Northwest Power and Conservation Council

June 30, 2011

BRIEFING MEMORANDUM

TO: Council members

FROM: Peter Paquet, Manager, Wildlife & Resident Fish

SUBJECT: Briefing on Wildlife Crediting Forum Draft Report.

INTRODUCTION: The purpose of today's discussion is to familiarize the Council with the draft report produced by the Wildlife Crediting Forum and to seek input from the Council on the adequacy of the report in meeting the Council's desired outcomes. The report is the result of nearly one and a half years work by the Forum and is intended to provide a blueprint or framework for future discussions between Bonneville and regional fish and wildlife agencies and tribes on the development of agreements for meeting Bonneville's wildlife mitigation obligations. It is not intended to be applied to individual projects or to establish new policies outside of the legal mandates established by the Power Act.

BACKGROUND

The Council chartered the Forum to provide advice on the crediting and accounting of wildlife habitat mitigation associated with the construction and inundation impacts of the Federal Columbia River Power System (FCRPS). The Forum consists of wildlife program managers representing tribes (14 in all) and state fish and game departments (Oregon, Washington, Idaho) impacted by FCRPS, the U.S. Fish and Wildlife Service (USFWS), and representatives from the Bonneville Power Administration (BPA) and BPA Customers. The State of Montana is not a participant as wildlife mitigation issues relating to FCRPS have been settled by prior agreement between BPA and the state.

The instructions to the Forum were to make recommendations regarding the NPCC Wildlife Crediting Program (Program) with respect to:

- Developing a commonly accepted "ledger" of habitat units acquired by BPA
- Developing a common database for tracking, assigning and recording habitat units
- Resolving issues about accounting for habitat units
- Other issues related to wildlife crediting, including the use of Habitat Evaluation Procedures (HEP) or alternative evaluation procedures

The charter also allowed for the development of strategies that will allow the parties to achieve long-term agreements.

The Forum and several sub-committees have been meeting since January, 2010 to address Program issues. Much of the Forum's early deliberations focused on the difficulty of coming to collective agreement on all issues posed by the Council's Fish and Wildlife Program. Crediting issues were found to differ depending on geographic area, specific hydropower projects, and the entities involved in specific

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crediting decisions. The methodologies involved in crediting decisions have also changed and evolved over time, been interpreted and applied in differing ways, and in some cases crediting has been resolved through individual project agreements. Reflecting on these factors, the Forum felt that the many technical and recordkeeping issues with the ledger, overlaid with unresolved policy issues, would make full resolution at the Forum level difficult, and decided that "agreements" were more likely to be an effective means of resolution. At the same time, the Forum indicated that the technical analysis of the ledger should continue to help resolve or make clear as many outstanding issues as possible. A considerable effort in this regard has been undertaken over the last several months. While not every issue or dispute has been resolved, and significant anomalies remain, the commonalities developed by the Forum provide a solid basis for bringing this portion of the Program to a successful conclusion. The draft report we will discuss at this meeting details the outcomes of the Forum's deliberations. Major areas of accomplishment include:

- Establishment of a ledger depicting the current status of Bonneville funded wildlife mitigation activities
- Development of Standard Operating Procedures for future applications of HEP
- Development protocols for determining the amount of credit Bonneville should receive for management actions that occur on Federal lands
- Development of protocols for determining the amount of credit that Bonneville should receive for fish mitigation projects that benefit wildlife
- Acceptance of the Fish and Wildlife Program loss assessments as the agreed upon measure of wildlife losses

However, several policy related issues remain unresolved including:

- Agreement on the application of the crediting ratio established in the Fish and Wildlife Program
- Agreement on how to deal with wildlife species benefiting from open water habitats resulting from reservoirs associated with dam construction
- Agreement on how to account for mitigation that occurred prior to the 1980 Power Act

While these issues remain unresolved, the report provides important background information on them which can form the basis for negotiations focused on agreements and for future Council policy deliberations associated with future Fish and Wildlife Program amendent processes.

DRAFT Wildlife Crediting Forum Report on Forum Deliberations January 2010 — May 2011

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EXECUTIVE SUMMARY

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The Forum and several sub-committees have been meeting since January, 2010 to address Program issues. Much of the Forum's early deliberations focused on the difficulty of coming to collective agreement on all issues posed by the Council's Fish and Wildlife Program. Crediting issues were found to differ depending on geographic area, specific hydropower projects, and the entities involved in specific crediting decisions. The methodologies involved in crediting decisions have also changed and evolved over time, been interpreted and applied in differing ways, and in some cases crediting has been resolved through individual project agreements. Reflecting on these factors, the Forum felt that the many technical and recordkeeping issues with the ledger, overlaid with unresolved policy issues, would make full resolution at the Forum level difficult, and decided that "agreements" were more likely to be an effective means of resolution. At the same time, the Forum indicated that the technical analysis of the ledger should continue to help resolve or make clear as many outstanding issues as possible. A considerable effort in this regard has been undertaken over the last several months. While not every issue or dispute has been resolved, and significant anomalies remain, the commonalities developed by the Forum provide a solid basis for bringing this portion of the Program to a successful conclusion. The draft report we will discuss at this meeting details the outcomes of the Forum's deliberations. Major areas of accomplishment include:

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PURPOSE

The purpose of this summary report is to capture the work conducted by the Wildlife Crediting Forum (**Forum**). The Forum was chartered in late 2009 by the Northwest Power and Conservation Council (**NPCC**) to provide input on the Council's Fish and Wildlife Program (Program). This summary report provides an overview of the Forum's discussions and direction through December 2, 2010. This summary report and appendices also reflect the additional work conducted in January and February 2011 with Bonneville Power Administration (BPA) and Columbia Basin Fish and Wildlife Authority (CBFWA) staff to further analyze Program records by sub-basin.

This summary report only reflects the input of individual Forum members, and does not necessarily represent the policy position(s) of the tribes, agencies, and stakeholders they represent. Forum members have been made aware that they serve only in an advisory role to NPCC.

BACKGROUND

NPCC chartered the Forum to provide advice on the quantifying and accounting system (informally known as the **Ledger**) for the wildlife habitat mitigation credits associated with the construction and inundation impacts of the Federal Columbia River Power System (**FCRPS**) within the Columbia River Basin (**Basin**). The database that currently houses the Ledger is called **Pisces**. The Program was initiated in 1981, and has been modified from time to time (most recently in 2009) by NPCC in updating the overarching Columbia River Basin Fish and Wildlife Program (**Program**).

The Forum consists of wildlife co-managers representing the 14 tribes and 3 state fish and game departments (Oregon, Washington, Idaho) impacted by FCRPS; and representatives of the U.S. Fish and Wildlife Service (USFWS), BPA, and BPA Customers. The State of Montana is not a Forum participant, as wildlife mitigation issues relating to FCRPS have been settled by prior agreement between BPA and that state. CBFWA and NPCC staff acted as advisors to the Forum. A private consulting firm (Parametrix) was engaged to facilitate Forum processes and to provide for augmented technical analysis of the Ledger.

The original Forum charter called for the development of recommendations with respect to:

(A) Developing and recommending to the Council a commonly accepted ledger of habitat units acquired by the Bonneville Power Administration.

(B) Recommendations to the Council on ways to resolve issues about accounting for habitat units.

(C) Developing a common data base for tracking, assigning and recording habitat units.

(D) Reviewing and issues related to wildlife crediting, such as the frequency and use of the Habitat Evaluation Procedure following the initial baseline evaluation. The forumcould also provide recommendations on acceptable alternative evaluation procedures.

The Forum met eight times in 2010 to address the Program issues. The Forum also convened three sub-committees to discuss specific issues (credits for fish projects, Federal lands, and general Ledger issues). Each of these sub-committees met one or two times, and produced reports which were provided to the full Forum. The Forum conducted wildlife crediting issues orientation and reviews over the course of its first three meetings. Starting in May 2010, the Forum focused on the difficulty of coming to collective agreement on the resolution of even the first issue specified in its NPCC charter (see above). Several factors contributed to this challenge:

- Over the course of nearly 30 years, the NPCC has modified the Program from time to time. In addition, some changes have not been uniformly interpreted by the co-managers or BPA.
- Wildlife mitigation is largely, though not exclusively, out-of-place and out-of-kind, which means the areas and species used for mitigation are not necessarily the same as those lost through the construction and inundation of FCRPS dams. Thus, the habitats and species used in the loss assessments were in many cases not the same as those needing crediting on the mitigation sites
- Crediting issues were found to differ depending on geographic area, specific hydropower projects, and the tribes or agencies involved.
- The database system housing the Ledger has also changed and evolved, and some ad-hoc "workarounds" have been made to fit data into database formats.
- The methodologies involved in the Program have changed and evolved, and interpretation and application has varied in the field, across different subregions, and as entered in the Ledger.
- The tool used to evaluate the quality of habitat being acquired or enhanced (the Habitat Evaluation Procedure or HEP) was not designed to provide comparability among and across a region as large and diverse as the Columbia River Basin.

In some cases, (e.g. Montana, Dworshak, Willamette) crediting has been resolved through individual wildlife mitigation agreements. Generally, these types of agreements have resulted in a comprehensive resolution of wildlife mitigation issues. *NOTE: the use of individual agreements is permitted by the Program.*

Reflecting on these factors, the Forum concluded that the many technical and recordkeeping issues with the Ledger, overlaid with unresolved policy issues, would make full resolution in accordance with the original NPCC charter difficult. The Forum discussed therefore the possibility of "settlement agreements" as a more effective means of resolution. At the same time, the Forum indicated that the technical analysis of the Ledger should continue to help resolve or make clear as many outstanding issues as possible. NPCC concurred with this overall "revised" approach and goals at its July, 2010 meeting.

NOTE: The possibility of shifting to a "settlement agreement" option is referenced as an acceptable alternative in the original Forum charter: ".... or strategies that will allow parties to achieve long-term settlement agreements." In October 2010, a settlement for the Willamette River Sub-basin of the FCRPS was signed between BPA and the State of Oregon (Oregon participated during the early

phases of the Forum, but discontinued participation following completion of the Willamette Wildlife Agreement).

On December 2, 2010, the Forum met and discussed ongoing issues and concerns. NPCC staff and the consultants recommended that additional Basin-wide technical analysis was becoming more costly than merited by the resulting understanding or improvements to the Ledger. The suggestion was made that the most valuable additional analysis would be that conducted at the sub-regional level. A considerable effort with respect to this detailed technical analysis was undertaken **up through May 20, 2011**. The outcomes of these sub-regional reviews are attached as Appendix D.

Also at the Forum's December 2 meeting, a matrix prepared by NPCC and Parametrix staff was presented that estimated the level of agreement (high, medium, low) by sub-region for each of the remaining issue topics. A version of this matrix, revised as per sub-region reviews, is included in each of the attached sub-region appendices.

NOTE: Inclusion of the following issue topics in this summary report does not mean that the Forum has reached full consensus on any given item. Each may require additional discussion on the part of the full Forum and/or at the sub-group level. Accordingly, specific recommendations are not included. Some divergent viewpoints remain (an example being over the 2:1 crediting ratio). It is also important to keep in mind that within the context of developing settlement agreement(s) that a full resolution of many of the remaining Ledger issues identified herein may be moot, as settlement(s) may simply supplant the issue irrespective of the degree to which it is technically resolved (or not).

VARIABILITY AND EXPECTATIONS OF HEP

NOTE: This issue was referred to an ad-hoc sub-committee of the Forum. The summary below reflects the deliberations of that sub-committee. In addition, this particular subcommittee addressed other Crediting issues. ***The full report of the sub-committee is attached as Appendix A.***

At the May meeting of the WCF, the Ledger Subcommittee provided a report that identified a number of technical and policy issues that would need to be addressed in order to develop a comprehensive and consistent crediting ledger based on habitat unit accounting. The subcommittee was tasked with working through known issues such as: lack of consistency in the use of the Habitat Evaluation Procedure (HEP), HEP models, data collection, "stacking" and other related issues.

Inherent Variability in HEP

However, the sub-committee acknowledged at the outset that a major cause of the variation in the region is the nature of the HEP tool itself. The HEP tool was designed and is very effective as a comparative tool to address mitigation for specific discrete losses. The habitat units provided through the HEP process provide relative value but should not be seen as an absolute value. HEP was not intended be a comprehensive accounting tool tracking progress over a broad geographic area and over a long period of time. For that reason, the group recognized and accepted there is great variation, either positive or negative, in the habitat units attributed to any given property.

Other Issues

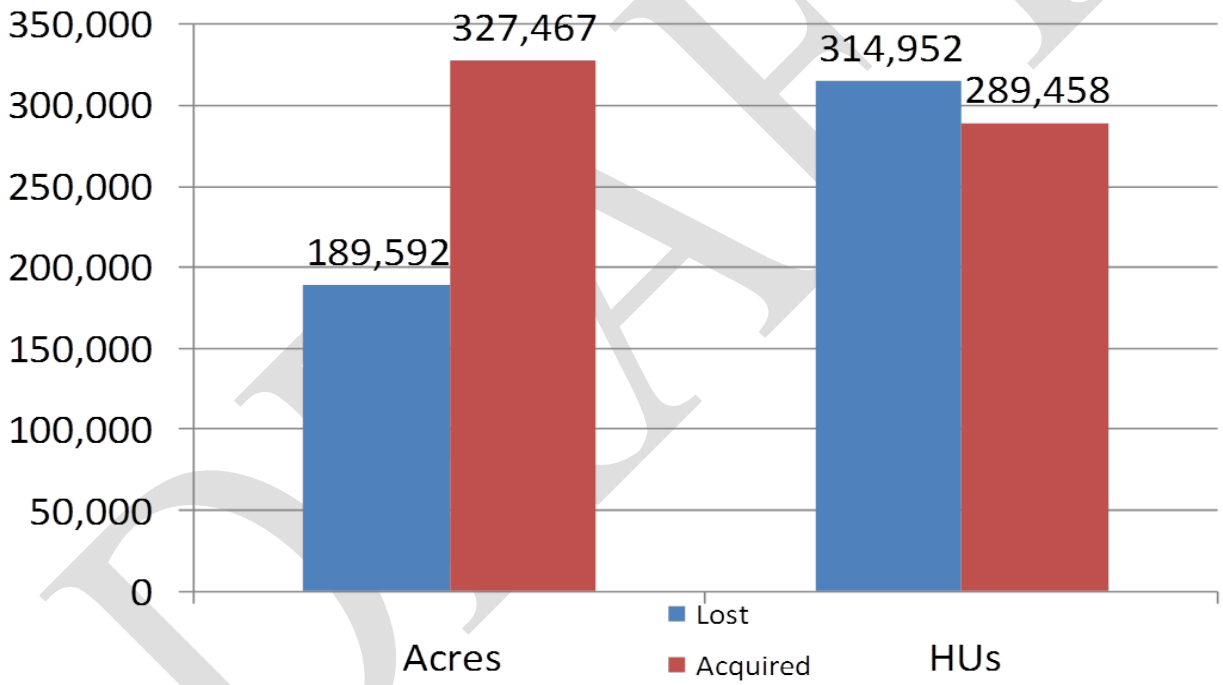
The sub-committee worked through the many issues identified above. Appendix A includes a summary of each of the issues and recommended standard operating procedures for the following:

- HEP Methods
- Stacking
- Crediting

Team Recommendation

In recent years, however, the application of HEP has been relatively consistent between projects. The sub-committee identified that Program crediting issues were found to differ depending on geographic area, specific hydropower projects, and the entities involved in the specific crediting decisions. The methodologies involved in crediting decisions have also changed and evolved over time, been interpreted and applied in differing ways, and in some cases crediting has been resolved through individual project agreements. Reflecting on these factors, the Forum felt that the many technical and recordkeeping issues with the ledger, overlaid with unresolved policy issues, would make full resolution at the Forum level difficult, and discussed the possibility of "agreements" as a more effective means of resolution. At the same time, the Forum indicated that the technical analysis of the ledger should continue to help resolve or make clear as many outstanding issues as possible while recognizing the numerical values from such am exercise are subject to the inherent discrepancies described above.

Figure 1 Acres and Habitat Units Lost and Acquired.



ISSUES RESOLVED

STANDARD OPERATING PROCEDURES FOR HEP

The quality of habitat varies widely between watersheds, sub-basins, and major regions across the Basin. Thus the number of HUs per acre will also vary from watershed to watershed, sub-basin to sub-basin, etc. (Figure 1). The type of protection method also varies greatly. These variables were recognized by the Forum as a "fact of life" across such a large region, and such variation cannot be necessarily construed as inequity. The ledger subcommittee's suggestions focused primarily on resolving such issues in future applications of HEP through the development of standard operating procedures to address the following issues:

Sources of Variation in Crediting Due to HEP Methods: Methodological choices beginning with how habitat types are delineated for analysis and ending with the species models and inputs used can dramatically alter HEP results and therefore the HUs credited.

Species Stacking: Using fewer species per cover type in the crediting HEP than were used in the loss assessments results in underreporting of HU credit.

Crediting for Actions on public and other non-Permanent or Unsecured Mitigation: Either HUs on such sites have not been credited yet, or the credit was agreed to absent clear consistent guidance.

See Appendix A for a complete listing of the standard operating procedures recommended by the ledger subcommittee.

CREDITS ON FEDERAL LANDS

NOTE: This issue was referred to an ad-hoc sub-committee of the Forum. The summary below reflects the deliberations of that sub-committee.

Some management actions included in the Program occur on Federal lands. This raises the question of how much credit BPA should receive for these actions. The Forum has concluded that for all future projects involving Federal lands, the following considerations need to be addressed.

- Whether Bonneville funded actions on Federal lands that are generally creditable, but have happened or would have happened anyway based on a Federal agency's usual and customary responsibilities should be included.
- Whether the Federal agency's usual and customary responsibilities are such that the protections for wildlife values are assured over time.

This Forum sub-committee suggested that the following standards be applied to the question of crediting of Federal land projects:

- Must meet the current Program criteria for wildlife projects.
- Must be "permanently" protected – minimum of an easement with a term of equal to the life of the FCRPS, or an appropriately formulated and adopted Federal management plan.
- Must primarily benefit priority wildlife habitat, species or populations (as

defined by Federal, state, or tribal wildlife management plans or sub-basin plans).

- Subject to a completed wildlife management plan.
- Subject to an "adequately funded" long-term restoration and/or maintenance agreement

- Located in the same province as the FCRPS hydroelectric dam against which it is being credited.

