Appendix A: The Columbia River Basin Fish and Wildlife Program

The 2000 Fish and Wildlife Program is the fifth revision of the Columbia River Basin Fish and Wildlife Program since the NPCC adopted its first program in November 1982. This time, as in the series of program amendments between 1991 and 1995, the program is being revised in phases. Unlike past versions of the program, which were criticized by scientists for consisting primarily of a number of measures that called for specific actions without a clear, program-wide foundation of scientific principles, the 2000 version of the program expresses goals and objectives for the entire basin based on a scientific foundation of ecological principles.

The 2000 NPCC Fish and Wildlife Program marks a significant departure from past versions, which consisted primarily of a collection of measures directing specific activities. The 2000 Program establishes a basin-wide vision for fish and wildlife — the intended outcome of the program — along with biological objectives and action strategies that are consistent with the vision. Ultimately, the program will be implemented through subbasin plans (including this Intermountain Province subbasin plan) developed locally in the more than 50 tributary subbasins of the Columbia and amended into the program by the NPCC. Those plans will be consistent with the basin-wide vision and objectives in the program, and its underlying foundation of ecological science.

Vision for the Columbia River Basin

The vision is the outcome intended for this program. Actions taken at the basin, province, and subbasin levels should be consistent with, and designed to fulfill, this vision. Thus, this vision guides the choice of biological objectives and, in turn, the selection of strategies.

The Overall Vision for the Fish and Wildlife Program

The vision for this program is a Columbia River ecosystem that sustains an abundant, productive, and diverse community of fish and wildlife, mitigating across the basin for the adverse effects to fish and wildlife caused by the development and operation of the Federal Columbia River Power System (FCRPS) and providing the benefits from fish and wildlife valued by the people of the region.

This ecosystem should provide abundant opportunities for tribal trust and treaty right harvest and for non-tribal harvest. The Plan should enhance the conditions that allow for the recovery of the fish and wildlife affected by the operation of the hydrosystem and listed under the Endangered Species Act.

Wherever feasible, this program will be accomplished by protecting and restoring the natural ecological functions, habitats, and biological diversity of the Columbia River Basin. In those places where existing development make this locally feasible, other methods that are compatible with naturally reproducing fish and wildlife populations will be used. Where impacts have irrevocably changed the ecosystem, the program will

protect and enhance the habitat and species assemblages compatible with the altered ecosystem. Actions taken under this program must be cost-effective and consistent with an adequate, efficient, economical and reliable electrical power supply as defined by the Northwest Power Act.

Specific Planning Assumptions

As part of this vision, the NPCC also adopts the following policy judgments and planning assumptions for the fish and wildlife program.

- No single activity is sufficient to recover and rebuild fish and wildlife species in the Columbia River Basin. Successful protection, mitigation, and recovery efforts must involve a broad range of strategies for habitat protection and improvement, hydrosystem reform, artificial production, and harvest management.
- The Bonneville Power Administration should make available sufficient funds to implement measures in the program in a timely fashion.
- This is a habitat-based program, rebuilding healthy, naturally producing fish and wildlife populations by protecting, mitigating, and restoring habitats and the biological systems within them, including anadromous fish migration corridors. Artificial production and other non-natural interventions should be consistent with the central effort to protect and restore habitat and avoid adverse impacts to native fish and wildlife species.
- Management actions must be taken in an adaptive, experimental manner because ecosystems are inherently variable and highly complex. This includes using experimental designs and techniques as part of management actions, and integrating monitoring and research with those management actions to evaluate their effects on the ecosystem.
- Actions to improve juvenile and adult fish passage through mainstem dams, including fish transportation actions and capital improvement measures, should protect biological diversity by benefiting the range of species, stocks and life-history types in the river, and should favor solutions that best fit natural behavior patterns and river processes, while maximizing fish survival through the projects. Survival in the natural river should be the baseline against which to measure the effectiveness of other passage methods.
- For the purpose of planning for this fish and wildlife program, and particularly the hydrosystem portion of the program, the NPCC assumes that, in the near term, the breaching of the four federal dams on the lower Snake River will not occur. However, the NPCC is obliged under law to revise its fish and wildlife program every five years, at a minimum. If, within that five-year period, the status of the lower Snake River dams or any other major component of the Federal Columbia River Power System has changed, the NPCC can take that into account as part of the review process.
- Mainstem hydrosystem operations and fish passage efforts should be directed at re-establishing natural river processes where feasible and consistent with the NPCC's responsibility for maintaining an adequate, efficient, economical, and reliable power supply.

- The effect of ocean habitat on salmonid species should be considered in evaluating freshwater habitat management to understand all stages of the salmon and steelhead life cycle.
- Systemwide water management, including flow augmentation from storage reservoirs, should balance the needs of anadromous species with those of resident fish species in upstream storage reservoirs so that actions taken to advance one species do not unnecessarily come at the expense of other species.
- There is an obligation to provide fish and wildlife mitigation where habitat has been permanently lost due to hydroelectric development. Artificial production of fish may be used to replace capacity, bolster productivity, and alleviate harvest pressure on weak, naturally spawning resident and anadromous fish populations. Restoration of anadromous fish into areas blocked by dams should be actively pursued where feasible.
- Artificial production actions must have an experimental, adaptive management design. This design will allow the region to evaluate benefits, address scientific uncertainties, and improve hatchery survival while minimizing the impact on, and if possible benefiting, fish that spawn naturally.
- Harvest can provide significant cultural and economic benefits to the region, and the program should seek to increase harvest opportunities consistent with sound biological management practices. Harvest rates should be based on population-specific adult escapement objectives designed to protect and recover naturally spawning populations.
- Achieving the vision requires that habitat, artificial production, harvest, and hydrosystem actions are thoughtfully coordinated with one another. There also must be coordination among actions taken at the subbasin, province, and basin levels, including actions not funded under this program. Accordingly, creating an appropriate structure for planning and coordination is a vital part of this program.

Scientific Foundation and Principles

The scientific foundation reflects the best available scientific knowledge. The scientific principles summarize this knowledge at a broad level. The actions taken at the basin, province, and subbasin levels to fulfill the vision should be consistent with, and based upon, these principles.

Purpose of the Scientific Foundation

In developing a program to fulfill the vision statement above, the NPCC is relying on the best available scientific knowledge. While the vision is a policy choice about what the program should accomplish, the scientific foundation describes our best understanding of the biological realities that will govern how this is accomplished. The program can succeed only as it recognizes these realities and builds upon them.

Thus, the scientific foundation is the basis for the working hypotheses that underlie this program. It also provides specific guidance for program measures. For example, the strategies for the use of artificial production are an application of the scientific foundation to the use of hatcheries for raising fish within the Columbia River Basin.

The scientific foundation consists of the scientific principles, a detailed discussion of those principles, the geographic structure of the program, and a set of more specific scientific rules and hypotheses. Only the scientific principles and the geographic structure appear in this volume of the program; the remainder of the foundation is in the Technical Appendix for the 2000 Fish and Wildlife program.

The rules and hypotheses in the Technical Appendix will change over time in response to new scientific information. These rules and hypotheses will continue to be evaluated as the program is implemented and will be revised as needed.

In contrast, the scientific principles below are intended to be relatively fixed points of reference. Although scientific knowledge will improve over time, modification of the principles should occur only after due scientific deliberation. The NPCC charges the Independent Scientific Advisory Board with the primary role in reviewing and recommending modifications to the scientific principles in the future prior to any major revision of this program.

Scientific Principles

As part of the scientific foundation, the program recognizes eight principles of general application. It is intended that all actions taken to implement this program be consistent with these principles.

The scientific principles are grounded in established scientific literature to provide a stable foundation for the NPCC's program. A more detailed discussion of the implications of these principles, together with citations to the supporting references, is included in the Technical Appendix of the 2000 Fish and Wildlife Program.

Principle 1. The abundance, productivity and diversity of organisms are integrally linked to the characteristics of their ecosystems. The physical and biological components of ecosystems together produce the diversity, abundance and productivity of plant and animal species, including humans. The combination of suitable habitats and necessary ecological functions forms the ecosystem structure and conditions needed to provide the desired abundance and productivity of specific species.

Principle 2. Ecosystems are dynamic, resilient and develop over time. Although ecosystems have definable structures and characteristics, their behavior is highly dynamic, changing in response to internal and external factors. The system we see today is the product of its biological, human and geological legacy. Natural disturbance and change are normal ecological processes and are essential to the structure and maintenance of habitats.

Principle 3. Biological systems operate on various spatial and time scales that can be organized hierarchically. Ecosystems, landscapes, communities and populations are usefully described as hierarchies of nested components distinguished by their appropriate spatial and time scales. Higher-level ecological patterns and processes constrain, and in turn reflect, localized patterns and processes. There is no single, intrinsically correct

description of an ecosystem, only one that is useful to management or scientific research. The hierarchy should clarify the higher-level constraints as well as the localized mechanisms behind the problem.

Principle 4. Habitats develop, and are maintained, by physical and biological processes. Habitats are created, altered and maintained by processes that operate over a range of scales. Locally observed conditions often reflect more expansive or non-local processes and influences, including human actions. The presence of essential habitat features created by these processes determines the abundance, productivity and diversity of species and communities. Habitat restoration actions are most effective when undertaken with an understanding and appreciation of the underlying habitat-forming processes.

Principle 5. Species play key roles in developing and maintaining ecological conditions. Each species has one or more ecological functions that may be key to the development and maintenance of ecological conditions. Species, in effect, have a distinct job or occupation that is essential to the structure, sustainability and productivity of the ecosystem over time. The existence, productivity and abundance of specific species depend on these functions. In turn, loss of species and their functions lessens the ability of the ecosystem to withstand disturbance and change.

Principle 6. Biological diversity allows ecosystems to persist in the face of environmental variation. The diversity of species, traits and life histories within biological communities contributes to ecological stability in the face of disturbance and environmental change. Loss of species and their ecological functions can decrease ecological stability and resilience. It is not simply that more diversity is always good; introduction of non-native species, for example, can increase diversity but disrupt ecological structure. Diversity within a species presents a greater range of possible solutions to environmental variation and change. Maintaining the ability of the ecosystem to express its own species composition and diversity allows the system to remain productive in the face of environmental variation.

Principle 7. Ecological management is adaptive and experimental. The dynamic nature, diversity, and complexity of ecological systems routinely disable attempts to command and control the environment. Adaptive management — the use of management experiments to investigate biological problems and to test the efficacy of management programs — provides a model for experimental management of ecosystems. Experimental management does not mean passive "learning by doing," but rather a directed program aimed at understanding key ecosystem dynamics and the impacts of human actions using scientific experimentation and inquiry.

Principle 8. Ecosystem function, habitat structure and biological performance are affected by human actions. As humans, we often view ourselves as separate and distinct from the natural world. However, we are integral parts of ecosystems. Our actions have a pervasive impact on the structure and function of ecosystems, while at the same time, our health and well-being are tied to these conditions. These actions must be managed in ways that protect and restore ecosystem structures and conditions necessary for the

survival and recovery of fish and wildlife in the basin. Success depends on the extent to which we choose to control our impacts so as to balance the various services potentially provided by the Columbia River Basin.

Biological Objectives

The biological objectives describe the conditions that are needed to reach the vision, consistent with the scientific principles. The program fulfills the vision by achieving these objectives.

Basin Level Biological Objectives

Biological objectives describe physical and biological changes needed to achieve the vision, based on the information we now have and thereby fulfill the vision. Biological objectives have two components: (1) biological performance, describing responses of populations to habitat conditions, described in terms of capacity, abundance, productivity and life history diversity, and (2) environmental characteristics, which describe the environmental conditions or changes sought to achieve the desired population characteristics. Where possible, biological objectives are intended to be empirically measurable and based on an explicit scientific rationale. Objectives at the basin level are more qualitative, but objectives should become increasingly quantitative and measurable at the province and subbasin levels. These basin-wide objectives will help determine the amount of change needed across the basin to fulfill the vision. They will also help determine the cost effectiveness of program strategies, and provide a basis for monitoring, evaluation and accountability.

The NPCC will establish specific biological objectives at the province level and in subbasin plans identifying the changes needed in characteristics of the environment and target populations. The program provides the following biological objectives at the basin level.

Objectives for Biological Performance

The NPCC recognizes that significant losses of anadromous fish, resident fish, and wildlife and their habitats have occurred as a result of the development and operation of the hydrosystem. To be consistent with the Power Act, these losses establish the underlying basis for population objectives for the program as a whole. Collectively, specific biological objectives should represent what is considered to be mitigation for losses under the program.

Anadromous Fish Losses

The NPCC recognizes that the scientific basis for biological objectives is not certain and will shift over time as our knowledge improves. Further, we expect to learn a great deal through the process of developing subbasin plans. The NPCC intends to review, and if necessary, revise these objectives in the course of adopting subbasin plans in a subsequent amendment process. On an interim basis, until subbasin plans identify actual targets, the NPCC adopts the following regional objectives for anadromous fish:

Halt declining trends in salmon and steelhead populations above Bonneville Dam by 2005. Obtain the information necessary to begin restoring the characteristics of healthy lamprey populations.

Restore the widest possible set of healthy naturally reproducing populations of salmon and steelhead in each relevant province by 2012. Healthy populations are defined as having an 80 percent probability of maintaining themselves for 200 years at a level that can support harvest rates of at least 30 percent.

Increase total adult salmon and steelhead runs above Bonneville Dam by 2025 to an average of 5 million annually in a manner that supports tribal and non-tribal harvest. Within 100 years achieve population characteristics that, while fluctuating due to natural variability, represent on average full mitigation for losses of anadromous fish.

Substitution for Anadromous Fish Losses

Part of the anadromous fish losses has occurred in the blocked areas. (The Intermountain Province is wholly within the blocked areas). A corresponding part of the mitigation for these losses must occur in those areas. The program has a "Resident Fish Substitution Policy" for areas in which anadromous fish have been extirpated.

Given the large anadromous fish losses in the blocked areas, these actions have not mitigated these losses. The following objectives address anadromous fish losses and mitigation requirements in all blocked areas:

Restore native resident fish species (subspecies, stocks and populations) to near historic abundance throughout their historic ranges where original habitat conditions exist and where habitats can be feasibly restored.

Take action to reintroduce anadromous fish into blocked areas, where feasible.

Administer and increase opportunities for consumptive and non-consumptive resident fisheries for native, introduced, wild, and hatchery-reared stocks that are compatible with the continued persistence of native resident fish species and their restoration to near historic abundance (includes intensive fisheries within closed or isolated systems).

Resident Fish Losses

The development and operation of the hydrosystem has also resulted in losses of numbers and diversity of native resident fish, such as bull trout, cutthroat trout, kokanee, white sturgeon and other species. The following objectives address resident fish losses:

Complete assessments of resident fish losses throughout the basin resulting from the hydrosystem, expressed in terms of the various critical population characteristics of key resident fish species.

Maintain and restore healthy ecosystems and watersheds, which preserve functional links among ecosystem elements to ensure the continued persistence, health and diversity of all species including game fish species, non-game fish species, and other organisms.

Protect and expand habitat and ecosystem functions as the means to significantly increase the abundance, productivity, and life history diversity of resident fish at least to the extent that they have been affected by the development and operation of the hydrosystem.

Achieve population characteristics of these species within 100 years that, while fluctuating due to natural variability, represent on average full mitigation for losses of resident fish.

Wildlife Losses

Development and operation of the hydrosystem also resulted in wildlife losses through construction and inundation losses, direct operational losses or through secondary losses. The program has included measures and implemented projects to obtain and protect habitat units in mitigation for these calculated construction/inundation losses. Operational and secondary losses have not been estimated or addressed. The program includes a commitment to mitigate for these losses. More specific wildlife objectives are:

Quantify wildlife losses caused by the construction, inundation, and operation of the hydropower projects.

Develop and implement habitat acquisition and enhancement projects to fully mitigate for identified losses. Coordinate mitigation activities throughout the basin and with fish mitigation and restoration efforts, specifically by coordinating habitat restoration and acquisition with aquatic habitats to promote connectivity of terrestrial and aquatic areas.

Maintain existing and created habitat values.

Monitor and evaluate habitat and species responses to mitigation actions.

Objectives for Environmental Characteristics

Basin level environmental characteristics describe the kinds of changes that are needed across the Columbia Basin to achieve the changes in biological performance described earlier. Again, the intent is to achieve the vision and allow for mitigation under the Power Act for the fish and wildlife losses resulting from the development and operation of the hydrosystem. The NPCC is including in the Appendix of this program a provisional set of environmental characteristic objectives for the basin level.

The NPCC directs the Independent Scientific Advisory Board to review the basin level environmental characteristics in the Appendix by June 2001. The Independent Scientific Advisory Board should report to the NPCC on the scientific soundness and basin-wide applicability of the environmental characteristics, as well as their utility for further defining biological objectives at the province and subbasin levels. As part of its review,

the Independent Scientific Advisory Board should consider and report to the NPCC on the applicability of these objectives in the most altered areas of the basin, the blocked areas.

The NPCC will make the Independent Scientific Advisory Board's report publicly available and seek views and comment from interested parties. The NPCC will consider the report of the Independent Scientific Advisory Board and the views and comments of others on the report, and will confirm or revise these basin level objectives for environmental characteristics for purposes of providing guidance for subbasin level planning and further program amendments.

Further Development of Biological Objectives at the Basin Level

Biological objectives, comprising both biological performance and environmental characteristic standards, will be established at the province level and subbasin level (in subbasin plans) in subsequent program amendments. However, the efforts at assessment and planning that will precede the formal adoption of province and subbasin level biological objectives may further inform the basin level objectives adopted here.

This is possible in two primary ways. First, assessment and planning at these levels should test the validity of the general basin level biological objectives, as previously described. Second, assessment and planning at these levels may identify more specific, quantified biological objectives for the program as a whole. Examples might include abundance and performance objectives for fish populations that transcend more than one province, specific program-wide objectives for improvement in certain habitat types, and specific objectives for water management and coordinated operation of the hydrosystem to benefit fish and wildlife.

More specific basin-wide objectives could help determine the amount of change needed across the basin to fulfill the vision. They will also help determine the cost-effectiveness of program strategies and provide a basis for monitoring, evaluation, and accountability. These more specific objectives will be considered as guidance for subbasin planning, and for adoption when the NPCC considers adoption of province level biological objectives and subbasin plans.

Significance of Objectives and Strategies

These objectives and the strategies that follow are to be used as guidance for developing province and subbasin plans, as the basis for development of more specific objectives, and as a basis for NPCC recommendations to the Bonneville Power Administration regarding project funding. Proposed measures will be evaluated for consistency with these objectives and strategies. A primary function of the monitoring and evaluation components of this program is to measure progress toward achieving these objectives. All province and subbasin plans must be consistent with these objectives.

Strategies

Strategies are plans of action to accomplish the biological objectives. In developing strategies, the program takes into account not only the desired outcomes, but also the physical and biological realities expressed in the scientific foundation.

This program anticipates that detailed plans, consistent with the biological objectives, will be developed locally for each of the more than 50 subbasins in the Columbia River Basin. This Intermountain Province Plan covers six of these subbasins. Because most of the specific actions will be addressed at the province and subbasin levels, most of the strategies will be developed in subbasin plans such as this one. At the subbasin level, "strategies" will include the particular measures to be implemented within a given subbasin.

Thus, at the basin level, most of the strategies are guidelines for implementation at other levels of the program. However, these strategies also include specific measures for subjects that transcend one or more of the provinces, such as data management, research, monitoring and evaluations.

In general, the purpose of the strategies at the basin level is to allow maximum local flexibility while assuring that subbasin plans follow the best available scientific knowledge, are consistent with one another, and together, form a well-integrated, well-organized, and comprehensive fish and wildlife program.

These strategies are presumed to be applicable to all subbasin plans and projects proposed for funding. This presumption may be overcome by showing, to the satisfaction of the NPCC, compelling reasons why the particular action proposed will be a greater benefit to fish and wildlife than one that is in accordance with these strategies. In addition, in the case of subbasin plans, when a plan proposed for adoption is not consistent with these strategies, the proponent may also propose that these strategies be amended so that the plan will be in compliance. Again, such amendments will require a showing of compelling reasons why the amendment will result in greater benefit to fish and wildlife.

Linkage of General Biological Objectives with Strategies

Because this is a habitat-based program, implementation strategies will vary depending on the current condition and the restoration potential of the habitat for the species and life stages of interest. For example, with regard to fish spawning and rearing in either the mainstem or tributaries, the first consideration in any particular area is the current condition of the habitat for spawning and rearing and the potential for protection or restoration of that habitat for natural production. If the potential for restoring the natural production of the habitat is low, or the biological potential of the target population is low because of survival problems elsewhere in its life cycle, the area may become a candidate for certain types of artificial production.

Intact habitat: Where the habitat for a target population is largely intact, then the biological objectives for that habitat will be to preserve the habitat and restore the

population of the target species up to the sustainable capacity of the habitat. When the biological potential of a target population is high, biological risk should be avoided and restoration should be by means of natural spawning and rearing. When the biological potential of the target population is limited by external factors, such as the presence of mainstem dams or other factors, supplementation is a possible policy choice to augment natural capacity and productivity, in a limited fashion that ensures that the majority of production will be the result of natural spawning.

Restorable habitat: Where the habitat for a target population is absent or severely diminished, but can be restored through conventional techniques and approaches, then the biological objective for that habitat will be to restore the habitat with the degree of restoration depending on the biological potential of the target population. Where the target population has high biological potential, the objective will be to restore the habitat to intact condition, and restore the population up to the sustainable capacity of the habitat. In this situation, if the target population had been severely reduced or eliminated as a result of the habitat deterioration, the use of artificial production in an interim way is a possible policy choice to hasten rebuilding of naturally spawning populations after restoration of the habitat. Where the target population has low biological potential — for example, when downstream rearing conditions severely limit the survival of juveniles from a given spawning area — the objective will be to restore the habitat to intact condition and consider sustained but limited supplementation as a possible policy choice.

Compromised habitat: Where the habitat for a target population is absent or substantially diminished and cannot reasonably be fully restored, then the biological objective for that habitat will depend on the biological potential of the target species Where the target species has high biological potential, the objective will be to restore the habitat up to the point that the sustainable capacity of the habitat is no longer a significant limiting factor for that population. The objective also is to restore the population of the target species up to the sustainable capacity of the restored habitat. Sustained supplementation in a limited fashion is a possible policy choice in this instance. Where the target species has low biological potential, the objective will be to restore the habitat up to the point that the sustainable capacity of that habitat is no longer a significant limiting factor for that population. In this instance, a possible policy choice is expanded artificial production that utilizes the natural selection capabilities of the natural habitat to maintain fitness of both natural and artificial production.

Eliminated habitat: Where habitat for a target population is irreversibly altered or blocked, and therefore there are no opportunities to rebuild the target population by improving its opportunities for growth and survival in other parts of its life history, then the biological objective will be to provide a substitute. In the case of wildlife, where the habitat is inundated, substitute habitat would include setting aside and protecting land elsewhere that is home to a similar ecological community. For fish, substitution would include an alternative source of harvest (such as a hatchery stock) or a substitution of a resident fish species as a replacement for an anadromous species.

Basin-wide Strategies

The 2000 Fish and Wildlife Program identifies specific strategies to be applied in the Columbia River basin. For more detailed information, see the 2000 Fish and Wildlife Program. The following are the primary strategies that are identified:

Primary Habitat Strategy: Identify the current condition and biological potential of the habitat, and then protect or restore it to the extent described in the biological objectives.

This NPCC Fish and Wildlife program relies heavily on protection of, and improvements to, inland habitat as the most effective means of restoring and sustaining fish and wildlife populations. However, it also recognizes that depending on the condition of the habitat and the target species, certain categories of mitigation investments are likely to be more effective than others. Thus, an important function of this strategy is to direct investments to their most productive applications.

Because some of the greatest opportunities for improvement lie outside the immediate area of the hydrosystem — in the tributaries and subbasins off the mainstem of the Columbia and Snake Rivers — this program seeks habitat improvements outside the hydrosystem as a means of off-setting some of the impacts of the hydrosystem. In addition, protection and restoration of mainstem habitat conditions must be a critical piece of this habitat-based program.

The following principles should be followed:

- Efforts to improve the status of fish and wildlife populations in the basin should protect habitat that supports existing populations that are relatively healthy and productive. Next, we should expand adjacent habitats that have been historically productive or have a likelihood of sustaining healthy populations by reconnecting or improving habitat.
- Restoration efforts must focus on restoring habitats and developing ecosystem conditions and functions that will allow for expanding and maintaining a diversity within, and among, species in order to sustain a system of robust populations in the face of environmental variation.
- Even in degraded or altered environments, native species in native habitats provide the best starting point and direction for needed biological conditions in most cases. Where a species native to that particular habitat cannot be restored, then another species native to the Columbia River Basin should be used. Any proposal to produce or release non-native species must overcome this strong presumption in favor of native species and habitats and be designed to avoid adverse impacts on native species.
- Mitigation in areas blocked to salmon and steelhead by the development and operation of the hydropower system is appropriate, and flexibility in approach is needed to develop a program that provides resident fish substitutions for lost salmon and steelhead where in-kind mitigation cannot occur.

- The estuary is an important ecological feature that is negatively affected by upriver management actions and local habitat change. The estuary will be included as one of the planning units for this program.
- Ecosystem restoration efforts should address transboundary stocks of fish and wildlife and transboundary habitats.

Primary Artificial Production strategy: Artificial production can be used, under the proper conditions, to 1) complement habitat improvements by supplementing native fish populations up to the sustainable carrying capacity of the habitat with fish that are as similar as possible, in genetics and behavior, to wild native fish, and 2) replace lost salmon and steelhead in blocked areas.

The critical issue that the region faces on artificial production is whether artificial production activities can play a role in providing significant harvest opportunities throughout the basin while also acting to protect and even rebuild naturally spawning populations. The NPCC and the region's fish and wildlife managers recently completed a multiyear review of artificial production in the Columbia River Basin. This review established a set of standards to be applied in all artificial production programs in the Columbia River Basin, and this program incorporates these standards as minimum standards for all artificial production projects. The full description of these standards is in the Artificial Production Review section of the Appendix to the 2000 Fish and Wildlife Program. In summary, the policies are:

- The purpose and use of artificial production must be considered in the context of the ecological environment in which it will be used.
- Artificial production must be implemented within an experimental, adaptive management design that includes an aggressive program to evaluate the risks and benefits and address scientific uncertainties.
- Hatcheries must be operated in a manner that recognizes that they exist within ecological systems whose behavior is constrained by larger-scale basin, regional and global factors.
- A diversity of life history types and species needs to be maintained in order to sustain a system of populations in the face of environmental variation.
- Naturally selected populations should provide the model for successful artificially reared populations, in regard to population structure, mating protocol, behavior, growth, morphology, nutrient cycling, and other biological characteristics.
- The entities authorizing or managing an artificial production facility or program should explicitly identify whether the artificial propagation product is intended for the purpose of augmentation, mitigation, restoration, preservation, research, or some combination of those purposes for each population of fish addressed.
- Decisions on the use of the artificial production tool need to be made in the context of deciding on fish and wildlife goals, objectives and strategies at the subbasin and province levels.
- Appropriate risk management needs to be maintained in using the tool of artificial propagation.

- Production for harvest is a legitimate management objective of artificial production, but to minimize adverse impacts on natural populations associated with harvest management of artificially produced populations, harvest rates and practices must be dictated by the requirements to sustain naturally spawning populations.
- Federal and other legal mandates and obligations for fish protection, mitigation, and enhancement must be fully addressed.

Where the critical habitat is largely intact, artificial production is not currently occurring, and the fish population has good potential, then no artificial production should be used.

Hatcheries intended solely to produce fish for harvest may be used to create a replacement for the lost or diminished harvest. The hatchery must be located and operated in a manner that does not lead to adverse effects on other stocks through excessive straying or excessive take of weak stocks in a mixed-stock fishery.

Except for wild salmon refuges or areas where the habitat is blocked or eliminated, supplementation of natural runs with artificially produced fish may be used for the purpose of rebuilding the natural runs, although the decision of whether to employ supplementation for this purpose is one that should be made locally, as part of the subbasin plan. The object of such supplementation is to restore and maintain healthy fish populations, with sufficient genetic and life history diversity to ensure that eventually, after appropriate habitat improvements, they will become self-sustaining.

In recognition of the risk and uncertainty associated with artificial production, each artificial production activity must be approached experimentally with a plan detailing the purpose and method of operation, the relationship to other elements of the subbasin plan, including associated habitat and other projects within the subbasin plan, specific measurable objectives for the activity, and a regular cycle of evaluation and reporting of results.

Over the next three years, every artificial production program and facility in the basin, federal and nonfederal, should undergo a review to determine its consistency with these strategies, scientific principles, and policies. These evaluations will be a prerequisite for seeking continued funding and/or adopting a subbasin plan into the program in the next phase of the amendment process.

After five years, the NPCC, other regional decision-makers and Congress should assess whether existing review, funding and planning processes are successful in implementing needed reforms in artificial production practices. In the interim, the entities responsible for artificial production programs should issue annual reports on their progress in achieving the policies and standards called for in the Artificial Production Review. The NPCC will act as a clearinghouse to obtain, compile, and distribute these annual reports for review by decision-makers and the public.

In order to achieve a regional perspective and a unified approach to artificial production reform, an advisory committee to the NPCC will be created. The advisory committee will

be tasked with reporting quarterly on implementation of artificial production reforms across the basin in a consistent, coordinated and efficient manner.

Harvest strategy: Assure that subbasin plans are consistent with harvest management practices and increase opportunities for harvest wherever feasible.

The NPCC makes no claim to regulatory authority over harvest of fish and wildlife. It recognizes and affirms the fish and wildlife managers' legal jurisdiction and tribal trust and treaty rights. However, there is little point in recommending funding for implementation of a subbasin plan when the objectives for the plan cannot be reached under current harvest regimes. On the other hand, there is also no advantage to increasing fish populations in the interest of greater harvest if the anticipated harvest regimes will not allow that harvest to take place.

Each subbasin plan and hatchery management plan must explicitly describe the expected contribution to harvest for each of the harvested stocks or species. In the case of wildlife, the plan must indicate the area in which the wildlife will be harvested. In the case of fish, the plan must indicate the expected contribution to specific fisheries.

Each subbasin plan and hatchery management plan must state the likelihood that adequate numbers of adults will remain or return to the subbasin to assure reproductive success and meet subbasin goals for the next generation.

Artificially produced fish created for harvest should not be produced unless they can be effectively harvested in a fishery or provide other significant benefits.

Each subbasin plan and hatchery management plan should identify (a) where there is an opportunity for a terminal fishery and (b) any instance in which increased harvest is possible but will not occur under the existing harvest regime, and the changes that would be necessary to allow the harvest to occur.

The NPCC recommends the following practices in harvest management, and will seek to encourage the region's fish and wildlife managers to adopt them:

- Maintain an open and public process, allowing public observation of harvest and allocation discussions and timely dissemination of harvest-related information in a publicly accessible manner.

- Integrate harvest management to assure that conservation efforts made in one fishery can be passed through subsequent fisheries.

- Manage harvest to ensure the risk of imprecision and error in predicted run size does not threaten the survival and recovery of naturally spawning populations.

- Monitor in-river and ocean fisheries and routinely estimate stock composition and stock-specific abundance, escapement, catch, and age distribution. Expand

monitoring programs as necessary to reduce critical uncertainties. Manage data so that it can be easily integrated and readily available in real time.

- Manage harvest consistent with the protection and recovery of naturally spawning populations.

- Biennially, solicit scientific peer review of harvest management plans and analyses, starting in January 2002.

Primary Hydrosystem Passage and Operations strategy: Provide conditions within the hydrosystem for adult and juvenile fish that most closely approximate the natural physical and biological conditions, provide adequate levels of survival to support fish population recovery based in subbasin plans, support expression of life history diversity, and assure that flow and spill operations are optimized to produce the greatest biological benefits with the least adverse effects on resident fish while assuring an adequate, efficient, economical, and reliable power supply.

In April 2003 the NPCC adopted the 2003 Mainstem Amendments to the Columbia Basin Fish and Wildlife Program (Mainstem Plan). The Mainstem Plan contains visions, objectives, and strategies for mainstem hydrosystem operations. The Mainstem Plan vision statement is as follows:

Hydrosystem operations, fish passage efforts, habitat improvement investments and other actions in the mainstem should be directed toward protecting, enhancing, restoring and connecting natural river processes and habitats, especially spawning, rearing, resting and migration habitats for salmon, steelhead, sturgeon and important resident fish populations. This will allow for abundant, productive and diverse fish and wildlife populations. The vision includes providing conditions within the hydrosystem for adult and juvenile fish that: 1) most closely approximate natural physical and biological conditions; 2) support the expression of life history diversity; 3) allow for adequate levels of mainstem survival to support fish population recovery in the subbasins; and 4) ensure that water management operations are optimized to meet the needs of anadromous and resident fish species, including those in upstream storage reservoirs, with the least cost so that actions taken maximize benefits to all species while ensuring an adequate, efficient, economical and reliable power supply. Any system changes needed to achieve these goals must be implemented in such a way and over a sufficient time period to allow the region to make whatever power system adaptations are needed, if any, to maintain an adequate, efficient, economical and reliable power supply.

The biological objectives stated in the 2003 Mainstem Plan are intended to be based on, and consistent with, the biological objectives stated in the 2000 Fish and Wildlife Program.

One of the overarching biological objectives for the program is the recovery of ESA-listed anadromous and resident fish affected by development and operation of the hydrosystem. Federal hydrosystem operations to benefit fish now are focused on listed populations through the 2000 Biological Opinions on the Operation of the Federal

Columbia River Power System from NOAA Fisheries for salmon and steelhead and the U.S. Fish and Wildlife Service for Kootenai white sturgeon and bull trout. Achieving these biological performance standards for listed species as stated in the biological opinions is a key biological objective of the NPCC's program and this mainstem plan.

Under the Northwest Power Act, however, the NPCC has an obligation to protect, mitigate and enhance all of the fish and wildlife of the Columbia Basin affected by the development, operation and management of the hydrosystem. Concern over the listed populations is only one part of the NPCC's broader mandate. And so a goal of the program, as also stated in the overarching objectives of the program framework, is to provide habitat conditions that sustain abundant, productive, and diverse fish and wildlife populations that support the recovery of listed species and abundant opportunities for tribal trust and treaty-right harvest and non-tribal harvest. In addition, the science relating to the rebuilding of Pacific salmon, as incorporated into the objectives and habitat strategies in the 2000 Fish and Wildlife Program, indicates that success in protecting and enhancing abundant and diverse naturally spawning populations of salmon and steelhead and other native fish requires an emphasis on protecting, enhancing, connecting, and restoring habitats and populations that are relatively productive. This is a priority for actions that should be equal to protecting migration and spawning conditions for ESA-listed populations.

Accordingly, the Mainstem Plan emphasizes protecting and restoring mainstem spawning and rearing habitats and populations.

The Mainstem Plan lists detailed program objectives and strategies. For more information about these objectives and strategies, the information is available at http://www.nwcouncil.org/library/2003/2003-4.htm

Primary Wildlife strategy: Complete the current mitigation program for construction and inundation losses and include wildlife mitigation for all operational losses as an integrated part of habitat protection and restoration. Primary Ocean Conditions strategy: Identify the effects of ocean conditions on anadromous fish and use this information to evaluate and adjust inland actions.

Some previous versions of this fish and wildlife program have treated wildlife mitigation measures as separate from fish mitigation measures. In the 2000 program, the NPCC has revised its approach, treating a given habitat as an ecosystem that includes both fish and wildlife.

The 1994-1995 Program called upon the fish and wildlife managers and Bonneville to use Table 11-4 from the 1994 – 195 Program as the starting point for wildlife mitigation measures and short- and long-term mitigation agreements. The program also called upon these parties to reach agreement on how wildlife mitigation projects and fish mitigation projects should be credited toward identified losses. A portion of the habitat units identified in Table 11-4 have been acquired in the wildlife mitigation projects to date, and some mitigation project agreements establish the basis on which the project will be credited toward these losses. However, no agreement has been reached on the full extent

of wildlife losses due to the operations of the hydrosystem, nor has there been agreement on how to credit wildlife benefits resulting from riparian habitat improvements undertaken to benefit fish.

The extent of the wildlife mitigation is of particular importance to agencies and tribes in the so-called "blocked" areas, including the IMP, where anadromous fish runs once existed but were blocked by development of the hydrosystem. While there are limited opportunities for improving resident fish in those areas, resident fish substitution alone seldom is an adequate mitigation the NPCC believes that the wildlife mitigation projects should be integrated with the fish mitigation projects.

To provide an orderly transition between the past fish and wildlife program and this program, the NPCC is asking Bonneville and the fish and wildlife managers to complete mitigation agreements for the remaining habitat units. These agreements should equal 200 percent of the habitat units (2:1 ratio) identified as unannualized losses of wildlife habitat from construction and inundation of the federal hydropower system as identified in Table 11-4, which is included in Appendix C of the 2000 Fish and Wildlife Program. This mitigation is presumed to cover all construction and inundation losses, including annualized losses. In addition, for each wildlife agreement that does not already provide for long-term maintenance of the habitat, Bonneville and the applicable management agency shall propose for NPCC consideration and recommendation a maintenance agreement adequate to sustain the minimum credited habitat values for the life of the project.

Habitat acquired as mitigation for lost habitat units identified in Table 11-4 must be acquired in the subbasin in which the lost units were located unless otherwise agreed by the fish and wildlife agencies and tribes in that subbasin.

Habitat enhancement credits should be provided to Bonneville when habitat management activities funded by Bonneville lead to a net increase in habitat value when compared to the level identified in the baseline habitat inventory and subsequent habitat inventories. This determination should be made through the periodic monitoring of the project site using the Habitat Evaluation Procedure (HEP) methodology.

Bonneville should be credited for habitat enhancement efforts at a ratio of one habitat unit credited for every habitat unit gained.

An assessment should be conducted of direct operational impacts on wildlife habitat. Subbasin plans will serve as the vehicle to provide mitigation for direct operational losses and secondary losses. Annualization will not be used in determining the mitigation due for these losses. However, where operational or secondary losses have already been addressed in an existing wildlife mitigation agreement, the terms of that agreement will apply.

Project selection will be guided by subbasin plans incorporating wildlife elements. The subbasin plans will reflect the current basin-wide vision, biological objectives and strategies, and will also outline more specific short-term objectives and strategies for

achieving specific wildlife mitigation goals. The plans will act as work plans for the fish and wildlife managers and tribes, with an emphasis on fully mitigating the construction and inundation and direct operational losses by a time certain, and will be revisited regularly as part of the provincial review cycle. Mitigation programs should provide protection of habitat through fee-title acquisition, conservation easement, lease, or management plans for the life of the project.

***Ocean conditions primary strategy*:** Identify the effects of ocean conditions on anadromous fish and use this information to evaluate and adjust inland actions.

***Research, Monitoring, and Evaluation Primary strategies*:** 1) Identify and resolve key uncertainties for the program; 2) monitor, evaluate, and apply results; and 3) make information from this program readily available.

The intention of the NPCC — and the Northwest Power Act — is for the region to make the best possible choice of actions based on the available information. Thus, lack of perfect information is not grounds for inaction.

The NPCC will establish a basin-wide research plan, similar to the subbasin plans, which identify key uncertainties for this program and its biological objectives and the steps needed to resolve them. The plan will identify major research topics, including ocean research, and establish priorities for research funding.

The research plan will be coordinated with the research elements of the mainstem plan and the subbasin plans. The process for developing the plan and associated budgets will ensure independent scientific review, input from fish and wildlife agencies and tribes, independent scientists, and other interested parties in the region.

All completed research funded by Bonneville will be made readily available to all interested parties through the Internet and a library open to the public.

The NPCC will implement projects to review the current state of the science in key research areas.

The NPCC will initiate a process involving all interested parties in the region to establish guidelines appropriate for the collection and reporting of data in the Columbia River Basin.

Except where these criteria are clearly inapplicable, each project proposed for funding under this program must satisfy the following monitoring and evaluation criteria:

- The project must have measurable, quantitative biological objectives. (Related projects may rely on a single set of biological objectives.)

- The project must either collect or identify data that are appropriate for measuring the biological outcomes identified in the objectives.

- Projects that collect their own data for evaluation must make this data and accompanying metadata available to the region in electronic form. Data and reports developed with Bonneville funds should be considered in the public domain. Data and metadata must be submitted within six months of their collection.

- The methods and protocols used in data collection must be consistent with guidelines approved by the NPCC. Bonneville, in its contracting process, should ensure that each project satisfies these four criteria.

Subbasin plans will contain biological objectives as well as a plan for monitoring and evaluation to assess whether the projects implemented under the subbasin plan are achieving the objectives. The monitoring and evaluation portion of a subbasin plan should 1) identify the monitoring and evaluation tasks related to the objectives; 2) identify who will do the evaluation and on what schedule; 3) explain what kind of independent review will be incorporated if the main part of the monitoring and evaluation will be done by a main participant in the plan implementation; and 4) provide a budget for the monitoring and evaluation work. The project-specific monitoring and evaluation described above should feed information into the subbasin level evaluation.

Program implementation must also include as a system-wide project a program to evaluate whether the individual actions in the various subbasins are achieving the objectives of the program stated at the basin and province levels. The NPCC will work with other relevant parties in the basin to design this program –level monitoring and evaluation program, including describing the evaluation tasks, who will do the work, the possible budget, and the possible use of the independent science panels in assisting with this evaluation effort. The goal should be for the NPCC to produce an annual evaluation report of the success of the program in meeting its objectives.

The NPCC will initiate a process for identifying data needs in the basin, surveying available data, and filling any data gaps. The NPCC will initiate a process for establishing an Internet-based system for the efficient dissemination of data for the Columbia Basin. This system will be based on a network of data sites, such as Streamnet, Northwest Habitat Institute, Fish Passage Center, Columbia River Data Access in Real Time (DART), and others, linked by Internet technology. The functions of each data site, or module, will be clearly articulated and defined.

Appendix B: Acronym Index

BLM	Bureau of Land Management
BMPs	Best Management Practices
BPA	Bonneville Power Administration
BTCP	Bull Trout Conservation Plan
°C	Celsius
CCT	Confederated Colville Tribes
cfs	cubic feet per second
cms	cubic meter per second
Council	Northwest Power and Conservation Council
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
DNA	Deoxyribonucleic Acid
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EQIP	Environmental Quality Incentive Program
EWU	Eastern Washington University
°F	Fahrenheit
FC	Flood Control
FCD	Ferry Conservation District
FCRPS	Federal Columbia River Power System
FERC	Federal Energy Regulatory Commission
FMP	Fisheries Management Plan
fps	feet per second
GIS	Geographical Information System
GMA	Growth Management Act
HDI	Hardin and Davis, Inc.
HEP	Habitat Evaluation Procedure
HGMP	Hatchery Genetics Management Plan
HOSP	Headwaters of the San Poil
IBIS	Interactive Biodiversity Information System
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDPR	Idaho Department of Parks and Recreation
IDL	The Idaho Department of Lands
IDWR	Idaho Department of Water Resources
IFPA	Idaho Forest Practices Act
IMP	Intermountain Province
IMP OC	Intermountain Province Oversight Committee
INLT	Inland Northwest Land Trust
IPN	Infectious Pancreatic Necrosis
IPNF	Idaho Panhandle National Forests
IRMP	Integrated Resource Management Plan
ISRP	Independent Scientific Review Panel

IWRB	International Waterfowl and Wetlands Research Bureau
JSAP	Joint Stock Assessment Project
KNRD	Kalispel Natural Resource Department
KSSWCD	Kootenai-Shoshone Soil and Water Conservation District
KT	Kalispel Tribe
KTWMT	Kettle Tri-Watershed Management Team
LAUs	Lynx Analysis Units
LCCD	Lincoln County Conservation District
LMZs	Lynx Management Zones
LRHCT	Lake Roosevelt Hatcheries Coordination Team
LRFEP	Lake Roosevelt Fisheries Evaluation Program
MOU	Memorandum of Understanding
mps	meter per second
NAWCA	North American Wetlands Conservation Act
NOAA	National Oceanic and Atmospheric Administration Fisheries
NPDES	National Pollution Discharge Elimination System
NPPC	Northwest Power Planning Council
NRCS	Natural Resources Conservation Service
NSRP	Native Salmonid Restoration Plan
PBTTAT	Panhandle Bull Trout Technical Advisory Team
PHABSIM	Physical Habitat Simulation
PHS	Priority Habitats and Species
PME	Protection, Mitigation, and Enhancement
POCD	Pend Oreille Conservation District
PUD	Public Utility District
QHA	Qualitative Habitat Assessment
RDEP	Riparian Demonstration and Education Project
RFMP	Resident Fish Management Plan (developed by the Coeur d' Alene Tribe)
RK	River Kilometer
RM	River Mile
ROD	Record of Decision
SCCD	Spokane County Conservation District
SCH	Sherman Creek Hatchery
SCUD	Spokane County Utilities Division
SMART	Sherman Management and Restoration Team
SNTEMP	Stream Network Temperature Model
SRFB	Salmon Recovery Funding Board
STH	Spokane Tribal Hatchery
STOI	Spokane Tribe of Indians
SWAPAH	Soil, Water, Air, Plants, Animals, and Humans
TAT	Technical Advisory Team
TDG	Total Dissolved Gas
TMDLs	Total Maximum Daily Loads
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

USFS	United States Forest Service
USGS	United States Geological Survey
VARQ	Variable Discharge (“Q” common symbol in engineering for discharge)
WASP	Water and Soil Protection Project
WDFW	Washington Department of Fish and Wildlife
WDOE	Washington State Department of Ecology
WDOT	Washington State Department of Transportation
WHIP	Wildlife Habitat Incentives Program
WHMP	Wildlife Habitat Management Plan
WNHP	Washington Natural Heritage Program
WQLS	Water Quality Limited Segments
WQS	Water Quality Standards
WRIA	Water Resource Inventory Area
WWP	Washington Water Power

Appendix C: Focal Wildlife Species

Intermountain Province Focal Wildlife Species for IBIS Analysis	
Birds	
American crow	*Corvus brachyrhyncos*
American dipper	*Cinclus mexicanus*
American kestrel	*Falco sparverius*
American white pelican	*Pelecanus erythrorhynchos*
American wigeon	*Anas americana*
Bald eagle	*Haliaeetus leucocephalus*
Barred owl	*Strix varia*
Black tern	*Chlidonias niger*
Black-backed woodpecker	*Picoides arcticus*
Black-capped chickadee	*Poecile atricapillus*
Blue grouse	*Dendragapus obscurus*
Boreal owl	*Aegolius funereus*
California quail	*Callipepla californica*
Canada goose	*Branta canadensis*
Chukar	*Alectoris chukar*
Common loon	*Gavia immer*
Common merganser	*Mergus merganser*
Double-crested cormorant	*Phalacrocrorax auritus*
Downy woodpecker	*Picoides pubescens*
Ferruginous hawk	*Buteo regalis*
Flammulated owl	*Otus flammeolus*
Golden eagle	*Aquila chrysaetos*
Grasshopper sparrow	*Ammodramus savannarum*
Gray partridge	*Perdix perdix*
Great blue heron	*Ardea herodias*
Great gray owl	*Strix nebulosa*
Green-winged Teal	*Anas crecca*
Harlequin duck	*Histrionicus histrionicus*
Killeer	*Charadrius vociferus*
Lewis' woodpecker	*Melanerpes lewis*
Loggerhead shrike	*Lanius ludovicianus*
Mallard	*Anas platyrhyncos*
Marsh wren	*Cistothorus palustris*
Merlin	*Falco columbaris*
Mourning dove	*Zenaida macroura*
Northern goshawk	*Accipiter gentilis*

Northern pygmy owl	*Glaucidium gnoma*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Olive-sided flycatcher	*Contopus cooperi*
Osprey	*Pandion haliaetus*
Peregrine falcon	*Falco peregrinus*
Pileated woodpecker	*Dryocopus pileatus*
Pygmy nuthatch	*Sitta pygmaea*
Redhead	*Aythya americana*
Ring-billed gull	*Larus delawarensis*
Ring-necked pheasant	*Phasianus colchicus*
Ruddy duck	*Oxyura jamaicensis*
Ruffed grouse	*Bonasa umbellatus*
Rufous hummingbird	*Selasphorus rufus*
Sage grouse	*Centrocercus urophasianus*
Sage sparrow	*Amphispiza belli*
Sage thrasher	*Oreoscoptes montanus*
Sandhill crane	*Grus canadensis*
Sharp-tailed grouse	*Tympanuchus phasianellus*
Spotted sandpiper	*Actitis macularia*
Spruce grouse	*Dendragapus canadensis*
Swainson's hawk	*Buteo swainsoni*
Three-toed woodpecker	*Picoides tridactylus*
Tundra swan	*Cygnus columbianus*
Upland sandpiper	*Bartramia longicauda*
Vaux's swift	*Chaetura vauxi*
Western burrowing owl	*Athene cunicularia*
Western grebe	*Aechmophorus occidentalis*
Western meadowlark	*Sturnella neglecta*
Western Tanager	*Piranga ludoviciana*
White-headed woodpecker	*Picoides albolarvatus*
Wild turkey	*Meleagris gallopavo*
Willow flycatcher	*Empidonax traillii*
Yellow warbler	*Dendroica petechia*
Mammals	
American badger	*Taxidea taxus*
American beaver	*Castor canadensis*
American marten	*Martes americana*
Bighorn sheep	*Ovis canadensis*
Black bear	*Ursus americanus*
Bobcat	*Lynx rufus*
California myotis	*Myotis californicus*

Canada lynx	*Lynx canadensis*
Cougar	*Felis concolor*
Coyote	*Canis latrans*
Fisher	*Martes pennanti*
Fringed myotis	*Myotis thysanodes*
Gray wolf	*Canis lupus*
Grizzly bear	*Ursus arctos*
Long-eared myotis	*Myotis evotis*
Long-legged myotis	*Myotis volans*
Merriam's shrew	*Sorex merriami*
Mink	*Mustela vison*
Moose	*Alces alces*
Mountain goat	*Oreamnos americanus*
Mule deer	*Odocoileus hemionus hemionus*
Muskrat	*Ondatra zibethica*
Northern bog lemming	*Synaptomys borealis*
Northern flying squirrel	*Glaucomys sabrinus*
Pygmy rabbit	*Brachylagus idahoensis*
Pygmy shrew	*Microsorex hoyi*
Raccoon	*Procyon lotor*
River otter	*Lutra canadensis*
Rocky Mt. elk	*Cervus elaphus nelsoni*
Snowshoe hare	*Lepus americanus*
Townsend's big-eared bat	*Coryhorhinus townsendii*
Pale Townsend's big-eared bat	*Coryhorhinus townsendii pallescens*
Washington ground squirrel	*Spermophilus washingtoni*
Western small-footed myotis	*Myotis ciliolabrum*
White-tailed deer	*Odocoileus virginianus*
White-tailed jackrabbit	*Lepus townsendii*
Wolverine	*Gulo gulo*
Woodland caribou	*Rangifer tarandus*
Yuma myotis	*Myotis yumanensis*
Amphibians	
Coeur d'Alene salamander	*Plethodon vandykei idahoensis*
Columbia spotted frog	*Rana luteiventris*
Long-toed salamander	*Ambystoma macrodactylum*
Northern leopard frog	*Rana pipiens*
Rough-skinned newt	*Taricha granulosa*
Western toad	*Bufo boreas*
Wood frog	*Rana sylvatica*

Reptiles	
Northern alligator lizard	*Elgaria coerulea*
Ringneck snake	*Diadolphis punctatus*
Striped whipsnake	*Masticophis taeniatus*

Appendix D: Degree of Association Between Focal Wildlife Species and Focal Habitats for Breeding

Degree of association (● = close, ○ = general) for breeding between focal wildlife species and focal habitats of the Intermountain Province

		Cliff	Wetland			Ripn	Steppe/Shrub-stpp			Upland Forest						
Common Name	**Scientific Name**	**Rock**	**lrpr**	**h**	**mc**	**ei**	**wg**	**eig**	**ss**	**wj**	**wlc**	**mm**	**eim**	**lp**	**pp**	**ua**
Amphibians																
Coeur d'Alene salamander	*Plethodon vandykei idahoensis*	○	●	○	○	○										
Columbia spotted frog	*Rana luteiventris*		●	●	○	●										
Long-toed salamander	*Ambystoma macrodactylum*		●	●	●	●	○	○	○	○	○	○	○	○	○	○
Northern leopard frog	*Rana pipiens*		●	●		●										
Rough-skinned newt	*Taricha granulosa*		●	●	●											
Western toad	*Bufo boreas*		●	●	●	●										
Wood frog	*Rana sylvatica*		●	●	●	●					○	○	○			
Birds																
American crow	*Corvus brachyrhyncos*					○					○		○		○	
American dipper	*Cinclus mexicanus*		●			●										
American kestrel	*Falco sparverius*	○				○	○	○	○	○	○	○	○	○	○	
American white pelican	*Pelecanus erythrorhynchos*		●													
American wigeon	*Anas americana*			●				○								
Bald eagle	*Haliaeetus leucocephalus*					○					○	○	○	○	○	
Barred owl	*Strix varia*					○					●		●			
Black tern	*Chlidonias niger*			●												
Black-backed woodpecker	*Picoides arcticus*				○							○	○	●	○	
Black-capped chickadee	*Poecile atricapillus*					○					○				○	
Blue grouse	*Dendragapus obscurus*				○	●			○		●	○	●	○	●	○
Boreal owl	*Aegolius funereus*											○	○			○
California quail	*Callipepla californica*					○	○	○	○	○	○				○	
Canada goose	*Branta canadensis*	○		●					○							
Chukar	*Alectoris chukar*	○						●	●							
Common loon	*Gavia immer*		○	●												
Common merganser	*Mergus merganser*					●					●					
Double-crested cormorant	*Phalacrocrorax auritus*		●	○		●										
Downy woodpecker	*Picoides pubescens*					○					○					○
Ferruginous hawk	*Buteo regalis*	○						●	●							
Flammulated owl	*Otus flammeolus*					○							●	○	●	○
Golden eagle	*Aquila chrysaetos*	●				○		○	○	○					○	
Grasshopper sparrow	*Ammodramus savannarum*						●	●	○							
Gray partridge	*Perdix perdix*							○	○							
Great blue heron	*Ardea herodias*					●					○					
Great gray owl	*Strix nebulosa*				○								○	●	●	
Green-winged teal	*Anas crecca*			●			○	○								
Harlequin duck	*Histrionicus histrionicus*					●										
Killdeer	*Charadrius vociferus*		○	○		○	○	○	○							
Lewis' woodpecker	*Melanerpes lewis*					○	○						○		○	

		Cliff	Wetland			Ripn	Steppe/Shrub-stpp			Upland Forest						
Common Name	**Scientific Name**	**Rock**	**lrpr**	**h**	**mc**	**ei**	**wg**	**eig**	**ss**	**wj**	**wlc**	**mm**	**eim**	**lp**	**pp**	**ua**
Loggerhead shrike	*Lanius ludovicianus*						○		●	●						
Mallard	*Anas platyrhyncos*			●		●		○	○							
Marsh wren	*Cistothorus palustris*			●												
Merlin	*Falco columbaris*										○					
Mourning dove	*Zenaida macroura*					●	○	○	○	○	○				○	
Northern goshawk	*Accipiter gentilis*				○	○					○	○	●	●	●	
Northern pygmy owl	*Glaucidium gnoma*				○	○				○	●		●	○	○	
Northern rough-winged swallow	*Stelgidopteryx serripennis*	○	●			●										
Olive-sided flycatcher	*Contopus cooperi*				○	○					●	●	●	○	○	
Osprey	*Pandion haliaetus*		●			○			○		○	○	○	○	○	
Peregrine falcon	*Falco peregrinus*	●				○		○	○	○	○	○	○	○	○	
Pileated woodpecker	*Dryocopus pileatus*				○	○					○	○	○		○	
Pygmy nuthatch	*Sitta pygmaea*					●									●	
Redhead	*Aythya americana*			●												
Ring-billed gull	*Larus delawarensis*		●	○												
Ring-necked pheasant	*Phasianus colchicus*					●	●	○	○							
Ruddy duck	*Oxyura jamaicensis*			●												
Ruffed grouse	*Bonasa umbellatus*				○	●					●				○	○
Rufous hummingbird	*Selasphorus rufus*				○	○					○	○	○		○	○
Sage grouse	*Centrocercus urophasianus*							●	●							
Sage sparrow	*Amphispiza belli*								●	○						
Sage thrasher	*Oreoscoptes montanus*								●							
Sandhill crane	*Grus canadensis*			●		○										
Sharp-tailed grouse	*Tympanuchus phasianellus*							●	●						○	
Spotted sandpiper	*Actitis macularia*		○	○		●										
Spruce grouse	*Dendragapus canadensis*				○								○	○		
Swainson's hawk	*Buteo swainsoni*					○		●	●	○						
Three-toed woodpecker	*Picoides tridactylus*				○							○	○	●	○	
Tundra swan	*Cygnus columbianus*															
Upland sandpiper	*Bartramia longicauda*			○				●								
Vaux's swift	*Chaetura vauxi*				○		○				○	○	○		○	
Western burrowing owl	*Athene cunicularia*						○	●	●							
Western grebe	*Aechmophorus occidentalis*		●	●												
Western meadowlark	*Sturnella neglecta*						●	●	●	○						
Western tanager	*Piranga ludoviciana*				○	○					●	●	●	○	●	○
White-headed woodpecker	*Picoides albolarvatus*					○							○		●	
Wild turkey	*Meleagris gallopavo*					○	○				○		○		○	
Willow flycatcher	*Empidonax traillii*				○	●					○	○				
Yellow warbler	*Dendroica petechia*					●										○

Mammals																	
American badger	*Taxidea taxus*						○	●	●	○			○		○	○	
American beaver	*Castor canadensis*		●	●	○	●											
American marten	*Martes americana*				○						○	●	●	●			
Bighorn sheep	*Ovis canadensis*	○							○								
Black bear	*Ursus americanus*				○	○					○	○	○	○	○	○	
Bobcat	*Lynx rufus*	○				○			○	○	○	○	○	○	○	○	
California myotis	*Myotis californicus*	○			○	○		○	○		●		●	○	○	○	
Canada lynx	*Lynx canadensis*											○	●	●			
Cougar	*Felis concolor*	○				○				○	○	○	○	○	○	○	
Coyote	*Canis latrans*				○	○	○	○	○	○	○	○	○	○	○	○	
Fisher	*Martes pennanti*				○	○					●	●	●				
Fringed myotis	*Myotis thysanodes*	○				○			○		○		○		○		
Gray wolf	*Canis lupus*					○	○	○			○	○	○		○		
Grizzly bear	*Ursus arctos*												○				
Long-eared myotis	*Myotis evotis*	○			○	○				○	○	○	○	○	○		
Long-legged myotis	*Myotis volans*	○				●	○			○	●	●	●	○	●		
Merriam's shrew	*Sorex merriami*								●								
Mink	*Mustela vison*		●		○	●											
Moose	*Alces alces*				○	○						○	○				
Mountain goat	*Oreamnos americanus*	○										○					
Mule deer	*Odocoileus hemionus hemionus*				○	○		○	○	○		○	○	○	○	○	
Muskrat	*Ondatra zibethica*		●	●		●											
Northern bog lemming	*Synaptomys borealis*			●	○								○	○			
Northern flying squirrel	*Glaucomys sabrinus*				○	○					●	●	●	○	○		
Pygmy rabbit	*Brachylagus idahoensis*								●								
Pygmy shrew	*Microsorex hoyi*												●				
Raccoon	*Procyon lotor*					●	○				○						
River otter	*Lutra canadensis*		●	●		●											
Rocky Mt. elk	*Cervus elaphus nelsoni*				○	○		○	○	○	○	○	○	○	○	○	
Snowshoe hare	*Lepus americanus*				●	●					○	●	●	●		○	
Townsend's big-eared bat	*Coryhorhinus townsendii*	○						○	○	○	○	○	○	○	○		
Pale Townsend's big-eared bat	*C. t. pallescens*	○						○	○	○	○	○	○	○	○		
Washington ground squirrel	*Spermophilus washingtoni*							●	●								
Western small-footed myotis	*Myotis ciliolabrum*	○				●		●	●	●							
White-tailed deer	*Odocoileus virginianus*					●		○	○			○	○	○	○	○	
White-tailed jackrabbit	*Lepus townsendii*							●	○								
Wolverine	*Gulo gulo*	○			○							○					
Woodland caribou	*Rangifer tarandus*				○	○						○	○				
Yuma myotis	*Myotis yumanensis*	○			●	●	○	○	○	○	○	○	○	○	○		

Reptiles																
Northern alligator lizard	*Elgaria coerulea*	○				○	○				○	○	○	○	○	○
Ringneck snake	*Diadolphis punctatus*	○					○		○		○				○	
Striped whipsnake	*Masticophis taeniatus*	○							○	○					○	

Cliff or Rock Outcrop:
Wetland: **lrpr** = lake, river, pond, and reservoir; **h** = herbaceous; **mc** = montane coniferous.
Riparian: **ei** = eastside (interior) riparian-wetland.
Steppe or Shrub-steppe: **wg** = westside grassland; **eig** = eastside (interior) grassland; **ss** = shrub-steppe.
Upland Forest:: **wj** = western juniper and/or mountain mahogany; **wlc** = westside lowland conifer-hardwood; **mm** = montane mixed conifer; **eim** = eastside (interior) mixed conifer;
lp = lodgepole pine; **pp** = ponderosa pine; **ua** = upland aspen.

(Source: Adapted from Johnson and O'Neil 2001)

Appendix E: Critical Functional Link Wildlife Species

Focal habitats containing focal wildlife species that supply a critical functional link in the Intermountain Province

Focal Habitat	Key Ecological Function	Focal Wildlife Species
Wetland – Lake, River, Pond, & Reservoir	● Creates feeding, roosting, denning, or nesting opportunities for other organisms	Great blue heron
	● Parasitizes nest of other species for breeding	Redhead
	● Uses aerial structures created by other species	Black tern
	● Creates ponds or wetlands through wallowing	American beaver
	● Impounds water by creating diversion or dam	American beaver
	● Primary consumer of bark, cambium, or bole	American beaver
Wetland – Herbaceous	● Creates roosting, denning, or nesting opportunities for other organisms	Great blue heron
	● Disperses lichens	Mountain caribou
	● Impounds water by creating diversion or dam	American beaver
	● Physically fragments standing wood	Black bear
	● Primary cavity excavator in snags or live trees	Black bear
Wetland – Montane Coniferous	● Feeds on fecal material	Snowshoe hare
	● Impounds water by creating diversion or dam	American beaver
	● Primary creator of aquatic structures	American beaver
Riparian – Eastside (Interior)	● Creates roosting, denning, or nesting opportunities for other organisms	Great blue heron
	● Impounds water by creating diversion or dam	American beaver
Steppe – Eastside (Interior) Grassland	● Creates feeding, roosting, denning, or nesting opportunities	Grizzly bear
	● Creates ponds or wetlands through wallowing	Rocky Mtn. elk
	● Primary cavity excavator in snags or live trees	Black bear
	● Primary consumer of bark, cambium, or bole	Black bear
	● Uses aquatic structures created by other organisms	Mink
Shrub-steppe	● Uses aquatic structures created by other organisms	Mink
Forest – Westside Lowland Conifer-Hardwood	● Creates roosting, denning, or nesting opportunities for other organisms	Great blue heron
	● Grazes grasses/forbs, possibly altering vegetative structure & composition	Rocky Mtn. elk
	● Impounds water by creating diversion or dam	American beaver
	● Primary creator of aquatic structures	American beaver
Forest – Montane Mixed Conifer	● Impounds water by creating diversion or dam	American beaver
	● Primary creator of aquatic structures	American beaver
Forest – Eastside (Interior) Mixed Conifer	● Impounds water by creating diversion or dam	American beaver
	● Primary creator of aquatic structures	American beaver
Forest – Lodgepole Pine	● Feeds on fecal material	Snowshoe hare
	● Impounds water by creating diversion or dam	American beaver

Focal Habitat	Key Ecological Function	Focal Wildlife Species
	● Primary creator of aquatic structures	American beaver
	● Uses aquatic structures created by other organisms	Mink
Forest – Ponderosa Pine	● Feeds on fecal material	Snowshoe hare
	● Impounds water by creating diversion or dam	American beaver
	● Primary creator of aquatic structures	American beaver
Forest – Upland Aspen	● Impounds water by creating diversion or dam	American beaver
	● Primary creator of aquatic structures	American beaver
	● Secondary consumer of freshwater or marine zooplankton	Long-toed salamander
	● Uses aquatic structures created by other organisms	Mink

(*Source*: IBIS 2003)

Appendix F: Alternative Funding Sources

The Technical Guide for Subbasin Planners requests that subbasin plans include activities outside the responsibility of the Bonneville Power Administration (BPA). Specifically, the Technical Guide says, “Subbasin plans need to integrate and coordinate Bonneville obligations under the NW Power Act, Endangered Species Act and Clean Water Act requirements and tribal trust and treaty based responsibilities. Beyond Bonneville specific responsibilities, subbasin plans should be developed broadly enough to take into account other federal, state, and local activities, objectives, and responsibilities. Including these other elements, though they may not be a funding responsibility of Bonneville, should enable planners and implementers to coordinate their activities in a more cost-effective manner and in a way that produces cumulative and synergistic benefits.”

This subbasin plan does include recommended strategies for fish and wildlife protection and restoration that are outside BPA’s mandate. In order to aid fish and wildlife managers and the public in implementing this plan, we have included this appendix with a list of alternative funding sources that may be willing to provide financial support for strategies in this plan. The information in this appendix came from: Directory of Watershed Funding Resources - Environmental Finance Center at Boise State University: http://ssrc.boisestate.edu/index.asp. More detailed information about funding is available on this website.

The mission of the Environmental Finance Center (EFC) at Boise State University is to provide help to those facing the "how to pay" challenges of environmental protection. The EFC is committed to helping the regulated community build and improve the technical, managerial, and financial capabilities needed to comply with federal and state environmental protection laws. Their goal is to assist local communities and watershed groups in finding creative funding solutions to support their own plans for environmental protection.

There is a tremendous volume of information available for funding watershed restoration. However, finding and sorting through this information can be a daunting task. In an effort to address this need, the EFC has created an on-line, searchable database for watershed restoration funding. The database includes information on funding programs available for federal, state (Oregon, Washington, Idaho, and Alaska), private, and other funding sources.

Users can query the information in a variety of ways including agency sponsor, keyword, or by a detailed search. At the end of a query, a brief description of each matching program will be displayed. When a specific program is selected, a detailed page of that program will be displayed and can be printed.

