course correction point in line with adaptive management procedures?
8.	Has the project been designed to make the restored habitat as self-sustaining as possible to reduce maintenance requirements?
9.	Have risk and uncertainty been incorporated into the project planning?

2.3. Private Landowner Program. It is recognized that the Tributary Committee, because of its origins and association with the District, can develop a unique, locally-based relationship with private landowners within the Mid-Columbia Region. The Tributary Committee desires to facilitate the process by which private landowners within the Mid-Columbia Region can comply with the Endangered Species Act and contribute to the conservation of Plan Species. It will do so by fostering cooperation among federal agencies, local conservation districts, watershed groups, tribes, and non-federal landowners in the development of voluntary, watershed-based, locally driven approaches to protection of aquatic/riparian/wetland ecosystems.

The Tributary Plan may be used to foster these voluntary approaches by developing a programmatic framework for on-the-ground activities which is consistent with the requirements of the Endangered Species Act. This may include incentives for private landowners to implement these voluntary approaches. The Fish and Wildlife Service and the National Marine Fisheries Service will assist the Tributary Committee by defining a method under which private landowners, when conducting activities in a manner consistent with the Tributary Plan, may comply with the Endangered Species Act.

Private landowners within the Tributary Plan's Geographic Boundary will be encouraged to manage their property in ways that protect aquatic - riparian - wetland ecosystems and further the Tributary Plan's purpose. It is not enough to simply slow the incremental rate of

degradation. It must be reversed. To fulfill the purposes of the Tributary Plan, significant changes in land and water management will be necessary.

Appendix A contains guidelines that should be used by private landowners when submitting project proposals to the Tributary Plan. Appendix A may be revised by the Tributary Committee. Following are typical incentive approaches that will be further developed for these purposes : (1) implement water conservation and improved management practices in exchange for trust water rights or other flow improvements; (2) implement cooperative planning; (3) promote or purchase conservation easements; (4) expand educational outreach by providing technical and biological information on Plan Species and their habitat, (5) provide information on financing opportunities available through the Tributary Plan and other sources, (6) fund programs that further the Tributary Plan's purpose, and (7) assist private landowners and any other entity to develop and implement programs that further the Tributary Plan's purpose.

The following criteria will be weighed by the Tributary Committee when selecting private landowner programs; whether the program would:

- ❑ fall within the Tributary Plan's geographic boundary;
- ❑ further the Tributary Plan's purpose;
- ❑ have a positive impact on aquatic/riparian/wetland ecosystems of the Tributary Plan's Geographic Boundaries;
- ❑ be voluntary, and encourage partnerships; and
- ❑ be feasible, simple and clear.

3. **Project Implementation**. The Tributary Committee may establish long range planning goals for restoration projects so that proposed restoration projects may be reviewed in relation to Tributary Plan's long range goals.

3.1. Land or Water Conservancy Organizations. Some protection efforts undertaken by the Tributary Plan may be coordinated with established land or water conservancy organizations. Land and water conservancy organizations are ideally suited to preservation efforts on a county-wide scale, for example, by protecting land through purchases or donations of conservation easements. Landowners may also more readily assign stewardship of their land to a conservancy organization such as a land trust.

3.2. Conservation Standards. A series of standards for watershed protection may be established. The purpose of these standards is to ensure that the habitat restoration practices are maintained. The standards may be based upon physical measurements of the stream channel and flood-prone areas. Information from stream inventories may be used in the assessment of the standards. This may ensure a consistent approach for stream channel management.

3.3. Adaptive Management. Some restoration projects may take several years to be fully completed, and it is likely that not all will have the same effectiveness. A mechanism is required to identify ongoing projects that are not cost effective or not biologically effective. Inventories should provide information on the progress of restoration projects, and periodic reviews by fisheries scientists will be solicited. The Tributary Committee should review each restoration project a minimum of once each year, and will have the option to terminate a given project, if it appears to not meet biological objectives or standards for cost effectiveness.

4. **Evaluation.**

4.1. Program Specific Studies. The Tributary Committee may undertake monitoring and evaluation programs; the *Biological Assessment* may be consulted for guidance. Program monitoring and evaluation should have two components: (1) studies to determine the efficacy of specific projects sponsored by the Tributary Plan, and (2) continuous monitoring of selected parameters in the streams of the Tributary Plan's Geographic Boundary.

A monitoring schedule should be set as the Tributary Plan's programs are established to avoid inappropriate and excessive expenditures of effort and money. Monitoring should be maintained long enough for the Tributary Committee to confirm that the restoration can withstand unusual environmental events, such as floods and droughts (NRC 1992; Wissmar 1993).