The sub-committee also suggested that BPA receive credit for any enhancement provided by the management actions taken by the Federal agency, subject to:

- The enhancement credit shall be determined through the use of baseline HEP data if available, or from existing Federal agency data sets if HEP data are not available.
- The enhancement credit being in "perpetuity" (e.g.: life of the FCRPS), unless there is a change in the management plan employed by the Federal agency that results in the reduction of enhancement values. In such cases, the enhancement credits would be adjusted to reflect the reduced value.

CREDITS FOR FISH MITIGATION

NOTE: This issue was referred to an ad-hoc sub-committee of the Forum. The summary below reflects the deliberations of that sub-committee.

This Forum sub-committee clearly recognized that acquisition and restoration projects primarily, or even exclusively, designed for the purposes of mitigating for fish losses resulting from the FCRPS hydroelectric dam system could and does benefit wildlife. The subcommittee identified the need to develop guidelines for future habitat projects; and the need to state upfront what type of benefits were being sought (e.g.: what are the benefits for fish and wildlife?). The sub-committee also felt that projects that have joint benefits to fish and wildlife should be encouraged.

The sub-committee suggested the following should apply for fish projects to receive wildlife credits:

- Specific wildlife management plans for the project area need to be completed, approved and implemented.
- Long-term operations and maintenance funding for wildlife species/habitats must be in place and "adequate."
- Appropriate permanent land protections (easements) should be applied, in perpetuity and with adequate protection language.

- The protected wildlife species/populations/habitats should be "priority" and so defined by existing Federal, state or tribal management and sub-basin plans.
- .Located in the same province as the FCRPS hydroelectric dam against which it is being credited.

The sub-committee also reviewed a specific list of such projects (Table 1). Projects were

classified into four tiers. Tier 1 includes wildlife projects supported by anadromous fish funds that should be credited. The projects shown as Tier 2 were left as subject to "further review". Projects in the Lower Columbia Estuary were flagged as "special case" and included as Tier 3. These Tier 3 projects were identified by the sub-committee as potentially available as operational loss offsets for project elsewhere in the FCRPS. Tier 4 projects are special existing projects on federal lands that may be considered for credit but in some cases may be difficult to categorize because they are located in areas not directly affected by hydroelectric development. . These three projects (Bear Valley, Deer Creek, Elk Creek) were moved by the Forum from the Federal Lands topic of this summary report and were directed to be included in Table 1. These types of projects could potentially lead to "overmitigation" in some sub-regions. However these issues could be addressed as part of an agreement, as was the case with the Dworshak Settlement Agreement, or as part of operational losses in the future.

Table 1: Candidate Fish Projects for Wildlife Credits

Parcel Name	Proponent	Sub-Basin	Acres	Tier
Forrest Conservation Area	CTWSRO	John Day	4,232	1
Oxbow Conservation Area	CTWSRO	John Day	1,022	1
Pine Creek (Wagner Conservation Area)	CTWSRO	John Day	9,000	1
Rainwater Wildlife Area (Part II)	CTUIR	Walla Walla	2,340	1
Yakama Nation Riparian/Wetlands Restoration	Yakama Nation	Yakima	5,000*	1
Yakima Side Channels (Lower Naches)	Yakama Nation	Yakima	376	2
Colville Fish Habitat Projects	Colville Tribes	Okonogan	176	2
Cottonwood Farms / Witte Place	NFWF, Methow Conservancy	Methow	54	2
Hancock Springs	NFWF, Methow Conservancy	Methow	122	2
Heath	NFWF, Methow Conservancy	Methow	140	2
Mid-Methow / Lehman	NFWF, Methow Conservancy	Methow	93	2
Oak Flats (Naches River)	WDFW	Yakima	289	2
Red River Wildlife Area (Little Ponderosa)	IDFG	Clearwater	1,300	2
Sandy River Delta	Forest Service	Sandy	1,400	2
Yakima Side Channels (Upper Yakima)	Yakama Nation	Yakima	544	2
Zumwalt Prairie Preserve (Camp Creek Ranch)	Nature Conservancy	Imnaha	27,000	2
Crims Island	Columbia Land Trust	Columbia Estuary	451	3
Crazy Johnson Creek	Columbia Land Trust	Grays	305	3
Crooked Creek (F&W)	Columbia Land Trust	Columbia Estuary	60	3
Elochoman River	Columbia Land Trust	Columbia Estuary	183	3
Germany Creek	Columbia Land Trust	Columbia Estuary	155	3

Walker Island	Columbia Land Trust	Columbia Estuary	100	3
Willow Grove	Columbia Land Trust	Columbia Estuary	312	3
Bear Valley	IDFG/ShoBan	Salmon	n/a	4
Deer Creek	IDFG/ShoBan	Salmon	n/a	4
Elk Creek	IDFG/ShoBan	Salmon	n/a	4

LOSS ASSESSMENTS

The Forum chose not to reconsider prior loss assessments, and generally accepted *Wildlife Crediting Program Table C-4* (as published in the NPCC-approved 2009 Program) as an agreed to measure of loss assessments (Program Table C-4 is attached as Appendix B to this summary report).

The Forum's determination notwithstanding, in 2009 the Shoshone-Bannock, Shoshone-Paiute, Idaho Department of Fish and Game (IDFG) and CBWFA staff re-examined the Anderson Ranch, Palisades, Black Canyon, Minadoka, and Deadwood loss assessments in Southern Idaho for accuracy and consistency relative to other loss assessments across the Basin, and for the number of HUs credited against hydro facilities. HU losses reported in *Program Table C-4*were found by this group to be in error for the number of HUs listed for the Anderson Ranch, Black Canyon, and Palisades projects. In one instance, HUs were listed for sharp-tailed grouse, which was not a target species in any of the SE Idaho loss assessments and yellow-rumped warbler were not listed for Deadwood when they were included in the loss assessment.

NOTE: BPA's position is that it is not responsible for Deadwood Dam mitigation.

Southern Idaho loss assessment calculations subtracted estimated post-project HU gains from the total losses in reporting "net" losses. Because most other loss assessments show just the "total" losses, the "net" HU losses reported in Southern Idaho were 4,835 fewer than if the Southern Idaho loss assessments had listed only the "total" HU losses (as was the case in other parts of the Basin). Wildlife managers now believe that Habitat units gained from Southern Idaho mitigation projects should be examined and subtracted from the losses shown in *Program Table C-4*. .

NOTE: Program Table C-4 as published also included habitat gains.

ISSUES UNRESOLVED

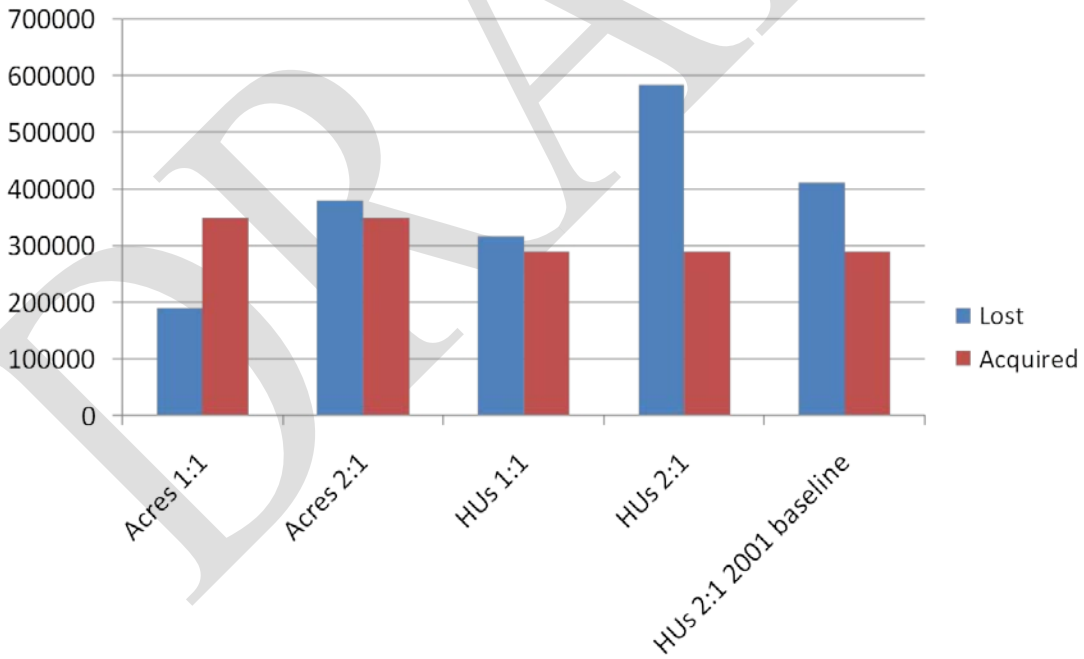
CREDITING RATIO

The 2000 Program applied a 2:1 ratio to all remaining habitat units (HU) in the Ledger that had not been previously satisfied by habitat acquisitions and projects, and went into effect on April 1, 2001. The balance of HU's that remained on April 1, 2001 were to be doubled as a means of "settling" questions over the actual mitigation work remaining to reach full compensation for dam inundation and

construction losses. NPCC specified that all credits from projects prior to April 2001 were to remain at the levels previously agreed to by BPA and project proponents. Moreover, the findings section of the program acknowledged that "the Council recognized existing mitigation project agreements, even if such agreements have a crediting ratio of 1:1. The 2009 Program reaffirmed the 2:1 crediting ratio (see Appendix E for 2009 Program language). At its April 2010 meeting, the NPCC responded to questions put forth by some Forum members with respect to this policy, and confirmed its earlier policy decision establishing a 2:1 ratio effective April 1, 2001. Notwithstanding the NPCC's recent confirmation, Forum members indicated that there is either disagreement with or different interpretations of the Council's position. Further, members indicated that not all entities had made a formal policy decision relative to the Council's 2:1 position. (See Appendix F for a more complete discussion of this issue).

The application of the 2:1 mitigation ratio and its varying interpretations, results in changes in the total habitat units outstanding for mitigation. Figure I-2 show the increase in habitat units or acreage needed to meet the mitigation obligation with the 2:1 ratio applied.

Figure 2.



HYDROELECTRIC FACILITY CREDIT ASSIGNMENTS

Credits are assigned to specific FCRPS hydroelectric facilities. In some cases, credits have been assigned to hydro facilities in different sub-basins from the actual project, to facilities that are more distant from projects than other hydro sites, or to more than one facility. Although to an extent a recordkeeping issue, this practice

has resulted in uncertainty over what HU's remain in any given sub-region, whether mitigation has been adequately met for a given dam (or even over-mitigated), and concern that other sub-regions may end up being "short changed" when mitigation responsibilities are rolled up to the system-wide total. Figure 3 maps the location of wildlife projects and shows the relationship with facilities mitigated by the projects.

Forum members have asked that the assignment of wildlife projects to multiple dams be evaluated..The available data does not specify the specific division of HU's to each dam. The way the data is stored in the Ledger prevents double counting of credits when applied to multiple projects, but it does create new groupings of dams in addition to individual dams. Accordingly, a single dam may not easily be reviewed based on mitigation projects. Another concern raised by the Forum was the sets of species used for HEP evaluation when spread across multiple dams. The available data does not indicate the species used, or if the species at the dam site are the same as at the wildlife project site.

It also should be noted that the Loss Assessments for the Lower Snake Dams included in the Fish and Wildlife Program is an aggregated assessments for the four Snake River. Because of the complex relationship of these projects with the Lower Snake River Compensation Plan and other Federal responsibilities no individual loss assessments were performed.

Ideally, the geographic distribution of projects effectively assigns projects to the closest dam. In some cases this can be a considerable distance, such as in the Lower Snake. However, these projects are in the nearest watershed for the facilities. The Forum has indicated a preference that projects assigned to a hydro facility should at a minimum be in the same province as that hydro facility.

Additionally, it is also important to note that BPA does not believe that it has a mitigation responsibility for losses caused by the construction and operation of Deadwood Dam.

INUNDATION GAINS

The permanent dam reservoir pools resulting from inundation created a significant expansion of open water habitat on the Columbia River. Not all wildlife species benefiting (and expanding) from new open water were those that lost suitable habitat due to inundation. Tribes and agencies (WDFW and IDFG) participating at the Forum's December meeting concurred that allowing credit for such species did not appear to be appropriate. The following species appear to have increased as a result of open water gains created by inundation:

Table 2: Species and Gains from the 2009 Wildlife Program

Species	Habitat Units

Bald Eagle	5,693
Black-capped Chickadee	68
Common Merganser	1,042
Greater Scaup	820
Lesser Scaup	20,577
Mallard	174
Mallard (wintering)	13,744
Marsh Wren	207
Osprey	6,159
Redhead	4,475
Other Waterfowl	423
Western Grebe	273
Yellow Warbler	8
Total	**53,663**

PRE-ACT MITIGATION

Prior to the Northwest Power Act of 1980, official mitigation efforts in response to FCRPS system impacts were undertaken by Federal water resource managers (U.S. Army Corps of Engineers, Bureau of Reclamation) and the U.S. Fish and Wildlife Service. Some mitigation actions go back as far as the 1910s, and in many cases are very difficult or impossible to fully document and assess. Wildlife mitigation prior to 1980 was in part generated through consultation with the US Fish and Wildlife Service under the Fish and Wildlife Coordination Act of 1934, and the subsequently more rigorous requirements from amendments in 1946 and 1958. The majority of the Pre-Act mitigation is associated with the McNary and John Day dams. The 1991 Geiger Report and 2004 USFWS Coordination Act Report identified 50,938 acres of Pre-Act mitigation and recommended that 14,032 HUs be credited as mitigation. (See Appendix D for Giger Report). Because this issue affects each of the sub-regions differently, the impact of the recommended credits will be addressed among the parties within each of the sub-regions.

AGREEMENTS

Following a lengthy discussion of the issues related to the use of HEP, the WCF agreed that resolution of many of these issues would require reevaluation and assessment of many of the original HEPs and a number of the subsequent project HEPs. The forum concluded that these efforts would likely be both labor intensive and time consuming, and that it was likely that better course of action would be to focus the efforts of the WCF on long-term agreements focused on the unique situations represented in the various geographic areas. HEP analysis to date can form the underpinnings of agreements. The intent of this report is to help guide the issues

Agreements can provide benefits to both the wildlife managers and to BPA. For managers they provide and assured funding stream for project implementation and maintenance and greater management flexibility. For BPA the advantages are greater certainty in budgeting

and the ability to complete its mitigation responsibility for wildlife construction and inundation losses.

AGREEMENT SUB-REGIONS

The Forum suggests that several agreements are more feasible than a single Basin-wide settlement agreement. Several sets of sub-regions based on groupings of hydroelectric projects were identified. At its December 2 meeting, the Forum decided on the following subregions on which to base further technical analysis and potentially to define agreement groups.

- Lower Columbia (Bonneville, The Dalles, John Day, McNary)
- Lower Snake (Ice Harbor, Little Goose, Lower Monumental, Granite)
- Upper Snake (Anderson Ranch, Palisades, Black Canyon, Minadoka, and Deadwood)
- Northern Idaho (Albeni Falls)
- Upper Columbia (Chief Joseph, Grand Coulee)

AGREEMENT LENGTH & "CURRENCY"

The term of the mitigation is either in perpetuity or for the life of the hydro project(s) to which losses are credited. However, the term of any agreement(s) could conceptually range from 10 years, as with the Fish Accords; to life of the Federal hydroelectric system (FCRPS). The recent Willamette River Basin Memorandum of Agreement Regarding Wildlife Habitat Protection and Enhancement (Willamette MOA)specifies a term of 15 years, to complete the purchases associated with the agreement which was deemed to be an adequate period for remaining mitigation obligations to be satisfied in that sub-basin.

An issue to consider is the consequences of any events, natural or human made, that may change habitat conditions over the term of the agreement(s). This requires predicting those natural events which would increase or change the calculations of the remaining habitat needed for "full" mitigation, or identifying the impacts of other agreements encompassing the Basin, such as the Tribal Fish Accords.

The value of the agreement could also vary based on the term and the type of losses to be mitigated. For example, the value of the Willamette MOA varies across several increments within its overall term. Settlement agreement(s) could also potentially use a variety of "currencies," including habitat units, acres, or funding. Agreements based on lump sum payments are considered most desirable by many Forum members, although there are challenges around how this may occur based on appropriate Federal funding levels, and regulatory compliance issues for BPA.

PRIOR AGREEMENTS

Prior BPA-to-tribe/agency agreements, Memoranda of Agreements, or contracts may inform and/or effect how agreement(s) are reached. Some of these prior agreements include specific decisions about issue topics discussed in this summary

report (for instance the 2:1 ratio), as well as including differing terms and requirements. The Forum recognizes the impact such prior agreements may have on settlement considerations.

OPERATION AND MAINTENANCE

The success of mitigation projects often relies on active and ongoing management to maintain the habitat benefits obtained from land acquisition and restoration. Properties are purchased based on a number of criteria and. many properties purchased are not in pristine condition so O&M costs may vary considerably, particularly for the first several years after purchase. However, the 2007 Independent Economic Analysis Board (IEAB) report, "Investigation of Wildlife O&M Costs" concluded that Program costs for O&M are generally comparable to other land management agencies costs Settlement agreements should address this issue.

Other key findings relevant to the charter of the Forum include:

- O&M cost data in Pisces is very coarse and needs to be more detailed to provide support for informed comparisons. Current data on O&M does not allow for parcel to parcel comparisons.
- IEAB recommended data be added to Pisces to capture the other non-BPA cost shares and the expected life of investments.

AGREEMENT PROCESS

For any settlement agreement(s) to be funded, a series of steps must first occur, including NEPA review, budgeting and inclusion in a future rate case for BPA. These steps are identified in Appendix C as requested by the Forum, including estimated time requirements for each step. Appendix C assumed a certain timeframe for initiating negotiations, but as these are not definitive, this information should only be treated as an EXAMPLE of the relative time scale of any settlement process.