The database is a work-in-progress. Information is added and updated regularly. The database is a result of a collaborative effort between the EFC and the following organizations:

* Alaska Department of Community and Economic Development (OCED)
* Idaho Department of Water Resources (IDWR)
* Oregon Watershed Enhancement Board (OWEB)
* Washington Infrastructure Assistance Coordinating Council (IACC)
* U.S. Environmental Protection Agency (EPA)

Non - BPA Funding Sources:

Federal / Interstate Agency Sponsors	
	Bureau of Indian Affairs
	Agriculture on Indian Lands
	Bureau of Indian Affairs
	Environmental Management on Indian Lands
	Fish, Wildlife, and Parks Programs on Indian Lands
	Forestry on Indian Lands
	Indian Loan Guaranty Program - BIA
	Native American Employment Assistance (BIA)
	Soil and Moisture Conservation
	Training and Technical Assistance for Indian Tribal Governments
	Water Resources on Indian Lands
	Bureau of Land Management
	BLM Learning Landscapes - Idaho
	BLM Learnng Landscapes - Oregon & Washington
	Challenge Cost Share
	Secure Rural Schools & Community Self-Determinatio
	Wyden Amendment
	Bureau of Reclamation
	Bridging-the-Headgate - A Conservation Partnership
	Construction Program
	General Investigations Program
	Native American Program
	Planning/Technical Assistance Program
	Technical Assistance to States
	Waste Water Reuse Program
	Cooperative State Research Education and Extension Service
	Sustainable Agriculture Research Education (SARE)
	Water Quality Special Research Grants Program
	Corporation for National and Community Service
	AmeriCorps Education Awards Program
	AmeriCorps Indian Tribes and US Territories Program
	AmeriCorps National Civilian Community Corps (NCCC)
	AmeriCorps National Program
	AmeriCorps State Program
	AmeriCorps Volunteers In Service To America (VISTA)
	Learn and Serve America Program
	Senior Corps

	Department of Health and Human Services
	Indian Environmental Regulatory Enhancement
	Economic Development Administration
	Center for Economic Development - University of Alaska
	Economic Adjustment Program
	Partnership Planning Grants for Economic Development Districts, Indian Tribes, & Other Eligible Area
	Public Works and Development Facilities Program
	Public Works and Economic Development Program
	Sudden and Severe Economic Dislocation Program
	Support for Planning Organizations
	Technical Assistance Program (Local)
	Environmental Protection Agency
	Brownfields Assessment and Demonstration Projects
	Brownfields Cleanup Revolving Loan Fund Pilots
	Brownfields Job Training and Development Pilots
	Capitalization Grants for Drinking Water State Revolving Fund
	Chemical Emergency Preparedness and Prevention Technical Assistance Grants
	Clean Water Act Indian Set-Aside Grant Program
	Clean Water Act Water Quality Cooperative Agreements
	Direct Implementation Tribal Cooperative Agreements
	Drinking Water SRF Tribal Set-Aside Program
	Energy Star Program
	Environmental Education Grants Program
	Environmental Justice Collaborative Problem-Solving Grant Program
	Environmental Justice Grants to Small Community Groups
	Environmental Justice Through Pollution Prevention
	Environmental Monitoring for Public Access and Community Tracking (EMPACT)
	Five-Star Restoration Program
	Guidebook of Financial Tools
	Hazardous Waste Management Grants for Tribes
	Indian Environmental General Assistance Program (GAP) Grant
	Indian Set-Aside Wastewater Treatment Grant Program
	National Estuary Program
	Nonpoint Source Implementation Grants
	Pesticide Environmental Stewardship Grants
	Pollution Prevention Incentives for States
	Regional Geographic Initiative (RGI) Program
	Science to Achieve Results Program
	Small Community Wastewater Technical Assistance and Outreach Program
	State/Tribal Wetland Planning Grants
	Superfund Technical Assistance Grants
	Sustainable Development Challenge Grants
	Toxic Substances Compliance Monitoring Cooperative Agreements
	Tribal Drinking Water Capacity Building/Source Water Protection Grants
	Tribal Grants for Surface and Groundwater Protection, Pesticide Management Planning
	Tribal Multimedia Compliance Assistance and Enforcement Support

	Tribal Municipal Solid Waste Landfills Programs
	Tribal Pesticide Program Support
	Water Pollution Control - State and Interstate Program Support
	Water Protection Grants to the States
	Water Quality Cooperative Agreements
	Watershed Assistance Grants
	Watershed Iniative
	Wetland Protection, Restoration, and Stewardship Discretionary Funding
	Wetlands Program Development Grants
	Farm Service Agency
	Conservation Reserve Enhancement Program
	Conservation Reserve Program
	Conservation Reserve Program - Idaho
	Conservation Reserve Program - Washington
	Emergency Conservation Program
	Farm Debt Cancellation-Conservation Easement Program
	Farm Ownership and Operating Loans
	Interest Assistance Program
	Water Quality Incentives Projects
	Federal Emergency Management Agency
	Flood Mitigation Assistance Program
	Hazard Mitigation Grant Program
	Project Impact Grant Program
	Federal Highway Administration
	Alaska Scenic Byways Program
	Transportation Environmental Research Program (TERP)
	Transportation Equity Act for the 21st Century (TEA-21)
	National Credit Union Administration
	Revolving Loan Fund for Credit Unions
	National Fish & Wildlife Foundation
	Bring Back the Natives
	Centennial Refuge Legacy
	Challenge Grants for Conservation
	National Wildlife Refuge Support Group Grant Program 2002 Application Kit
	Pacific Grassroots Salmon Initiative
	National Oceanic and Atmospheric Administration
	Coastal Services Center Cooperative Agreements
	Coastal Zone Management Administration/Implementation Awards
	Community-Based Restoration Program
	Fisheries Development and Utilization Research & Development Grants & Cooperative Agreement Program
	Fisheries Financing Program
	Saltonstall-Kennedy Fisheries Research and Development Grants
	National Park Service
	Historic Preservation Grants-In-Aid
	Outdoor Recreation
	Rivers, Trails, and Conservation Assistance Program
	Natural Resources Conservation Service

	Columbia-Pacific Resource Conservation and Economic Development District
	Conservation of Private Grazing Land Program
	Conservation Security Program (CSP)
	Conservation Technical Assistance Program
	Emergency Watershed Protection Program
	Environmental Quality Incentive Program - Idaho
	Environmental Quality Incentive Program - Washington
	Farm and Ranch Land Protection Program (FRPP)
	Farm Bill 2002 Conservation Programs
	Forestry Incentives Program - Washington
	Plant Materials Program
	Resource Conservation and Development (RC&D) Program
	River Basin Surveys and Investigations
	Rural Development (RD) Program
	Snow Survey & Water and Climate Services Program
	Soil and Water Conservation
	Soil Survey Program
	Tribal Conservation Districts
	Water Bank Program
	Watershed Protection and Flood Prevention Program
	Wetlands Reserve Program (WRP)
	Wildlife Habitat Incentives Program (WHIP)
	Small Business Administration
	Pollution Control Loans
	SBA Bond Guarantees for Small Businesses
	SBA Business Development Assistance to Small Businesses
	SBA Loans for Small Businesses
	SBA Minority Enterprise Development
	Small Business Development Centers
	U.S. Army Corps of Engineers
	Basinwide Restoration New Starts General Investigation
	Construction of Municipal and Industrial Water Supply Projects
	Ecosystem Restoration in the Civil Works Program
	Flood Fighting
	Floodplain Management Services Program
	Levee Rehabilitation
	Partners for Environmental Progress
	Section 107: Small Navigation Projects
	Section 1135: Project Modifications to Improve the Environment
	Section 14: Emergency Streambank and Shoreline Protection
	Section 203: Tribal Partnership Program
	Section 204: Environmental Restoration Projects in Connection with Dredging
	Section 205: Flood Damage Reduction Projects
	Section 206: Aquatic Ecosystem Restoration Program
	Section 208: Snagging and Clearing for Flood Control
	Section 22: Planning Assistance to the States Program (PAS)
	Section 306: General Investigation Studies for Environmental Restoration

	U.S. Department of Agriculture
	Agricultural and Economic Research
	Business and Industry Loans
	Grassland Reserve Program
	National Integrated Water Quality Program (NIWQP)
	National Organic Certification Cost-Share Program - Idaho
	National Research Initiative Competitive Grants Program
	Small Watershed Rehabilitation Program
	Water Conservation Program
	Watershed Processes and Water Resources Program
	U.S. Department of Commerce
	Alaska Export Assistance Center
	Alaska Minority Business Development Center
	Community Development Quota (CDQ) Fisheries Program
	U.S. Department of Defense
	Doing Business with the Federal Government (PTAC)
	U.S. Department of Energy
	Best Practices Program
	Center of Excellence for Sustainable Development
	Million Solar Roofs Initiative
	Office of Industrial Technologies Clearinghouse, The
	Rebuild America
	U.S. Department of Health and Human Services
	Administration for Native Americans Grants
	Capacity Building Among American Indian Tribes
	IHS Sanitation Facilities Construction Program
	Improving the Capability of Indian Tribal Governments
	Mitigation of Environmental Impacts to Indian Lands Due to Department of Defense Activities
	Office of Community Services - Grant Programs
	U.S. Department of Housing and Urban Development
	Community Development Block Grant Program (ICDBG) - Idaho
	Indian Community Development Block Grant Program
	U.S. Department of Interior
	Abandoned Mine Land Reclamation Program
	Acid Mine Drainage Grant
	Land & Water Conservation Fund Grants to States
	U.S. Fish & Wildlife Service
	Alaska Coastal Conservation Grants
	Chehalis Fisheries Restoration Program
	Clean Vessel Act Grant Program
	Coastal Grant Program
	Cooperative Endangered Species Conservation Fund
	Fish Screen Construction Program
	Greenspaces Program
	Habitat Conservation - Partners for Fish and Wildlife Program
	Habitat Conservation - U.S. Fish and Wildlife Service Coastal Program
	Habitat Conservation Plan Land Aquisition Grants Program

	Habitat Conservation Planning Assistance Grants - Cooperative Endangered Species Conservation Fund
	Hatfield Restoration Program
	Jobs-in-the-Woods Program
	National Coastal Wetlands Conservation Grant Program
	National Wildlife Refuge Challenge Cost Share Program
	Neotropical Migratory Bird Conservation Act Grants Program
	North American Wetlands Conservation Act Grants Program
	Partnerships for Wildlife
	Private Stewardship Grant Program
	Puget Sound Program
	Recovery Land Acquisition Grants - Cooperative Endangered Species Conservation Fund
	Refuges and Wildlife - North American Waterfowl Management Plan
	State Wildlife Grants
	Washington State Ecosystems Conservation Program
	U.S. Fish and Wildlife Service
	Landowner Incentive Grant Program - (Non - Tribal)
	U.S. Forest Service
	Economic Action Programs
	Forest Land Enhancement Program - Idaho
	Forest Land Enhancement Program - Washington
	Forest Legacy Program - Cooperative Forestry Assistance Program
	Forest Legacy Program - Washington
	Forest Stewardship & Stewardship Incentive Program
	Forest Stewardship Program
	Mini-Grants Assistance Program
	Rural Community Assistance Program
	Stewardship Incentive Program
	Urban & Community Forestry Program
	WACERT Process
	U.S. General Services Administration (GSA)
	Doing Business with the Federal Government (GSA)
	U.S. Geological Survey
	State Partnership Initiative
	USDA - Rural Development
	Agricultural Cooperatives Technical Assistance
	Community Facilities Direct and Guaranteed Loans and Grants for Rural Areas - Idaho
	Community Facility Loan and Grant Program
	Emergency Community Water Assistance Grant Program
	Guaranteed Business and Industry Loans
	Guaranteed Water and Waste Disposal Loans
	Intermediary Relending Program
	Rural Alaskan Village Water and Waste Disposal Grants
	Rural Business Enterprise Grant Program
	Rural Business Loan Fund
	Rural Economic Development Loan Program
	USDA Water and Waste Disposal Grants

	USDA Water and Waste Disposal Loans
	Water and Waste Disposal Direct and Guaranteed Loans and Grants for Rural Areas - Idaho
	Water and Waste Disposal Loan and Grant Program
State - Idaho	
	Idaho Department of Agriculture
	Container Recycling Operation Program (CROP)
	Idaho OnePlan Program
	National Organic Certification Cost-Share Program - Idaho
	Noxious Weed Cost-Share Program
	Pesticide Disposal Program
	Idaho Department of Commerce
	Community Development Block Grant Program (ICDBG) - Idaho
	Idaho Gem Community Implementation Grants
	Idaho Department of Environmental Quality
	Drinking Water Revolving Loan Fund - Idaho
	Nonpoint Source Implementation Grant (319) Program - Idaho
	Planning Grant Program for Drinking Water Facilities - Idaho
	Planning Grant Program for Wastewater Facilities - Idaho
	Water Pollution Control State Revolving Loan Fund - Idaho
	Idaho Department of Fish & Game
	Habitat Improvement Program (HIP)
	Project WILD - Idaho
	State Wildlife Grants Program - Idaho
	Wildlife Conservation and Restoration Program (WCRP)
	Idaho Department of Lands
	Arbor Day Grants
	Community Transportation Enhancement (CTE) Grant
	Forest Land Enhancement Program - Idaho
	Forest Legacy Program - Idaho
	Hazardous Fuels Treatment Grants
	Urban & Community Forestry (UCF) - Program Development Grant
	Urban & Community Forestry (UCF) - Tree Planting & Care Grant
	Urban & Community Forestry Program - Idaho
	Western Wildland Urban Interface (WUI)
	Idaho Department of Parks and Recreation
	Land and Water Conservation Fund - Idaho
	Motorbike Recreation Fund
	Off-highway Vehicle Programs
	Recreational Trails Program - Idaho
	Snowmobile Registration Fund
	Waterways Improvement Grants
	Idaho Department of Water Resources
	Energy Conservation Loan Program
	Idaho Water Resource Board Funding Programs
	Idaho Office of Species Conservation
	Idaho Wolf Depredation Compensation Program

	Idaho Soil Conservation Commission
	Natural Resource Conservation Tax Credit
	Resource Conservation and Range Development Program (RCRDP) Loans
	Water Quality Program for Agriculture (WQPA)
	Idaho Transportation Department
	Congestion Mitigation and Air Quality Improvement Program - Idaho
	Enhancement Program
	Transportation Equity Act for the 21st Century (TEA-21) - Idaho
	Idaho Water Resources Research Institute
	Water Resources Research Institute
	University of Idaho
	Project WET - Idaho
State - Washington	
	Interagency Committee for Outdoor Recreation
	Athletic Facility Account Program
	Boating Facilities Program
	Firearms and Archery Range Recreation
	Non-Highway & Off-Road Vehicle Activities Program
	Riparian Habitat Program
	Salmon Recovery Funding Board
	Washington Wildlife and Recreation Program (WWRP)
	Transportation Improvement Board (TIB)
	FEMA Match Program
	Small City BRAC Match Program
	Small City Pedestrian Safety and Mobility Program
	Small City Program (SCP)
	Urban Pedestrian Safety and Mobility Program
	Washington Conservation Commission
	Non-Point Water Quality Grants
	Washington Department of Community, Trade and Economic Development
	Community Development Block Grant Community Investment Fund - Washington
	Community Development Block Grant General Purpose - Washington
	Community Development Block Grant Imminent Threat Fund - Washington
	Community Development Block Grant Planning Only - Washington
	Community Economic Revitalization Board Rural Program
	Community Economic Revitalization Board Traditional Program
	Energy Policy
	Public Works Trust Fund Capital Facilities Planning Program
	Washington Department of Fish and Wildlife
	Eastern Washington Pheasant Habitat Enhancement Grant Program
	Washington Department of Natural Resources
	Aquatic Lands Enhancement Account (ALEA)
	Forest Land Enhancement Program - Washington
	Forest Legacy Program - Washington
	Forest Stewardship & Stewardship Incentive Program
	Forestry Riparian Easement

	Urban & Community Forestry Program - Washington
	Washington Department of Transportation
	City Fish Passage Barrier, Stormwater and Habitat Restoration Grant Program
	Transportation Equity Act for the 21st Century (TEA-21) - Washington
	Washington Military Department
	Public Assistance Program
	Washington Office of Community Development
	Growth Management Program Grants - Partially Planning Grant
	Washington Office of Trade & Economic Development
	Coastal Loan Fund
	Washington Public Works Board
	Public Works Trust Fund Construction Loan Program
	Public Works Trust Fund Emergency Loan Program
	Public Works Trust Fund Planning Loan Program
	Public Works Trust Fund Pre-Construction Loan Program
	Washington State County Road Administration Board
	County Arterial Preservation Program
	Rural Arterial Program
	Rural Arterial Program (RAP) Emergency and Emergent Provisions
	Washington State Department of Agriculture
	Pesticide Management and Collection Program
	Washington State Department of Ecology
	Aquatic Weeds Management Fund
	Centennial Clean Water Fund
	Coastal Protection Fund (CPF)
	Coastal Zone Management Administration/ Implementation Awards - Washington
	Community Litter Cleanup Program
	Coordinated Prevention Grants Non-Emergency Program
	Drought Emergency Water Supply
	Flood Control Assistance Account Program
	Model Toxics Control Act
	Nonpoint Source Implementation Grant (319) Program - Washington
	Project WET - Washington
	Public Participation Grants
	Puget Sound Wetland Restoration Program
	Referendum 38 Emergency Water Supply
	Remedial Action Grant Program
	Safe Drinking Water (Hazardous Waste Sites)
	Site Hazard Assessment (Hazardous Waste Sites)
	Toxic Clean-up Program
	Washington State Water Pollution Control Revolving Fund
	Water Reclamation and Reuse - DOE
	Washington State Department of Fish and Wildlife
	Regional Fisheries Enhancement Groups
	Upland Wildlife Restoration Program
	Washington State Department of General Administration
	Building Commissioning

	Energy Life Cycle Cost Analysis
	Energy Savings Performance Contracting
	Plant Operations Support Consortium
	Resource Conservation Management Program
	Washington State Department of Health
	Public Water System Technical Assistance Program
	Water Reclamation and Reuse - DOH
	Washington State Department of Health/Wa. Public Works Board
	Drinking Water State Revolving Fund - Washington
	Washington State Department of Transportation
	Bridge Replacement
	Commute Trip Reduction
	Congestion Mitigation and Air Quality Program - Washington
	Emergency Relief Program
	Essential Rail Assistance Account
	Freight Rail Assistance Account
	Local Government Traffic Engineering Services
	Metropolitan Planning Organization Funding
	Public Lands Highway
	Public Transportation for Non-Urbanized Areas
	Regional Transportation Planning Organization Funding
	Rural Mobility Grant Program
	Small City Pavement Preservation Program
	STP Hazard Elimination Safety (HES)
	STP Railway/Highway Crossings
	STP Regional Allocation
	STP Transportation Enhancements
	Transportation & Community & System Preservation Pilot Program
	Transportation Community System Preservation
	Wetlands Mitigation Program
	Washington State Departments of Natural Resources and Washington Department of Fish and Wildlife
	Jobs for the Environment Program
	Washington State Interagency Committee For Outdoor Recreation
	Recreational Trails Program - Washington
	Washington State Parks and Recreation Commission Boating Program Office
	Clean Vessel Boat Sewage Disposal Program - Washington
	Washington State Transportation Improvement Board
	Arterial Improvement Program
	City Hardship Assistance Program
	Transportation Partnership Program
	Washington State University Cooperative Extension Energy Program
	Education and Training
	Energy Efficient Manufactured Housing
	Energy Ideas Clearinghouse
	Resource Efficiency Management - Total Efficiency Network
	Washington State University Cooperative Extension Program
	Energy Efficient Low-Income Housing

	Residential Energy Code Training
	Washington Transportation Improvement Board
	Route Jurisdiction Program
Private / Foundation Sponsors	
	A Territory Resource (ATR)
	A Territory Resource (ATR)
	Acorn Foundation
	Common Counsel Foundation (Acorn Foundation)
	American Farmland Trust
	Farm Legacy Program
	American Land Conservancy
	American Land Conservancy Program
	American Water Works Association Research Foundation (awwaRF)
	American Water Works Association Research Foundation (AwwaRF)
	American Wildlands
	American Wildlands
	Andrew Mellon Foundation
	Conservation and the Environment Program
	ARCO Foundation, The
	ARCO Foundation
	Barker (Donald R.) Foundation
	Barker (Donald R.) Foundation
	Bay Foundation, The
	Bay Foundation, The
	Ben & Jerry's Foundation
	Ben & Jerry's Foundation
	Bikes Belong Coalition
	Bikes Belong Coalition
	Bonneville Environmental Foundation
	Bonneville Environmental Foundation Watershed Program, The
	Renewable Energy Program
	Braemar Charitable Trust
	Braemar Charitable Trust
	Brainerd Foundation
	Communications & Capacity Building Program - Brainerd Foundation
	Endangered Ecosystems Program
	Bullitt Foundation
	Bullitt Foundation (Rivers, Wetlands, Estuaries, and Marine Ecosystems Grant Program), The
	C. Giles Hunt Charitable Foundation
	C. Giles Hunt Charitable Trust
	Captain Planet Foundation
	Captain Planet Foundation
	Cascade Natural Gas Foundation
	Cascade Natural Gas Foundation
	Charla Richards Kreitzberg Charitable Foundation
	Charla Richards Kreitzberg Charitable Foundation

	Collins Foundation
	Collins Foundation Environmental Program, The
	Compton Foundation
	Compton Foundation Environmental Grants, The
	Conservation Alliance, The
	Conservation Alliance Grants
	Conservation Fund, The
	Conservation Fund, The
	Kodak American Greenways Award
	Defenders of Wildlife
	National Stewardship Initiatives: Conservation Strategies for U.S. Land Owners
	Diack Ecology Education Program
	Diack Ecology Education Program
	Doris Duke Charitable Foundation
	Doris Duke Charitable Foundation, The
	Ducks Unlimited
	Ducks Unlimited
	Matching Aid to Restore States Habitat (MARSH) - Ducks Unlimited
	U.S. Habitat Projects
	Earth Force, Inc.
	Earth Force, Inc.
	Educational Foundation of America
	Educational Foundation of America, Environmental Grant Program, The
	Environmental Program
	Evergreen Community Development Association
	Evergreen Community Development Association
	Evergreen Rural Water of Washington
	Evergreen Rural Water of Washington Technical Assistance and Training
	First Nations Development Institute (FNDI)
	First Nations Development Institute
	FishAmerica Foundation
	FishAmerica Grant Program
	Flintridge Foundation
	Flintridge Foundation's Conservation Program
	FMC Corporation and The National Fish and Wildlife Foundation
	FMC Corporation Bird and Habitat Conservation Fund
	For the Sake of the Salmon
	Technical Assistance Directory (TAD)
	Watershed & Community Support
	Friends of Paul Bunyan Foundation
	Friends of Paul Bunyan Foundation
	Fund for Wild Nature
	Fund for Wild Nature Grant Program
	General Electric Foundation
	General Electric Foundation
	Gifts In Kind International
	Gifts In Kind International

	Greenville Foundation
	Greenville Foundation Environment Funding
	Groundwater Foundation, The
	Groundwater Foundation, The
	Henry M. Jackson Foundation
	Henry M. Foundation (Environmental and Natural Resource Management Program)
	Home Depot Corporation
	Home Depot Coporate Contributions Programs
	Homeland Foundation, The
	Homeland Foundation, The
	Homer Foundation, The
	Homer Foundation, The
	Hugh and Jane Ferguson Foundation
	Hugh and Jane Ferguson Foundation, The
	Idaho Fish and Wildlife Foundation
	Idaho Fish and Wildlife Foundation
	Idaho Forest Products Commission
	Project Learning Tree - Idaho
	Teachers Grant Program
	Izaak Walton League
	Save Our Streams Program
	Jackson Foundation, The
	Jackson Foundation, The
	Jessie Smith Noyes Foundation
	Sustainable Agriculture Program
	Kongsgaard-Goldman Foundation
	Environmental Protection and Conservation Program
	L.J. and Mary C. Skaggs Foundation
	L.J. and Mary C. Skaggs Foundation, Environmental Education Grant Resource
	Laird Norton Endowment Foundation, The
	Laird Norton Endowment Foundation
	Lamb Foundation
	Lamb Foundation Grants
	Land Trust Alliance
	Land Trust Alliance-Northwest Program
	Laura Jane Musser Fund
	Laura Jane Musser Fund
	Lawrence Foundation
	Lawrence Foundation, The
	Lazar Foundation, The
	Lazar Foundation, The
	Mountaineers Foundation
	Mountaineers Foundation Environmental Program, The
	Nathan Cummings Foundation
	Nathan Cummings Foundation Grant Program, The
	National Association of Development Organizations (NADO)
	National Association of Development Organizations

	National Congress for Community Economic Development (NCCED)
	National Congress for Community Economic Development
	National Congress of American Indians (NCAI)
	National Congress of American Indians
	National Economic Development and Law Center (NED&LC)
	National Economic Development and Law Center
	National Environmental Education & Training Foundation
	NEETF Challenge Grant Program
	National Fish and Wildlife Foundation
	Challenge Grants
	Community Salmon Fund
	Migratory Bird Conservancy
	National Fish and Wildlife Foundation in partnership with Natural Resources Conservation Service
	National Fish and Wildlife Foundation, The
	Natural Resources Conservation Service: Conservation on Private Lands
	Nature of Learning, The
	Pathways to Nature Conservation Fund
	Pulling Together Initiative
	National Forest Foundation
	Community Assistance Program (CAP)
	National Forest Foundation Matching Awards Program
	National Foundation for Integrated Pest Management Education
	Pesticide Environmental Stewardship Grants
	National Geographic Society
	Expeditions Council Grants
	National Geographic Society
	Conservation Trust
	Grants for Scientific Field Research and Exploration
	National Geographic Society Education Foundation
	Grosvenor Grant Program
	Teacher Grants
	Venture Fund
	National Natural Resource Conservation Foundation
	National Natural Resources Conservation Foundation
	National Science Foundation - Division of Environmental Biology
	Water and Watersheds
	National Wildlife Federation
	National Wildlife Federation
	Native American Fish & Wildlife Society
	Native American Fish & Wildlife Society
	Nature Conservancy, The
	Nature Conservancy, The
	Patagonia
	Patagonia Environment Grants
	Paul G. Allen Forest Protection Foundation
	Paul G. Allen Forest Protection Foundation, The
	Pew Charitable Trusts

	Pew Charitable Trusts Environmental Program, The
	PGE Foundation
	PGE Foundation
	Pheasants Forever
	Pheasants Forever
	Phillips Petroleum Company
	Phillips Petroleum Company
	Plum Creek Foundation
	Plum Creek Foundation Grants
	Public Welfare Foundation
	Public Welfare Foundation - Environment Grants
	REI
	REI Conservation and Outdoor Grants
	River Network
	Watershed Assistance Grants
	Rockefeller Family Fund
	Rockefeller Family Fund (Environment Grants Program)
	Rocky Mountain Elk Foundation
	Rocky Mountain Elk Foundation
	Rural Community Assistance Corporation
	RCAC - Technical Assistance and Training
	Ruth H. Brown Foundation
	Ruth H. Brown Foundation
	Ruth Mott Fund
	Ruth Mott Fund
	Seventh Generation Fund
	Seventh Generation Fund
	Skaggs Foundation, The
	Skaggs Foundation, The
	Strong Foundation for Environmental Values, The
	Strong Foundation for Environmental Values, The
	Training Resources for the Environmental Community (TREC)
	Training Resources for the Environmental Community (TREC)
	Treasure Valley Land Trust
	Treasure Valley Land Trust
	Trout Unlimited
	Embrace-A-Stream, Education Project
	Embrace-A-Stream, Research Project
	Embrace-A-Stream, Resource Project
	Turner Foundation
	Turner Foundation Environmental Grant Programs
	Wal-Mart Foundation
	Local Wal-Mart Environmental Grant Program, The
	Washington Water Trust, The
	Washington Water Trust
	WaterWatch
	WaterWatch

	Weyerhaeuser Company Foundation
	Weyerhaeuser Company Foundation
	Wilburforce Foundation
	Wilburforce Foundation
	Wildhorse Foundation
	Wildhorse Foundation
	William and Flora Foundation
	William and Flora Hewlett Foundation
	William C. Kenney Watershed Protection Foundation
	William C. Kenney Watershed Protection Foundation

Appendix G: Wildlife Harvest Data

Beaver Trapping Harvest in the San Poil Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		18			0.4%							
2000		6			1.0%							
2001		2			0.2%							
2002		5			0.3%							
Average		8			0.5%							

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.330	23	9	0	9				
Lincoln									
Okanogan	0.061	166	52	32	41				
PendOreille									
Spokane									
Stevens									
Harvest reported in this table is for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State									
WA State		4,819	642	1,150	1,703				
TOTAL									

(*Source*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Beaver Trapping Harvest in the Spokane Subbasin. (Washington statistics reported per county; Idaho per entire state.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		24			0.5%							
2000		8			1.2%							
2001		3			0.2%							
2002		3			0.2%							
Average		9			0.5%							

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah	0.252	n.d.	n.d.	n.d.	n.d.				
Bonner	0.013	n.d.	n.d.	n.d.	n.d.				
Boundary									
Kootenai	0.317	n.d.	n.d.	n.d.	n.d.				
Shoshone									
Whitman	0.010	n.d.	n.d.	n.d.	n.d.				
WASH.									
Chelan									
Douglas									
Ferry									
Lincoln	0.088	0	8	0					
Okanogan									
PendOreille	0.126	78	28	2	16				
Spokane	0.744	10	2	2	0				
Stevens	0.208	32	11	4	3				
Harvest reported in this table is for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		2,164	2,290	2,829	2,532				
WA State		4,819	642	1,150	1,703				
TOTAL		6,983	2,932	3,979	4,235				

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Beaver Trapping Harvest in the Upper Columbia Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		48			1.0%							
2000		18			2.8%							
2001		36			3.1%							
2002		10			0.6%							
Average		28			1.9%							

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.651	23	9	0	9				
Lincoln	0.141	0	8	0					
Okanogan	0.050	166	52	32	41				
PendOreille	0.030								
Spokane									
Stevens	0.778	32	11	44	3				

Harvest reported in this table is for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State					
WA State		4,819	642	1,150	1,703
TOTAL					

(*Source*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Deer (Mule + Whitetail) Hunting Harvest and Recreation in the Coeur d'Alene Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	3,296	36	3,332	9.1%	0.1%	4.9%	113,399	1,139	114,538	13.8%	0.1%	5.0%
2000	2,997	51	3,048	8.2%	0.1%	4.1%	n.d.	833		n.d.	0.1%	
2001	3,623	36	3,659	8.6%	0.1%	4.7%	66,348	663	67,011	12.0%	0.1%	4.8%
2002	2,683	35	2,717	7.1%	0.1%	3.8%	97,310	671	97,981	12.7%	0.1%	6.1%
Average	3,150	39	3,189	8.3%	0.1%	4.4%	92,352	826	93,177	12.8%	0.1%	5.3%

		Harvest				Hunter-Days			
GMU	Portion in Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1									
ID-2	0.50	906	885	952	763	23,221	n.d.	15,498	18,991
ID-3	1.00	1,006	1,063	1,167	968	27,713	n.d.	18,485	24,580
ID-4	1.00	746	493	716	436	46,401	n.d.	22,964	37,392
ID-4A	0.50	180	115	117	90	4,412	n.d.	2,069	2,985
ID-5	0.25	593	645	672	552	10,990	n.d.	8,321	10,564
ID-6	1.00	753	700	913	619	17,782	n.d.	10,695	14,595
ID-7	1.00	100	80	124	95	4,939	n.d.	3,340	7,114
WA-101									
WA-105									
WA-109									
WA-113									
WA-117									
WA-121									
WA-124	0.02	1,801	2,548	1,809	1,731	56,949	41,637	33,147	33,542
WA-127									
WA-130									
WA-133									
WA-204									
WA-248									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		36,178	36,455	41,996	37,586	823,665	n.d.	553,023	767,250
WA State		31,879	37,411	36,359	33,928	1,450,784	949,631	838,393	836,325
TOTAL		68,057	73,866	78,355	71,514	2,274,449		1,391,416	1,603,575

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Deer (Mule + Whitetail) Hunting Harvest and Recreation in the Pend Oreille Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	2,647	826	3,474	7.3%	2.6%	5.1%	54,191	38,441	92,632	6.6%	2.6%	4.1%
2000	2,046	1,051	3,097	5.6%	2.8%	4.2%	n.d.	25,888		n.d.	2.7%	
2001	2,491	843	3,334	5.9%	2.3%	4.3%	35,028	17,669	52,697	6.3%	2.1%	3.8%
2002	1,929	785	2,714	5.1%	2.3%	3.8%	45,358	18,673	64,031	5.9%	2.2%	4.0%
Average	2,278	876	3,155	6.0%	2.5%	4.3%	44,859	25,168	69,787	6.3%	2.4%	4.0%

		Harvest				Hunter-Days			
GMU	Portion in Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1	0.70	3,006	2,209	2,795	2,146	57,678	n.d.	37,492	49,100
ID-2	0.50	906	885	952	763	23,221	n.d.	15,498	18,991
ID-3									
ID-4									
ID-4A	0.50	180	115	117	90	4,412	n.d.	2,069	2,985
ID-5									
ID-6									
ID-7									
WA-101									
WA-105									
WA-109	0.20	868	1,129	813	817	32,797	19,867	14,923	16,705
WA-113	0.40	433	456	577	467	33,201	19,877	12,622	13,737
WA-117	0.40	1,199	1,606	1,125	1,087	46,502	34,909	24,088	24,594
WA-121									
WA-124									
WA-127									
WA-130									
WA-133									
WA-204									
WA-248									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		36,178	36,455	41,996	37,586	823,665	n.d.	553,023	767,250
WA State		31,879	37,411	36,359	33,928	1,450,784	949,631	838,393	836,325
TOTAL		68,057	73,866	78,355	71,514	2,274,449		1,391,416	1,603,575

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Deer (Mule + Whitetail) Hunting Harvest and Recreation in the Lake Rufus Woods Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		67			0.2%			1,033			0.1%	
2000		52			0.1%			708			0.1%	
2001		81			0.2%			712			0.1%	
2002		88			0.3%			864			0.1%	
Average		72			0.2%			829			0.1%	

		Harvest				Hunter-Days			
GMU	Portion in Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1									
ID-2									
ID-3									
ID-4									
ID-4A									
ID-5									
ID-6									
ID-7									
WA-101									
WA-105									
WA-109									
WA-113									
WA-117									
WA-121									
WA-124									
WA-127									
WA-130									
WA-133									
WA-204									
WA-248	0.30	223	173	269	292	3,442	2,361	2,372	2,879
ID State									
WA State		31,879	37,411	36,359	33,928	1,450,784	949,631	838,393	836,325
TOTAL									

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

(*Source*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Deer (Mule + Whitetail) Hunting Harvest and Recreation in the San Poil Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		313			1.0%			15,856			1.1%	
2000		474			1.3%			10,775			1.1%	
2001		370			1.0%			8,078			1.0%	
2002		351			1.0%			8,713			1.0%	
Average		377			1.1%			10,855			1.1%	

	Portion in	Harvest				Hunter-Days			
GMU	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1									
ID-2									
ID-3									
ID-4									
ID-4A									
ID-5									
ID-6									
ID-7									
WA-101	0.20	927	1,553	1,105	994	46,488	32,201	23,200	24,272
WA-105									
WA-109									
WA-113									
WA-117									
WA-121									
WA-124									
WA-127									
WA-130									
WA-133									
WA-204	0.25	511	654	594	609	26,232	17,338	13,751	15,436
WA-248									
ID State									
WA State		31,879	37,411	36,359	33,928	1,450,784	949,631	838,393	836,325
TOTAL									

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

(*Source*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Deer (Mule + Whitetail) Hunting Harvest and Recreation in the Spokane Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	119	2,980	3,098	0.3%	9.3%	4.6%	2,198	101,166	103,364	0.3%	7.0%	4.5%
2000	129	4,196	4,325	0.4%	11.2%	5.9%	n.d.	75,416		n.d.	7.9%	
2001	134	3,010	3,144	0.3%	8.3%	4.0%	1,664	54,276	55,940	0.3%	6.5%	4.0%
2002	110	2,976	3,086	0.3%	8.8%	4.3%	2,113	56,582	58,694	0.3%	6.8%	3.7%
Average	123	3,290	3,413	0.3%	9.4%	4.7%	1,992	71,860	72,666	0.3%	7.0%	4.1%

	Portion in	Harvest				Hunter-Days			
GMU	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1									
ID-2									
ID-3									
ID-4									
ID-4A									
ID-5	0.20	593	645	672	552	10,990	n.d.	8,321	10,564
ID-6									
ID-7									
WA-101									
WA-105									
WA-109									
WA-113									
WA-117									
WA-121	0.30	2,025	2,756	1,826	1,798	78,591	57,735	32,770	35,593
WA-124	0.98	1,801	2,548	1,809	1,731	56,949	41,637	33,147	33,542
WA-127	0.90	418	647	476	499	15,098	11,102	8,668	9,010
WA-130	0.50	462	580	521	582	16,380	14,599	8,319	9,847
WA-133									
WA-204									
WA-248									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		36,178	36,455	41,996	37,586	823,665	n.d.	553,023	767,250
WA State		31,879	37,411	36,359	33,928	1,450,784	949,631	838,393	836,325
TOTAL		68,057	73,866	78,355	71,514	2,274,449		1,391,416	1,603,575

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Deer (Mule + Whitetail) Hunting Harvest and Recreation in the Upper Columbia Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		3,008			9.4%			113,940			7.9%	
2000		4,046			10.8%			79,407			8.4%	
2001		2,767			7.6%			51,238			6.1%	
2002		2,736			8.1%			56,147			6.7%	
Average		3,139			9.1%			75,183			7.3%	

	Portion in	Harvest				Hunter-Days			
GMU	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1									
ID-2									
ID-3									
ID-4									
ID-4A									
ID-5									
ID-6									
ID-7									
WA-101	0.30	927	1,553	1,105	994	46,488	32,201	23,200	24,272
WA-105	1.00	409	506	359	357	13,532	9,805	7,095	7,909
WA-109	0.80	868	1,129	813	817	32,797	19,867	14,923	16,705
WA-113									
WA-117									
WA-121	0.70	2,025	2,756	1,826	1,798	78,591	57,735	32,770	35,593
WA-124									
WA-127									
WA-130									
WA-133	0.30	695	806	493	562	17,369	12,112	7,685	8,924
WA-204									
WA-248									
ID State									
WA State		31,879	37,411	36,359	33,928	1,450,784	949,631	838,393	836,325
TOTAL									

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

Dove Hunting Harvest and Recreation in the San Poil Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		74			0.1%			167			0.9%	
2000		318			0.3%			88			0.4%	
2001		330			0.4%			61			0.3%	
2002		288			0.4%			68			0.4%	
Average		252			0.3%			96			0.5%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.330	0	0	180	0	438	46	18	12
Lincoln									
Okanogan	0.061	1,208	5,212	4,442	4,720	363	1,198	901	1,046
PendOreille									
Spokane									
Stevens									

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State								
WA State	65,450	99,731	77,836	73,402	18,162	24,701	17,403	17,233
TOTAL								

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Dove Hunting Harvest and Recreation in the Spokane Subbasin. (Washington statistics reported per county; Idaho per entire state.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		1,596			2.4%			621			3.4%	
2000		3,082			3.1%			910			3.7%	
2001		1,905			2.4%			502			2.9%	
2002		1,488			2.0%			426			2.5%	
Average		2,018			2.5%			615			3.1%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah	0.252	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Bonner	0.013	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Boundary									
Kootenai	0.317	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Shoshone									
Whitman	0.010	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
WASH.									
Chelan									
Douglas									
Ferry									
Lincoln	0.088	1,247	1,900	2,563	2,730	275	449	558	463
Okanogan									
PendOreille	0.126	58	280	51	0	86	149	20	0
Spokane	0.744	1,852	3,438	2,190	1,664	580	1,061	590	502
Stevens	0.208	487	1,547	212	46	741	299	57	57
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
WA State		65,450	99,731	77,836	73,402	18,162	24,701	17,403	17,233
TOTAL									

(*Sources:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Dove Hunting Harvest and Recreation in the Upper Columbia Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		833			1.3%			977			5.4%	
2000		2,346			2.4%			504			2.0%	
2001		1,441			1.9%			290			1.7%	
2002		1,061			1.4%			269			1.6%	
Average		1,420			1.7%			510			2.7%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan	0.100	2,163	6,053	5,737	4,044	557	1,141	1,100	990
Douglas									
Ferry	0.651	0	0	180	0	438	46	18	12
Lincoln	0.141	1,247	1,900	2,563	2,730	275	449	558	463
Okanogan	0.050	1,208	5,212	4,442	4,720	363	1,198	901	1,046
PendOreille	0.030	58	280	51	0	86	149	20	0
Spokane									
Stevens	0.778	487	1,547	212	46	741	299	57	57

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State									
WA State		65,450	99,731	77,836	73,402	18,162	24,701	17,403	17,233
TOTAL									

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Elk Hunting Harvest and Recreation in the Coeur d'Alene Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	1,177	1	1,178	10.8%	0.0%	7.1%	89,480	135	89,615	16.4%	0.0%	7.5%
2000	1,147	1	1,147	9.6%	0.0%	6.1%	n.d.	134		n.d.	0.0%	
2001	1,287	0	1,287	11.3%	0.0%	7.6%	61,575	85	61,660	16.7%	0.0%	7.8%
2002	1,293	1	1,294	11.3%	0.0%	7.3%	82,881	81	82,962	17.1%	0.0%	8.9%
Average	1,226	1	1,227	10.7%	0.0%	7.0%	77,978	109	78,079	16.7%	0.0%	8.1%

	Portion in	Harvest				Hunter-Days			
GMU	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1									
ID-2	0.50	33	59	29	49	5,807	n.d.	3,569	4,598
ID-3	1.00	119	143	162	138	10,467	n.d.	7,419	10,295
ID-4	1.00	449	413	495	476	41,217	n.d.	28,285	37,555
ID-4A	0.50	53	32	40	37	2,600	n.d.	2,051	2,844
ID-5	0.25	125	105	113	109	5,312	n.d.	4,040	5,418
ID-6	1.00	396	371	392	434	20,893	n.d.	14,807	19,973
ID-7	1.00	139	148	175	175	11,371	n.d.	7,244	9,982
WA-101									
WA-105									
WA-109									
WA-113									
WA-117									
WA-121									
WA-124	0.02	50	27	22	29	6,750	6,713	4,254	4,060
WA-127									
WA-130									
WA-133									
WA-204									
WA-248									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		10,929	11,985	11,412	11,403	544,266	n.d.	369,356	484,938
WA State		5,695	6,779	5,470	6,367	645,962	471,080	425,327	447,917
TOTAL		16,624	18,764	16,882	17,770	1,190,228		794,683	932,855

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Elk Hunting Harvest and Recreation in the Pend Oreille Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	205	46	251	1.9%	0.8%	1.5%	17,394	14,414	31,807	3.2%	2.2%	2.7%
2000	226	37	263	1.9%	0.5%	1.4%	n.d.	9,825		n.d.	2.1%	
2001	249	26	275	2.2%	0.5%	1.6%	11,174	5,696	16,870	3.0%	1.3%	2.1%
2002	221	36	257	1.9%	0.6%	1.4%	14,703	5,755	20,457	3.0%	1.3%	2.2%
Average	225	36	261	2.0%	0.6%	1.5%	14,424	8,922	23,045	3.1%	1.7%	2.3%

		Harvest				Hunter-Days			
GMU	Portion in Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1	0.70	231	258	307	254	18,843	n.d.	11,949	15,688
ID-2	0.50	33	59	29	49	5,807	n.d.	3,569	4,598
ID-3									
ID-4									
ID-4A	0.50	53	32	40	37	2,600	n.d.	2,051	2,844
ID-5									
ID-6									
ID-7									
WA-101									
WA-105									
WA-109	0.20	14	18	12	27	4,105	3,848	2,409	2,683
WA-113	1.00	37	21	18	20	10,916	6,620	3,681	3,796
WA-117	0.40	16	30	13	26	6,692	6,088	3,832	3,555
WA-121									
WA-124									
WA-127									
WA-130									
WA-133									
WA-204									
WA-248									
ID State		10,929	11,985	11,412	11,403	544,266	n.d.	369,356	484,938
WA State		5,695	6,779	5,470	6,367	645,962	471,080	425,327	447,917
TOTAL		16,624	18,764	16,882	17,770	1,190,228		794,683	932,855

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

Goose Hunting Harvest and Recreation in the Coeur d'Alene Subbasin. (Idaho statistics reported per entire state.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	n.d.	0		n.d.	0.0%		n.d.	0		n.d.	0.0%	
2000	n.d.	0		n.d.	0.0%		n.d.	0		n.d.	0.0%	
2001	n.d.	0		n.d.	0.0%		n.d.	0		n.d.	0.0%	
2002	n.d.	0		n.d.	0.0%		n.d.	0		n.d.	0.0%	
Average	n.d.	0		n.d.	0.0%		n.d.	0		n.d.	0.0%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah	0.718	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Bonner	0.012	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Kootenai	0.608	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Latah	0.026	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Shoshone	0.854	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
WASH.									
Chelan									
Douglas									
Ferry									
Lincoln									
Okanogan									
PendOreille									
Spokane									
Stevens									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
WA State		62,351	73,865	64,657	56,129	92,397	114,876	97,356	88,611
TOTAL									

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Goose Hunting Harvest and Recreation in the Pend Oreille Subbasin. (Washington statistics reported per county; Idaho per entire state.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	n.d.	812		n.d.	1.3%		n.d.	2,046		n.d.	2.2%	
2000	n.d.	1,619		n.d.	2.2%		n.d.	3,118		n.d.	2.7%	
2001	n.d.	2,165		n.d.	3.3%		n.d.	3,215		n.d.	3.3%	
2002	n.d.	733		n.d.	1.3%		n.d.	1,727		n.d.	1.9%	
Average	n.d.	1,332		n.d.	2.0%		n.d.	2,527		n.d.	2.5%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner	0.831	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Boundary	0.209	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Kootenai	0.075	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Latah									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry									
Lincoln									
Okanogan									
PendOreille	0.843	864	1,772	2,458	798	2,281	3,534	3,691	1,939
Spokane	0.023	3,187	4,589	3,111	2,337	4,719	4,849	3,199	3,513
Stevens	0.014	768	1,375	1,557	469	1,077	1,986	2,136	828
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
WA State		62,351	73,865	64,657	56,129	92,397	114,876	97,356	88,611
TOTAL									

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Goose Hunting Harvest and Recreation in the Lake Rufus Woods Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		455			0.7%			407			0.4%	
2000		360			0.5%			549			0.5%	
2001		396			0.6%			534			0.5%	
2002		267			0.5%			394			0.4%	
Average		369			0.6%			471			0.5%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas	0.129	2,688	1,616	2,306	1,273	2,118	2,947	3,249	1,597
Ferry	0.020	921	461	536	149	1,224	468	329	230
Lincoln									
Okanogan	0.074	1,209	1,920	1,193	1,346	1,478	2,152	1,461	2,476
PendOreille									
Spokane									
Stevens									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State									
WA State		62,351	73,865	64,657	56,129	92,397	114,876	97,356	88,611
TOTAL									

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Goose Hunting Harvest and Recreation in the San Poil Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		378			0.6%			494			0.5%	
2000		269			0.4%			286			0.2%	
2001		250			0.4%			198			0.2%	
2002		131			0.2%			227			0.3%	
Average		257			0.4%			301			0.3%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.330	921	461	536	149	1,224	468	329	230
Lincoln									
Okanogan	0.061	1,209	1,920	1,193	1,346	1,478	2,152	1,461	2,476
PendOreille									
Spokane									
Stevens									

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State									
WA State		62,351	73,865	64,657	56,129	92,397	114,876	97,356	88,611
TOTAL									

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Goose Hunting Harvest and Recreation in the Spokane Subbasin. (Washington statistics reported per county; Idaho per entire state.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	n.d.	3,027		n.d.	4.9%		n.d.	4,417		n.d.	4.8%	
2000	n.d.	4,275		n.d.	5.8%		n.d.	4,833		n.d.	4.2%	
2001	n.d.	3,236		n.d.	5.0%		n.d.	3,656		n.d.	3.8%	
2002	n.d.	2,242		n.d.	4.0%		n.d.	3,384		n.d.	3.8%	
Average	n.d.	3,195		n.d.	4.9%		n.d.	4,073		n.d.	4.1%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah	0.252	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Bonner	0.013	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Boundary									
Kootenai	0.317	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Shoshone									
Whitman	0.010	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
WASH.									
Chelan									
Douglas									
Ferry									
Lincoln	0.088	4,397	3,998	3,275	3,466	4,490	4,168	4,162	4,026
Okanogan									
PendOreille	0.126	864	1,772	2,458	798	2,281	3,534	3,691	1,939
Spokane	0.744	3,187	4,589	3,111	2,337	4,719	4,849	3,199	3,513
Stevens	0.208	768	1,375	1,557	469	1,077	1,986	2,136	828

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State									
WA State		62,351	73,865	64,657	56,129	92,397	114,876	97,356	88,611
TOTAL									

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Goose Hunting Harvest and Recreation in the Upper Columbia Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		1,903			3.1%			2,410			2.6%	
2000		2,083			2.8%			2,651			2.3%	
2001		2,155			3.3%			2,647			2.7%	
2002		1,042			1.9%			1,544			1.7%	
Average		1,796			2.8%			2,313			2.3%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.651	921	461	536	149	1,224	468	329	230
Lincoln	0.141	4,397	3,998	3,275	3,466	4,490	4,168	4,162	4,026
Okanogan	0.050	1,209	1,920	1,193	1,346	1,478	2,152	1,461	2,476
PendOreille	0.030	864	1,772	2,458	798	2,281	3,534	3,691	1,939
Spokane									
Stevens	0.778	768	1,375	1,557	469	1,077	1,986	2,136	828

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State									
WA State		62,351	73,865	64,657	56,129	92,397	114,876	97,356	88,611
TOTAL									

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Forest Grouse Hunting Harvest and Recreation in the San Poil Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		2,239			3.0%			3,817			2.0%	
2000		5,666			3.8%			9,359			2.3%	
2001		3,692			3.3%			6,752			2.3%	
2002		4,963			3.6%			7,520			2.3%	
Average		4,140			3.4%			6,862			2.2%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.330	5,153	13,162	8,221	10,978	9,258	21,719	15,492	16,062
Lincoln									
Okanogan	0.061	8,828	21,686	16,043	21,974	12,492	35,924	26,885	36,392
PendOreille									
Spokane									
Stevens									

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State									
WA State		73,429	148,193	110,852	138,585	189,762	399,941	298,565	330,339
TOTAL									

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Forest Grouse Hunting Harvest and Recreation in the Spokane Subbasin. (Washington statistics reported per county; Idaho per entire state.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	n.d.	6,249		n.d.	8.5%		n.d.	12,528		n.d.	6.6%	
2000	n.d.	10,004		n.d.	6.8%		n.d.	20,854		n.d.	5.2%	
2001	n.d.	6,191		n.d.	5.6%		n.d.	12,495		n.d.	4.2%	
2002	n.d.	7,124		n.d.	5.1%		n.d.	13,800		n.d.	4.2%	
Average	n.d.	7,392		n.d.	6.5%		n.d.	14,919		n.d.	5.0%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah	0.252	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Bonner	0.013	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Boundary									
Kootenai	0.317	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Shoshone									
Whitman	0.010	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
WASH.									
Chelan									
Douglas									
Ferry									
Lincoln	0.088	739	1,614	836	812	2,448	3,199	1,812	2,134
Okanogan									
PendOreille	0.126	6,008	10,673	8,118	10,916	8,750	21,842	15,555	15,771
Spokane	0.744	2,449	4,662	2,607	2,940	6,328	10,743	6,279	7,730
Stevens	0.208	17,332	24,272	15,166	16,779	31,258	47,250	27,421	28,239
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		80,600	85,851	149,384	147,694	n.d.	n.d.	n.d.	n.d.
WA State		73,429	148,193	110,852	138,585	189,762	399,941	298,565	330,339
TOTAL		154,029	234,044	260,236	286,279				

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Forest Grouse Hunting Harvest and Recreation in the Upper Columbia Subbasin. (Washington data reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		17,565			23.9%			31,578			16.6%	
2000		29,084			19.6%			53,802			13.5%	
2001		18,315			16.5%			33,485			11.2%	
2002		21,741			15.7%			35,035			10.6%	
Average		21,676			18.9%			38,475			13.0%	

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.651	5,153	13,162	8,221	10,978	9,258	21,719	15,492	16,062
Lincoln	0.141	739	1,614	836	812	2,448	3,199	1,812	2,134
Okanogan	0.050	8,828	21,686	16,043	21,974	12,492	35,924	26,885	36,692
PendOreille	0.030	6,008	10,673	8,118	10,916	8,750	21,842	15,555	15,771
Spokane									
Stevens	0.778	17,332	24,272	15,166	16,779	31,258	47,250	27,421	28,239
ID State									
WA State		73,429	148,193	110,852	138,585	189,762	399,941	298,565	330,339
TOTAL									

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Mink Trapping Harvest in the Spokane Subbasin. (Washington statistics reported per county; Idaho per entire state.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	n.d.	1		n.d.	0.3%							
2000	n.d.	1		n.d.	0.7%							
2001	n.d.	1		n.d.	2.6%							
2002	n.d.	0		n.d.	0.4%							
Average	n.d.	1		n.d.	1.0%							

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah	0.252	n.d.	n.d.	n.d.	n.d.				
Bonner	0.013	n.d.	n.d.	n.d.	n.d.				
Boundary									
Kootenai	0.317	n.d.	n.d.	n.d.	n.d.				
Shoshone									
Whitman	0.010	n.d.	n.d.	n.d.	n.d.				
WASH.									
Chelan									
Douglas									
Ferry									
Lincoln	0.088	0	0	0					
Okanogan									
PendOreille	0.126	10	0	1	2				
Spokane	0.744	0	1	1	0				
Stevens	0.208	0	0	0	0				

Harvest reported in this table is for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State	540	603	582	740
WA State	462	101	33	62
TOTAL	1,002	704	615	802

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Mink Trapping Harvest in the Upper Columbia Subbasin. (Washington statistics reported per county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		1			0.1%							
2000		0			0.1%							
2001		1			2.2%							
2002		0			0.3%							
Average		0			0.7%							

	Portion in	Harvest				Hunter-Days			
County	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas									
Ferry	0.651	0	0	1	0				
Lincoln	0.141	0	0	0					
Okanogan	0.050	7	2	1	2				
PendOreille	0.030	10	0	1	2				
Spokane									
Stevens	0.778	0	0	0	0				

Harvest reported in this table is for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

ID State					
WA State		462	101	33	62
TOTAL					

(*Source:* Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm.)

Moose Hunting Harvest and Recreation in the Pend Oreille Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	50	16	66	6.5%	37.3%	8.1%	n.d.	155		n.d.	56.4%	
2000	58	22	79	7.4%	33.8%	9.4%	n.d.	165		n.d.	42.1%	
2001	107	24	131	11.7%	31.7%	13.2%	n.d.	176		n.d.	25.9%	
2002	105	23	128	12.3%	28.5%	13.7%	n.d.	267		n.d.	32.6%	
Average	80	21	101	9.5%	32.8%	11.1%	n.d.	191		n.d.	39.3%	

	Portion in	Harvest				Hunter-Days			
GMU	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1	0.70	64	75	135	133	n.d.	n.d.	n.d.	n.d.
ID-2	0.50	10	10	25	23	n.d.	n.d.	n.d.	n.d.
ID-3									
ID-4									
ID-4A	0.50								
ID-5									
ID-6									
ID-7									
WA-101									
WA-105									
WA-109	0.20	4	5	6	3	37	63	49	52
WA-113	1.00	10	13	16	14	116	106	108	193
WA-117	0.40	14	19	18	22	79	115	146	160
WA-121									
WA-124									
WA-127									
WA-130									
WA-133									
WA-204									
WA-248									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		772	774	918	852	n.d.	n.d.	n.d.	n.d.
WA State		44	64	77	82	275	391	680	819
TOTAL		816	838	995	934				

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Moose Hunting Harvest and Recreation in the Spokane Subbasin. (Agency statistics reported per management unit.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999	0	15	15	0.0%	33.4%	1.8%	0	38	38	0.0%	13.9%	13.9%
2000	0	24	24	0.0%	36.8%	2.8%	0	99	99	0.0%	25.3%	25.3%
2001	0	32	32	0.0%	42.0%	3.3%	0	329	329	0.0%	48.4%	48.4%
2002	0	35	35	0.0%	43.0%	3.8%	0	339	339	0.0%	41.4%	41.4%
Average	0	26	26	0.0%	38.8%	2.9%	0	201	201	0.0%	32.3%	32.3%

	Portion in	Harvest				Hunter-Days			
GMU	Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
ID-1									
ID-2									
ID-3									
ID-4									
ID-4A									
ID-5	0.20								
ID-6									
ID-7									
WA-101									
WA-105									
WA-109									
WA-113									
WA-117									
WA-121	0.30								
WA-124	0.98	15	24	33	36	39	101	336	346
WA-127	0.90								
WA-130	0.50								
WA-133									
WA-204									
WA-248									
Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.									
ID State		772	774	918	852	n.d.	n.d.	n.d.	n.d.
WA State		44	64	77	82	275	391	680	819
TOTAL		816	838	995	934	275	391	680	819

(*Sources*: Washington Department of Fish and Wildlife. 2004. Game Harvest Reports. Accessed at http://wdfw.wa.gov/huntcorn.htm. Idaho Department of Fish and Game. 2004. General Season or Statewide Harvest Data. Accessed at http:www2.state.id.us/fishgame/hunt/programsinfo/hprograms.htm.)

Ring-necked Pheasant Hunting Harvest and Recreation in the Lake Rufus Woods Subbasin. (Agency statistics reported by county.)

	Harvest						Hunter-Days					
	Quantity			Percent of State Total			Quantity			Percent of State Total		
Year	ID	WA	Total	ID	WA	Total	ID	WA	Total	ID	WA	Total
1999		400			0.3%			664			0.3%	
2000		318			0.2%			737			0.3%	
2001		348			0.3%			672			0.3%	
2002		206			0.2%			546			0.3%	
Average		318			0.3%			655			0.3%	

		Harvest				Hunter-Days			
County	Portion in Subbasin	1999	2000	2001	2002	1999	2000	2001	2002
IDAHO									
Benewah									
Bonner									
Boundary									
Kootenai									
Shoshone									
WASH.									
Chelan									
Douglas	0.129	1,689	1,347	2,013	804	3,145	3,721	3,612	2,546
Ferry	0.020	445	497	553	240	753	811	901	341
Lincoln									
Okanogan	0.074	2,339	1,809	1,040	1,316	3,290	3,247	2,543	2,853
PendOreille									
Spokane									
Stevens									
ID State									
WA State		127,738	131,701	121,810	99,140	218,140	233,175	198,666	180,159
TOTAL									

Harvest & hunter-days reported in this table are for entire GMU; proportioned quantities (entire GMU x Portion in Subbasin) are calculated in top table.