4.2. Public Participation. The public in the Tributary Plan's geographic boundary may have become increasingly aware of the need for aquatic restoration. Several groups have undertaken stream restoration projects, and are likely to interact directly or indirectly with the Tributary Plan. These organizations, if properly guided and supported, can be a valuable impetus for effective aquatic ecosystem restoration, and occasionally a valuable source of volunteer labor. In a collaborative effort with local conservation districts and state agencies, ambient monitoring stations (Michaud 1991) should be encouraged for each watershed. Short term benefits to citizen monitoring are tangible: convenience and expense. From a long range perspective, the advantage of citizen monitoring is that it promotes a citizenry committed to the purpose of the Tributary Plan. Many of these activities could be coordinated by the Private Landowner Program.

4.3. Database Management. The Tributary Plan recognizes the importance of a well-designed database management system for all its activities. Decisions on project selection and implementation may depend upon information derived from the WSP, and through other sources, such as USFS, WDNR, WDOE, and county governments. A Geographic Information System (GIS) database may be developed and maintained for information retrieval by the Tributary Committee. In the event a GIS database is developed, it should be able to link with cooperating entities.

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Appendix A
Guidelines for Preparation of Proposals to the Tributary Conservation Plan

The Tributary Conservation Plan is established to protect the habitat of spring, summer and fall chinook salmon (O. tshawytscha), sockeye salmon (O. nerka), coho salmon (O. kisutch) and steelhead (O. mykiss) in the Mid-Columbia Region. You may be able to obtain a grant from the Tributary Plan for your programs that further the Tributary Plan's purpose.

The following guidelines shall be used by all persons making proposals to the Tributary Plan. Not all proposals will fit this format exactly, and should be modified as appropriate. However, a proposal should be written with enough detail to describe the proposed project and its relevance to the Tributary Plan's purpose.

Format for Proposals

1. Basic Information (on standard cover page):
    - 1.1. name and address of agency, institution, or organization,
    - 1.2. title of project,
    - 1.3. funding requested,
    - 1.4. duration of effort,
    - 1.5. names(s) and phone number(s) of project leaders, and
    - 1.6. date of submission.

2. Project Summary should not exceed the equivalent of one single-spaced typed page and should convey to the Tributary Committee the general approach to be followed. It should be specific and focus on:
    - 2.1. overall project objective and supporting tasks,
    - 2.2. relevance of project to the Tributary Plan's purpose, and
    - 2.3. how the project fits into the Tributary Plan's prioritized plan for the watershed.

3. Project Description should be in sufficient detail to describe the project to be conducted (maximum of 10 single-spaced pages), and should include the following components:
    - 3.1. Introduction. The objectives of the proposed project should be stated and described in detail.
    - 3.2. Rationale and significance of proposed project should be presented, which will discuss its application to the Tributary Plan's purpose.

3.3. A monitoring and evaluation plan (if appropriate) should include, but not be limited to:

- methods by which the data will be collected and analyzed,
- kinds of results expected (with statistical power analysis, if needed),
- problems that might be encountered, and
- tentative schedule for major steps in the project, particularly if the project is part of sequential activities.

3.4. Facilities and equipment to be used in the project should be described. Any special or high cost equipment should be justified.

3.5. Collaborative arrangements. If the proposed project requires collaboration with other research scientists, agencies, or organizations, such arrangements should be fully explained. Any opportunities for synergistic relations among the proposed projects and existing projects should be described.

3.6. List of Key Personnel, and their duties on the project should be described.

3.7. Technology Transfer. Describe how the technical information gathered from the project will be distributed and implemented.

3.8. Budget. A detailed budget should be provided for each year of the proposed project. The project should include time, rate and total cost of personnel, benefits, cost of equipment and non-expendable property to be purchased, specific supplies, operations and maintenance, capital improvements, travel, indirect costs, and any sub-contracts.

3.9. Map. A map and photos showing the project site and location of the proposed property.

3.10. Title Report. Title report covering the subject property.

Other Funding Sources

1. Sources of additional funding for habitat programs can be found in the following publications (copies of which are available through the Tributary Plan).

* Potential Funding Sources for Watershed Restoration and Related Projects (4/6/97)
* Jobs in the Woods U.S. Fish and Wildlife Service (3/24/97)

* 1995 - 1997 Jobs in the Environment Application Guidelines (February 1996)

* National Fish and Wildlife Foundation
  - Grant Guidelines (4/17/95)
  - Program Description (7/8/96)

* Exploring Wetlands Stewardship DOE Publication No. 96-120 (October 1996)

2. Proposals shall identify opportunities for cost-sharing with other programs, identify available matching funds, and shall be “piggy-backed” onto other habitat efforts when ever possible.