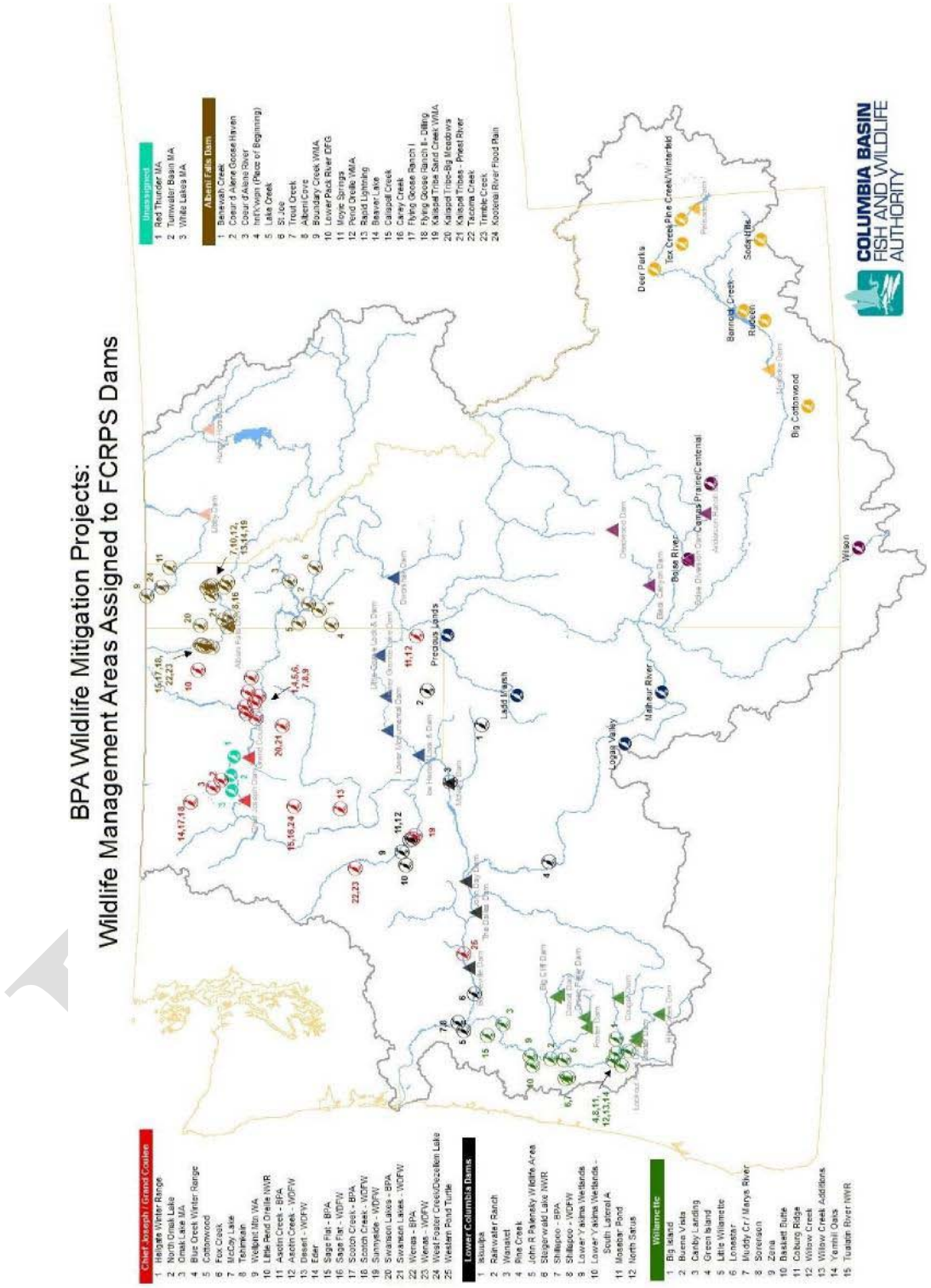


Figure 3: Projects and Facilities Mitigated

APPENDIX A

HEP Crediting Sub-committee Report

April 20-21, 2010 Crediting Forum Technical Team Meeting

The Crediting Technical Team addressed technical HEP issues that make reconciling the crediting ledger difficult and contribute to the different interpretations within the region on crediting. We identified issues in three tiers with the first tier representing technical HEP issues, the second tier focusing more on sub-regional issues that have policy implications for some but not all managers or areas in the region, and the third tier being primarily overarching, regional policy issues needing resolution. We sought to establish a foundation for greater consistency to the extent possible while recognizing the limitations of existing agreements. The following are working notes from the meeting and have not received regional peer review or input.

Tier 1 Issues: Technical HEP w/ little or no policy implications

Sources of Variation in crediting due to HEP methods

1. Cover Typing - Delineation of cover type boundaries
2. Similarity (or lack thereof), between habitats characterized in losses and compensation lands
3. Choice of HEP species- for original losses and compensation lands
    - *Should be a good representation of habitat quality*
4. Lack of peer review or consistency of HEP models chosen for losses or compensation lands.
5. Choice of substitute HEP species when out of kind-
    - Covering same habitat attributes with same number of species
6. Modification or lack of suitable modification of HEP models.
    - Appropriate/inappropriate selection of model
    - Use of updated models for mitigation while losses are static with old models.
    - Appropriate/inappropriate alteration of equations to address site specific realities.
    - Real world differences in application of model from original area
7. Field Data Collection techniques-
    - Changes in Techniques and intensity of survey
    - Changes in survey staff
    - Season of survey/phenology
    - Under represented or over represented cover types

Variation SOP:

- *Use tools, models, and methods that most accurately reflect the quality and quantity of the habitats being protected and managed.*
- *HEP methods used should reflect the site specific habitat parameters and management goals of the property and may differ from the HEP methods used in determining the losses.*
- *When disagreements arise, the project proponent should seek resolution through consultation with BPA, HEP team, and sub-basin or provincial co-managers to assure consistency and accuracy.*
- *Consider validating new or significantly modified models with appropriate testing and review.*

Species Stacking

Stacking occurs when multiple species are used to characterize the quality of a single cover type. It becomes a crediting issue when the same number of species used to assess losses are not in turn used to characterize the compensation lands. *Stacking is an issue of how you adjust the credits of the mitigation sites to be in balance with the number of species used to characterize the losses. Loss assessments are what they are and should not be revised or replaced to address stacking issues.*

Stacking SOP

- *SOP options to address staking issues include:*
  a. *Use the same number of species to characterize the out of kind cover types as were used to characterize the loss assessment cover types.*
  b. *If using fewer species to characterize the mitigation site cover type than were used to characterize the losses, average the HSIs of the out of kind mitigation cover types and multiply by the number of species used in the losses. However, species selection must be peer reviewed and approved by the regional HEP team, BPA and the project proponent.*
  c. *If incidental out of kind cover types (inclusions) are associated with a mitigation acquisition, assume the same HSI as the adjacent cover type.*
  d. *Do not credit the same acres of a given cover type between two or more hydroprojects with a combination of species from both.*

Tier 2 Issues: Sub-regional issues with policy implications

- **Crediting public lands actions, trust lands, and non-permanent or unsecured lands mitigations** How to credit BLM lease for range lands.
- How to credit State DNR Land mitigations.
- How to credit BIA Trust lands leases or easements
- How to credit leases or easements on fee lands
- How to credit areas where BPA contributed to but did not fully provide protection or operations and maintenance funding.
- How to credit BPA where they were not involved in the protection of the habitat but provide all or part of the O&M and enhancements.

Crediting SOP:

- *Project proponents must provide minimum irreducible HU letter for each compensation site including statements on each of the following issues:*
  a. *Hydro project being mitigated*
  b. *Cover type(s) and target species used to characterize habitat quality on the compensation site*
  c. *Commitment to follow SOPs to quantify and qualify habitat*
  d. *Minimum number of habitat units being credited from the site*
- *Crediting of Non-permanent protection- The Crediting Technical Team* recommends that the region have a Crediting SOP covering sites without permanent protection. The specific operating procedure adopted needs to be further defined and agreed to.
- *Partial purchase- credit for proportion of protection funding provided.*
- *Partial O&M or enhancements- credit for HU increases proportional to 10 year average investment.*
- *Credit for leases that may not provide permanent protection- credit against operational or secondary losses or normal full credit when the protection and credit from a nonpermanent compensation site gets rolled over to another non-permanent site with an equal or greater amount of habitat value*
- *Credit for lands protected with partial lease such as the purchase of an annual grazing lease on Indian trust lands or a federal grazing allotment - receive credit for cover types*

enhanced by the annual protection and O&M. Assumption of replacement with similar lease if lease terminated.

Tier 3 Issues: Policy level resolution required

1. Socio-political issues of crediting projects that are out of kind and out of place from impacts.
2. Allocation HUs among resource managers.
    a. Crossing political boundaries with mitigation actions.
    b. Crossing ecological/population boundaries.
3. Crediting of fish projects against construction and inundation wildlife losses.
4. Crediting non-permanent or unsecured lands
5. How to deal with "over mitigation"?

Where do we go from here?

1. Regional Agreements on SOPs after vetting through all Forum members.
2. Direct the HEP team to work with project managers at each compensation site to address technical shortcomings identified above.
    - For new projects, do this with baseline HEPs.
    - For existing projects, do this with follow-up HEPs.
    - Consider adding to HEP team's contract an express mandate and responsibility to identify inconsistencies in technical HEP applications throughout the region.
3. Incorporate fish credit findings and recommendations as appropriate.
4. Reassign credits within lower four mainstem Columbia River dams.
    - Unlike other areas in the basin, the lower four crediting can be reassigned based on existing HEP reports, so no need to wait or gather additional data.
5. Develop draft ledger for recommendation to Council for review and approval.
    - The ledger will report HUs protected and enhanced through the Council's Fish and Wildlife Program.

APPENDIX B

Loss Assessment Summary, Table C-4, 2009 Program

Table C-4 Estimated Losses and Gains Due to Hydropower Construction
(losses are preceded by a "-", gains by a "+")

Species	Total Habitat Units
Albeni Falls	
• Mallard Duck	-5,985
• Canada Goose	-4,699
• Redhead Duck	-3,379
• Breeding Bald Eagle	-4,508
• Wintering Bald Eagle	-4,365
• Black-Capped Chickadee	-2,286
• White-tailed Deer	-1,680
• Muskrat	-1,756
• Yellow Warbler	+171
Lower Snake Projects	
• Downy Woodpecker	-364.9
• Song Sparrow	-287.6
• Yellow Warbler	-927.0
• California Quail	-20,508.0
• Ring-necked Pheasant	-2,646.8
• Canada Goose	-2,039.8
Anderson Ranch	
• Mallard	-1,048
• Mink	-1,732
• Yellow Warbler	-361
• Black Capped Chickadee	-890
• Ruffed Grouse	-919
• Blue Grouse	-1,980
• Mule Deer	-2,689
• Peregrine Falcon	-1,222 acres*
* Acres of riparian habitat lost. Does not require purchase of any lands.	
Black Canyon	
• Mallard	-270
• Mink	-652
• Canada Goose	-214
• Ring-necked Pheasant	-260
• Sharp-tailed Grouse	-532
• Mule Deer	-242
• Yellow Warbler	+8
• Black-capped Chickadee	+68
Deadwood	
• Mule Deer	-2080
• Mink	-987
• Spruce Grouse	-1411
• Yellow Warbler	-309

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Table C-4 (cont.) Estimated Losses and Gains Due to Hydropower Construction (losses are preceded by a "-", gains by a "+")

Species	Total Habitat Units
Palisades	
• Bald Eagle	-5,941 breeding -18,565 wintering
• Yellow Warbler	-718 scrub-shrub
• Black Capped Chickadee	-1,358 forested
• Elk/Mule Deer	-2,454
• Waterfowl and Aquatic Furbearers	-5,703
• Ruffed Grouse	-2,331
• Peregrine Falcon*	-1,677 acres of forested wetland -832 acres of scrub-shrub wetland +68 acres of emergent wetland
* Acres of riparian habitat lost. Does not require purchase of any lands.	
Willamette Basin Projects	
• Black-tailed Deer	-17,254
• Roosevelt Elk	-15,295
• Black Bear	-4,814
• Cougar	-3,853
• Beaver	-4,477
• River Otter	-2,408
• Mink	-2,418
• Red Fox	-2,590
• Ruffed Grouse	-11,145
• California Quail	-2,986
• Ring-necked Pheasant	-1,986
• Band-tailed Pigeon	-3,487
• Western Gray Squirrel	-1,354
• Harlequin Duck	-551
• Wood Duck	-1,947
• Spotted Owl	-5,711
• Pileated Woodpecker	-8,690
• American Dipper	-954
• Yellow Warbler	-2,355
• Common Merganser	+1,042
• Greater Scaup	+820
• Waterfowl	+423
• Bald Eagle	+5,693
• Osprey	+6,159
Grand Coulee	
• Sage Grouse	-2,746
• Sharp-tailed Grouse	-32,723
• Ruffed Grouse	-16,502
• Mourning Dove	-9,316
• Mule Deer	-27,133
• White-tailed Deer	-21,362
• Riparian Forest	-1,632
• Riparian Shrub	-27
• Canada Goose Nest Sites	-74

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Table C-4 (cont.) Estimated Losses and Gains Due to Hydropower Construction (losses are preceded by a "-", gains by a "+")

Species	Total Habitat Units
McNary	
• Mallard (wintering)	+ 13,744
• Mallard (nesting)	-6,959
• Western Meadowlark	-3,469
• Canada Goose	-3,484
• Spotted Sandpiper	-1,363
• Yellow Warbler	-329
• Downy Woodpecker	-377
• Mink	-1,250
• California Quail	-6,314
John Day	
• Lesser Scaup	+14,398
• Great Blue Heron	-3,186
• Canada Goose	-8,010
• Spotted Sandpiper	-3,186
• Yellow Warbler	-1,085
• Black-capped Chickadee	-869
• Western Meadowlark	-5,059
• California Quail	-6,324
• Mallard	-7,399
• Mink	-1,437
The Dalles	
• Lesser Scaup	+2,068
• Great Blue Heron	-427
• Canada Goose	-439
• Spotted Sandpiper	-534
• Yellow Warbler	-170
• Black-capped Chickadee	-183
• Western Meadowlark	-247
• Mink	-330
Bonneville	
• Lesser Scaup	+2,671
• Great Blue Heron	-4,300
• Canada Goose	-2,443
• Spotted Sandpiper	-2,767
• Yellow Warbler	-163
• Black-capped Chickadee	-1,022
• Mink	-1,622
Dworshak	
• Canada Goose-(breeding)	-16
• Black-capped Chickadee	-91
• River Otter	-4,312
• Pileated Woodpecker	-3,524
• Elk	-11,603
• White-tailed Deer	-8,906
• Canada Goose (wintering)	+323
• Bald Eagle	+2,678
• Osprey	+1,674
• Yellow Warbler	+119

Table C-4 (cont.) Estimated Losses and Gains Due to Hydropower Construction (losses are preceded by a "-", gains by a "+"

Species	Total Habitat Units
Minidoka	
• Mallard	+174
• Redhead	+4,475
• Western Grebe	+273
• Marsh Wren	+207
• Yellow Warbler	-342
• River Otter	-2,993
• Mule Deer	-3,413
• Sage Grouse	-3,755
Chief Joseph	
• Lesser Scaup	+1,440
• Sharp-tailed Grouse	-2,290
• Mule Deer	-1,992
• Spotted Sandpiper	-1,255
• Sage Grouse	-1,179
• Mink	-920
• Bobcat	-401
• Lewis' Woodpecker	-286
• Ring-necked Pheasant	-239
• Canada Goose	-213
• Yellow Warbler	-58

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Monitor and Evaluate Wildlife Efforts at Non-federal Projects

Non-federal hydroelectric projects are licensed by the Federal Energy Regulatory Commission. The Electric Consumers Protection Act of 1986 (ECPA) mandates that the Federal Energy Regulatory Commission give equal consideration to the protection, mitigation of damage to, and enhancement of wildlife in licensing and relicensing decisions.

Mitigation Considerations in Dam Licensing Decisions

Federal Energy Regulatory Commission

In developing license conditions, take into account to the fullest extent practicable the policies established in this section, and the measures taken by Bonneville and others to implement this section. In particular, it is important to take into account the mitigation efforts at federal projects undertaken pursuant to this section, to ensure that license conditions are consistent with and complement these wildlife mitigation projects and contribute fully and proportionately to regional wildlife mitigation goals.

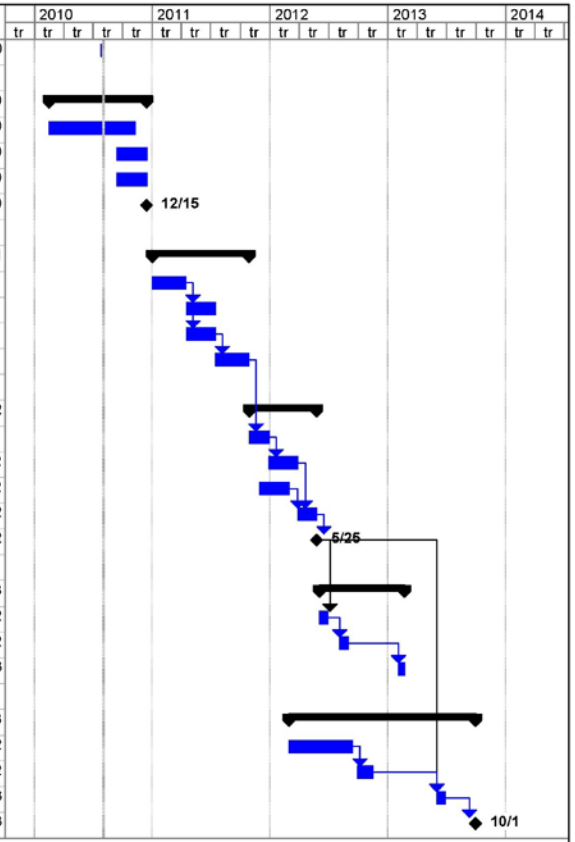
Council

The Council will monitor the Federal Energy Regulatory Commission licensing and relicensing proceedings and comment or intervene where appropriate.