(*Source*: Washington Department of Fish and Wildlife. 2004. Harvest Reports. Accessed online at http://wdfw.wa.gov/huntcorn.htm)

Appendix H: Inventory of Recently-Completed Projects

Appendix H. Inventory of projects recently completed (last five years) or on-going in the Intermountain Province
See bottom of table for endnotes and definition of codes

							Subbasins																				
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies***							**LFA****							
1999		BPA	9094	Produce Kokanee Salmon in Net Pens for Release into Lake Roosevelt	STOI	R	UC	SPO			4	8						8							
2000		BPA	20096	Ford Hatchery Improvement, Operation and Maintenance	WDFW	R	UC	SPO	SP		4	8						8							
2000		BPA	20146	Lake Roosevelt Kokanee Net Pens	WDFW	R	UC	SPO			4	8						8							
2001		BPA	21007	Outdoor Education/Research Center for Riparian Management and Environmental Sustainablity	WSU	W	UC RW SP SPO				6	5						7							
2001		BPA	200103300	Implement Wildlife Habitat Protection and Restoration on the Coeur d'Alene Indian Reservation: Hangman Watershed.	CDA Tribe	W/R	SPO				1	2	3	6	5			8	4	3	2	7			
2001		BPA	200103200	Implement Fisheries Enhancement on the Coeur d'Alene Indian Reservation: Hangman Creek	CDA Tribe	R	SPO				1	5	6	8	3			2	3	5	7	8	1		
2001		BPA	21020	Monitor and Enhance the Lakes and Streams of the Spokane Indian Reservation	STOI	R	SPO	UC			1	2	3	5	6	7	8	1	2	3	4	5	6	7	
2001		BPA	21023	Determine causes of mule deer population declines in the IM Columbia Basin: a test of the "apparent competition " hypothesis	WSU	W	IMP				6							5							
2001		BPA	21025	Intermountain Province Resident Fish Symposium	LRF	R	IMP				5							1	2	3	4	5	6	7	8
2001		BPA	21029	A cooperative approach to identifying the role of forage quality in affecting physical condition….of mule deer in north central Washington.	WDFW	W	IMP				6							3	4	7					
2001		BPA	21032	Eastern Washington Survey for Townsend's big-eared bat	WDFW	W	IMP				6	5						4	7	1	6	3			

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**							
2001		BPA	21034	Colville Tribes Restore Habitat for Sharp-tailed Grouse	CCT-FWD	W	UC	SPO	RW	SP	1	3	6	8	2	4	5	3	7	8	1	2	4	5	7
2001		BPA	21035	Phalon Lake Native Redband Rainbow trout Trap Construction and O & M	WDFW	R	UC	SPO			4	8						8	1	2	3	4	5		
2002		BPA	24001	Lake Pend Oreille Predation Research	IDFG	R	PO				6	8						5	7						
2002		BPA	24003	Acquire and conserve high priority bull and westslope cutthroat trout habitat in Trestle Creek.	IDFG	R	PO				2							4	3						
2002		BPA	24004	Pend Oreille/Priest Exotic Fish Species Suppression and Native Fish Protection	IDFG	R	PO				8	6						5							
2002		BPA	24006	Pend Oreille Erosion Abatement and Landform Restoration	IDFG	R	PO				1	2						4							
2002		BPA	24008	Genetic Inventory of Bull Trout and Westslope Cutthroat Trout in the Pend Oreille Subbasin	KT	R	PO				6							5							
2002		BPA	24020	Center for GIS Analysis and Information in the Coeur d'Alene Subbasin	CDA Tribe	W/R	CDA				6							7							
2002		BPA	24025	Pend Oreille Subbasin Native Westslope Cutthroat Population Study	WT	R	PO				6							7							
2000	2001	BPA	8503800[i]	Colville Tribal Fish Hatchery	CCT	R	UC	SP	RW	SPO	4	6	8	1				5	6	8	1	2	3	4	7
1992	2000	BPA	9001800	Habitat Improvement - Lake Roosevelt	CCT	R	UC	SPO	SP	RW	1	2	3	6	8			1	2	3	4	7	8		
1987	2002	BPA	9004400	Fisheries Enhancement -- Coeur d'Alene Reservation	CDA Tribe	R	CDA	SPO			1	2	4	8				2	3	8					

							Subbasins				Strategies							LFA							
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**															
1999	2002	BPA	9004401	Lake Creek Land Acquisition and Enhancement	CDA Tribe	W	CDA				1	2						8	2	3	4				
2000	2002	BPA	9004402	Coeur d' Alene Tribe Trout Production Facility	CDA Tribe	R	CDA	SPO			4	8						8							
1998	2001	BPA	9104600	Spokane Tribal (Galbraith Sprgs) Hatchery - O&M	STOI	R	SPO	UC			4	8						8							
1998	2001	BPA	9104700	Sherman Creek Hatchery - O&M	WDFW	R	UC	SPO			4	8						8							
1998	2002	BPA	9106000	Kalispel Pend Oreille Wetlands Wildlife Mitigation Project	KT	W	PO				1	2						3	4						
1998	2000	BPA	9204800	Hellsgate Big Game Winter Range	CCT	W	UC	RW	SP	SPO	6	7	1	2	4			4	1	2	3	4	7		
1992	ongoing	BPA	9206100	Albeni Falls Wildlife Mitigation Project	IDFG, KT and Albeni Falls Workgroup	W	PO	CDA	SPO		1	2						1	3	4					
1992	ongoing	BPA	9206100	Albeni Falls Wildlife Mitigation Project	IDFG, KT and Albeni Falls Workgroup	W	PO	CDA	SPO		1	2						2	3	4	8				
1998		BPA	9305800	WDFW - Washington Wildlife Mitigation Agreement	WDFW	W					1	2	5	6	8			3	4	7					
1998	2001	BPA	9404300	Lake Roosevelt Monitoring / Data Collection Program	STOI	R	UC	SPO	SP		6	5	8					8	2	3	4	5	7		
1985	2002	BPA	9404700	Lake Pend Oreille Fishery Recovery Project	IDFG	R	PO				1	6	8					4	5	7					
1998	2002	BPA	9500100	Kalispel Tribe Resident Fish Project	KT	R	PO				1	3	8					1	2	3	4	5	7		
1998	2001	BPA	9500900	Net Pen Rainbow Trout Above Grand Coulee Dam	LRDA	R	UC	SPO			4	8						8							
1998	2001	BPA	9501100[ii]	Chief Joseph Kokanee Enhancement Project	CCT	R	RW	UC	SP	SPO	4	6	8	1	2	3	5	1	5	7	2	3	7	8	4

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**							
1999	2001	BPA	9502700	Assess Limiting Factors of the Lake Roosevelt White Sturgeon Population	STOI	R	UC	SPO			4	6	5	8				1	2	3	4	5	6	7	
1999	2000	BPA	9506700[iii]	Colville Confederated Tribes Performance Contract (Credits For Habitat)	CCT	W																			
1998	2000	BPA	9700300	Box Canyon Watershed Project	KT	R	PO				3							1	2	3	4	5			
1998	2002	BPA	9700400[iv]	Resident Fish Stock Status Above Chief Joseph and Grand Coulee Dams	KT	R	RW	UC	SPO	SP	1	2	4	3	6	8		1	2	3	4	5	6	7	8
1999	2000	BPA	9800300	O & M Funding of Wildlife Habitat on STOI Reservation for Grand Coulee Dam	STOI	W	UC	SPO			1	2	3	5	6			1	2	3	4	7			
		BPA	199001800[v]	Evaluate Rainbow Trout/Habitat Improvements Of Tributaries To Lake Roosevelt	CCT	R	SP	UC	RW		1	2	3	6	8			1	2	3	4	7	8		
2001		BPA	199106200	Spokane Tribe of Indians Wildlife Mitigation Project	STOI	W	SPO	UC			1	2	3	5	6			1	3	4	7	2			
		BPA	199204800	Hellsgate Big Game Winter Range Operation And Maintenance Project	CCT-FWD	W	UC	SPO	RW		1	2						3	4	7					
2002		BPA	200204500	Wetland/Riparian Protection, Restoration, Enhancement and Maintenance in the Coeur d'Alene Subbasin	CDA Tribe	W/R	CDA				1	2	3	5	6			2	3	8	4				
2001	2001	Non-BPA	CDAR DEMO-MS	(Streambank Stabilization)	KSSWCD	R	CDA				1							2	3						

							Subbasins																				
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**									
2000	2003	Non-BPA	WQPA 00-11	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3								
1998	2007	Non-BPA	WQPA 98-10	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3								
2000	2003	Non-BPA	2000-UNI-DM	(Sediment Retention Pond)	KSSWCD	W/R	CDA				1							2	3								
2003	2002	Non-BPA	CDALMP-DW	(Streambank Restoration)	KSSWCD	R	CDA				1							2	3								
1997	2003	Non-BPA	CRP-HM	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3								
2000	2001	Non-BPA	CRP-RB	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3								
2001	2003	Non-BPA	EQIP-CR	(Streambank Stabilization)	KSSWCD	R	CDA				1							2	3								
2002	2003	Non-BPA	KC 319 MN	(Sediment Retention Pond)	KSSWCD	W/R	CDA				1							2	3								
1988	ongoing	IDFG	None	Bull trout redd counts - Upper St. Joe River	IDFG	R	CDA				6							7									
2003	2004	Avista	None	Cutthroat Trout Telemetry Study Coeur d'Alene	Avista, USFS, NIFC, IEFF, IDFG	R	CDA				6	8						3	7								
1970	ongoing	IDFG	None	Cutthroat trout trend monitoring - St. Joe and Coeur d'Alene Rivers	IDFG	R	CDA				6	8	7														
2003	2004	Avista	None	JW BT Telemetry Study St. Joe	Avista	R	CDA				6							7									
1974	ongoing	IDFG	None	Kokanee Population Monitoring - Coeur d'Alene Lake	IDFG	R	CDA				6	8						7									
1997		Non-BPA	SAWQP	PLUMMER Ck	BSWCD	W/R	CDA				1							2	3								
1993		Non-BPA	SAWQP 93-1	PLUMMER Ck	BSWCD	W/R	CDA				1							2	3								
1993		Non-BPA	SAWQP 93-2	PLUMMER Ck	BSWCD	W/R	CDA				1							2	3								
1995		Non-BPA	SAWQP 95-5	Plummer Creek SAWQP 95-5	BSWCD	W/R	CDA				1							2	3								

							Subbasins																					
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**										
1995	2002	Non-BPA	SAWQP 95-6	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
1995		Non-BPA	SAWQP 95-6	Plummer Creek SAWQP 95-6	BSWCD	W/R	CDA				1							2	3									
1996		Non-BPA	SAWQP 96-7	PLUMMER Ck	BSWCD	W/R	CDA				1							2	3									
1998		Non-BPA	SAWQP 97-11	PLUMMER Ck	BSWCD	W/R	CDA				1							2	3									
1997		Non-BPA	SAWQP 97-8	PLUMMER Ck	BSWCD	W/R	CDA				1							2	3									
1999	1999	Non-BPA	WHIP-GM	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
2000	2001	Non-BPA	WQPA 00-14	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
2000	2003	Non-BPA	WQPA 00-15	(Sediment/storage Ponds on Upper Lake Creek)	KSSWCD	W/R	CDA				1							2	3									
2001	2005	Non-BPA	WQPA 01-1	(Mica Creek Ranch Improvements)	KSSWCD	W/R	CDA				1							2	3									
2001	2009	Non-BPA	WQPA 01-16	(Sediment Retention Pond)	KSSWCD	W/R	CDA				1							2	3									
1994	2003	Non-BPA	WQPA 94-4	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
1997	2003	Non-BPA	WQPA 97-7	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
1997	2006	Non-BPA	WQPA 97-8	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
1998	2007	Non-BPA	WQPA 98-9:	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
2003	2003	Non-BPA	WQPA-CR	(Dryland Crops on Erodible Soils)	KSSWCD	W/R	CDA				1							2	3									
		Non-BPA		Out reach educational efforts for fish, wildlife, and habitat issues.	WDFW	W/R	SPO				5							7										
		Non-BPA		Relicensing of AVISTA dams on mainstem of Spokane River.	WDFW/ AVISTA	W/R	SPO				1	2	3	4	5	6	8	1	2	3	4	5	6	7	8			
2001	ongoing	Non-BPA		319 Shoreline stabilization Project	KT	R/W	PO				1							2	3									

							Subbasins				Strategies							LFA							
Start	End	Funding	ID	Title	Sponsor	Focus	1	2	3	4															
1998		Non-BPA		A Chronicle of Latah (Hangman) Creek: Fisheries and Land Use	Spokane County Conservation Dist	R	SPO				5							7							
		Non-BPA		annual monitoring fish habitat	USFS	R	PO				6							7							
		Non-BPA		Annual monitoring of wildlife populations (game and non-game).	WDFW	W	SPO				6							7							
2001	2001	Non-BPA		Armoring of Livestock Crossings on Middle Branch Le Clerc Ck.	USFS	R	PO				1	2						2	3						
1996		Non-BPA		Best Management Practices (BMPs) for timber harvest Trestle Creek, South Gold Ck North Gold, Granite, Grouse, Pack R,	Trestle Creek Local Working Committee Lakeview Local Working Committee and IDL	R	PO				1							2	3						
	1997	Non-BPA		Biological Assessment of Hangman (Latah)Creek Watershed	Spokane County Conservation Dist	R	SPO				6							3	4						
	2004	Non-BPA		Bismark Meadows Wetland Restoration	NRCS	W	PO				1	2						4							
				Brett Creek Watershed Project	USFS	R/W	CDA				1							3							
	2003	Non-BPA		Brown Kettle River Bank Stabilization	FERRY CONS DIST	R	UC				1							2	3						

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**							
		Non-BPA		build bypass road and reclaim existing road LeClerc Ck	USFS, Stimson Lumber Co., the KT, and Pend Oreille County Roads	R/W	PO				1	2						1	2	3	4				
				Bunker Hill Water Monitoring	EPA	R	CDA				1							3							
1986	2003+	Non-BPA		Cabinet Gorge Hatchery	IDFG	R	PO				4							5	7						
		Non-BPA		Caribou relocation project	WDFW, IDFG, USFS, and British Columbia	W	PO				8							8							
1994	1995	Non-BPA		Centennial Clean Water Act Shoreline Stabilization Demonstration Project	KT	R/W	PO				1							2	3						
				CERCLA Removal Projects at Rose and Thompson Lakes	EPA	R	CDA				1							3							
1996		Non-BPA		channel restoration North Gold Ck	USFS	R	PO				1							3							
		Non-BPA		Channeled Scablands Focus Area Phase I Project	MANY	W	SPO				9							9							
?	On-going	ACOE	vi	Chief Joesph Wildlife Mitigation (10 foot pool rise)	CCT		RW																		
		Non-BPA		closed roads lower PO subbasin	USFS	R/W	PO				9							9							
				Coeur d'Alene River/Chain Lakes Land Exchange	USFS	W	CDA				2							4							
1997		Non-BPA		Color fish identification guide	IDFG, Lake Pend Oreille Idaho Club	R	PO				5							7							
	2002	Non-BPA		Conservation Plan for Fish Creek	Cocolalla Lake Assoc	R/W	PO				1							3							

							Subbasins																				
Start	End	Funding	ID	Title	Sponsor	Focus	1	2	3	4	Strategies							LFA									
		Non-BPA		Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP) & Wildlife Habitat Incentives Program (WHIP)		W	SPO				1	6						3	4								
		Non-BPA		Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP) & Wildlife Habitat Incentives Program (WHIP)	FERRY CONS DIST	W/R	UC				1	6						3	4								
	2000	Non-BPA		Constructed manure pit and two manure storage slabs Hoodoo Ck	NRCS and landowner	R	PO				1							2								
		Non-BPA		Cougar predation study to determine impacts on caribou		W	PO				9							9								
	1997	Non-BPA		cover structures in NF Grouse Creek and boulder clusters in Grouse Creek	USFS and TU	R	PO				1							3								
	1990	Non-BPA		Created pools and boulder clusters in Grouse Creek	USFS, LPOIC, and TU.	R	PO				1							3								
				Crown Pacific Road Access Project	USFS	W	CDA				1							3								
2002	2000	Non-BPA		Culvert Replacement to provide fish passage at Annabelle Ck.	USFS	R	SP				1								1							
				Deerfoot restoration project	USFS	R/W	CDA				1							3								
1998	1999	Non-BPA		Dike Road stabilization and wetland enhancement project	KT	R/W	PO				1							2	3							
		Non-BPA		document bull trout abundance in the Upper Priest Lake system	IDFG	R	PO				6	8						7								

							Subbasins																		
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**							
2000		Non-BPA		Easements acquired Trestle Creek	Avista Settlement agreement	R	PO				2							4							
2001	2005	Non-BPA		East Branch Road Removal and Reclamation Project	Stimpson Timber Co., USFS, POPUD, WDFW, WA IAC, KT, Fed DOT	R/W	PO				1	8						1	2	3					
1998		Non-BPA		Education and enforcement to protect bull trout.	IDFG, Avista, TU	R	PO				5							7							
1998	On-going	Non-BPA	[vii]	enforce fish and Wildlife regulations.	CCT & WDFW	R/W	RW				7							8							
1998		Non-BPA		excavated channel through drawdown zone Gold Ck	IDGF	R	PO				1							1							
1999	2002	Non-BPA		Exclosure Fencing of Le Clerc Ck.Riparian Habitat	USFS	R	PO				1	2						2	3						
		Non-BPA		FCD Native Plant Nursery	FERRY CONS DIST	W/R	UC				1							3	4						
	2001	Non-BPA		Fencing creek from livestock Hoodoo Ck	NRCS and landowner	R	PO				1							2	3						
	2003	Non-BPA		FERRY COUNTY KETTLE RIVER PARK	FERRY CONS DIST	R	UC				1							3							
	2002	Non-BPA		Fischer Riparian Improvement	FERRY CONS DIST	W/R	UC				1							3							
		Non-BPA		fish and water quality assessments in the Lower Clark Fork	USGS	R	PO				6							7							
				Fish Fry Wood Removal Project	USFS	R	CDA				1							3							

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**								
1997		Non-BPA		Fish information pamphlet	IDFG, USFS, Idaho AFS	R	PO				5							7								
	1994	Non-BPA		fish ladder in impassable flume Strong Ck	IDFG & TU	R	PO				1							1								
				Fish Wetland Reserve Program Restoration Project	NRCS	W	CDA				1							3								
2001	2002	Non- BPA		Food habits of picivoros fish in CDA Lake	CDA Tribe, Avista	R	CDA				6	8						5	7							
	2001	Non-BPA		Forest riparian buffer along Careywood Creek	NRCS	R/W	PO				1							3								
	2002	BPA		Genetic Inventory of Bull Trout and Westslope Cutthroat Trout in the Pend Oreille Subbasin	KT and WDFW	R	PO				6							7								
1996	2000	Non-BPA, BPA?		Genetic Inventory of Redband Trout and Westslope Cutthroat Trout in the San Poil Subbasin	USFS, CCT	R	SP				6								5							
1996	2000	Non-BPA		Genetic Inventory of Redband Trout and Westslope Cutthroat Trout in the U. C. Subbasin	USFS	R	UC				6							5								
		Non-BPA		Graham Lake Native Trout / Remote Site Incubator Research	WDFW	R	UC				4	5	6	8				1	2	3	4	5	7		
				Grouse Creek/Mary Mix Land Exchange	USFS	W	CDA				2							4								
		Non-BPA		habitat assessments and snorkeling surveys in tributaries to Box Canyon Reservoir	PO PUD, KT, WDFW	R	PO				6							7								

							Subbasins																		
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**							
		Non-BPA		Habitat enhancement and protection through the WA State Hydraulics Code and other applicable regulations, for wetland, riparian, instream, and other habitat types.	WDFW	W/R	SPO				1	3	7					1	3	7					
		Non-BPA		Hangman (Latah)Creek Comprehensive Flood Hazard Management Plan	WA DEPT OF ECOL	W/R	SPO				3							3							
	1999	Non-BPA		Hangman (Latah) Creek Management Plan	Spokane County Conservation Dist	R	SPO				1	2	3	5				2	3	4					
	1999	Non-BPA		Hangman (Latah) Creek Water Quality Monitoring Report	Spokane County Conservation Dist	R	SPO				9							9							
		Non-BPA		Hangman Creek Instream Flow Project	Spokane County Conservation Dist	R	SPO				9							9							
	2003	Non-BPA		Hangman Creek Main Stem Channel/Riparian Evaluation	Spokane County Conservation Dist	R	SPO				9							9							
1994	2002	Non-BPA		Hangman Creek Management Plan	Spokane County Conservation Dist	R	SPO				3							2	3	4					

							Subbasins				Strategies							LFA							
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**															
		Non-BPA		Hangman Creek Riparian/Sediment Reduction Projects	Spokane County Conservation Dist	R	SPO				1							2	3	4					
1995	1999	Non-BPA		Hangman Creek Subwatershed Improvement Project Report	Spokane County Conservation Dist	R	SPO				9							9							
1998	2001	Non-BPA		Hangman Creek Water Quality Network: A Summary of Sediment Discharge and Continuous Flow Measurements	Spokane County Conservation Dist	R	SPO				9							9							
1994		Non-BPA		Harvest management of lake trout	IDFG, Lake Pend Oreille Idaho Club	R	PO				8							5							
1996		Non-BPA		harvest of bull trout eliminated	IDFG	R	PO				5	7						7							
	2003	Non-BPA		Hydrology of the Hangman Creek Watershed	Spokane County Conservation Dist	R	SPO				5	6						2	7	3					
		Non-BPA		IDFG Albeni Cove Wetlands Restoration	IDFG	W	PO				1							3	4						
1996	1999	Non-BPA		improve conditions for bull trout in Sullivan Springs	IDFG	R	PO				1							7	3						

							Subbasins																				
Start	End	Funding	ID	Title	Sponsor	Focus	1	2	3	4	Strategies							LFA									
1996	2000	Non-BPA		Incentive program for management of riparian areas Cocolalla Ck	Cocolalla Lake Association, Bonner County Soil and Water Conservation District, NRCS, Soil Conservation Commission, IDL, IDEQ, and IDFG	R/W	PO				1							3								
	1999	Non-BPA		Increased minimum flow release from Cabinet Gorge Dam	Avista Settlement agreement	R	PO				1							2	4							
	2000	Non-BPA		Initiated bull trout passage project, Cabinet Gorge Dam	Avista Settlement agreement	R	PO				1	8						1								
		Non-BPA		Inland Northwest Land Trust	INLT/ AVISTA	W	SPO	CDA			2							4								
		Non-BPA		Inland Northwest Wildlife Council	INWC/AVISTA	W	SPO				9							9								
	1999	Non-BPA		Inspection at Cabinet Gorge to protect bull trout redds	IDFG, Avista, IDEQ FERC	R	PO				7							4								
	1999	Non-BPA		Installed riparian buffers Hoodoo Ck	NRCS and landowner	R	PO				1							3								
2000	2001	Non-BPA		inventorying all culverts on USFS service roads	USFS	R	PO				1							1								
2001	2002	Non-BPA		inventorying all culverts on USFS service roads	USFS	R	SP				1								1							
2001	2002	Non-BPA		inventorying all culverts on USFS service roads	USFS	R	UC				6							1								
				Iron Honey Project	USFS	R/W	CDA				1							3								

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**							
1997	1997	Non-BPA		Kalispel Shoreline Stabilization Project	KT	R/W	PO				1							2	3						
		Non-BPA		Kettle Tri-Watershed Project	FERRY CONS DIST	R	UC				6							2	7						
1957	2000	Non-BPA		kokanee spawning channel and egg taking facility in Sullivan Springs.	IDFG	R	PO				4	8						5							
1994	2001	Non-BPA		Lake Creek Monitoring	KSSWCD	R	CDA				1							2	3						
		BPA	[viii]	Lake Roosevelt Emergency Fish Restoration Project	CCT	R	SPO	UC	SP	RW	4	8	6					1	8	2	3				
				Law WRP Project, St. Joe River	NRCS	W	CDA				1							3							
		Non-BPA		Leclerc Creek Wildlife Area	WDFW	W	PO				1	2						3	4	1					
2001	2002	Non-BPA		Little Pend Oreille Cusick Unit Shoreline Stabilization Project	USFWS, KT, WDFW, USFS, and Pend Oreille PUD	R/W	PO				1							2	3						
		Non-BPA		long-term conservation of key avian habitats	Joint Ventures	W	SPO				2							3	4						
1997	1999	Non-BPA		Maintain high water elevations of Pend Oreille Lake	USCOE	R	PO				1							4							
				McArthur Lake Wildlife Corridor Project	USFS	W	CDA				1							3							
2003	ongoing			Migratory patterns of CT trout in CDA Lake	Avista, CDA Tribe	R	CDA				6	8						7							
Ongoing		Non-BPA	[ix]	Monitor and Enhance the Lakes and Streams	IDFG, CDA	R	CDA				1	2	3	4	5	6	7	1	2	3	4	5	6	7	
Ongoing		Non-BPA	[ix]	Monitor and Enhance the Lakes and Streams	WDFW, IDFG, KSPL	R	SPO				1	2	3	4	5	6	7	1	2	3	4	5	6	7	

							Subbasins																				
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**									
Ongoing		Non-BPA	[ix]	Monitor and Enhance the Lakes and Streams	STOI, WDFW, CCT	R	UC				1	2	3	4	5	6	7	1	2	3	4	5	6	7		
Ongoing		Non-BPA	[ix]	Monitor and Enhance the Lakes and Streams	STOI, WDFW, CCT	R	SP				1	2	3	4	5	6	7	1	2	3	4	5	6	7		
Ongoing		Non-BPA	[ix]	Monitor and Enhance the Lakes and Streams	STOI, WDFW, CCT	R	RW				1	2	3	4	5	6	7	1	2	3	4	5	6	7		
		Non-BPA	[ix]	Monitor and evaluate the effect instream structures have on the freshwater macroinvertebrate community.		R	PO				6							7								
		Non-BPA		monitor range condition, utilization and range improvements	USFS	W	PO				9							9								
		Non-BPA		monitor water quality in the Upper Pend Oreille	IDEQ	R	PO				6							2	7							
		Non-BPA		Moores Creek Livestock Fencing & Tree Planting	NRCS	R/W	PO				1							3								
	1999	Non-BPA		native fish restoration project, tributary restoration in Idaho; tributary restoration work in Montana; minimum flows in the lower Clark Fork River; recreational fish enhancements; habitat enhancement in the lower Clark Fork River in Idaho; and fisheries management assistance funding	Avista Settlement agreement	R	PO				8	1	2	6				3	4	7							
1999	1999	Non-BPA		Obliteration of Deemer Creek Road	USFS	R	PO				1							2								
	2001	Non-BPA		PALMANTEER FENCING PROJECT	FERRY CONS DIST	R	UC				2							3	2							

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**							
1991	ongoing	BPA		Pend Oreille Wetlands Wildlife Mitigation Project	KT	W	PO				1	2						3	4						
2001		Non-BPA		Phalon Lake Native Redband Rainbow trout Trap Construction and O & M	WDFW	R	UC	SPO			4	8						8	1	2	3	4	5		
	1996	Non-BPA		Planted riparian areas in Grouse Creek	USFS and Coldwater Creek Company.	R	PO				1							3							
		Non-BPA		Pre-Settlement Vegetation of the Hangman Creek Watershed and Soil Loss	Spokane County Conservation Dist	R	SPO				9							9							
	2000	Non-BPA		private land purchased Granite Ck	IDFG, Avista, LPOIC	R	PO				2							2	3						
	1996	Non-BPA		Pulled culverts, improved cross drainage, and improved stream crossings Trout Ck	USFS	R	PO				1							2	3						
1998	2000	Non-BPA		reconstruction of channelized stream Twin Ck	IDFG, the USFWS, Avista, TU, Ruen Family Trust, Bonner County, and Crown Pacific	R	PO				1							3							
	1997	Non-BPA		Recontoured road segments Lightening Ck	USFS	R	PO				1							2	3						
		Non-BPA		Reed Canary Grass management project	WSU and the KT	W	PO				9							9							

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**								
	1995	Non-BPA		Relocated floodplain road Lightening Ck	USFS	R	PO				1							2	3							
	1997	Non-BPA		Removed culvert from North Fork Twin Creek	USFS	R	PO				1							1								
	1997	Non-BPA		removed culvert repaired stream crossing Rapid Lightening Ck	USFS	R	PO				1							1								
		Non-BPA		research on bull trout populations	The Rocky Mountain Research Station	R	PO				6							4	7							
		Non-BPA		resident fish genetic analysis managed lakes Pend Oreille County	WDFW	R	PO				9							9								
1998		Non-BPA		Restricted vehicle access to Gold Creek	Avista Settlement agreement	R	PO				1							4								
1999	1999	Non-BPA		Resurfacing of Middle Branch Le Clerc Rd.	USFS, Stimson Lumber Co.	R	PO				1							2	3							
				RI/FS Removal Activities in Coeur d'Alene Basin	EPA	R	CDA				1							3								
		Non-BPA		Riparian Demonstration and Education Project (RDEP)	FCD & WDFW	R/W	SP				9							9								
	2003	Non-BPA		Riparian Demonstration and Education Project (RDEP)	FERRY CONS DIST	W/R	UC				1	5						3								
		Non-BPA		Riparian Management Zone research	WDFW	R/W	PO				9							9								
1996	2000	Non-BPA		RMEF hardwood habitat enhancement projec	KT	W	PO				1							3								

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**								
		Non-BPA		Road Surface Treatment	Lincoln County Public Works	R	SPO	UC			2							2								
		Non-BPA		Road Surface Treatment	Lincoln County Public Works	R	SPO	UC			2							2								
	2003	Non-BPA		Roberta Creek Restoration	FERRY CONS DIST	W/R	UC				2							2	3							
		Non-BPA		Rocky Mtn Elk – WDFW Monitoring Project	WDFW	W	SPO				6							7								
2001	2004	Non-BPA		Santa Creek Streambank Protection and Stability Project	BSWCD	W/R	CDA				1							2	3							
1997	1999	Non-BPA		Sherman Ck Restoration	USFS	R	UC				1							2	3							
		Non-BPA		Sherman Creek Implementation Project	FERRY CONS DIST	W/R	UC				9							9								
		Non-BPA		Sherman Creek Wildlife Area	WDFW	W	UC				1	2						1	3	4						
1997	ongoing	Non-BPA		Shoreline Assistance Program	KT	R/W	PO				1							2	3							
1999	2002	Non-BPA		Shoreline stabilization projects part of 1998 Settlement with Pend Oreille PUD	KT, WDFW, USFWS, Pend Oreille PUD, USFS	R/W	PO				1							2	3							
				St. Joe Bank Stabilization EQIP Projects	NRCS	R/W	CDA				1							3								
				St. Joe River WRP Projects	NRCS	W	CDA				1							3								
1998		Non-BPA		Stabilized eroding lakeshore	NRCS	R	PO				1							2	3							
		Non-BPA		State regulation enforcement of fish and wildlife laws.	WDFW	W/R	SPO				7							7								
				Steamboat Creek Fish Restoration Project	USFS	R/W	CDA				1							3								

							Subbasins																			
Start	**End**	**Funding**	**ID**	**Title**	**Sponsor**	**Focus**	**1**	**2**	**3**	**4**	**Strategies**							**LFA**								
	2001	Non-BPA		STEVENS FENCING PROJECT	FERRY CONS DIST	W/R	UC				1							2	3						
	2002	Non-BPA		Strandberg Stock Water Project	FERRY CONS DIST	W/R	UC				1							2							
		Non-BPA		stream inventory surveys on segments of Pend Oreille River tributaries on USFS lands	USFS	R	PO				1							7							
	1998	Non-BPA		streambank stabilization project Rapid Lightening	NRCS and landowner	R	PO				1							3							
1996	2003+	BPA		supplement largemouth bass in Box Canyon Reservoir	KT	R	PO				4							8							
	2002	Non-BPA		The Little Spokane River Watershed Plan Development; A Compilation of Project Results (2001 – 2002)	Spokane County Conservation Dist	R	SPO				5							7							
1998	1998	Non-BPA		Tonata Ck. Culvert Replacement	USFS	R	UC				1							1							
1997	1998	Non-BPA		transported bull trout spawners around intermittent reach of Granite Creek	IDFG	R	PO				1							1							
1994	1996	Non-BPA		Trestle Creek Watershed restoration project	USFS	R	PO				1							3							
		Non-BPA		Water and Soil Protection Project (WASP)	FERRY CONS DIST	W/R	UC	SP			1	3						2	3	7					
		Non-BPA		Water and Soil Protection Project II (WASP II)	FERRY CONS DIST	W/R	UC	SP			1	3						2	3	7					
	2002	Non-BPA		Water and Soil Protection Project III (WASP III)	FERRY CONS DIST	W/R	UC	SP			1	3						2	3	7					
	2001	Non-BPA		water control structure constructed on Derr Creek	NRCS & FSA	R	PO				1	8						1							

							Subbasins																				
Start	End	Funding	ID	Title	Sponsor	Focus	1	2	3	4	Strategies							LFA									
				Watershed rehabilitation projects	USFS	R/W	CDA				1							3									
1994	1999	Non-BPA		Watershed restoration work North Gold, Granite ck	USFS	R	PO				1							3	2								
2003		Non-BPA		WDFW collecting cougar DNA to study northeast Washington population	WDFW	W	UC	SP			8	6						8	6	7						
2003	2004	Non-BPA		WDFW Wood's Property Shoreline Stabilization Project	KT	R/W	PO				1							2	3								
		Non-BPA		Well Closure in the Hawk Creek Watershed	LINCOLN COUNTY CONS DIST		SPO				2							2									
		BPA		wildlife habitat compensation for Box Canyon Dam	WDFW, KT, USFWS, PUD, USFS	W	PO				1	2						3	4								
		Non-BPA		year-long creel survey on Lake Pend Oreille and the lower Clark Fork River	IDFG	R	PO				6	8						7									
2000	ongoing	Non-BPA		LPO Bull trout survival study	IDFG, Avista	R	PO				6	8						7									
1999	ongoing	Non-BPA		Clark Fork River Fishery Monitoring	IDFG, Avista	R	PO				6	8						7									
	ongoing	Non-BPA		LPO Bull trout redd counts	IDFG, Avista	R	PO				6	8						7									
	ongoing	Non-BPA		Bull trout trap and transport project	IDFG, Avista	R	PO				4	6	8					1	3								
	ongoing	Non-BPA		Granite Ck channel restoration and fish passage	IDFG, Avista, USFS	R	PO				1	8						1	3	4							

Endnotes are from ID column.

[i] This project does both hatchery and Monitoring and Evaluation activities throughout the Rufus Woods and Upper Columbia Subasins with a minor role in work done in the San Poil Subbasin

[ii] This project is mainly involve with researching ways to reduce entrainment at Gand Coulee Dam and monitoring Kokanne Population in RW, UC, and SP subbasins with a less degree of involvement in the SPO subbasin.

[iii] Review of NPCC web-site and comments from John Arterburn

[iv] This project is design to compile existing data and collect information to fill data gaps and warehouse and distribute these data for fish and fish habitat within the blocked area.

[v] Project has primarily focused on the San Poil watershed but has done some work in the Upper Columbia and the scope allows for work in RW and SPO but no projects in the last 5-years have been conducted in either subbasin.

[vi] This project mitigates for lost wildlife habitat from the 10 foot pool raise along Lake Rufus Woods.

[vii] These are regulatory functions that support fish and wildlife projects
[viii] This project was designed to replace fish entrained at Grand Coulee Dam and was short term emergency funding for 1 year. Primary focus is UC with minimal impacts on SPO and SP per review of NPCC web-site.
[ix] Each entity does this regularly as part of their activities.

*** Table of strategy codes**

Number	Strategy
1	Habitat Improvement or Restoration
2	Habitat Protection/acquisition
3	Watershed Planning/recovery planning
4	Hatcheries/supplementation/augmentation
5	Education/Outreach
6	Research/Monitoring/Evaluation
7	Enforcement and protection
8	Population management

** Table of Limiting Factor Codes

NUMBER	LIMITING FACTOR	EXAMPLES
1	Barriers or impediments to fish and/or wildlife passage	For fish, includes upstream fish passage barriers (such as dams and culverts) as well as entrainment. For wildlife, includes loss of connectivity as a result of highways, urban development, etc.
2	Water quality or quantity	Includes low flow, high flow, low temperature, high temperature, pollutants, oxygen
3	Physical structure of habitat (habitat quality)	For fish, includes riparian condition, channel stability, habitat diversity, fine sediment. Also includes conversion of rivers to reservoirs.
		For terrestrial species, includes lack of key habitat features for target species, noxious weed control, etc.
4	Habitat quantity	Includes acquiring management rights to land.
		Also includes modifying dam operations to make more fish habitat available
5	Competition/predation and/or hybridization	Competition/predation and/or hybridization
6	Disease	Disease
7	Lack of information	Not actually a limiting factor, but a reason why we do studies
		Monitoring and evaluation
8	Indirect mitigation	In some cases the limiting factors cannot be corrected directly, such as the limiting factors that are created by Grand Coulee Dam. This is the category for projects that are designed to mitigate for these types of limiting factors. Hatcheries are the primary example.

Appendix I: References for Research, Monitoring, and Evaluation

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Appendix J: Comments Received on IMP Final Drafts

Comments Received:

Avista Corporation
Bryan Bremner
Jim Carney
Coeur d' Alene Tribe
Colville Confederated Tribes
Ferry County Natural Resources Board
Idaho Department of Environmental Equality
Idaho Department of Fish and Game
Kalispel Tribe of Indians
Pend Oreille Conservation District
Pend Oreille PUD
Spokane County Conservation District
Spokane Tribe of Indians
U.S. Forest Service, Colville National Forest
U.S. Fish and Wildlife Service
Washington Department of Fish and Wildlife

Comments from the Avista Corporation

March 31, 2004

Thank you for the opportunity to comment on the Intermountain Province Subbasin Plan (IMP) draft III, dated March 1, 2004. After reading this draft of the IMP plan, we offer these observations and suggestions.

There was uncertainty at the sub-basin planning meetings about the goals, or the products, being created through this process. On one hand the work groups were directed to focus primarily on determining objectives and strategies to achieve resource mitigation for the federal Columbia River hydropower projects. On the other hand, work groups were also directed to develop a comprehensive plan to identify all resource objectives. These sometimes conflicting goals confused the work effort. We feel that this plan and process best serves to develop those goals and objectives necessary to mitigate for the federal Columbia River projects.

Mitigation for losses from the construction and operation of the federal Columbia River projects can, and should, be accomplished in both the Spokane and the Coeur d'Alene sub-basins. We feel this mitigation is most clearly established for anadramous fish losses, rather than as mitigation for resident fish losses as outlined in the Coeur d'Alene sub-basin objectives. At the same time, within the Spokane and Coeur d'Alene sub-basins exists the unique opportunity to protect and enhance important species like resident native westslope cutthroat trout and bull trout.

Avista is concerned over goals and objectives expressed in the draft report. We feel that including federally licensed projects in this plan could create conflicts with the Federal Energy Regulatory Commission (FERC) relicensing process. After expressing this concern at the sub-basin meetings, it was explained that FERC projects were included in order to meet stakeholder interests to be able to attract federal funding for fish and wildlife efforts that may be within the geography of a federally licensed project. It was also clarified that it was not the intent of the IMP process to establish commitments for these non-federal hydropower systems. Clarifying that intent, we offer no changes to this draft language.

Avista is currently involved in a collaborative relicensing process to obtain a new federal license for the continued operation of the Spokane River Hydroelectric Project. This relicensing process identifies and evaluates resource interests associated with the operation of our hydroelectric developments on the Spokane River. The operation of the Spokane River Project, and our commitment to resource protection, mitigation, or enhancement will be defined with stakeholder input through a license issued by FERC. Therefore, objectives and strategies identified in this IMP plan that reference the Spokane River Project or its operation as a limiting factor, assumes impacts of the Project, suggests to mitigate for losses, or suggests changes to the operation of the Project, is inappropriate and does not create an obligation for Avista.

Common ground expressed by stakeholders involved in both the IMP process and the relicensing of the Spokane River Project is a desire to coordinate activities, where appropriate, with other processes. Thoughtful coordination can help to achieve the most from projects that have like goals to achieve resource objectives. Where appropriate, we feel cooperating with the NPCC on strategies and projects to accomplish like goals in the Spokane and Coeur d'Alene sub-basins can benefit both the natural resources and citizens in these sub-basins.

Thank you for the opportunity to participate in the IMP planning process. If you wish to discuss these comments, please call me at (509) 495-8612.

Tim Vore
Environmental Coordinator

Comments from Bryan Bremner

Enclosed are small examples of four different types of modeling techniques and a brief one page comparison and description of the models. These are some documents that I created for another purpose.

I was quite excited when I was invited to join the San Poil Subbasin Work Team. It seemed to involve planning for the region in which I had decided to retire. It also dealt with an area, planning, that I had spent much of my professional career performing: computer applications planning, computer systems planning, computer network planning, mine transportation systems planning, health and welfare systems planning, and even a brief foray into forest management systems planning tools. It rapidly became obvious that the level of planning and precision that was projected for the Intermountain Province Subbasin Planning effort had nothing to do with the level of detail that I was used to dealing with. Even though I was disappointed in the level of precision and the opportunities for political manipulation, I wanted to continue with the effort as it seemed that there were opportunities for system-wide improvements. The subbasin planning process was designed and controlled by lawyers, administrators, and politicians. This group of people are used to dealing with a value system with only two options, (call it a binary system), in a purely nominative manner. On the other hand, systems modeling is usually done with rational numbers, commonly in a non-linear fashion.

I realize that our current report will be submitted at a rather imprecise level of detail and sophistication. What I do hope is that this report will form the basis for further detailed planning and mathematical modeling. It is at this level that I would like to become involved.

An input/output model is very attractive in that almost all animals/plants provide calories/minerals/etc. to other animals/plants. However the classic I/O models use only one variable: money. Living systems use many variables: calories, habitats, mating opportunities, predators, etc.

Systems Dynamics models are probably the most commonly used models in biological systems but they are very expensive in terms of trained personnel and they commonly use variables that are very difficult to quantify in the field.

Array models are very attractive but they demand incredible amounts of data. I would think that it would be very difficult to combine elk and trout in one model. For elk I would think that a cell size measured in acres would be appropriate. A cell size for trout would probably be in the neighborhood of a square foot or a square yard(meter).

A discrete events model would probably work for elk, deer, moose, eagles, etc. but it would be totally impractical for small animals or insects. Discrete events might be useful for very specific submodels.

Systems modeling would provide a more mathematically rigorous way to examine current conditions and to provide a path for evaluating concrete proposals.

Bryan Bremner
bremner@wsu.edu
(509) 775-0162
March 18, 2004

Comments from Jim Carney

March 28, 2004

Kristi Overberg
GEI Consultants, Inc.
127 E. Front Street, Suite 216
Missoula, Montana 59802

Dear Ms. Overberg;

After reading through the Third Draft Intermountain Province Subbasin Plan, I feel that there are some issues that still have not been addressed satisfactorily. I address them as follows:

One issue which troubles me is the proposal by Idaho Fish and Game to fluctuate winter water levels of Lake Pend Oreille. This concern was brought to the attention of GEI at the meeting but it was not allowed to be presented and does not show up in any drafts to this point. Please refer to my letter sent to you on February 24, 2004.

I have been repeatedly disturbed about the obvious preference to remarks presented by the various State and Tribal agencies over citizen and private party proposals and requests. This negates the purpose of the IMP document.

Again, I am not opposed to rehabilition of the fishing in Lake Pend Oreille but I am not convinced that all alternative plans have been given equal consideration and coverage. There are negative aspects of the plan being promoted which are never presented for discussion.

Thank you, in advance, for your consideration of my concerns.

Sincerely,

Jim L. Carney

Jim L. Carney
1691 Cusick Meadow Road
Cusick, Washington 99119
PH/FAX #509-445-1143

CC: Allison Squire, N.W. Power Council

February 24, 2004

Kristi Overberg
GEI Consultants, Inc.
Missoula, Montana 59802

Dear Ms. Overberg;

This letter is written in response to the draft sent out last week regarding the IMP report. Specifically, I am addressing the level of Lake Pend Oreille during the winter months, claimed by Idaho Fish and Game to restore the Kokanee population.

To begin with, we farmers in the Cusick, Washington area have no qualms about the restoration of the Kokanee population in Lake Pend Oreille; however...not at the expense of the Cusick ranchers. The retention of the 2051' winter Lake level is extremely essential to flood control in the Cusick area. I would be more than willing to meet with any interested parties to demonstrate how the Lake level correlates with flood control.

Other factors besides spawning conditions are responsible for the decreased population of Kokanee. I fished often for Kokanee in the early 1960's and each year the fish I caught were noticeably smaller than those caught during the previous season. This was a strong indication to me that the food supply was diminishing. Also, there are alternative methods of cleaning gravel that, to this point, I have not seen included in the Idaho Fish and Game report.

If a lower Lake level is a strong factor, how about lowering it below 2051' or holding Lake at a lower level during the summer months? It seems to me that a great deal of support for higher winter Lake levels is coming from those who want more water under their docks.

Originally, there was a natural V-shaped fault in the River bed where the Albeni Falls Dam was built. This natural formation provided downstream flood protection during spring run-off. This protection was eradicated when the Albeni Falls Dam was constructed. It seems only reasonable that an alternate plan should be considered to compensate for this loss of natural flood protection for the farmers.

In one of the drafts, referance was made to a report presented by Pat McCrane, of the Army Corps of Engineers, stating that the flooding in 1997 was due to the operative decisions of the Pend Oreille P.U.D. This may be true to some extent, but the large problem was the lack of cooperation from the Corps. Also, the volume of water coming from Calispel Creek was never addressed, making the report incomplete and consequently, invalid.

Again, I state that the farmers in the Cusick Valley have no opposition to the recovery of Kokanee or Bull Trout, or any other fish habitat; just

not at the expense of losing their livelihoods. I strongly feel that the area ranchers, or farmers, should be given as much consideration in this matter as any agency.

Finally, I have been very upset that the drafts of the last two reports were not sent to me until the comment period had elapsed. Why?

Sincerely,

Jim L. Carney

Jim L. Carney
1691 Cusick Meadow Road
Cusick, Washington 99119

PH #509-445-1143

cc: Representative George Nethercutt
Bob Geddes, Pend Oreille P.U.D.
Don Comins, Pend Oreille Co. Conservation District
Allison Squire, N.W. Power Council

Comments from the Coeur d' Alene Tribe

COEUR D'ALENE TRIBE
850 "A" STREET
P.O. BOX 408
PLUMMER, IDAHO 83851
(208) 686-1800 FAX (208) 686-1182

REFERENCE:

April 4, 2004

To: GEI Consultants

Edits to the Spokane Subbasin Plan as Proposed by the Coeur d' Alene Tribe

Problem #1: It is not even acknowledged in Section 21.1, Regional Context of the Spokane Subbasin Overview, that a portion of the Coeur d'Alene Indian Reservation and all of the Spokane Indian Reservation are within the Spokane Subbasin.

Solution: Add the following to paragraph 1 or insert a new paragraph 2.

The majority of the Watershed (approximately 78%) lies within the State of Washington while the eastern, and generally higher elevations, portions lie within the State of Idaho. The Spokane Indian Reservation lies entirely within the Spokane Subbasin and borders the north shore of the Spokane River from Little Falls Dam west to the confluence with the Columbia River. The western boundary of the Spokane Indian Reservation coincides with a portion of the western boundary of the Subbasin. The Subbasin covers approximately 43% of the Coeur d'Alene Indian Reservation, which is located in the southeastern portion of the Subbasin in the upper reaches of the Hangman Creek Watershed. The southern boundary of the Coeur d'Alene Indian Reservation corresponds with the southern most boundary of the Subbasin.

Problem #2: The second to the last sentence in the third paragraph under **21.1 Regional Context** is indecipherable.

Solution: Cannot suggest a solution since we are unfamiliar with the load demands and pool level fluctuations of Nine Mile Dam.

Problem #3: The first sentence under 21.2.1 is clearly incorrect. Figure 21.1 shows quite clearly that the Spokane Subbasin covers small portions of Bonner County Idaho and Whitman County, Washington.

Solution: The first sentence should read *The Spokane Subbasin lies in **five** Washington counties, Pend Oreille, Stevens, Lincoln, Spokane and **Whitman** and **three** Idaho counties, Benewah, Kootenai and **Bonner** (Figure 21.1).*

Problem #4: Paragraph 3 under 21.2.5, which describes the topography/geomorphology of Hangman Creek, sediment loads, alterations to the stream and 303(d) listing status. Almost nothing in the paragraph actually deals with the topography/geomorphology of Hangman Creek.

Solution: Issues of current Hangman Creek condition are best covered in **22.8.1.6 Current Conditions – Hangman Creek**. All the information in paragraph 3 under **21.2.5** should be moved to **22.8.1.6**. The paragraph should read:

The headwaters of Hangman Creek lie above 3,600 feet above mean sea level in the western foothills of the Clearwater Mountains. These foothills are part of the Rocky Mountains of the old North American Continent. Slopes are steep, largely forested and stream courses are set in deep mountainous drainages. Water flowing northwesterly in Hangman Creek from the Mountain foothills passes through the rolling Palouse Hills, were valley bottoms are broad with low gradients. The streams in the upper portions of the rolling Palouse Hills within the Coeur d'Alene Indian Reservation are perched well above the water table due to the thick layers of basalt under the deep Palouse loess soils (Ko et al., 1974). The water table and the stream elevations converge near the current border between the states of Washington and Idaho (Buchanan and Brown, 2003). The stream enters deep and narrow basalt canyons as it leaves the rolling Palouse Hills and ultimately flows into a broad alleviated valley as it joins the Spokane River (SCCD, 1994).

References:

Ko, C. A., A. C. Mueller, J. W. Crosby III, J. F. Orsborn. 1974. Preliminary Investigation of the water resources of the Hangman Creek Drainage Basin. Washington State University, College of Engineering Research Division. Research Report No. 74/15-81. 132pp.

Buchanan, J. P. and K. Brown. 2003. Hydrology of the Hangman Creek Watershed (WRIA 56), Washington and Idaho. Report prepared for the Spokane County Water Conservation District and the Washington State Department of Ecology. 51pp.

Spokane County Water Conservation District. 1994. Hangman Creek Watershed Management Plan. Spokane, Washington. 116 pp plus appendixes.

Problem #5: In **22.1.4 Hangman Creek Watershed** the last sentence in the first paragraph does not belong.

Solution: The information contained in that sentence is (and should be) covered in **22.8.1.5 Historic Conditions – Hangman Creek**.

Problem # 6: In **22.3.2 Current Status**second paragraph last half of the first sentence reads **and the Coeur d'Alene Tribe speculate some remnant redband trout populations exist in the upper reaches in the Hangman Creek drainage**. This language is unacceptable to the Tribe because "speculation" is not a scientific endeavor.

Solution: Change the wording to **and fish captured in the upper reaches of the Hangman Creek drainage by Coeur d'Alene Tribal Fisheries staff express phenotypic characteristics of native redband.**

Problem #7: Third sentence in **22.3.2.3 Hangman Creek** is a weak representation of the data.

Solution: Change sentence beginning with **There was also** to read; Many of the rainbow trout sampled in the upper Hangman Watershed, particularly those sampled in the Indian Creek, expressed phenotypic characteristics that were consistent with those of native redband trout. In addition to the rainbow trout, a fish sampled in Nehchen Creek expressed phenotypic characteristic that would suggest a rainbow/cutthroat hybrid.

Problem # 8: The paragraph under **22.8.1.6 Historic Conditions – Hangman Creek** does not reflect the wide variation in anecdotal evidence concerning the historic conditions of Hangman Creek.

Solution: Should read:

Little is known about the historic conditions of Hangman Creek. Early records were not kept and anecdotal evidence is inconsistent. The Coeur d'Alene harvest of Chinook and steelhead in the area of what is now Tekoa, Washington (Scholz et al., 1985) suggests a clear, clean flowing stream. However, Gilbert and Evermann (1895) noted Hangman was "an unimportant stream… found to be a small, rather filthy stream, not suitable for trout or other food-fishes, but well supplied with minnows and suckers of several species. These observations made in the same area of Tekoa, Washington may have been the result of land use activities (for example, timber harvest, agriculture) not described by Gilbert and Evermann. Other historical accounts vary from seasonally dry (original Public Land Survey Notes) to "almost as high in low water time as it was in high water time" (Cornelius Mooney circa 1920). The scant and contradictory evidence of the historic condition of Hangman Creek only highlights the lack of information as to its potential.

References not previously cited:

Cornelius Mooney. Circa 1920. *Published in* Postmarked Washington, an Encyclopedia of Postal History Covering Eleven Counties of Eastern Washington Based on the Research of the Late Guy Reed Ramsey and Others Sources. 1987. Volume I. Bert Webber, Editor. Ye Galleon Press. Fairfield Washington.

Scholz, A., K. O'Laughlin, D. Geist, D. Peone, J. Uehara, L. Fields, T. Kleist, I. Zozaya, T. Peone, and K. Teesatuski. 1985. Compilation of information on salmon and steelhead trout run size, catch, and hydropower related losses in the Upper Columbia River Basin, above Grand Coulee Dam. Upper Columbia United Tribes, Fisheries Center. Eastern Washington University, Cheney, WA. Fisheries Technical Report No. 2.

Edelan, W., and D. Allen. 1998. A Chronicle of Latah (Hangman) Creek: Fisheries & Land Use. Spokane County Conservation District, Water Resources Department.

Problem # 9: **22.8.1.6 Current Conditions – Hangman Creek**, second paragraph (top of page 40) needs more supportive references to the extent of sediment load transported by Hangman Creek.

Solution: Add as sentence between the current first and second sentences to read **Soltero et al. (1992) estimated that Hangman Creek contributes 77% of the total annual sediment load to Lake Spokane.**

Reference not previously sited;

Soltero, R. A., L. M. Sexton, L. L. Wargo, D. D. Geiger, K. J. Robertson, K. E. Bolstad, J. P. Buchanan, M. S. Johnson and D. Lamb. 1992. Assessment of nutrient loading sources and macrophyte growth in Long Lake (Lake Spokane), WA and the feasibility of various control measures. Cheney, WA.

Problem #10: 23.3.3 BPA Funded Projects does not include a summary of the Coeur d'Alene Tribe Fisheries Program's Hangman Project.

Solution:

23.3.2.13 Hangman Creek Fisheries Restoration on the Coeur d' Alene Indian Reservation, BPA Project 2001-032-00. Sister project to *Implement-Habitat Protection and Restoration on the Coeur d' Alene Indian Reservation: Hangman Watershed.*

Project Description:
This project establishes the historic and current distribution of redband trout (*Oncorhynchus mykiss gairdneri)* and other native fish species throughout Hangman Creek and its tributaries. The main emphasis is to substitute restoration of resident fish habitat for lost subsistence from anadromous fish resulting from construction of the Columbia River dams. These findings will determine if the trout are redband and if they are recoverable. If not, then another native salmonid species may be pursued as an alternative for Tribal subsistence. Phase I of the project is a bioassessment of the watershed and restoration project planning. Phase II is implementation of restoration plans, and Phase III will be monitoring of the effectiveness of restoration efforts.

Some of the methods being used to assess salmonid habitat are:

- Conduct a fisheries inventory for distribution and population estimates using electroshocking equipment.
- Study migratory habitats to determine if fish are adfluvial or resident fish.
- Conduct a genetics study to determine if salmonids are pure strain Redband Trout and their relationship to other rainbow stocks in the Spokane River watershed.
- Perform water quality/quantity testing by taking discharge, D.O., pH, conductivity and temp, as well as collecting water samples for laboratory analysis.

- Conduct a macro invertebrates study in Hangman Creek and its' tributaries to identify species, numbers, diversity and biomass as another means to assess the health of Hangman Creek and its tributaries. water quality and erosion data will continue to be collected to establish background data. The first year of genetics sampling will be reported in a preliminary report in 2004, and a final report in 2005. Conducting a two-year Instream Flow Incremental Methodology (IFIM) study to assess the feasibility of improving baseline flows and temperatures.
- Coordinating Idaho Department of Environmental Quality BURP (Beneficial Uses Reconnaisance Project) surveys within Idaho boundaries.
- Assessing Eros ional processes.
- Characterize the watershed by channel typing using Rosgen protocols in order to use the proper restoration techniques.
- Educate and involve the public in restoration activities.

Accomplishments

- Mapped out salmonid distribution throughout the Idaho reaches of Hangman Creek
- Collected water quality/quantity data in 2002-2004
- Collected genetics samples in 2003 to be analyzed in 2004 by Washington Fish & Wildlife
- Surveyed fourteen sites using BURP methodology during 2002-2003.
- Collected continuous temperature and discharge measurements to be used for the IFIM study.
- Coordinated efforts of logging operations to remove 3 culverts and block access to stream crossings in 2002.
- Collected erosion and sediment data using bank pins and analyzing water samples for Total Suspended Solids in 2003.

Sincerely

Ronald L. Peters

Fisheries Program Manager

Natural Resources Department Coeur d'Alene Tribe

****

Bruce Kinkaid's comments say (3/17/04):

Historical Conditions- Hangman Creek

This paragraph needs to be rewritten because it reflects conditions after land was cleared and a sugar beet plant was built near the mouth of the creek. Delete entire paragraph and replace with this:

Historically, Hangman Creek produced Chinook salmon (*Oncorhynchus tshawytscha*) and Steelhead trout (*Oncorhynchus mykiss*) for the Upper Columbia Basin Tribes. One weir, located at the mouth of Hangman Creek was reported to catch 1,000 salmon a day for a period of 30 days a year (Scholz et al. 1985). The current town of Tekoa, Washington, near the state border with Idaho, was the location of one of the principle anadromous fisheries for the Coeur d'Alene Tribe (Scholz et al. 1985).

Current Conditions- Hangman Creek, Paragraph 2

Please delete the number of miles of forest roads, gravel roads and paved roads. Road density/mi^2 should be appropriate. Sentence should read.

The watershed within the state of Idaho has a road density of 3.9 miles/mi^2 (data on file, Coeur d' Alene Tribe Water Resources Program, 2003).

Comments received from Gerry Green Jan 12, 2004:

Historic Conditions – Hangman Creek

In 1894, Hangman Creek was classified as "an unimportant stream…. found to be a small, rather filthy stream, not suitable for trout or other food-fishes, but well supplied with minnows and suckers of several species" (Gilbert and Evermann 1894). These observations were made near the Idaho-Washington state line. The degraded state of the Hangman Creek in 1894 was undoubtedly the result of land use activities (e.g. timber harvest, agriculture) not described by Gilbert and Evermann (1894) as a sugar beat processing plant near the town of Fairfield, Washington discharged its pollutants into the stream during the early agricultural period (Thomas Connoley SJ, personal communication). It seems unlikely that this stream was ever a major producer of salmon since early references to the stream indicate a muddy nature (Schulz et al. 1985). However, salmon were present in sufficient numbers to support a fishery for the Coeur d'Alene Tribe near where the current town of Tekoa, Washington (Schulz et al. 1985, Seltice 1990) is located.

Current Conditions - Hangman Creek

The Upper Hangman Creek is located in Idaho and is also listed on their 1998 303(d) list exceeding water quality criteria set for habitat alteration, sediment, nutrients, and pathogens. Low flows, high temperatures, and low dissolved oxygen concentrations also impair the upper reaches (Peters et al.2003). Agriculture, in the form of dryland farming and grazing, is prevalent throughout this portion of the watershed. By 1996, the predominant (65.1%) use of the land within the Hangman Watershed on the Coeur d'Alene Reservation was agriculture, followed by forest (37.9%), grassland (0.2%), developed (0.3%) and wetland (0.006%) (Redmond and Prather 1996). Also, in the Upper Hangman Watershed (that portion east of the State of Idaho) 84.2% (Redmond and Prather 1996) of the coverage of soils that evidence hydric conditions (Weisel 1980, 1981) is devoted to crop production. Fifty-six percent of the Hangman Watershed overall is devoted to crop production (SCCD 1994) causing increased width to depth ratios from

increased bank erosion. Forestry practices have cleared much of the upper watershed, with increased and more peaked flood frequency in sediment loading and decreased summer low flows. High road densities in the upper portions of the watershed also contribute significantly to sedimentation. The watershed within the state of Idaho has 407 miles of forest roads, 73 miles of gravel roads, and 21 miles of paved roads, for Also, the Watershed within the State of Idaho has a high total road density withof 3.9 miles/mi^2 (data on file, Coeur d' Alene Tribe Water Resources Program, 2003). Also, the Watershed within the State of Idaho has a high total road density with 3.9 miles/mi^2 (data on file, Coeur d' Alene Tribe Water Resources Program, 2003). This agricultural disturbance, along with high road densities and rapid forest harvest rates has contributed to excessive erosion/sediment and streambank that is the major source of nonpoint source pollution of Hangman Streams (SCCD 1994). In 1994, the Spokane County Conservation District estimated that 43,928.84 tons of sediment was delivered annually to Spokane River from Hangman Creek. Soltero et al. (1992) estimated that Hangman Creek alone contributes 77% of the total annual sediment load to Long Lake (Lake Spokane).

COEUR D'ALENE TRIBE

850 "A" STREET
P.O. BOX 408
PLUMMER, IDAHO 83851
(208) 686-1800 FAX (208) 686-1182

REFERENCE:

May 12, 2004

Ginger Gillin, Environmental Scientist
GEI Consultants, Inc.
127 East Front Street, Suite 216
Missoula, MT 59802

Dear Ginger,

The Coeur d'Alene Tribe is submitting the following recommendations and changes for the fourth draft of the Intermountain Province Subbasin Plan:

Coeur d'Alene Subbasin Terrestrial Inventory
Section 9.3.1 BPA Funded Projects

This section should contain the following three projects with language as follows:

Project #9004401: Lake Creek Land Acquisition and Enhancement
This project is part of an ongoing effort by the Coeur d' Alene Tribe and the Bonneville Power Administration (BPA) to protect, enhance, and maintain high value fish and wildlife habitat in the Lake Creek Watershed. The project currently manages 148 acres at the mouth of Lake Creek that encompasses approximately 35.6 acres of scrub shrub and approximately 25 acres of seasonally submerged wetlands. Crediting for the ecquisition and enhancement of the wildlife habitats are applied towards the wildlife loss ledger for Albeni Falls. All activities on the project site complement ongoing habitat restoration work in the Lake Creek Watershed and help to establish a precedent for watershed management efforts on the Reservation. The enhancement and protection of wetland, riparian, and upland areas will also provide measurable improvements in channel stability, sediment abatement, water quality, habitat availability, and suitability for wildlife and fish.

Project # 200204500 Wetland / Riparian Protection, Restoration, Enhancement, and Maintenance in the Coeur d' Alene Subbasin
This project was submitted for funding by BPA through the 2000/2001 Rolling Provincial Review as substitution for anadromous fish losses. The project received a fund recommendation from the ISRP, CBFWA, NWPCC, and BPA. The project proposed to maintain the native diversity that persists within the Coeur d'Alene subbasin and restore and enhance native habitats to support a full complement of native fish and wildlife species. Acquisition of priority habitats is a

primary tool that was intended to facilitate restoration and enhancement of riparian, wetland and stream habitats. To date, the project has not been contracted and has not been funded.

Coeur d'Alene Tribe Wildlife Mitigation, Albeni Falls Program Project # 1991-061-06

The Albeni Falls Wildlife Mitigation Project was proposed as partial mitigation for wildlife losses associated with the construction of Albeni Falls Dam. Off-site mitigation takes place in the Coeur d'Alene subbasin for effects to aquatic and terrestrial resources traditionally used by the CDAT in the Pend Oreille subbasin. A total of approximately 1,000 acres of potential wetland, open water and riparian habitats was purchased by BPA in 2001 and is being managed by the CDAT to partially offset the construction and innundation impacts assocated with the Albeni Falls dam. An additional 2,500 acres of forested upland riparian habitat has been targeted for purchase in 2005. This programmatic approach realizes dual benefits to both fish and wildlife habitats and their associative species. Various habitat types exist on the project including forested wetland, scrub-shrub wetland, emergent wetland, wet meadow or floodplain grassland, open water, upland forest, and riparian deciduous forest. Habitat Evaluation Procedures (HEP) were developed by the USFWS (Cite ref.) and utilized to convert acres and habitat suitability into a manageable crediting structure, known as HU's or Habitat Units. HEP is conducted every 5 years to actively determine if protection or improvement actions have increased the associative HU's to credit against the Albeni Falls loss ledger. Annual activities include Planning and Design which covers pre-acqusition activities (NEPA, Cultural Resource Surveys, Management Plans etc.) and determining habitat acquisition opportunites. The Operation and Maintenance Phase is ongoing and covers most activities conducted on the propeties including, fence and trash removal, noxious weed control, and boundary surveys. The Construction and Implementation phase includes those types of restoration and enhancement activities associated with the site-specific management plan. The Monitoring and Evaluation phase determines if those adaptive management strategies conducted in the C&I phase are working to improve habitats and their use by associative wildlife species and a general trend upwards in Habitat Unit improvement. The program provides direct and indirect benefits to a number of guilds and populations including: herpteofauna guilds, native and nonnative resident fish populations, game and non-game mammals, and migaratory and non-migratory birds.

Chapter 10, Objectives 1A1-1A8

The Objectives that reference the Habitat Units attributed to the different HEP species must all be high priority, and can not be prioritized amongst themselves. This sets a dangerous precedent where species and their associative habitats are given priority over another. Species as they relate to HU's are only indicators of representative guilds.
I believe there was some misunderstanding within the workgroup as to how these objectives should be prioritized. My understanding is that we agreed the four objectives prioritized as high by the NWPCC could be listed first, followed by the other objectives. However, all eight objectives would be ranked as high. The Coeur d'Alene Tribe is the sole mitigator in this subbasin, and should have the final say on this matter. The ranking approach does not reflect the intent of the Power Act, Brown Book loss assessment or the existing F&W program.

Chapter 11, Terrestrial Research, Monitoring and Evaluation Plan

The Terrestrial Research, Monitoring and Evaluation Plan Table is missing the Objectives and Strategies headings in each row.

Edits to the Final Draft of the Spokane Subbasin Plan

Section 1.4.1 Fisheries (Background of Existing Programs)

A brief summary of the processes that are in place to make recompense for the losses caused by the FCRPS as they are laid out in the 2000 Summary and how they are implemented in the Intermountain Province is missing from the Province Overview. A paragraph must be added prior to the last paragraph in section 1.4.1 that discusses the three avenues of recompense. The paragraph should read:

The Northwest Power and Conservation Council's 2000 Fish and Wildlife Program laid out Objectives for Biological Performance as avenues by which recompense can be made for the economic and ecological function losses that result from the construction and operation of the FCRPS. The Objectives for Biological Performance were presented in three categories to address fish losses: Anadromous Fish Losses, Substitution for Anadromous Fish Losses and Resident Fish Losses. The Anadromous Fish Losses Objectives focus on improving the remaining stocks of anadromous fish in the Columbia River Basin. Since migration of anadromous fish has been completely blocked from the Intermountain Province these Objectives are inapplicable to this Subbasin Planning effort. If, however, a means is provided for migrating anadromous fish to pass Chief Joseph and Grand Coulee Dams these Objectives may become relevant. The Substitution for Anadromous Fish Losses Objectives propose to provide resident fish as a substitution for anadromous fish losses. Since there was a complete loss of anadromous fish from the Intermountain Province the Substitution Objectives play the primary role in gaining recompense for fish losses in this area. Loss assessments have been completed through previous Council Programs (see Technical Appendices, Estimates of Hydropower-related Losses) and actions in the Intermountain Province have been funded. However, the Power and Conservation Council in their 2000 Program fully recognized that "While there are limited opportunities for improving resident fish in those ("blocked") areas, resident fish substitution alone seldom is an adequate mitigation." The Resident Fish Losses Objectives propose to compensate for the loss of fish that resided wholly within the streams and rivers effected by the FCRPS. These losses have not been quantified so, to date, these Objectives have played only a minor role in activities related to fish losses due to the FCRPS.

Section 22.3.2 Current Status (redband/rainbow trout)

The second paragraph, third sentence sites (G. Green, Fisheries Biologist, CDA Tribe personal Communication, 2004).

This sentence must be replaced with:

The Coeur d'Alene Tribe has captured fish that express phenotypic characteristics of redband trout in several streams of in the upper reaches of the Hangman Creek Watershed and

intends to conduct DNA analysis to determine whether these fish originated from pure redband stock or are of a mixed origin (Peters et al. 2003).

Figure 22.1. Redband Trout Distribution

The Coeur d'Alene Tribe is in the process of changing the name of Squaw Creek. We must be sensitive to the origin and meaning of the names given to prominent landscape features. The name of Squaw Creek is being changed to Nehchen Creek. Everywhere where Squaw Creek in the Hangman Watershed is mentioned the name should be changed to **Nehchen Creek**.

Section 22.6.1 Historical Status

The citation of (G. Green, Coeur d'Alene Tribe, personal communication, 2003) must be removed from that paragraph. The last sentence should read:

Historical evidence indicates the Coeur d'Alene Tribe harvested Chinook as far upstream as the current town of Tekoa, Washington (Scholz et al. 1985; Seltice 1990) and possibly as far as DeSmet, Idaho (Scholz et al. 1985).

Section 22.8.1.5 Historical Conditions – Hangman Creek –second paragraph should read-

Little is known about the historic conditions of Hangman Creek. Early records were not kept and anecdotal evidence is inconsistent. The Coeur d'Alene harvest of Chinook and steelhead in the area of what is now Tekoa, Washington (Scholz et al., 1985) suggests a clear, clean flowing stream. However, Gilbert and Evermann (1895) noted Hangman was "an unimportant stream… found to be a small, rather filthy stream, not suitable for trout or other food-fishes, but well supplied with minnows and suckers of several species. These observations made in the same area of Tekoa, Washington may have been the result of land use activities (for example, timber harvest, agriculture) not described by Gilbert and Evermann. Other historical accounts vary from seasonally dry (original Public Land Survey Notes) to "almost as high in low water time as it was in high water time" (Cornelius Mooney circa 1920). The scant and contradictory evidence of the historic condition of Hangman Creek only highlights the lack of information as to its potential.

This is the second time this editorial suggestion has been made. At the very least the citation of (Thomas Connoley SJ, personal communication) should be removed and replaced with **(Leitz, G. 1999)**. The full citation is as follows:

Leitz, G. 1999. A history of Waverly and Pioneer Life along this part of Hangman Creek. Waverly, Washington.

Section 26.1.1 Spokane Aquatic Assessment and Limiting Factors.

Top of page 26-4

The sentence:

The Objectives that were developed to address the impacts of the loss of anadromous fish include objectives 1C3, 2B1, 2C1, 2C2, 2C3, and 2D1.

Must be replaced with:

The Objectives that were developed to address the impacts of the loss of anadromous fish include 2A1, 2A2, 2A3, 2B1, 2C1, 2C2, 2C3 and 2D1.

1C3 does not belong with this group because it was developed to address mitigation for losses of resident fish due to FCRPS.

2A1, 2A2, 2A3 must be added to the list because they were specifically developed to address the impacts of anadromous fish losses to the region.

Section 26.3.2 Discussion of Aquatic Prioritization

The first paragraph does not clarify the fact that Objectives from Category 1 and Category 2 were lumped together under the Priority category headings and they are not listed in any level of prioritization within Priority level.

The last sentence of the first paragraph that reads;

The result is a prioritization list with several objectives of equal priority grouped together.

Must be replaced with:

The result is a prioritized list with objectives from Category 1 and 2 grouped by priority. The objectives within priority levels are listed in alphanumeric order since all are of equal priority.

Please take the time to incorporate these changes into the final draft of the Intermountain Province Subbasin Plan. If you have any questions, please contact me at (208) 686-5521.

Sincerely,

Cameron Heusser
Wildlife Program Manager
Coeur d'Alene Tribe

Comments from the Colville Confederated Tribes

Colville Confederated Tribes

Fish and Wildlife Department

P.O. Box 150 Nespelem, WA. 99155
(509) 634-2110/ FAX (509) 634-2126

March 31, 2004

GEI Consultants, INC.
Attn: Ginger Gillin
127 East Front Street
Suite 216
Missoula, MT 59802

Dear, Ginger:

Contained in this letter are the Colville Confederated Tribes (CCT) comments on the 3rd draft of the Intermountain Province Subbasin Plan (IMP plan). These comments were compiled from technical staff to provide suggestions for changes that are intended to improve the current draft document. The CCT has played and active role in the development of the IMP plan and will continue to support these efforts until the document is completed and submitted to the Northwest Power and Conservation Council (NPCC) on May 28, 2004. However, these comments should not be considered an endorsement from the Colville Business Council as to the content of the IMP plan or in any way constrain their ability to accept or reject the final document.

General Comments

This version of the IMP plan is improved from previous drafts but still falls well short of a good plan and is not remotely close to a final plan. The IMP plan appears to be similar to other efforts occurring throughout the Columbia River basin. Proofing, grammar, standardized measures, formatting, and the quality of tables and graphics are all things that need to be addressed and with the addition of a professional writer should be easily fixed prior to the next draft. It is critical that considerable improvements to the presentation, flow, and readability of this document be made between now and the next draft. The logic path and categories used in the plan need to be addressed because the current presentation is impossible to follow and unnecessarily repetitious. Consolidation of the number of categories used would vastly improve clarity and logic. Many items are not included such as species distribution maps, prioritization, research, monitoring, and evaluation, connection to the ecosystem and ecological processes, and the synergies associated with combining activities that will benefit both fish and wildlife.

Wording and readability suggestions will be included with other minor changes and sent only by E-mail using "tracked-changes" format as per the GEI memo dated March 1, 2004. Major changes and comments will be included in the following table and if needed attached as supplemental material.

Section	Page	Comment
ES.1	all	Looks good but will likely change as more information is added to this document.
ES2.1	all	Do not overlook the importance of redband trout to this province.
ES.2.2	5-6	Put habitat losses into a table format for clarity using text to describe all of these numeric values is hard to follow
ES2.2	6	Assessment of operational and secondary effects is a "research need" and should be develop as such
ES.3	7	1) Good job with the diagram but takes time to follow and could be improved using a different format, 2) should the importance of native or focal fish be included into the 4 hypothesis corollaries?
ES.3	8	Reduce redundancy by combining fish and wildlife and habitat and abundance at this point because at this level an ecosystem approach provided better clarity for example nutrient losses affect fish and wildlife along with their habitats (plants), loss of salmon fishing opportunities affect fish and wildlife but the losses to the people needs to be considered as well. Loss of anadromous fish have really affected tribal peoples due to loss of traditions and values, loss of culture and ceremony (i.e. the celebrating the return of the first salmon), loss of gatherings and ways of life, loss of a **healthy** food resource. Restoration of cultural and subsistence values is critical to meeting the mitigation responsibility that BPA has toward the tribes. The lack of ecologically important flooding events and habitat diversity are also major impacts from reservoir/dam operations especially as they relate to fish and river ecology.
ES.3	8-9	Secondary impacts to fish and wildlife from hydropower development need to include Increase use of water resulting in lost habitat and fish plus a whole host of associated ecological processes. Changes in plant communities (i.e noxius weeds, agricultural monocultures, clearing of land, timber management, etc.), Increased road densities, development of fish and wildlife habitats for other uses, increased conflicts between fish, wildlife and humans, increased need for regulation, management, protection, and restoration.
ES.4	9	**Where did these come from???? This does not add anything of value to this document. If this is deemed important, combine with guiding principles. We already have too many categories for this document to make sense. Delete all references to supporting objectives this only serves to confuse the reader and add redundancy. This comment will be repeated were appropriate**

Section	Page	**throughout the document.** Comment
Fig ES.3	all	Looks good but will likely change as more information is added to this document and needs to be reformatted and condensed so that people can follow. Could require refining provincial level and higher goals and objectives. How does this relate to the assessments? I've got real problems with the amount of redundancy that exists throughout this document and this diagram could be a simplified concept rather than showing each step if redundancies can not be reduced or eliminated.
ES.4.	14	The terminology of the 14 different categories ranging for vision through subbasin strategies is very confusing either; 1) reduce the number of categories or 2) use different terminology for each (i.e. vision, principles, category, goals, guideline and reserve the terms objective and strategies for the subbasin level stuff). Once it is decided what the terminology should be make it consistent with both fish and wildlife.
ES.4.1	14-16	The terminology of the 14 different categories ranging for vision through subbasin strategies is very confusing either; 1) reduce the number of categories or 2) use different terminology for each (i.e. vision, principles, category, goals, guideline and reserve the terms objective and strategies for the subbasin level stuff). Once it is decided what the terminology should be make it consistent with both fish and wildlife.
Fig ES-4	18-19	This makes some sense but what we need is to reduce redundancy as per the above comments and work on presenting this in a better way perhaps with some prioritization included.
ES.4.2	20-25	The terminology of the 14 different categories ranging for vision through subbasin strategies is very confusing either; 1) reduce the number of categories or 2) use different terminology for each (i.e. vision, principles, category, goals, guideline and reserve the terms objective and strategies for the subbasin level stuff). Once it is decided what the terminology should be make it consistent with both fish and wildlife.
ES.5	25	The aquatic assessment only covers some physical habitat parameters that could be limiting. No population or biological analysis was conducted therefore it is hard to say if or to what extent the populations are limited by these factors. It is important to not over state the value of the current assessment that is largely based on WAGs.
ES.5.1.1	25-26	Wording is awkward and need to add information about confidence levels expressed in the QHA..
ES.5.1.2	26	Needs minor grammatical changes
ES 5.1.3,4,5	26-27	Looks good to me
ES.5.2.1	28	See comments from ES.5.1.1
ES.5.2.2, 3,4,5	28-29	Looks good to me

Section	Page	Comment
ES.5.3.1	30	See comments from ES.5.1.1
ES5.3.2,3,4,5	30-31	Could use some better writing.
ES.5.4.1	31-32	The assessment results for this subbasin must be viewed in the context of why the results are what they are. Unless context is identified, the QHA results have little meaning. Segregating results for Mainstem and tributaries is critical to understanding the needs in this subbasin. Inundation, operational and secondary effects all have a huge impact in this subbasin and the link to all three should be identified. The oxygen issue continues to be a problem, it must be presented in the context of the TDG issue as was identified in the QHA and in each draft comments but has yet to be addressed in the plan this would apply to LRW subbasin as well. Human development does not only apply to wildlife it is a major fisheries issue as well. Specific comments and wording was sent using "tracked changes" although more could and should be done.
ES5.4.2,3,4,5	32-33	Could use some better writing.
ES.5.5.1	33-34	Wording is awkward and need to add information about confidence levels expressed in the QHA. The QHA table needs to be outlined into the proper context what is it really telling us. Specific wording changes have been sent in track changes. The nonnative stock and exotic species issues are similar but need to be addressed separately. Human development does not only apply to wildlife it is a major fisheries issue as well. Specific comments and wording was sent using "tracked changes" although more could and should be done. The "redband trout story" needs to be told, as the San Poil subbasin would provide an excellent core area for recovery efforts.
ES5.5.2	34	What is needed here is not just a tally of the projects but a breakdown for example; **only one BPA funded fisheries project places its primary focus in the San Poil Subbasin all others either only contribute in a minor way or are funded through another source that is the honest and true story that needs to be told.** The wildlife side is not much better 2 BPA funded projects impact the San Poil. That means that 13 projects listed in the inventory are smoke and mirrors that contribute collectively less to this subbasin than one additionally funded BPA project would. The non-BPA projects although doing good work within the subbasin largely provide little funding and are only capable of producing a single task in a typical BPA funded project.