APPENDIX C

Example Agreement Timeline

ID	Task Name	Duration	Start	Finish
1	DRAFT Conceptual Timeline for Wildlife Settlement Agreements	1 day?	Tue 7/27/10	Tue 7/27/10
2				
3	**Wildlife Crediting Forum (WCF)**	**216 days?**	**Wed 2/17/10**	**Wed 12/15/10**
4	Discus and Articulate Crediting Issues	191 days?	Wed 2/17/10	Wed 11/10/10
5	WCF Summary of Ledger Status	66 days?	Wed 9/15/10	Wed 12/15/10
6	WCF Agree on Description of issues	66 days?	Wed 9/15/10	Wed 12/15/10
7	Present WCF Findings to NPCC and Region	0 days	Wed 12/15/10	Wed 12/15/10
8				
9	**Possible Settlement Negotiations**	**215 days?**	**Mon 1/3/11**	**Fri 10/28/11**
10	Develop Settlement Proposals (Indivual/Groups)	75 days?	Mon 1/3/11	Fri 4/15/11
11	Evaluate Cumulative Impact of Proposed Settlements	65 days?	Mon 4/18/11	Fri 7/15/11
12	Perform Financial Analysis of Proposed Settlements	65 days?	Mon 4/18/11	Fri 7/15/11
13	Negotiate Draft Contracts/Agreements	75 days?	Mon 7/18/11	Fri 10/28/11
14				
15	**Contracting/Agreements**	**150 days?**	**Mon 10/31/11**	**Fri 5/25/12**
16	Finalize Draft Agreements	44 days?	Mon 10/31/11	Thu 12/29/11
17	NEPA Evaluation	64 days?	Fri 12/30/11	Wed 3/28/12
18	BPA/Partner Internal Reviews and Approval	64 days?	Fri 12/2/11	Wed 2/29/12
19	Public Review Process	42 days?	Thu 3/29/12	Fri 5/25/12
20	Issue ROD/Sign Agreements	0 days	Fri 5/25/12	Fri 5/25/12
21				
22	**2014+ Budgeting**	**190 days?**	**Mon 6/4/12**	**Fri 2/22/13**
23	Finalize BPA Internal 2014+ Budget	20 days?	Mon 6/4/12	Fri 6/29/12
24	BPA proposed budget to DOE	20 days?	Mon 8/6/12	Fri 8/31/12
25	President's Budget to Congress	15 days?	Mon 2/4/13	Fri 2/22/13
26				
27	**BPA 2014-? Rate Case**	**413 days?**	**Thu 3/1/12**	**Tue 10/1/13**
28	Integrated Program Review	142 days?	Thu 3/1/12	Fri 9/14/12
29	Rate Case Begins	34 days	Mon 10/1/12	Thu 11/15/12
30	Final Rates ROD	20 days?	Mon 6/3/13	Fri 6/28/13
31	Begin FY2014 Rate Period	0 days	Tue 10/1/13	Tue 10/1/13



Project: Settlement timeline
Date: Mon 8/2/10

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

APPENDIX D

Giger Report

ASSIGNING MITIGATION CREDIT TO RESIDUAL WILDLIFE HABITAT AT BONNEVILLE, THE DALLES, JOHN DAY, AND MCNARY DAMS

A Report Supplementing
Wildlife Impact Assessments

Prepared By
Richard D. Giger

U.S. FISH AND WILDLIFE SERVICE
PORTLAND FIELD STATION
Portland, Oregon

January, 1991

INTRODUCTION

Among many Federal dams on the Columbia River, John Day and McNary are perhaps the most complex in terms of existing wildlife activities and the potential credits these actions warrant in determining remaining Bonneville Power Administration (BPA) mitigation obligations. When wildlife loss studies for four Corps of Engineers dams got underway in 1987, the complexity of these two projects was not addressed in any special contract requirements or funding provided by BPA. In addition, little discussion of mitigation theory or policy has occurred to provide crediting guidance.

The loss reports for Bonneville, The Dalles, John Day and McNary dams identified only original positive and negative impacts of project construction in the reservoir area. This supplemental report is provided to review in greater detail the status of post-construction wildlife activities and provide an analysis and rationale for consideration of these actions in determining overall mitigation needs for these projects.

According to a report published by the Pacific Northwest Utilities Conference Committee (PNUCC), more than 56,200 acres of "mitigation" lands should be credited to the four Corps dams (Attachment 1). However, an analysis of these areas was not conducted by that group. Our analysis finds the PNUCC acreage estimate to be inaccurate and misleading, as explained in detail in this supplemental report.

This report consists of sections on general mitigation and crediting considerations, detailed review of existing wildlife activities, rationale for credit calculations, and calculation of credits for existing activities.

CREDITING CONSIDERATIONS

Application of Mitigation Policy to Crediting Decisions

The Fish and Wildlife Service (Service) has previously expressed the concepts underlying mitigation policy and its relation to Habitation Evaluation Procedures (HEP) impact analysis, however, these concepts are not addressed in the Northwest Power Planning Council (Council) Wildlife Rule. The Council has accepted the validity of HEP methodology as a scientific loss assessment tool, but given no indication that it recognizes or supports policy and technical mitigation premises inherent in the Procedures. These premises are tied to the concept of "no net loss" and the Corollary requirement for replacement of high value habitats such as those inundated by the subject projects.

The Service's national Mitigation Policy (Federal Register, Vol. 46, No. 15, Friday, January 23, 1981) addresses the interpretation of mitigation and related application of HEP procedures. Attachment 2 of this supplemental report is an excerpt from the Policy, which presents the National Environmental Policy Act (NEPA) definition of mitigation endorsed by the Service, and documents that the mitigation goal for losses of high value habitat consists of

"replacement of habitat value so that the total loss of such habitat value will be eliminated." Compensation is requested for unavoidable losses, and is defined as "full replacement of project-induced losses." Merely preserving the existing levels of habitat value on residual habitat following project construction does not constitute replacement or compensation, since it does not "eliminate" a loss realized on impacted areas.

On a procedural basis, to assign compensation or replacement credit to wildlife habitat values remaining on an area following impact violates HEP technical procedures. In such a case, the existing habitat essentially receives a zero value basis when in fact it has values that are likely to continue (futures analysis). Assigning credit for existing values requires separate consideration and policy discussion under the Wildlife Rule.

A recent decision on crediting of habitat acquisition at the Lower Snake River facilities addresses this issue (Attachment 3). Agreements between the Corps, Washington Department of Wildlife, and Fish and Wildlife Service regarding wildlife losses at the Lower Snake facilities (Ice Harbor, Lower Monumental, Little Goose, and Lower Granite dams) outline a mitigation compromise which allows the Corps 50 percent credit for wildlife habitat values present on private lands they purchase as mitigation. Other features of the agreement make the compromise more acceptable to wildlife agencies, and will improve opportunities for net habitat increases (true compensation).

Enhancement, Operation and Maintenance

Based on the Status Review of Wildlife Mitigation (BPA, 1984) and other information detailed later, it is unlikely that the Corps has provided substantive overall wildlife enhancement, supported by operation and maintenance funding, which would represent credit for habitat development leading to a significant net increase in wildlife. Detailed review and possibly field survey would be necessary to establish whether compensation of this type can be justified, and if so, the amount to be applied against Corps obligations.

Mitigation Permanence

A critical premise of the Council's Rule is that mitigation must be permanent, based on the understanding that benefits lost become a new mitigation obligation and on the need to protect ratepayer investment. The "mitigation areas" claimed by power interests in their summary exhibit a range of permanence.

According to Service refuge documents, the bulk of Corps of Engineers "Lock and Dam Project" lands and Special Law lands transferred for wildlife uses under cooperative agreements remain under primary control of the Department of the Army (DOA). Under the agreements "The Department (of the Army) reserves unto itself the right to grant easements, leases, and licenses for any purpose whatsoever..." DOA prerogatives and the advent of power peaking operations have had adverse impact on these lands subsequent to the agreements.

Corps of Engineers Obligations

The Council's Wildlife Rule recognizes wildlife losses to the total project, including all project purposes, and states that "the Corps and the Bureau of Reclamation should seek alternatives for funding mitigation (of non-power purposes) to address the full scope of wildlife losses." Lands acquired by the Corps through Congressional appropriation for all project purposes were at that time paid for by the Nation's taxpayers. It is reasonable that the Corps receive credit for the actions that they have taken, and be able to apply this credit against their obligation. Creditable Corps actions must in our opinion be assigned to their obligation for non-power purposes to the extent permitted under the Wildlife Rule.

Given *the* general crediting factors discussed above, we will attempt to review the four lower Columbia River projects in greater detail.

REVIEW OF EXISTING WILDLIFE ACTIVITIES

Bonneville and The Dalles Dams

There appears to be little wildlife preservation or enhancement activity which warrants consideration for crediting against losses associated with construction of Bonneville or The Dalles dams. This conclusion is in line with that found in the Mitigation Status Reviews for these projects. The two small sites identified in the Status Reviews, Crates Point (132 acres) and Rufus Bar (233 acres), are Corps lands under interim-use license to the State of Oregon, and on which no enhancement, operation or maintenance has been funded by the Federal government. Further consideration of credits at these projects should not be necessary, since any benefits would fall well within the non-power obligations of the Corps, which are detailed later, and not influence the BPA obligation.

John Day Dam

The principal wildlife area associated with John Day Dam is the Umatilla National Wildlife Refuge (NWR), consisting of 22,885 acres. The Umatilla NWR acreage figure of 29,310 acres given in the PNUCC summary is inaccurate, because acres from a separate Service lease and water areas excluded by the Corps from the Refuge were included.

By agreement dated July 3, 1969, the Corps transferred 3,400 acres "acquired specifically for wildlife" to the Fish and Wildlife Service. Other lands transferred to the Service and State appear to have been acquired for the "primary purposes of the project" (power, navigation, flood control) and are made available for wildlife management through periodic interim-use licenses.

The Corps may permit non-wildlife uses on interim-use lands if it deems necessary. As a result some actions detrimental to wildlife have taken place on the Refuge and on other areas, and may occur in the future. There is an extensive list of completed and pending leases, easements and licenses, including many powerlines (for example the Crow Butte crossing), many water pumping stations,

pipelines, telephone lines, roads, railroads, a sewage pump station, an industrial site, and all the associated right-of-ways. There are sixty-two oil and gas lease applications pending on these Refuge lands. The 680-acre Coolidge site is under a 5-year lease agreement from the Corps, but is proposed as a port/commercial development area. Another 105-acre interim-use site is reserved for port development, and other port sites are referenced to the Umatilla Refuge Management Plan, "Frequent and rapid water fluctuations caused by power peaking have discouraged development of riparian and moist soil plant species on the Refuge." Some units along the river have been diked by the Service, which has been only partially effective in controlling fluctuation impacts. Subsequent to project construction, there has been a continuing loss of very high value island habitats (John Annear, Umatilla NWR, personal communication).

No funding has been provided by the Corps for development of wildlife habitat or for operation and maintenance of the Refute. The Service has been partially dependent on cooperative farming cn the Refuge to provide financial help, a less than ideal wildlife management activity.

The Willow Creek (646 acres) and Irrigon (484 acres) Wildlife Areas managed by the Oregon Department of Fish and wildlife are also interim-use lands similar to those managed by the Service. No Corps funding is provided for operation of these areas.

There are 2,850 acres of Corps lands along the lower reaches of the John Day River being considered as wildlife habitat enhancement areas (Dan Troglin, COE, personal communication). To date 750 acres have been fenced to prevent grazing and to limit disturbance such as from off-road vehicles. This area is termed "Columbia River Shore Enhancement" in the PNUCC summary for John Day Dam. The reported 12,000-acre size figure is in error.

McNary Dam

The McNary NWR was established in 1955 through transfer of Corps lands by cooperative agreements. Although presently consisting of more than 3,600 acres, only 2,849 acres of Corps lands were transferred to the Service. The balance largely consists of lands purchased over the years by the Service. There are three divisions: Burbank Slough (3,104 acres); Strawberry Islands (171 acres); and Hanford Islands (348 acres). The Hanford Islands lands are located on the Hanford Nuclear Reservation.

Similar to Umatilla NWR, all transferred Government lands remain under Department of Army primary control, and are subject to interim use agreements and the possibility of some conversion to other uses. Easements, leases, and licenses for other uses have and can be granted by the Corps. It is not apparent that land transferred to the Service was acquired specifically for wildlife purposes. The Refuge encompasses gravel borrow sites used during construction of the project, which suggests it was acquired for other project purposes.

According to our Refuge records, Corps lands transferred to the State of Washington for wildlife purposes totalled 7,732 acres. This

acreage included several parcels under the general title of McNary Habitat Management Area. These interimuse lease lands were managed by the State without Corps funds until 1985, when they were relinquished back to the Corps because the State was unable to fund their management. The extent, if any, of subsequent Corps enhancement on these lands is not known.

Little is known about the 642 acres of Corps land retained under their management control for wildlife as identified in the Status Review for McNary Dam. The extent of any enhancement on these areas would have to be determined. McNary NwR records do not clarify the basis for the City of Richland, Washington leasing and controlling 1,121 acres of "mitigation" land. The area has no provision for resource agency management activities in its status as a community nature park.

MAGNITUDE OF LOSSES, ABSENCE OF LOSS REPLACEMENT, AND RECOMMENDED CREDIT FOR ACTIONS TAKEN

Status of Loss Compensation

If we consider only the combined acreage of wildlife habitat inundated and wildlife habitat now remaining on Corps of Engineers lands associated with the four lower Columbia River dams, then the Corps can be said to have acquired about 93,000 acres of stream corridor wildlife habitat on which to develop their projects (Table 1). Of this total acreage, nearly 53,000 acres (57 percent) of habitat were subsequently permanently flooded and lost to wildlife production, and 40,000 acres (43 percent) remain (from Wildlife Impact Assessments).

Table 1. Acreage of mainland and island wildlife habitat inundated, and remaining habitat reserved for wildlife, four lower Columbia River Corps projects.

Project	Habitat Inundated	Habitat Retained	Total	Percent of Habitat Lost
Bonneville	7,027	132	7,159	98
The Danes	2,411	233	2,644	91
John Day	27,566	27,365	54,931	50
McNary	15,639	12,344	27,983	56
Totals	52,643	40,074	92,717	57

Nearly 75,000 wildlife Habitat Units (Habitat Evaluation Procedures) were lost, as well as many decades of human uses of wildlife, on 53,000 inundated acres. In addition, there have subsequently been some unquantified adverse impacts to the remaining habitat caused primarily by the operation of the projects

for power peaking and by Corps permitting of human activities detrimental to wildlife. Even to begin with, the remaining habitat was, on average, of lower quality than that which was lost.

There is no evidence that the wildlife value of the residual habitat is significantly higher now than it was at the time it was acquired by the Corps. The principal factors leading to this conclusion are (1) expert opinion of Service personnel based on field reconnaissance, (2) subsequent operational and other impacts, and (3) the historic lack of operation and maintenance or enhancement funding for wildlife on these lands. If there has been nonmeasurable increase in wildlife habitat values on the remaining 40,000 acres, it follows that there have been no post-construction gains which offset or compensate for losses of 75,000 Habitat Units and 53,000 acres. Thus, the full range of habitat value losses have yet to be "replaced" in accordance with Service Mitigation Policy. There has been no true mitigation for wildlife losses at these four projects.

Having stated this, the Service recognizes that a substantial portion of residual Corps lands were for the most part protected from further losses by Corps actions relatively soon following project construction. The Service also recognizes that a recent agreement was forged with the Corps which generally allows them a 50 percent credit for habitat values existing on lands they acquire specifically for wildlife as mitigation for losses caused by their Lower Snake River facilities. For these reasons, the Service is recommending that mitigation credit be assigned for Corps actions taken to reserve residual lands at the lower Columbia River projects.

Rationale for Crediting Remaining Habitat

Table 2 summarizes more accurately the acreages and categories of Corps lands retained for wildlife use. Although some sites are at risk for future conversion to other uses, only two included below (The Coolidge site and an unnamed port site-totalling 785 acres) are identified at a level sufficient to consider them non-creditable as mitigation for John Day Dam. All remaining acreages in the Table are further considered for mitigation credit.

Table 2. Classification of 40,074 acres of Corps of Engineers wildlife lands, lower Columbia River Projects.

Project and	1 Specifically acquired for wildlife-transfer to FWS or States	2 Acquired for other purposes and made available to FWS/States (non-	3 Under Other leases	4 Corps Management Control
Bonneville Dam				
Crates Point		132		
The Dalles Dam				
Rufus Bar		233		
John Day Dam				

Umatilla NWR	3,400	19,485		
Willow Creek WA		646		
Irrigon WA		984		
John Day River			2,850	
McNary Dam				
McNary NWR	2,849			
McNary HMA			7,732	
Corps Mgt. Area			642	
Cty of Richland				1,121

Category 1 lands are those considered to have a higher degree of permanence and in some cases wildlife management control, and which are identified as acquired by the Corps specifically for wildlife purposes. These lands are given a 50 percent credit for existing habitat values, in line with the recent agreement reached for the Lower Snake River facilities.

Category 2 lands appear to be less secure lands acquired for primary project purposes and made available to wildlife agencies for use on a periodic lease or agreement basis. They are subject to modification through leasing, agreements, licenses, and easements under jurisdiction of the Corps. Some of these lands have been adversely affected by other uses and may be impacted in future years. They do not in the Service's view adequately meet the Council's requirement for permanence. These lands are given a 25 percent credit for initial existing values.

Category 3 lands are similar to Category 2 lands, except they are under full Corps management control. Wildlife management agencies are not generally in a position to direct activities nor to specify that activities adhere to specific wildlife objectives. These lands are also given a 25 percent credit for existing initial values.

There is but one wildlife area identified as Category 4, under other control, in this case by the City of Richland, Washington. This 1,121-acre area is provided a 25 percent credit for existing initial values.

As discussed, no substantive credit is evident at these projects for enhancement activities and for operation and maintenance of enhanced areas.

Table 3 summarizes the proportion of total project losses assigned to Corps responsibility, and against which proposed credits are to be applied. The

Corps allocations are based on the "reimbursement from power supply revenues" figures in the Council's "Revised Allocations For Determining Hydroelectric-Related Wildlife Losses."

Table 3. Corps of Engineers Mitigation Obligation, Lower Columbia Projects

Project	Habitat Units Lost	Percent Allocated to COE	Habitat Units Allocated to COE

Bonnevil	12,3	6	739
le The	17		326
Dalles	2,33	1	9,139
John Day	0	4	4,709

ESTIMATION OF MITIGATION CREDITS

Credit for existing mitigation at John Day and McNary dams, the two facilities requiring further consideration, was calculated by determining "average" habitat values existing on project lands. This is done by dividing current estimates of habitat units lost by acres flooded. These HU/acre figures for each project are then the basis for calculating initial values on wildlife lands. HU's present on these lands are then adjusted by the amount of credit warranted based on status, history, management control, permanence of the sites, and proposed crediting approach.

Habitat Units per acre is not generally appropriate as a statistic to ***use*** in impact analysis or mitigation considerations. With standardization of target species numbers and other considerations, however, it can provide about the only reasonable index for establishing credits in the absence of field investigations of various wildlife areas.

The calculations are as follows:

John Day Dam - Crediting Analysis

Total Cover Type Acres Flooded = 27,566
(Table 1) Total Habitat Units Lost (9 sp.)
= 36,555
HU's lost per acre = 1.33

Credits

1. Category 1 lands (50% credit - initial values) 3,400 acres x 1.33 = 4,522 HU's
   4,522 x .5 credit = 2,261 HU's credit

2. Category 2 lands (25% credit - initial values)
   21,115 **acres less 785 acres port/commercial sites (minimum) =** 20,330 acres
   20,330 x 1.33 = 27,039 HU's
   27,039 x .25 credit = 6,760 HU's credit

3. Category 3 lands (25% credit - initial values) **2,850 acres x** 1.33 = 3,790 HU's
   3,790 x .25 = **947 HU's** credit

4. **Total credits = 9,968 HU's** (sum of **1** through 3) Corps **obligation = 9,139 HU's (from Table 3)**

Conclusion: The Corps' non-power obligation for the John Day Project is fulfilled, **and there is a balance of 829 non-specific** Habitat Units which can be used as **credit against the** HPA obligation of 27,416 HU's.

Credit for lesser scaup habitat gains caused by increase in open water area is not addressed in this report. It may require

interagency tradeoff analysis, considering the importance of scaup and open water to agency and tribal plans and objectives, relative importance of this habitat under Council priorities and standards, limiting factors, etc. The **same is true for open** water gains and mallards at the McNary Project.

McNary Dam - Crediting Analysis

Total Cover Type Acres Flooded = 15,639
(Table 1) Total Habitat Units Lost (8 sp.)
= 16,703
HU's lost per acre = 1.07

Credits

1. Category 1 lands (50% credit - initial values) 2,849 acres x 1.07 = 3,048 HU's
   3,048 x .5 credit = 1,524 HU's credit

2. Category 3 lands (25% credit - initial values) 8,374 acres x 1.07 = 8,960 HU's
   8,960 x .25 credit = 2,240 HU's credit

3. Category 4 lands (25% credit - existing values) 1,121 acres x 1.07 = 1,199 HU's
   1,199 x .25 = 300 HU's credit

4. Total credits = 4,064 HU's (sum of 1 through 3) Corps obligation = 4,709 Mi[l] s (from Table 3)

Conclusion: The Corps has a remaining non-power obligation at McNary of 645 non-specific Habitat Units, and BPA has an obligation of 18,836 HU's.

Summary of Crediting

For John Day and McNary Projects, there was a combined loss of 60,353 wildlife Habitat Units. No replacement of wildlife habitat values has occurred which would offset the losses. However, the Corps has taken action to reserve for wildlife a substantial portion of project lands remaining after project construction and inundation. For these actions, a combined credit of 14,032 Habitat Units is recommended.

Use of these credits in the Council's Program guidance to SPA requires distribution of HU's **by target species. This can only be reasonably done by distributing HU's among species in the same proportion that they are represented in the loss assessments. This is accomplished in Table 4. The Service is uncomfortable in making this distribution, however, if it** becomes a hard **constraint on ultimate mitigation goals without opportunity for discussion and adjustment. For example, we are identifying 2,794 HU's credit for Canada Goose production areas, when we know that these areas have suffered a virtual total loss that has not been replaced and should be an important mitigation objective. Such considerations will require further discussion as specific mitigation projects are considered for implementation.**

Table 4. Distribution of mitigation credits among target John Day and McNary Dams species for

Species	Habitat Units Credit	
	John Day	McNary
Canada goose	2,193	601
Mallard	1,994	1,201
California quail	1,695	1,090
Mink	399	215
Great blue heron	897	---
Downy woodpecker	---	65
Western meadowlark	1,395	599
Yellow warbler	299	57
Spotted sandpiper	897	236

Attachment 1. PNUCC list of potential mitigation areas.

PROJECT	MITIGATION FE-AS	ACRES
Libby	Acquired / Enhanced	4,695
Columbia Basin Project Enhancement Areas		112,423
Owc rshak	Acquired / Enhanced	7,920
Albeni Falls	Idaho F&G Mgmt. Area	3,7E0
Anderson Ranch	Forest Service Mcmt. Area	2,300
Black Canyon	- Idaho F&G Mgmt. Area	1,130
Lower Snake River	Washington Game Department Management	27,473
	$10 million available for additional land acquisition	
Eonneville	Crates Point	132
The Dalles	Rufus Bar	233
John Day	Umatilla NWR	29,310
	Irrigon Wilderness Area	984
	Willow Creek Wilderness Area	646
	Columbia River Shore Enhancement	12,000
McNary	McNary NWR	3,293
	McNary Habitat Management Area	5,619
	Walla Walla River Management Area	1,959
	Burbank Heichts	275
	Corps Wilderness Management Area	642
	Yakima River Nature Area	1,121
Chief Joseph	• Corps Wilderness Manacement Area	3.587
	TOTAL ACRES FOR MITIGATION	229,522

<u>Sources</u>

Howerton, J., et al. 1984. Status Review of Wildlife Mitigation at

ArfAC.71 FENT 2

Mitigation Policy

[Editor's note: Several OCR-scanning errors below. 6/30/2011 schrepel]

– –where new activities or changes in cince.nt activities would result in new impacts or where new authorities.newscientific info=atior., or developer
failure to implement agreed upon recommendations make it necessary.

The policy covers impacts to fish and wildlife populations. their habitat and the h=zn uses thereof. However, the primary focus in terms of specific guidance is on recommendations related to habitat value losses. In many cases compensation of habitat value losses should result in replacement of fish and wildlife populations and human uses. But where it does not, the Service will recommend appropriate additional means and measures.

IV. DF.FINITION OF MITIGATION •

The President's Council on Environmental Quality defined the term "mitigation" in the National Environmental Policy Act regulations to include: la) avoiding the impact altogether by not taking a certain action or parts of an action: (b) rinInIraf ·agimpacts by limiting the degree or magnitude of the action and its implementation: (c) rectifying the impact by repairing. rehabilitating, or restoring the affected environment (cl] reducing or elir··Triating the impact over time by preservation and maintenance
operations during the life of the action and (e) compensating for the impact by replacing or providing substitute resources or environments? (40 CFR Part 1508.20(a–e)).

The Service supports and adopts this definition of mitigation and considers the spedfic elements to represent the desirable sequence of steps in the mitigation planning process. (See - Appendix B for de nitions of other important terms necessary to understand this policy.)

APPENDIX B—OTIIER DEFINITIONS

. *"Comperaction,"* **when used in the context of Service mitigation recommendations. means full replacement of project-induced losses to fish and wildlife resources. providedsuch fall replacement has been judged by the Service to be consistent with the appropriate mitigation planning goal.**

RESOURCE

CATEGORY 2 a.

Designation Criteria

Habitat to be impacted is of high value for evaluation species and is relatively scarce or becoming scarce **on a national basis or in the ecoregion section.**

Mitigation Goal

No Net Loss of In-Kind Habitat Value.

Guideline

The Service will recommend ways to avoid or rainizzize losses. If losses are likely to occur, then the Service will recommend ways to immediately rectify them or reduce or eliminate them over time. If losses remain likely to occur, then the Service will recommend that - those losses be compensated by replacement of the same kind of habitat value so that the total loss of such in-kind habitat value·will be eliminated.

Specific ways to achieve this planning goal include: (1) physical modification of replacement habitat to convert it to the same type lost (2) restoration or rehabilitation of previously altered - habitat; (3) inm·eased management of similar replacement habitat so that the in-kind value of the lost habitat is replaced. or (4) a combination of these measures-By replacing habitat value losses with similar habitat values. populations of species associated with that habitat may remain relatively
stable in the area over time. This is generally referred to as in-kind replacement.

RESOURCE CATEGORY 3

1. Designation Criteria

Habitat to be impacted is of high to medium value for evaluation species and is relatively abundant on a national basis.

2. Mitigation Goal

No Net Loss of Habitat Value While Nfinimi.ting Lass of In-Kind Habitat Value.

Guideline

The Service will recommend ways to avoid or minimize losses. If lasses are likely to occur, then the Service will recommend ways to *immediately* **rectify them or reduce or eliminate them over time. If losses remain likely to occur.then the Service will recommend that those losses be compensated by replacement of habitat value so that the total loss of habitat value will be eliminated.**

Attachment 3. Excerpts from Lower Snake River Compensation Plan Agreement (WDW, USFWS, COE)

Technical Issues:

Please refer to Article 4, Items 4 and 5. These are the part of the agreement that we have had the most technical problems with and discussions on. Our concerns have centered around (1) making sure the LSRCP would result in a net increase in habitat, (2) de-emphasize acquisition of habitat providing high quality habitat already, and (3) giving the Corps 50% credit for existing habitat values of acquired land parcels.

We will discuss each concern:

1. There is now language in the LOA stating that acquisition will be "focused... on lands having minimal existing HU's (habitat quality currently marginal) but good potential for habitat development." In addition, the 50% credit that the Corps insisted upon will not be incorporated into any cost/benefit assessment. By doing this, the cost/benefit analysis will not skew selection of off-project lands towards those with existing high habitat values. By focusing on low quality habitat areas with good potential and eliminating the 50% credit in the cost/benefit comparisons, a net increase in habitat should result.

1. See above discussion on the focus of acquisition.

2. The Corps has been adamant about receiving some credit for existing habitat values. We were at first opposed, but now can live with the credit based on the following changes and realizations:

    a. The LOA now emphasizing acquisition of marginal habitat with high habitat development potential. The number of existing HU's for acquisition parcels will be small and as a result the 50% credit will not be a significant contribution to the compensation goals.

    b. The HU's resulting from the 50% credit will not be incorporated into any cost/benefit comparisons. This will avoid skewing acquisition programs toward those with high existing habitat values. The comparisons will be made using actual habitat units gained per dollars expended.

    c. The original LSRCP had an overwhelming emphasis on recreational mitigation. Most of the mitigation for recreational losses are being achieved through the Game Farm Alternative. However, the 50% credit of existing habitat values also recognizes recreational benefits accrued immediately after purchase. This is fair considering the emphasis of the original LSRCP.

    d. The WDW believes that the 50% credit is fair

with the currently agreed to changes in the LOA.

APPENDIX E

2009 Fish & Wildlife Program – Wildlife Strategies

6. Wildlife Strategies

Primary 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.

The Program established wildlife loss assessments due to hydrosystem construction and inundation. See Table C-4[5] in Appendix C. The Council expects the fish and wildlife managers and Bonneville to use this table as the starting point for wildlife mitigation measures as well as long-term mitigation agreements. The Program also directs 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 C-4 have been acquired in 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 blocked areas, where anadromous fish runs have been extirpated by development of the hydrosystem, and where full mitigation cannot be accomplished through resident fish substitution alone. Given the vision of this Program, the strong scientific case for a more comprehensive, ecosystem-based approach, and the shift in focus to implementation through subbasin plans, the Council believes that the wildlife mitigation projects should be integrated with the fish mitigation projects as much as possible.

The Council adopts the following wildlife strategies:

a. Completion of Current Mitigation Program

Bonneville and the fish and wildlife managers should complete mitigation agreements for the remaining habitat units identified in Table C-4 representing the un-annualized losses of wildlife habitat from construction and inundation of the federal hydropower system. Bonneville and the fish and wildlife managers should develop agreements by 2011 and report back to the Council on progress. 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 a

[5] This table originally appears in the Council's 1994-1995 Fish and Wildlife Program and has been part of every Program since.

management plan adequate to sustain the minimum credited habitat values for the life of the project.

Beginning in the 2000 Program, the Council called for these mitigation agreements to equal 200 percent of the remaining habitat units (2:1 ratio). The Council chose the 2:1 crediting ratio to address the inability to precisely determine the habitat units resulting from acquiring an interest in property that already has wildlife value or the additional losses represented by annualization of the losses. The Council adopted and continues to endorse the 2:1 crediting ratio for the remaining habitat units. However when loss estimates appear inaccurate due to habitat unit stacking and those inaccuracies cannot be resolved through use of a different, cost-effective tool or approach recommended by the crediting Forum and approved by the Council, then the 2:1 ratio will not apply to the remaining stacked habitat units.[6]

Whenever possible, wildlife mitigation should take place through longterm agreements that have clear objectives, a plan for action over time, a committed level of funding that provides a substantial likelihood of achieving and sustaining the stated wildlife mitigation objectives, and provisions to ensure effective implementation with periodic monitoring and evaluation. Thus, wildlife mitigation agreements should include the following elements:

- Measurable objectives, including acres of habitat types and number of habitat units by species to be acquired, and a statement estimating the contribution to addressing the wildlife losses identified in Table C-4 in the Appendix;

- Demonstration of consistency with the wildlife policies, objectives, and strategies in the Council's Program, including with the implementation priorities described in Tables C-1, C-2, and C-3 in the Appendix;

- Adherence to the open and public process language found in the Northwest Power Act including measures to address concerns over additions to public land ownership and impacts on local communities, such as a reduction or loss of local government tax base or the local economic base and consistency with local governments' comprehensive plans;

- When possible, protection for riparian habitat that can benefit both fish and wildlife, and protect high-quality native habitat and species of special concern, including endangered, threatened, or sensitive species;

[6] For additional background information see *Habitat Unit Stacking White Paper* by Paul Ashley, February 19, 2008.

Incentives to ensure effective implementation of the agreement, plan or action, with periodic monitoring and evaluation (including a periodic audit) and reporting of results. At a minimum, annual reports to Pisces[7] must continue in order for the Council to evaluate the mitigation benefits;

- Provisions for long-term maintenance of the habitat adequate to sustain the minimum credited habitat values for the life of the project; and

- Sufficient funding to demonstrate a substantial likelihood of achieving and sustaining the wildlife mitigation objectives.

1. Habitat Units and the Habitat Evaluation Procedure (HEP) Methodology

The Council continues to endorse habitat units as the preferred unit of measurement for mitigation accounting and the Habitat Evaluation Procedure methodology as the preferred method for estimating habitat units lost and acquired. Parties to a wildlife mitigation agreement may develop and use another method for evaluating potential mitigation actions if, in the Council's opinion, that alternative method adequately takes into account both habitat quantity and quality adequate to mitigate for the identified losses.

2. Allocation of Habitat Units

Habitat acquired as mitigation for lost habitat units identified in Table C-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.

3. Habitat Enhancement Credits

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

1. Operational Losses

As part of the programmatic evaluation of the wildlife program described below, the Council will consult with the wildlife managers and Bonneville on the value of committing Program resources at this time to assessing direct operational impacts on wildlife habitat. Operations loss assessment work under way in the Kootenai Subbasin in 2008 may serve as a pilot project for this evaluation. The wildlife managers and Bonneville should also consider using mitigation agreements to settle operational losses in lieu of precise assessments of impacts. Revised subbasin plans will serve as the vehicles to provide mitigation for any identified direct operational losses and for secondary losses to

wildlife due to declines in fish populations resulting from hydropower development. Annualization will not be used in determining the mitigation due for these losses. However, where operational or secondary losses already have been addressed in an existing wildlife mitigation agreement, the terms of that agreement will apply.

2. Implementation Guidelines

Project selection will be guided by subbasin plans incorporating wildlife focal species and management strategies. The subbasin plans will reflect the current basinwide vision, biological objectives, and strategies and also will 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 project review cycle. Mitigation programs should provide protection of habitat through fee-title acquisition, conservation easement, lease, or other management strategies in management plans that provide for the protection of the habitat units for the life of the project.

3. Mitigation Crediting Forum

The Council recognizes that controversy over the Program's wildlife crediting ratio continues. The managers and Bonneville have not reached agreement on how to credit wildlife benefits resulting from riparian habitat improvements undertaken to benefit fish nor have they reached agreement on the full extent of wildlife losses resulting from operation of the hydrosystem.
On or about April 2009, in consultation with the wildlife managers, Bonneville, and other interested parties, the Council will initiate a Wildlife Mitigation Crediting Forum to 1) recommend a commonly accepted ledger of habitat units acquired; 2) recommend to the Council ways to resolve issues about accounting for habitat units; and 3) develop a common data base for tracking, assigning and recording habitat units.For a project to be credited against construction and inundation losses it must be consistent with the Fish and Wildlife Program. Criteria include:

1. Project areas must be permanently protected and dedicated to wildlife benefits through covenants, easements, fee title acquisitions or other appropriate agreements for the life of the hydroelectric project.

2. Projects must benefit priority wildlife habitat, species, or populations as defined by federal, state, or tribal wildlife management plans or subbasin plans.

3. A project-area management plan must be completed.

4. A long-term funding agreement adequate to support implementation of the management plan must be in place.

As part of the crediting forum, the Council will work with Bonneville and the managers to develop a comprehensive agreement on the proper crediting method for construction and inundation losses or strategies that will allow parties to reach long-term settlement agreements. Once completed, the Council will consider adopting the comprehensive agreement into the Program.

APPENDIX F

Findings on the Year 2000 Recommendations for Amendments to the *Columbia River Basin Fish and Wildlife Program*

Appendix E to Northwest Power Planning Council's 2000 Columbia River Basin Fish and Wildlife Program

Findings on the Year 2000 Recommendations for Amendments to the *Columbia River Basin Fish and Wildlife Program*

- The Council should direct Bonneville to mitigate all construction and inundation losses and direct operational losses on a 3:1 basis, e.g. Bonneville should acquire 3 habitat units or acres for every 1 habitat unit or acre lost. This ratio should be applied to all mitigation accomplished to date and all mitigation to be implemented in the future. Doing so will have the effect of incorporating baseline protection credits (i.e., existence value) and annualization of these losses as defined by the HEP methodology.

Finding: The long-standing dispute regarding the appropriate ratio for crediting land acquisitions for wildlife habitat as mitigation for lost wildlife habitat was one of the most contested issues in this program amendment process. On the one hand, Bonneville maintains that a 1:1 crediting ratio -- that is, crediting each acre of land or habitat unit acquired and protected as exactly equivalent mitigation for each acre of land or habitat unit lost due to dam construction and inundation -- is the technically and legally appropriate standard. Bonneville also contends that past decisions and contracts have already established the 1:1 crediting ratio as an irrevocable part of the wildlife program. On the other hand, the wildlife managers maintain that something greater than a 1:1 crediting ratio is technically and biologically necessary. An appropriate crediting ratio must take into account the fact that lands acquired and protected through the program have pre-existing wildlife habitat values that are, in most cases, not in immediate danger of complete loss. The act of purchasing and protecting property with pre-existing wildlife habitat does not bring the wildlife value of that acquired property from zero to the assessed value by the fact of purchase, which it would have to do to match on a 1:1 basis the habitat units or acres completely lost to construction and inundation. This problem is magnified, the managers have noted, by the fact that the losses have not been "annualized," that is, they are treated as a one-time static loss and not as an accumulation of the losses in each year since inundation. To assume that the wildlife value of property acquired would, except for the protection afforded by the acquisition, one day decline to zero, and thus that it is legitimate to match it in a 1:1 crediting ratio against wildlife losses, is to apply a form of annualization to the mitigation that has not been applied to the losses. Finally, the wildlife managers contend that other wildlife mitigation programs use a crediting ratio of 2:1 or greater for precisely these reasons, and that past actions under this program that authorize the use of a 1:1 crediting ratio have
always been understood, by the managers at least, as an interim minimum crediting arrangements pending a final resolution of the issue.