Section	Page	Comment

ES5.5.3,4,5	34-35	Could use some better writing.
ES.5.6.1	35	**This section is lacking several important points; 1) this subbasin is confined between 2 major fish barriers, 2) anadromous fish habitat exists but passage is limiting, 3) QHA context is needed because the habitats have been so altered along the mainstem. 4) fish culture operations need to be discussed, 5) the lack of knowledge in this subbasin is larger than for any other subbasin in the IMP and the FCRPs responsibility is more directly tied than in any other subbasin. The Rufus Woods subbasin was retained as a separate subbasin because it has been historically ignored and it is important that this subbasin gets the attention it deserves during this round of subbasin planning.**
ES.5.6.2	36	What is needed here is not just a tally of the projects but a breakdown for example; **only one BPA funded fisheries project places some focus in the Lake Rufus Woods subbasin others either only contribute in a minor way or are funded through another source that is the honest and true story that needs to be told.** The wildlife side is not much better 2 BPA funded projects impact Lake Rufus Woods. The non-BPA projects although doing good work are minor contributors to fisheries. One wildlife project has an impact but is associated with the 10 foot pool rise.
ES 5.6.3,4,5	36	Could use some better writing.
ES-all	all	At times, this section reads well enough to be a 3rd draft but some sections especially the objectives and strategies and assessment sections are poorly described and laid-out. Too much redundancy and categories for a logical pathway and understandable explanation. Much of this work has been scrutinized at the subbasin level but little attention have been given to the province level and higher by any group it was rushed through to provide guideance to the subbasin workteams without much debate other than perhaps the subbasin coordinator and GEI. It would be useful for GEI, the subbasin work teams, tech ad-hoc committee, and oversight committee to modify and adapt a simplified version that can effectively show a logical pathway. The terminology of the 14 different categories ranging for vision through subbasin strategies is very confusing.

Section	Page	Comment
1-general	all	Gererally good. Needs to be proofed for grammar, spelling, and

		consistency with other plan sections. Use standard measures throughout the document (i.e is it RM or RKM don't mix and match). The following sections should be added; 1) information about the ferry conservation district contract, 2) combined benefits to fish and wildlife to add information about processes and environments that link terrestrial and aquatic systems (i.e. groundwater, sediments, soils, riparian, and floodplain function etc. Links to operational and secondary impacts (i.e. how do land uses and development effects the ecology, fish, and wildlife. The impact of climatic events and out-of –basin impacts. 3) Redband information needs to be improved and coorections to GCMP stuff that outlines the responsibility to build a hatchery for the Okanogan River that has never been completed. However most of these issues have been addressed.
1.1	4-5	Looks good
1.2	5	This is confusing and awkward have sent in tracked changes comments.
1.2.1	5	Page break formatting error.
1.2.1,2	6-10	Looks good.
1.2.2.4	10	Talks about two contractors but only mentions GEI. Need to add information on the other contractor.
1.2.3	11	Once the proper terminology has been determined for the objectives, goals , visions, principles etc. make sure that this is updated and remains consistent with the adopted terminology. The text about the hierarchy of the plan is terribly confusing to me and I know the process I can't imagine picking this document up and understanding this if I was new to the process (this is bad, bad, bad).
1.2-1.3	11-19	Tables could be presented with more style and needs some minor proofing and edits
1.4	20-23	Try to avoid using references in the middle of the sentence. As part of the GCFMP a fourth hatchery was approved but never built for the Okanogan River because of the outbreak of WWII. Having learned the hard lessons from past experience, constructing the fourth hatchery at the base of Chief Joseph Dam would increase recovery efforts for listed anadromous stocks and improve harvest opportunities for up-river tribes at the closest geographic spot possible. This is also in alignment with the recently findings of the NPPC's artificial production review. The suggested language has been submitted using tracked changes. Reference U.S. Bureau of Reclamation. 1947. Columbia Basin Project: annual report history. Vol. XV-1947. U.S. Department of Interior, Bureau of Reclamation, Boise, Idaho.On page 21 you use river mile RM and on page22 your use river kilometer RKM use standard measure throughout the document. Please do not forget about the importance of Redband Trout to this entire province was

		historically the main resident salmonid species in this area and it may not be ESA listed it has probably been more widely impacted by the FCRPS than bull trout.
1.4.2	23-24	**Need to consider fish and wildlife**
1.4.1.5	New	A new section should be added that identifies the important of ecological function and processes. We have talked a lot about ecosystem planning but the current plan never really addresses the issue. Many of the over lap items are included in the secondary impacts but this is written so it pertains only to wildlife. Habitat improvements to reduce road densities, improve land use practices, protect riparian habitats all provide dual fish and wildlife benefits throughout this document a number of opportunities exist to combine this information a bring the importance of this synergy out. **Some wording for this section as a starting point was supplied through tracked changes but it is just as important to highlight these items throughout the rest of this plan.**
1.5	25	San Poil is also a headwater subbasin, Rufus woods in downstream of all subbasins. A new section should be added to include climatic events that could overshadow our efforts. Some suggested language and topics are included in the tracked changes comments. TMDLs cover other pollutants along with TDG.
1.6	26	Looks good but an appendix should be added that contains all the QHA data and results.
2	4	Looks good
2.1	5	Not sure why you have guiding principles and supporting objectives this is added complexity and redundancy that is unnecessary provide comments on how to consolidate in tracked changes
2.2	5-7	This is a good start in developing the logical pathway but this needs to be refined. This is a better approach then what the council and ISRP had proposed. GEI should enlist support for continued review of this material from the subbasin work teams, oversight committee, and ad-hoc committee to make sure that all issues are covered. However there does not appear to be a clear link to the assessment and this is required. Several specific comments were provided in tracked changes. See comments for section ES-3 for additional comments.

Section	Page	Comment
2.3 and Figure 2.1	7-10	Figure 2.1is duplication of Figure ES-3 use this figure once and refer to it. It is unnecessary to duplicate this flow chart. The use of the figure is sufficient and it is not necessary to describe it in

		detail within the text. A legend and better caption text would be sufficient. For additional comments see section Figure ES-3 and ES-4 above. This is a good start at making the logic path but needs considerable work.
2.3.1	11-13	Tons of redundancy and unnecessary complication this can be easily consolidated to make a clearer logic path and better organization suggested changes were send by tracked changes and additional comments on section ES-4.1.
Figure 2.2	14-15	Same comments as for section 2.3 and figure 2.1 apply additional comments provided in section Fig ES-4 and Section ES-4.1.
2.3.3	16-20	Considerable redundancy and loads of duplication make this list long and tedious. Suggestions for ways to consolidate simplify and clarify this information were provided in tracked changes. For additional comments see section ES-4.2.
Figure 2.3	21-22	Looks good but graphic quality and presentation could improve and it will be necessary to be consistent with section 2.3.3 when changes are made. A legend would be useful.
2.4.1.1	23-25	BPA does not have authority over flows and flood control this is the responsibility of dam operators like USDI Bureau of Reclamation and USACE. Make sure each section covers all subbasins. For example The Colville and Okanogan National Forests cover lands in the San Poil subbasin and no mention of the upper Columbia is made but Colville National forest is at work here as well. It might be better to talk about subbasins rather than specific rivers. ACOE has considerable land holding and mitigation responsibility in the Rufus Woods subbasin (i.e. the 10 foot pool rise) information should provided by the ACOE for this area (Contact Bob Fischer for information Lake Rufus Woods subbasin work team has contact information). Bureau of Reclamation is a major player because they operate Grand Coulee Dam additional information is needed about what they do, hold and are involved with that effects the upper Columbia and Rufus Woods subbasins (Craig Sprankle can supply this information- See upper Columbia work team list for contact information). Information from this section appears to be pasted from documents that related to specific subbasins. It should reflect the agencies commitment to the IMP and at minimum include the areas were each agency has management authority and their mission.

Section	Page	Comment
2.4.1.2,3	26-32	Information from this section appears to be pasted from documents that related to specific subbasins. It should reflect the agencies commitment to the IMP and at minimum include the areas were each agency has management authority and their

		mission. Writing, grammar etc. needs work. **Few specific comments are provided because this should be between GEI and each agency it would be wise to contact each agency specifically about their section.**
2.4.2 not numbered correctly in draft	33	**This is entirely inadequate.** The protections that are inplace to protect fish and wildlife are vast. The clean water act, Endangered species act, the Powers Act, mitigation land holdings, wilderness areas, game preserves, water, air, land regulations, codes, and laws, federal, state and tribe, codes, practices, regulations, laws, etc. This section could be increased by pulling information from the other sections that precede this one and placing it under this heading. It would be possible to add 20 pages here but every effort should be made to list the title, the agency, and a very brief explanation on how it protects fish, wildlife, or their habitats. It is difficult to determine at what level to cut this off but it is important information and **the current two paragraphs is not even close.** One of the most important items is to identify all the wildlife areas, preserves, and game management areas and include name, legal location, acres, purpose, and agency within the IMP. All federal, state, and tribal legal protections for fish, wildlife, and their habitat including the law and parameters associated with it. The best contact for this would be (Mark Bagdovich-USFWS for federal items, Mimi Wainwright-WDOE for state environmental regs. and laws the ad-hoc technical committee especially the wildlife folks for protected, preserve, and mitigation lands).
2.4.3,4,5	33-39	**This is so far the strongest part of the subbasin plan good job**.
Fig 2.4	34	This is one of the better pictures but it could use some work to accurately convey the data. Is it possible to update this for 2004? The icon pile at Grand Coulee Dam is not informative would it be possible to move icons to the location of primary work for example 199001800 would primarily be located along the lower end of the San Poil River the only project that is working at the dam currently is the Chief Joseph Kokannee enhancement project (199501100). Would it be possible to apply wildlife and fisheries rather than habitat and hatcheries? The Colville Tribal Hatchery is located downstream of Chief Joseph Dam but stocks all of its fish in the IMP but the location of the hatchery and project do not appear on the map. 21034 is funded but not on map, 199506700 should be east of San Poil River, 199404300 should be near Colville, Kettle river confluences, 199500900 should be between Colville and Spokane river confluences. 199502700 should be located just below Canada on Mainstem project 200103100 is not listed in the inventory appendix
Fig 2.4	34	A new section should be added that identifies the important of

		ecological function and processes. We have talked a lot about ecosystem planning but the current plan never really addresses the issue. Many of the over lap items are included in the secondary impacts but this is written so it pertains only to wildlife. Habitat improvements to reduce road densities, improve land use practices, protect riparian habitats all provide dual fish and wildlife benefits throughout this document a number of opportunities exist to combine this information a bring the importance of this synergy out. **Some wording for this section as a starting point was supplied through tracked changes but it is just as important to highlight these items throughout the rest of this plan.**
Figure 2.5 and Figure 2.6	38-39	These figures according to the text provide the same information in 2 different ways. It might be easier to link-up the limiting factors and implementation information using text or a table that places specific projects into specific categories. Physical habitat quality items should include water quality because you use the same strategies. Water quantity and habitat quantity all involve conservation easements purchase, this should also address the passage issue. Population management should include hatcheries, competition and disease issues. Research monitoring and evaluation includes lack of data, no data, or specific data related activities. Enforcement outreach and education could be combined, and planning, coordination would stand alone. So categories for; 1) habitat quantity, 2) habitat quality, 3) population management, 4) RM&E, 5) Enforcement and education, 6) Planning and Coordination. The fewer categories the better it is to be able to tell the story and consolidate information for comparison. Both figures could be combined into one figure with the above categories easily and these used for comparing to the management plan priorities.
2.5	40-44	This reads and is write well therefore no tracked changes comments were provided. However, the Colville Tribes have goal especially for fisheries that may not be in alignment with Bull Trout recovery efforts in Northeast Washington. For example, the San Poil or Rufus Woods subbasins should not be included in recovery efforts, as no information exists on historical use. The extremely cold water needed for bull trout was unlikely to exist in these subbasins even historically. If you want more information, on the Colville Tribes fisheries goals contact John Arterburn.
Section	Page	Comment
2.6	45	This should include a reference to the inventory spreadsheet for non-BPA funded projects. Specific comments were sent by tracked changes. Changes reflect the use of BPA responsibility criteria in the prioritization process at the subbasin level.
2.7	45	The goals listed in section 2.5 for bull trout and other endangered

		species should be moved and added to this section along with specific water quality goals for CWA. The goals for each management agency with authority in a specific subbasin should be placed after the councils goals in section 2.5? This approach would combine ESA and recovery goals together and put agency, council and non-listed goals together.
2.8	45-46	Some minor grammatical and writing issues specific comments sent by tracked changes.
3.1	4-5	Added San Poil River but a paragraph could be written on historic use but did not have the information ask Alison Squire. Added additional historic information from Colville Tribes on Kettle Falls Fishery as this seemed slanted toward the Spokane that was a secondary fishery to the Kettle Falls fishery. Also added information about historic wide spread use of the resource by native people. Specific comments were sent by tracked changes.
3.2.5	7	Added information about redbands, exotic species, and non-native species to separate the stream and reservoir issues. Specific comments were sent by tracked changes.
3.2.6	7	Added information about historic Chinook use and current habitat availability. Added information about impacts to resident fish from Chief Josephs Dam. Put in lake and stream information about species and put sentence in to address non-salmonid species issues. Specific comments were sent by tracked changes.
Section 3	All	Looks and reads better than most other sections but is short. The information contained in the spreadsheets used to get QHA output should be included in the appendix and referred to especially for project level detail.

Section	Page	Comment
2.4.1.2,3	26-32	Information from this section appears to be pasted from documents that related to specific subbasins. It should reflect the agencies commitment to the IMP and at minimum include the areas were each agency has management authority and their mission. Writing, grammar etc. needs work. **Few specific comments are provided because this should be between GEI and each agency it would be wise to contact each agency specifically about their section.**
2.4.2 not numbered correctly in draft	33	**This is entirely inadequate.** The protections that are inplace to protect fish and wildlife are vast. The clean water act, Endangered species act, the Powers Act, mitigation land holdings, wilderness areas, game preserves, water, air, land regulations, codes, and laws, federal, state and tribe, codes, practices, regulations, laws, etc. This section could be increased by pulling information from the other sections that precede this one and placing it under this heading. It would be possible to add 20 pages here but every effort should be made to list the title, the agency, and a very brief

		explanation on how it protects fish, wildlife, or their habitats. It is difficult to determine at what level to cut this off but it is important information and **the current two paragraphs is not even close.** One of the most important items is to identify all the wildlife areas, preserves, and game management areas and include name, legal location, acres, purpose, and agency within the IMP. All federal, state, and tribal legal protections for fish, wildlife, and their habitat including the law and parameters associated with it. The best contact for this would be (Mark Bagdovich-USFWS for federal items, Mimi Wainwright-WDOE for state environmental regs. and laws the ad-hoc technical committee especially the wildlife folks for protected, preserve, and mitigation lands).
2.4.3,4,5	33-39	**This is so far the strongest part of the subbasin plan good job**.
Fig 2.4	34	This is one of the better pictures but it could use some work to accurately convey the data. Is it possible to update this for 2004? The icon pile at Grand Coulee Dam is not informative would it be possible to move icons to the location of primary work for example 199001800 would primarily be located along the lower end of the San Poil River the only project that is working at the dam currently is the Chief Joseph Kokannee enhancement project (199501100). Would it be possible to apply wildlife and fisheries rather than habitat and hatcheries? The Colville Tribal Hatchery is located downstream of Chief Joseph Dam but stocks all of its fish in the IMP but the location of the hatchery and project do not appear on the map. 21034 is funded but not on map, 199506700 should be east of San Poil River, 199404300 should be near Colville, Kettle river confluences, 199500900 should be between Colville and Spokane river confluences. 199502700 should be located just below Canada on Mainstem project 200103100 is not listed in the inventory appendix
Fig 2.4	34	A new section should be added that identifies the important of ecological function and processes. We have talked a lot about ecosystem planning but the current plan never really addresses the issue. Many of the over lap items are included in the secondary impacts but this is written so it pertains only to wildlife. Habitat improvements to reduce road densities, improve land use practices, protect riparian habitats all provide dual fish and wildlife benefits throughout this document a number of opportunities exist to combine this information a bring the importance of this synergy out. **Some wording for this section as a starting point was supplied through tracked changes but it is just as important to highlight these items throughout the rest of this plan.**
Figure 2.5	38-	These figures according to the text provide the same information

and Figure 2.6	39	in 2 different ways. It might be easier to link-up the limiting factors and implementation information using text or a table that places specific projects into specific categories. Physical habitat quality items should include water quality because you use the same strategies. Water quantity and habitat quantity all involve conservation easements purchase, this should also address the passage issue. Population management should include hatcheries, competition and disease issues. Research monitoring and evaluation includes lack of data, no data, or specific data related activities. Enforcement outreach and education could be combined, and planning, coordination would stand alone. So categories for; 1) habitat quantity, 2) habitat quality, 3) population management, 4) RM&E, 5) Enforcement and education, 6) Planning and Coordination. The fewer categories the better it is to be able to tell the story and consolidate information for comparison. Both figures could be combined into one figure with the above categories easily and these used for comparing to the management plan priorities.
2.5	40-44	This reads and is write well therefore no tracked changes comments were provided. However, the Colville Tribes have goal especially for fisheries that may not be in alignment with Bull Trout recovery efforts in Northeast Washington. For example, the San Poil or Rufus Woods subbasins should not be included in recovery efforts, as no information exists on historical use. The extremely cold water needed for bull trout was unlikely to exist in these subbasins even historically. If you want more information, on the Colville Tribes fisheries goals contact John Arterburn.

Rufus Woods Subbasin

Section	Page	Comment
45.2	4	Needs a little something about the tributaries and lakes this is a whole subbasin not one lake. Specific comments submitted using tracked changes.
4.5.2.2	4	Coyote Creek likely had historic anadromous fish but not many. Specific comments submitted using tracked changes.
45.2.6	8	Might want to check the campground information with Bob at ACOE I'm not the expert. The Colville Tribes have access points but it is important to point out that recent increases in recreational use have resulted in impacts and conflicts.
Section	Page	Comment
45.2.6	8	Loss of passage at Chief Joseph dam had impacts to resident fish and wildlife as well. Specific comments supplied using tracked changes.
45.2.6	8	Added some specific information on road densities. The land use information is lacking overall and the Colville Tribes will send some specific information for the Colville Reservation for Forest cover, Road Density, zoning, and Land ownership. The

		information should be used in the Sanpoil, and Upper Columbia subbasins as well. This information will be sent as a separate attachment. We hope that this will provide information to improve this section and should be considered in addition to specific comments sent by tracked changes.
46.1.1	4	Added specific language about introduced fish from entrainment.
46.1.2	4	The white fish in the Nespelem are *Prosopium williamsoni*
Table 46.1	5	Pumpkinseed and Largemouth Bass are known to exist in the Lake Rufus Woods Subbasin (Arterburn 2003)
46.3	6	Add information about species life histories (i.e. full distribution, physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section.
46.3.1	6-7	Added specific information in tracked changes about spring Chinook.
46.3.2	7	Inserted lake elevation words
46.3.3	7-8	Inserted information about regulations and made several word choice and grammar corrections. Improved language about future research. Changes were sent by tracked changes.
46.4	8	Add information about species life histories (i.e. full distribution, physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section.
Section	Page	Comment
46.4.1	8	Cleaned up the writing and deleted some redundancy see specific tracked changes comments.
46.4.2	9-10	Added information about Buffalo Lake Kokanee. See Tracked changes Comments for specific information.
46.4.3	10	Added information to correct error in the regulations and deleted

		redundancies. See tracked changes for specific information.
46.5	10	Add information about species life histories (i.e. full distribution, physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section.
46.5.1	11	Word smithing
46.5.2	11	Corrected language on brook trout introductions and broodstock and reduced redundancies. See specific Tracked changes comments.
46.5.3	11	Improved regulation language to correct inconsistencies and false statements specific changes are included in tracked changes and are from (WDFW 2003 and CCT 2004).
46.6	12	Add information about species life histories (i.e. full distribution, physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section.
46.6.1	12-13	Several small changes to word etc. see tracked changes for specific information.
46.6.2	13	Added information to correct hatchery stock practice information and to give credit to stakeholders involved in work on Lake Rufus Woods. Added information about tributary and lakes stocked that are also in the subbasin.
Section	Page	
46.6.3	NEW	Added section on Current management. Current management allows for the take of 2 fish on Rufus Woods. Buffalo Lake has a 5 fish limit but only allows for the harvest of 1 fish over 20" with a limited season. Tribal members have no season of bag limit. Focus of management needs to include managing people and access as the popularity of the Lake Rufus Woods fishery becomes increasingly popular. **See extensive addition in tracked**

		changes.
46.7	13	Add information about species life histories (i.e. full distribution, physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section.
46.7.1	14	Looks Good.
46.7.2	14-15	Changed some wording and reduced redundancy see specific comments sent using tracked
46.7.2	15	Delete paragraph break.
46.8.1	16	Insert other in Nespelem River and tributaries section title and delete other form Lakes title. Text about the southwest plateau and alkalinity is not an issue for lake Rufus Woods subbasin it is a major issue for the Columbia Cascade Province in the Okanogan subbasin.
46.8.2	17	Looks good
46.9.1	18	Insert other in Nespelem River and tributaries section title.
46.9.2	19-21	Text about the southwest plateau and alkalinity is not an issue for lake Rufus Woods subbasin it is a major issue for the Columbia Cascade Province in the Okanogan subbasin. Made several wording changes see tracked changes for specific changes and reduced redundancy.
46.9.3	21	Looks good
46.10	22	Oxygen was used in the QHA specifically on the Mainstem reaches as a variable for dissolved gas, not just oxygen. In most/ all cases this category came up as a limiting factor because TDG was an issue I'm not sure it ever came up as a oxygen issue specifically. Suggested changes were sent by tracked changes.
Section	Page	Comment
46.10.1	22-23	The QHA reference section were treated differently in this subbasin than others and the token reference condition set at optimal was not used that is why the list of not optimal habitats is so long. Specific changes were sent in by tracked changes.
46.10.2	24	Inserted lanaguage that cautions against putting to much emphasis on QHA output due to limitations in interpretation. High ranking habitats and locations may not represent the habitats that would produce the greatest benefit for the focal species, were the focal species in abundant, and may represent areas were data are lacking or where additional data would

		result in a substantially different output.
46.10.3	25-31	Inserted specific comments in tracked changes on the likelihood of increasing brook trout production if habitat restoration or protection occurs. **A discussion of confidence scores is needed. Levels of data confidence were captured by inserting a 0=unknown, 1=speculative, 2=expert opinion, and 3=well documented. Variable ratings of confidence were all left at a rating of 1 because they were not rated. This makes the maximum score a reach could receive 0.67 based upon how the model calculated the confidence. This rating had three categories of possible scores 0.22 would be a no data category, scores from 0.23-.45 would be a category of some data gaps exist, and confidence ratings above .46 indicate that sufficient data currently exists. Specific tracked changes comments were recorded based upon this basic premise. Specific comments were included in tracked changes.** Added information about establishing core areas for restoration in the Nespelem River watershed.
46.10.4	31-35	Kokanee do not traditionally rear in streams they only spawn there. Oxygen levels are not an issue but TDG is a major issue and it needs to be addressed as such. **A discussion of confidence scores is needed. Levels of data confidence were captured by inserting a 0=unknown, 1=speculative, 2=expert opinion, and 3=well documented. Variable ratings of confidence were all left at a rating of 1 because they were not rated. This makes the maximum score a reach could receive 0.67 based upon how the model calculated the confidence. This rating had three categories of possible scores 0.22 would be a no data category, scores from 0.23-.45 would be a category of some data gaps exist, and confidence ratings above .46 indicate that sufficient data currently exists. Specific tracked changes comments were recorded based upon this basic premise. Specific comments were included in tracked changes.** Added information on protections needed.
Section	Page	Comment
46.10.5	35-39	**A discussion of confidence scores is needed. Levels of data confidence were captured by inserting a 0=unknown, 1=speculative, 2=expert opinion, and 3=well documented. Variable ratings of confidence were all left at a rating of 1 because they were not rated. This makes the maximum score a reach could receive 0.67 based upon how the model calculated the confidence. This rating had three categories of possible scores 0.22 would be a no data category, scores from 0.23-.45 would be a category of some data gaps exist, and confidence ratings above .46 indicate that sufficient data currently exists. Specific tracked changes comments were**

		recorded based upon this basic premise. Specific comments were included in tracked changes. Added information on lake and reservoir fisheries and stream habitats and how they might be managed for the benefit of all the people in the pacific northwest.
46.11	40-41	**I'm not sure that the current information contained in this section represents the intent of the guide to subbasin planning. Headwater habitats should be managed to restore/protect habitat and reintroduce/restore native fish. The middle section of the Nespelem River should be managed for brook trout and rainbow trout through hatchery supplementation for harvest production using genetic stocks that would have minimal negative impacts (i.e. triploids, brook trout). The lower Nespelem River and Coyote Creek should be enhanced and protected for adfluvial and anadromous spawning and rearing. The Mainstem Columbia River reaches (Lake Rufus woods should be managed to continue developing the trophy rainbow trout fishery using triploid stocks and enhanced to promote opportunities for adfluvial and anadromous fish restoration/reintroduction. Lake habitats and populations should continue to be managed by the Colville Tribes to provide subsistence and recreation harvest opportunities for the species best suited for the habitat as partial mitigation for anadromous and resident fish losses resulting from the construction and operation of the FCRHS. This would be one way to interpret and synthesis results that would provide focus and direction. I'm certain that there are many ways to approach this therefore no specific comments were included in tracked changes as the authors of this document will have to determine what their synthesis is.**
47.1.1.2	4	Added information on the Colville Tribes vision in tracked changes. **Additional information in the vision of each agency would be helpful to provide context about opposing views however this will require GEI to contact each agency for this information.**
Section	Page	Comment
47.2	4	**Existing and imminent protections in my mind would relate not only to endangered species but federal water quality in the CWA and other environmental protections. State and tribal protections for land and water wilderness areas, wildlife areas, wild/scenic rivers, ETC. this could go on and on but what is provided in this draft is lacking badly. No specific comments were provided because decisions need to be made on what is going to be used. For example the Berg Ranch is a piece of land that has been set aside by the Colville Tribes and BPA as mitigation lands in the Rufus Woods**

		subbasin and these lands are managed for wildlife benefits and this in my mind would constitute an existing protection. No specific comments provided.
47.3	4	**There appears to be some confusion here the Kalispel Tribes have a project to collect information about fish in the blocked areas called the Joint Stock Assessment Project (JSAP) the USGS has conducted some work on the distributions of fish in the Columbia River Basin and specifically done work on the Gas Bubble disease issue in Lake Rufus Woods. I'm not sure this is clear. Perhaps GEI should contact Joe Marony of the Kalispel Tribes and Dave Vendetti at USGS on this matter and clarify the information so that there is no confusion. No specific comments provided.**
47.3.1.1	4-6	The notes do not appear to be germane to the topic. Suggest deleting. The detail here appears to be a bit excessive or perhaps this is correct and everything else is way to superficial. The CJKE project is working throughout the Blocked area and much of the work is mostly aimed at entrainment issues this should be worked on to make it come out as the point. **My problem with reviewing this section is that it is very inconsistent and it is hard to grasp what direction or point the author is trying to make.**
47.3.1.2	6	The ColvilleTribal Hatchery stocks streams in the Rufus Woods subbasin as well. Specific comments provided in tracked changes format.
47.3.2.1	6	Provided text and wording changes to clarify and correct activities and correct tense and verb usage. See tracked changes comments for specifics.
47.3.2.3	6	**Made specific changes to correct their sphere of influence. Contact Craig Sprankel at Grand Coulee Dam for specific information about Bureau of Reclamation.**
47.3.2.4	7	**There appears to be some confusion here the Kalispel Tribes have a project to collect information about fish in the blocked areas called the Joint Stock Assessment Project (JSAP) the USGS has conducted some work on the distributions of fish in the Columbia River Basin and specifically done work on the Gas Bubble disease issue in Lake Rufus Woods. I'm not sure this is clear. Perhaps GEI should contact Joe Marony of the Kalispel Tribes and Dave Vendetti at USGS on this matter and clarify the information so that there is no confusion. Specific tracked changes comments provided but might need to be reorganized.**
Section	Page	Comment
47.4	7	Provided specific changes for additional information to set context for activities.
47.4.1	7-9	**The text talks about seven projects in the Rufus Woods Subbasin. Only 2 are listed as funded by BPA and NPCC**

		(CJKE, and Colville Tribal hatchery). The Tribe Funded the following fish work independently: **1) Columbia River Fish Farm RBT purchase** **2) Battel anadromous fish spawning habitat study** **3) Fish passage feasibility Study** **I am not sure of any other work that has taken place in this subbasin other than the USGS gas bubble disease study.** **Matt has aquired some Land in the Rufus Woods Subbasin as part of his project.** **ACOE and the Colville Tribes have been mitigating for the 10-foot pool raise through the Chief Joseph Dam Wildlife Mitigation project. If these are the seven projects and I can't think of anything that has been left out other than perhaps some planning activities or recurring items like enforcement. This would provide a much different graph than the one in Figure 47.1 with Indirect Mitigation or hatchery supplementation being 28%, Research, monitoring and evaluation being 57%, Direct wildlife mitigation or Habitat quantity being 28% The main point is that I have no idea how you got seven projects to fit into a pie with eight wedges this is impossible not to mention how you could get different percentages. The idea of outlining how the funded activities line-up is important!!!!! It would be nice to assign the specific strategies that the subbasin work teams came-up with to a category and identify how the current activities line-up with the proposed plan but showing the inventory information in two different ways is redundant and confusing. If you used the data from the appendix H as this information is just plan wrong and previous comments have been sent that specifically recommended changes that have not taken place (i.e. several proposed projects are listed from the provincial review that occurred almost three years ago and were never funded or recommended and definitely never implemented is just one example of why this information is incorrect).** The basic idea for this section is good but it needs some serious attention prior to this plan being complete or acceptable. No specific comments were sent because the data that is being used was not provided. If comments are to be made then provide the data that is being used to make the graphs and charts and provide the methodology being used to reach the conclusions. The current work is in no way scientifically defensible.
47.4.2	9-10	**The lack of any action is a very valid point** but it says that the

		Technical Coordination Group provided this jewel. I know that I have not been to a meeting when this was talked about? I would be glad to work with you to augment this information if you would like. All you have to do is give me a Call at (509)-422-7424 or send me an E-mail at john.Arterburn@colvilletribes.com and let me know specifically what information you are wanting. Specific comments were not sent because it was unclear what was needed.

San Poil Subbasin

Section	Page	Comment
37.1	4	Looks Good.
37.2.1	4	It is a good idea to use standard measures (i.e. all meteric or all standard) mixing measures makes the document read poorly.
37.2.2 to 37.2.7	4-7	Looks Good.
37.2.7	8	Provided specific comments to list the areas were road densities are highest and drainages containing the greatest number of road crossings.
37.2.8	10	I'm not sure the map adds much information that cannot be adequately conveyed by the text. However additional information that links the erosive nature of area soils to the flowing water systems would also be of value. Soils in the San Poil River basin are mostly highly erodible types and once exposed are easily dislodged and do not contain enough nutrients for vegetation to colonize rapidly. Specific comments were provided in tracked changes.
Fig 37.4	11	Consider deleting unless this is expanded to identify highly erodible sites throughout the basin. A person wanting to know were the shoreline of Lake Roosevelt is in the San Poil subbasin can use any of the other maps that are already included.
Section	Page	Comment
38.1	4	Looks good.
Table 38.1.	4	Formating issues with superscripted word "known" under a couple of fish and font is different then in other sections throughout the table. Made superscript changes in tracked changes.
38.1.2	5	Westslope cutthroat are native to areas of the Westslope of the Rocky Mountains and the Lake Chelan area in Washington State which was the site of the very first hatchery in the State of Washington. Many areas were stocked from this production using genetically pure westslope cutthroat trout and many of the isolated populations that exist in the mid and upper Columbia Basin are naturalized remnants of these early stocking efforts making it hard to delineate native form naturalized populations. However areas were these fish continue to exist obviously have

		habitat conditions well suited to westslope cutthroat trout. Joe Foster with WDFW region 2 out of Ephrata could probably give you additional information on this and some references. Added specific language about Redband trout to this section and modified wording for the remaining paragraph for other fish species. Specific comments were included in tracked changes format.
38.1.2	5-6	See comments above regarding westslope cutthroat trout. Efforts to change anoxic conditions in small lakes have as yet been unsuccessful but efforts continue. Specific wording changes were included in tracked changes.
38.1.3	6	The wording in the second paragraph is very awkward and difficult to read. Added information about predator stocking. Reference of stomach sample data from exotic species should be readily availbile in the liturature but I did not have any close by. Deanne Pavlik of the Spokane Tribes probably has some information on walleye, and smallmouth bass consumption of salmonids that could be used to make the link between these introduced species and predation on salmonids for Lake Roosevelt.
38.2	6	Looks good.
38.3	6	Add information about species life histories (i.e. full distribution, physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section. Added specific information in tracked changes about spring Chinook.
Section	Page	Comment
38.3.1 to 38.3.2	6-9	This is some good stuff here don't change a thing.
38.3.3	9-10	Regulations in the San Poil subbasin are complex and require considerable focus to decipher. Specific information was provided in tracked changes format to correct errors in the regulation that were included in the 3rd draft. It is a legal matter that these regulations be correct. Added stocking information for the Colville Reservation. Wording changes and verb tense issues were also corrected but this section needs some work by the technical writer without changing the meaning.
38.4	10	Add information about species life histories (i.e. full distribution,

		physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section. Added specific information in tracked changes about spring Chinook.
38.4.1	10-11	Added information as to way previous post dam stocking efforts failed to return fish to the San Poil River and deleted unneeded information. Specific comments were supplied in tracked changes format
38.4.2	11	Deleted wordiness and did some word smithing. See Tracked changes Comments for specific information.
38.4.3	11-12	Looks Good.
38.5	12	Add information about species life histories (i.e. full distribution, physical habitat needs, physiological requirements, merestic measures, spawning requirements, rearing requirements etc.) This information is readily available in many texts such as fishes of Washington which has recently been updated and re-released, Native Trout of Western North American by Behnke among others I'm not looking for a ton of information but enough to relate the habitat information to benefit this species. This is all part of the logic path and making the links as to why we are doing what we are, from a scientific basis. This is critical information and should be listed for each focal species and would best fit in this section.
Section	Page	Comments
38.5.1-38.4.4	12	Looks Good only one minor word change. See specific Tracked changes comments.
38.6.1	13-14	**Outstanding, this is one, if not the best section in the entire document. If this document read cover to cover as effortlessly as this section we would have a dynamite product.**
38.6.2-37.7.2	14-16	Looks Good
38.7.3	16	What happened to the good writing this is back to the cut and paste editing. Made several small changes to words, grammar, etc. see tracked changes for specific information.
38.8	17	Oxygen was used in the QHA specifically on the Mainstem reaches as a variable for dissolved gas, not just oxygen. In most/ all cases this category came up as a limiting factor because TDG

		was an issue I'm not sure it ever came up as a oxygen issue specifically. Suggested changes were sent by tracked changes.
38.8.1	17	Looks Good
38.8.2	18-19	Multiple local habitat degradation issues have had a systemic impact on the San Poil River such as high sediment loads from tributary habitats that settle out in the main stem and result in increased width to depth ratios and additional sediment recruitment through lateral erosion. Other word smithing see tracked changes comments for specific information.
38.8.3	19-24	**A discussion of confidence scores is needed. Levels of data confidence were captured by inserting a 0=unknown, 1=speculative, 2=expert opinion, and 3=well documented. Variable ratings of confidence were all left at a rating of 1 because they were not rated. This makes the maximum score a reach could receive 0.67 based upon how the model calculated the confidence. This rating had three categories of possible scores 0 to 0.22 would be a no data category, scores from 0.23-.45 would be a category of some data gaps exist, and confidence ratings above .46 indicate that sufficient data currently exists. Specific tracked changes comments were recorded based upon this basic premise. Specific comments were included in tracked changes.** Added information about locations where data are good or bad. Added specific changes to the artificial production part of the discussion.
38.8.4	24-32	**A discussion of confidence scores is needed. Levels of data confidence were captured by inserting a 0=unknown, 1=speculative, 2=expert opinion, and 3=well documented. Variable ratings of confidence were all left at a rating of 1 because they were not rated. This makes the maximum score a reach could receive 0.67 based upon how the model calculated the confidence. This rating had three categories of possible scores 0 to 0.22 would be a no data category, scores from 0.23-.45 would be a category of some data gaps exist, and confidence ratings above .46 indicate that sufficient data currently exists. Specific tracked changes comments were recorded based upon this basic premise. Specific comments were included in tracked changes.** Added information about locations where data are good or bad. Added specific changes to the adfluvial discussion relating back to habitat needs. See specific tracked changes comments.
Section	Page	Comments
38.8.5	33-44	**A discussion of confidence scores is needed. Levels of data confidence were captured by inserting a 0=unknown, 1=speculative, 2=expert opinion, and 3=well documented. Variable ratings of confidence were all left at a rating of 1 because they were not rated. This makes the maximum score**

		a reach could receive 0.67 based upon how the model calculated the confidence. This rating had three categories of possible scores 0 to 0.22 would be a no data category, scores from 0.23-.45 would be a category of some data gaps exist, and confidence ratings above .46 indicate that sufficient data currently exists. Specific tracked changes comments were recorded based upon this basic premise. Specific comments were included in tracked changes. Added information about the number of reaches containing good or bad data and cautioned anyone attempting to use this data do so carefully. Added specific changes to the adfluvial discussion relating back to quality benefits that could have synergistic benefits and added information related to positive benefits of barriers for protecting rear redband populations. See specific tracked changes comments.
38.9	44	**I'm not sure that the current information contained in this section represents the intent of the guide to subbasin planning. Headwater habitats should be managed to restore/protect habitat especially related to reducing fine sediment, riparian protection, and increasing flow during low water periods. The mian-stem riverine section should focus on channel stability, habitat diversity, and flood plain connectivity. The inundated section should be managed to protect native fish from predation and over harvest. The main habitat issues in the San Poil relate to high water temperatures and fine sediment, protection and restoration of riparian areas is one of the best approaches to restoring both at the same time. Barriers are and will continue to be a major problem in the San Poil subbasin so continued funding of activities that improve fish passage are critical although caution should be used to avoid unintended negative impacts to pure redband populations. Life stage specific information related to habitat usage is lacking and could help direct restoration and protection efforts in the future. Continued efforts to artificial produce locally adapted brood stocks would help repair damage created by historic hatchery efforts and help to rebuild depressed stocks of native salmonids before it is necessary to list then under the ESA.**
Section	Page	Comment
39.1	4	Added word exclusively in front of Colville Tribes to emphasis the soverenty over fish and wildlife on the reservation.
39.1.1.1	4-5	The FCD section is very wordy. Reduced wordiness and redundancy to improve readability and reduce length. It was attempted to not change the context of points made simply to reduce unnecessary length. See specific comments in tracked changes format these changes are suggestions to improve this

		section but should be run through FCD as a courtesy. **Considerable information is contained that does not apply specifically to the San Poil subbasin it might be a good idea to place this information in the appropriate subbasin mostly the upper Columbia rather than duplicating all this information twice. Contact Lyle Gardener about specific changes or for more information.**
39.2	6	**Existing and imminent protections in my mind would relate not only to endangered species but federal water quality in the CWA and other environmental protections. State and tribal protections for land and water wilderness areas, wildlife areas, wild/scenic rivers, ETC. this could go on and on but what is provided in this draft is lacking badly. No specific comments were provided because decisions need to be made on what is going to be used. For example portions of the Hells Gate Preserve is located in the San Poil subbasin and been set aside by the Colville Tribes and BPA as a wildlife preserve, these lands are managed for wildlife benefits and this in my mind would constitute an existing protection. No specific comments provided.**
39.3	6	Added some detail about projects and how the activities should be categorized. The LRHIP is a native fish restoration project mainly.
39.3.1.1	6-7	Blue Creek was in of the original five streams and is located in the Spokane Subbasin. Several other wording changes. See specific comments in tracked changes.
Section	Page	Comments
Table 39.1	7-9	Changes wording in the header-see tracked changes comments for specific information. The list of projects in Table 39.1 are not all BPA funded but the table clearly indicates which ones are and are not. Many of the non-bpa funded activities are duplicated in the next section and this is unnecessary.
39.3.2.1	9	Delete duplication with Table 39.1 it is unnecessary to duplicate this information. See tracked changes for specific deletions.
39.3.2.2	10	This is ok
39.3.2.3	10	Delete duplication with Table 39.1 it is unnecessary to duplicate this information. See tracked changes for specific deletions.
39.3.2.4	10	Delete duplication with Table 39.1 it is unnecessary to duplicate this information. See tracked changes for specific deletions.
39.4.1	11	**The text talks about 16 projects in the Rufus Woods Subbasin. Only 2 are listed as funded by BPA and NPCC (LRHIP, and Colville Tribal hatchery). Several projects are funded through EPA clean water grants and a few from other sources. However the vast majority of this work would not occur if it were not for the LRHIP work funded by BPA that most other projects are connected to. Are we talking about**

		projects such as the LRHIP or task such as installing a fence or planting some trees? With 16 projects how do you get differences of 1% on your pie chart 1/16 is 6.25%? FCD, the forest service, WDFW, and the Colville Tribes are the only agencies working in the San Poil subbasin but 16 projects seems like a stretch and definitely does not address the Councils program and how it fits into the subbasin which is one project that is specifically funded in this subbasin. **Does this include planning activities or recurring items like enforcement. The idea of outlining how the <u>funded activities line-up is important!!!!!</u> It would be nice to assign the specific strategies that the subbasin work teams came-up with to a category and identify how the current activities line-up with the proposed plan but showing the inventory information in two different ways Figures 39.1 and 39.2 is redundant and confusing. If you used the data from the appendix H this information is just plan wrong and previous comments have been sent that specifically recommended changes that have not taken place (i.e. several proposed projects are listed from the provincial review that occurred almost three years ago and were never funded or recommended and definitely never implemented this is just one example of why this information is incorrect).** The basic idea for this section is good but it needs some serious attention prior to this plan being complete or acceptable. No specific comments were sent because the data that is being used was not provided. If comments are to be made then provide the data that is being used to make the graphs and charts and provide the methodology being used to reach the conclusions. The current work is in no way scientifically defensible. Perhaps GEI should consider listing fish and wildlife activities separately. More effort is needed to make this section link-up in a logical way to other parts of the plan. **The logic path is not remotely clear in this section but this section should be were it is the clearest.**
39.4.2	13	**The lack of any action is a very valid point** but it says that the Technical Coordination Group provided this jewel. I know that I have not been to a meeting when this was talked about? I would be glad to work with you to augment this information if you would like. All you have to do is give me a Call at (509)-422-7424 or send me an E-mail at john.Arterburn@colvilletribes.com and let me know specifically what information you are wanting.
47.2&50	All	**See specific comments related to ES.4 and ES tracked changes.** This section is being modified by the subbasin work teams and comments would not be germane to the section as presented in the 3rd draft because significant changes are still

		being make at the subbasin level and prioritization will greatly impact how this section is presented**. It has come to my attention that the final prioritization will be on Objectives only and this is not consistent with council guidance in the guide to subbasin planning.** I would strongly recommend that some level of prioritization be specified for strategies. I suggest using the numbers generated to provide High (2.34-3.0), Medium (1.67-2.33), and low (1-1.66) be assigned to the strategies so that when evaluating projects the relative value of a given approach can be ranked as to how well it aligns with the subbasin desires. It would be a shame if projects that plan work on low priority strategies for a highly ranked objective get funded ahead of projects that intend to complete high priority strategies for a lower priority objective.
43&51	All	**Delete these section.**
Appendix H	all	**This section has many projects listed multiple times and many proposed projects that were never implemented. Several listed "projects" are activities or tasks or funding mechanisms. Not sure what the usefulness of this information is but it should not be used for analysis until consistent data protocols are developed and the list is consistently used to provide useable data.**
Appendix A	All	**Looks Good no changes needed.**
Other items	All	Time to review additional information was too limited and therefore several sections did not get review.
		Upper Columbia Subbasin (tracked changes were not provided due to lack of review time)
Section	Page	Comments
29.2.1	4	In the text , major tributaries include add Big Sheep Creek. Include text that states "Waters of importance to the membership of the Colville Confederated Tribes include the following; North and South Twin lakes, Lake, Round Lake, LaFleur Lake, Nicholas Lake, Borgeau, Sugar, Elbow and on the North Half of the former reservation, Ellen, Pierre, Summit and
31.3.5	9	Rewrite second paragraph to include. "Current activities include 1) Ongoing annual monitoring of adult spawner escapement. 2) Continued research into genetic profiles of all known kokanee stocks. 3) Fine scale fish behavior study at Grand Coulee Third Powerplant using multi/split beam acoustic assessment of strobe light efficacy in conjunction with sonic tags and underwater hydrophones. Small-scale assessment of Grand Coulee Pumping/generating station entrainment into Banks Lake. 4) Conduct kokanee reintroduction (300,000) into Big Sheep Creek using Meadow Creek B. C. stocks.
31.3.5	10	Delete current paragraph and add the following. Critical project accomplishments include the determination that at a minimum,

		seven (7) kokanee stocks exist that may potentially inhabit lake Roosevelt, with another being examined. Entrainment was determined to be considerable at Grand Coulee Dam (LeCaire 1999). Over a forty two-month acoustic assessment, 1,655,000 fish targets entrained through Grand Coulee Dam; eighty five percent of the entrainment was determined to take place at the third power plant during power peaking operations (Sullivan, 1999). Natural production kokanee comprise a large portion of the existing fishery, however naturally producing tributary stocks seem to be in jeopardy. Strobe light efficacy testing reveals that their use as a deterrent may be more effective during night time however; stronger results are seen when higher currents flow through the fore bay during power-peaking operations. The project is beginning a reintroduction effort using an indigenous wild origin kokanee stock (Meadow Creek B. C.). Additional important data have and continue to be collected relating entrainment characteristics to project operations (flood control draft, power draft, power peaking, spring and summer flow augmentation, temperature profile mapping, current profiles, plankton populations and associated fore bay conditions).
31.3.8	12	Delete third and fourth paragraphs and rewrite to "Several thousand triploid steelhead were purchased and planted at various locations along the lake. The initial lot of triploids averaged 1.84 lbs each followed by another at 2.2 lbs each. An additional lot of 100,000 were purchased, reared and released into the lake. All of the large fish were tagged with floy tags, 10% of the small fish were tagged as well. Floy tag returns to EWU indicated that the triploids supported a winter fishery in 2000 and still recruit very well to the fishery."
30.4	10	Add at end of fourth paragraph. "Additional naturally producing red band rainbow populations have been documented in Barnaby Creek on National Forest Lands, in Meadow, Jack and Bridge Creeks on the Colville Indian Reservation."
30.1.4	10	Add verbage (paragraph): In 1999, the Colville Tribes Emergency Fish Relocation Project planted over 100,000 triploid steelhead from Columbia River Fish Farm via Trout Lodge. The planting supported an intensive winter fishery in the Kettle Falls area. Tripoid steelhead still recruit to the Lake Roosevelt fishery (Monte Miller, CCT. 2004).
30.5	12	In the paragraph relating to focal species "Kokanee" At the end of the para add " Another six kokanee stocks have been documented within the blocked area with the confirmed possible existence of another. Genetic analysis upon this stock is expected in 2005.
30.5.2	12	Second sentence; strike substantially. At end of third sentence add " Current beliefs hold that a great number of kokanee fall-out from upreservoir areas including the Arrow and Kootenai Lake

		systems. Correct LeClair to LeCaire.
30.10.1	19	Before last sentence add " The early limited entrainment study (1996-99) at Grand Coulee Dam monitored 14 of 24 turbine intakes and did not monitor entrainment during spill events that occurred during the study period. Sullivan, in her 1999 report on entrainment suggested that while spill for light show needs probably does not entrain fish, the act of spilling at greater depths that 4 inches does. She further stated that spill for flood control at depths greater than 4 inches will act as an attractant and will probably entrain fish. The entrainment question becomes further complicated when discussing water pumped through the Lake Roosevelt Pumping/generating station into Banks Lake. The appearance of walleye in Banks Lake followed the walleye establishment in Lake Roosevelt. Recent angler creel information from Banks lake confirm tagged rainbow trout from Lake Roosevelt caught in Banks Lake. Fish implanted with sonic tags were monitored by underwater hydrophones near the Banks Lake pumping station intakes during several time periods (LeCaire, Personal Communication 2004). A critical unknown for this province is the lack of complete entrainment information. We have an idea of how many fish entrain out of Lake Roosevelt but not into Lake Roosevelt. Many dams exist above Grand Coulee on major tributaries that include the Arrow lake system, the Kootenai Lake System, the Spokane and Pend O'Rielle River systems.
30.10.3	19	Human populations also heavily impact natural resources in the sub-basin. The Cities of Colville, Chewelah, Valley and Springdale with their municipal sewage systems also degrade water qualities in the sub basin.
30.10.3	22	Correct spelling of "perturbations"
30.11.	27	Correct spelling of Barnaby creek
	41	Correct spelling of Barnaby Creek
31.3.5	9&10	Rewrite second paragraph to include. "Current activities include: 1) Ongoing annual monitoring of adult spawner escapement. 2) Continued research into genetic profiles of all known kokanee stocks. 3) Fine scale fish behavior study at Grand Coulee Third Powerplant using multi/split beam acoustic assessment of strobe light efficacy in conjunction with sonic tags and underwater hydrophones. Small scale assessment of Grand Coulee Pumping/generating station entrainment into Banks Lake. 4) Conduct kokanee reintroduction (300,000) into Big Sheep Creek using Meadow Creek B. C. stocks. Critical project accomplishments include the determination that at a minimum, seven (7) kokanee stocks exist that may potentially inhabit lake Roosevelt, with another being examined.

		Entrainment was determined to be considerable at Grand Coulee Dam (LeCaire 1999). Over a forty two-month acoustic assessment, 1,655,000 fish targets entrained through Grand Coulee Dam; eighty five percent of the entrainment was determined to take place at the third power plant during power peaking operations (Sullivan, 1999). Natural production kokanee comprise a large portion of the existing fishery, however naturally producing tributary stocks seem to be in jeopardy. Strobe light efficacy testing reveals that their use as a deterrent may be more effective during night time however; stronger results are seen when higher currents flow through the fore bay during power-peaking operations. The project is beginning a reintroduction effort using an indigenous wild origin kokanee stock (Meadow Creek B. C.). Additional important data have and continue to be collected relating entrainment characteristics to project operations (flood control draft, power draft, power peaking, spring and summer flow augmentation, temperature profile mapping, current profiles, plankton populations and associated fore bay conditions).
29.1	5	As a long time resident of the Kettle Falls/Colville/Northport area I have a problem with the location of the Colville Hatchery being situated 50 miles North of Colville. The CBFWA map on page 5 has this location in error.

Thank you for the opportunity to review the 3rd draft of the IMP subbasin plan. It is regrettable that more time could not be provided for a complete review of this draft but the timeframe set by the NPCC was identified as being too short early in the process and we have been informed that no extensions would be made to the timeline and this is not within the control of GEI.

John E Arterburn
(509) 422-7424
cc: Alison Squire

Colville Confederated Tribes

Fish and Wildlife Department

P.O. Box 150 Nespelem, WA. 99155
(509) 634-2110/ FAX (509) 634-2126

TO: Subbasin planning work group. Please review the following comments on the 3rd draft of the upper Columbia subbasin working group.

FROM: Richard LeCaire, Fisheries Biologist III,
Fish and Wildlife Department,
Confederated Tribes of the Colville Reservation

Example format for comments:

Section	Page	Comment
29.2.1	4	In the text , major tributaries include add Big Sheep Creek. Include text that states "Waters of importance to the membership of the Colville Confederated Tribes include the following; North and South Twin lakes, Owhi Lake, Omak Lake, Buffalo Lake, Round Lake, LaFleur Lake, Nicholas Lake, Borgeau, Sugar, and on the North Half of the former reservation, Ellen, Elbow, Pierre, Summit and
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30.10.3	19	Human populations also heavily impact natural resources in the sub-basin. The Cities of Colville, Chewelah, Valley and Springdale with their municipal sewage systems also degrade water qualities in the sub basin.
30.10.3	22	Correct spelling of "perturbations"
30.11.	27	Correct spelling of Barnaby creek
30.11	29	Table 30.11 12 streams are identified as being in the table; only 11 are listed. The missing stream may be Bridge Creek on the Colville Indian Reservation
	41	Correct spelling of Barnaby Creek
31.3.5	9&10	Rewrite second paragraph to include. "Current activities include: 1) Ongoing annual monitoring of adult spawner escapement. 2) Continued research into genetic profiles of all known kokanee stocks. 3) Fine scale fish behavior study at Grand Coulee Third Powerplant using multi/split beam acoustic assessment of strobe light efficacy in conjunction with sonic tags and underwater hydrophones. Small scale assessment of Grand Coulee Pumping/generating station entrainment into Banks Lake. 4) Conduct kokanee reintroduction (300,000) into Big Sheep Creek using Meadow Creek B. C. stocks.
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29.1	5	As a long time resident of the Kettle Falls/Colville/Northport area I have a problem with the location of the Colville Hatchery being situated 50 miles North of Colville. The CBFWA map on page 5 has this location in error.

Sorry that the comments are not in chronological order. I kinda jumped from one section to another. All comments are numbered so it will fall into place.
Thanks
Richard

****

Comments on third draft San Poil Sub-basin Plans
Sheri Sears
Environmental Biologist III
Lake Roosevelt Habitat Improvement Project Manager

Section	Page	Comment
39.1	5	Local Government The Colville Confederated Tribes is a sovereign government and should be listed as well. Hydraulic, Shoreline, Forest Practice and Land Use Codes as well as Member and Non-member Fishing and Hunting Regulations and Water Quality Standards may affect fish and wildlife within the San Poil sub-basin. (This would also apply to the terrestrial section 41.1, numbers in this section of confusing goes back to 39.1. after 41.1)
39.3.1.1	6	Not all five streams were on the San Poil the sentence should read: "Five (5) streams were selected four (4) on the San Poil River and the fifth, Blue Creek, was on the Spokane Reservation in the Upper

		Columbia Sub-basin for planning and implementation of passage/habitat improvement based upon…..”
39.3.1.1	6	Wording needs to be changed again it was only 4 streams on the San Poil and one on the Spokane Reservation in the Upper Columbia Sub-basin
39.3.1.1	7	The second paragraph should have agriculture added to the list of previous and current land use activities within the Bridge Creek watershed. Agriculture and grazing are the two land uses that have had the greatest impact on Bridge Creek. Grazing has contributed significantly to the loss of vegetation along the riparian areas. Implementation on Bridge Creek actually began in December of 2003 not September.
39.3.1.1	7	“Associated Monitoring and Accomplishments” Pre- and post-implementation trapping, electro-shock population estimates, horizontal surveys and habitat surveys are conducted for two years before and after implementation. Long term monitoring of all locations where improvements have been done has been initiated using a rotational monitoring system similar to EMAP. Monitoring is to be done each year for current status with general trend monitoring of all watersheds. Pre-implementation surveys, trapping, and electro-shocking has been completed on Bridge Creek. A landowner agreement for protection of improvements was signed and a categorical exclusion was received from BPA and the Colville Tribes following public review, inter-disciplinary review, approval of all required Tribal permits, and approval of the report on the archaeological survey with shovel tests by the Tribal Historic Preservation Officer (THPO).
39.3.2	9	Remove section under “Notes:” replace with “All work on in-stream habitat improvements and bank stabilization on the 2550 feet of Bridge Creek starting at the new culvert at the Old State Road has been completed. Post implementation finish work included erosion matting, native grass seeding, and tree planting with willow, red osier dogwood, cottonwood, and pine. Design work for passage improvements reconnecting Bridge Creek to the San Poil River will be done in 2004 with implementation in 2005.”
39.3.2.2	10	Rochelle Habitat Enhancement is not a CCT LRHIP project.
39.3.2.4	11	“Notes” sentence doesn’t read right add the word “wetlands” before “above the North Fork of Hall Creek…..”
39.3.2.5	11	Annabelle Creek Culvert Replacement is not a LRHIP project. With the exception of the Rochelle and Annabelle Creek projects the Lake Roosevelt Habitat Improvement Project (LRHIP) did all other work and projects in this section. The non-BPA projects represent work done by the LRHI Project with grants and cooperative agreements outside of BPA funding to increase the amount of on the ground improvements that we were unable to accomplish with the limited BPA funding available.

39.4.2	13	I don't think this assessment is really accurate without seeing the database described in Section 2.4 it is difficult to make any corrections. However, it should be noted that the limiting factor for actions on the San Poil is limited funding from BPA. With additional funding considerably more work could be accomplished.

Comments from the Ferry County Natural Resource Board

Ferry County Natural Resource Board

350 East Deleware P.O. Box 115 Republic, WA 99166

March 15, 2003

Ginger Gillin
GEI Consultants, Inc.
127 East Front Street, Suite 216
Missoula, MT 59802

RE: Intermountain Province Subbasin Planning

We are very concerned with the proposed management plan and its implementation. Through Project Level Planning such as this, Interior Columbia Basin Ecosystem Management Project and all its science is being implemented without regulatory analysis.

In a Press Release dated 2/19/2003 it is indicated Federal Land Agencies will cooperatively implement the "***"The Interior Columbia Basin Strategy"*** to guide the efforts to update land use plans in a four-state region of eastern Oregon and Washington, Idaho and western Montana. Instead of a formal, basin-wide decision from the Project however, the regional decision makers elected to adopt a "strategy" of incorporating the science into ongoing land use planning efforts.

The Interior Columbia Basin Ecosystem Project (ICBEMP) was initiated in July 1993, when President Clinton directed the US Forest Service and Bureau of Land Management to "develop a scientifically sound and ecosystem-based strategy for management of eastside forest."

- In addition to the land management agencies the US Fish and Wildlife Service, NOAA-Fisheries and Environmental Protection Agency are working on ICBEMP
- The ICBEMP geographic area includes over 140 million acres in the Interior Columbia River Basin.
- Two draft environmental impact statements addressing management of these public lands were released in May of 1997 for public comment. Over 83,000 comments were received during the comment period.
- A combined Supplemental Draft EIS was released in May of 2000.

- A final EIS and Proposed Decision were released on December 15, 2000 initiating a public protest process that closed on January 16, 2001. **Seventy-four** protests on the final EIS and Proposed Decision were received. A Record of Decision was not issued and the Agencies evaluated various options on how to proceed. **Project Level Planning is the option being pursued.**

Our comments will be based upon 11 years of involvement and opposition to the Interior Columbia Basin Ecosystem Management Project. NOAA – National Marine Fisheries Service has used the Federal Caucus to implement Extreme Ecological Experiments. NOAA has engaged in these experiments to test hypotheses, used the Cumulative Risk Initiative performing numerical experiments based on theoretical survival improvements, including issues of experimental design, and an experimental framework. Implementation of a "Biological Opinion" was initiated in 1995 and is proposed to extend to the year 2012.

THE FEDERAL CAUCUS – IMPLEMENTING AGENCIES

- ARMY CORPS OF ENGINEERS
- BONNEVILLE POWER ADMINISTRATION
- BUREAU OF INDIAN AFFAIRS
- BUREAU OF LAND MANAGEMENT
- BUREAU OF RECLAMATION
- ENVIRONMENTAL PROTECTION AGENCY
- FISH AND WILDLIFE SERVICE
- FOREST SERVICE
- NATIONAL MARINE FISHERIES SERVICE

BASINWIDE SALMON RECOVERY STRATEGY- Being Implemented through Subbasin Planning

Area Affected – 144 Million Acres

Five States, Eight Groups of Counties,

Tribal Reservations

"ANNUAL" ESTIMATED COSTS

BUREAU OF RECLAMATION 1999

Economic Analysis

Draw Down 29 Federal Dam Reservoirs on Columbia River and All Tributaries – Flow Augmentation

- AGRICULTURAL PRODUCTION LOSSES - $100 Million - $200 Million
- LOSS TO RECREATION - $5 Million - $15 Million
- EMPLOYMENT LOSS – 2,000 TO 4,000 JOBS

- NAVIGATION LOSSES - $25 MILLION TO $75 MILLION

- LOST ELECTRICITY GENERATION - $0.5 **Billion** to $1 **Billion**

Document Quoted – US Bureau of Reclamation – Multi-Species Framework Project – 1999

Lands located in Ferry County are part of the 40 ***high restoration priority sub basins*** identified in the INTERIOR COLUMBIA BASIN ECOSYSTEM MANAGEMENT PROJECT.

ICBEMP science contains the following directives.

- *Landscape Restoration Priority* – The extent feasible within the physical, biological, and legal limits of forest management. (Colville Indian Reservation Draft EIS, Summary, February 2000, Page 4).
- Restoration of *landscape succession/disturbance regimes* (such as **fire, flood, windthrow, insects, and disease**) is the foundation of the strategy of ICBEMP.

Activities implementing this strategy would be first concentrated as near as possible to those isolated and economically specialized communities, which includes the north half of Ferry County and the Colville Indian Reservation.

Management emphasis will shift toward managing landscape processes to provide the most effective "fit" with the biophysical environment and associated pattern of *succession/disturbance regimes*. **(Fire, flood, windthrow, insects, and disease)** (ICBEMP Supplemental Draft EIS/Appendix 16/Page 16-9 Volume 2).

Private lands will also be affected not only by ICBEMP, but by The Multispecies Framework, the All H Papers, the Washington State Salmon Recovery Plan, development of habitat conservation plans, the Washington State Forest & Fish Report, Shorelines Management Guidelines and the National Fire Plan, all of which are being directed by NOAA National Marine Fisheries Service promulgating ICBEMP science. (Page 133 & 140/Chapter 4/ICBEMP Supplemental Draft EIS)

Interim Management Direction of the Eastside Ecosystem Management Strategy was adopted May 20, 1994 and revised 6/15/95. With these Eastside Screens in place, the basin timber harvest from agency lands fell by about **one billion board feet** during 1995-1997, causing the loss of 8,000 timber related jobs in two years. (Page 156/chapter 4/ICBEMP Supplemental Draft EIS)

The stated Purpose of ICBEMP is:

- Restore and maintain long-term ecosystem health and ecological integrity.

- Support economic and/or social needs of people, cultures, and communities, and provide sustainable and predictable levels of products and services.

(Page 10/Chapter 1/ICBEMP supplemental Draft EIS)

Issues related to Colville Indian Reservation:

- Maintenance of economic stability
- Protecting cultural values
- Federal Government Trust Responsibility mandating resource laws are consistent with a tribes' ability to protect their members, **to manage their own resources,** and to maintain themselves as distinct cultural and political entities.

The present management program of the Colville Indian Reservation has supplied a renewable, sustainable economic, cultural stability to the Colville Indian Reservation. Changing management directives of land use that will produce uncertainty for Indian Nations is against Treaty of Ghent 1814 (Page 210/Chapter2: Affected Environment, Volume 1)

Reducing the Animal Units per Month (AUM's) and reducing harvestable forest products will greatly influence the economic viability of the members of the Tribes as well as all citizens of Ferry County.

ICBEMP science stipulates the following:

- Harvest of timber would be postponed for 15 years on 16 Watershed Management Units (WMUs) determined to be in the "extreme" management sensitivity and 10 years on 25 WMUs determined to be in the "high" management sensitivity class.
- Harvest has also been deferred for 15 years in the Upper and Lower San Poil River Watershed Management units to reduce impacts on important wildlife corridor habitat.

In all deferred watersheds 20 percent or greater of the non-arterial road mileage would be closed to vehicle travel, with the highest priority for closure being in the 41 deferred watersheds.

- There will be a 50 percent general reduction in range use, reducing the current 60,924 AUM's to 30,462. This reduction includes withdrawal from commercial livestock grazing all WMU's identified as "extreme" and "high".

(Colville Indian Reservation Draft EIS Summary, February 2000, Page 10)

The documents prepared for the ICBEMP science (DEISs) indicate implementation of Alternative 4 (preferred) would result in 41 plants, 41 vertebrates and 45 invertebrate species with unfavorable outcomes and possible "extirpation". Prescribed fire from the National Fire Plan will destroy habitat and create an increase of smoke emissions.

We are opposed to the use of Subbasin Planning for the creation of habitat for designated threatened and endangered species. One of the most controversial provisions of the Endangered Species Act, 'critical habitat' is a category of protected land in which building and other activity can be limited or even barred to ensure the survival of rare plants and animals. Before designating habitat, the Fish & Wildlife Service is legally required to analyze the economic consequences for developers, property owners, cities and others who have an interest in the land. Until last year, nearly all those analyses had said creating critical habitat would have little to no economic effect. The Fish and Wildlife Service agreed that a new economic analysis was needed, citing a ***federal appeals court ruling in May that struck down protection of streamside habitat in New Mexico.***

The 10th Circuit Court of Appeals ruled that the process used to decide what lands to protect did not adequately analyze the financial effect on property owners and others who make a living from the land.

With the proposed Subbasin Plan, federal agencies are bypassing this requirement of Fish & Wildlife to analyze the financial effect on property owners.

Fish & Wildlife objectives contained in "***The Interior Columbia Basin Strategy***" (Press Release – December 12, 2000 – Summary of Key Components and Effects for the Final EIS Interior Columbia Basin Ecosystem Management Project – December 2000)

- Approximately 15.1 million acres of Riparian Conservation Areas to be identified using local information. No new management activities would be allowed in these areas unless they meet riparian health objectives.
- 7.1 million acres of aquatic subwatersheds are identified and proposed for aquatic restoration.
- 6.5 million acres of aquatic subwatersheds are identified and proposed for aquatic protection.
- 14 million acres of terrestrial watersheds are identified and proposed for restoration and protection.

We cannot find any economic analysis other than what is contained in ICBEMP Environmental Impact Statements.

Summary of Human Effects of Multispecies Framework

- A significant redistribution of economic value and wealth would occur.
- Declining role of resource-using activities (for example, agriculture, transportation, hydropower, and fishing).
- Flow augmentation of 1 million-acre feet annually for 10 years. This action is expected to result in a loss of recreation value of $5 to $15 million annually and costs to irrigated agriculture of $10 to $80 million annually. Flow augmentation is associated with agricultural production losses of $100 million to $200 million annually,

employment losses of 2,000 to 4,000 jobs annually, and personal income losses of $50 million to $100 million annually.

- Preliminary information from DREW shows that the value of Columbia River salmon in this fishery is $1 to $2 million of personal income annually.

Types of benefits quoted for these extreme ecological experiments of "***The Interior Columbia Basin Strategy***" are:

- A more even distribution of wealth
- Increased recreational opportunities associated with non-consumptive use (primarily viewing)

Existence values (values placed on preservation of species even if the value-holder never expects to consume, fish for, or view the species)

The cumulative effects of Project Level Planning of the nine federal agencies involved implementing ICBEMP science (which has not received a Record of Decision or Regulatory Analysis) is not being addressed. The cumulative effect of Project Level Planning drastically affects our economy, our culture, our heritage, our environment, our wildlife and our established property rights.

The riparian objectives and standards contained in Subbasin Planning are a direct threat to Riparian Water Rights, Prior Appropriation Water Rights and specifically property rights. We just recently commented on proposed rules being issued by BLM for grazing management. We include excerpts from our letter of opposition to these proposed rules.

[*Executive Order 12866, Regulatory Planning and Review* "The proposed regulatory changes would not adversely affect, in a material way, the economy...of State, local, or tribal governments or communities.

Implementation of the proposed rule *Section 4110.3-3 Implementing Changes in Active Use* - This section would phase in changes in active use of more than 10 per cent over a 5 year period pertaining to increases and decreases of grazing use...would provide time for gradual operational adjustments by grazing permittees or lessees **to lessen sudden adverse economic impacts that may arise from a reduction...**

- According to BLM report of 1997 – In 1987, the cash receipts from the 2.4 million cattle produced in the 13 Western States came to $9.2 billion; the 5.8 million sheep in these states came to $339 million. Half of those cattle and at least 40 percent of the sheep depend on public forage. On BLM land alone, more than 20,000 farmers and ranchers graze livestock on about 165 million acres.

Implementation of the proposed regulatory changes would definitely adversely affect the economy as noted in the Federal Register page 68460.

- The Internal Revenue Service recognizes a grazing permit on federal lands as a property right. In Shufflebarger v. Internal Revenue Service, 24 t.c. 980 (1955) the court held:
    - "... that the grazing of livestock on National Forests is to be regarded as a substantial, well-established, and indefinitely continuing part of the National Forest program; is not, according to our reading of the grazing regulations and the Forest Service manual, open to question... It seems to us abundantly clear that the statute and regulations contemplate that once the right to a fair and just allotment of grazing land has been acquired under the established procedures, that right, subject to some adjustment if it should become necessary for the protection of the range or for a more equitable distribution among preference holders, is to be regarded as an indefinitely continuing right".

As determined by the IRS, that "indefinitely continuing right" is taxed upon the death of the owner for the fair market value of the permit.

A recent court case *Hage v. United States* determined by Senior Judge Loren A. Smith stipulated...specific rejection of the opposition of the BLM and Forest Service that ranchers have no property rights on their grazing allotments...Although Judge Smith rejected the Hages' claim that they owned the surface estate of their grazing allotments, they do have private property rights, i.e., water rights...

Based upon these court cases, grazing on Federal land is a property right and reject the assumption grazing permits are a revocable license.

The statement under *4120.3-2 Cooperative Range Improvement Agreements* "The current regulations provide that the United States has title to new permanent structural range improvements" is in direct defiance of title 43 Chapter 8A Subchapter 1 Sec. 315c. Taylor Grazing Act June 28, 1934.

- Fences, wells, reservoirs, and other improvements; construction; permits; partition fences
    - No permit shall be issued which shall entitle the permittee to the use of such improvements constructed and owned by a prior occupant until the applicant has paid to such prior occupant the reasonable value of such improvements to be determined...

We refute the statement that the United States has title to improvements and therefore the proposition to share title to these improvements is beyond the intent of the law.

The proposed rule would include modifying the public participation requirements relating to some day-to-day grazing management matters... However, BLM grazing advisory boards were "sunset" on December 31, 1985, by FLPMA. (Federal Register 68455 Vol. 68). The Federal Land Policy and Management Act Title 43, Chapter 35, Subchapter IV, Sec.

1752 (d) states: ...in careful and considered consultation, cooperation and coordination with the **lessees, permittees, and landowners involved**...

From this statement, grazing management of allotments is not open to public participation.

These are just a few of the reasons we are adamantly opposed to the Proposed Action Alternative revising regulations for the administration of the grazing program and suggest any regulations being developed pertaining to public land grazing implement the original intent of the Law – Taylor Grazing Act, Federal Land Policy & Management Act and Public Rangelands Improvement Act.]

Implementing the "*Interior Columbia Basin Strategy*" through Project Level Planning will definitely result in the economic analysis predicted for annual estimated costs itemized by the Bureau of Reclamation 1999 – Multi-Species Framework.

We have petitioned the ICBEMP team as to our concerns of economic stability, custom and cultures of our peoples, and the threat to our heritage. The ICBEMP team has continually denied compliance with requirements of National Environmental Protection Act (NEPA), National Forest Policy Act (NFMA), Federal Land Planning Management Act (FLPMA) Regulatory Flexibility Act, Small Business Regulatory Enforcement and Fairness Act. The ICBEMP team contended the directives, objectives and standards for land management on 145 million acres of federal, state, tribal and private land is not a "rule" and is not subject to regulatory analysis requirements.

However, proposals contained for land management at the Subbasin level, will be a "rule" and are subject to regulatory analysis including economic analysis. Until such time economic and regulatory analysis has been completed, we are adamantly opposed to the Intermountain Province Subbasin Plan.

Respectfully Submitted,

Sharon Shumate

Sharon Shumate – Chairman
Ferry County Natural Resource Board

cc: Ferry County Commissioners
State Senator Bob Morton
State Representative Bob Sump
State Representative Cathy McMorris
Representative George Nethercutt
Senator Patty Murray
Senator Maria Cantwell
Intermountain Province Subbasin Planning – Spokane, Washington

Comments from Idaho Department of Fish and Game

State of Idaho
Department of Fish and Game
2750 Kathleen Avenue
Coeur d'Alene, Idaho 83814
Phone (208) 769-1414 FAX (208) 769-1418

March 23, 2004

M E M O R A N D U M

TO: **Ginger Gillen, GEI**

FROM: **Ned Horner, IDFG**

SUBJECT: **Comments on 3rd Draft of IMP Subbasin Plan, Coeur d'Alene Subbasin**

CC: **Gregg Servheen, Chip Corsi – IDFG**
Ron Peters, Coeur d'Alene Tribe

I have noted changes using bold italics for sections referenced by section and page number (I didn't want to try and send you track change version of the entire document). If you have any questions, please give me a call.

Section - 2 PROVINCE MANAGEMENT PLAN AND INVENTORY

Page 37, Section 2.4.3 Strategies Currently Being Implemented Through Existing Projects

The fish and wildlife projects in the IMP inventory were categorized by the limiting factors that the ***projects were*** designed to address. Many projects addressed more than one limiting factor. The categories used were:

8. **Indirect mitigation**
In some cases, limiting factors cannot be corrected directly, such as the ***cumulative impacts*** created by Grand Coulee Dam. ***Indirect mitigation*** is the category for projects designed to mitigate for these types of limiting factors. Hatcheries are the primary example. This category also includes modifying dam operations to make more fish habitat available.

As described in the section on the working hypothesis (above), the federal and federally licensed hydropower system created a wide range of direct, indirect, and secondary impacts on fish and wildlife. Some of these impacts cannot be directly mitigated. For example, dams create reservoirs that ***provide*** poor habitat for many species of native fish and wildlife. ***Attempts can be made to improve*** reservoir habitat, but they will never return to the flowing rivers that they once were, as long as the dams remain in place. Therefore, projects have been implemented to ***enhance*** fish and wildlife populations in spite of the existing limiting factors, rather than to try to eliminate the limiting factor directly. Hatcheries are an example of an indirect mitigation, ***replacing fish that were lost as a result of river inundation.***

Page 38-40, Section 2.4.3 - there is reference to "***the federal and federally licensed hydropower system***". Other places it refers to "the Federal Columbia River Power System (FCRPS)". We had this discussion with the Coeur d'Alene Tribe at the last Coeur d'Alene Work Team meeting and my understanding is that FCRPS is the term that should be used. The Coeur d'Alene Tribe would like to tie Avista dams into the Subbasin Plan process, but they are currently going through FERC relicensing with the Tribe fully involved in those negotiations.

Section – 3 AQUATIC RESOURCES IN THE INTERMOUNTAIN PROVINCE

Page 8, section 3.3.1, 2nd paragraph - "Fish are uniquely different from ***other*** wildlife and must be treated differently."

Page 8, last bullet item - "Use ***a*** tiered approach."

Page 9, TABLE 3.1 Focal Fish Species in the IMP – look for changes in ***bold italics***

Species	Subbasins	Reason for selection
Bull ***Trout***	Pend Oreille, Coeur d'Alene,	ESA listed, native species, indicator of ***environmental health***
Westslope Cutthroat Trout	Pend Oreille, Coeur d'Alene,	Potential ESA listed species, indicator of environmental health, native species
Kokanee	Pend Oreille, Coeur d'Alene, Spokane, Upper Columbia, Lake Rufus Woods, San Poil	Ecological significance, local significance, recreational value
Largemouth Bass	Pend Oreille, Spokane (Limited Geographic Area)	Cultural value (resident fish substitution), recreational value
Mountain Whitefish	Pend Oreille, Spokane	Ecological significance, native species, indicator of environmental health

Rainbow/***Redband Trout***	Spokane, Upper Columbia, San Poil, Lake Rufus Woods	Cultural value, recreational value, redband native species, commercial value, indicator of environmental health
White ***Sturgeon***	Upper Columbia, Lake Rufus Woods	Cultural value, ecological significance, native species, international significance
Burbot	Upper Columbia	Cultural value, native species
Chinook ***Salmon***	Lake Rufus Woods, San Poil, Upper Columbia, Spokane	Cultural significance, native species. Considered Tier 2, Reintroduction potential
Brook Trout	Lake Rufus Woods	Recreational value, resident fish substitution, subsistence value, habitat suitability
Lamprey	Lake Rufus Woods Upper Columbia, Spokane	Will be discussed in the narrative, fish passage for lamprey is of interest to the Tribes, native species

Section - 5 COEUR D'ALENE SUBBASIN OVERVIEW

Section – 5 COEUR D'ALENE SUBBASIN OVERVIEW

Page 4, Section 5.1, 2nd paragraph- There are references to Al Sholz stating that Spokane Falls was the **only** barrier to anadromous fish and that *"evidence suggests salmon or steelhead may have passed Spokane Falls in high flow years (personal communication Scholz, EWU*)."

I found the reference to anadromous fish presence above Spokane and Post Falls in section 6.7.1.1, page 37. The following paragraph provides justification for the statement in section 5.1: **Hydropower section** "A historical description of the Spokane River upstream of Spokane Falls and Post Falls prior to impoundment by Monroe Street Dam in 1889 and Post Falls Dam in 1906 is provided in Scholz et al. (1985). McDonald (1978 cited in Scholz et al. 1985) states "… salmon were able to get over the falls [Spokane Falls] at Spokane; at least up until the first dam was constructed [Monroe Street Dam in 1889], and to continue on to Coeur d' Alene Lake and all its tributaries." Scott (1968 cited in Scholz et al. 1985) reported "salmon would congregate by the thousands below Spokane Falls, awaiting an opportunity to push their way over the falls into the river above and form there into Coeur d' Alene Lake and its tributaries. … Some [salmon] got through the seething torrent [of Spokane Falls], others were destined for disappointment." None of these accounts indicate Post Falls was a natural barrier to fish migration."

This creates a very interesting situation. This is the first statement I have ever seen claiming anadromous fish were native to the Coeur d'Alene Subbasin above Spokane Falls. This new information is contrary to what is reported in Simpson and Wallace (1982). There is no present day fish evidence to suggest anadromous fish ever made it above the falls. There are no other accounts that I am aware of documenting salmon and steelhead utilizing tributaries of the Coeur

d'Alene system for spawning and rearing. Basically, statements by some person historically doesn't make it a fact – we need some evidence.

I suggest you re-incorporate some of the language used in the 2nd draft and suggest the following wording that will hopefully be acceptable to the Coeur d'Alene Tribe:

Prior to hydroelectric development on the Spokane River, Spokane Falls was ***a*** natural barrier to anadromous and resident fish migration in the Spokane River (Sholz et al. 1985). However, evidence suggests salmon or steelhead may have passed Spokane Falls in high flow years (personal communication Scholz, EWU). ***Post Falls located above Spokane Falls on the Spokane River formed a barrier to the post-glacial dispersal of fishes, such as the Pacific salmon and steelhead trout, from the lower Columbia River to the Coeur d' Alene Subbasin (Simpson and Wallace 1982).***

Page 5, Figure 5.1 – Check spelling of Coeur d'alene R. in middle of figure. ***Alene*** should be capitalized.

Page 19, Section 5.2.7 Major Land Ownership and Land Uses - All references to the "Water Resource Projects" have been deleted. Was this intentional?

Section - 6 COEUR D'ALENE SUBBASIN ASSESSMENT - AQUATIC

Page 4 - TABLE 6.1. Fishes of the Coeur d' Alene Subbasin – You still have the scientific name of westslope cutthroat spelled wrong. Should be ***Oncorhynchus*** (you are missing the "h"in chus, see spelling on rainbow, chinook and kokanee).

Page 7, Section 6.1.8, Chinook Salmon – An important sentence referencing chinook population management was deleted and replaced with a sentence that references chinook abundance estimates made at one point in time with hydroacoustics (Teuscher 2001 citation). An abundance estimate of 0 to 5.7 fish/chinook over 500 mm is data, but it doesn't really mean anything to the reader. Please insert the bolded, italic wording into the paragraph: " …..The management plan for chinook calls for a total annual stocking level of 70,000 chinook smolts with wild (approximately 40,000) and hatchery chinook (approximately 30,000) combined. ***Chinook salmon abundance is controlled to maintain kokanee abundance at a level that maintains a yield fishery for 10-11 inch kokanee and a limited trophy fishery for chinook salmon in the 3-18 pound range (IDFG Fisheries Management Plan 2001-2006).*** Chinook salmon provide an important component of the sport fishery of Coeur d' Alene Lake, but may have some detrimental effects on the native sport fishes through direct predation on juvenile westslope cutthroat or bull trout.

Page 9, Section 6.3, 3rd paragraph, first sentence – Need to ***delete the word "commonly***" in the sentence "Although dolly varden (*Salvelinus malma*), a close relative of bull trout, were ***commonly*** stocked…..".

Page 10, same paragraph as above, correct spelling of Coeur d'Alene in following sentence – "Upper Gildden Lake is the upper most headwater of Canyon Creek, one of the most heavily polluted tributaries from mining waste of the South Fork ***Couer d' Alene*** River."

Page 11 and 12, Section 6.3.3 Current Management – This section looks like it doubled in length with language suggesting artificial propagation is a viable option for bull trout recovery. This option has generally been viewed as a last resort by the scientific community. Suggest the following edits to the third paragraph on in this section:

"As mentioned in earlier sections, bull trout have had a limited stocking history and the restoration plans do not include artificial propagation. Instead USFWS emphasizes removal of limiting factors affecting bull trout and bull trout habitats (USFWS 2002). ***Artificial propagation as a restoration strategy is generally regarded as an option of last resort for bull trout recovery, due to genetic concerns and the difficulty with bull trout artificial propagation (Montana Bull Trout Scientific Group). A*** thorough analysis on the streams that are capable of harboring bull trout ***and a determination of the factors limiting bull trout*** will need to be done ***prior to considering artificial propagation as a recovery tool.***. Transplanting listed species must be authorized by the USFWS through a 10(a)(1)(A) recovery permit and must meet applicable State fish-handling and disease policies.

Efforts to recover bull trout in the wild may be difficult in the Coeur d' Alene Recovery Unit since ***some*** local populations of bull trout within the North Fork Coeur d' Alene River drainage and portions of the St. Joe River Subbasin are thought to be extirpated. In addition, numbers of bull trout in the upper portion of the St. Joe River drainage are limited. ***While*** bull trout exhibit a high degree of fidelity to natal streams (Spruell et al. 2000; Hvenegaard and Thera 2001) ***straying and refounding of bull trout populations are documented***

The findings of the Montana Bull Trout Scientific Group (MBTSG) ***explore*** the possible use of artificial propagation and transplantation. The Montana Bull Trout Scientific Group identified seven ***possible*** strategies for using artificially propagated fish, evaluated the strategies relative to recovery criteria and objectives, and provided recommendations ***(MBTSG 1996)***. The group also concluded that transplantation into areas where bull trout have been extirpated should be considered only after the causes of extirpation have been identified and corrected.

Currently, only one known local population in the St. Joe River may meet the level of 100 annual adult spawners suggested by Rieman and Allendorf (2001) to minimize the risk of inbreeding depression. The Coeur d' Alene Recovery Unit Team recommends the following: 1) identify and correct threats in the St. Joe River drainage to increase bull trout densities and allow for natural recolonization to occur within streams that have evidence of recruitment and consider an artificial propagation program only if a feasibility study indicates that such a program is the best option for recovery or to establish a genetic reserve, and 2) recognize that, even if threats are identified and corrected in the North Fork Coeur d' Alene River watershed, ***the probability of*** recolonization in the near future is ***low. A more thorough assessment of potential bull trout habitat is the basin is warranted. Researchers at the U.S. Forest Service Intermountain Research Station, Boise, Idaho, and others (Watson and Hillman 1997) have identified factors***

affection bull trout distribution and abundance that will likely be applicable in assessing suitable bull trout habitat.

Page 14, section 6.4.2 Current Status of Westslope Cutthroat Trout
- second paragraph – add the year 1988 to the sentence "Catch-and-release regulations were implemented in the upper St. Joe River above Prospector Creek ***in 1988*** and the number and size of cutthroat continued to increase."
-fourth paragraph – "moderately damaged" is not a term we have seen used. Suggest modification to the following sentence "Westslope cutthroat trout populations are believed to be at least moderately damaged resulting from the persistence of adverse conditions in lower elevation tributaries to Coeur d' Alene Lake. Moderately damaged is defined ***by the Coeur d'Alene Tribe*** as the average spawning escapements fall between the minimum viable population and the number of adults needed to produce 50 percent of the carrying capacity of the stream environment.

Page 19, Section 6.5.2, Current Status of Kokanee Salmon, last paragraph
Referencing some very specific data on kokanee age class abundance in part of the lake in 2001 doesn't mean anything to the reader. Population abundance estimates vary from year to year. Information in the previous text provides information on the management goal for kokanee.

Delete the entire last paragraph: "In August of 2001, kokanee abundance and density in the northern section of Coeur d' Alene Lake was estimated using two gear types, trawl boat and Hydroacoustic Technology Inc. sonar gear (Teuscher 2001). Trawl sampling estimated total kokanee abundance at about 1.5 million and sonar sampling estimated kokanee abundance at about 2.6 million (Teuscher 2001). Trawl sampling was not as efficient at capturing age 2 and older, thus total abundance estimates varied while density estimates of younger age classes were more similar. The mean density of young of the year (<75 mm) kokanee was 684 fish/ha based on trawl sampling and 722 fish/ha with sonar sampling (Teuscher 2001)."

Page 25, Section 6.6.1.3 Coeur d' Alene River Drainage, 1st paragraph – It's ***Panhandle*** National Forests, not Pan Handle.

Page 25-27, Section 6.6.1.3, North Fork Coeur d'Alene River Watershed – IDFG had inserted in comments and citations in the 2nd draft to better reflect the current status of cutthroat trout in the North Fork Coeur d'Alene River watershed. None of those comments are in the 3rd draft, but there are numerous citations and comments from IDEQ and U of I graduate student projects. IDFG is the fisheries management entity for this area and our assessment of cutthroat population status should be included. I am requesting that in the last paragraph of this section on page 27, you add the following language (bold italics) back in as requested in the 2nd draft:

"….Cutthroat population trends in the Coeur d' Alene River drainage have been monitored annually by IDFG with snorkeling transects since 1983. ***Cutthroat trout densities in the Coeur d'Alene River basin have been described as depressed (Lewynsky 1986, Hunt and Bjornn 1993). However, more recent surveys indicate the population of cutthroat trout is increasing, although it is believed this population is still below its potential (DuPont and Horner In Press). Reasons for this depressed fishery have been attributed to toxic mining***

wastes (DEQ 1996) poor habitat (Abbott 2000), over fishing and poaching (Lewynsky 1986) and sediment delivery (DEQ 1996)."

If you need the citations for the above references, here they are again:

Abbott, A.M. 2000. Land management and flood effects on the distribution and abundance of cutthroat trout in the Coeur d'Alene River basin, Idaho. Master's Thesis, University of Idaho, Moscow, Idaho.

DuPont J. and N. Horner. In Press. Regional fisheries management investigations. Idaho Department of Fish and Game, Federal Aid in Fish Restoration, F-71-R-27, Job c-1, 2002 Job Performance Report, Boise, Idaho.

Lewynsky, V.A. 1986. Evaluation of special angling regulations in the Coeur d'Alene River trout fishery. Master's Thesis, University of Idaho, Moscow, Idaho.

Page 27-28, Section 6.6.1.3, South Fork Coeur d' Alene River Watershed – This particular header is in 13 pt font while all the others are 12 pt. Also this section has been rearranged with the very specific data on Rosgen channel type and sediment particles coming in the first two paragraphs and the more general information coming last. The big story on the South fork Coeur d'Alene River is the long mining history and all the impacts. I suggest moving the first two paragraphs to the end and starting this section with the paragraph ***"Large scale and adverse changes have occurred to the South Fork and its tributaries as a result of mining, urbanization, agriculture, logging, and road building (Woods and Beckwith 1997)……..."***

Page 29, Section 6.6.1.3, Mainstem of Coeur d' Alene River Watershed – Delete the entire 2nd paragraph of this section that starts "The IDFG most recently surveyed the lower Coeur d' Alene River for aquatic habitat in 1986-87…" Replace it with the following paragraph "***IDFG surveys in 1986-87 of the portion of the mainstem Coeur d'Alene River inundated by Post Falls Dam indicate this section serves primarily as a migratory corridor for westslope cutthroat trout (Apperson et. al. 1987). More recent surveys of the 12 km of free flowing river show high densities of cutthroat trout similar in abundance to the upper St. Joe River managed under catch-and-release regulations (Fredericks et. al. 2002)."***

Page 37, Section 6.7.1.1, Hydropower, 1st paragraph – Given the controversial nature of the first paragraph stating that anadromous salmon and steelhead made it over Spokane and Post Falls and the lack of any historic or present day data to verify that claim, I would suggest adding the following sentence to the end of the first paragraph of this section:
"However, the lack of any historic or present day data of anadromous fish presence (lack of any mention of anadromous fish by Mullan (1860), lack of other historic accounts of spawning concentrations of salmon in tributaries, presence of native rainbow trout populations any where in the drainage,) in the Coeur d'Alene Subbasin above Spokane and Post Falls would suggest that these falls were natural barriers to anadromous fish.

Page 38, Section 6.7.1.1, Hydropower, insert new paragraph below between 3rd and 4th paragraph – A paragraph on the condition of the Spokane River below the lake was omitted from the 3rd draft. This section of river has also been impacted by the operation of Post Falls Dam and should be included in the discussion. Suggest the following paragraph be inserted:

"Post Falls Dam has also inundated the free flowing portion of the Spokane River below the outlet of Coeur d'Alene Lake. A description of the Spokane River upstream from Post Falls prior to impoundment was provided by Mullan (1860). He described a rocky, boulder strewn river channel with a swift current, suggesting the habitat conditions suitable for trout. The presence of native trout in the river system elsewhere during that time and high concentrations of cutthroat trout below the outlet of the lake during unimpounded conditions in the spring (personal communication, Horner, IDFG) suggest the reach provided at least seasonal habitat for native coldwater fish."

Page 39, Section 6.7.1.1, Passage Barriers, last paragraph – you have Arrowrock Dam spelled incorrectly (Arrow rock dam).

That's it for the Coeur d'Alene Subbasin. Ned

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State of Idaho
Department of Fish and Game
2750 Kathleen Avenue
Coeur d'Alene, Idaho 83814
Phone (208) 769-1414 FAX (208) 769-1418

March 26, 2004

M E M O R A N D U M

TO: **Ginger Gillen, GEI**

FROM: **Melo Maiolie, IDFG**

SUBJECT: **Comments on 3rd Draft of IMP Subbasin Plan, Pend Oreille Subbasin**

CC: **Gregg Servheen, Chip Corsi – IDFG**

I have noted changes in the Subbasin Plan using strike-over for sections referenced by section and page number. If you have any questions, please give me a call.

13.2.1.6 Water Quality, 3rd paragraph,
"As a result of plunge pool spillways at Cabinet Gorge and Noxon dams, total dissolved gases (TDGs) in Lake Pend Oreille and River exceed Idaho and Washington standards during run-off in high flow years. The Washington State water quality standard for TDG is 110 percent (WAC 173-201A-030 (2)(c)(iii)."

Reason: Dissolved gasses also exceed the Idaho state standard of 110 percent.

14.1.2.5 Lake Trout, page 13
"In 2002, a strobe light test was conducted in the Thorofare. Results from this test concluded lake trout can be stopped from migrating through the waterway (Liter and Maiolie, 2003). "

The full citation should be: Liter, M. and M.A. Maiolie. 2003. Upper Priest Lake lake trout removal and Priest Lake Thorofare strobe light evaluation. Idaho Department of Fish and Game, Completion Report, Report number 03-36, Boise.

14.6.2.1 Lake Pend Oreille Kokanee, page 32
"For comparison, abundance (ages 1 to 5) was 7.3 million kokanee in 1996, with a biomass of 353 metric tons, an annual production rate of 278 metric tons, and an annual yield of 275 metric tons ~~(IDFG files)~~ (Maiolie et al. 2002)."
Reason: These numbers are available in the completion report from 2002 and are a better source than just IDFG files.

Figure 14.6. Estimates of kokanee abundance in Lake Pend Oreille, Idaho. page 33.
The arrow for the 100 year flood should be pointing to data from 1997. It looks like it is pointing at about 1998.

14.6.2.1 Lake Pend Oreille Kokanee, page 32
"There are several factors that have been identified with the decline of kokanee including competition by mysis shrimp with kokanee fry for cladoceran zooplankters (Rieman and Falter 1981, Rieman and Bowler 1980), reductions of shoreline spawning gravels from dam operations (Maiolie et al. 2002; Fredericks et al. 1995; Paragamian and Ellis 1994; Maiolie and Elam 1993; Bowles et al. 1991), ~~and~~ an increasing effect of predation as a result of the kokanee population being low (Maiolie et al. 2002), and a possible increase of predatory fish~~es~~ as a result of the mysis shrimp prey base (M. Maiolie, Fisheries Biologist IDFG, personal communication, 2003)."

14.6.2.1 Lake Pend Oreille Kokanee, page 33.
"Additionally, it remains unclear as to the species interactions between lake whitefish and kokanee. As recent as February 18, 2004, Ned Horner of the IDFG commented on the abundance of lake whitefish in Lake Pend Oreille. Based on IDFG research, lake whitefish populations are significant and Horner "wants a clearer picture of populations of fish to determine how the lake whitefish affect kokanee" (Newport Miner, Feb. 18, 2004). Lake whitefish, which feed heavily

on Mysis shrimp in Lake Pend Oreille, may be causing the decline in shrimp abundance. Maiolie (2002) noted that the overall density of shrimp has been dropping since 1980, and from 1998 to 2001 immature and adult shrimp densities declined from 426 shrimp/m^2 to 225 shrimp/m^2. The reason for the decline in shrimp is unknown, however, whitefish predation is a current leading theory (personal communitation, Melo Maiolie, Idaho Fish and Game, March 2003). ~~Lake whitefish are bottom feeders and generally will not overlap spatially with kokanee. In Lake Pend Oreille, lake whitefish were documented as feeding exclusively on organic material (possibly bryozoans), molluses, and insects (Jeppson and Platts 1959 cited in Leathe and Graham 1982). According to a study in Flathead Lake (Leathe and Graham 1982), the diet of lake whitefish shifted, which was not considered unusual, from primarily benthic organisms in April to one based on zooplankton (primarily *Daphnia thorata*) in the summer.~~
Reasoning: Lake Whitefish stomachs have been examined in Lake Pend Oreille this year and were found to eat Mysis shrimp and benthic insects, most notably midge larvae. Lake Whitefish and shrimp have coevolved so it makes sense whitefish would eat them. Jeppson and Platts studies from 1959 would predate the introduction of shrimp in Lake Pend Oreille and so would not be a good reference for what whitefish are eating now.

14.6.2.1 Lake Pend Oreille Kokanee, page 34, second paragraph, last sentence.
"Additionally, this trend was observed in Flathead Lake located in Northwest Montana, where mysis shrimp approached carrying capacity within 10 years of introduction." Thus, as shown in Figure 14.5, kokanee harvest had decreased to 1/3 its former level before shrimp became well established.

14.6.2.1 Lake Pend Oreille Kokanee, page 36, first full paragraph.
"Kokanee utilized the newly available gravel for spawning and the survival rate for kokanee eggs-to-fry increased from 1.4 percent in 1995 to 9.6 percent in 1998, 6.0 percent in 1999, 10 percent in 2000, and 7 percent in 2001. ~~, and 14 percent in 2002.~~ Summary results through 2001 are available in the completion report prepared for BPA by Maiolie et al. (2002)."
Reason: Data from 2002 is still in draft form.

14.6.2.1 Lake Pend Oreille Kokanee, page 36,
Lake levels were not found to influence the presence or absence of Eurasian milfoil, which is already well established in the ~~Lake~~ Pend Oreille River (Maiolie et al. 2002).

14.6.2.1 Lake Pend Oreille Kokanee, page 36,
"In addition to spawning habitat as a limiting factor, the growth of other exotic populations may ~~must~~ be considered. [sounds too strong, with the recovery in 2003 predation problems seem to have been minimized] There are a number of predatory fishes (lake trout, bull trout, and Kamloops trout) residing in Lake Pend Oreille contributing to the complexity of the lake's ecology. ~~resolving the kokanee decline issue.~~[the decline of kokanee had little to do with predators since kokanee survival was good in all age classes except the egg-to-fry stage] ~~Exotic predators like lake trout can have a significant effect on keeping the kokanee population down (M. Maiolie, Fisheries Biologist IDFG personal communication, 2003).~~ [please delete this since it is taken out of context, lake trout in other systems have affected kokanee but not here]. ~~However, r~~Recent lake trout population estimates show 5,000 to 7,700 lake trout ~~fish~~ over 20 inches in length reside in Lake Pend Oreille, indicating a relatively low abundance of lake trout

(M. Maiolie, Fisheries Biologist, IDFG, personal communication, 2004). Thus, lake trout predation is not considered a significant factor in depressing kokanee populations (M. Maiolie, Fisheries Biologist IDFG, personal communication, 2004). Some believe the introduction of the mysis shrimp in the mid 1960s were beneficial to the lake trout populations in Lake Pend Oreille while adversely impacting ~~the~~ kokanee ~~salmon~~ [the accepted common name is "kokanee"]much like the case in Priest Lake (refer to Bowles et al. 1991) (refer to Section 14.1.2 under subheading Priest River and Section 14.6.1 under subheading Priest Lake). However, the current abundance of lake trout in Lake Pend Oreille does not support this argument, since their population remains low after 80 years in the lake . Lake trout, however, do remain a potential threat to bull trout particularly since the lake trout population appears to be expanding. ~~Efforts are underway to control predacious fishes and the resulting improvements in survival should help to recover the kokanee population in Lake Pend Oreille.~~[this was not being done to recover kokanee; kokanee are expanding well without predator control. Also the trapnetting effort to remove lake trout was discontinued with no lake trout being removed except for study purposes.]

14.6.2.2 Priest Lake and Upper Priest Lake Kokanee

Currently, there are not enough kokanee in Priest Lake to contribute to the fishery. Based on information presented by Bowles et al. (1991), the rehabilitation of the kokanee fishery in Priest Lake did not appear possible in 1991. ~~is not likely a realistic possibility~~. However, kokanee appear to be making a comeback in Priest Lake without hatchery enhancement. In 2003, over 3000 kokanee spawners were observed along the shoreline in a single weekly count. Spawner counts remained high for three weeks (Idaho Fish and Game files). ~~An annual release of 5 million kokanee would be needed to saturate the piscivorous appetite of lake trout (Mauser et al. 1988).~~ Refer to Section 14.1.2 Artificial Production under subheading Priest River for more information regarding kokanee in Priest Lake.

14.8.1 Environmental Conditions within the Subbasin, page 46, first paragraph.
"Recent reservoir operations in Idaho and Montana have involved raising the winter lake levels for the ~~presumed~~ benefit of fisheries concerns.
Reason: The changes were done to benefit resident fisheries, there is enough information on warm water fish in the river and kokanee in the lake to not include the word "presumed".

14.8.1.2 Lower Pend Oreille Subbasin ,page 51 , fourth paragraph.
Since water in ~~Lake Pend Oreille (in~~ the Idaho portion of the Pend Oreille River above Albeni Falls Dam~~)~~ is homeothermic, the temperature of water passing through Albeni Falls Dam downstream to the lower Pend Oreille cannot be manipulated by drawing water from depth (C. Vail, Fisheries Biologist, WDFW, personal communication, 2003).
Reason: Water in Lake Pend Oreille is not homeothermic during the summer, but is thermally stratified with cold water at deeper depths. The Pend Oreille River on the other is homeothermic.

15.4.2 Gaps Between Actions Taken and Actions Needed, page 25. second paragraph.
There is substantial information available about bull trout adults in tributaries to Lake Pend Oreille, but there is little ~~no~~ information on bull trout habitat use in Lake Pend Oreille itself.
Reason: we are currently tracking bull trout in Lake Pend Oreille to determine habitat use.

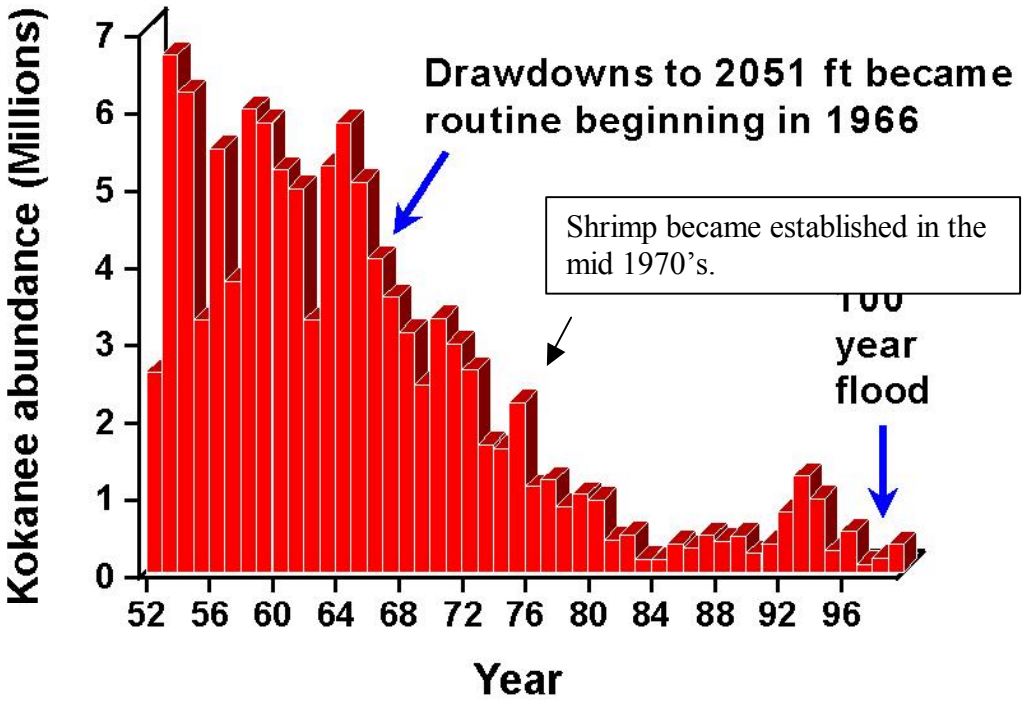

Figure 14.6. Estimates of kokanee abundance in Lake Pend Oreille, Idaho.
Reason: Please add the notation that it was not until the mid-1970s that shrimp became numerous in the lake.

Page 8 chapter 18
Subbasin Objective 1B.6: Maintain 1.7 million square feet of clean shoreline gravel areas for kokanee spawning in Lake Pend Oreille throughout the duration of this plan. Note: Any studies should include evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations. ~~One potential project would be to protect and improve the 2 km of shoreline where the deep-water kokanee spawning area in Scenic Bay on Lake Pend Oreille to provide for an additional 6,000 redds.~~
Reason: examples are not needed in the objective and this one is mentioned in strategy f.

Page 18, chapter 18:
Subbasin Objective 2B.1: Increase the amount of harvestable largemouth bass in Box Canyon Reservoir from the current levels of 6 pounds per acre to 12 pounds per acre by 2010, as long as this activity does not adversely impact native fish.

Proposed strategy a: Create 250+ acres of bass over-winter habitat ~~about~~ above Albeni Falls Dam by building impoundments or other structures.
Reason: this is a typo. Also as discussed at the work team meeting, this needs to be moved to an objective for Lake Pend Oreille, not Box Canyon Dam.

Comments from the Idaho Department of Environmental Quality

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

2110 Ironwood Parkway • Coeur d'Alene, Idaho 83814-2648 • (208) 769-1422

Dirk Kempthorne, Governor
C. Stephen Allred, Director

March 31, 2004

Ms. Ginger Gillin
GEI Consultants, Inc.
127 East Front Street, Suite 216
Missoula, Montana 59802

Dear Ms. Gillin:

Thank you for the opportunity to review and comment on the third drafts of the Intermountain Province documents prepared for the Northwest Power and Conservation Council. Personnel of the Coeur d'Alene Regional Office of Department of Environmental Quality have reviewed the Intermountain Province Overview and the Pend Oreille and Coeur d'Alene Subbasins. The compiled comments are listed in the following table.

Section	Page	Comment
1.5.2	25	Discussion of TDG does not address this problem in Pend Oreille Lake and River caused by Cabinet Gorge and Albeni Falls Dams or violation of Idaho water quality standards.
2.4	34	Map shows the Hale fish hatchery misnamed as the Mullan fish hatchery.
13.2.1.5	11	Last paragraph: These estimates of RPSV Aquifer recharge have been questioned in recent years by J. P. Buchanan 1999. In Unified Groundwater Flow Model of the Rathdrum Prairie-Spokane Valley Aquifer. Eastern Washington University, Cheney WA 99004
13.2.1.6	12	Last paragraph: TDG exceeds Idaho's water quality standards in Pend Oreille Lake.
15.3.2.2	14	Remediation of Kickbush Slide: U.S. Forest Service, Avista and IDFG, not IDEQ.
15.3.2.2	14	Removal of tailings at Idaho Lakeview Mill: U.S. Forest Service, not IDEQ.
15.4.2	25-26	General Comment: greater need for BPA to invest in agency sponsored projects that achieve sediment source reduction.
Table 15.1	27-28	**Habitat Restoration:** Incorporate language that more directly encourages funding of habitat restoration projects.
5.2	5	Harrison is in Kootenai County Idaho, not Benewah County
5.2.2	6	Last paragraph: Coeur d'Alene and St. Joe ŧRivers

Section	Page	Comment
5.2.7.1	15	Last Paragraph: IDEQ certifies permits meet State water quality standards under section 401 Clean Water Act. IDEQ does not issue dredging permits.
6.3.1	10	Last paragraph: The relevance of downstream mining impacts to these bull trout releases should be tied into the text. Are the downstream impacts relevant because it was thought these impacts would preclude escapement downstream?
6.6.1.3	25	2nd Paragraph, last sentence: westslope cutthroat trout are severely depressed in ~~some~~ many reaches.
6.6.1.3	29	2nd Paragraph: The IDFG results are 17 years old. Use of the adverb "recently" is erroneous on the face of the dates.
6.6.1.4	29	The Woods and Beckwith 1997 data demonstrates that the total phosphorous concentration of the northern pool of Cd'A Lake is well in the oligotrophic range. The 2002 IDEQ data, the last recorded averages in the range of 5 ug/L TP. Parameters such as clarity, 8 meters, and chlorophyll a support this assessment. Hayden Lake's ten year average is 7.75 ug/L while Priest is at 5–6 ug/L TP, both solidly in the oligotrophic range. Neither Priest nor Hayden has metals and neither is expected to evidence algal blooms due to their low total phosphorous concentration. Why then would any reasonable individual expect this of Cd'A Lake. The nutrient argument stated here is a myth that is easily debunked by a rational examination of the data. The metals do not mask the higher productivity of C'dA Lake's northern pool, because the TP data collected over the years, backed up by clarity and chlorophyll a data clearly demonstrate oligotrophy.
6.6.1.4	30	1st full paragraph: Cd'A lake bed anoxia is another myth. All Woods and Beckwith and subsequent DEQ measurements show few sub 6 mg/L dissolved oxygen measurements at any level in the lake. Anoxia is sub 1 mg/L. Here again a rationale examination of the existing data does not match the rhetoric.
6.6.1.4	30	1st full paragraph, last sentence: Adopted by whom? Kootenai and Shoshone County and the Cd'A Tribe signed the existing plan in 1995. The Cd'A Basin Improvement Commission voted to implement the existing plan in early 2004.
6.6.1.4	32	Benewah Creek: After the initial two paragraphs there appears to be a title missing. The discourse changes abruptly.
6.8.3	52	2nd paragraph: It seems to this reader that a decision is required on the tributaries in question. What does the science indicate? Would these be bull trout streams or would they not be?

Section	Page	Comment
6.8.4	63	1st Paragraph: " Little North Forks" are mixed up here. The Little North Fork of the North Fork Cd'A watershed is a substantial watershed with trout populations. The Little North Fork of the South Fork Cd'A is a headwater tributary which may be isolated by a barrier at its mouth. BURP crews have not found trout in this South Fork tributary.
6.8.4	63	2nd Paragraph: The North Fork above the Tepee Creek confluence and Independence Creek are the areas in the North Fork Cd'A closest to reference. Tepee Creek exclusive of Independence and Shoshone Creek have numerous habitat problems.
6.8.4	71	Last Paragraph: The North Fork Cd'A River above the Tepee Creek confluence could be an opportunity as well although it is not as intact as the upper St. Joe.
10.2	5	Subbasin Objective 1A: Since there are no federal hydropower projects in the Cd'A Subbasin, one could question if this set of objective is available to this Subbasin. The "federally licensed hydropower projects" are inserted in the Province objective. Does the NW Power Planning Act address federally licensed projects? Will this pass the test of logical connection that the independent science review committee will apply?
10.2	5	Subbasin Objective 1A.2: Strategy C to create catch out ponds does not meet the objective stated of restoring native fish populations. Maybe strategy C should be a separate objective.
10.2	6	Subbasin Objective 1A.4: Strategy B is likely a non-starter politically with the general public.
10.2	7	Province Level Objective 1B Rationale: WBAG 2 is fairly static. The same assessment will be used for the 2004 303(d) list.
10.2	8	Subbasin Objective 1C.1: Strategy A is unclear. Does this mean use the bull trout plan strategies?
10.2	9	Subbasin Objective 1C.2: The objective is much larger than the two strategies listed could accomplish.
10.2	11	Subbasin Objective 2B.3: Maintaining introduced predator populations in the lake will not reduce pressure in native fish. Perhaps the intent here is fishing pressure? Requires clarification.
10.2	12	Province Level Objective 2C final paragraph: This paragraph does not jive with earlier statements in the Cd'A Subbasin Assessment that anadromous fish passed the Spokane and Post Falls (section 5.1 paragraph 2). It cannot be both ways. Perhaps the assessment should say that nonfederal power system dams block the return of salmon to the subbasin?

If you have questions concerning these comments, please direct these to me at, 208-769-1422 or gharvey@deq.state.id.us.

Sincerely,

Geoffrey W. Harvey
Waste & Remediation Manager

Comments from the Kalispel Tribe of Indians

>>> "Ray Entz" <rentz@knrd.org> 5/12/2004 9:48:12 AM >>>
Ginger,

We have completed our review of the fourth draft of the IMP subbasin plan. Even though this process has tenuous legal standing, the Kalispel Tribe is generally pleased with the 4th draft. Understanding that the process was flawed and poorly designed/directed by the NPCC, the 4th draft is acceptable with some minor changes as noted in our track-edit changes. We have posted our changes on an ftp site for download and the instructions for loging on to download are enclosed in this e-mail. Please note the the terrestrial additions to the RM&E plan were not incorporated in the fourth draft and were submitted by Joe Maroney earlier. I have re-attached the spreadsheet containing the terrestrial components for the Pend Oreille subbasin.

Thanks for all the hard work and we look forward to seeing the final draft plan.

Regards,

RDE

Kalispel Tribe of Indians

2 April 2004

Ginger Gillin,
GEI Consultants, Inc.,
127 East Front Street, Suite 216,
Missoula, Montana 59802

Dear Ms. Gillin;

The Kalispel Tribe would like to take this opportunity to provide its comments on the latest draft (1 March 2004) of the Intermountain Province Subbasin Plan. This planning process is one of the largest undertakings by the region to plan, fund and associate FCRPS mitigation projects. We have been very critical of the legalities of this process from the very beginning and continue to participate with great reluctance. However, we have and will continue to provide input, information and support of this subbasin plan until its completion.

We have read the draft plan and have provided a legislative edit of the document in the enclosed CD and will summarize our concerns within this letter. Although the quality of this draft is much improved over the past two, there are several areas of concern, which are outlined below.

1) The introduction section of the Plan is not what we were expecting in regards to the memo, GEI sent to the Oversight Committee describing the context.
2) There is no clear logic path from the assessment and inventory to the objectives and strategies. This is the one area the ISRP emphasized as important in all their correspondence with subbasin planners.
3) There is no synthesis and analysis drawn from the QHA assessments and leaves the Tribe wondering why it is even part of the document.
4) The overall graphical presentation is lacking and draws strongly from graphics in the Subbasin Summaries.
5) There seems to be heavy reliance upon general statements without citations to establish or document the relevancy of the statements.
6) These comments are specifically explained in the attached table format proved by GEI.

Thank you for your attention to this critical process and we hope to see vast improvements by the final draft of the Plan.

Sincerely,

FOR Deane Osterman,
Director, KNRD

w: Water Program Manager

2 encl.

P.O. Box 39 • Usk, WA 99180 • (509) 445-1147 • Fax (509) 445-1705

Enclosure 2

Kalispel Tribe Comments on 3rd Draft IMP Plan

Section	Page	Comment
ALL	ALL	Readable format with much improved continuity, but falls far short of expectations regarding initial sell job at RFP interview stage and subsequent interactions with GEI. Not an acceptable product. There was little to no interaction with GEI to facilitate
ES	ALL	No independent work. Cut and pasted from other subsequent sections. Not acceptable as a stand-alone product of the Subbasin plan. This is not what was expected from detailed correspondence from GEI contractors. Language is too vague and does not relate to specific citations and existing data.
ES 2.2	7	More discussion of similar detail needs to occur for areas of the Province besides the Upper Columbia, San Poil, Spokane, and Lake Rufus Woods. Like impacts occurred everywhere and need the same level of discussion. Lack of continuity between areas of the Province. Grand Coulee and Chief Joseph dams have information associated with them and Albeni Falls does not – Why?
2.2	6	Need to expand on operational losses and be more specific about issues of impact – I.E., riparian impacts to cottonwood galleries due to altered flow and altered river stage (Rood and Braatne 2001). Erosion impacts – nesting habitat, access to water, migration corridors.
2.2	6	The secondary assessments would not have come from the Council or other federal agencies; they would have come from the Fish and wildlife manager's in the form of previously funded measures out of past Programs.
2	Fig. 2.1	Figure hard to read and draw conclusions from. May turn the reader off. Needs to be reworked in a more concise manner.
2.3.1	11	No logic path. Jumps straight into Goals and Objectives without any transition from vision, inventory, or assessment. Also redundant as this is repeated from each subbasin section. One place or the other would be OK. The figures 2.2 and 2.3might be a better way to summarize the information in this section.
2.4		See legislative edits on CD
2.4.3.1	35	Incorrect description of the AFWG. See legislative edits on CD.
2.4.3	38	Figure 2.5 – Lack of information and No data – aren't they the same thing?
4.1.3	6	This section lacks clear reflection of what assessment was completed. IBIS is mentioned, but is not an assessment tool. It is a descriptive tool at best. The current assessments (HEP brown books and salmon loss assessment), which are key to directing mitigation to this province, are not included here. According to this chapter no terrestrial assessment was completed and that is untrue.
4.2.1.1	7	More citations would help tie this all together. Lack of scientific literature will not fair well with the ISRP.
4.2.1.2	9	More local citations. Idaho and Washington sides of Pend Oreille have some scientific papers that can be drawn from to help here.
4.3.1.1	14	Too much focus on the Upper Columbia and Grand Coulee areas of Province. The other subbasins are underrepresented. More local citations would help here too.
4.3.3.1	21	No citations used to back up statements in each of the first three sub-headings.
4.3.3.1	22	Urbanization heading – no citations used and is heavily weighted toward Spokane. Sandpoint and other smaller urban areas of the Province as well as the sub-urban sprawl should be identified here as the change in the landscape from ag and open space to housing is a major problem, especially near water.
4.5.2.2	43	Personal Communication with Ray Entz 2004 to corroborate leopard frog presence in the Lower Pend Oreille portion of the subbasin.
4.6	All	Why is this in the document if no conclusions can be drawn from the assessment? I would like it to be kept as part of the document, however it should be used to assist in painting the logical picture toward our management plan and not as a stand alone piece of the plan

		that does not "FIT". Tie this in with Section 4.7 somehow.
4.7	All	Kind of leaves the reader hanging. I felt a bit robbed by the end of the section. Might be helped once the logic path is created tying the assessment, inventory and management plan together.
13	All	Figures – all graphics should be updated and not use subbasin summary graphics.
16	All	This chapter does not read like an assessment. It needs to be distilled from the terrestrial work completed in the provincial level chapter and reflect the first step in the logic path. Too descriptive and does not compile data or draw conclusions. Does not even set up the management plan portion at all.
16.2.2.1	All	Seems redundant with the provincial chapter. There has got to be a better way to capture the information without repeating it.
16.3.2	24	More detail necessary in the numbered items describing operation al effects. Expand and cite. I was ledt asking myself – why? – and – where are the cites? – too many times.
16.3.3	25	Charlie Robbins with WSU published a paper about impacts to Grizzly Bear and forests associated with Salmon extirpation. Might tie in nice here.
16.4	25	This section is weak. It needs to provide some synthesis to the reader. No interpreations can be made based on what is there now. This section may improve with the development of the logic path.
17.1	5	This section will lead the reader to believe that only the AFWG and Bonner County CD exist as management entities in the Pend Oreille Subbasin. Missing connection to the province chapter.
17.2	5	Missing a lead in paragraph to tie the section together.
17.2	6	Missing other laws, etc that exist and protect habitat and species in the subbasin – as was identified as lacking in the provincial chapter.
17.3	6/7	Missing the Albeni Falls Project. A big write up on a small piece of the mitigation (BPA) puzzle.
17.4.2	8	This wrap up section left me a little high and dry. Needs to be a true section identifying gaps and needs. Does not do that as written.
18	All	We will have substantial comments once this is incorporated into the document. The style and manner that this is presented will be crucial as to how well it ties into the logic path. Kathy, Alison and the Kalispel Tribe discussed alternatives to tie it all together graphically with a logic table.
14.1.2.2	7	Should discuss more of the hatchery plantings that occurred from the late 1900's until now. The Box Canyon Final License Application has a table that includes the number of fish stocked from 1930-1994 and there is approximately 11.2 million brook trout and 6.5 million rainbow trout stocked in Pend Oreille County
14.3.3	24	The Kalispel Tribe has a Fish and Wildlife Management Plan which outlines the Mission, Goals, and Objectives for sound resource management on and in the ceded lands of the Kalispel Tribe of Indians.
14.4.2	29	More emphasis on non –native interaction. Non-native fish are a clear threat to the continued existence of westslope cutthroat. Competition with introduced salmonids is often listed as a major reason for the decline of cutthroat populations (Linkes and Graham 1988).
14.8.1.2	51	Provide the scientific information that supports how the river has changed, particularly in velocity and elevation.
14.10	117	There needs to be better interpretation and synthesis of the QHA results for each stream. Is there any trends, does it relate to real actual management??
15.1	5	Discuss the management direction of the lower Pend Oreille. See track changes in document.
15.1.4	7	Need to add a 15.1.4 Federal Government and include under that the USFWS and USFS
15.1.5	8	Need to add a 15.1.5 Tribal Government.

15.3.3.1	23	Some of the headings don't fall under the heading of BPA funded (15.3.3.1)] These projects also don't really fit under the heading of : **"Funded Research, Monitoring, and Evaluation Activities"**
15.3.3.1	24	Include the Willow Creek project which is sponsored by the Kalispel Tribe and USFS.
15.3.3.1	24	Try to expand more on the US Forest Service and give data rather than a generalization and time frame. Include US Forest Service policies that protect fish habitat.

Comments from the Pend Oreille County Conservation District

To Whom it May Concern:

SUBJECT: PEND OREILLE IMP ISSUES

First of all, as a representative of the Pend Oreille Conservation District and the landowners and farmers living in Pend Oreille County, I'm concerned for the welfare and safety of the residents. Raising lake levels by four feet for the period from November through June only serves to compound the threat of flooding facing the people of the County. I'm a fisherman and I'd love to see the Lake Pend Oreille kokanee recover, but not at the expense of the people whose livelihoods depends on flood control from the various dams within the basin and especially Albeni Falls dam. Raising the lake level from 2051 to 2055 feet in November reduces the ability of Lake Pend Oreille to act as a cushion and to capture some of the runoff. Furthermore, raising the lake level impedes the manager's of Albeni Falls dam ability to regulate the big runoff occurring during May-June from the upper reaches of the watershed in Montana. The risk to these landowners is great and highly dependent on weather. Keeping the lake levels at 2051' reduces the risk of flooding and bank erosion in the lower Pend Oreille River. Recommendation: Insure that any discussion in the report regarding lake level manipulation also contains a caution about the risks of flooding to the lower Pend Oreille river.

Secondly, I don't believe the Idaho Department of Fish and Game fully understands the impact of the discovery of larger than thought populations of lake whitefish are having on the kokanee. I believe more analysis needs to be accomplished regarding the relationship of the lake whitefish and kokanee. In fact, Mr. Ned Horner of the Idaho Department of Fish and Game commented to the press about the "abundant" populations of whitefish found. He indicated, the department wants a clearer picture of populations of fish and to determine how the lake whitefish affect kokanee and other, smaller fish populations. Recommendation: Continue to study impacts of lake whitefish on kokanee populations.

Regards,

Don Comins
District Administrator
Pend Oreille Conservation District

Pend Oreille Conservation District
P.O. Box 280 • Newport, Washington 99156 • Telephone: (509) 447-5370 • FAX: (509) 447-0371

April 1, 2004

Ginger Gillin
GEI Consultants, Inc.
127 East Front Street, Suite 216
Missoula, Montana 59802

Dear Ginger,
I appreciate the attention to detail used in incorporating our comments provided during the second draft revision. I have included, as Appendix A, our comments provided during the second draft for use during the third draft revisions, as we expect those comments, which were included in the third draft, to remain in the final draft of the document.

In general the use of citations and documented sources throughout the document has improved however in several places, especially section 14.6, excerpts from reference material regarding lake level studies and impacts of mysis shrimp were pieced together in a way that misrepresented the data or leaves the paragraph without a clear connection from the referenced material to the subject of the statement. Included below are Pend Oreille Conservation District comments for Sections 13, 14 and 15 of the third draft of the Intermountain Province Subbasin Plan.

Regards,

Scott Jungblom
District Programs Coordinator
Pend Oreille Conservation District

Enclosures (2)

cc: Allison Squire, North West Power Council

Third Draft Comments

Section	Page	Comment
13	3	The Table of Contents for Chapter 13 should include more detail
13.1	4	Major tributaries of the Pend Oreille River with XX or greater drainage area are the (include any missing tributaries based on the specified drainage area) Clark Fork, Flathead, Bitterroot, Blackfoot, and St. Regis rivers in Montana, the Priest and Pack rivers and Lightning Creek in Idaho, and the Salmo River in Washington and British Columbia. What drainage constitutes a major tributary
13.1	4	Paragraph 2 last sentence: "These dams are conducting experimental fish passage ~~experiments~~ studies and are evaluating designs for some bull trout and cutthroat trout structures, but the current numbers of fish passed are limited." This sentence does not make sense may be incomplete. May want to include "structures"
13.2.1.5	11	The operation of Albeni Falls Dam is not to decrease flooding downstream in the lowland Cusick Flats region downstream of the dam (U.S. Senate 1949). This statement conflicts with: 13.2.1.1 page 8 that reads: Senate Document No. 9, February 7, 1949, requires that Albeni Falls Dam not contribute to downstream flooding. I don't have a copy of the document but I think that the wording under 13.2.1.1 page 8 is correct and should be applied to both sentences.
13.2.2.5	17	Peak flows ~~are~~ typically range~~s~~ from 50 to 90 thousand cubic feet per second (cfs).
13.2.2.5	18	The study concluded there was "one of many factors that influenced the water levels in Cusick area over the past four years [1996-1999]. This quote seems incomplete check the source for completeness or remove.
14.1.2.2	7	The Metaline Falls Rod Club has stocking records for Sullivan lake and possibly the Pend Oreille River that go back as far as the early 1930s including kokanee, rainbow, cutthroat and brown trout. This information should be included somewhere in this section. The contact for this information is Rich Sargent, President of the Metaline Falls Rod Club at 509-446-2483 or western@potc.net
14.1.2.3	Page 8 Paragraph 1	The initial introduction and consequent spreading of brook trout throughout the Priest River Subbasin probably had the biggest impact to native westslope cutthroat trout. (add reference)
14.1.2.5	p.11	The presence of mysis shrimp increased juvenile lake trout survival, increasing the population of lake trout, which then had adverse impacts on bull trout, kokanee and cutthroat populations (Figure 14.1)
14.3.2.1	p. 18	Kokanee were recently documented to be the principle food item of bull trout over 406 millimeters (mm), comprising 66 percent of the diet (Vidergar 2000) This comment should be accompanied by some stats if you want it to be accepted by the reader. For example (N=?) (p=?) (SD=?). as it stands the statement seems to give the reader only part of the story and should be supported by ratios of available prey species and bull trout to prey ratios.

14.3.2.2	p. 19	It has not yet been determined if these ~~populations~~ individuals are solely resident, adfluvial or a combination of the two life history strategies. I don't think individual fish sightings should be referred to as populations. If this sentence is focused on the LeClerc and Salmo populations then it should be moved up in the paragraph.
14.6.2	p. 32	Bead and Sullivan Lake have self-sustaining populations. The Sullivan Lake kokanee population has been enhanced over the last few years by egg collection, offsite rearing at the Colville hatchery and planting fingerlings back into the lake. For complete information contact Curt Vail WDFW or Joe Maronie, KNRD
14.6.2.1	p. 33	With regard to the discussion in paragraph 2 of lake whitefish diet and spatial overlap with Kokanee, WDFW has a vast amount of information on lake whitefish stomach content analyses as part of the Lake Roosevelt Monitoring Program including: "Of the 16 species examined from Lake Roosevelt during 1997, seven exhibited substantial diet overlap (. 0.70) with at least one other species. Rainbow trout exhibited substantial dietary overlap with both kokanee salmon (0.91) and lake whitefish (0.86;).Substantial dietary overlap was also noted between kokanee salmon and lake whitefish(0.93)", Cichosz, T.A. J.P. Shields, K.D. Underwood. 1999 Lake Roosevelt Monitoring/Data Collection Program. 1997 Annual Report. Prepared for Bonneville Power Administration. Portland, OR. Lake Roosevelt is also a reservoir system with fluctuating water levels and strong kokanee populations as seen in Lake Pend Oreille.
14.6.2.1	34	Shortly thereafter in 1976 (ten years after initial introduction), the mysis shrimp population reached carrying capacity (Rieman and Falter 1981). Include the limiting factor that established mysis shrimp carrying capacity.
14.6.2.1	34	Once mysis shrimp were well established in Lake Pend Oreille (mid 1970s), it was hypothesized that mysis shrimp were out-competing kokanee fry for cladoceran zooplankters (Rieman and Bowler 1980, Rieman and Falter 1981) since the kokanee numbers continued to decline after some adjustments were made to Albeni Falls Dam operations in the mid-1970s. This sentence makes little sense without including information on the adjustments made to Albeni Falls Dam operations in the mid-1970s. Additionally the statement taken from Bowles et al. 1991 refers to "older age class of kokanee" which is not relevant to the sentence above and misleads the reader into thinking both studies address effects to kokanee fry. The second sentence should be removed from the paragraph or explained in greater detail.
14.6.2.1	34	…after the establishment of mysis shrimp (Bowles et al. 1991) and the competition between mysis shrimp and age-1 and older kokanee was concluded to be minimal (Maiolie et al. 2002; Clarke 1999; Bowles et al. 1991). As the established limiting factor for kokanee seems to be survival of age class 0-1 and as the first paragraph of this page indicates "Kokanee declines have been documented to be a result of competition between **kokanee fry** and mysis shrimp" it would be clearer to the reader to reference studies that addressed this younger age class interaction.

14.6.2.1	35	Drawing the lake elevation down by 3.4 m in September… Fredericks et al. (1995) estimated 85 percent of suitable spawning gravel (<35 percent fine sediment) was located between the lake elevations 625.1 m and 626.7 m. This whole paragraph is misleading and incorrect indicating that holding lake levels at 626.7 would utilize freshly scrubbed gravel from a wash zone 1-2 m below summer lake level of 628.6. The math doesn't work because that zone is dry all winter at 626.7 m. The spawning gravel made available by the 626.7 m winter elevation was actually scrubbed by previous 625 m winter levels.
14.8.1	45	Livestock ranchers and farmers settled the Calispell Valley of the lower Pend Oreille River in the 1880's and chose the fertile sites on the river where flooding frequently occurred ~~(D. Comins, District Administrator, Pend Oreille Conservation District, 2004)~~. Industry also began to develop in the area during this time. Mining in Metaline Falls encouraged the Idaho and Washington Railroad to construct a railroad from Spokane to Metaline Falls between 1909 and 1913 (Bamonte 1996). Remove Don Comins as a reference, the entire statement came from Bamonte 1996.
14.8.1	47	Over 16 ha of high quality kokanee spawning habitat are estimated to be lost due to a 3.5-meter drawdown (625.1 m lake level) of Lake Pend Oreille during the winter months. Lowering of the lake to 625 m each year has not allowed for shoreline gravel to be cleaned and resorted at a depth where it is available for kokanee spawning and may be the single largest factor contributing to kokanee declines (Maiolie and Elam 1993) This statement is probably quoted correctly but is misleading in that by restricting the lowering of the lake to only 625 m each year it has not allowed for shoreline gravel to be cleaned and resorted at a depth where it is available for kokanee spawning at the 625 m lake level and the spawning gravel useable at the 626.7 winter level was provided by scrubbing action of previous 625 m winter lake levels. (See comment above on 14.6.2.1 p.35)
14.8.1	47	Consequently, most kokanee spawning takes place at the south end of the lake where conditions are favorable. It would be appropriate to expand on what makes the south end's conditions favorable.
14.8.1.2	49	Another position held by the ~~Pend Oreille Conservation District (POCD) and~~ Pend Oreille Public Utility District (POPUD), suggests that there is a very modest elevation change from Albeni to Box Canyon dams and from Box Canyon dam to Metaline Falls and the reaches were never "fast-moving." The ~~POCD and~~ POPUD also contend water received annually from Lake Pend Oreille is of a naturally elevated temperature that occurred historically and occurs during the summer months. Please clarify with Tom Shuhda of the US Forest Service about the temperature portion of this paragraph data that he showed me recently collected from the Army Core Of Engineers only noted a change in velocity due to dam construction, not temperature.
14.8.1.3	52	The Priest River watershed has been altered by wildfire, roads, logging, and homesteading (J. Cobbs, ~~Pend Oreille Water Conservation District,~~ personal communication, 2003). Jill Cobb is not a POCD employee.

14.9	60	The two primary limiting factors in the Lower Pend Oreille Subbasin are… This paragraph must emphasize the major limiting factor as the loss of connectivity between the lower Pend Oreille subbasin Lake Pend Oreille. The US Fish and Wildlife Service' Bull Trout Draft Recovery Plan requires populations meeting ESA recovery goals to consist of adult migratory bull trout. This requires fish passage at Albany falls at a minimum to reach ESA recovery.
14.9.1.3	64	Kokanee comprised of more than 65(previously in the document it was 66 %) percent of the diet for bull trout greater than 408 mm in Lake Pend Oreille (Videgar 2000) This comment should be accompanied by some stats if you want it to be accepted by the reader. For example (N=?) (p=?) (SD=?). as it stands the statement seems to give the reader only part of the story and should be supported by ratios of available prey species and bull trout to prey ratios.
14.10	65	Tables describing the "current habitat conditions" refer to the most degraded reaches, while s for "protection," the tables describe the most pristine reaches. This sentence does not make sense.
Table 14.26	111	NP= not present Does that mean currently or historically? Please specify on this and other similar tables.
15.4.2	26	. In addition, there is very little information about juvenile bull trout, as well as adult bull trout abundance distribution spawning and rearing in the tributaries of the lower Pend Oreille.

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Comments from the Pend Oreille Public Utility District

Pend Oreille County Public Utility District

Administrative Offices - P.O. Box 190 • Newport, WA 99156 • (509) 447-3137 • FAX (509) 447-5824
Box Canyon Hydro Project - P.O. Box 547 • Ione, WA 99139 • (509) 446-3137 • FAX (509) 447-6790

April 2, 2004

Ginger Gillin
GEI Consultants, Inc.
127 East Front Street, Suite 216
Missoula, Montana 59802

RE: Comments to IMP Plan

Thank you for the opportunity to review and comment on the Third draft of the Intermountain Province Subbasin (IMP) Plan.

Our comments are as follows:

Section 14.1.2.2...page 8 : The Blueslide Resort . . . add the phrase "in cooperation" with the Metaline Chambers, PUD and WDFW operates a rainbow (triploid) net pen facility ...add the phrase "releasing 25,000 - 30,000 fish annually"....

Section 14.3.1...page 16 : I believe portion of the last sentence in the first paragraph of this section regarding bull trout in Calispell Creek is incorrect. e.g....Bull trout were historically documented in the Lower PO River tributaries including LeClerc and Calispell Creek...Smith, 1931 mentioned " many small trout" in Calispell Creek but did not use the word bull trout or char or salmon trout in reference to this stream. Gilbert and Evermann, 1895 did mention finding salmon -trout or char in reference to LeClerc Creek but do not make the same statement regarding Calispell Creek either. You may wish to review the Smith, 1931 document to confirm this.