In the draft program, the Council noted that the proper mitigation crediting ratio for the replacement of construction and inundation losses has been an issue that needs to be resolved. The Council had hopes that Bonneville and the wildlife managers, with the assistance of Council staff, could still come to an agreement on crediting that the Council could adopt into the final program: "***Note: Past***

fish and wildlife programs have recommended that Bonneville and the fish and wildlife agencies and tribes attempt to reach agreement on the ratio at which replacement habitat units should be credited toward lost habitat units. The Council would prefer that all parties reach consensus on this issue, and therefore provides 45 days from the release of this draft program for all of these parties to meet and reach agreement on what the crediting ratio should be. In the event that the parties are unable to reach agreement, the Council will determine this ratio based on the recommendations and comments received." The managers and Bonneville did not come to an agreement as to what the crediting ratio should be.

In making its decision on the appropriate crediting ratio, the Council reviewed the recommendations, the comments on the recommendations and the draft program, and the history of this issue within the program, and has been guided especially by the following points: (1) This issue has been in dispute and in need of a programmatic resolution as long as the program has had a wildlife component. It is time to settle the issue. (2) Bonneville has executed contracts for specific wildlife projects that contain provisions crediting Bonneville on a 1:1 basis for the habitat units or acres acquired. Past programs have provided that the Council would accept such agreements as a step meant to allow mitigation agreements to move forward while the participants worked to resolve the crediting issue. (3) As a substantive matter, the Council is persuaded that, although reasonable arguments may be made for various crediting ratios, a 1:1 crediting ratio is not the appropriate standard for crediting replacement habitat purchases against wildlife lands lost due to hydrosystem construction and inundation. Using a 1:1 crediting ratio has several analytical flaws. First, it is a given that an inundated acre has zero wildlife value. Crediting preserved acres or habitat units on a 1:1 basis implies that these preserved acres or units would necessarily have gone to zero value as well, absent preservation. This might happen -- land might be paved over as a strip-mall -- but we do not know this at the time of purchase. Instead, acquired and preserved acres have a pre-existing value for wildlife that would continue into the future to some unknown extent and might never decay, even if never purchased. The sheer fact of purchase does not create or change that value. Using a 1:1 ratio ignores this fact. Second, If there are two acres of equal wildlife habitat value and one is inundated and the other protected by acquisition, using a 1:1 ratio could imply instead that the preserved acre must or will double in habitat value in order to achieve equivalent mitigation. There is no support in theory or experience to suggest that simple preservation will somehow result in such a doubling. Finally, it is also a given that the losses have not been annualized, which means that the loss estimates are in the low end of the range of legitimate ways to conceptualize the losses. This adds to the conclusion that mitigation crediting at a 1:1 ratio for these estimated losses will not provide adequate mitigation.

With this background, the Council accepted the recommendation of Oregon and the other wildlife managers not to accept a 1:1 crediting ratio, but modified that recommendation in two ways. First, the Council recognized existing mitigation project agreements, even if such agreements have a crediting ratio of 1:1. The only exception would be for agreements that clearly provide that the crediting ratio in the agreement was to be revisited upon final determination of the appropriate crediting ratio for the program as a whole. Second, the Council determined that a 2:1 crediting ratio, not a 3:1 ratio, would be the most appropriate for the remaining habitat units to be acquired to mitigate for the construction/inundation losses. Section III.D.7. The Council chose the 2:1 ratio as consistent with other mitigation programs in the basin and as an appropriate balance between the contesting views.

For the reasons given here, including the Council's judgment as to what policy with regard to crediting best meets the legal and biological requirements, accommodates part practice, and has the

greatest chance of successful implementation, the Council finds that the recommendation would be less effective than what the Council adopted in the protection, mitigation and enhancement of wildlife, Northwest Power Act §4(h)(7)(C).

APPENDIX G

Sub-Regional Reviews

NPCC Wildlife Crediting Forum - Sub-Regional Analysis

Introduction

The Wildlife Crediting Forum (**Forum**) was chartered in late 2009 by the Northwest Power and Conservation Council (**NPCC**) to provide input on the Council's Wildlife Crediting Program (). NPCC chartered the Forum to provide advice on the quantifying and accounting system (informally known as the **Ledger**) for the wildlife habitat mitigation credits associated with the construction and inundation impacts of the Federal Columbia River Power System (**FCRPS**) within the Columbia River Basin (**Basin**). The database that currently houses the Ledger is called **Pisces**. The Program was initiated in 1981, and has been modified from time to time (most recently in 2009) by NPCC in updating the overarching Columbia River Basin Fish and Wildlife Program (**Program**).

The activities of the Forum are documented in a **Forum Summary Report** that is currently in review draft. As requested at the December 2, 2010 meeting of the Forum, four separate sub-regional (see the table below for sub-regions) analyses have been performed to understand the implication of various crediting choices and decisions. These four supplemental analyses reflect the heading structure of the overall Summary Report, but provide more detail to help review each sub-region's remaining issues with respect to the Program. *Note: The ratings in the "Level of Agreement" table below were made in consultation with NPCC staff. Although reviewed in draft form by the Forum on December 2, 2010, these ratings have not been concurred in by the Forum.*

Data Source

The data used here is an updated version of the Ledger from the wildlife mitigation data in Pisces and in the Program. Updates include new information from managers and the regional HEP team. This data includes some parcels not included in Pisces and will differ from reports generated out of Pisces.

To conduct the analysis for each region parcel level data was necessary. In some cases HEP data is available at the parcel level. However, many follow-up HEP surveys have only been recorded in Pisces at the Wildlife Management Area (WMA) level. In this case, the WMA data was apportioned to parcels based on the acreage ratio of the parcel to area. In some cases the minimum HU letter was the only source for HU data, or the minimum HU amount was greater than subsequent HEP surveys. In these cases the minimum HU was used as the parcel's value.

Level of Agreement on Issues by Sub-Region

	A. Federal Lands	B. Fish Projects	C. HEP Issues	D. Loss Assessment	I. Ratios	J. Facility Assignment	K. O&M	L. Inundation Gains	M. Pre-Act Mitigation
Lower Four	High	Low	Low	High	Low	Low	Low	Low	Low
Lower Snake	Low	Low	Medium	High	Low	Low	Low	Low	Low
Upper Columbi	High	Medium	High	High	Low	High	Low	Medium	High
Upper Snake	Low	Low	Low	Low	Low	Low	Low	Medium	Low
Northern Idaho	High	High	Low	Low	Low	High	Low	Medium	Low

Lower Columbia

March, 2011

A. Federal Lands

There are no remaining issues on the use of federal lands for wildlife mitigation projects in this sub-region. The sole project using federal land occurred with the US Fish and Wildlife Service Steigerwald Lake National Wildlife Refuge.

B. Credits for Fish Mitigation

Of the 24 fish projects reviewed by Forum, 18 are within this sub-region. Included in these are all of the Tier 3 projects that are considered least likely candidates for inclusion as construction and inundation mitigation.

Table B-1: Candidate Fish Projects for Wildlife Credits

Parcel Name	Proponent	Sub-Basin	Acres	Tier
Forrest Conservation Area	CTWSRO	John Day	4,232	1
Oxbow Conservation Area	CTWSRO	John Day	1,022	1
Pine Creek (Wagner Conservation Area)	CTWSRO	John Day	9,000	1
Rainwater Wildlife Area (Part II)	CTUIR	Walla Walla	2,340	1
Yakama Nation Riparian/Wetlands Restoration	Yakama Nation	Yakima	5,000*	1
Oak Flats (Naches River)	WDFW	Yakima	289	2
Yakima Side Channels (Lower Naches)	Yakama Nation	Yakima	376	2
Sandy River Delta	Forest Service	Sandy	1,400	2
Yakima Side Channels (Upper Yakima)	Yakama Nation	Yakima	544	2
Crims Island	Columbia Land Trust	Columbia Estuary	451	3
Crazy Johnson Creek	Columbia Land Trust	Grays	305	3
Crooked Creek (F&W)	Columbia Land Trust	Columbia Estuary	60	3
Elochoman River	Columbia Land Trust	Columbia Estuary	183	3
Germany Creek	Columbia Land Trust	Columbia Estuary	155	3
Walker Island	Columbia Land Trust	Columbia Estuary	100	3
Willow Grove	Columbia Land Trust	Columbia Estuary	312	

These projects are expected to meet the following requirements before inclusion in the Ledger:

Specific wildlife management plans for the project area need to be completed, approved and implemented.

Long-term operations and maintenance funding for wildlife species/habitats must be in place and "adequate".

Appropriate permanent land protections (easements) should be applied, in perpetuity and with adequate protection language.

The protected wildlife species/populations/habitats should be "priority" and so defined by in-place Federal, state or tribal management or sub-basin plans.

Unique to this sub-region are the Columbia River Estuary projects that are currently Tier 3. Most recent discussions have indicated that these projects will not provide credits for the Construction and Inundation Losses, but rather may apply to future mitigation for Operation Losses.

C. HEP Application Variations

This is not a major issue in this subregion.

Table C-1: Acres and HU by Manager*

Manager	Acres	Current	Protected
Confederated Tribes Of Warm Springs	25,146	18,976	14,057
ODFW	1,336	1,960	1,547
Umatilla Confederated Tribes (CTUIR)	17,470	12,842	12,091
USFWS	317	201	201
WDFW	10,762	6,753	3,578
Yakama Nation	21,479	35,130	34,077
Grand Total	**76,510**	**75,862**	**65,551**

* Note: In general, the Current total is a sum of the Protected, Enhanced and where applicable Minimum HU totals by WMA. Minimum values are summed only when they are greater than the results of HEP surveys or no HEP survey has been entered into Pisces.

D. Habitat Unit Distribution

It is the position of the involved Treaty Tribes that losses that occurred within a tribe's individual aboriginal territories must be mitigated in locations where their members can access the benefits of the projects. The Interim Washington Agreement funding allocations were developed with the intent to generally reflect the magnitude of losses by jurisdiction. This translated into a roughly 50/50 split between the State of Washington and tribes and a tribal split based on ceded territories. As such, each tribe could determine where the most suitable locations were to mitigate the impacts to populations occurring within their jurisdiction. The crediting ledger, however, was not maintained with this in mind.In the absence of specific directives to credit the HU's from a project to a specific hydropower facility, BPA inadvertently misdirected credit in violation of this principle. Additionally, the Fish and Wildlife Program directive to mitigate in place where possible was also not met as there remains significant opportunity to mitigate within all tribal jurisdictions. The distribution of the mitigation credit across jurisdictional boundaries remains as a very

important issue in the Lower Columbia and Lower Snake River hydropower facilities. Any agreement discussions in these areas will have to address this issue.

It is the position of the WDFW that the 1993 Washington Wildlife Mitigation Agreement allocated 48% of the losses to WDFW for the people of the State of Washington. The 1993 Agreement states in Section 5.a.iv. that "expenditures and obligations by BPA to implement projects approved by BPA shall be consistent with the following percentages of the annual and total budget amounts". It goes on further to state "48% of the annual and total budget amounts shall be available for projects proposed by WDFW and approved by BPA." BPA has been unwilling to allow WDFW mitigation agreements to address 48% of the losses or obligations associated with the Lower Columbia Dams.

BPA's position is that Interim Agreement governed only the allocation of funds to the parties under the agreement. Because the agreement did not address HU distribution among the parties, and all parties did not agree on an HU allocation, they need to consider entity allocations as part of the crediting discussions related to the lower four Columbia River dams.

E. Ratio Application

The application of any ratios in the Program are not agreed on by all Forum members, but are documented in the Forum Summary Report. Figures D-1 and D-2 below documents how projects in this subregion break out based on the year they were booked to the Ledger and amount of mitigation acqured as protection or enhancement.

Figure D-1. Lower Columbia Hus Lost, Acquired, Enhanced & Protect

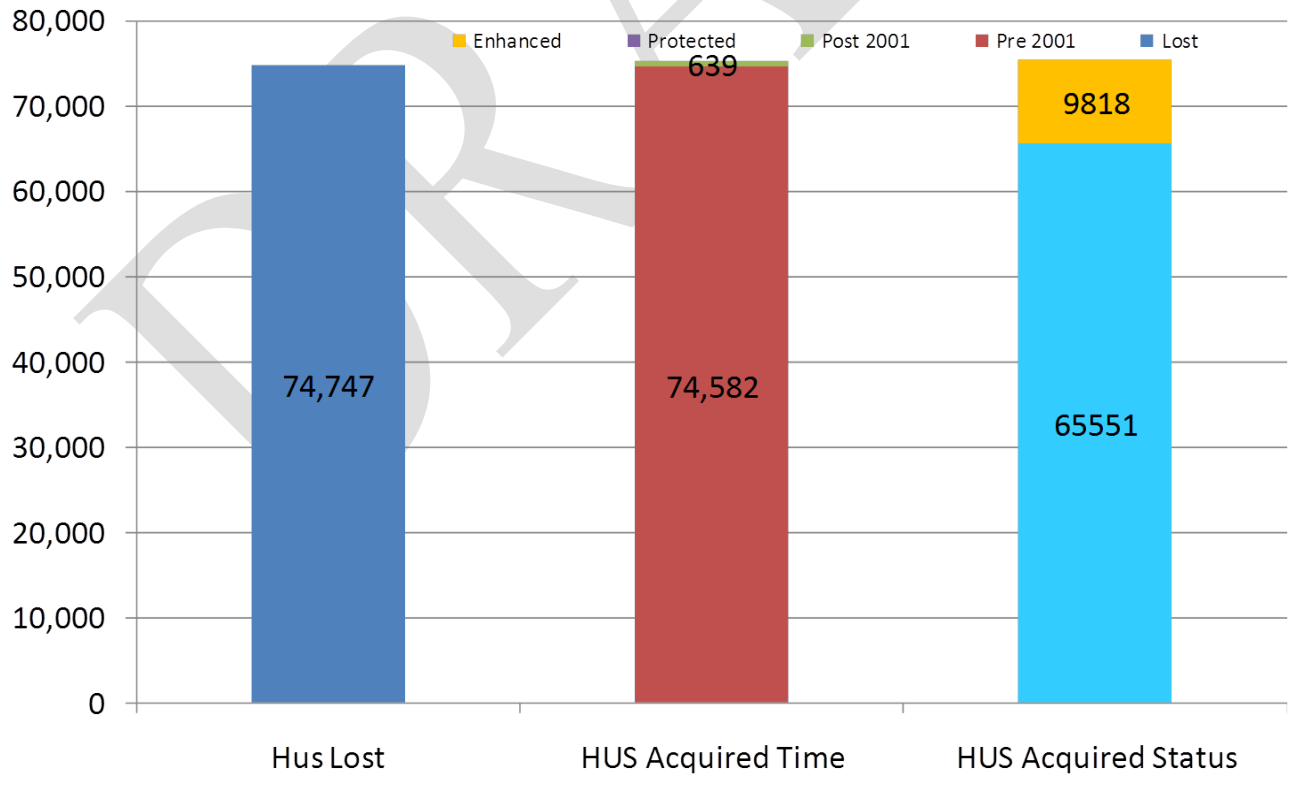
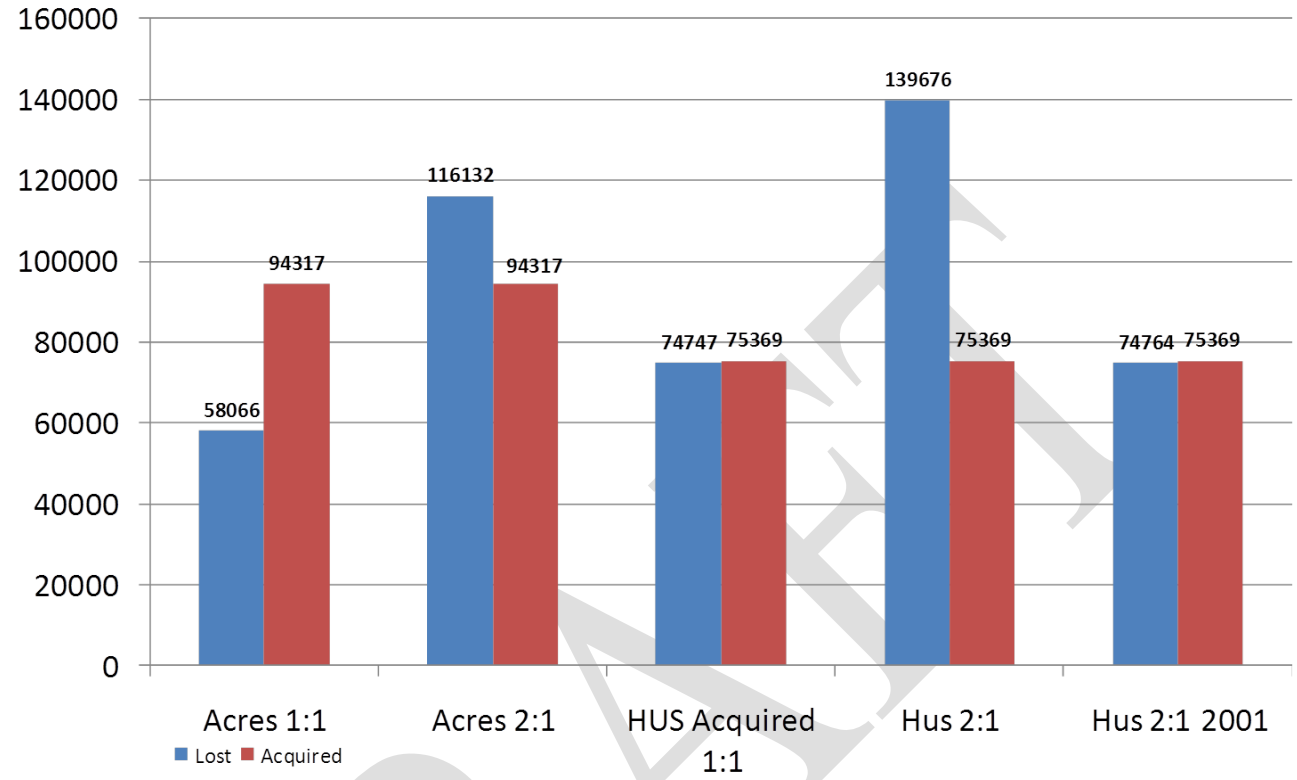


Figure D-2 – Lower Columbia Acres and HUs Lost and Acquired Under Various Policy Assumptions



F. Facility Assignment

Because of the early projects and many parties in this sub-region, the assignment of projects to facilities is still unresolved. The primary issue of concern is the assignment of project credits across multiple projects and between the various managers. Paul Ashley of the regional HEP team is developing a proposed approach to resolving the decisions made on assigning the credits.