Section 14.6.3.1....page 39: The middle of the paragraph ..."too high of a predation level and the 100 year flood"...Is this in reference to the recent flood of 1997? If so it was a 50 year flood event .A 50 year flood event is 147,000 cfs. The 1997 flood was a little under at 142,00 cfs.

Section 14.8.1...page 45: The third paragraph starts with the statement...The Pend Oreille Subbasin was first logged from 1915 to 1930.....It should read 1905 rather than 1915.

Section 14.8.1.2..page 49 ...The 2nd paragraph beginning with the phrase..."The consensus is that habitat.....has a few sentences in it that states the PUD position incorrectly. The following

sentences should be used to replace the last 2 in the paragraph. The following text should reduce some of the confusing and conflicting views in this section.

Another position held by the Pend Oreille Public Utility District (POPUD) suggests that there has always been a very modest elevation change, or gradient, and "flat" non-turbulent water of the Pend Oreille River, based on the 1912 USGS Survey, and numerous historic photos (1910 - 1913), in the southern 2/3 of the County from Albeni Falls to Ruby. The USGS study notes stream gradients of 1 to 2 foot per mile in this area. And during times other than the annual spring flood event, both then as now, typically in June, the River was not a "fast moving river". In the northern 1/3 of the County the Pend Oreille River had a gradually increasing gradient and one would expect increasing velocity of the river especially as the river progresses north towards the falls at Metaline Falls and the Z Canyon area..

Gilbert and Evermann (1895) are referenced frequently as noting that the Pend Oreille River as "being a fast -moving river and having a good strong current" however few also note that in the same page of their report they note that "The stream was up at this time and would probably fall at least 10 feet before reaching low water mark, according to the captain of the Dora, a small steamer which makes irregular trips between Newport and the head of Box Canyon"(page enclosed). It is interesting to note that Gilbert and Everman traveled the Pend Oreille during a late runoff event (August 9) and flows of the same magnitude can still be seen today during the early summer snow melt runoff where cold water flows on average can be from 60,000 to 80,000 cfs and recently, as in 1997, reach 142,000 cfs., as Box Canyon Dam is a run-of-the-river operation and cannot control flows such as these.

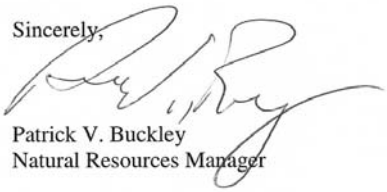
"The POPUD also contends that water received from Lake Pend Oreille is of a naturally elevated temperature that occurred historically and occurs each summer as warm water spills off the upper layer of the lake.

Section 14.8.1.2 ..page 49.. last paragraph...

The comment that the USGS survey....."does not illustrate smaller scale features such as the vertical fall at Metaline falls is incorrect...they are clearly shown...I will send you a copy of it. As mentioned earlier, the issue of large changes in flows is more related to the big influx of water each year as a result of snowmelt water coming from the mountains Idaho and Montana.

Once again, I appreciate the opportunity to review the document. Should you have any questions, please feel free to contact me at (509) 447-9334.

Sincerely,



Patrick V. Buckley
Natural Resources Manager

Enclosures

Comments from Seattle City Light

City of Seattle
Gregory J. Nickels, Mayor

Seattle City Light
Jorge Carrasco, Superintendent

April 2, 2004

Ginger Gillin
GEI Consultants, Inc.
127 East Front Street, Suite 216
Missoula, Montana 59802

RE: Pend Oreille Subbasin Plan

Dear Ms. Gillin:

Thank you for the opportunity to comment on the third draft Pend Oreille Subbasin Plan. We have been favorably impressed with the rapid progress made by the Workgroup and by your firm in pulling together a comprehensive vision and plan for this Subbasin, consistent with guidance from the Northwest Power and Conservation Council (NPCC). We do have comments relating to three elements of the Objectives and Strategies.

We note that some changes were made at the 3/16/04 Subbasin Workgroup meeting, from what was posted to the internet as "Draft 3". We are thus commenting on the revised draft received via email on 3/30/04. In the tables below, "Section" refers to the published draft, while "Page" refers to the 3/16/04 meeting minutes.

Non-federal dams

Aquatic Habitat Province Level Objective 1A and Subbasin Objectives 1A and 1A1 all refer to or imply mitigating for fisheries effects related to "construction and operation of federal and federally-licensed hydropower projects". We acknowledge the intent of the plan to craft a comprehensive vision and objective for the subbasin and the purview of the NPCC to make recommendations relating to any hydropower project. Nonetheless, it is also our understanding that federal hydropower licenses use habitat conditions at the time of licensing as the baseline from which to analyze the effects of proposed new licenses and to craft mitigation measures for those new licenses. We are also aware that stakeholders in the relicensing process refer to "ongoing impacts" as a result of the continued operation of the hydropower project, when defining and negotiating license conditions.

Water Quality

Aquatic Habitat Subbasin Objective 1B2 appropriately calls for actions to improve water quality. However, we believe some of the strategies need revising, or brought in line with actual processes underway in the subbasin. Part of the confusion may lie with differing processes and

700 Fifth Avenue, P.O. Box 34023, Seattle, WA 98124-4023
Tel: (206) 684-3000, TTY/TDD: (206) 684-3225, Fax: (206) 625-3709

schedules for the development of TMDL's in Washington and Idaho. The following are intended to be general enough to accommodate those differences.

Strategy "a" might be more accurate if a broader range of local entities were identified. Strategy "b" does not account for a "specific classification" standard of 20° C on the lower Pend Oreille River [WAC 173-201A-130(79)]. It also implies a method that may not accurately reflect the TMDL and related processes likely to occur here. Strategy "d", relating to TDG, also implies a method that may not accurately reflect the TMDL and 401 certification processes which are or will be underway in the lower Pend Oreille River.

Also, as a general matter, we would emphasize the benefits of close coordination of monitoring and analytical work for water quality impacts and effects among the major water quality entities in the subbasin. Thus, along with the other revisions, we insert the word "cooperative" in each of the following strategies. These thoughts taken together, we propose the following changes:

Section	Page	Comment
18.2	6	Under Subbasin Objective 1B2, reword Strategy "a" to begin: "Support current efforts by local, state, and federal agencies and stakeholders to cooperatively develop and implement TMDL water quality plans and Section 401 certifications, as per …."
18.2	6	Under Subbasin Objective 1B2, revise Strategy "b" by inserting text and rewording: "Support current efforts to achieve water temperature standards, including cooperative development of TMDL plans and Section 401 certifications, where appropriate."
18.2	6	Under Subbasin Objective 1B2, revise Strategy "d" by deleting existing text and inserting: "Support current efforts to achieve Total Dissolved Gas standards, including cooperative development of TMDL plans, Section 401 certifications, and hydroelectric system operations and mitigation plans, as appropriate."

Bull Trout

Aquatic Habitat Objective 1C1 (Workgroup 3/16/04 meeting minutes) addresses bull trout habitat connectivity. This is currently a matter of very considerable scientific uncertainty. On the lower Pend Oreille River, historically, Metaline Falls and/or Z Canyon may have been partial or complete barriers to upstream migration of bull trout and other fish, as the Subbasin Plan aquatics assessment describes. If this is the case, then genetically distinct sub-populations may have existed above and below the barrier, and the development of upstream passage at Boundary Dam would create connectivity where none existed before. Studies are underway to identify historical population distribution and genetic connectivity among sub-populations. These studies should be completed prior to making any judgments about geographic connectivity in order to determine whether upstream passage at Boundary Dam merits further consideration and, therefore, further feasibility studies.

We also note the interlinkage of Subbasin Objective 1C5 (Workgroup 3/16/04 meeting minutes), referring to the U.S. Fish and Wildlife Service Bull Trout Recovery Plan, with Appendix A, Northeast Washington Recovery Unit Criterion #4, calling for connectivity at Boundary Dam. We would like to note for the record that this issue has been discussed at Northeast Washington

700 Fifth Avenue, P.O. Box 34023, Seattle, WA 98124-4023
Tel: (206) 625-3000, TTY/TDD: (206) 684-3225, Fax: (206) 625-3709

Recovery Unit meetings, and it is our expectation that the final recovery plan will note the uncertainties and the need for further study and evaluation. With this in mind, we propose the following change:

Section	Page	Comment
18.2	11	Under Subbasin Objective 1C.5, reword Proposed strategy f to read: "Complete studies to determine historical patterns of bull trout distribution throughout the basin and analyze the merits of connectivity to reflect historical conditions."

Thank you for the opportunity to comment. Please feel free to contact Al Solonsky at 206.386.4580 with any questions or follow-up.

Sincerely,

Nancy Glaser, Director
Strategic Planning Division

700 Fifth Avenue, P.O. Box 34023, Seattle, WA 98124-4023
Tel: (206) 625-3000, TTY/TDD: (206) 684-3225, Fax: (206) 625-3709

Comments from Spokane County Conservation District

Spokane River Subbasin Plan
Draft

RE: Comments from Spokane Conservation District (Walt Edelen)

Section	Page	Comment
21.1	4	Should the storage capacities of the dams be noted here? Or somewhere else?
21.1	5	The map is too small for adequate viewing. Either enlarge or dedicate an entire page to the map.
21.2.1	5	Lake Spokane is still called Long Lake by many. It should state "also known as" instead of "previously called"
21.2.1	5	The sentence with fluvial habitats changed to lacustrine…is awkward. Should be rewritten.
21.2.1	5	The note on RM reference should be noted on the bottom of page, not in parentheses.
21.2.2	6	Fonts for headings seem to change from aerial and times new roman.
21.2.2	6	The use of WRIAs to describe the basins should include a map for clarity (in appendix or text).
21.2.2.1	6	3rd sentence of 1st paragraph. The word "is" should be placed in front of considered.
21.2.2.2	7	Hangman Creek should be listed before the Little Spokane River due to order of their confluences with the Spokane River.
21.2.2.2	7	The USGS gage # should be noted. The name of the gage (Dartford) should also be noted
21.2.2.3	7	I have previously noted that the Hangman basin is approximately 689 square miles, not 705. Check with the USGS on this.
21.2.2.3	7	The gage # for Hangman should be noted.
21.2.2.3	7	The lowest flow recorded was not 1.96. It was 0.74 cfs. Please review this again.
21.2.2.3	8	I hope this map is not the final map for this page. It is very poor quality and too small to actually review. Plus, I'm not sure why you are depicting the water quality stations unless you have denoted water quality in the previous text.
21.2.2.3	9	The graphs should be the same size, same font
21.2.2.5	11	Fonts need to be consistent. Also the first sentence is missing the "the" in front of Spokane River.
21.2.3.1	11	Why is there an entire subsection of ROS under this section for Drainage Area? It appears to be out of place. Plus, if you are going to have a map of ROS, then there should be a map for climate as well. Prism data is available. A precip map and/or

		snow map may be appropriate.
21.2.4	13	I don't believe that it is appropriate to place web addresses within the text of the document. These types of citations tend to change frequently and should be found within the references.
21.2.4	13	Your description of the ice dams and flooding implies that the water simply poured over the dams and caused flooding. My understanding is that the dams broke and caused massive flood events.
21.2.3.2	14	I'm not sure why this section is here. It is out of place. If you have this discussion here, then why not discuss Hangman erosion. This is a discussion of geology and soils in this section, not erosion problems. The same comment goes for the map of shoreline erosion for Lake Roosevelt (Figure 21.8). This should all be moved to another section. The figure that should be here or in the appendices is a general soils and surficial geology map.
21.2.5	16	This entire section is weak on the actual geomorphology for the basin. The Spokane River section could be better, but the paragraph on the Little Spokane River topography and geomorphology is extremely weak. The entire Hangman Creek watershed (mainstem) has been gemorphically delineated by reach. This reference was provided earlier. The Hangman paragraph appears to focus on water quality.
21.2.5	17	Why does this map of vegetation follow the topography/geomorphology section? The scale of this map is basically unreadable as well.
21.2.6	17	The statement regarding dryland crops should indicate turfgrass (not grass).
21.2.6	18	The statement that the urban setting has resulted in displacement of native vegetation is misleading. While this is true, the majority of vegetative loss has occurred due to other land uses such as agriculture and logging.
21.2.7	18	Figure 21.1? or Figure 21.10 on page 19. This needs to be fixed.
21.2.7	18	Do you have some numbers on the overall anthropogenic impacts to the basin? How much ag covers the basin (%)? How much urban, etc…? This should be outlined in the document with associated map.
21.2.7	18	There is another discussion of land use impacts within this section. Again, I believe this to be out of place. These types of discussions should be elsewhere. The section heading is Major land uses. The discussion should state the facts of what types and the extent of each of these uses. Leave the impacts for a different section. The impacts stated for Hangman are not isolated to Hangman

		alone. These occur throughout the Spokane basin.
21.2.7.1	18	Again, the document focuses on the wrong portion of the section heading and then provides a map of it. Why is there no map of the land uses and then we have a map of the road densities? I'm not sure why this continues to happen in this document.
21.2.7.1	18	Why is there an entire section devoted to road density and not other uses such as forestry, agriculture, urbanization? As for the road density section, the rankings for moderate, high or low should be identified in the text. I found it later when I read over the map.
22.1	4	I agree that the redband trout is an important species, but the location and distribution of this species is still unknown. DNA work is pending for some of the basins and even where DNA work has been completed, it is not conclusive. I also do not know how we can say that the redband species is declining. What facts do we have on this?
22.1.1	5	The confluence of Hangman with the Spokane River was denoted as a significant gathering place to harvest salmon.
22.1.4	9	There are some fish surveys that were completed in Hangman. I provided the references but see they were not used (1890s,1970s, 1990s and most recently in 2001). Salmon did run up Hangman and there are good accounts of drying racks of salmon as far as Tekoa, WA. A new table should be constructed illustrating the species found throughout the watershed.
22.1.4	9	The description of Gilbert and Evermann should not be used as the basis for what Hangman looked like historically. By the time they had moved through the area, the watershed had been impacted by agriculture. There are many conflicting accounts of the clarity of the water and the fishes found there.
22.1.4	10	How could Edelen and Allen indicate something about a 2002 survey when their report was completed in 1998? Furthermore, Edelen and Allen did not indicate anything about the ag land and species distribution and abundance near Lolo, Tensed, and Moctileme creeks.
22.3.2	14	Genetic work is scheduled for redband trout in the Hangman Creek watershed in early may of 2004. WDFW in coordination with the CDA tribe and the SCCD will collect data in Marshall Creek, California Creek, and Rock Creek on the WA side.
22.3.2	16	Where did figure 22.1 originate? California Creek, Rock Creek, and Marshall Creek (all within Hangman) are suspected to contain redband. These tribs should have yellow lines. Actual work to determine this will begin in May 2004.
22.3.2.1	19	Again there is discussion of impacts in a section that is not about impacts. These should be removed.
22.3.2.1	20	More discussion of water quality and impacts that should be removed from section.

22.3.2.2	20	Title should be Little Spokane River
22.3.3	22	Edelen and Allen did not report any such statement referring to spawning habitat on the Spokane River. This is the wrong citation.
22.4	23	Mountain whitefish were historically reported in the Hangman Creek watershed. In fact, tribal elders have provided accounts that the whitefish were a main staple from the creek due to its abundance.
22.8.1.2	30, 31	The map titles should be consistent in font and letter case.
22.8.1.2	34	3rd paragraph, 2nd sentence. Replace enormous with a different word (high, etc).
22.8.1.3	35	Why does the first sentence of the second paragraph state that Gilbert and Evermann did not mention species, yet the third sentence specifies two species with a citation from them?
22.8.1.3	35	The entire section on Historic conditions of the LSR is weak. There is information available about early gristmills, vegetation, and settlement.
22.8.1.4	35	Ist paragraph, last sentence. Water availability, "is" another critical issue…not "are"
22.8.1.4	37	There was an earlier statement that domestic was partly responsible for declining instream flows in the LSR. Yet, this text on page 37 says that in the 90s…domestic use was solely responsible for the decline. Are you sure this is correct?
22.8.1.4	38	2nd paragraph. The first sentence is awkward.
22.8.1.5	38	The section for historic conditions of Hangman Creek is very weak. The statements for this section by G & E are not completely representative. The SCCD has several published documents that portray the fisheries, pre-settlement vegetation and impacts to these. The current watershed planning process has information regarding early hydrology as well.
22.8.1.6	38	The same comment above applies to this section too. The SCCD has many published documents that illustrate current conditions of the watershed. Water quality, land uses, vegetation, and instream flows within the Washington portion of the watershed have been characterized, but not entered into the document. Consultant staff should rewritte this entire section. It appears that consultant staff utilized only the brief summaries that were submitted by the SCCD. A great deal of information exists within each of the documents that should be utilized for this section. There is extensive information on impaired water quality parameters and other issues in the basin. Currently, the SCCD and DOE are developing a TMDL for the basin.
22.8.1.6	40	3rd paragraph. Where did you get the information for the high road densities in the lower portions of the Hangman watershed? I would like to review this data. As I have stated in a previous comment…this may be where the road density section should be

		located…not within the previous section 21.
22.9.1	43	There are statements here that appear to be conflicting with previous statements regarding low base flows. In this section, it states that the Spokane River low flows are the product of poor land use practices in the headwaters. Where did you get this data? Other statements have pointed to increase of population water use and climate. Which is it? Or is it all three?
22.9.1.2	44	There is more water quality data available on the LSR. The Pend Oreille CD and the SCCD completed a water quality document in 1999. This information should be utilized. Currently, a Water Quality Improvement Plan is being developed by the SCCD with the assistance of DOE/WSU (TMDL modeling/analysis). Water quality within the basin may not be quite as poor as indicated by Dames and Moore 1995.
22.9.1.3	44	For Hangman Creek, low flows, sedimentation, lack of habitat, and temperature should be emphasized. An SNTEMP modeling study was completed as part of an Instream flow study completed in 2003. Results are available for review and incorporation to document.
22.10.4	55	The key findings are lopsided in the favor of waterbodies within Idaho. Why do tables 22.17 & 22.18 only depict Idaho? There are WA waterbodies or reaches that have similar problems and rankings, yet are not mentioned. .
23.1.1.2	5	Please add that the SCCD is currently facilitating Water Quality Improvement Plans (TMDLs) on the Little Spokane River and the Hangman Creek watershed. Or maybe that should be a section unto its own for the subbasin (Section 23.2)
23.2	5	The section should probably begin with the Clean Water Act and aassociated protection. DOE administration. It would also be relevant to include local Critical Area Ordinances and Shoreline Management Guidelines.
23.2.3	6	You should indicate which WRIAs and associated waterbodies within the subbasin are currently undergoing watershed planning. WRIA 54, 55, 56, 57 (Spokane County)
23.3.3.2	15	The SCCD is not the lead entity for the ESHB planning in WRIAs 55/57. This is facilitated by Spokane County Water Quality Program under direction of Stan Miller.
24.1.1.1	6	Hangman has not been affected by industrial impacts near its confluence. This should state urban development.
24.1.1.2	7	We have better data for the riparian areas within the LSR.
24.1.1.2	7	Parametrix just completed an extensive riparian/wetland delineation study for the FERC project. A summary of the results should be placed within this section.
25.3.2.9	13	Why don't we have some numbers of protected land under federal programs such as CRP, WRP, CCRP?? These numbers should be obtained from FSA/NRCS offices.

Comments from the Spokane Tribe of Indians

Spokane Tribal Natural Resources

P.O. Box 100 ● Wellpinit, WA 99040 ● (509) 258 – 9042 ● fax 258 - 9600

April 2, 2004

GEI,

Enclosed please find a comprehensive list of the Spokane Tribe of Indians fish and wildlife managers concerns regarding the third draft of the Intermountain Province Subbasin Plan.

AQUATICS

Section	Page	Comments
ALL		Throughout entire document: Tribal should be lower case unless it identifies or is referring to a specific tribe.
ALL		Throughout entire document: Artificial production would be a better term to use.
22 & 30		The limitations of using QHA for reservoir habitats should be clearly spelled out in the narrative of the model.
22 & 30		The assessment sections lack flow and connectivity. In particular, the QHA doesn't seem to be connected to the overall assessment, it reads as an afterthought to the written section.
EXECUTIVE SUMMARY		
ES		The executive summary seems to be cut directly out of the main document, which makes the repetitious nature of the document even more repetitious. It should stand alone and reflect the main points of the overall document without repeating them verbatim.
ES.1	1	"50 tributary" Upper Columbia is not a tributary
ES.1	1	Shouldn't this objective be broader because of all the non-BPA stuff?
ES.2.1	4	list number and ownership, public or private in paragraph 3.
ES.2.1	4	Reference to "lake-like" reservoirs. Some of these reservoirs are not lake like at all.
ES.2.1	4	Impoundments have affected much more than just streamflow such as aquatic and terrestrial habitats
ES.2.1	5	Demand has increased on fishable fisheries.
ES.2.1	5	Socio-Economic impacts to tribes and its impact today. It may be identified later.
ES.2.1	5	Paragraph 1: Clarify "thermal, hydraulic and food webs" thermal webs? hydraulic webs?
ES.3	7	Under Corollary 1, change "inundate" to "impacts"
ES.3	7	Add Corollary 5 "The demand for fish and wildlife resources will increase."
ES.3	8	Paragraph 1: "complex" money is not complex

ES.3	8	Change bullet "Subsistence salmon fishing loss continues." to "Continued loss of subsistence fisheries"
ES.3	8	Where are the economic and cultural impacts in sub-bullets under "Subsistence salmon fishing loss continues" bullet?
ES.3	8	add another bullet (Impacts of raising adequate fish for substitution) under sub-bullet "Increased fishing pressure on resident fish"
ES.3	8	add two more bullets under "Elevated total dissolved gas" bullet 1) Elevated temperature 2) lower dissolved oxygen
ES.3	8	FORMATTING: bullet spacing and bullet sizing
ES.3	8	"Aquatic riverine habitats continue to be replaced by warm water reservoir habitats supporting nonnative fishes." Comment... some habitats are lost altogether for fish, because of milfoil, TDG, etc
ES.3	8	"Connectivity of native fish and wildlife habitats continues to be disrupted by reservoirs." Comment… also pools for contaminants and sediment
ES.3	8	Last bullet of page 8, comments… Power production driving the operations of the facilities rather than environmental concerns. The construction of more reservoirs in Canada to support our need for late year flows i.e. Keenlyside
ES.3	9	After bullet "Hunting, fishing, and recreation pressure continues to increase." add another bullet, "Contamination-urban development, industrial pollutants
ES.3	9	Remove this sentence, "The impact of all this is that fish and wildlife habitat continues to decrease and the abundance of fish and wildlife declines."
ES.3	9	Change "limiting factors" in paragraph one to "impacts"
ES.4.1	14	Add "Goals" to title of this section.
ES.4.1	15	In 1C. consider changing "restored" to "increased."
ES.4.1	15	Is objective 1D a repeat of 1C?
ES.4.1	15	Is 2A also a repeat of 1C?
ES.4.1	18	Add "Produce Hatchery Fish" box to flow chart
ES.4.1	19	Add "Monitor/Manage/Evaluate These activities" box stemming from box 2B.a. and 2B.b.
ES.5.1.1	25	What value, High Temperatures Westslope Cutthroat (???)
ES.5.1.1	26	Reword last sentence of paragraph one.
ES.5.3.1	29	Add "anadromous" before "Chinook have been eradicated…" in last paragraph.
ES.5.3.1	30	Paragraph one change "that can no longer support" to "which are less suitable for"
ES.5.3.1	30	Add somewhere that the Spokane and Upper Columbia subbasins were the predominant areas used by anadromous fish past Grand Coulee Dam.
ES.5.3.1	30	What does paragraph five mean?
ES.5.3.2	30	Add to "Data Needs" identify predation by non-native (walleye), redband populations, TDG effects, bull trout research, etc. etc…
ES.5.4.1	31	Chinook are occasionally found in Lake Roosevelt, but they are likely wash-outs from Coeur d' Alene Lake.
ES.5.4.1	32	Add "Dissolved" before "Oxygen" in table ES-4
ES.5.4.1	32	Table ES-4 Adfluvial are not listed as a focal spp.
ES		Additional corrected typos, sentence structure, grammar, etc. 10 corrections
SECTION 1		
1	4	Section 1 looks too much like the executive summary.
1.2.1	5	Formatting problem.
1.2.1	5	Footnote would be better placed in the Sanpoil Subbasin.

1.2.2	6	The first paragraph states "The IMP structure and organization is intended to provide a forum in which state and tribal governments collaborate and coordinate . . ." This statement does not include counties and private interests such as Avista or Conservation Districts, which were invited to the table. The statement seems to preclude what we actually did, which would be inappropriate.
1.2.2.1	8	Subbasin Work Teams 4th paragraph. Was this sentence true? "however only the identified Subbssin Work Team members were able to participate in formal decision-making within the group."
1.4.1	20	The discussion of the history of the fishery in the Columbia River suggests the fishery had already crashed prior to the completion of the Dams. This refers to the entire Columbia River, but not really what was going on in the Upper Columbia River region - where fisheries were still strong. How should this be clarified. The fishery existed until 1939. Cite how many fish were harvested historically to highlight our concern.
1.4.1	22	This section needs to include BPA/BOR construction of Ford Fish Hatchery in 1941 as an initial onsite mitigation program.
1.4.1	23	Figure 1.2 shows anadromous fish migrating up the Colville River, but this was not likely. Could you verify this, or fix the map.
1.4.1	23	Throughout the document, Grand Coulee Dam inundated ~150 miles.
1.4.1	12	There is a very repetitive nature to the plan. For example, the statement "Other dams within the basin also converted significant sections of river into reservoirs. The creation of these impoundments . . . , but quite isolated biologically." is repeated in the very next paragraph "In addition to the Federal hydropower system . . .". The overall quality of the report would improve without this type of repetition.
1.4.1	23	In the last part of the first paragraph under Figure 1.2, insert a statement identifying higher temperatures and lower D.O. as part of reservoir effects as they are also major factors for fish. Also use "free-flowing" rather than lotic.
1.4.1	23	The last paragraph on page 22 (now 23) discusses the Canadian dams just briefly. However, it would improve the document if their role was clarified in relation to the US dams. Did we pay for these dams or give Canada money so we would have upriver storage?
1.4.1	24	The second paragraph on this page discusses how devastating to native species exotic introductions have been. Insert into the paragraph how reservoirs also benefit these exotics (non-natives), further increasing the pressure on natives.
1.5.1	26	Update contamination issues in Upper Columbia River section. Insert "In 2004 EPA is contracting a 6 part study of existing information on the river and USGS is studying the affects of air-born contaminants."
1.6	27	Document organization. Both paragraphs in section 1.6 have a large amount of data that could be put in table form for simplicity.
1		Corrected typos, sentence structure, grammar, etc. 3 corrections
SECTION 2		
2.2	5	There are certain sections of this document that are very repetitive. This is one of these sections.
2.4.1.1	24	BLM Section: The BLM also administers some lands in the Spokane Subbasin.
2.4.1.1	24	USDI BOR Section: Include a discussion of the agreement between BOR and Canada.
2.4.1.1	24	NPS Section: insert NPS' new Upper Columbia Inventory and Monitoring Plan currently under development to the sentence.
2.4.1.1	25	USFWS Section: Is the "USFWS is the primary federal agency responsible for the conservation, protection, and enhancement of migratory birds, endangered species, and resident fish." Should "resident" fish be native fish?

2.4.1.1	25	USFWS Section: Does the Northeast Washington Recovery Plan for bull trout extend throughout most of the Province rather than in just the Pend Oreille Subbasin?
2.4.1.1	25	USEPA Section: EPA also oversee the NPDES permitting system for pollutant dischargers and they assist tribes and state governments in protecting water quality.
2.4.1.2	28	STOI Section - insert paragraph.
2.4.3	32	WSDOE Section: WDOE is also responsible for Watershed Planning.
2.4.1	33	2.4.1 Existing and Imminent Protections - Not just anadromous and bull trout or just salmon bearing streams.
2.4.3	37	# 4 Habitat quantity - include "and water rights easements to partially mitigate for loses and may not be directly connected to the affected areas."
2.4.3	37	# 5 - Competition/predation/hybridization - Assess c/p relationships.
2.4.3	37	# 8 - Change "hatcheries are" to "Artificial production is".
2.4.3	37	# 8 - Offsite vs Indirect mitigation – Could you please clarify this concept.
2.4.3	37	What is the point of this statement? "Therefore, projects have been implemented to fish and wildlife populations in spite of the existing limiting factors, rather than to try to eliminate the limiting factor directly."
2.4.3	37	Change "hatcheries are" to "Artificial production is".
2.4.3	38	Figure 2.5 Is "off-site" mitigation considered indirect mitigation for this graph?
2.4.4	40	Insert "and focal species continue to decline" into the last sentence of the first paragraph.
2.5.1	40	Non-listed fish species section: The plan states "The Council is to treat the Columbia Basin as a “system,” while balancing the requirements of hydropower production, to ensure an “adequate, efficient, economical and reliable power supply system”. Balancing implies something on both sides of the balance, and you've only identified power needs and not what it needs to be balanced with - in this case the environment/fish and wildlife.
2.5.1	40	FORMATTING.
2.5.1	41	Cost of fish passage modifications are not discussed at any point in the document to this point, nor in any section after. There is no documentation to support the "costliness" of passage modifications and identifying it as a issue here is inappropriate.
2.5.1	42	Unlisted Fish Species: The unlisted fish species section is repetitive. Combining the bulleted sections and paragraphs would improve clarity and flow.
2.7	45	The plan discusses the need to integrate state water quality management plans with the subbasin plan. However, there is no discussion of what part tribes' clean water management plans/standards play in the subbasin plans. Was there no directive in the technical guide in regards to this? If so it needs to be identified. If not, this section should reflect the work of the work teams to integrate tribal management plans/standards into the subbasin plan.
2		Corrected typos, sentence structure, grammar, etc. 9 corrections
SECTION 3		
3.2	5	Much of the information presented in the "Current Aquatic Resources in the IMP" is historical information.
3.2.1	5	The document states "Migratory fishes from the Columbia River were not present in the Coeur d’ Alene Subbasin prior to the construction of Grand Coulee and Chief Joseph dams, due to natural barriers on the Spokane River. The Coeur d’ Alene Indian Tribe historically fished for salmon in portions of the Spokane River and its tributaries downstream of Post Falls, Idaho." However, you stated earlier that they didn't go above the Falls - as does the historical data. Please make a single determination on this, explain it well and make sure it is carried throughout the document.
3.2.4	7	Discuss the inundation of the Spokane River bottom by Grand Coulee Dam. Grand Coulee Dam still has an affect on the river, but the effects are not discussed.

3.2.4	7	Throughout this document there is extensive discussion on how Grand Coulee Dam stopped migration of anadromous fish in the Spokane River. However, several other dams were already in place when Grand Coulee Dam was completed. Nine Mile Dam was built first, stopping migration to tributaries upriver. Fish could migrate as far as Little Spokane and those tributaries below it. In 1911, Little Falls Dam was built, stopping migration to the rest of the Spokane River. Grand Coulee Dam is an impediment, but it wasn't the first. The effects of these dams on the Spokane Fishery should also be addressed.
3		Corrected typos, sentence structure, grammar, etc. 5 corrections
SECTION 21		
21.1	4	Monroe Street Dam was built in 1890, not 1889 (Citation - IIP for FERC Project # 2545).
21.1	4	Personal Communication is unacceptable as a citation, especially when reports and other types of documentation exist. (3)
21.1	5	Dam location on Figure 21.1 (Spokane subbasin Map), location seems slightly off.
21.2.1	5	There seems to be some slight confusion about exactly where Lake Roosevelt begins in relation to the Spokane River. The Spokane Arm of Lake Roosevelt begins a short distance downriver from Little Falls Dam - not at the confluence of the Spokane River and the Columbia River.
21.2.2.4	7	The paragraph was largely re-written to improve clarity and flow of the paragraph. Additionally, the maximum daily flow (cfs) should be identified similar to what was done for Hangman Creek. That data would be available on the USGS website where they store past data.
21.2.2.5	11	Insert "Lake Spokane stratifies and is currently operated in the summer within one foot of full pool." into paragraph
21.2.3.1	11	Does the quantification of ROS event days indicate the length of time the events occurred or the number of events? It's not clear.
21.2.3.1	11	State line is two words, not one. This occurs frequently throughout the document.
21.2.3.2	14	It is highly unlike the average reservoir elevation for Lake Roosevelt is 1290, because that is the full pool elevation for Lake Roosevelt.
21.2.5	16	The statement "Information regarding the topography and geomorphology in the Chamokane Creek drainage was not available" is not true. Citations include: UCUT Report #38 – Drainage Basin Hydrology and Geomorphology of the SIR. 1993. & UCUT Report #24 – Geomorphology of Chamokane Creek below Ford, WA. 1989.
21.2.7	18	Chamokane Creek land use practices include forestry, livestock and agriculture, fish hatcheries, and urban development.
21.2.7	18	The second paragraph of this section was entirely about Hangman Creek, except the last sentence, where discusses the Little Spokane River. It reads as if it was an afterthought and it's out of place.
21.2.7.1	18	Very high road densities are also found on the Spokane Indian Reservation
21		Corrected typos, sentence structure, grammar, etc. 23 corrections
SECTION 22		
22.1	4	Table 22.1 - Remove the locations identified for white sturgeon, burbot, and kokanee salmon.
22.1	4	Table 22.1 - Add lake whitefish (*Coregonus clupeaformis*) and associated information to the table.
22.1	5	Table 22.1 - Walleye has a new scientific name (*Sander vitreus*).
22.1	5	Table 22.1 - Formatting - rows at bottom need to be narrower & tench needs a bottom border.
22.1.1	5	The Spokane River was not an "infamous" salmon river.

22.1.1	5	The Spokane Tribe harvested various anadromous species such as Chinook salmon, sockeye salmon, coho salmon (check on the validity of this statement - some biologist do not think coho salmon migrated this far up the Columbia River), and steelhead
22.1.1	5	The section discussing the suggestion that anadromous fish were capable of migrating past Spokane Falls contradicts what was stated earlier in the document. Tell the whole story in one place to clarify the issue.
22.1.1	5	Include Spring Creek as one of the streams that had natural barriers preventing upstream migration of fishes.
22.1.1	5	Nine Mile Dam was built before Little Falls Dam, and as such, affected upstream migration above the Nine Mile Dam before Little Falls Dam was built.
22.1.2	6	Nine Mile Dam, Little Falls Dam and Long Lake Dam were built at different times and they each played a part in preventing fish migrations.
22.1.2	6	When listing species, list them all, include "and others" type statement, or don't list them.
22.1.2	6	The statement "bull trout were present at low densities" contradicts the statement made earlier in the document that "450 salmon trout and cutthroat trout above Spokane Falls."
22.1.2	6	Replace sentence with "Bull trout occur upstream in Coeur d' Alene Subbasin, but are at depressed levels. Bull trout are also incidentally noted downstream in Lake Roosevelt, but are likely dropouts from tributaries."
22.1.2	6	What does "relatively abundant" mean?
22.1.2	7	Burbot information is available for the Spokane Arm - and they are native.
22.1.2	7	Combine paragraphs to simplify and hopefully improve logic path.
22.1.2	7	Citations need to be included with statements. (3)
22.1.4	9	Personal Communication is unacceptable as a citation when reports and other types of documentation exist.
22.1.2	10	Citation should be the original, not a citation of the citations
22.1.5	11	LRFEP has 10 years of data on Lake Roosevelt.
22.1.6	12	Add the following paragraph to address Spokane Tribe inland lakes. "There are three major inland lakes within the Spokane Indian Reservation that support fisheries. These are natural, eutrophic lakes that are not directly connected to larger streams or rivers. These lakes support salmonid fisheries that co-exist with warmwater species such as largemouth bass and pumpkinseed. Preference of Spokane Tribal members is to catch and consume salmonid species. Although the lakes suffer from high temperature and low dissolved oxygen, they are stocked with salmonids with the goal to provide an adequate consumptive fishery for tribal members."
22.1.6	13	Personal Communication is unacceptable as a citation when reports and other types of documentation exist.
22.1.6	14	Include Spokane Arm and Little Falls pool information. Include information on the tributaries of Little Chimokane and Chimokane, such as irrigation pumps in the streams.
22.3.2	15	Stocking information is available for other regions of the subbasin.
22.3.2	15	Replace "WDFW and Coeur d'Alene Tribe" for fish managers. Allows more flexibility for other managers that may want to do this type of work also.
22.3.2	15	Insert "Additionally, native rainbow trout, presumably redband trout, are found in the Blue Creek watershed, and potentially in Chimokane Creek (Citation–most recent JSAP report)." NOTE: These locations should be added to Figure 22.1 (Map of Redband Trout Distribution)
22.3.2.1	19	Include information about stocking of Spokane River by tribes.
22.3.2.1	19	Personal Communication is unacceptable as a citation when reports and other types of documentation exist.

22.3.2.1	19	The statement "Available data regarding the current population relative abundance, structure, and condition of rainbow trout in the entire Spokane River is limited to the middle (above Nine Mile Dam) and upper (above Spokane Falls) Spokane River." is not true. The LRFEP has 10 years of reports and Chamokane Creek has had work done in the past that includes population numbers etc. (UCUT Reports and JSAP reports).
22.3.3	23	There is currently no discussion about tribal harvest regulations. They need to be included as WDFW information was. Also, discuss specific regulations about the Spokane Arm.
22.4.2	24	Mt. Whitefish are present in lower Chimokane Creek and in the Spokane Arm of Lake Roosevelt. It should be at least mentioned and briefly discussed.
22.5.1	25	Personal Communication is unacceptable as a citation when reports and other types of documentation exist.
22.5.1	25	The statement "After the construction of Little Falls Dam, these sockeye were landlocked and are now referred to as kokanee." requires a citation.
22.5.2	25	Insert "Kokanee broodstocks used for artificial production are listed and described in the 2000 Lake Roosevelt Hatcheries Genetic and Management Plans".
22.5.3	26	Insert "A collaborative multi-agency artificial production program for Lake Roosevelt including the Spokane Arm exists. Lake Roosevelt fishery management agencies consisting of the WDFW, Spokane Tribe of Indians and Colville Confederated Tribes direct hatchery stocking in the Spokane Arm that includes annual releases of kokanee. Hatchery releases support a sport fishery as well as supplement kokanee returns up to Little Falls Dam where a terminal subsistence fishery for Spokane Tribal members exists. Current stocks used include brood from Lake Roosevelt, Lake Whatcom and Meadow Creek." Delete current paragraph.
22.6	26	Insert ", and the historic range of Chinook salmon up to Spokane Falls and into the Little Spokane River." at the end of the first sentence.
22.6.1	26	In the discussion of the historic status of Chinook salmon, a reference older than Scholz 1985 may be more appropriate to that discussion.
22.6.1	27	Delete Brian Crossley, personal communication and replace with citation of actual report (JSA 2003, pending report).
22.6.3	27	Change Spokane Tribe Reservation to Spokane Indian Reservation.
22.7.2	28	Personal Communication is unacceptable as a citation when reports and other types of documentation exist.
22.7.3	29	Largemouth bass are in the Spokane Arm, Lake McCoy and Benjamin Lake. There are no daily limits for tribal members and the populations are naturally reproducing.
22.8.1.1	30	The second paragraph very nicely states the theoretical concept of what happens, but is there actual evidence and documentation on the peak runoff over the years? It should be included.
22.8.1.2	30	The Spokane River is also currently on the 303(d) list for dissolved oxygen and TDG.
22.8.1.2	30	The term "some" should be quantified. Either as the number of miles or a percentage of the river that is free-flowing and/or percent reservoir.
22.8.1.2	31	High levels of TDG in the Spokane River is of concern and should be addressed. The citation is Avista's Golder 2003 TDG Report.
22.8.1.2	36	Insert "PCB and sediment grab samples were collected in Little Falls pool, and from Little Falls pool downstream to Porcupine Bay in 2003 (WDOE and Spokane Tribe).
22.8.1.2	36	When stating "Cultural eutrophication and nutrient loading <u>is evident by total phosphorus</u>.", supporting documentation for the TP should be included.

22.8.1.2	36	Insert "Much of the high biological oxygen demands and phosphorus loading result in extremely low dissolved oxygen levels (<4 mg/L below Long Lake Dam) (Avista 1999-2000 TDG study citation on the web).
22.8.1.2	37	Pacific Decadal Oscillation should not be tossed out as the only potential reason for failing to maintain flow targets. Post Falls Dam strongly influences flow in the Spokane River.
22.8.1.2	37	Personal Communication is unacceptable as a citation when reports and other types of documentation exist.
22.8.1.4	38, 39 & 40	Table 22.9 and Figure 22.7- Irrigators are limited in water use each year in Lake Spokane because the minimum instream flow is not being met. These tables and graphs do not show that. If they expressed daily flow from July-Sept with minimum instream flow, this would be shown clearly.
22.8.1.6	43	The majority of the suspended sediments settle out in Lake Spokane, but the TSS is higher below Long Lake than below Monroe Street.
22.8.1.6	43	How do you increase the carrying capacity for sediments?
22.8.1.7	43-44	Insert "Studies in the late 1980's and early 1990's found the area in Chamokane Creek below Ford, WA to be highly productive, similar to blue ribbon trout streams (UCUT Report # ??). A minimum instream flow of 24 cfs protects aquatic habitats from water withdrawals. Farming and logging with some grazing are the largest impacts to water quality". AND "Chamokane Creek provides a unique fishery for tribal members and low densities could be related to high fishing pressure." NOTE: There are references available to support these statements.
22.8.1.8	45	Past studies have found phosphorus loading and upstream sources to be linked to the low dissolved oxygen, algal blooms, increase of aquatic macrophytes, and poor quality conditions in Lake Spokane (Cunningham and Pine 1969; Soltero et al. 1992). What does "upstream sources" refer to?
22.8.1.8	45	Water retained behind Post Falls would/could alleviate some of the flow and pollution problems.
22.8.1.9	45	The annual mean and snow and spring runoff average (Feb-May) would provide more useful information.
22.9.1	46	The statement that there is no data regarding change in habitat conditions or identifying limiting factors available for Chamokane Creek drainage and Little Falls Pool is not true. There is a Watershed Plan from Stevens County Conservation District and UCUT reports that discuss bacteria, sediments, temperature, low flows (Citation – AVISTA 1999-2001 TDG and D.O. study).
22.9.1.1	47	Insert "The turbine intakes are positioned low enough that the water discharged down the river has a lower temperature, and a lower DO because Long Lake stratifies and becomes anoxic in the hypolimnion. TDG is a major problem below Long Lake Dam with TDG saturation levels reaching over 139% when the standard is 110%. A continual network of reservoirs prevent the dissolved gas from reaching equilibrium."
22.9.1.4	48	Spokane Arm and Little Falls Pool water quality issues are high temperatures, TDG and dissolved oxygen. They should be discussed for these reaches.
22.10	49	The limitations of using QHA for reservoir habitats should be clearly spelled out in the narrative of the model.
22.10.5	was 62, now 65	The sentence "There are five reaches on the mainstem of the Spokane River currently having kokanee where they were not present historically." needs to be more specific and cite information source, or just strike the sentence out of the document.

22.11	69	The QHA results need to be tied to the management plans developed by the Work Teams. The logic path on how we got from point A to point B is missing throughout this section. All of the information from section 22 needs to tie together and flow in a logical, successive order. Currently this is lacking.
22		Corrected typos, sentence structure, grammar, etc. 39 corrections
SECTION 23		
23.2	5	Need to reference STOI regulatory control over tributaries into Spokane River and also cite the Spokane Tribe as a party of Wild Salmonid Policy.
23.3.2	6	This section should include the Lake Roosevelt Forum as public involvement and information interface. Should note purpose and outcomes of annual conference.
23.3.2.2	6	Insert "The Spokane Tribal Hatchery (Galbraith Springs) project originated from the Northwest Power Planning Council (NPPC) 1987 Columbia Basin Fish and Wildlife Program. The *goal* of this project is to aid in the restoration and enhancement of the Lake Roosevelt and Banks Lake fisheries adversely affected by the construction and operation of Grand Coulee Dam. The *objective* is to produce kokanee salmon and rainbow trout for release into Lake Roosevelt for maintaining a viable fishery. The goal and objective of this project adheres to the NPPC Resident Fish Substitution Policy and specifically to the biological objectives addressed in the NPPC Columbia River Basin Fish and Wildlife Program to mitigate for hydropower related fish losses in the blocked area above Chief Joseph/Grand Coulee Dams."
23.3.2.2	6	Insert "The Spokane Tribal Hatchery (managed by the Spokane Tribe of Indians is one component of 4 artificial production *projects* operated complementary of one another as part of a *program* to restore and enhance the Grand Coulee impoundment fisheries (Lake Roosevelt and Banks Lake). The other artificial production components include the Sherman Creek Hatchery, Ford Trout Hatchery and the Lake Roosevelt Kokanee and Rainbow Trout Net Pen Projects. The Spokane Tribe operates the Spokane Tribal Hatchery, the WDF&W operates the Sherman Creek Hatchery, Ford Trout Hatchery and the Kokanee Net Pen Project and the Lake Roosevelt Development Association operates the Rainbow Trout Net Pen Project."
23.3.2.2	6	Insert "Each project has its own production goal to collectively produce up to 1,000,000 kokanee yearlings, 1.4 million kokanee fry/fingerlings and 500,000 rainbow trout yearlings for annual stocking into Lake Roosevelt and Banks Lake. Fishery managers from the Washington Department of Fish and Wildlife, Spokane Tribe of Indians and Colville Confederated Tribes comprise the Lake Roosevelt Hatcheries Coordination Team responsible for directing hatchery and net pen rearing operations. Performance and evaluation of hatchery and net pen reared fish released into the project area and the impact on the biota is monitored and evaluated by the Lake Roosevelt and Banks Lake Fisheries Evaluation Programs."
23.3.2.5	9	This section needs to add information on conservation/recovery objectives and current measures/tasks. This adds justification to a balanced & thorough approach to restoration and enhancement efforts, Spokane Arm & Lake Roosevelt reservoir wide.
23.3.2.6	9 & 19	This section needs to add information on conservation/recovery objectives and current measures/tasks. This adds justification to a balanced & thorough approach to restoration and enhancement efforts, Spokane Arm & Lake Roosevelt reservoir wide.
23.3.2.7	11	Insert more information about artificial production contribution to increases in fishery (harvest, actual economic value increases and supplementing adult returns to areas such as Hawk Creek, Little Falls Dam. Also language about building returns at Colville River, Sheep Creek and possibly others.

23.4.1	22	Other Projects Currently Not Included - The Spokane Tribe is collecting baseline information on habitat conditions on the Spokane Indian Reservation's streams and tributaries, completing an IRMP, monitoring and evaluating TDG and temperatures. NRDA and Midnight Mine Dam Mill site on Blue and Chimokane Creeks. Midnight Mine superfund site work. WDOE is doing a UAA, TMDL's (TDG in Lake Roosevelt), sediment replacement and PCB sampling. Lake Spokane Protection Association are doing aquatic weeds management plan for Lake Spokane. WIRA 54 work.
23.4.2	26	Is Hangman Creek really the only system with data gaps? This is difficult to believe, especially considering the number of times no information was identified as a problem in the rest of the document. Data gaps for the entire region need to be identified.
23		Corrected typos, sentence structure, grammar, etc. 1 correction
SECTION 26		
26.2	None	The management plan does not identify formalizing stocking of inland lakes as an objective/strategy, but it should.
26.2	6	Subbasin Objective 1B.2 Strategy b. There is no mention of working with internationally to promote fish issues, but much of the key kokanee spawning areas are located there.
26.2	7	Subbasin Objective 1B.3 Strategy a. This should also identify cooperating with tribal and state non-point source management plans.
26.2	8	Subbasin Objective 1B.4 Beaver control in excessively affected areas is another strategy that could be implemented to address flow issues.
26.2	8	Subbasin Objective 1B.5 Strategy c. Should also identify participation in existing technical and policy working groups.
26.2	9	Subbasin Objective 1B.6 Strategy a. Incomplete strategy - Conduct the evaluation to fill any gaps from existing studies.
26.2	9	Province Level Objective 1C and Subbasin Objective 1C.4. Combining these two objectives may make the document cleaner and give it more logical organization.
26.2	10	Columbia River Basin Level Goal 2A. This objective does not allow for opening up of non-historical habitat when it's appropriate.
26.2	10	Province Objectives 2A - The section is missing some potential strategies.
26.2	10	Subbasin Objective 2A2 Strategies all. Controlling effects of predators is not adequately covered under these objectives.
26.2	13	Subbasin Objective 2B.3 Strategy a. The numbers presented under this strategy do not reflect tribal subsistence numbers.
26.2	14	Subbasin Objective 2C.2. There are no strategies identified. Perhaps there should be, for example: conduct an assessment of anadromous fish status in Lake Roosevelt when plans come under review.
SECTION 29		
29.2.2	7	Clarify precipitation vs snowfall. It is currently unclear what comprises the precipitation values presented.
29.2.6	10	Clarify major land uses in the Subbasin. This paragraph, with the exception of the first 3 sentences, appears to be exclusively about the Colville River valley, but the Upper Columbia subbasin is much larger than this. Additionally, the paragraph is confusing and difficult to follow.
29		Corrected typos, sentence structure, grammar, etc. 4 corrections
SECTION 30		
30	all	Personal Communication should not be used so indiscriminately as the reference. Many of these referenced statements are from reports, papers, etc.
T of C	3	Formatting - Change Table of Contents font to match the rest of the document.
30.1.4.1	6	An explanation of what silver salmon and silver trout are would be helpful.

30.3.2	8	Combine the last two paragraphs of this section. They talk about essentially the same issues and would be better presented if they were combined.
30.3.3	9	The last sentence of the first paragraph in this section does not make sense.
30.3.3	9	Change "These fish have been found in Lake Roosevelt (2002 LRSRP Report)" to These fish have been found to migrate into Lake Roosevelt.
30.4.3	11	Personal Communication should not be used so indiscriminately as the reference. Many of these referenced statements are from reports, papers, etc.
30.4.3	12	The use of historic is indiscriminate - it seems to mean anything greater than 10 years ago. Due to the truly historic nature of much of the information presented in this document, the use of historic should be limited to information, documents, etc from 40-50 years ago or more.
30.9.1.4	17	30.9.1.4 - should be 30.9.1.2?. Colville River
	17	Colville River section 1st paragraph - what are "recreational grasses"
30.11.3	28	Under the key findings for kokanee, oxygen is identified as a limiting factor. However, the identification of oxygen as a limiting factor in Lake Roosevelt is not valid. The oxygen does not generally drop below levels necessary for Kokanee. This is an artifact of the fact that a few people identified TDG as an oxygen issue rather than a pollution issue as it should have been. The oxygen problems for LR are actually indicative of elevated TDG, NOT low oxygen.
30.11.4	34	Under key findings for adfluvial redband/rainbow trout, the degradation of habitat was most pronounced in reservoir habitats (Lake Roosevelt). This concept should be expounded on as it is critical to the logic path that should be threading through the entire section.
30		Corrected typos, sentence structure, grammar, etc. 52 corrections
30.4	10	DELETE ALL "STRIKE-THROUGH(S)" & ADD LANGUAGE LISTED BELOW
		ADD - Rainbow trout are stocked into Lake Roosevelt annually through a resident fish hatchery program established as partial-mitigation for losses of anadromous salmon and steelhead in the blocked area above Grand Coulee Dam.
		Development of the FCRPS adversely impacted the ability of native fluvial rainbow trout to sustain a viable population with a harvestable surplus. After construction of Grand Coulee Dam , ~~With commencement of widespread~~ stocking of hatchery-reared rainbow trout (*O. m. iridous*) into the Upper Columbia Subbasin commenced.~~*O. m. irideus* was introduced.~~
30.4.3	12	DELETE ALL "STRIKE-THROUGH(S)" & ADD LANGUAGE LISTED BELOW
		In the 1980's, volunteers from Lake Roosevelt piloted a successful net pen rearing rainbow trout program. Fingerlings raised by state and federal hatcheries were transferred to net pens in the fall and the volunteers reared the fish to the following spring before release. Creel surveys performed by Peone et al. (1989) estimated 65,515 rainbow trout were harvested from January to December 1989. In comparison, Harper et al. (1981) estimated anglers harvested 1,517 rainbow trout from April 15, 1981 to September 15, 1981. This large increase in harvest was attributed to the net pen rearing program (Peone et al. 1989). Fishery surveys in 1986 and 1987 conducted by the Upper Columbia United Tribes Fisheries Center indicated net pen reared trout grew in length at rates ranging from 22 to 36 mm/month and anglers caught most of the fish within 14 months after release (Peone et al. 1989). Prompted by excellent harvest returns and growth rates of net pen reared rainbow trout, additional space was incorporated in the design of 2 kokanee hatcheries constructed in 1990-1991 to rear 500,000 rainbow trout fingerlings annually for Lake Roosevelt net pens.
30.5	12	ADD-DELETE: mitigation~~substitution~~
30.5.1	13 TO 15	DELETE ALL "STRIKE-THROUGH(S)" & ADD LANGUAGE LISTED BELOW
		Note: listed below are 2 options (long & short) for inclusion into this section

		Option 1. Short Version:
		Various fisheries investigations from the 1940's to the early 1990's concluded reservoir operations effect on reproduction and early rearing habitat limited the ability of existing kokanee salmon populations of producing a viable fishery while noting a substantial biological productivity base (primary and secondary) capable of supporting a large number adult fish (Gangmark and Fulton 1949, Nigro, 1981, Stober et al. 1982,Jagielo 1984, Scholz et al. 1986, Peone et al. 1990). Continued fishery investigations in the 1980's indicated the use of artificial production as a viable way to restore and enhance kokanee salmon in Lake Roosevelt. Following recommendations in a feasibility study by Scholz et al. (1986), measures to construct two hatcheries were amended into the Northwest Power Planning Council 1987 Columbia Basin Fish and Wildlife Program. The measures for the hatcheries included one constructed in 1991 at Galbraith Springs on the Spokane Indian Reservation operated by the Spokane Tribe of Indians (Spokane Tribal Hatchery), and one constructed in 1992 at Sherman Creek (a northern tributary in Lake Roosevelt) operated by the Washington Department of Fish and Wildlife.
		Operation of the two hatcheries compliments each other. Kokanee eggs cultured at the Spokane Tribal Hatchery and resulting progeny are reared at both hatcheries before release into Lake Roosevelt as yearlings.
		Option 2. Long Version:
30.5.2	15 TO 16	DELETE ALL "STRIKE-THROUGH(S)" & ADD LANGUAGE LISTED BELOW
		From the 1940's to the late 1960's fishery surveys indicated a prominent population of kokanee salmon were abundant in Lake Roosevelt. Large numbers of kokanee were reportedly harvested in the forebay of Lake Roosevelt and high gill net and purse seine catches were made in the forebay in 1966 and 1967 by Bureau of Commercial Fisheries personnel (Snyder 1967, reviewed by Stober et al. and Scholz et al. 1986). There were additional reports of large numbers of kokanee that emigrated through Grand Coulee Dam during this time period. Interviews of local residents as well as National Park Service and Bureau of Reclamation personnel indicated that there was a salvage fishery for the "tens of thousands to hundreds of thousands" of disabled kokanee in the tailrace of Grand Coulee Dam (Cash 1985). These observations indicate that ecological conditions after 1939 to the late 1960's were favorable for successful reproduction and survival of kokanee.
		Kokanee abundance declined precipitously, commencing in 1968, after the reservoir was drawn down for the construction of a third powerhouse at Grand Coulee Dam. The drawdown was thought to negatively effect kokanee in at least two ways; first, through increased entrainment through the dams because of a higher flushing rate; second, by reducing access to tributaries and shoreline areas for spawning (Scholz et al. 1986). Since completion of the third powerhouse, the magnitude and duration of reservoir level fluctuations has been altered (U.S. Geological Survey reports for water years 1960-1984; reviewed by Scholz 1986). Analysis of the increased annual drawdown over time, specifically 1941 to 1976, indicated the kokanee decline after 1968 was because reservoir elevations reduced egg and fry survival rates (Stober 1977).

		Stober et al. (1977) evaluated the historical drawdown patterns of Lake Roosevelt in relation to spawning and incubation timing of kokanee and concluded that the decline in kokanee during the 1960's and 1970's could be explained by the impact of the annual drawdown regime on kokanee reproductive success (Scholz et al. 1985). Since 1968, the reservoir has been operated to produce more power, follow flood control rule curves and meet ESA requirements (1990's), thus causing lower water elevations and reduced water retention times from winter through spring. Since kokanee spawn in late fall when water levels are high, maintenance of reservoir levels in winter and spring are critical importance to the normal development of eggs and the early life history stages. Given these current reservoir operations, any type of natural production to support a sustainable kokanee salmon or fishery would be impossible (Scholz et al. 1986, Peone et al. 1989).
		Comparison of zooplankton standing crops in Lake Roosevelt to those of other good kokanee producing lakes indicates zooplankton densities in Lake Roosevelt are greater than, or comparable to, other kokanee lakes (Jagielo 1984, Beckman et al. 1985, Peone et al. 1989, Griffith and Scholz 1990). Taking into account that kokanee are primarily planktivorous feeders and analyzing the high productivity of zooplankton (e.g., Daphnia sp.), Beckman et al. (1985) estimated the forage base in Lake Roosevelt could support 16 million fingerlings and 5.9 million adult kokanee (Scholz et al. 1986, Peone et al. 1989).
		Nigro et al. (1983) determined that 27,200 m of suitable natural spawning habitat was available for kokanee in Lake Roosevelt and tributaries, and calculated that 181,000 adult fish or 5.4 fish/hectare could be produced by natural spawning if the habitat was fully utilized. Thus, the ability of naturally spawned kokanee to populate the reservoir was far less than the number that could be produced given the food availability in the reservoir. The primary (phytoplankton) and secondary (zooplankton) biological productivity of the reservoir can support 5.9 million adults, whereas the maximum number that can be produced, if all natural spawning habitat is used, is 0.18 million adults (Scholz et al. 1986, Peone et al. 1989). Continued fishery investigations in the 1980's indicated the use of artificial production as a viable way to restore and enhance kokanee salmon in Lake Roosevelt. Following recommendations in a feasibility study by Scholz et al. (1986), measures to construct two hatcheries were amended into the Northwest Power Planning Council 1987 Columbia Basin Fish and Wildlife Program. The measures for the hatcheries included one constructed in 1991 at Galbraith Springs on the Spokane Indian Reservation operated by the Spokane Tribe of Indians (Spokane Tribal Hatchery), and one constructed in 1992 at Sherman Creek (a northern tributary in Lake Roosevelt) operated by the Washington Department of Fish and Wildlife (Sherman Creek Hatchery).
30.5.2	15 TO 17	DELETE ALL "STRIKE-THROUGH(S)" & ADD LANGUAGE LISTED BELOW
		The Upper Columbia Subbasin currently supports adfluvial (residualized) stocks of kokanee as well as hatchery-supported stocks originating from Lake Roosevelt, Lake Whatcom and Kootenay Lakes. No anadromous life history types are present, although current populations are thought to possess remnant genetic material of anadromous sockeye salmon making them prone to emigration ~~ing~~. Kokanee are considered abundant within the Upper Columbia Subbasin, although ~~fish~~ recruitment from the natural spawning population is limited~~. in the natural spawning tributaries is low.~~ While artificial propagation substantially contributes to the ~~overall numbers~~ population, ~~of kokanee,~~ entrainment, predation and precocity problems are known limiting factors to the survival/success of hatchery releases.

		Kokanee hatchery stocking from 1988 to 1994 predominantly consisted of fry releases. However, coded wire tag data and a study to chemically imprint and assess smoltification of hatchery produced kokanee indicated that kokanee released as residualized smolts (e.g. yearlings/age 1+) performed more favorable than the kokanee released as fry/fingerlings (age 0+) (Scholz et al. 1993, Tilson et al. 1994 and 1995). Additionally, entrainment losses and predation are thought to be a greater factor for kokanee released as fry as opposed to residualized smolts (Tilson et al. 1994 and 1995). As a result, hatchery stocking shifted from kokanee fry to residualized smolts/yearling releases. Since 1995 hatchery operations have targeted an release of 1-million yearling (residualized smolt) kokanee.
		In 1995 fishery managers implemented a harvest goal of 300,000 fish based upon the theoretical number of fish the impoundment could support. Ongoing fishery investigations include objectives to develop a model to predict biological responses to reservoir operation, evaluate the effects of releasing hatchery origin kokanee salmon and rainbow trout on the fishery and evaluate success of various stocking strategies to increase fish harvest while maximizing the return of spawning kokanee to egg collection facilities. .
	16	Do not list w/o a substantiating citation.
	17	An task already occurring in the Chief Joseph Kokanee Enhancement Project – this is current status section, not recommendation.
30.5.3	17	DELETE ALL "STRIKE-THROUGH(S)" & ADD LANGUAGE LISTED BELOW
		Kokanee management in the Upper Columbia consists of measures to enhance harvest opportunities, maintain genetic integrity of existing stocks and restore adult returns of wild and hatchery populations. Ongoing activities to meet these measures include an artificial production program, conservative harvest regulation of 2 fish per day, a program to evaluate natural occurring stocks with respect to conservation and/or recovery efforts and program for monitoring and evaluating the kokanee population reservoir wide. Fishery managers from the Spokane Tribe, Colville Tribe and WDF&W meet monthly to coordinate management and research activities. Additional support and peer review is provided by Eastern Washington University while the Lake Roosevelt Forum serves as a public inter-face mechanism.
		~~Several hatcheries and rearing locations, including Trout Lodge hatchery (private), WDFW-Sherman Creek, Colville, Spokane, Ford hatcheries, Spokane Tribal Hatchery, and Lake Roosevelt net pen program, culture kokanee for out-planting. However, there are no captive propagation facilities for the expressed culture of native stocks to prevent extirpation.~~ This is a task of the Chief Joseph Kokanee Enhancement Program.
		~~Due to the recent genetic analysis (Loxterman and Young 2003) of kokanee populations in Lake Roosevelt, current management efforts are aimed at conserving the genetic structure of the native population, while collecting new information on the origin of kokanee in Lake Roosevelt.~~
SECTION 31		
31		Same changes as in the Spokane Subbasin Inventory Section (23).
SECTION 34		
34.2	5	Columbia River Basin Level Goal 1A. This objective needs more fish related strategies (for example, tracking, temperature studies, etc.). Currently there seems to be a lot on habitat, but not so much on fish population status.
34.2	5	Subbasin Objective 1A1. There should be a strategy that identifies evaluation of reservoir effects on water quality with respect to fish.
34.2	6	Subbasin Objective 1A.4. A strategy that identifies evaluation of TDG effects on fish in net pens would be an appropriate addition to the strategies already identified.

34.2	7	Subbasin Objective 1A.4 Strategy d. It may be appropriate in some instances to remove natural barriers that impede fish migration. This strategy only identifies artificial barriers.
34.2	9	Subbasin Objective 1A.6 What will be used to measure how "intact and functional" riparian habitats are?
34.2	11	Columbia River Basin Level Goal 1C and the Provincial Level Objective identified under it deal with different fish groups (resident vs threatened and endangered).
34.2	11	Columbia River Basin Level Goal 2A and the Provincial Level Objectives 2A identified under it identify different fish groups (resident vs native, when not all resident fish of concern are native).
34.2	11-12	Columbia River Basin Level Goal 2A and the Provincial Level Objective 2A2 - PL Obj 2A2 identifies subsistence species (among others) as species to "maintain, restore, and enhance". However, many subsistence species may not have a historical range in this subbasin (which is identified in the Columbia River Basin Level Goal 2A as the level of restoration to attain).

Terrestrial

Section	Page	Comments
GENERAL		
	ALL	Following hydropower you do not always have to say flood control, irrigation and power generation.
SECTION 2		
2.4.1.2	28	**Spokane Tribe of Indians** The Spokane Tribe of Indians were historically a River People whose main staple diet pre- European settlement consisted of salmon harvested at three primary locations within the Intermountain Province. Spokane Falls and Little Falls along the Spokane River (Spokane Subbasin) and Kettle Falls located on the Columbia River (Upper Columbia Subbasin). The Spokane Tribe was bound on three sides by water and have one of the richest fishing archeological / histories in the Interior Columbia River Basin. President Hayes signed the Executive Order establishing the Spokane Indian Reservation on January 18, 1881. The executive order established the reservation size to be approximately 157,000 acres (mol). ***" It is here by ordered that the following tract of land situated in Washington Territory be, and the same is hereby, set aside and reserved for the use and occupancy of the Spokane Indians, namely:*** ***Commencing at a point where Chamakane Creek crosses the forty eight parallel of latitude; thence down the East bank of said creek to where it enters the Spokane River; thence across said Spokane River***

		westwardly along the southern bank thereof to a point where it enters the Columbia River; thence across the Columbia River northwardly along its western bank to a point where said river crosses the said forty eight parallel of latitude thence East along said parallel to the place of beginning." ***R.B. Hayes*** The mission of the Spokane Tribe of Indians Department of Natural Resources is to preserve, protect, manage and enhance the long term sustainability of the Natural Resources for present and future generations, through interdisciplinary process by developing and implementing Best Management Practices. The Department of Natural Resources of the Spokane Tribe has management authority that includes areas such as; fish and wildlife management, enforcement, land use activities, water rights and adjudication, development, hydraulics permitting and shore line protection. STOI DNR / Bureau of Indian Affairs use the Forest Management Plan, Integrated Resource Management Plan, Code of Federal Regulations, and the Spokane Tribal Law and Order Code to assist in the decision making of management for land use, water resources and fish and wildlife resources. An Environmental Code and a Non-Point pollution source plan are currently under development.
SECTION 4		
4.3.1.1	14	Paragraph 3, sentence 2. Needs reworded. Suggestion: "These forested wetlands have been subject to fewer of the lower elevation practices such as grazing,"
4.3.1.2	16	Paragraph 1, sentence 4, needs reworded. Suggestion: "Reduction in beaver populations has likely affected riparian habitats."
4.3.1.3	16	Paragraph 1, sentence 3, need to include "trees and" before shrubs.
4.4.1.1	30	Paragraph 1, sentence 2, Indicates that bison were over harvested prior to European settlement, which means that Native Americans over-hunted and I do not believe this to be the case.
4.5.1	32	Table 4.7 Upland aspen has no species closely associated. Ruffed grouse was probably included with the riparian habitat, but is would more closely associated with upland aspen and is an important mitigation species.
4.5.2.3	51	Ruffed grouse section. Ruffed grouse definitely breed in the Upper Columbia Subbasin.
SECTION 25		
25.1.5	5	Rewrite: "The Spokane Tribe of Indians manages wildlife resources on the Spokane Reservation. The Wildlife Program is directly responsible for the management of over 6000 acres of wildlife lands that were acquired through BPA and Avista Utilities mitigation projects in the Spokane Subbasin.
25.2	6	Paragraph 4, sentence 1. 1st word is "Sage" not age.

25.2	6	Paragraph 5, additional information. "The Spokane Tribe is nearing the completion of a Sharp-tailed Grouse Re-Introduction Feasibility Study for the Spokane Indian Reservation (Spokane Subbasin). If the study indicates that sufficient habitat (quality and quantity) exists or would exist with the proper habitat enhancement activities. The Spokane Tribe will then work with other management agencies within the western U.S. to identify populations of Columbian Sharp-tailed grouse that may be used for the Re-Introduction effort.
25.3		Formatting should be similar throughout the inventory section
25.3.1.2	7	**In heading include "Project # 199800300" and rewrite to similar format.**
		"Operate and Maintain wildlife lands that have been acquired through Project # 199106200. Management activities include fencing, noxious weed control, road maintenance, site clean-up and etc.. The habitat enhancement activities that are occurring on these lands are being conducted with tribal funds. During the 2000 Rolling Review Process the project included the Sharp-tailed Grouse Re-introduction Feasibility Study that has been delayed due to the BPA financial crisis, but should be completed in 2004.
		Associated Monitoring:
		Conduct initial HEP analysis on projects within 1 year of acquisition and then every 5 years there after.
		Habitat Monitoring includes tree and shrub survival surveys, native grass/forb restoration establishment surveys and photo point monitoring.
		Wildlife Population Monitoring includes Ruffed Grouse Drum Counts, Bird Point Counts, Small Mammal Trapping, Big Game Counts, Bald Eagle Surveys, and Incidental Wildlife Observations.
		Accomplishments:
		Since 2001, over 16,000 riparian trees and shrubs have been planted within the McCoy Lake Watershed (non-BPA funding)
		McCoy Creek Stream Channel Restoration: 1000' of the stream channel was constructed to near original characteristics. Riparian tree and shrub planting will be conduct on the site in 2005 (non-BPA funding).
		Conversion of over 60 acres of old agricultural land to native grass.
25.3.1.3	8 NEW SECTION	New section needs added to include: "Project # 199106200 Spokane Tribe Wildlife Mitigation: Blue Creek Winter Range. **This project should actually be before the Spokane Tribe O&M**.
		"Protect wildlife habitat as partial mitigation for the Grand Coulee Dam construction and inundation wildlife loss assessment through fee title and tribal allotment title acquisition on or adjacent to the Spokane Indian Reservation. The project was initially started as acquiring land within the Blue Creek Winter Range area, but has come to include all wildlife mitigation land acquisitions. The current priority areas include McCoy Lake Watershed, Wellpinit Mt., and the Peaks (shrub-steppe/steppe habitat). The Spokane Tribes wildlife projects can be acquired in both the Spokane and Upper Columbia Subbasins.
		Accomplishments:
		Between 1996 and 1999, the Spokane Tribe acquired 1863 acres of wildlife lands of which 1663 acres are located within the Spokane Subbasin.
		The project was approved for a total of $4.5 million in acquisitions for FY02-03, but no projects were funded due to the BPA financial crisis.
		To date in FY04, the Tribe has acquired 1151 additional acres of mitigation lands all in the Spokane Subbasin.

25.3.2	8 NEW SECTION	**Spokane Tribes Little Falls Wildlife Mitigation Agreement (Avista Utilities)**
		"Protect wildlife habitat as mitigation for Little Falls Dam construction and inundation through fee title and tribal allotment title acquisition on or adjacent to the Spokane Indian Reservation. The primary focus was on acquisition of land with in the Chimokane Creek Watershed and all projects were acquired in the Spokane Subbasins.
		Accomplishments:
		The final land acquisitions took place in 2000 and a total of 3223 acres of land have been protected.
SECTION 26		
All		May have additional comment once the final Spokane Subbasin meeting information is included in the plan.
SECTION 32		
32.2.2.1	17	Sharp-tailed grouse section, end of 2nd line "of" instead of or.
SECTION 33		
33.1	NEW	**Similar to 25.1.5** "The Spokane Tribe of Indians manages wildlife resources on the Spokane Reservation. The Wildlife Program is directly responsible for the management of 200 acres of wildlife lands that were acquired through the BPA mitigation project in the Upper Columbia Subbasin."
33.3.1.2	6	Heading to include: "Project # 199106200 Spokane Tribe Wildlife Mitigation: Blue Creek Winter Range.
		"Protect wildlife habitat as partial mitigation for the Grand Coulee Dam construction and inundation wildlife loss assessment through fee title and tribal allotment title acquisition on or adjacent to the Spokane Indian Reservation. The project was initially started as acquiring land within the Blue Creek Winter Range area, but has come to include all wildlife mitigation land acquisitions. The current priority areas include McCoy Lake Watershed, Wellpinit Mt., and the Peaks (shrub-steppe/steppe habitat). The Spokane Tribes wildlife projects can be acquired in both the Spokane and Upper Columbia Subbasins.
		Accomplishments:
		Between 1996 and 1999, the Spokane Tribe acquired 1863 acres of wildlife lands of which 200 acres are located within the Upper Columbia Subbasin.
		The project was approved for a total of $4.5 million in acquisitions for FY02-03, but no projects were funded due to the BPA financial crisis.
		To date in FY04, the Tribe has acquired 1151 additional acres of mitigation lands in the Spokane Subbasin, but near the border of the Upper Columbia.
33.3.1.3	6	**Heading to include "Project # 199800300" and rewrite to similar format.**

		"Operate and Maintain wildlife lands that have been acquired through Project # 199106200. Management activities include fencing, noxious weed control, road maintanence, site clean-up and etc.. The habitat enhancement activities that are occurring on these lands are being conducted with tribal funds. During the 2000 Rolling Review Process the project included the Sharp-tailed Grouse Re-introduction Feasibility Study that has been delayed due to the BPA financial crisis, but should be completed in 2004.
		Associated Monitoring:
		Conduct initial HEP analysis on projects within 1 year of acquisition and then every 5 years there after.
		Habitat Monitoring includes tree and shrub survival surveys, native grass/forb restoration establishment surveys and photo point monitoring.
		Wildlife Population Monitoring includes Ruffed Grouse Drum Counts, Bird Point Counts, Small Mammal Trapping, Big Game Counts, Bald Eagle Surveys, and Incidental Wildlife Observations.
		Accomplishments:
		Since 2001, over 16,000 riparian trees and shrubs have been planted within the McCoy Lake Watershed (non-BPA funding)
		McCoy Creek Stream Channel Restoration: 1000' of the stream channel was constructed to near original characteristics. Riparian tree and shrub planting will be conduct on the site in 2005 (non-BPA funding).
		Conversion of over 60 acres of old agricultural land to native grass.

Kelly Singer, Wildlife Mitigation Project Manager.
Tim Peone, Spokane Tribal Hatchery Manager
Deanne Pavlik, Program Manager, Lake Roosevelt Fisheries Evaluation Program

Spokane Tribal Natural Resources

P.O. Box 100 ● Wellpinit, WA 99040 ● (509) 258 – 9042 ● fax 258 - 9600

May 12, 2004

GEI,

Enclosed please find a comprehensive list of the Spokane Tribe of Indians fish and wildlife managers concerns regarding the fourth draft of the Intermountain Province Subbasin Plan.

AQUATICS

Section	Page	Comments
OVERALL		
		Overall the plan has much improved.
1 & 22 & 30		In some sections you have Grand Coulee Dam as having inundated 151 (Upper Columbia Subbasin Sections), and in others 135 miles (Section 1 and Spokane Subbasin)? Please use just one number for the "length" of Lake Roosevelt. Also, in Section 30.9.1 it states that the Columbia River from Grand Coulee Dam to the international border was inundated. There is a free-flowing section between the upper reaches of Lake Roosevelt and the international border. Also, in Section 1.4.1, you state that only free-flowing Columbia River in the U.S. is in the Hanford Reach (pg 31)? Would you please address these inconsistencies?
26 & 34 or one of the overview chapters.		There should be language included into the Plan, and the Management Plans for the Upper Columbia and Spokane Subbasins for the Lake Roosevelt sections that identify hydro-operation needs of the Lake Roosevelt Fishery. These were last updated in the Mainstem Amendment (2003). It just came to our attention that the Mainstem Amendments were going to be replaced by the Subbasin Plans, so this language is not currently captured in the Subbasin plans. This issue must be addressed.
EXECUTIVE SUMMARY		
		Good.
SECTION 1		
1.4.1	28	The discussion of the history of the fishery in the Columbia River suggests the fishery had already crashed prior to the completion of the Dams. This refers to the entire Columbia River, but not really what was going on in the Upper Columbia River region - where fisheries were still strong. How should this be clarified? The fishery existed until 1939. Cite how many fish were harvested historically to highlight our concern.
1.4.1	28	This section should include the BPA/BOR construction of the Ford Fish Hatchery in 1941 as an initial onsite mitigation program.
1.4.1	31	Insert discussion identifying higher temperatures and lower D.O. levels associated with reservoirs as they impact fish as well.
SECTION 2		
		No comments

SECTION 3		
All		Much improved section.
3.1	5	The upper Columbia fisheries were important to more than the Colville Tribes – it was important to tribes as a whole. (See the sentence "Although Kettle Falls was the preeminent fishery, it was only one of many upper Columbia River fisheries important to the Colville Tribes such as the San Poil River fishery.")
3.2.4	7	Insert "It was the first of three dams on the Spokane River constructed without fish passage facilities (Little Falls in 1911 and Long Lake Dam in 1915). Delete "~~Upper Falls Dam on the Spokane River was completed in 1922 without fish passage facilities~~."
SECTION 22		
22.1.1	3	Delete "surface" from: Sockeye salmon historically migrated up the east branch of the Little Spokane River to Chain Lakes, which consists of three small lakes with a total ~~surface~~ area of 100-surface acres (unpublished WDFW 1956).
22.1.1	3	Reword the following: After the construction of Little Falls Dam (RM 29) in 1911, migratory fishes (anadromous and resident salmonids) were blocked from the ~~upper~~ middle reaches of the Spokane River and its tributaries including Chamokane Creek (RM 32.5), Little Spokane River (RM 56.3), and Hangman Creek (RM 72.4) (Scholz et al. 1985). Additionally, after the construction of Grand Coulee Dam (1939) on the Columbia River, anadromous stocks were ~~permanently~~ blocked and extirpated from the remainder of the lower Spokane River system.
22.1.2	4	The date on Little Falls Dam is 1910, but 1911 was used in the rest of the document.
		Rewording: "Bull trout occur in the upstream Subbasin (Coeur d' Alene), but are at depressed levels (Scholz et al. 1985). Bull trout are also incidentally noted downstream in Lake Roosevelt, but are likely dropouts from tributaries. ~~and downstream in Lake Roosevelt, but the current populations in both regions are at depressed levels (Scholz et al. 1985).~~
22.1.5	8	Insert "major" into: "The other major tributaries to Lake Roosevelt include Colville River, Kettle River, and San Poil River."
22.3.2.1	18	Delete: "Genetics samples for the lower Spokane River have been collected, but have not been analyzed to date (STOI personal communication, April 2004)."
22.4.2	31	Please use Chamokane Creek, not Chamokane River. (last word, 1st paragraph)
22.6.2	44	Distinguish the Chinook from Coeur d' Alene as non-anadromous: "The only naturally reproducing population of Chinook salmon is a non-anadromous population that exists upstream in Coeur d' Alene Lake, the neighboring Subbasin."
22.8.1.2	52	Insert "combined with stratification of Lake Spokane in "Dissolved oxygen levels have also been low (<4 mg/L) downstream of Long Lake as a result of the high biological oxygen demands and phosphorus loading combined with stratification of Lake Spokane (CH2MHILL, 2000, 2001, 2002; Golder Associates 2003a)."
22.8.1.2	53	The following section is difficult to understand: "These types of bedload movement impediments contribute to reduced entrainment of smaller gravel and cobble and allowed a relatively homogeneous substrate composition dominated by large cobble through boulder size substrate to remain. This large substrate limits the native salmonid spawning habitat, where currently there are only three major spawning sites for rainbow trout located between Post Falls and Upper Falls Dam (Avista Corp 2000)."
22.8.1.7	62-63	Delete: "In 2002, salmonids were only observed in one of six reaches electrofished. Density of salmonids in the reach was estimated to be less than 8 fish/100 m^2 (Conner et al. 2003b)."
22.8.1.9	64	Insert "The maximum TDG levels at the tailrace of Little Falls Dam was between 125-134 percent from 1999-2001 (CH2MHILL, 1999, 2000, 2001). High TDG levels are the suspected cause of net pen fish kills within the Spokane Arm of Lake Roosevelt in 1999 and previous years (Tim Peone, personal communication, 2004)."

22.9.2.4	68	Restructure the sentence as follows: "Two key ~~habitat~~ water quality alterations impacting conditions in Little Falls Pool include TDG~~s~~ and dissolved oxygen levels. During the spring months TDG saturation often exceeds the 110 percent water quality standard while dissolved oxygen levels fall below 4 mg/L during the summer and fall months ~~(CH2MHILL 1999, 2000, 2001)~~. High TDG~~s during~~ occurs primarily in the spring months (CH2MHILL 1999, 2000, 2001). The Spokane Tribe of Indians has not been able to successfully raise fish in net pens in Little Falls Pool.
22.9.2.6	69	Delete the "s" from TDGs in: "The transformation from a free-flowing environment to a more lacustrine system has negatively impacted water quality through increased water temperatures and TDG~~s~~ and decreased dissolved oxygen levels."
SECTION 23		
23.1.1.4	4	Coeur d' Alene Tribe Section – single space formatting.
23.3.2.5	21	In the *Water Quality and Quantity Monitoring on Spokane Indian Reservation* section, please use "Spokane Indian Reservation" rather than "Spokane Indiana Reservation".
23.3.2.5	22	In the *Spokane Tribe Integrated Resource Management Plan* section, please use "Spokane Indian Reservation" rather than "Spokane Indiana Reservation".
23.3.2.5	22	Replace Risk with Resource in "Integrated Risk Management Plan".
23.3.2.5	22	Under Accomplishments, include "and a new Forest Management Plan is being developed.
23.4.2	26-27	Hangman Creek is not the only system with gaps between actions needed and actions taken. Other gaps in the Subbasin need to be identified and addressed.
SECTION 26		
		Include Mainstem Amendment language for Hydro-operations.
SECTION 30		
30.1.1	3	Delete "the" from "..., more than 25 fish species are known to occur throughout ~~the~~ Lake Roosevelt."
30.3.3	7	Replace Plan with Project in "These fish have been found to migrate into Lake Roosevelt (2002 Lake Roosevelt Sturgeon Recovery ~~Plan~~ Project Report)."
30.3.3	7	Delete "Additionally, the WDFW will be raising sturgeon at hatchery that has not yet been determined (eggs or fish from Canadian source) next year while awaiting completion of a feasibility study for a U.S. conservation hatchery." This concept is captured more fully in the following 2 paragraphs.
30.4.1	9	(End of first paragraph) Incomplete sentence - "Today,"
30.4.4	30	Remove "were" and add comma in "Fingerling rainbow trout were raised by state and federal hatchery, ~~were~~ transferred to net pens in the fall and the volunteers reared the fish to the following spring before release.
30.5.1	32	Replace "impossible" with "difficult" and delete the "or" in "Given these current reservoir operations, any type of natural production to support a sustainable kokanee salmon ~~or~~ fishery would be difficult ~~impossible~~ (Scholz et al. 1986, Peone et al. 1989)."
30.5.1	32	*Daphnia* should be italicized (5th paragraph of section).
30.5.2	33	3 Typos in 2nd paragraph: 1) delete "and" from the last sentence. 2) Replace "favorable" with favorably"; and 3) delete "the" from the following sentence: "However, coded wire tag data and a study to chemically imprint and assess smoltification of hatchery produced kokanee indicated that kokanee released as residualized smolts (e.g. yearlings/age 1+) performed more favorably~~e~~ than ~~the~~ kokanee released as fry/fingerlings (age 0+) (Scholz et al. 1993, Tilson et al. 1995)."
30.5.4	40	Add an "ly" to natural, add an "a" before program, and add "of Indians" to Spokane Tribe in the following sentences: "Ongoing activities to meet these measures include an artificial production program, conservative harvest regulation of 2 fish per day, a program to evaluate naturally occurring stocks with respect to conservation and/or recovery efforts and a program for monitoring and evaluating the kokanee population reservoir wide. Fishery managers from the Spokane Tribe of Indians, CCT and WDFW meet monthly to coordinate management and research activities."

30.7.1	43	Please reword following: "Pacific lamprey were utilized by Upper Columbia Tribes. Northwest Indians utilized Pacific lamprey for food. They were smoked~~ing~~, sun dried, and salted (Wydoski and Whitney 2003)."
30.7.1	43	Delete "and" and add a comma to "Commercial fisheries existed in the Lower Columbia as late as the 1940's, when lamprey were used for oil production, ~~and~~ animal food and fertilizer (Wydoski and Whitney 2003).
30.9.1	45	Add a parenthesis to the end of the citation (LeCaire and Peone 1991)
SECTION 34		
		Include Mainstem Amendment language for Hydro-operations.

Terrestrial

Section	Page	Comments
SECTION 4		
4.3.1.1	14	Paragraph 3, sentence 2. Needs reworded. Suggestion: "These forested wetlands have been subject to fewer of the lower elevation practices such as grazing,"
4.3.1.2	16	Paragraph 1, sentence 4, needs reworded. Suggestion: "Reduction in beaver populations has likely affected riparian habitats."
4.3.1.3	16	Paragraph 1, sentence 3, need to include "trees and" before shrubs.
4.4.1.1	30	Paragraph 1, sentence 2, Indicates that bison were over harvested prior to European settlement, which means that Native Americans over-hunted and I do not believe this to be the case.
4.5.1	32	Table 4.7 Upland aspen has no species closely associated. Ruffed grouse was probably included with the riparian habitat, but they would be more closely associated with upland aspen and is an important mitigation species.
4.5.2.3	51	Ruffed grouse section. We have documented Ruffed grouse breeding in the Upper Columbia Subbasin.
SECTION 25		
25.1.5	5	Rewrite: "The Spokane Tribe of Indians manages wildlife resources on the Spokane Reservation. The Wildlife Program is directly responsible for the management of over 6000 acres of wildlife lands that were acquired through BPA and Avista Utilities mitigation projects in the Spokane Subbasin.
25.2	6	Paragraph 5, additional information. "The Spokane Tribe is nearing the completion of a Sharp-tailed Grouse Re-Introduction Feasibility Study for the Spokane Indian Reservation (Spokane Subbasin). If the study indicates that sufficient habitat (quality and quantity) exists or would exist with the proper habitat enhancement activities. The Spokane Tribe will then work with other management agencies within the western U.S. to identify populations of Columbian Sharp-tailed grouse that may be used for the Re-Introduction effort.
25.3		Formatting should be similar throughout the inventory section
25.3.1.2	7	**In heading include "Project # 199800300" and rewrite to similar format.**
		"Operate and Maintain wildlife lands that have been acquired through Project # 199106200. Management activities include fencing, noxious weed control, road maintenance, site clean-up and etc.. The habitat enhancement activities that are occurring on these lands are being conducted with tribal funds. During the 2000 Rolling Review Process the project included the Sharp-tailed Grouse Re-introduction Feasibility Study that has been delayed due to the BPA financial crisis, but should be completed in 2004.

		Associated Monitoring:
		Conduct initial HEP analysis on projects within 1 year of acquisition and then every 5 years there after.
		Habitat Monitoring includes tree and shrub survival surveys, native grass/forb restoration establishment surveys and photo point monitoring.
		Wildlife Population Monitoring includes Ruffed Grouse Drum Counts, Bird Point Counts, Small Mammal Trapping, Big Game Counts, Bald Eagle Surveys, and Incidental Wildlife Observations.
		Accomplishments:
		Since 2001, over 16,000 riparian trees and shrubs have been planted within the McCoy Lake Watershed (non-BPA funding)
		McCoy Creek Stream Channel Restoration: 1000' of the stream channel was constructed to near original characteristics. Riparian tree and shrub planting will be conduct on the site in 2005 (non-BPA funding).
		Conversion of over 60 acres of old agricultural land to native grass.
25.3.1.3	8 NEW SECTION	New section needs added to include: "Project # 199106200 Spokane Tribe Wildlife Mitigation: Blue Creek Winter Range. **This project should actually be before the Spokane Tribe O&M**.
		"Protect wildlife habitat as partial mitigation for the Grand Coulee Dam construction and inundation wildlife loss assessment through fee title and tribal allotment title acquisition on or adjacent to the Spokane Indian Reservation. The project was initially started as acquiring land within the Blue Creek Winter Range area, but has come to include all wildlife mitigation land acquisitions. The current priority areas include McCoy Lake Watershed, Wellpinit Mt., and the Peaks (shrub-steppe/steppe habitat). The Spokane Tribes wildlife projects can be acquired in both the Spokane and Upper Columbia Subbasins.
		Accomplishments:
		Between 1996 and 1999, the Spokane Tribe acquired 1863 acres of wildlife lands of which 1663 acres are located within the Spokane Subbasin.
		The project was approved for a total of $4.5 million in acquisitions for FY02-03, but no projects were funded due to the BPA financial crisis.
		To date in FY04, the Tribe has acquired 1151 additional acres of mitigation lands all in the Spokane Subbasin.
25.3.2	8 NEW SECTION	**Spokane Tribes Little Falls Wildlife Mitigation Agreement (Avista Utilities)**
		"Protect wildlife habitat as mitigation for Little Falls Dam construction and inundation through fee title and tribal allotment title acquisition on or adjacent to the Spokane Indian Reservation. The primary focus was on acquisition of land with in the Chimokane Creek Watershed and all projects were acquired in the Spokane Subbasins.
		Accomplishments:
		The final land acquisitions took place in 2000 and a total of 3223 acres of land have been protected.
SECTION 32		
32.2.2.1	17	Sharp-tailed grouse section, end of 2nd line "of" instead of or.
SECTION 33		

33.1	NEW	**Similar to 25.1.5** "The Spokane Tribe of Indians manages wildlife resources on the Spokane Reservation. The Wildlife Program is directly responsible for the management of 500 acres of wildlife lands that were acquired through the BPA mitigation project in the Upper Columbia Subbasin."
33.3.1.2	6	Heading to include: "Project # 199106200 Spokane Tribe Wildlife Mitigation: Blue Creek Winter Range.
		"Protect wildlife habitat as partial mitigation for the Grand Coulee Dam construction and inundation wildlife loss assessment through fee title and tribal allotment title acquisition on or adjacent to the Spokane Indian Reservation. The project was initially started as acquiring land within the Blue Creek Winter Range area, but has come to include all wildlife mitigation land acquisitions. The current priority areas include McCoy Lake Watershed, Wellpinit Mt., and the Peaks (shrub-steppe/steppe habitat). The Spokane Tribes wildlife projects can be acquired in both the Spokane and Upper Columbia Subbasins.
		Accomplishments:
		Between 1996 and 1999, the Spokane Tribe acquired 1863 acres of wildlife lands of which 200 acres are located within the Upper Columbia Subbasin.
		The project was approved for a total of $4.5 million in acquisitions for FY02-03, but no projects were funded due to the BPA financial crisis.
		To date in FY04, the Tribe has acquired 1151 additional acres of mitigation lands in the Spokane Subbasin, but near the border of the Upper Columbia.
33.3.1.3	6	**Heading to include "Project # 199800300" and rewrite to similar format.**
		"Operate and Maintain wildlife lands that have been acquired through Project # 199106200. Management activities include fencing, noxious weed control, road maintenance, site clean-up and etc.. The habitat enhancement activities that are occurring on these lands are being conducted with tribal funds. During the 2000 Rolling Review Process the project included the Sharp-tailed Grouse Re-introduction Feasibility Study that has been delayed due to the BPA financial crisis, but should be completed in 2004.
		Associated Monitoring:
		Conduct initial HEP analysis on projects within 1 year of acquisition and then every 5 years there after.
		Habitat Monitoring includes tree and shrub survival surveys, native grass/forb restoration establishment surveys and photo point monitoring.
		Wildlife Population Monitoring includes Ruffed Grouse Drum Counts, Bird Point Counts, Small Mammal Trapping, Big Game Counts, Bald Eagle Surveys, and Incidental Wildlife Observations.
		Accomplishments:
		Since 2001, over 16,000 riparian trees and shrubs have been planted within the McCoy Lake Watershed (non-BPA funding)
		McCoy Creek Stream Channel Restoration: 1000' of the stream channel was constructed to near original characteristics. Riparian tree and shrub planting will be conduct on the site in 2005 (non-BPA funding).
		Conversion of over 60 acres of old agricultural land to native grass.

Spokane Tribe of Indians, DNR Staff, Kelly Singer, Wildlife Mitigation Project Manager, Tim Peone, Spokane Tribal Hatchery Manager, Deanne Pavlik, Program Manager, Lake Roosevelt Fisheries Evaluation Program

Comments from the U.S. Fish and Wildlife Service

To: K. Overberg
GEI Consultants

From: G. Kedish
USFWS

Subject: Comments on Pend Oreille Subbasin Summary

Kristi,
Thanks for getting our comments incorporated! I did notice some possible inconsistencies between the overview (13) and the aquatic assessment (14), see 14-96 comment below. I think that is because 13 is more general and I just fear some people will extrapolate general information for personnel gains. Given more time we would probably catch more of these and improve the doc.

Thanks again,
Gary

13-2: ¶2 - None of the dams have fish passage facilities. Dams in the Pend Oreille tributaries further fragment the connectivity of native salmonid population, including Cedar Creek, Sullivan Lake, Mill Pond, Calispell Pumps, and West Branch LeClerc Creek Log Crib dams. Fish passage is blocked upstream of Lake Pend Oreille in the Clark Fork River at the Cabinet Gorge, Noxon Rapids, and Thompson Falls dams. These Clark Fork River dams are conducting experimental fish passage studies and are evaluating structure designs to pass bull trout

14-96: last ¶ - "The current velocities in Box Canyon Reservoir are considered unsuitable for native salmonids with the exception of mountain whitefish. Mountain whitefish were the fifth most abundant species captured in Box Canyon Reservoir from November 1988 to December 1989 (Barber et al. 1989)." **This seems to contradict ¶4 on 14-112, and adfluvial and fluvial fish are defined as fish living a large portion of their life in river and lake environments.**

14-97: ¶ - "While entrainment at hydroelectric facilities has been identified as a potential threat…" **Please delete potential. Hydro facilities are identified as a threat, not just a potential threat.**

14-112: ¶ - "…five mainstem dam facilities negatively habitat historically available and suitable for native salmonids." **Edit – Sentence fragment.**

U.S. Fish and Wildlife (Jason Flory)

Comments on Introduction

Section	Page #	Comment
1.2.1	1-6	Change, "One of the guiding principles developed in the IMP was to ignore political boundaries in deference to ecological boundaries", to "…was to favor ecological boundaries over political boundaries". Our map (fig. 1.1) shows a definitive recognition of the US-Canada border. Clearly we did not "ignore" political boundaries.
1.4.1	1-30	"The Colville Tribes efforts to construct the fourth GCFMP hatchery at Chief Joseph Dam would improve recovery efforts of listed salmon stocks and parallels this thinking." Do we **know** that another hatchery would improve recovery efforts? Perhaps if this is the Tribe's view, then it should be stated as such rather than as a statement of fact.
1.4.1	1-31	"Also devastating to the native fish has been the introduction of no fewer than 21 exotic fish…" Add "species" after "fish".
1.4.1	1-31	As in executive summary, "This impact has become known as oligotrophication (Stockner and Ashley 2003)", change or remove. The term, oligotrophication refers to the condition of water being poor in nutrients and is not solely associated with the loss of anadromous fish runs.

Comments on Provincial Management Plan

Section	Page #	Comment
2.3.1.2	2-24	Objective 1C2 (under priority 6) is exactly the same as Objective 2A1 (under priority 3). I suggest listing both objectives under priority 3, i.e. "Establish put-and-take fisheries for westslope cutthroat trout in waters that currently do not, or likely will not, support native cutthroat trout populations by 2010. **Objective 2C1, Objective 1C2**"
2.3.1.2	2-24	Objective 1C1 (under priority 6) is a strategy for achieving the above objectives.
2.5.1.2	2-74	Change, "Bull trout are a threatened (ESA-listed) resident fish species in the IMP", to "Bull Trout, a resident fish species in the IMP, are listed as threatened under the federal ESA."

Comments on CDA Aquatic Assessment

Section	Page #	Comment
6.1.1	6-3	Add statement similar to that in the Aquatic Resources section "Large migratory bull trout…were historically abundant in the Coeur d' Alene Subbasin."
6.3.1	6-8	In, "Currently only fluvial and adfluvial life strategies are present", change to "known to be present".

6.3.1	6-9	Somewhere in the discussion of bull trout population trends, cite the BTRP, "The current distribution is substantially less than the historical distribution."
6.6.1.2	44	Insert from BTRP pg. 11 "In the St. Maries River drainage, Fields (1935) and Maclay (1940) observed bull trout in Santa Creek".
6.6.1.3	45	Insert from BTRP pg. 8-9 "Maclay (1940) observed bull trout in 8 creeks (Grizzly, Brown, Beaver, Lost, Big, Downey, Yellow Dog, and West Fork Eagle Creeks), in addition to the North Fork CDA River".
6.6.2	53	Third paragraph in section, add bull trout whenever westslope cutthroat trout are mentioned, or change to "resident trout".
6.7.1	6-57	"The Coeur d' Alene Subbasin has **experience** over a century of settlement and anthropogenic disturbances impacting aquatic systems throughout the Subbasin in **varies** degrees." Change to "experienced" and "various".

Comments on Management Plan

Section	**Page #**	**Comment**
1C1	10-9	Insert link to BTRP CDA Chapter (http://pacific.fws.gov/bulltrout/recovery/Chapter_15.htm). Also, in 1C2, change from "Sixth priority" to "Third priority", since it is identical to our third priority (2C1). Somehow address the fact that we will likely work towards 1C2 and 2C1 by implementing 1C1 (perhaps by removing the "Sixth priority" from 1C1).
10.3.1	10-15-16	Objective 1C2 (under priority 6) is exactly the same as Objective 2A1 (under priority 3). I suggest listing both objectives under priority 3, i.e. "Establish put-and-take fisheries for westslope cutthroat trout in waters that currently do not, or likely will not, support native cutthroat trout populations by 2010. **Objective 2C1, Objective 1C2**"
10.3.1	10-17	Objective 1C1 (under priority 6) is a strategy for achieving the above objectives.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Upper Columbia Fish and Wildlife Office
11103 East Montgomery Drive
Spokane, Washington 99206

April 1, 2004

Ginger Gillin,
GEI Consultants, Inc.,
127 East Front Street, Suite 216,
Missoula, Montana 59802

Dear Ms. Gillin:

Thank you for the opportunity to provide comment on the most recent draft of the Intermountain Province Subbasin Plan. Enclosed are staff biologist comments on the Provincial Overview, the Pend Oreille, and the Coeur d'Alene sections. We are also providing these comments electronically.

If you have any questions, please feel free to contact Jason Flory for Coeur d'Alene comments at (509) 893-8003 and Gary Kedish for Pend Oreille comments at (509) 893-8028.

Sincerely,

FOR Supervisor

General comments:

I felt the writing was much better than past draft documents. I would like to see additional citations for many areas because of the current political arena in the Pend Oreille Subbasin. Especially section 14.8 that describes dam operations and flood control. Your language and statements WILL show up in legal/formal regulatory documents and will need to be scientifically sound and substantiated. There are several citations that I wonder about and may be cited differently in other documents; Fredenberg 2000 – is this the Priest Lake BTRP?, Entz and Maroney 2000 = NPPC 2001 in FWS 2002 doc. I have provided citations I have used in my comments and I would encourage you to contact me (G. Kedish, 509-893-8028) if I can help with other questions. Below are my comments for the Executive Summary, Introduction and portions of the Pend Oreille Subbasin.

G. Kedish
Fish and Wildlife Biologist
US Fish and Wildlife Service
Upper Columbia Fish and Wildlife Office

Section	Page	Comment
ES.2.1	3	". In addition to the Federal hydropower system, numerous public and private dams have been constructed in the province…" **Added public (PUD and Seattle Light) to other dams in the system. G. Kedish**
ES.5.2.1	26	"The construction of five dams on the mainstem Pend Oreille River and three dams on the lower Clarkfork have reduced the amount of riverine habitat and created large reaches of disjunct reservoir habitat." **The three dams are Cabinet, Noxin and Thompson Falls. The cite below lists the targeted species for passage. Kokanee: 100,000 upstream and 5-10 mil. Downstream. Other discussion in the Klenschmidt document. "**Lake Pend Oreille and its tributaries have historically provided a highly regarded sport fishery for bull trout, including trophy specimens. Estimated harvest peaked in the 1950s, as the last of the fish produced from adfluvial runs to Montana tributaries became available to anglers." 14.3.2.2, p.18. Klenschmidt Associates. 1997. Clarkfork Relicensing Team Fisheries Work Group. Cabinet Gorge Fish Passage and Protection Study. Phase I Report. Washington Water Power (Avista) Spokane, WA. P.15. "Kokanee salmon populations have been in decline since the 1960's, following the construction of Albeni Falls and Cabinet Gorge Dams and the introduction of *Mysis* shrimp"(FWS 2002). **G. Kedish**
ES.5.2.1	26	"Limiting factors for kokanee in Lake Pend Oreille includes fragmented habitat, predation and an inadequate quantity of shoreline spawning habitat." **(Above) G. Kedish**
2.4	28	"…KNRD resource plans for Kalispel Tribe's (KT) ~~ceded~~ lands. **The Kalispel Tribe is not a treaty tribe and therefore has no ceded lands as do the other tribes in our area. Strike out ceded. GK**
13.2.2.5 Hydrology	**17**	. ~~On a scale exceeding one day, Boundary Dam is a run-of-the river project as well.~~ **Delete. Boundary Dam should not be considered a 'Run-of-the-**

		River' project. Avista (2002) "'run-of-river' as used here(Spokane River), means that water flow into the [hydroelectric development] reservoir is essentially equal to downstream outflow, and the reservoir water levels change little unless under flood conditions, operation and maintenance activities, or some other unusual circumstance". Also, the BOR web page has a link to a glossary with a definition of run-of-river, which is similar. These types of projects, ROR, have very little, if any, useable storage, hence, ROR project. This is also the basis for my comment for Albeni Falls. G. Kedish **Avista Corp. 2002. Initial Information Package for the FERC Relicensing of the Spokane River Hydroelectric Project (FERC Project No. 2545). Spokane Washington. P30.** **Run-of-river plants.** The regulated inflow of one powerplant is equal to the outflow from a powerplant upstream. A hydroelectric powerplant using the flow of a stream as it occurs and having little or no reservoir capacity for storage or regulation. http://www.usbr.gov/main/library/glossary/#R **G. Kedish**
13.2.2.5 Hydrology	17	**There are two reservoirs under this license – Mill Pond and Sullivan Lake. G. Kedish**
14.1.1	5	"…abundance of ~~resident~~ trout and char (bull trout) above Z Canyon…" Delete**. Implies non-migratory fish and based on historical accounts, (Gilbert and Everman) fish caught in the Pend Oreille River were of size to suggest some of these fish were adfluvial and fluvial. G. Kedish**
14.3.2.2	19	During a non-native fish removal effort by WDFW, July 30, 2003, Kalispel tribal biologist, Todd Anderson, documented and removed a genetic sample from a 274mm bull trout below the municipal dam (S. Lembcke, pers. Comm. 2003). **New information, could just add cite in next ¶ "…**Individual fish sighting have been documented…"**. G. Kedish**
14.3.2.2	20	A manmade barrier ~~exists~~ about 0.6 km upstream from the mouth of Uleda Creek that was preventing bull trout upstream migration was removed in 2003 (IDL in litt. 2003; S. Deeds pers. comm. 2004). **This barrier was removed in 2003. G. Kedish**
14.3.2.3	19	"Currently, bull trout are still present in the lakes (Upper Priest and Priest Lakes) and some of their tributaries…" **Consider revising this section**. **There is no father discussion here about streams in this section.** "Currently, bull trout are still present in the lakes (Upper Priest and Priest Lakes) and have been reported in most of the large accessible tributaries (see Table 1.) The extent and type of utilization is not fully known. Bull trout have also been documented in the East River system and Lower Priest River~~.~~ (PBBT 1998a)." **The Table 1 reflects the presents of bull trout (redds) in 12 streams surveyed since 1992. The FWS agrees that the population is severely depressed, but distribution in this watershed needs to be recognized for future planners. G. Kedish** [0]I
14.8	46	"…combination of free flow, pumps and dikes/flapper valves ~~protected~~

		reduced potential flooding in the Calispell Valley ~~from flooding~~ during the annual two-part spring…" **Suggested revision. G. Kedish**
14.8.1	47	"Recent reservoir operations in Idaho and Montana have involved raising the winter lake levels for the presumed benefit of fisheries concerns." **Please revise this sentence –" Recent reservoir operations …" VARQ involves a lot more than higher winter levels above Albeni Falls. Additionally, there are no citations or support information for this paragraph. Suggest** – Recent changes in the FRCPS flood control system, VARQ, and the Lake Pend Oreille kokanee experiment, were initiated to benefit listed fish species and have resulted in higher than normal winter reservoir levels. The purpose of VARQ is "…to improve the multi-purpose operation [i.e.…flow objectives for the listed ESA…] of Libby and Hungary Horse while maintaining the current level of system flood control protection in the Columbia River" (Corps 1999, in litt. 1999a). The Corps was requested by NPPC to operate Albeni Falls Dam to support the kokanee experiment by sustaining a higher winter level in Lake Pend Oreille (McGrane 1999). **Add Cite. : Corps (US Army Corps of Engineers). 1999. Status report. Work to date on the development of the VARQ Flood control operation at Libby Dam and Hungry Horse Dam. Portland Oregon.** **G. Kedish**
14.8.1	47	"…potential frequency and duration of flooding downstream in places such as the lower Pend Oreille River Valley ~~(Cusick Valley).~~ **Needs citation. This is speculative without it. G. Kedish**
14.8.1.1		"…Drawdown of ~~the reservoir~~ Lake Pend Oreille…" Delete reservoir and insert Lk. P.O. This is a natural lake not a man-made reservoir. G. Kedish
14.8.1.1	49	**I had trouble reading this ¶. I tried to revise based on notes from presentations at a Pend Oreille River Watershed meeting (3-18-04) given by the COE and PUD operators. Again, where there is some finger pointing, without documentation or citations these are just speculative statements. G. Kedish** Raising the winter lake level by four feet reduces the available spring storage in Lake Pend Oreille by 360,000 acre feet (Kokanee Recovery Task Force 1999). ~~On the other hand,~~ One of the consequences of raising the winter storage level in Lake Pend Oreille is the increased potentially for flooding around the lake and along the lower Pend Oreille River below Albeni Falls Dam. ~~Cities and towns along the lower Pend Oreille are annually threatened by the run-off from the upper Pend Oreille, Flathead and Clark Fork basins.~~ Lake Pend Oreille ~~can pontentially~~ , at lower winter elevations, may reduce the impacts of high run-off by acting as a cushion during the run-off months of May and June when residents and landowners are most affected. ~~Raising the lake level by four feet reduces the amount of storage by 360,000 acre feet (Kokanee Recovery Task Force 1999) and subjects residents, farmers and landowners to an increased risk of flooding downstream of Albeni Falls Dam.~~ This risk in the lower Pend Oreille River may be farther reduced if proper procedures are followed by the Pend Oreille P.U.D. at Box Canyon Dam when certain reservoir water elevations are reached, if downstream pumping facilities are updated, and better cooperation takes place between the Corps of Engineers, Pend Oreille P.U.D. and the down stream drainage districts (McGrane 1999).
14.8.1.2	50	significant decline in native salmonid populations, particularly bull trout…" **This may also be true for westslope cutthroat. G. Kedish**

14.8.1.2	50	**See Critical Habitat justification language in document comment. Please use cited documents or call FWS (G. Kedish) for documents or citations. G Kedish**
14.8.1.2	50	**Vary vague statement without support!!!! Refer to my previous language. Also, the PUD continues to deny their project has affected the Pend Oreille River basin by not addressing what has changed (supporting info) and focusing on obscure statements. Example- What is "modest elevation change" "never were fast moving" and that seems to conflict with the next paragraph – "dangerous rapids" "good strong current" May consider revising. G. Kedish**
14.8.1.2	50	**First I have been aware of the agreement between the PUD and POCD. If this is the case, the Lead Entity TAG of the POCD (which I am part of) is in conflict with that agreement based on developing the LAF – Andonaegui 2003. G. Kedish**
14.8.1.2	51	"Historic records of velocity were also recorded by the USGS from 1903 to 1941 at a gage 1.6 miles below the present location of Albeni Falls Dam (Ray Smith, USGS personal communication, 2004) (note: in process of acquiring data)". **USGS data cited in Final CH rule for velocity at Newport from 1952 to 1966: pre-dam, pre-Albeni Agreement (1962) and post. In 1962, the PUD entered into some agreement with Corps to increase Box Canyon elevations by 2 feet at Albeni Falls. G. Kedish**
14.8.1.2	52	"Water temperatures often rise during the summer months (Andonaegui 2003) exceeding favorable thermal conditions of salmonids". **Salmonids normally move into tribs or cold water refugia in the main river during the summer months. The question is not the historic temp, but what is the change in duration and lost of refugia. These temperatures are near the upper lethal limit and a slight increase in temp or duration (exposure) may be critical. . Also, see my comments for temp above. G. Kedish**
14.8.1.2	52	"…rearing habitat preference for zero velocities. Habitat preference curves begin to reach zero for these fish when velocities are greater than 0.2 mps (0.8 fps)." **Needs Citation. G. Kedish**
14.8.1.2	52	"The current velocities in Box Canyon Reservoir are considered unsuitable for native salmonids with the exception of mountain whitefish." **This is not necessarily true and leads the reader to think that native salmonids have been lost because of changed velocity. This also conflicts with P. Buckely's (PUD) statements that the velocity has not significantly changed post dam – historic vs. current. Velocities are not a criteria for "suitability" in reservoirs or lakes, but rather DO, forage, temp, and etc. If velocity were a major factor we wouldn't have salmonids in Lake Pend Oreille or Lake Coeur d'Alene, not to mention major lakes in Montana or Canada. The Bull Trout Recovery Plan, Proposed Critical Habitat and LFA, (Andonaegui 2003) all cite connectivity as a major factor in the loss/decline of native salmonids. Again this needs citations and clarification. G. Kedish**
14.8.1.3	53	"…homesteading (J. Cobbs, Pend Oreille Water Conservation District, personal communication, 2003)**." J. Cobb works for USFS. Please Check reference G. Kedish**

14.8.1.3	55	"Rock Creek drainage (Fredenberg 2000)." **Please Check this cite. Dr. Fredenberg has not worked in this watershed. He is the FWS Bull Trout coordinator for Priest Lake and may be referring to other literature. G. Kedish**
14.9	62	The two primary limiting factors in the Lower Pend Oreille…" **This needs to be reinforced to include the major limiting factor being the lost of connectivity on the Pend Oreille River (Albeni Falls and Box Canyon Dams). Extensive work is being done on many of the tributaries and the Northeast Washington bull trout Recovery Team and others (TAG) have agreed that recovery is essential if not depended on passage at Albeni Falls and recommends passage at Box Canyon. See FWS 2002. G. Kedish**
14.9	62	"These low productivity watersheds help explain the evolutionary history of anadromous fish in the basin and the migrating nature of resident fish". **Please provide references for this ¶, and explain the last sentence. I have reports of dip netting and 'hook and line' harvest of whitefish and bull trout in Priest Lake Tribs during the 1920's and up to about when kokanee were introduced. G. Kedish**
14.9.1.1 Tributaries	63	**Comment: I really like this section, but you may consider including some references as this will be challenged by timber and ag. There are Barrier analysis and road densities information by the local managers – POCD, WDFW, KNRD, USFS, IDL. G. Kedish**

Comments from the U.S. Forest Service, Colville National Forest

From: Thomas H Shuhda <tshuhda@fs.fed.us>
To: <ggillin@geiconsultants.com>, <vailcav@dfw.wa.gov>, <gary_kedish@fws.gov>, <alison@softridge.net>, <ggillin@geiconsultants.com>
Date: 5/11/2004 10:42:24 AM
Subject: Comments to the 4th Draft Subbasin Workplans

Ginger, here are our comments:

In the Provincial Overview, under Kalispel Tribe, pg 2-54 - it is stated that "Tribal occupation of these areas is supported through the United States Constitution, Indian Claims Commission findings, executive order rights, and working agreements with the states of Idaho and Washington."

The word "occupation" indicates that the Tribe control these areas and can exclude all others. This is not the case for non-reservation lands within "these areas". We suggest deleting the above statement. If this is not acceptable, then we suggest replacing the above statement with the following - Tribal use of these areas in accordance with applicable state and federal law...

We can not sign this document if it contains this incorrect language regarding jurisdiction over National Forest System lands. Please refer to our previous letter discussing the rationale for our position on the "ceded lands" issue.

Thank you for the inclusion of our other proposed supplemental language throughout the documents previously reviewed.

Please call me if you have questions @ 509 684-7211.

CC: <alison@softridge.net>, Rick Brazell <rbrazell@fs.fed.us>, Donald N Gonzalez <dngonzalez@fs.fed.us>, <gary_kedish@fws.gov>, <vailcav@dfw.wa.gov>, Lynn F Kaney <lkaney@fs.fed.us>

United States Department of Agriculture
Forest Service
Colville National Forest
Federal Building
765 South Main
Colville, WA 99114
509-684-7000
Fax: 509-684-7280

File Code: 1900
Date: March 31, 2004

Ginger Gillin
Lead Consultant
GEI Consultants
127 E.Front St.
127 E. Front St., Suite 216
Missoula, MT 59802

Dear Ginger,

Thank you for the opportunity to review and comment on the third draft Intermountain Province (IMP) Subbasin workplans. Our comments are attached to this letter.

A majority of the technical corrections are self-explanatory. References are given where additional information is submitted for inclusion in the final workplans. Comparison of mean velocity, channel width and area worksheets are also attached to this letter as the source for the requested addition of a statement denoting changes in mean velocities, river channel widths and areas after the construction of Box Canyon Dam. Also, a copy of the formal Forest Service response and staff paper are attached as references for our request for a change in the existing language in the draft IMP Overview document regarding Kalispel Tribe "ceded lands" and "co-management".

If you have any questions concerning our comments, please contact Tom Shuhda at (509) 684-7211.

Sincerely,

Rick Brazell

RICK BRAZELL
Forest Supervisor

Enclosures

Caring for the Land and Serving People

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United States Department of Agriculture
Forest Service
Pacific Northwest Region
P.O. Box 3623
Portland, OR 97208-3623
333 S.W. First Avenue
Portland, OR 97204

File Code: 1563 **Date:** March 25, 2004
Route To: Tom Shuhda

Subject: Kalispel Tribal Status

To: Rick Brazell

I have been asked to respond to language written in a sub-basin planning document wherein an Executive Order Indian tribe has asserted that they have co-management duties for both fisheries and associated habitat. Further, that the author of the sections and parts of the plan have requested signatures from federal and state agencies which may lead a reader to believe that the assertions are accurate or otherwise factual.

Several important points need to be clarified about the claims of co-management status and land cessions made by federally recognized Indian tribes.

Within the court adopted Columbia River fisheries management plan, there are arrangements for Indian tribes to cooperate with the State of Oregon in the management of harvest allocations of salmon and steelhead. Along with this plan there are provisions for fisheries enhancement work. However, there is no mention of Indian tribes having authorities to make management decisions on federal lands. The term co-management was coined from this case and a similar one in Washington State. As the Columbia River case developed, Washington became a party to the case thereby sharing this cooperation status.

There is no court adopted definition for the term co-management. However, the USDA Office of General Counsel has issued an opinion on the term and subject based generally on the assumption that a party would share in making the management decision. The Forest Service has no authority to make two party decisions, nor the ability to share liability for such decisions.

Enclosed is a staff paper addressing the status of the Kalispel Tribe as an Executive Order Tribe. They have no ceded lands or off-reservation reserved rights.

If you have questions, please contact Les McConnell at 503-808-2603.

/s/ Jim Golden (for)
LINDA GOODMAN
Regional Forester
Enclosure

Sub-Basin Planning, US Forest Service and Claims Made Regarding the Kalispel Indian Community of the Kalispel Reservation, Washington State.

Documents written for sub basin planning contain statements implying that the Kalispel Indian Community has co-management status for fisheries. Those statements are not factual. The following archival research is an account of the historic facts illustrating the lack of off-reservation fishing rights:

The status of the Kalispel peoples as an Indian tribe and their relationship with the U.S. Government begins with Executive Order of the President, signed on April 8, 1872. The E.O. sets aside an Indian reservation for several bands of Indians in Washington Territory. The E.O. lists the tribe as having 420 members who are to reside on the Colville Reservation along with seven other tribes and scattering bands of Indians. In 1887, an agreement with the Coeur d' Alene Indians was concluded. Article 4. of this agreement contains a consent to settlement of "Calespel" peoples then living in the "Calespel Valley" and other Indians to be removed to the Coeur d' Alene Reservation.

Note: In 1871 Congress passed a law putting an end to treaty making with Indian tribes. Therefore, no treaty exists between these tribes and the U.S.; no lands were ceded to the U.S. by Kalispel, and no off-reservation rights were reserved for them by the U.S. or by themselves, for future use or management.

A Presidential Proclamation was signed on July 1, 1892 (27 Stat., 62), reducing the size of the Colville Reservation to approximately one half its original size. The area is commonly referred to as the old North Half of the original Colville Reservation. Hunting and fishing rights within the North Half were retained by the tribal members of the Colville Reservation. The subsequent Act of July 1, 1898 (30 Stat., 593) reserved mineral rights to the U.S., within the old North Half and then the area was opened up for settlement by citizens of the U.S.

The modern tribe, known as Kalispel Indian Community of the Kalispel Reservation, was provided a separate reservation of approximately 4,600 acres, by Executive Order dated March 23, 1914. It contains no mention of fishing rights or fisheries management. This 1914 reservation is not within the lands withdrawn from the original Colville Reservation where some off-reservation fishing was provided for in 1892. By 1925, 3,808 acres had been allotted to Kalispel tribal members. Since fishing rights are not transferable, the populations of Kalispel members now residing on the Kalispel reservation do not share in off-reservation rights that apply to the old North Half of the former Colville reservation. Indian tribal members of the modern day Colville Reservation are enrolled as Colville tribal members. It is not possible to be enrolled or registered in two federally recognized Indian tribes. Hence, the there are no treaty or other off-reservation rights that apply to the modern Kalispel Indian Community, as a separate federally recognized Indian tribe. Similarly, there is no co-management status between the Tribe and the U.S. Forest Service for fisheries habitat. Some cooperative management agreements exist between the State of Washington and treaty tribes in the Northwest, but those apply to harvest allocation and fish hatchery activities, and have been authorized or provided for by court order. I understand that the State also has some cooperative projects with the Kalispel tribe, but not as an equal manager with jurisdiction.

A claim by the Kalispel against the U.S. for uncompensated taking of former Indian lands was settled in 1956 by the Indian Claims Commission (4 ICC 151, 1956, Docket 181). A final settlement payment of $3,000,000 was made in 1958 for the land claim. The modern Kalispel Indian Community, recognized as a tribe by the Secretary of Interior, adopted a Constitution and By Laws which was approved on March 24, 1938. A federal corporation charter was issued to the Community on April 19, 1938, pursuant to the Act of 1934 (48 Stat., 984), commonly known as the Indian Reorganization Act. The Tribal Constitution and By Laws were revised then approved by Interior on July 28, 1969. None of the federal or tribal documents included land cessions, off-reservation rights or tribal management jurisdiction outside the bounds of the Indian reservation.

Les McConnell: coordinated with BIA Portland Regional Office,.and USDI Associate Regional Solicitor, 3/10/04.

Comments from the Washington Department of Fish and Wildlife

STATE OF WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE
8702 N. Division Street • Spokane, Washington 99218-1199 • (509) 456-4082 FAX (509) 456-4071

April 2, 2004

Ms. Ginger Gillin
GEI Consultants, Inc.
127 E. Front St., Suite 216
Missoula, MT 59802

Dear Ms. Gillin:

The Washington Department of Fish and Wildlife (WDFW) has completed its review of the third draft of the Intermountain Province Subbasin Plan. WDFW is submitting comments on the following sections: 1-4, 13-14, 16-17, 22, 24-25, 29, 30-33, 37-38, 40-41, 46, 48-50, and Appendices G and H.

Comments are in the format requested by GEI. WDFW reviewer's last names are provided and you are encouraged to contact these individuals directly if you have questions regarding a particular comment.

- Braaten, Eric – 509-633-3764; braatemb@dfw.wa.gov
- Donley, Chris – 509-456-3039; donlecld@dfw.wa.gov
- Ferguson, Howard – 509-456-4420; ferguhlf@dfw.wa.gov
- Lembcke, Sandy – 509-684-2031; lembcsrl@dfw.wa.gov
- Truscott, Kurk – 509-664-1227; trusckdt@dfw.wa.gov
- Vail, Curt – 509-684-7452; vailcav@dfw.wa.gov
- Whalen, John – 509-456-4085; whalejtw@dfw.wa.gov
- Zender, Steve – 509-935-6073; zendestz@dfw.wa.gov

While the document is much improved from the second draft, it still lacks a clear logic path; "Interpretation and Synthesis" of the terrestrial and aquatic assessments is lacking; and formatting is inconsistent. Numerous comments, corrections, and data that were provided to GEI after review of the second draft were not incorporated into this document. This is noted in our comments and we have an expectation that they will be incorporated in the final draft.

We support the content of the "Management Plan" and appreciate the collaborative effort, involvement, and time commitment put forth by subbasin work team members to develop

the plan. We look forward to the final approval of the management plan at the subbasin work team wrap-up meeting on May 5th.

Thank you for your continued work on this project. If you have any questions regarding our comments, please feel free to contact Sandy Lembcke or me.

Sincerely,

Kevin W. Robinette
Regional Habitat Program Manager

Enclosure

cc: Sandy Lembcke
Alison Squier, Intermountain Province Coordinator
Lyle Gardinier, Ferry Conservation District

Washington Department of Fish and Wildlife

COMMENTS ON 3RD DRAFT INTERMOUNTAIN PROVINCE SUBBASIN PLAN
Submitted: April 2, 2004

General Comments:

- The "voice" of the document is inconsistent from chapter to chapter and is particularly evident in the aquatic sections.
- The formatting of the document is inconsistent.
- The format of figures is inconsistent and figures are often difficult to read or include irrelevant information.
- Consistency in documentation of citations is lacking, especially for personal communications, www citations, and citations in Section 4.
- Consistency is needed for names/places used throughout the document. For example, "Lake Roosevelt", "Franklin D. Roosevelt Lake", and "Franklin Roosevelt Lake" are all used to refer to the impoundment created by Grand Coulee Dam. "Woodland caribou" and "mountain caribou" are used interchangeably. We suggest that you use "woodland caribou" only, as "mountain" refers to the ecotype. There also seems to be some confusion regarding the use of "Kalispel", "Kalispell", and "Calispell". "Kalispel" is the correct spelling when referring to the Kalispel Tribe, "Kalispell" when referring to Kalispell Creek in eastern Pend Oreille County/western Bonner County, and "Calispell" should be used when referring to Calispell Creek or Calispell Peak in western Pend Oreille County.
- Sections 2, 3 and 4 should be updated to reflect new information and corrections provided in subbasin chapters.

Section	Paragraph	Comment	Reviewer
Aquatic Assessment	NA	The document fails to tie the QHA habitat metrics to appropriate sections where environmental limiting factors are discussed. The limiting factors are generally limited to discussion in the focal species "Key Findings" sections. Habitat degradation/alteration within the IMP have negative impacts to species other than those selected as focal species. Including a discussion of the eleven QHA habitat metrics in these sections will affirm that the impacts go beyond the focal species.	Truscott Donley Vail
Aquatic Assessment	NA	Move the QHA tornado diagrams and reach ranking tables to an appendices. Capture the information in a written summary instead. The tables and diagrams just take up too much space and make the document difficult to read.	Lembcke

Aquatic and Terrestrial Assessment	NA	The "Interpretation and Synthesis" sections of the terrestrial and aquatic assessment chapters are weak and provide more of a summary than interpretation and synthesis. This is the most important section of the document.	Lembcke
Management Plan and Inventory	NA	These sections are not well organized and are extremely difficult to read. Please consider reformatting the goals, objectives, and strategies to make these sections easier to follow.	Lembcke
Executive Summary 5.2.4	2	Include "bald eagle" in the list of species.	Zender
Executive Summary 5.4.4	2	Regarding the following: "Portions of designated lynx analysis units are located within the subbasin". It would be better to indicate that all or portions of lynx management zones are located within the subbasin. Many lynx analysis units are located in the various subbasins. This would be true for the Pend Oreille and Sanpoil as well, where similar statements are made and should be corrected. So, either recognize many LAUs or discuss only LMZ's, which is preferred.	Zender
Executive Summary	Figure ES-2	The Colville River had no anadromous fish above Meyers Falls historically. Edit map to show Colville River as blue above the falls.	Vail
Aquatic and Terrestrial Inventory	NA	There is inconsistency in how "Current Management Direction" is presented within each subbasin chapter. For example, in Section 15.1 (Pend Oreille), it is difficult for the reader to tell who is responsible for managing aquatic resources in the subbasin. Is is WDFW or the Albeni Falls Interagency Work Group or the Bonner Co. Soil and Water Conservation District? What about Idaho Fish and Game? Obviously they are a key player here. What about the role of the tribes? Perhaps, the "Current Management Direction" section would be better presented only at the provincial level…since basically all of the players are the same (IDFG, WDFW, USFWS, tribes, USFS, Conservation Districts, NRCS, etc.). Explain who does what and where. For example, WDFW and IDFG are responsible for managing fish populations in ID and WA,	Lembcke

		USFS responsible for managing habitat, tribes are cooperators or co-managers of fish resources, CDs play this role, NRCS that role, etc.	
Terrestrial Inventory	NA	This section fails to present the "Existing and Imminent Protections" as the section heading dictates, but instead provides only a summary of the previous sections. The section should describe the protections given to ESA-listed species (e.g., that they are "protected" from "take" - "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect…"). Discuss any habitat protections that are given under ESA (e.g., Habitat Conservation Plans, Critical Habitat?). What "extra/specific" protections might be given to species with recovery plans? Also, please discuss Washington and Idaho state protections for state-listed species (all those listed in Table 4.9, as appropriate by subbasin). For example, you mention that Idaho considers the wolf to be an "experimental non-essential population". Explain what this means from a "protection" standpoint. See **Attachment B** for Washington State protections for the following state-listed species: American white pelican, bald eagle, lynx, sage grouse, sharp-tailed grouse, upland sandpiper, fisher, wolf, grizzly bear, northern leopard frog, Columbia spotted frog, and woodland caribou which are found in the Intermountain province. We recommend that instead of repeating this information in each subbasin chapter, that the information be provided once at the provincial level.	Zender Ferguson Lembcke
1.2.2.4	2	Explain who the second of the "two contractors" hired to "fulfill the RFP" is and what her role was (i.e., Alison Squier).	Lembcke
1.4.1	9	Add "redband trout" to the list of remnant native resident salmonids.	Lembcke
1.4.1	Figure 1.2	The Colville River had no anadromous fish above Meyers Falls historically. Edit map to show Colville River as blue above the falls. Also, the map should show locations of Grand Coulee and Chief Joseph Dams.	Vail Lembcke

1.5.1	1	Information regarding studies documenting contamination of Lake Roosevelt by Tek Cominco should be cited.	Lembcke
1.5.2	2	Information regarding water quality impacted by Libby Dam should be cited.	Lembcke
2.4.1.2	1 under "Kalispel Tribe"	Edit this paragraph as indicated: The Kalispel Natural Resource Department (KNRD) *Fish and Wildlife Management Plan* is a comprehensive accumulation of current and future KNRD resource plans for Kalispel Tribe's (KT) lands. The Plan identifies resource mission statements that are supported by specific goals and objectives. The Plan directs each division's annual work plan. Strategies are developed annually and drive each division's on-the-ground activities to achieve its stated mission. The KNRD's approach is to manage sustainable native populations and habitats using watershed management principles. Nonnative populations and/or artificial habitat management will be addressed based upon population health, habitat condition, and feasibility. The KT entered into an MOU with WDFW to work cooperatively to restore and recover depressed populations of native fish species such as bull trout and cutthroat trout in the lower Pend Oreille River and its tributaries. NOTE: The Kalispel Tribe is not a treaty tribe and, therefore, does not hold ceded lands. Additionally, the MOU between the Kalispel Tribe and WDFW does not provide the tribe with fisheries co-management status off-reservation. Co-management status of fish resources has been retained by Indian tribes with federally secured off-reservation fishing rights.	Vail Whalen
2.4.1.3	1 under "WDFW"	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows: The Washington State Legislature has given WDFW the responsibility of preserving,	Lembcke Whalen

		protecting, and perpetuating all fish and wildlife resources of the state. ~~The WDFW strives to preserve, protect, and perpetuate the fish and wildlife species of the state~~. The Wild Salmonid Policy (WSP) (State of Washington 1997) is one of the guidance documents used to review and modify current management goals, objectives, and strategies related to wild salmonid stocks within the ~~Lower Pend Oreille Subbasin~~ IMP. Under the WSP, the goal of WDFW is to protect, restore, and enhance the productivity, production, and diversity of wild salmonids and their ecosystems to sustain ceremonial, subsistence, commercial, recreational fisheries, non-consumptive fish benefits, and other related cultural and ecological values. The WSP will serve as one of the primary tools for review of Washington hatchery and harvest programs, as well as development of watershed-based plans that insure adequate habitat protection. The WDFW currently entered into a Memorandum of Understanding with the Kalispel Tribe to promote cooperation and coordination on management of fishery resources of the Pend Oreille River and its tributaries.	
2.4.1.3	4 under "WDFW"	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows: The Washington State Legislature established Lead Entities in ESHB 2496, the state Salmon Recovery Act (1998~~, which the Governor signed into law in April 1998~~. ~~For the past three years,~~ ~~t~~The legislature ~~has~~ provide~~s~~d funding to WDFW to support the infrastructure and capacity needs of Lead Entities engaged in salmon recovery at the watershed level. There is currently one Lead Entity in the IMP. The Pend Oreille Lead Entity, which is administered by the Pend Oreille Conservation District, covers that area of Washington State known as Water Resource Inventory Area (WRIA) 62 WRIA 62 includes the lower Pend Oreille River and its tributaries between Albeni	Lembcke

		Falls Dam and the Canadian border. The WRIA also includes tributaries to Priest River/Priest Lake which originate in Washington.	
2.4.1.3	Under "WDFW"	The following information was requested to be added to the document in the 2nd draft review, but corrections were not made in the 3rd draft. Please add. In January 2003, WDFW published the Washington Game Management Plan (WDFW. 2003. Game Management Plan. Wildlife Program. Olympia, WA). This plan will guide the management of hunted species in Washington for the period of 2003-2009. WDFW also maintains a list of Washington State endangered, threatened and sensitive species (Washington Administrative Codes 232-12-014 and 232-12-011, Appendix A). The first step in the listing procedure is to develop a preliminary species status report. Several species status reports have been completed for species which occur in the IMP, including reports for common loon (Richardson et l. 2000), peregrine falcon (Hayes and Buchanan 2002), bald eagle (Stinson et al. 2001), fisher (Lewis and Stinson 1998), Northern leopard frog (McAllister et al. 1999), pygmy whitefish (Hallock and Mongillo 1998), sage grouse (Hays et al. 1998), and sharp-tailed grouse (Hays et al. 1998). Recovery plans have also been completed for some species, including lynx (Stinson 2001), sage grouse (draft – Stinson et al. 2003), pygmy rabbit (WDFW 1995), and sandhill crane (Littlefield and Ivey 2002). COMMENT: For complete citations for these documents for the references cited section go to http://wdfw.wa.gov/wlm/diversty/soc/concern.htm)	Lembcke Zender
2.4.3.2	NA	The following information was requested to be added to the document in the 2nd draft review, but corrections were not made in the 3rd draft.	Lembcke McLelan

		Please add after last paragraph of section. Accomplishments to date include: • Baseline fish population assessment of Boundary Reservior, Pend Oreille River • Baseline water quality, algae, zooplankton, and macroinvertebrate assessment of Boundary Reservoir, Pend Oreille River • Baseline fish and habitat assessments in eight tributaries (Peewee, Slate, Sand, Flume, Sweet, Lunch, Lime, and Sullivan creeks) to the Boundary Reservoir, Pend Oreille River • DNA characterization of cutthroat populations in eight Pend Oreille River tributaries (Sullivan, Cedar, Mill, Middle, West Branch LeClerc, East Branch LeClerc, North Fork Sullivan, and Slate creeks). • Baseline fish and habitat assessments in the Little Spokane River drainage (mainstem and 22 tributaries) • Baseline fish distribution and densities in the lower Spokane River from Spokane Falls to Nine Mile Falls. • DNA characterization of wild rainbow trout populations in the upper and lower Spokane River and the Little Spokane River drainage. • Assessment of the Sullivan Lake kokanee spawning run in Harvey Creek. • Development of the JSAP database and coordinated data sharing with the StreamNet database. COMMENT: These accomplishments are for WDFW only, please check with other cooperating agencies, esp. Kalispel Tribe, for a complete list.	
2.4.4.1	1 under "Bureau of Land Management"	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows:	Lembcke

		The Bureau of Land Management (BLM) administers several small, isolated tracts in northern Idaho, and management emphasis is directed at water-based recreation. The BLM also administers some lands in the Upper Columbia Subbasin and approximately 6 miles of shoreline along the Pend Oreille River north of Metaline Falls.	
2.4.4.1	1 under "U.S. Fish and Wildlife Service"	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows: The mission of the U.S. Fish and Wildlife Service (USFWS) is to work with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. Within the IMP, theUSFWS, in the Department of the Interior, is responsible for administration of the Endangered Species Act for resident and native fish and wildlife.	Lembcke
2.4.4.1	2 under "U.S. Fish and Wildlife Service"	Edit the second sentence to read: "The USFWS administers and manages the National Wildlife Refuges, including the Little Pend Oreille National Wildlife Refuge in the Upper Columbia subbasin.	Lembcke
2.4.4.1	4 under "U.S. Fish and Wildlife Service"	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows: . The USFWS is developing bull trout and lynx recovery plans that includesubbasins within the IMP. Recovery plans for grizzly bears, caribou, and bald eagles are in effect. Federal plans, policies, and guidelines associated with the IMP include the *Canada Lynx Conservation Assessment and Strategy (2000)*, *Selkirk Mountain Woodland Caribou Recovery Plan (CITE)*, and the *Grizzly Bear Recovery Plan (CITE)*. The Interagency Grizzly Bear Committee also established strategies for reducing female grizzly bear mortalities in the Selkirk and Cabinet-Yaak Recovery Zones,	Lembcke

		which are located in the Pend Oreille subbasin.	
2.5.1	Under "Listed fish species"	The recovery goal information provided for the various USFWS recovery regions is redundant. We recommend that you discuss adding more specific language with the U.S.F.W.S. recovery plan coordinator – Gary Kedish 509/893-8028	Lembcke
2.5.2	2	Change second bullet to read: "Quantify and mitigate for wildlife losses…"	Ferguson
2.7	1	ESA listed anadromous salmon are not present in the IMP, therefore we do not have any NMFS TRTs. Recommend changing last sentence to read: "Coordination with the USFWS and state agencies…"	Lembcke
2.8	1	Add "salmon recovery planning" to the list of subbasin work team membership.	Lembcke
3.1	1	Change 2nd sentence to read: "Natural barriers may have blocked the migration of salmon in the Pend Oreille River near Z Canyon and Metaline Falls." There is no conclusive evidence that these were complete barriers to fish migration historically.	Vail
4	General	This chapter is well written. Some confusion/limitations with other terrestrial chapters could be avoided if the information in this chapter was used in other chapters.	Zender
4.2.1.1	3	The mouth of the Pend Oreille River is in Canada at the Columbia River, not at "Lake Pend Oreille". Perhaps you are referring to the mouth of the Clark Fork River at Lake Pend Oreille or the "headwaters" of the Pend Oreille River at Lake Pend Oreille.	Lembcke
4.3.3	2	Section 1.4.1 indicates that Grand Coulee Dam was constructed in 1939, not "1941" as stated here.	Lembcke
4.4.1.3	1	We have no verification of a "major population" of trumpeter swan "in the Washington interior" and recommend that this information be deleted unless documentation of a population is available.	Zender Ferguson
4.5.2.1	1 under "Pygmy Rabbit"	This paragraph states that "the pygmy rabbit is not known to occur in any Subbasin in the Intermountain Province", yet the 1st paragraph of Section 4.5.2.1 states that "two terrestrial vertebrate species occurring in the province are listed as endangered under [ESA]" with pygmy	Braaten

		rabbit being listed in Table 4.8 under this category. Pygmy rabbits did not occur historically or currently within the province. There are no plans to attempt recovery of this species outside of historic distribution. Please remove all references to pygmy rabbit in the document.	
4.5.2.2	1 under "Leopard Frog"	NPCC website indicates that leopard frog have been recently found in Pend Oreille County (http://www.nwcouncil.org/fw/stories/pendoreille.htm)	Lembcke
4.5.2.2	3 under "American white pelican"	Documentation of American white pelican in the IMP may be underrepresented by the PHS database (which we are assuming is the reference used here – i.e., WDFW 2003b). They are fairly common with wide dispersal immediately after breeding season (Ferguson, WDFW, pers. comm. 2004).	Zender Ferguson
13	Figure 13.1	The location of Box Canyon Dam should be noted on map.	Vail
13.1	1	The Pend Oreille River does not drain land in western Montana. As described in Section 13.2.1.1, the Pend Oreille River begins at the outlet of Lake Pend Oreille in Idaho. The river which flows into Lake Pend Oreille from Montana is the Clark Fork River.	Lembcke
13.2	1	The geographic description of the Upper Pend Oreille subbasin in confusing. Suggest replacing it with the one provided in paragraph one of Section 13.2.1.1.	Lembcke
13.2	2 and 3	These descriptions of vegetation and road densities seem out of place and don't fit well in this section.	Lembcke
13.2	Figure 13.1	This figure is really busy. Recommend showing just the three mainstem Pend Oreille River Dams and removing the hatchery and rearing ponds.	Lembcke
13.2.2.1	1	The lower Pend Oreille subbasin in bordered by the Selkirk Mountains to the "east" not the "west".	Lembcke
13.2.2.3	1	The highest peak in the lower Pend Oreille subbasin is 2230 m high (nearly 7300 feet). Edit first sentence to reflect this.	Vail
13.2.2.5	1	The Pend Oreille River is the second largest river in Washington, not the "third largest".	Lembcke
13.2.2.5	1	Waneta Dam is not owned and operated by BC	Lembcke