Please note that in Table E-1, a number of projects are combined together and it is not clear how to separate out the portion of HU's assigned. This creates a series of composite projects with multiple facilities listed.

Table E-1: Habitat Unit Assignment to Facilities

Projects	Current	Protected
Bonneville OR, Cougar, Hills Creek	1,319	1,319
Bonneville WA	226	213
Bonneville WA, John Day WA	2,359	1,622
Bonneville WA, John Day WA, The Dalles WA	199	98
Bonneville WA, McNary WA	894	894
Grand Coulee, John Day WA, McNary WA	5,171	2,846
John Day OR	18,976	14,057
John Day WA	4,047	3,967

John Day WA, McNary WA	24,975	24,002
John Day WA, The Dalles WA	1,177	1,177
Lower Snake	26,464	25,283
McNary OR	7,655	6,904
McNary WA	5,826	5,826
McNary WA, The Dalles WA	2,397	2,397
Grand Total	**101,685**	**90,606**

Table E-2: Loss Assessment by Facilities

Facility		Habitat Units (Exc. Gains)
Bonneville	-12,317	
John Day		-36,555
McNary		-23,545
The Dalles	-2,330	
Total		**-74,747**

G. Inundation Gains

The 2009 Program includes totals for species gains from inundation, but does not specify the role of these gains in evaluating mitigation. The data is presented here as additional issue to be addressed at the sub-region. Two species are included in the adopted 2009 *Program Table C-4* for this sub-region. They are:

Table L-1: Inundation Gains by Species

Species	HU
Lesser Scaup	19,137
Mallard (Wintering)	13,744
Total	**32,881**

G Pre-Act Mitigation

Pre-Act mitigation primarily applies to this sub-region. The 1991 Geiger Report and 2004 USFWS Coordination Act Report identified 50,938 acres of Pre-Act mitigation and calculated additional credit for McNary and John Day totaling 14,033 Hus. (See Apendix xx for Giger Report).

H Parcel Accounting Concerns

Parcel data has been updated with assistance from managers and the HEP regional team leader. This is reflected in the parcel data attached to this report. WDFW data is one area that may require extra review. Updates were made based on WDFW comments - but a mix of parcel and project names may have caused some updates to be captured slightly incorrectly. This is not expected to impact totals.

Parcel Data for the Sub-Region

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Burlington Bottoms	Burlington Bottoms	ODFW	1,319	1,319	0		Fee Title	1991	417	Bonneville OR, Cougar, Hills Creek
Iskuulpa	Iskuulpa	Umatilla Confederated Tribes (CTUIR)	4,570	4,570	0		Fee Title	1997	5,937	McNary OR
Lower Yakima Wetlands	Bailey	Yakama Nation	80			80	Fee Title	1978	40	John Day WA
Lower Yakima Wetlands	Graves	Yakama Nation	283	283	0	200	Fee Title	2006	140	McNary WA
Lower Yakima Wetlands	Carl	Yakama Nation	356	356	0	300	Fee Title	2006	160	McNary WA
Lower Yakima Wetlands	Buena	Yakama Nation	65	65	0		Mix	1978	157	John Day WA
Lower Yakima Wetlands	Campbell	Yakama Nation	125	125	0		Mix	1978	360	Bonneville WA, John Day WA
Lower Yakima Wetlands	Dry Creek	Yakama Nation	160	160	0		Lease	1978	160	Bonneville WA, John Day WA
Lower Yakima Wetlands	East 80 Pumphouse	Yakama Nation	227	227	0		Easement	1978	78	John Day WA, The Dalles WA
Lower Yakima Wetlands	Garcia	Yakama Nation	69	69	0		Lease	1978	82	John Day WA
Lower Yakima Wetlands	Island Road	Yakama Nation	229	229	0		None/ unknow	1978	243	John Day WA
Lower Yakima Wetlands	L. Satus Creek	Yakama Nation	367	367	0		None/ unknow	1978	409	John Day WA, The Dalles WA
Lower Yakima Wetlands	Lawrence	Yakama Nation	87	87	0		None/ unknow	1978	81	John Day WA
Lower Yakima Wetlands	Lawrence I (J. Lawrence)	Yakama Nation	55	55	0		None/ unknow	1978	61	Bonneville WA, John Day WA
Lower Yakima Wetlands	Lawrence II	Yakama Nation	28	28	0		None/ unknow	1978	40	John Day WA
Lower Yakima Wetlands	Lower Satus	Yakama Nation	8,637	8,637	0		Mix	1978	3,694	John Day WA, McNary WA
Lower Yakima Wetlands	Meninick	Yakama Nation	504	504	0		Mix	1978	428	John Day WA, The Dalles WA
Lower Yakima Wetlands	Meninick North	Yakama Nation	1,640	1,640	0		None/ unknow	1978	1,052	John Day WA, McNary WA
Lower Yakima Wetlands	Meninick South	Yakama Nation	79	79	0		None/ unknow	1978	68	John Day WA, The Dalles WA
Lower Yakima Wetlands	Mill Creek North	Yakama Nation	141	141	0		Mix	1978	159	Bonneville WA, John Day WA
Lower Yakima Wetlands	Mill Creek South	Yakama Nation	173	173	0		Easement	1978	165	John Day WA
Lower Yakima Wetlands	Old Goldendale	Yakama Nation	123	123	0		Easement	1978	184	Bonneville WA, John Day WA
Lower Yakima Wetlands	Olney Drain	Yakama Nation	375	375	0		Easement	1978	451	Bonneville WA, John Day WA

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Lower Yakima Wetlands	Parker	Yakama Nation	25	25	0		Lease	1978	36	John Day WA
Lower Yakima Wetlands	Plank	Yakama Nation	390	390	0		None/ unknow	1978	685	John Day WA
Lower Yakima Wetlands	Plank Road (East Plank)	Yakama Nation	113	113	0		Mix	1978	168	John Day WA
Lower Yakima Wetlands	Satus	Yakama Nation	8,329	8,329	0		Mix	1978	4,474	John Day WA, McNary WA
Lower Yakima Wetlands	Satus Corridor	Yakama Nation	2,177	2,177	0		Lease	1978	2,718	John Day WA
Lower Yakima Wetlands	Shuster Road	Yakama Nation	1,404	1,404	0		Mix	1978	667	John Day WA, McNary WA
Lower Yakima Wetlands	South Barkes Rd.	Yakama Nation	86	86	0		Lease	1978	75	John Day WA
Lower Yakima Wetlands	Sunnyside Dam	Yakama Nation	22	22	0		Lease	1978	22	Bonneville WA, John Day WA
Lower Yakima Wetlands	T 2126	Yakama Nation	116	116	0		None/ unknow	1978	95	John Day WA
Lower Yakima Wetlands	T 3669	Yakama Nation	134	134	0		None/ unknow	1978	116	John Day WA
Lower Yakima Wetlands	T 4433	Yakama Nation	30	30	0		None/ unknow	1978	44	John Day WA
Lower Yakima Wetlands	T 565	Yakama Nation	89	89	0		None/ unknow	1978	80	John Day WA
Lower Yakima Wetlands	T 570	Yakama Nation	93	93	0		None/ unknow	1978	73	John Day WA
Lower Yakima Wetlands	Tillman	Yakama Nation	63	63	0		Fee Title	1978	79	John Day WA
Lower Yakima Wetlands	Toppenish Creek Pumphouse	Yakama Nation	2,397	2,397	0		Mix	1978	1,236	McNary WA, The Dalles WA
Lower Yakima Wetlands	Wanity Slough	Yakama Nation	894	894	0		Mix	1978	361	Bonneville WA, McNary WA
Lower Yakima Wetlands	Wapato	Yakama Nation	1,352	1,352	0		Mix	1978	770	John Day WA, McNary WA
Lower Yakima Wetlands - South Lateral A	South Lateral A (Zimmerman)	Yakama Nation	1,114	682	432		Fee Title	1978	414	John Day WA, McNary WA
Mosebar Pond	Mosebar Pond	Yakama Nation	891	791	100	0	Mix	1980	432	John Day WA, McNary WA
North Satus	North Satus	Yakama Nation	1,608	1,167	441	1,167	Mix	1979	722	John Day WA, McNary WA
Pine Creek	Pine Creek	Confederated Tribes Of Warm Springs	18,976	14,057	4,919		Fee Title	1999	25,146	John Day OR
Rainwater Ranch	Rainwater Ranch	Umatilla Confederated Tribes (CTUIR)	5,187	5,187	0		Fee Title	1998	8,768	McNary WA
Shillapoo - BPA	Egger	WDFW	698	307	390	0	Fee Title	1980	612	Bonneville WA, John Day WA
Shillapoo - BPA	Herzog	WDFW	239	106	134	0	Fee Title	1978	210	Bonneville WA, John Day WA

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams

Shillapoo - WDFW	Chapman Island	WDFW	25	12	13	0	No purchase (enhance-	1978	60	Bonneville WA
Shillapoo - WDFW	Shillapoo	WDFW	421	208	213	0	No purchase (enhanceme	1978	1,012	Bonneville WA, John Day WA
Shillapoo - WDFW	Vancouver Lake - Alcoa	WDFW	199	98	100	0	No purchase (enhance-	1978	477	Bonneville WA, John Day WA, The Dalles WA
Steigerwald Lake NWR	Bliss	USFWS	8	8	0		Fee Title	1996	9	Bonneville WA
Steigerwald Lake NWR	Burlington Northern	USFWS	18	18	0		Fee Title	1999	27	Bonneville WA
Steigerwald Lake NWR	James	USFWS	56	56	0		Fee Title	1996	90	Bonneville WA
Steigerwald Lake NWR	Straub	USFWS	119	119	0		Fee Title	1995	191	Bonneville WA
Sunnyside - WDFW	Sunnyside - WDFW	WDFW	5,171	2,846	2,325	4,330	None/ unknow	1996	8,391	Grand Coulee, John Day WA, McNary WA
Wanaket	Wanaket (Conforth Ranch)	Umatilla Confederated Tribes (CTUIR)	3,085	2,334	751		Fee Title	1993	2,765	McNary OR

Lower Snake

March, 2011

A Federal Lands

Issues remain on the use of federal lands for wildlife mitigation projects in this subregion. An example would be the Malheur grazing allotments.

B Credits for Fish Mitigation

Of the 24 fish projects reviewed by Forum, 1 was within this sub-region. Bonneville funded 18% of this purchase

Table B-1: Candidate Fish Projects for Wildlife Credits

Parcel Name	Proponent	Sub-Basin	Acres	Tier
Zumwalt Prairie Preserve (Camp Creek Ranch)	Nature Conservancy	Imnaha	27,000	2

These type of projects are expected to meet the following requirements before inclusion in the Ledger:

- Specific wildlife management plans for the project area need to be completed, approved and implemented.
- Long-term operations and maintenance funding for wildlife species/habitats must be in place and "adequate".
- Appropriate permanent land protections (easements) should be applied, in perpetuity and with adequate protection language.
- The protected wildlife species/populations/habitats should be "priority" and so defined by in-place Federal, state or tribal management or sub-basin plans.

C. HEP Application Variations

The variation of HEP models has some issues in this sub-regional group. Paul Ashley, of the regional HEP team, has developed proposed solutions for the Malheur River WMA where crediting for a unique land ownership pattern is required. In general the loss assessment and projects in this sub-region have applied HEP more uniformly when compared with other sub-regions in the Basin.

Table C-1: Acres and HU by Manager*

Manager	Acres	Current	Protected
Burns-Paiute Tribe	8,145**	4,705	3,937
Nez Perce Tribe	16,286	21,118	21,118
ODFW	919	642	229
Grand Total	**25,350**	**26,645**	**25,284**

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**Excludes any credit for approximately 31,000 acres of BLM land that BPA pays the tribe to lease.

D Ratio Application

The application of any ratios in the Program are not agreed on by all Forum members, but are documented in the Forum Summary Report..Figures D-1 and D-2 below documents how projects in this subregion break out based on the year they were booked to the Ledger and amount of mitigation acqured as protection or enhancement

Figure D-1. Lower Snake Hus Lost, Acquired, Enhanced & Protect

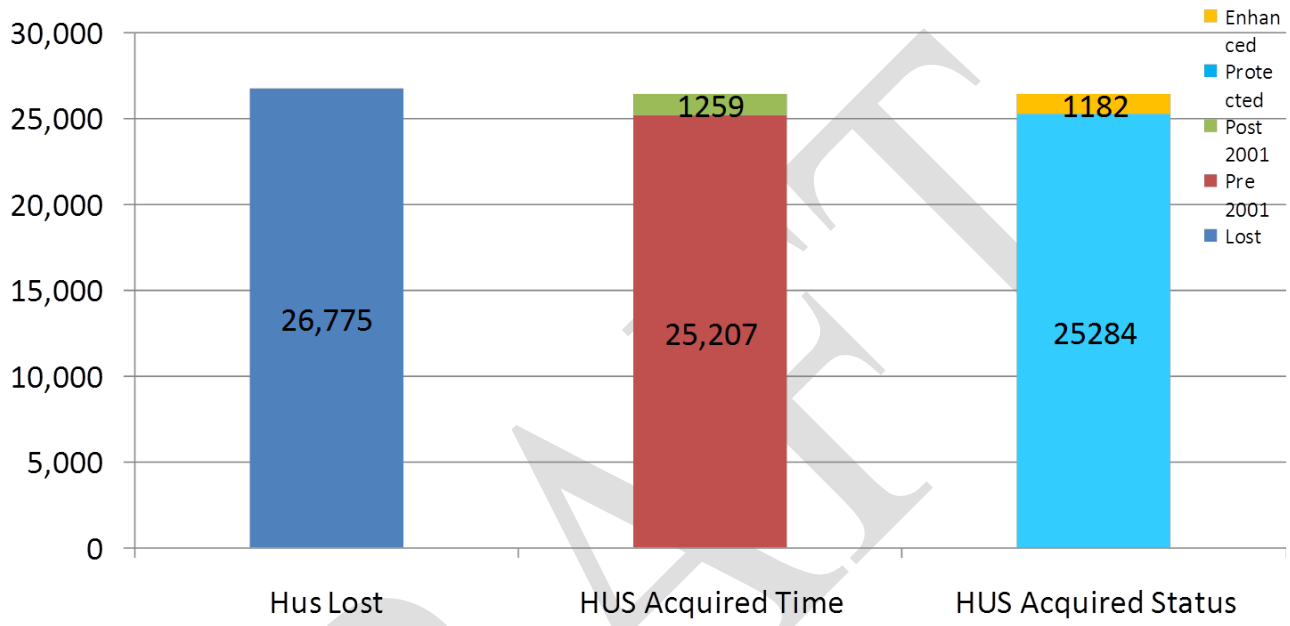
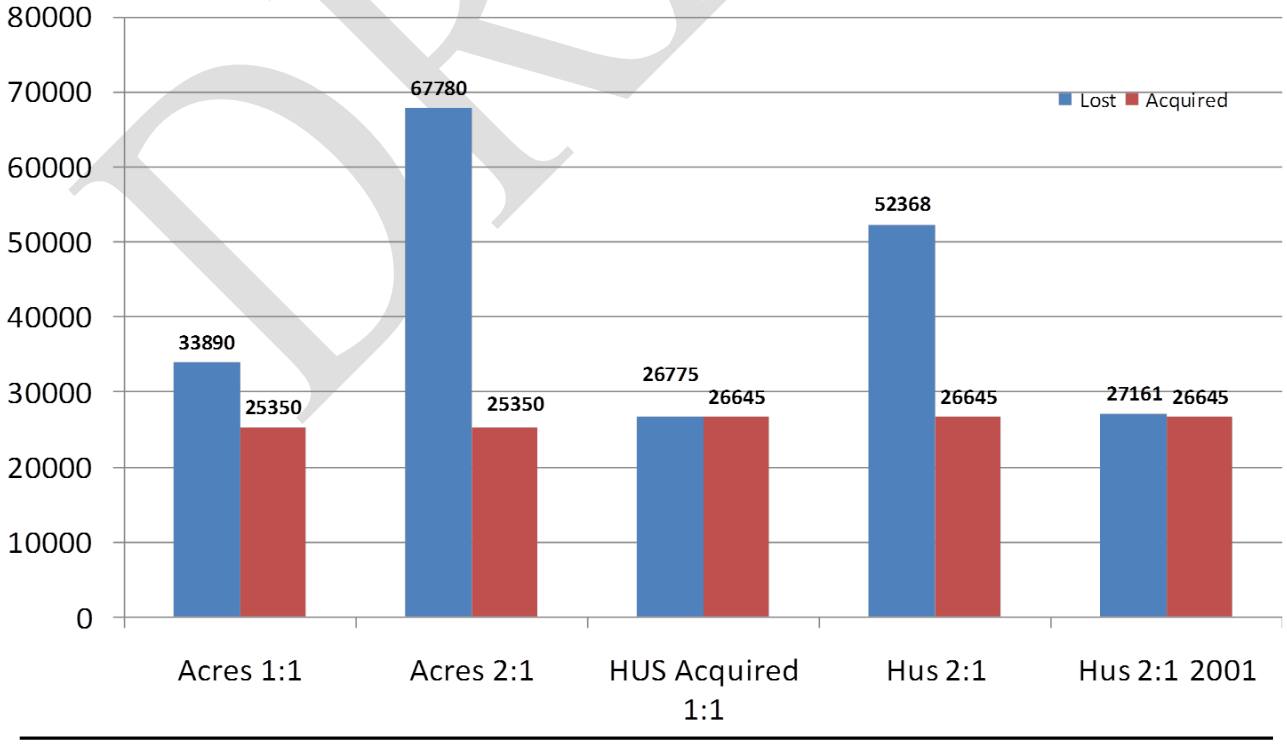


Figure D 2 – Lower Snake Acres and HUs Lost and Acquired Under Various Policy Assumptions



E. Facility Assignment

Please note that in Table E-1, a number of projects are combined together and it is not clear how to separate out the portion of HU's assigned. This creates a series of composite projects with multiple facilities listed.

Table E-1: Habitat Unit Assignment to Facilities

Projects	Current	Protected
Lower Snake	26,464	25,283
Grand Total	**26,464**	**25,283**

F. Inundation Gains

This is not an issue in this subregion.

H. Pre-Act Mitigation

This does not appear to be an issue for this subregion. Mitigation accomplished by the Corps of Engineers through the Lower Snake River Compensation Program was credited against the Loss Assessments and is reflected in the Losses table in the Fish and Wildlife Program.