		Hydo. It is owned and operated by Tek Cominco.	
13.2.2.5	3	Change "Calispell River" to "Calispell Creek" throughout this paragraph.	Lembcke Zender
13.2.2.7	1	Suggest moving this paragraph to the end of the section as it is out of place here.	Lembcke
14.1.1	2	This paragraph contains inconsistencies regarding Gilbert and Evermann's (1895) observations of Metaline Falls/Z Canyon. The first reference to Gilbert and Evermann is incorrect….they did not consider Metaline Falls and/or Z Canyon to be a "serious obstruction" to salmon. Remove this reference. The second reference to Gilbert and Evermann is correct (i.e., they "concluded neither Z Canyon nor Metaline Falls was a barrier to anadromous upstream migration…").	Lembcke
14.1.2.2	1	Edit 7th sentence as follows: "Net pen stocking and release of rainbow trout has continued intermittently in the Pend Oreille River…"	Vail
14.1.2.2	1 - 3	Within these three paragraphs there are inconsistencies regarding stocking of cutthroat trout in the Pend Oreille River.	
14.1.2.2	2	Edit 2nd sentence as follows: "Trout eggs collected at this site are utilized for fry and yearling trout stocking efforts of lakes within the Lower Pend Oreille…"	Vail
14.1.2.4	1	Information regarding introduction of rainbow trout in the Pend Oreille River and speculation as to the origin should be cited.	Lembcke
14.3.1	1	The proper citation for historical documentation of bull trout in Ruby Creek is USFWS 2003 (i.e., USFWS. 2003. Draft bull trout recovery plan. Chapter 23.). Slate Creek could also be listed under this same source.	Lembcke
14.3.2	1	Information cited as Andoneagui 2003 should be referenced as being for the lower Pend Oreille Subbasin only.	Lembcke
14.3.2.2	2	Please include the following after "(Andonaequi 2003)" in the first sentence: "In 2003, an additional 11 bull trout were observed - 10 in the Pend Oreille River below Albeni Falls Dam (Geist et al 2004) and one in Cedar Creek, a tributary to the Box Canyon Reservoir (S. Lembcke, WDFW, pers. comm. 2004)."	Lembcke
14.5.3	1	Consider adding this information to the RME	Lembcke

		section.	
14.6.1.3	1	Recent genetic analysis by Dr. Scholz/EWU has confirmed that the Sullivan Lake kokanee are not from the Lake Whatcom stock, which given the stocking history of the lake, is to be expected. Analysis indicates that Sullivan Lake kokanee are distantly similar to the Rimrock Lake stock in WDFW Region 2.	Vail
14.6.2.3	1	Change citation of "McLellan 2003" to "McLellan, WDFW, pers. comm. 2003)	Vail
14.8.1	All	Citations are lacking from this section and should be included.	Lembcke
14.8.1.2	All	We realize that there are a diversity of opinions regarding habitat and fishery impacts from the construction and operation of Box Canyon Dam. However, the information presented here is a compilation of documented data and personal communications that is very confusing for the reader. We appreciate that you are trying to incorporate several opinions in the section, but the "point" of all this information should be clearly and concisely provided.	Lembcke
14.9.1.2	5	This description of the historic factors leading to the decline of focal species in the lower Pend Oreille River is weak. Please refer to the Executive Summary in Andoneagui 2003 for a better description.	Lembcke
16.1 24.1 32.1 40.1 48.1	3	Accurate habitat type maps, especially those detailing riparian wetland habitats, are needed to improve assessment quality and support management objectives and strategies. Also, add the following after the first sentence: Therefore, aquatic, riparian, and wetlands are under represented as are small patchy habitats that occur at or near the canopy edge of forested habitats (as described in Tables XXXX). It is also likely that micro habitats located in small patches or narrow corridors were not mapped at all. Therefore, riparian floodplain habitats are not well represented on IBIS maps. With this in mind, there are approximately XXX lineal miles of aquatic riparian habitat in the XXX subbasin.	Ferguson
16.1	3	Include the following in the 2nd sentence:	Lembcke

		"Washington's Priority Habitats and Species database" as a source of information on habitats and wildlife in the Pend Oreille subbasin.	
16.1.1.1	1	The Pend Oreille River (and therefore, Priest River) is not a "tributary" to Lake Pend Oreille…as it originates at Lake Pend Oreille instead of flowing to it.	Lembcke
16.1.3.2 32.1.4.2 40.1.4.2	All	These sections provide a good description of the extent of the loss of salmon to IMP subbasins, but fail to discuss the impacts to wildlife. Please include this. Refer to http://wdfw.wa.gov/hab/salmonwild/ for documentation.	Lembcke
16.2.2.1	1 under "Canada lynx"	Edit paragraph to read as follows: ***Canada lynx.*** The Idaho portion of the Pend Oreille Subbasin has numerous sightings of lynx in the Priest River drainage during the 1990s, and a few sightings in the Pend Oreille River drainage (IDFG 2003). On the Washington side of the Subbasin, evidence of lynx presence was plentiful in the north half of the Subbasin from dozens of records into the 1990s (WDFW 2003b).. Limited surveys and track sighting confirmation efforts by WDFW have yielded lynx observations in 4 LAU's in the Pend Oreille River drainage sine 1997 (Base and Zender 2003). The Little Pend Oreille Lynx Management Zone (LMZ) includes the Calispell Mountain Range and consists of ten lynx analysis units (LAUs), seven of which are located within the Pend Oreille River Subbasin. The Salmo-Priest LMZ includes the Selkirk Mountain Range and the Lower Pend Oreille and Priest River areas. Reference for Base and Zender 2003 is: Base, D.L. and S. Zender. 2003. Lynx surveys in northeaster Washington. Unpublished administrative report. Washington Dept. of Fish and Wildlife, Region One. Spokane, WA. 15 p.	Zender
16.2.2.1	1 under "Fisher"	Edit paragraph to read as follows: ***Fisher.*** The Washington portion of the	Zender

		Subbasin has more sightings of fisher (11 of 14 total) than any other Subbasin in the Intermountain Province (WDFW 2003b). Most sightings occurred in the 1990s, and none occurred after 1997. Except for two sightings, all are north of Township 36. Many fisher sightings are, however, reported to WDFW, but can not confirmed by biologists. WDFW efforts to confirm fisher sightings in the northern Selkirk Mountains using baited camera stations in the mid- to late-1990's produced no fisher observations (Zender, WDFW, pers. comm. 2004). In Idaho, the Subbasin has eight fisher records for the Priest Lake and Priest River drainage during the 1990s; none occurred after 1999 (IDFG 2003). No records are known for the area around Lake Pend Oreille.	
16.2.2.1	1 under "Gray Wolf"	Edit paragraph to read as follows: ***Gray wolf.*** On the Washington side of the Subbasin, at least 15 wolf sightings or howlings were reported between 1990 and 2002 (WDFW 2003b). Thirteen occurred east of the Pend Oreille River, and 11 were in the northern half of the Subbasin. No known packs are established in Washington and sightings in the last decade are based primarily on interviews with credible observers. Generally, observations have not been confirmed (Zender, WDFW, pers. comm. 2004). In Idaho, wolves pass through the Priest River basin, but no resident packs are currently established (Entz and Maroney 2001).	Zender
16.2.2.1	1 under "Leopard frog"	NPCC website indicates that leopard frog have been recently found in Pend Oreille County (http://www.nwcouncil.org/fw/stories/pendoreille.htm)	Lembcke
16.2.2.1	1 under "Northern leopard frog"	Please add this information to the paragraph: "Northern leopard frogs were observed in the vicinity of the lower Pend Oreille River in Washington in the late 1950's (Leonard and McAllister 1996)." Reference: Leonard, P.L. and K.R. McAllister.	Zender

		1996. Past distribution and current status of the northern leopard frog (Rana pepiens) in Washington. WDFW. Olympia, WA. 14 p.	
16.2.2.1	1 under "Peregrine Falcon"	It would be more appropriate to indicate that no known nesting territories have been documented on surveys completed in the subbasin. No reliable sightings have been reported, but the PHS database may not track sightings alone as they may be migratory birds passing through.	Zender
16.2.2.1	1 under "Woodland Caribou"	Please add the following to the paragraph: "As part of the Selkirk Mountains woodland caribou recovery effort, WDFW transplanted a total of 43 caribou from British Columbia in 1996-1998 (Almack 2001)." Reference: Almack, J.A. 2001. Mountain caribou recovery in the southern Selkirk Mountains of Washington, Idaho, and British Columbia. Progress rpt. Jan 1 – Dec. 31, 2001. WDFW. Olympia, WA.	Zender
16.2.2.2	2 under "White-tailed deer…"	Cite S. Zender, WDFW, 2004, pers. comm. for the following: "Mule deer seem to be suffering long-term population declines attributed to habitat change and fragmentation"	Lembcke
16.2.2.3	1 under "Black bear"	Edit paragraph to read as follows: ***Black bear***. The Washington Department of Fish and Wildlife black bear population management- goals are to perpetuate and manage black bear and their habitats to ensure healthy, productive populations. WDFW will minimize threats to public safety and property damage from black bears while managing populations for sustained yield. Acceptable harvest guidelines in Washington include 35-39% females in the harvest, median age of females acceptable at 5-6 years, median age of males acceptable at 2-4 years (WDFW 2003). ~~objective is a harvest with females comprising less than 35 percent of all bears, and a median age for harvested bears of at least two years old for females and at least five years old for males. Statistics for 1997-2000 averaged 32 percent females in the total harvest, plus a~~	Zender

		~~median age of four years old for females and three years old for males (IDFG 2003). The agency reports that long-term habitat condition and trend appears relatively stable~~. Reference: WDFW. 2003. Game management plan. Olympia, WA.	
16.2.2.3	1 under "Harlequin duck"	Edit paragraph to read as follows: ***Harlequin duck***. On the Washington side of the Subbasin, harlequin ducks are observed on several streams with breeding records on Sullivan and Granite creeks (Zender 1995). ~~a single adult was sighted in 1995 within the South Salmo River drainage (WDFW 2003b). No other records of harlequin are documented; however, the species is likely a breeding resident within the Subbasin.~~ Reference: Zender, S. 1995. Harlequin duck breeding surveys. Unpubl. admin rpt. WDFW, Region One. Spokane, WA.	Zender
16.2.2.3	1 under "Northern goshawk" and "Pileated woodpecker"	The U.S. Forest Service may be able to provide you with additional data on these species. Contact Mike Borysewicz at the Sullivan Lake Ranger District 509/446-7500.	Zender
16.2.2.3 24.2.2.3	All	In general the information provided on species listed is very limited and it appears that only the WDFW PHS database was consulted. Obviously, the US Forest Service and other literature sources would provide information on these species. The non-game species were treated especially superficially. A lot more should be added here. For example, neotropical migrant birds are a high priority group of species and have been studied and monitored in great detail by many agencies and the NGO's. There is a huge amount of information on neotrops and several sources were provided in early reviews of the draft and under Task 3 of the Ferry CD contract, but there was no attempt to include this information in the report.	Zender
17.3	2	Shouldn't "Non-BPA Funded Projects" be another section (17.3.2) separate from 17.3.1 - the Pend Oreille Wetlands Mitigation Project?	Lembcke

17.3	2	Check formatting. ”Cougar predation study…” and “Implementation of wildlife habitat compensation for Box Canyon Dam…” should be separate bullet items.	Lembcke
22.1.1	1	First sentence of paragraph should read as follows: “Historically the Spokane River was famous as a recreational and subsistence fishery for both anadromous and resident fishes.”	Donley
22.1.2	2	On the 5th line of the paragraph, the word “passage” was omitted between “fish” and “facilities”.	Donley
22.1.5	5	Edit sentence as follows: “Refer to Thatcher et al. (1992) and the Upper Columbia section for discussions regarding fish species in Lake Roosevelt. The Spokane Arm flows into Lake Roosevelt and has a similar species assemblage.	Donley
22.3.2	1	Change 1st sentence to: “Currently redband/rainbow trout are present, or are suspected to exist throughout the Spokane subbasin…”	Donley
22.3.2.1	1	Delete the remainder of the paragraph beginning with “In Riverfront Park and in Nine Mile Falls pool…”. This portion of the paragraph is not accurate and needs to be removed.	Donley
22.3.2.1	2	In Line 7, please use a more scientifically-based word than “tied”.	Donley
22.3.2.1	2	Delete the sentences beginning with: “Genetics data were also collected in the middle Spokane River….” and ending with “No native redband populations were discovered in the middle Spokane River.” Insert the following: “Genetics data were also collected in the middle Spokane River and concluded that rainbow trout in that reach of the river represented multiple stocks of fish, and could not be grouped solely within any of the previously tested rainbow stocks present in the subbasin. As a result, additional genetic investigation will be done to determine the genetic contribution of each stock within the subbasin to the middle Spokane River metapopulation.”	Donley

22.3.2.1	3	Delete the last sentence of the 3rd paragraph.	Donley
22.4.2	3	In Line 4, please use a more scientifically-based word than "tied".	Donely
22.5.2	2	Delete last sentence of paragraph. Multiple agencies are capable of addressing stocking issues, WDFW, CCT, and STOI. There should also be material in the Upper Columbia subbasin assessment that details kokanee stocking. It may be better to reference that chapter instead of referring to a manager.	Donely
22.5.3	2	Edit last sentence to read as follows: "WDFW and cooperators are moving towards the use of Meadow Creek eggs from British Columbia, a native stock".	Donley
22.7.3	4	Delete or modify the last paragraph. Additional information exists in the form of current regulations in the fishing regulations pamphlet. https://fortress.wa.gov/dfw/erules/efishrules/index.jsp	Donley
24.1.1.2	2	Add the following between the 3rd and 4th sentences: The loss of cottonwood galleries, island habitats, and riverine function due to hydropower development, coupled with the degradation of remaining riparian habitats from agriculture practices, livestock grazing, and development has contributed significantly towards the decline of shoreline associated populations, e.g., herons and shorebirds.	Ferguson
24.2.2.1	1 under "Bald eagle"	Edit as follows: ***Bald eagle.*** The Spokane Subbasin currently supports ~~nine~~ eleven bald eagle nesting territories and one communal winter roost (WDFW 2003b). Six nesting territories and the communal roost are located along the Spokane River between Long Lake Dam and Nine Mile Dam. The other three territories occur at Diamond Lake, Eloika Lake, Liberty Lake, Philleo Lake, and Newman Lake (Ferguson, WDFW, pers. comm. 2004).	Ferguson
24.2.2.1	1 under "Peregrine falcon"	Replace paragraph with the following: Within the Spokane subbasin in Washington,	Ferguson

		one eyrie is present in the Hangman Creek drainage and another unoccupied hack site a few miles apart on the Spokane River (WDFW 2003b). Another new eyrie may have been found in 2003 at Hawk Creek and will be verified in 2004 (Ferguson, WDFW, pers. comm. 2004).	
24.2.2.1	1 under "Sage grouse"	Add the following: On April 4, 1998, the Washington Fish and Wildlife Commission listed the sage grouse as a threatened species in Washington.	Ferguson
24.2.2.1	1 under "Sharp-tailed grouse"	Add the following here and as appropriate in other subbasin chapters: On April 4, 1998, the Washington Fish and Wildlife Commission listed the sharp-tailed grouse as a threatened species in Washington. The overall population declined almost continually between 1960 and 2001, particularly during the 1960s and 1970s, when the estimated populations declined from about 10,000 to less than 1,000 birds. The overall estimated decline was 95.7% between 1960 and 2001 with the current distribution of sharp-tailed grouse covering approximately 2.8% of their historic distribution. The primary factor resulting in loss of native habitat was conversion of native habitat to dryland farming (Yocom 1952, Buss and Dziedzic 1955). Dams along the Columbia River resulted in additional loss of habitat due to flooding and indirect loss of habitat due to expansion of irrigated farming (Schroeder 2001). <u>References</u>: Buss, I.O., E.S. Dziedzic. 1955. Relation of cultivation to the disappearance of the Columbia sharp-tailed grouse from southeastern Washington. Condor 57:185-187. DeSante, D.F., K.M. Burton, J.F. Saracco, and B.L. Walker. 1995. Productivity indices and survival rate estimates from MAPS, a continent-wide programme of constant-effort mist netting in North America. J. Applied	Ferguson

		Statistics 22:935-947. Schroeder, M.A. 2001. Job progress report: Project #3 federal aid in wildlife restoration upland bird population dynamics and management. Washington Dept. of Fish and Wildlife. Olympia, Wa. Yocom, C.F. 1952. Columbian sharp-tailed grouse (*Pedioecetes phasianellus columbianus*) in the state of Washington. Am. Midland Naturalist 48:185-192.	
24.2.2.1	1 under "Upland sanpiper"	Edit as follows: ***Upland Sandpiper.*** The upland sandpiper was classified as an endangered species by the Washington Wildlife Commission in 1981 (WAC 232-12-014). Upland sandpiper is not known to have reproduced in Spokane County since 1993 (Iten et al. 2001). In the Washington portion of the Subbasin, upland sandpipers were seen during the nesting season of 1984, 1986, 1987, and 1992 on private land south of Newman Lake (WDFW 2003b). During 2002 and 2003 birds were observed west of Spokane from the end of May up to the middle of June ~~(S. Lembcke, WDFW, personal communication, September 22, 2003).~~ An intensive survey will be conducted during the 2004 breeding season to determine status of these birds (Ferguson, WDFW, pers. comm. 2004).	Ferguson
24.2.2.3	1 under "Columbia spotted frog"	Edit as follows: ***Columbia spotted frog.*** The Columbia spotted frog was selected as a priority species for the Subbasin because of its close association with wetland and riparian habitats. The Columbia spotted frog is a federal species of concern and a Washington State candidate species under evaluation for possible listing as endangered, threatened, or sensitive. In the Washington portion of the Spokane Subbasin, this amphibian has a close association with wetland and riparian habitats and associated upland habitats~~habitats~~, and is known to occur patchily	Ferguson

		along the Spokane River, consistently along the Little Spokane River, in the tributaries of Mud Creek and Thompson Creek, and in the small ponds and lakes just southwest of Spokane (WDFW 2003b; Ferguson, WDFW, pers. comm. 2004~~from three locations: the upper reaches of Little Spokane River, plus tributaries Mud Creek and Thompson Creek (WDFW 2003b)~~. In Idaho, the species occurs in appropriate habitat throughout the Subbasin (IDFG 2001). Management in Washington is directed at protecting native wetland vegetation, avoiding the introduction of nonnative species, controlling run-off, and using alternatives to pesticides.	
24.2.2.3	1 under "Yellow warbler"	Add the following after the 1st sentence: Habitat loss due to hydrological diversions and control of natural flood regimes (e.g., dams), inundation from impoundments, cutting and spraying riparian woody vegetation for water access, gravel mining, and urban development have negatively affected yellow warbler in the region. Similarly, yellow warblers have been impacted by habitat degradation including: loss of vertical stratification of riparian vegetation; lack of recruitment of young cottonwoods, ash, willows, and other subcanopy species; stream bank stabilization which narrows stream channels, reduces the flood zone, and reduces extent of riparian vegetation; invasion of exotic species such as reed canary grass and blackberry; overgrazing, which can reduce overstory cover; reductions in riparian corridor widths which may decrease suitability of the habitat and may increase encroachments of nest predators and nest parasites. Reference: Ashley, P. and S. Stovall. 2004. Southeast Washington subbasin planning ecoregional wildlife assessment. DRAFT.	Ferguson
24.2.2.3	NA	Neotropical landbirds were impacted by the construction and operation of FPARS. Why are they not included in the report?	Ferguson
24.3.2	1	Add the following:	Ferguson

		6) Fragmentation of habitat, discontinuation of important wildlife corridors and linkages preventing immigration and emigration, and elimination of sand bars and islands (elimination of cottonwood galleries)	
25.2	9	Edit 1st sentence as follows: State of Washington sharp-tailed grouse management is directed at 1) species monitoring…	Ferguson
25.3.2	NA	Add the following under "Non-BPA funded projects": **MAPS Bird Banding Project – WDFW Monitoring Project** **Project Description:** Monitoring vital rates (primary demographic parameters such as productivity and survivorship) of a relatively undisturbed riparian avian population. Estimating primary demographic parameters is critical for understanding population dynamics and is directly applicable to population models that can be used to assess land management practices by examining the effects of the landscapes they produce on vital rates. This project is part of Monitoring Avian Productivity and Survivorship (MAPS) International program which is a cooperative effort among public agencies, private organizations, and individual bird ringers in North and South America to operate a network of over 500 constant-effort mist netting and banding stations during the breeding season (DeSante et al. 1995). MAPS was established in 1989 by The Institute for Bird Populations (IBP) and was patterned to a large extent after the British Constant Effort Sites (CES) scheme operated by the British Trust for Ornithology. **Accomplishments:** To date over 2500 birds have been captured and almost 1900 have been banded including 1500 adults and almost 900 juveniles with over 550 recaptures.	Ferguson
29	Figure 29.1	The location of the Colville Hatchery should	Vail

		be the City of Colville, not the current location shown on map.	
29.2.1.4	1	Bank and Moses Lakes were never included in the Upper Columbia Subbasin. However, the Bank and Moses Lakes Projects (BPA No. 199502800) are mitigation for the Upper Columbia Subbasin.	Lembcke
30.1	2	Change "Aquatic species that are potentially present…" to "Aquatic species that are known or presumed to be present…"	Vail
30.1.4.2	1	Add the following to the end of the paragraph: "Lakes outside of the Colville Reservation which are managed by WDFW include Long Lake, which is managed for quality cutthroat flyfishing; Swan Lake, which is stocked with catchable rainbow plants; and, Ferry Lake, which is managed for rainbow trout."	Vail
30.3.3	2	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows: Harvest of white sturgeon is closed in all portions of the Columbia River upstream of Chief Joseph Dam (WDFW 2003). White sturgeon are not stocked nor do any captive breeding programs currently exist ~~within the Upper Columbia Subbasin~~in Washington. Canada has a conservation production facility for Upper Columbia River white sturgeon. These fish have been found in Lake Roosevelt (2002 Lake Roosevelt Sturgeon Recovery Plan Report). Additionally, the ~~U.S. agencies~~ Washington Department of Fish and Wildlife will be raising sturgeon at ~~the Colville State Hatchery~~ a yet to be determined hatchery in the subbasin ~~-~~(eggs or fish from Canadian source) next year while awaiting completion of a feasibility study for a U.S. conservation hatchery. Although most of the mainstem populations appear unstable, their genetic similarity to the stable lower Columbia River population has excluded them from consideration for listing under the federal Endangered Species Act.	Vail
30.4.1	2	Add the following to the end of the paragraph:	Vail

		"Currently, 500,000 rainbow trout are stocked into the lake annually by the Lake Roosevelt Net Pen Project."	
30.4.3	1	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows: In 1986, the Lake Roosevelt Development Association (LRDA) began a rainbow trout net pen program combined with hatchery production efforts by ~~the Spokane Tribal Hatchery~~ WDFW hatcheries to supplement the rainbow trout fishery in Lake Roosevelt. ~~The Spokane Tribal Hatchery donated 50,000 rainbow trout fry during the first several years of the program.~~ Since 1991, the Spokane Tribal Hatchery has annually hatched and reared, to fingerling stage, 500,000 rainbow trout. Upon reaching fingerling length, the fish are moved to net-pens until they are catchable yearlings at which time, usually late spring or early summer, they are released into the reservoir.	Vail
30.4.3	3	Corrections to this paragraph provided by WDFW in the 2nd review of the IMP plan were not incorporated as requested. Please edit the paragraph as follows: ~~Several hatcheries~~ One WDFW hatchery within the Subbasin culture rainbow trout and redband stocks (Phalon Lake redbands) for outplanting. The Colville Tribal Hatchery Program has evaluated captive breeding programs for the native, adfluvial redband stock and concluded that unpredictable adult returns and collection conditions (high water flows, etc.) may limit the applicability of the program (Kirk Truscott, WDFW, personal communication). However, WDFW maintains a redband rainbow broodstock facility from which net pens are being supplied for evaluation in the Lake Roosevelt fishery. Also, the Kettle River has received six years of redband stocking from this broodstock in an augmentation effort to strengthen the redband	Vail

		population (Curt Vail, WDFW, Personal Communication).	
30.4.3	3	Change last sentence to read as follows: "Drought conditions and very low flows precluded elecrofishing evaluation of stock status in 2002 and 2003 (Curt Vail….)"	Vail
30.4.3	4	This paragraph applies to the Kettle River only and should be corrected to indicate this.	Vail
30.7.1	1	The following information, provided by WDFW in the 2nd draft review, was not incorporated into the 3rd draft. Please do so. *Historically the pacific lamprey probably reached the Upper Columbia and was utilized by Upper Columbia Tribes. They were reportedly processed by Nortwest Indians for food by smoking, sundrying and salting (Wydoski and Whitney 2003). However, the importance of this fish was likely significantly overshadowed by the salmonid fishery volume and utilization. Commercial fisheries existed in the Lower Columbia as late as the 1940's, when lamprey was used for oil production and animal food and fertilizer (Wydoski and Whitney 2003).*	Vail
30.7.2	1	The following information, provided by WDFW in the 2nd draft review, was not incorporated into the 3rd draft. Please do so. Pacific lamprey were extirpated from the Upper Columbia with the construction of Grand Coulee and Chief Joseph Dams. Although lamprey have been known to ascend the faces of dams, they have not been observed at or above Grand Coulee Dam (Curt Vail, WDFW, pers. comm.).	Vail
30.8	1	Edit paragraph as follows: Burbot were selected as a focal species for their ecological significance, their native species status, and their potential recreational importance as a sport fish. Although burbot are not as sought after by recreational anglers as the salmonids in the region, they are excellent table fare. More research needs to be conducted to truly understand the status of	Vail

		burbot in this region. Burbot were chosen not be analyzed by the QHA model in this assessment. The QHA model was developed for salmonid fishes and would not effectively identify limiting factors for populations of burbot in the Upper Columbia Subbasin. ~~Although data on the general population characteristics and distribution is not well understood, burbot are perceived as an important species in the Subbasin and warrant research to further understand how they interact with their environment in the Subbasin~~. Prior to 1969, burbot were not managed in Washington State (Polacek, Baldwin and Knuttgen, in Draft). Since 1969, burbot have been listed as a gamefish in Washington. Harvest limits were imposed in 1998. Currently, there is a catch limit of five burbot with no minimum size limit. Some waters allow set lines where listed in the regulations. Lake Roosevelt is not one of these waters. Of the 11 known burbot populations in Washington, one is considered critical (Banks Lake), one is healthy (Lake Roosevelt), and the status of the rest is unknown (Bonar et. al. in Polacek et. al., Draft). Research on burbot in Lake Roosevelt was conducted from 1997 – 2001, with BPA funding through the Lake Roosevelt Fishery Evaluation Program. Preparation of the final report of this research is in progress, and results will become available upon its completion. Reference: Polacek, M.C., C.M. Baldwin, and K. Knuttgen. 2004. Status, distribution, diet, and growth of burbot, *Lota lota,* in Lake Roosevelt, Washington. In preparation.	
30.9.1.8	1	The following information, provided by WDFW in the 2nd draft review, was not incorporated into the 3rd draft. Please do so Off reservation lakes within the subbasin are managed by WDFW. There are thirty-five lakes managed for trout fisheries. Most are	Vail

		small, relatively pristine waters, located predominantly on the Colville National Forest. These lakes are stocked annually from the WDFW Colville Trout Hatchery with westslope cutthroat and rainbow trout. Over 1 million trout are stocked to provide a recreational fishery (Curt Vail, WDFW, pers. comm.).	
31.3.7	1	Edit 3rd sentence as follows: As described in Section 10.4A of the 1994 FWP, concern has arisen over the declining status of native sturgeon populations throughout the Columbia River Basin. White sturgeon populations above Grand Coulee Dam were closed to harvest in 1996, and closed to sturgeon fishing in both Lake Rufus Woods and Lake Roosevelt in 2002, due to increasing concerns over the apparent declining status of the population.	Vail
31.3.8	1 under "Phalon Lake…"	Edit paragraph to the present tense (i.e., WDFW has constructed…). The facility will be completed in the spring of 2004 (last sentence).	Vail
31.3.9	7-9	The WDFW Colville Hatchery, Phalon Lake Trap, and Graham Lake RSI projects are not BPA funded and should be moved to the "Non-BPA funded" section.	Vail
32.1.4.3	2	Add the following to this paragraph: "Several bald eagle nest trees located on sand bluffs along the shoreline of Lake Roosevelt are currently threatened by bank erosion (Zender, WDFW, pers. comm. 2004).	Zender
32.2.2	Table 32.6	Remove reference to Idaho in the 2nd column of table. The Upper Columbia subbasin does not extend to Idaho and the table is misleading.	Lembcke
32.2.2.1	2	Edit 4th sentence as follows: ***Canada lynx.*** ~~Kettle Crest, Wedge, and Little Pend Oreille areas above 4,000 feet are lynx analysis units (LAUs)~~ Little Pend Oreille, The Wedge, Kettle Range, and Vulcan-Tunk areas as elevations generally above 4,000 feet are lynx management zones (LMZ's) located partially or completely within the Subbasin (Stinson 2001).	Zender

32.2.2.2	1 under "Canada goose"	Cite data used from Washington Dept. of Fish and Wildlife.	Lembcke
32.2.2.2	1 under "Mourning dove"	Cite harvest data for mourning dove.	Lembcke
32.2.2.2	3	The first two paragraphs on "Mule and white-tailed deer" should be deleted and updated as follows to align with current WDFW game management plan (WDFW. 2003. Game management plan. Olympia, Wa): **Mule and white-tailed deer are both native to the subbasin. White-tailed deer populations are relatively stable while mule deer populations in northeastern Washington are below historic levels.** WDFW's management goal is to preserve, protect, perpetuate, and mange deer and their habitat to ensure healthy, productive populations. The population goal for white-tailed deer is to maintain relatively stable population growth. The population goal for mule deer management is an increase in populations within limitations of available mule deer habitat. WDFW's recreation management objective for deer is to maintain or increase hunting opportunity and improve hunting quality. The current general, post-hunt minimum goal for buck:doe ratios in Washington is greater than 15 bucks per 100 does for most populations.	Zender
32.2.2.3	1	Chelan County is not in the Upper Columbia subbasin. Remove reference.	Lembcke
32.2.2.3	1 under "Bighorn sheep"	The 4th sentence should be edited as follows to reflect for recent data: The Vulcan Mountain herd is northwest of Curlew and presently numbers ~~24~~ approximately 45 head (Zender, WDFW, pers. comm. 2004), but the desired population is 80-110.	Zender
32.2.2.3	1 under "Columbia	Edit paragraph as follows:	Zender

	spotted frog"	***Columbia spotted frog***. From 1991 to 1997, increased emphasis was place on establishing distribution of Columbia spotted frogs and several reports of spotted frogs were recorded in the Subbasin (WDFW 2003b). All except one were in the northern half of the Subbasin and they included drainages on both sides of the Columbia River. ~~No records have occurred since 1997~~. In Washington Amphibians and Reptiles: Check List and Habitat Guide (undated pub., WDFW), the spotted frog is listed as commonly occurring in the Intermountain Forest habitat type, which is present throughout the subbasin.	
32.2.2.3	1 under "Golden eagle"	Add the following: WDFW and USFWS have begun a two year effort to increase monitoring of known golden eagle nests and attempt to locate unrecorded nests in northeastern Washington (Zender, WDFW, pers. comm. 2004)	Zender
32.2.2.3	1 under "Long-eared owl"	Edit paragraph as follows: ***Long-eared owl***. ~~There are n~~No records of occurrence for this species have been submitted to WDFW in the Upper Columbia Subbasin (WDFW 2003b). A checklist prepared by the Colville National Forest, Little Pend Oreille National Wildlife Refuge, Bureau of Land Management, and WDFW (2001), lists long-eared owl as an uncommon resident in lower forested or agricultural habitats. Reference: USFS, USFWS, BLM, and WDFW. 2001. Wildlife of Northeast Washington.	Zender
32.2.2.3	1 under "Mink"	Add the following to the end of the paragraph: Prior to the trap type restrictions and increased conflict with trapping, mink were more commonly taken, especially in the low elevation streams and wetlands in the Colville Valley. In 1995, trappers reported taking four mink from northern Ferry County and sixteen from Stevens County (WDFW 1995 and 1996).	Zender

		Reference: WDFW. 1996. 1995-96 game harvest report. Wildlife Management Program. Olympia, Wa. 99 p.	
32.2.2.3	1 under "Pileated woodpecker"	It is misleading to refer to the WDFW PHS database for all species as most species, such as pileated woodpecker, have not been specifically surveyed for by WDFW and other agencies (e.g., USFS) do not regularly provide data to WDFW on these species. The USFS may have additional records on this species. Contact Jiim McGowan at the Supervisor's Office 684-7210. A checklist prepared by the USFS et al. (2001), lists pileated woodpecker as an uncommon resident in forested and sub-alpine habitats in the area. Reference: USFS, USFWS, BLM, and WDFW. 2001. Wildlife of Northeast Washington.	Zender
32.2.2.3	1 under "White-headed woodpecker"	A checklist prepared by USFS et al. (2001), lists white-headed woodpecker as a rare resident in forested, transition (dry hillsides, open forests) habitats in the area. Reference: USFS, USFWS, BLM, and WDFW. 2001. Wildlife of Northeast Washington.	Zender
33.2	2	Edit paragraph as follows: ~~Kettle Crest, Wedge, and Little Pend Oreille areas above 4,000 ft are designated lynx analysis units (LAUs) located partially or completely within the Subbasin (Stinson 2001).~~ Little Pend Oreille, The Wedge, Kettle Range, and Vulcan-Tunk areas at elevation generally above 4,000 feet are lynx management zones (LMZ's) located partially or completely within the subbasin (Stinson 2001). Although a number of sightings of lynx have been recorded in the Subbasin, most of the records are over ten years old.	Zender
33.3.1.4	NA	Information relevant to this section was provided by WDFW in the 2nd review of the IMP plan. This information was not incorporated as requested. Please add the following:	Lembcke Zender

		Sherman Creek Wildlife Area **Project Description**: **The Sherman Creek Wildlife Area is owned and managed by WDFW. The 8,782 acre wildlife area is managed primarily for deer winter range. Additional management activities provide habitat protection and improvement for nongame birds, waterfowl, and upland birds. Wildlife management programs traditionally focus on habitat manipulation including farming, shrub plantings, timber sales, forage enhancement seedings, and weed control. Farming has occurred on up to 200 acres, with 100 acres of irrigated farming.** **Associated Monitoring**: Breeding Bird point count and area search surveys are conducted annually. The area is also included in general Game Management Unit mule deer and white-tailed deer composition counts. Planted crops or shrubs are monitored and evaluated on a regular basis. Weed control is regulated by Ferry County and monitored regularly by WDFW. **Accomplishments**: Approximatley 1,785 acres of deer and other wildlife habitat has been enhance through timber management. Noxious weed control has been aggressive and implemented annually for at least the last decade. There is not a sufficient O&M budget to facilitate a full time manager so that is the primary limitation to further accomplishments or monitoring.	
33.4.1 33.4.2	All	We are concerned that these sections are exceptionally brief and do not include many of the other species previously described. These are critical sections of the report which will be referenced by funding agencies.	Zender
37.1	Figure 37.1	Replace “Curley Lake” with “Curlew Lake”.	Vail Lembcke

37.2.2	1	Cite information regarding the historic hydrologic connection of Curlew Lake to the Sanpoil River.	Lembcke
37.2.7	2	This information should be cited.	Lembcke
37.2.7	3	The last sentence of this paragraph should be cited.	Lembcke
37.2.8 40.1.3 40.3.1	1 3 1	These paragraphs indicates that the construction of Grand Coulee Dam inundated 12 miles of the Sanpoil River, however Section 38.1 indicates that 8.5 miles of the Sanpoil River was inundated by the project. Consistency is necessary throughout document.	Lembcke
38.1.2	2 under "Tributaries"	Since westslope cutthroat trout are discussed in the previous paragraph, there is no need to list them here.	Lembcke
38.3.2	7	In the last sentence, replace "introduced" with "stocked".	Lembcke
38.4.3	1	Please remove "WDFW" from the list of agencies that "strongly support" "fish passage at Chief Joseph Dam".	Lembcke
40.1.2	1	This paragraph indicates that "just under one percent of the subbasin is currently in agricultural and developed land", however, Section 40.4 (Interpretation and Synthesis) states that "approximately two percent of the native habitats have been converted to agriculture and developed land use". This is inconsistent. Please verify and correct.	Lembcke
40.2.2.1	1 under "Canada lynx"	Add the following to the end of the paragraph: The Kettle Range and Vulcan-Tunk areas at elevations generally above 4,000 feet are lynx management zones (LMZ's) located partially within the subbasin (Stinson 2001).	Zender
40.2.2.2	1 under "Mule deer…"	The first paragraph under "Mule and white-tailed deer" should be deleted and updated as follows to align with current WDFW game management plan (WDFW. 2003. Game management plan. Olympia, Wa): **Mule and white-tailed deer are both native to the subbasin. White-tailed deer populations are relatively stable while mule deer populations in northeastern Washington are below historic levels.**	Zender

		WDFW's management goal is to preserve, protect, perpetuate, and mange deer and their habitat to ensure healthy, productive populations. The population goal for white-tailed deer is to maintain relatively stable population growth. The population goal for mule deer management is an increase in populations within limitations of available mule deer habitat. WDFW's recreation management objective for deer is to maintain or increase hunting opportunity and improve hunting quality. The current general, post-hunt minimum goal for buck:doe ratios in Washington is greater than 15 bucks per 100 does for most populations.	
40.2.2.3	All	Most of the subbasin is within the boundaries of the Colville Indian Reservation and nearly all wildlife information presented here is based on review of the WDFW PHS database. The database generally has very limited data from the reservation. This should be acknowleged in the report.	Zender
41.2	2	Replace 2nd sentence with: The Kettle Range and Vulcan-Tunk areas at elevations generally above 4,000 feet are lynx management zones (LMZ's) located partially within the subbasin (Stinson 2001).	Zender
46	NA	Burbot and lamprey are endemic species that are either in unknown or depressed status (burbot) or extirpated (lamprey) from the Lake Rufus subbasin. Both species could have ecological significance in the subbasin, especially if anadromous fish passage is restored at Chief Joesph Dam. Walleye, while non-endemic, supports a popular sport fishery and are likely a significant ecological species in Rufus Woods Lake. We suggest that all three species be included as "species of interest" in the aquatic assessment and have provided historic status, current status, and current management descriptions to be included in the document (**Attachment C**). Management objectives specific to burbot and walleye are discussed in Section 50, but will have little merit or chance of being	Truscott

		implemented if these species are not identified as "species of interest" to the subbasin. Additionally, their inclusion is necessary to tie the aquatic assessment to the management objectives.	
46	NA	Three are no "Key Findings" for Chinook and sturgeon, two of the five focal species for the Lake Rufus subbasin.	Truscott
49.3.2	NA	Information relevant to this section was provided by WDFW in the 2nd review of the IMP plan. This information was not incorporated as requested. Please see **Attachment A** for additional projects which should be included in this section.	Braaten
50	NA	The management objectives and strategies specifically related to native species recovery/enhancement to near historic levels, need to be in the context of "where suitable habitat exists or where habitat can be feasibly restored". An attempt to manage toward native species without appropriate habitat will negatively impact fisheries supported by non-endemic species/stocks with little chance of recovery/enhancement of endemic populations. Suggested changes to objectives and strategies are as follows: **Subbasin Objective 2A.3:** Preserve and enhance native fish where historically present and where suitable habitat conditions exist and/or where habitat can be feasibly restored. **Subbasin Objective 2C.2:** **Strategy f:** Expand Chinook salmon and steelhead range and habitat ~~wherever possible~~ where suitable habitat conditions exist and/or where habitats can be feasibly restored~~.~~ **Columbia River Basin Level Goal 2B.** Administer and increase opportunities for **consumptive and non-consumptive resident fisheries** for native, introduced, wild, and hatchery reared stocks that are compatible with the continued persistence of native resident fish species and their restoration to near historic abundance where suitable habitat	Truscott

		conditions exist and/or where habitats can be feasibly restored (includes intensive fisheries within closed or isolated systems).	
50	NA	The following changes to management objectives and strategies are recommended to addresses proposed "species of concern" (see previous comment): **Subbasin Objective 1A.1:** Develop and implement plans to reduce hydropower impacts to native, ~~and~~ focal species, and species of concern. **Subbasin Objective 1B.1:** Begin implementation of habitat strategies for addressing identified limiting factors for all focal species, species of concern, and other native fishes by 2005. **Subbasin Objective 2A.1:** Determine genetic distribution of native focal species (white sturgeon, rainbow/redband trout, kokanee), and species of conern, identify limiting factors, and develop strategies for addressing limiting factors by 2005. **Subbasin Objective 2B.1:** **Strategy d:** Develop management plans consistent with native and focal species management (including walleye and other species of concern).	Truscott
Appendix G	NA	We assume that the information provide here was taken from the WDFW website. However, it appears that the percentages in GMU 121 were misappropriated. Considering that GMU 121 is bordered on the east by the Colville River and the west by Lake Roosevelt, approximately 70% of the GMU is located the Upper Columbia subbasin and 30% in the Spokane subbasin.	Zender
Appendix H	Line 13	Change "Funding" to "Non-BPA", "End" to "2004", and delete "ID" number	Vail

ATTACHMENT A

Submitted by: Washington Department of Fish and Wildlife

Within the Douglas County section of the Lake Rufus Woods subbasin, several projects have occurred protecting and restoring habitat. CRP has had the biggest influence in this area. Specific restoration projects within the last five years are as follows:

A. **Strahl Canyon Habitat Project- WDFW/Foster Farm**. This was a riparian restoration project, started in 1999 and completed in 2003. Approximately 4000 trees/shrubs were planted to restore Critical Sharp-tailed Grouse wintering habitat. This was completed and managed by the UWRP of the WDFW. Part of this project was funded by NRCS WHIP program. The project took place on private land and was funded by state and federal funds. The riparian habitat in Strahl Canyon is very critical riparian habitat for local Sharp-tailed grouse. Legal Description: T29N R29E SW ¼ Section 33.

B. **Rice Farms Habitat Project-WDFW/Richard Rice.** This was a habitat project to provide permanent protective cover for local wildlife. It was completed in 2003. Approximately 2000 trees/shrubs planted. This project was completed by the UWRP of the WDFW. This project took place on private land and was funded by state/federal funds. Permanent protective cover is very critical to wildlife in the winter months. Legal Description: T29N R30E SE ¼ Sec. 19.

C. **Upper China Creek Habitat Project- WDFW/Leroy Sanderson**
This was a riparian restoration project to provide critical winter cover for Sharp-tailed Grouse. It was completed in 1999. Approximately 1250 trees/shrubs planted. This project was completed by the UWRP of the WDFW. This project took place on private land and was funded by state/federal funds. China Creek is very critical riparian habitat for local Sharp-tailed Grouse. Legal Description: T30N R29E SE ¼ Sec. 25

ATTACHMENT B

Submitted by: Washington Department of Fish and Wildlife

To be included in the "Inventory of Exiting Programs (Terrestrial)" chapters for each subbasin under section titled "Existing and Imminent Protections":

Bald Eagle

Bald eagles are currently listed as threatened under the federal Endangered Species Act. This provides protection from "take" (i.e., harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect…). Bald eagles were proposed for removal from the endangered species list in 1999. That action has not been taken, in part because one prerequisite for delisting, a nationwide monitoring plan, has not yet been met. If a development project occurs on federal land or involves federal funding (i.e., nexus), an endangered species consultation may be required by the U.S. Fish and Wildlife Service.

In 1984, Chapter 77.12.655 RCW was adopted by the Washington State Legislature, requiring the establishment of rules defining buffer zones around bald eagle nests and roost sites. The law states that the rules shall take into account the need for variation of the extent of the buffer zone on a case by case basis.

In 1986, the Bald Eagle Protection Rules (WAC 232-12-292) were adopted by the Washington Wildlife Commission. The rules require permitting agencies (i.e., Department of Natural Resources, counties, cities) to review the database of bald eagle nest and communal roost locations prior to issuing permits for timber harvest, clearing land, residential development, etc. If the activity is within ½ miles of an eagle nest, the permitting agency notifies WDFW, who works with the applicant to develop a Bald Eagle Management Plan (see WAC 232-12-292 (4.4)).

Deliberate harassment of eagles is prohibited by state and federal law (Chapter 77.15.130 RCW; Bald Eagle Protection Act; Endangered Species Act; and, Migratory Bird Treaty Act).

Canada Lynx

The lynx was listed as a state threatened species in Washington in 1993 and was listed as a federally threatened species under ESA in April 2000. Legal take of lynx in Washington ceased in 1991 and consequent designation as a threatened species presently provides complete protection from hunting or trapping at both the state (Chapter 77.16.120 RCW) and federal level.

Over 90% of lynx habitat in Washington is managed under federal jurisdiction. Habitat is present in six Lynx Management Zones (LMZ) in Washington. The Little Pend Oreille LMZ includes the Kalispel Mountain Range and consists of ten lynx analysis units (LAUs), seven of

which are located within the Pend Oreille River Subbasin. The Salmo-Priest LMZ includes the Selkirk Mountain Range and the Lower Pend Oreille and Priest River areas. In 2000, the U.S. Forest Service signed an agreement with the USFWS to manage habitat specifically for lynx in order to minimize the impact of federal actions (USFWS 2000: 16083). Most state and private land in the northeastern Washington LMZs are covered under Lynx Management Plans that theoretically provide for maintaining suitable habitat through time. Forest practice regulations in Washington allow landowners to prepare special wildlife management plans in lieu of being subject to critical habitat rule (WAC 222-16-080). The three major non-federal landowners in Washington have WDFW approved plans in place. Each lynx management plan includes a process for monitoring the plan's effectiveness and annual or biennial reporting (Stinson, D. W. 2001. Washington state recovery plan for the lynx. Washington Department of Fish and Wildlife, Olympia, Washington. 78 pp. + 5 maps).

Gray Wolf

The gray wolf is a listed as endangered by Washington State. Protection of gray wolf from hunting, possession, or control is provided under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of state endangered species with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

Grizzly Bear

The grizzly bear listed as an endangered species under ESA, as a threatened species in the state of Idaho, and as an endangered species in the state of Washington. Most of the Pend Oreille Subbasin is within the Selkirk Grizzly Bear Recovery Zone. Protection of grizzly bear in Washington from hunting, possession, or control is provide under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of state endangered species with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

The following is from: Base, D.L. 2003. Selkirk mountains grizzly bear protection. Unpublished. Admin. Rept Washington Department of Fish and Wildlife, Region One, Spokane, Washington. 5p. The current population of grizzly bears within the Selkirk Recovery Zone is deemed to be below a level necessary for long-term viability (Wielgus et al. 1994, Wakkinen, pers. comm. 2001). Human caused mortality, especially of females, by illegal shooting or killing bears in self-defense is apparently the limiting factor in the recovery of the Selkirk Grizzly Bear population (McLellan et al. 1999; Knick and Kasworm 1989). To address this problem and help restore a viable population of grizzly bears into the Selkirk Mountains Ecosystem, the Interagency Grizzly Bear Committee recommends the following actions: (a) develop and implement strategies to prevent human caused mortalities of grizzlies. (b) develop a strategic conservation plan which includes provisions for grizzly bear population monitoring as well as provisions for informing & educating the public on the needs of grizzly bears. This plan must insure that increasing demands for human recreational usage within the Selkirk Zone are compatible with grizzly bear recovery. (c) improve community relations and garnish local support for grizzly bear recovery efforts. The Washington Department of Fish and Wildlife (WDFW) has made significant efforts toward accomplishing these actions as recommended by the IGBC. WDFW has devoted substantial staff time to make contact with recreational users,

especially during hunting seasons, to distribute information & education materials, and to generally monitor human activities within and surrounding the Washington portion of the Selkirk Mountains Recovery Zone**.**

Since 1989 the Colville National Forest has gated over 300 miles of road or 42% of the existing road network within the Sullivan Lake Ranger District. In addition 132 miles of road within the Sullivan Lake Ranger District have been permanently blocked and are in the process of forest reclamation. Most of the eliminated roadways along with year-round restricted roadways are within the Selkirk Grizzly Bear Recovery Zone. (Borysewicz, M. 2001. Management activities in the Selkirk Mountains Grizzly Bear Recovery Area in calendar year 2001. Unpublished admin. rept. Colville National Forest: Sullivan Lake Ranger District. 14 p.)

Fisher

Fisher is a state endangered species in Washington and is managed based on the findings of the WDFW status report (Lewis and Stinson 1998); it is not given special management designation in Idaho. Protection of fisher in Washington from hunting, possession, or control is provided under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of state endangered species with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

Woodland Caribou

The woodland caribou is listed as endangered by the federal government and states of Idaho and Washington. Portions of the Pend Oreille Subbasin are within a federally designated woodland caribou recovery zone that extends through British Columbia, Washington, and Idaho. Caribou habitat has been delineated on federal, state, and private lands within the Selkirk ecosystem. In Washington, the majority of caribou habitat is managed by the US Forest Service where vegetation management guidelines have been developed for protection or management of these allocated lands. (USFWS. 1994. Recovery Plan for Woodland Caribou in the Selkirk Mountains. March, 1994. Revision of 1985 Approved Action Plan. USFWS Portland, Oregon. USA.)

Protection of woodland caribou in Washington from hunting, possession, or control is provided under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of a woodland caribou with a $5,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

American White Pelican

The American white pelican is listed as an endangered species in Washington. Protection of American white pelican in Washington from hunting, possession, or control is provided under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of an American white pelican with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

Northern Leopard Frog

The northern leopard frog is listed as an endangered species in Washington. Protection of northern leopard frog in Washington from hunting, possession, or control is provided under

Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of northern leopard frog with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

Columbia Spotted Frog
The Columbia spotted frog is a federal species of concern and a Washington State candidate species under evaluation for possible listing as endangered, threatened, or sensitive. Under the provisions of the Wildlife Code of Washington the species is unclassified and unprotected, and can, therefore, be legally killed at any time without permit.

Upland Sanpiper
The upland sandpiper is listed as an endangered species in Washington (WAC 232-12-014). Protection of upland sandpiper in Washington from hunting, possession, or control is provided under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of upland sandpiper with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

Sage Grouse
The sage grouse is listed as an threatened species in Washington. Protection of sage grouse in Washington from hunting, possession, or control is provided under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of sage grouse with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

Sharp-tailed Grouse
The sharp-tailed grouse is listed as an threatened species in Washington. Protection of sharp-tailed grouse in Washington from hunting, possession, or control is provided under Chapter 77.16.120 RCW. Washington further charges those convicted of illegal take of sharp-tailed grouse with a $2,000 reimbursement for each animal taken or possessed (Chapter 77.21.070 RCW).

ATTACHMENT C

Submitted by: Washington Department of Fish and Wildlife

Focal Species Or Species- of-interest – Pacific Lamprey
Pacific lamprey were selected due to their cultural significance and subsistence value historically to the upper Columbia River Tribes, and to address concerns regarding native species conservation.

Historic Status
Pacific lamprey were historically present in the Rufus Woods Subbasin prior to the construction of Chief Joseph Dam. The construction of the dams without fish passage facilities prevented migration upstream of Pacific lamprey and other anadromous species as well as extirpated them from the subbasin.

Current Status
Currently, Pacific lamprey are not known to be present within the Subbasin.

Current Management
There is no current management for the species, since Pacific lamprey were extirpated from the Rufus Woods Subbasin.

Focal Species or Species-of- Interest – Burbot
Burbot were selected as a focal species or species-of-interest for their ecological significance, their native species status, and their potential recreational importance as a sport fish. Although burbot are not as sought after by recreational anglers as the salmonids and walleye in the region, they are excellent table fare. More research needs to be conducted to truly understand the status of burbot in this subbasin. Burbot were chosen not be analyzed by the QHA model in this assessment. The QHA model was developed for salmonid fishes and would not effectively identify limiting factors for populations of burbot in the Rufus Woods Subbasin. Although data on the general population characteristics and distribution is not well understood, burbot are perceived as an important species in the subbasin and warrant research to further understand how they interact with their environment in the subbasin.

Historic Status
Distribution of burbot is circumpolar in the northern hemisphere. There is not a lot known about burbot in the Upper Columbia Subbasin, but they are found in Lake Roosevelt, Lake Rufus Woods and the Columbia River downstream from Chief Joseph Dam. Early systematic studies placed burbot into three distinct subspecies with only one of these subspecies found in North America, *Lota lota lacustris* (Hubbs and Schultz 1941). Current evidence suggests the sub-specific designation is unwarranted (Scott and Crossman 1973).

Burbot are benthic feeders that reside in deep waters in lakes or rivers and are not considered migratory. Sexual maturity is reached between age 2 and age 4. Burbot spawn during the winter from mid-December to early April. Spawning habitat conditions include mostly shallow waters (0.3-1.5 m) and clean substrate (sand, gravel and stones) (Morrow 1980).

Current Status
Little is known regarding burbot biology within the Upper Columbia Subbasin. Population status, abundance, and trends are unknown. Abundance appears to be fairly stable with comparison to other harvest and species composition data (WDFW catch data for Lake Roosevelt). Carrying capacity and current habitat condition for burbot remains relatively unknown within the subbasin.

Current Management
Currently burbot have a daily catch limit of five per day. This was increased from previous regulations of two per day in an attempt to increase angler interest and harvest for burbot (WDFW 2003). No hatchery production or current captive breeding programs operate within the Upper Columbia Subbasin. Current management direction is to maintain the harvest regulations that are in place.

Focal Species or Species-of- Interest – Walleye
Walleye were not included as a focal species for the sub-basin planning process; however because of their potential ecological significance and popularity as a recreational fishery, entities within the Rufus Woods sub-basin have included walleye as a "species of interest"

Historical status:
Walleye are an introduced species that were first observed in Lake Roosevelt, upriver from Lake Rufus Woods during the early 1950's. Walleye may have occupied fluvial habitat and interacted with indigenous fish species downstream of Lake Roosevelt prior to impoundment by Chief Joseph Dam in 1961. The construction of Chief Joseph Dam and subsequent impoundment (Rufus Woods Lake) eliminated anadromous fish populations above Chief Joseph Dam and significantly reduced the viability of resident salmonid populations through habitat alterations and passage barriers, while at the same time increased habitat conducive to introduced species, including walleye.

Although the altered habitat is likely more conducive to walleye populations than that provided during pre-impoundment, substantial water level fluctuations, short water retention times, and minimal plankton production result in a relatively unproductive aquatic ecosystem (Zook et al. 1982). Walleye recruitment is thought to be largely entrainment from Lake Roosevelt rather within reservoir production, although a thorough investigation of walleye life-history trajectory has not been conducted.

Walleye have been and continue to be a focal target species for recreational angling in Rufus Woods Reservoir. Specific creel census data is lacking for Rufus Woods Lake. Because of its proximity to Lake Roosevelt and common species composition, it is likely that proportional fishery value (% of total recreational catch) of the walleye fishery in Rufus Woods Lake during the 1980's and 1990's mimicked that observed in Lake Roosevelt, where a large proportion of the recreational catches were comprised of walleye. More recently, rainbow trout associated with the triploid net-penning operation within Rufus Woods Lake has gained in popularity. However, walleye continue to provide a substantial recreational opportunity.

Current Status:
Walleye currently occupy habitat within Lake Rufus Woods and support an important recreational fishery. Recruitment is thought to be primarily entrainment from Lake Roosevelt.

Current Management:
Walleye are managed to provide a recreational sport fishery. The current population supports an important recreational fishery, although systematic creel census information is lacking, the fishery is well known throughout Washington State. The walleye fishery in Rufus Woods Lake is managed consistent with WDFW Statewide Rules for walleye.

May 12, 2004

Washington Department of FISH AND WILDLIFE

TO: Ginger Gillin, GEI Consultants, Inc.

FROM: Sandy Lembcke, Washington Dept. Fish and Wildlife

RE: Review 4th Draft of Intermountain Province Subbasin Plan

Enclosed please find Washington Dept. of Fish and Wildlife's review comments for the 4th draft of the Intermountain Province Subbasin Plan. The last name of the WDFW reviewer is provided for each comment. Please contact the reviewers directly if you have specific questions regarding a comment. For all other questions, please contact me.

WDFW reviewers and contact information:

- Ferguson, Howard – 509/456-4420; ferguhlf@dfw.wa.gov
- Lembcke, Sandy – 509/684-2031; lembcsrl@dfw.wa.gov
- Vail, Curt – 509/684-7452; vailcav@dfw.wa.gov
- Zender , Steve - 509/935-6073; zendestz@dfw.wa.gov

Cc: Lyle Gardinier and Marianne Quaade, Ferry Conservation District
Kevin Robinette, WDFW
Alison Squier, IMP Coordinator

Washington Department of Fish and Wildlife

COMMENTS ON 4th DRAFT INTERMOUNTAIN PROVINCE SUBBASIN PLAN
Submitted: May 12, 2004

Section	Paragraph	Comment	Reviewer
1.5.1	1	Information regarding "studies" documenting contamination of Lake Roosevelt by Tek Cominco should be cited or removed.	Lembcke
1.5.2	2	Information regarding water quality impacted by Libby Dam should be cited.	Lembcke
2.4.1.1	Under "Army Corps of Engineers"	As provided to Kathy Smayda on CD at the May 7 Oversight Committee meeting, please include information regarding "Section 10" and "Section 404" under U.S. Army Corps of Engineers where appropriate.	Lembcke
2.4.1.3	Under "DOE"	As provided to Kathy Smayda on CD at the May 7 Oversight Committee meeting, please include information regarding "2514", "401 Water Quality Certification", and "SMA Programatic" under Washington Dept. of Ecology where appropriate.	Lembcke
2.4.1.3	Under "WDFW"	Please include information regarding Ecoregional Conservation Assessments (Attachment A) where appropriate under Washington Dept. of Fish and Wildlife.	Lembcke
2.4.1.3	Under "WFDW:	As provided to Kathy Smayda on CD at the May 7 Oversight Committee meeting, please include information regarding "GMA-PHS" and "Road Maintenance" under Washington Dept. of Fish and Wildlife where appropriate.	Lembcke
2.4.4.1	4 under "USFWS"	Citations should be provided for the Selkirk Mountain Woodland Caribou Recovery Plan and the Grizzly Bear Recovery Plan. U.S. Fish and Wildlife Service. 1993. Grizzly Bear Recovery Plan. Missoula, Montana. 181 p U. S. Fish and Wildlife Service. 1994. Recovery plan for woodland caribou in the Selkirk Mountains. USDI Fish and Wildlife Service, Portland, Oregon.	Lembcke
13.2.2.1	1	Edit last sentence of paragraph as indicated: The Lower Pend Oreille Subbasin is bordered by the Selkirk Mountains to the west and the Chewelah Mountains or	Vail

		Calispell Mountains to the ~~west~~ EAST in the upper part of the Colville Valley.	
14.1.1	2	This paragraph contains inconsistencies regarding Gilbert and Evermann's (1895) observations of Metaline Falls/Z Canyon. The first reference to Gilbert and Evermann is incorrect….they did not consider Metaline Falls and/or Z Canyon to be a "serious obstruction" to salmon. Remove this reference. The second reference to Gilbert and Evermann is correct (i.e., they "concluded neither Z Canyon nor Metaline Falls was a barrier to anadromous upstream migration…").	Lembcke
14.4.1	1	Edit 1st sentence as indicated: Shepard et al. (2003) estimate that 200 ~~hundred~~ years ago westslope cutthroat trout occupied 56,600 miles of habitat within the five states of Washington (3,000 miles), Oregon (>1,000 miles), Idaho (19,000 miles), Montana (33,000 miles), and Wyoming (<100 miles).	Vail
16.1.3.2	4	Change sentence to "The impact of the loss of salmon to focal wildlife…"	Lembcke
25.3.2	NA	As noted in comments on the 3rd draft, please add the following under "Non-BPA funded projects": **MAPS Bird Banding Project – WDFW Monitoring Project** **Project Description:** Monitoring vital rates (primary demographic parameters such as productivity and survivorship) of a relatively undisturbed riparian avian population. Estimating primary demographic parameters is critical for understanding population dynamics and is directly applicable to population models that can be used to assess land management practices by examining the effects of the landscapes they produce on vital rates. This project is part of Monitoring Avian Productivity and Survivorship (MAPS) International program which is a cooperative effort among public agencies, private organizations, and individual bird ringers in North and South America to operate a network of over 500 constant-effort mist netting and banding stations during the breeding season (DeSante et al. 1995). MAPS was established in 1989 by The Institute for Bird Populations (IBP) and was patterned to a large extent after the British Constant Effort Sites (CES) scheme operated by the British Trust for Ornithology.	Ferguson

		Accomplishments: To date over 2500 birds have been captured and almost 1900 have been banded including 1500 adults and almost 900 juveniles with over 550 recaptures.	
26.4	NA	Edit as indicated: **Objective 2A1**: Maintain bald eagle populations at or above present levels (2004) in the Spokane Subbasin.	Ferguson
26.4	NA	Edit strategy 2A.4(a) as indicated: Determine limiting factors for golden eagles~~~~ populations by 2006.	Ferguson
26.4	NA	Edit strategys 2A.2(d) and 2A.3(d) as indicated: Assess and ~~if deemed needed~~ as needed limit/restrict nonnative invasive species interaction/competition and habitat degradation.	Ferguson
26.4	NA	Objective 2A.2 Strategy b should be noted as an RM&E item and also added to the RM&E section.	Ferguson
27	NA	Add a new "Strategy Type" under the terrestrial section - #11 Population Monitoring	Ferguson
27	NA	Under Objective 2A1(c) delete "1" and add "11" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A2 add Strategy b (i.e., Develop, prioritize, and implement projects/or research to address identified sharp-tailed grouse limiting factors by year 2007") and include "1 and 2" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A2(a) add "1, 2, 11" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A2(c) add "2" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A3(a) add "11" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A3(c) add "1" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A3(d) add "2" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A4(a) add "11" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A6(c) add "11" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A7(c) add "2 and 11" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A8(c) add "2 and 11" under "Strategy Type"	Ferguson
27	NA	Under Objective 2A9(b) add "2 and 11" under "Strategy Type"	Ferguson
30.3.3	4	Delete 2nd sentence of paragraph which begins with "Plans call for similarly equipping WDFW's Colville Hatchery…"	Vail
30.3.3	NA	Add the following where appropriate in this section: "In May 2004, 2,000 juvenile sturgeon received from British Columbia and reared at WDFW's Columbia Basin Hatchery were pit tagged and released into Lake Roosevelt to further the current research."	Vail
31.3.2	2 under	Add the following to the end of the paragraph: "The	Vail

	"Phalon Lake"	facility was completed in Spring 2004."	
33.2.1	1 under "Canada Lynx"	Edit 2nd sentence as follows: Kettle Crest, Wedge, and Little Pend Oreille areas above 4,000 ft are designated lynx ~~analysis units~~ management zones (LMZ~~AU~~s) located partially or completely within the Subbasin (Stinson 2001).	Zender
37.2.2	1	Information regarding the historic hydrologic connection of Curlew Lake to the Sanpoil River should be cited.	Lembcke Vail
40.2.2.3	All	Most of the Sanpoil Subbasin in located within the boundaries of the Colville Indian Reservation. Nearly all wildlife data presented here is based on review of the WDFW PHS database. The database generally has very limited data from the reservation. This should be acknowledged in the document.	Zender
41.2.1	1 under "Canada Lynx"	Edit 2nd sentence as follows: The San Poil Subbasin includes land within designated lynx analysis unit (Kettle Range ~~Crest~~ and Vulcan-Tunk).	Zender

ATTACHMENT A

Description of Ecoregional Conservation Assessments
To be included in Section 2.4.1.3 under "Washington Dept. of Fish and Wildlife" where appropriate

Ecoregional Conservation Assessments

Unlike fish, wildlife are not confined to subbasins. Individual animals move across watershed boundaries to utilize resources in neighboring subbasins. The viability of a local population can be improved by dispersal of individuals from nearby subbasins. A metapopulation may consist of populations that are distributed widely across many subbasins. Some subbasins may provide "source' habitats while other subbasins may contain mostly lower quality "sink" habitats. For these reasons, understanding the regional context of a subbasin is necessary for effective conservation strategies. Ecoregional conservation assessments (ECAs) provide subbasin plans with a regional context for making conservation decisions.

ECAs identify areas of greatest importance and opportunity for conserving an ecoregion's biodiversity B both plants and animals. Ecoregional conservation assessments are the product of a partnership between The Nature Conservancy (TNC) and the Washington Department of Fish and Wildlife (WDFW). ECAs use an approach developed by TNC (Groves et al. 2000, Groves et al. 2002, Groves 2003) and other scientists (Possingham et al. 2000, McDonnell et al. 2002) to establish long-term conservation priorities within the natural boundaries of ecoregions.

ECAs are one of many science-based tools that will help WDFW fulfill the agency's mission. WDFW will use the results of ECAs in four ways. First, WDFW's future land acquisitions will be prioritized. Lands inside identified conservation areas will be a higher priority than those outside. Secondly, ECAs will assist grant programs decide where to focus limited conservation resources, e.g. financial assistance or incentives for local habitat protection projects. Thirdly, the results of ECAs will be used to influence the management of public lands. ECAs will indicate the most important public land parcels for the conservation of fish and wildlife populations. Finally, the results of EAs will be provided to counties for their planning under the Growth Management Act (GMA).

The Intermountain Province intersects the Canadian Rockies and Okanagan Ecoregions. The Canadian Rockies ECA was completed in 2003. The Okanagan ECA will be completed by TNC and WDFW sometime in 2005. Future mitigation projects should refer to the ECA for additional guidance about where to do mitigation in the subbasins of the Intermountina Province.