I. Parcel Accounting Concerns

Parcel data has been updated with assistance from managers and the HEP regional team leader. This is reflected in the parcel data attached to this report.

Parcel Data for the Sub-Region

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Logan Valley	Logan Valley	Burns-Paiute Tribe	1,376	608	768		Fee Title	2000	1,760	Lower Snake
Malheur River	Malheur River Ranch (Denny Jones)	Burns-Paiute Tribe	3,329	3,329	0		Fee Title	2001	6,385	Lower Snake
Ladd Marsh	Conley Lake	ODFW	112	40	72		Fee Title	2001	160	Lower Snake
Ladd Marsh	North City	ODFW	52	19	34		Fee Title	2001	75	Lower Snake
Ladd Marsh	Simonis	ODFW	262	93	169		Fee Title	2001	375	Lower Snake
Ladd Marsh	Wallender	ODFW	216	77	139		Fee Title	2002	309	Lower Snake
Precious Lands WMA	Graham Tree Farm	Nez Perce Tribe	0	0						Lower Snake
Precious Lands WMA	Beach Ranch	Nez Perce Tribe	2,007	2,007						Lower Snake
Precious Lands WMA	Jackman	Nez Perce Tribe	4,532	4,532						Lower Snake
Precious Lands WMA	ODL #1	Nez Perce Tribe	911	911						Lower Snake
Precious Lands WMA	ODL #2	Nez Perce Tribe	240	240						Lower Snake
Precious Lands WMA	Helm	Nez Perce Tribe	13,428	13,428	0		Fee Title	1999	10,306	Lower Snake

NPCC Wildlife Crediting Forum Sub-Regional Analysis

Northern Idaho

A . Federal Lands There no current issues on the use of federal lands for wildlife mitigation projects in this sub-region.

B . Credits for Fish Mitigation There are no fish projects within this sub-region.

C . HEP Application Variations

The variation of HEP models at facilities and at mitigation projects sites is a significant challenge in this area. Each entity has its own crediting matrix, and none of those matrixes use the same number of species per habitat as the loss assessment.

Table C-1: Acres and HU by Manager*

Manager	Acres	Current	Protected
CdA Tribe	3,595	3,738	2,125
IDFG	3,660	4,046	768
Kalispel Tribe	4,158	5,209	2,150
KTI	1,120	1,324	115
Grand Total	**12,533**	**14,317**	**5,158**

* Note: In general, the Current total is a sum of the Protected, Enhanced and where applicable Minimum HU totals by WMA. Minimum values are summed only when they are greater than the results of HEP surveys or no HEP survey has been entered into Pisces. Goose Haven, Benewah and Kalispel Beaver Lake-Strong have Minimum's greater than HEP results. But the HEP results are presented here for reference.

I.D Ratio Application

The application of any ratios in the Program are not agreed on by all Forum members, but are documented in the Forum Summary Report. Figures D-1 and D-2 below documents how projects in this subregion break out based on the year they were booked to the Ledger and amount of mitigation acqured as protection or enhancement

Figure D-1. Northern Idaho Hus Lost, Acquired, Enhanced & Protected

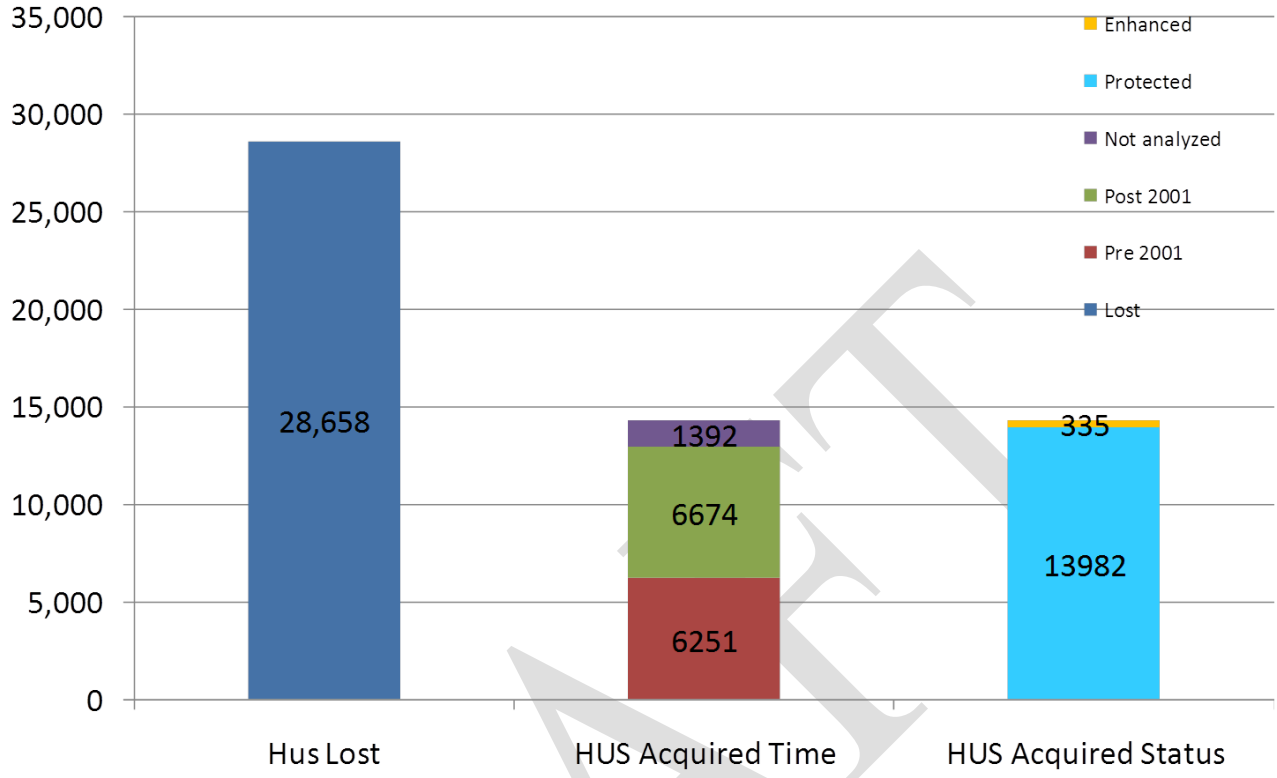
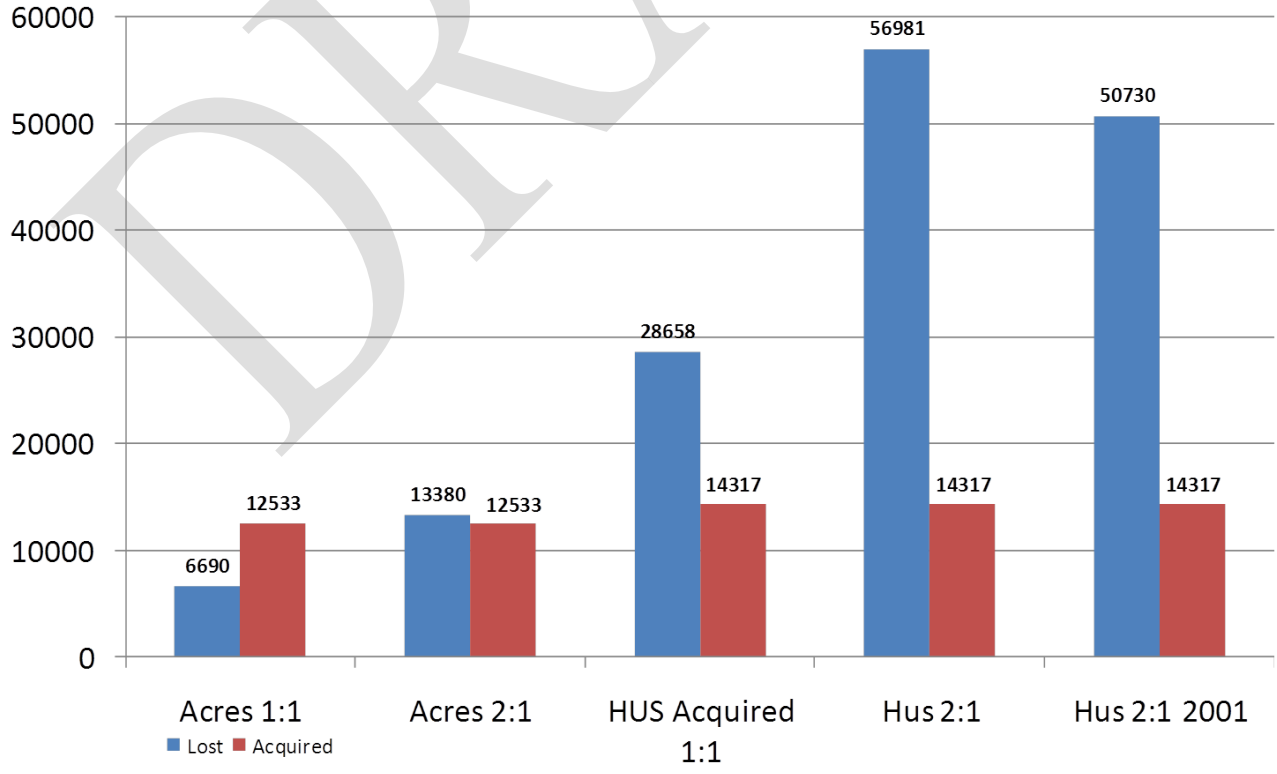


Figure D-2 – N. Idaho Acres and HUs Lost and Acquired Under Various Policy Assumptions



E Facility Assignment

Please note that in Table E-1, a number of projects are combined together and it is not clear how to separate out the portion of HU's assigned. This creates a series of composite projects with multiple facilities listed.

Table E-1: Habitat Unit Assignment to Facilities

Projects	Current	Protected
Albeni Falls	14,317	5,158
Grand Total	**14,317**	**5,158**

Table E-2: Loss Assessment by Facilities

Facility	Habitat Units (Exc. Gains)
Albeni Falls	-28,658
Total	**-28,658**

F Inundation Gains

The 2009 Program includes totals for species gains from inundation, but does not specify the role of these gains in evaluating mitigation. The data is presented here as additional issue to be addressed at the sub-region. One species is included in the adopted 2009 *Program Table C-4* for this sub-region. It is:

Table F-1: Inundation Gains by Species

Species	HU
Yellow Warbler	171
Total	**171**

G Pre-Act Mitigation

Pre-Act mitigation does not apply to this sub-region. However, IDFG does manage between 3000 and 6000 acres of Corps project lands for wildlife.

H Parcel Accounting Concerns

Parcel data has been updated with assistance from managers and the HEP regional team leader. This is reflected in the parcel data attached to this report. Goose Haven, Benewah and Kalispel Beaver Lake-Strong have Minimum's HU letter totals greater than subsequent HEP results. These parcels may need to be reviewed.

Parcel Data for the Sub-Region

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Albeni Cove	Albeni Cove	IDFG	96	0	96	95	Fee Title	2000	70	Albeni Falls
Beaver Lake	Kalispel Beaver Lake-Strong	Kalispel Tribe	255	233	0	255	Fee Title	2003	255	Albeni Falls
Beaver Lake	West Beaver Lake	Kalispel Tribe	103	103	0	40	Fee Title	2004	40	Albeni Falls
Beaver Lake	North Eaton Lake	Kalispel Tribe	235	235	0	105	Fee Title	2005	90	Albeni Falls
Beaver Lake	Gamlin Lake	Kalispel Tribe	274	274	0	244	Fee Title	2002	156	Albeni Falls
Beaver Lake	South Eaton Lake	Kalispel Tribe								Albeni Falls
Benewah Creek	Benewah Creek	CdA Tribe	832	831	0	832	Fee Title	2001	411	Albeni Falls
Boundary Creek WMA	Boundary Creek	IDFG	607			607	Fee Title	1999	1,405	Albeni Falls
Boundary Creek WMA	Smith Creek	IDFG	86			86	No purchase (enhancement only)	2007	620	Albeni Falls
Boundary Creek WMA	Deep Creek	IDFG	78	78	0	78	No purchase (enhancement only)	2005	40	Albeni Falls
Boundary Creek WMA	Sullivan	IDFG	24			24	Fee Title	2008	24	Albeni Falls
Calispell Creek	Calispell Creek - Northwest - Carney	Kalispel Tribe	268			268	None/unknown	2007	442	Albeni Falls
Calispell Creek	Calispell Creek - Northeast - Twigg	Kalispel Tribe	140	140	0	90	None/unknown	2004	170	Albeni Falls
Carey Creek	Carey Creek	Kalispel Tribe	173	173	0	164	Fee Title	2002	117	Albeni Falls
Coeur d Alene Goose Haven	Goose Haven Lake	CdA Tribe	1,078	774		1,078	None/unknown	2002	648	Albeni Falls
Coeur d'Alene River	Cougar Creek	CdA Tribe	454	454	0	163	None/unknown	2006	163	Albeni Falls
Elkhorn Flats	Trout - Elkhorn Flats	CdA Tribe	650			650			612	Albeni Falls
Flying Goose Ranch 1	Flying Goose Ranch	Kalispel Tribe	945			945	Fee Title	1992	436	Albeni Falls
Flying Goose Ranch II - Dilling	Flying Goose Ranch II - Dilling Addition	Kalispel Tribe	367			367	Fee Title	1997	164	Albeni Falls
hnt'k'wipn (Place of Beginning)	Upper Hangman Creek	CdA Tribe	364			364	Fee Title	2005	1,382	Albeni Falls
IDFG Gold Creek	Gold Creek	IDFG	606	606	0	310			310	Albeni Falls
Kalispel Tribe Sand Creek WMA	Sand Creek	Kalispel Tribe	126			126	None/unknown	2006	80	Albeni Falls
Kalispel Tribe-Big Meadows	Big Meadows	Kalispel Tribe	620			620	Fee Title	2007	620	Albeni Falls
Kalispel Tribes - Priest River	Priest River	Kalispel Tribe	142	142	0	105	Fee Title	2001	63	Albeni Falls
Kootenai River Flood Plain	Nimz Ranch	Kootenai Tribe of Idaho	242			242	Fee Title	2009	693	Albeni Falls
Kootenai River Flood Plain	Trout Creek Peninsula	Kootenai Tribe of Idaho	70			70	Fee Title	2002	112	Albeni Falls
Lake Creek	Windy Bay	CdA Tribe	67	66	239	67	Fee Title	2002	148	Albeni Falls
Lower Pack River IDFG	Lower Pack River	IDFG	84	84	0	30	Fee Title	1999	30	Albeni Falls
Moyie Springs	Perkins Lake	Kootenai Tribe of Idaho	115	115	0	115	Fee Title	2002	99	Albeni Falls
Pend Oreille WMA	Gold Creek	IDFG	606			606	Fee Title	2005	310	Albeni Falls

Wildlife Crediting Form

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Pend Oreille WMA	Derr Creek	IDFG	380			380	Fee Title	1997	240	Albeni Falls
Pend Oreille WMA	Carter's Island	IDFG	311			311	Fee Title	1997	96	Albeni Falls
Pend Oreille WMA	Cocolalla Lake	IDFG	186			186	Fee Title	2000	98	Albeni Falls
Pend Oreille WMA	Lower St. Joe	IDFG	87			87	Fee Title	2007	62	Albeni Falls
Pend Oreille WMA	Westmond Lake	IDFG	87			87	Fee Title	2000	65	Albeni Falls
Pend Oreille WMA	Marsh	IDFG	49			49			49	Albeni Falls
Pend Oreille WMA	Denton Slough	IDFG	41			41	Fee Title	1997	17	Albeni Falls
Pend Oreille WMA	Anselmo	IDFG	27			27	Fee Title	2008	27	Albeni Falls
Pend Oreille WMA	Kline	IDFG	20			20			20	Albeni Falls
Rapid Lightning	Rapid Lightning	IDFG	604			604	Fee Title	1999	110	Albeni Falls
Rapid Lightning	Shields 2	IDFG	67			67			67	Albeni Falls
Rapid Lightning	Ginter 1	IDFG								Albeni Falls
Rapid Lightning	Ginter 2	IDFG								Albeni Falls
Rapid Lightning	Shield/Pack River Ridge	IDFG								Albeni Falls
St Joe	Hepton	CdA Tribe	206			144	Mix	2007	144	Albeni Falls
St Joe	St Joe	CdA Tribe	87			87	Fee Title	2007	87	Albeni Falls
Tacoma Creek	Tacoma Creek - North - Sivert	Kalispel Tribe	412	412	0	412	Fee Title	2000	437	Albeni Falls
Tacoma Creek	Tacoma Creek - South - Carstens	Kalispel Tribe	187	187	0	76	Fee Title	2004	94	Albeni Falls
Trimble Creek	Lower Trimble Creek - Scheibel	Kalispel Tribe	528			528	Fee Title	2001	450	Albeni Falls
Trimble Creek	Upper Trimble Creek - South - Doramus	Kalispel Tribe	183			183	Fee Title	2000	303	Albeni Falls
Trimble Creek	Upper Trimble Creek - North - Testall	Kalispel Tribe	251	251	0	120	Fee Title	2004	241	Albeni Falls

Upper Columbia

March, 2011

A Federal Lands

There are no remaining issues on the use of federal lands for wildlife mitigation projects in this sub-region.

B Credits for Fish Mitigation

Of the 24 fish projects reviewed by Forum, 5 are within this sub-region. The projects are all in tier 2, meaning there are several issues that must be reviewed before these can be included in the Ledger.

Table B-1: Candidate Fish Projects for Wildlife Credits

Parcel Name	Proponent	Sub-Basin	Acres	Tier
Colville Fish Habitat Projects	Colville Tribes	Okonogan	176	2
Cottonwood Farms / Witte Place	NFWF, Methow Conservancy	Methow	54	2
Hancock Springs	NFWF, Methow Conservancy	Methow	122	2
Heath	NFWF, Methow Conservancy	Methow	140	2
Mid-Methow / Lehman	NFWF, Methow Conservancy	Methow	93	2

These projects are expected to meet the following requirements before inclusion in the Ledger:

- Specific wildlife management plans for the project area need to be completed, approved and implemented.
- Long-term operations and maintenance funding for wildlife species/habitats must be in place and "adequate".
- Appropriate permanent land protections (easements) should be applied, in perpetuity and with adequate protection language.
- The protected wildlife species/populations/habitats should be "priority" and so defined by in-place Federal, state or tribal management or sub-basin plans.

C. HEP Application Variations

The variation of HEP models at facilities and at mitigation projects sites is not considered a challenge aside from some individual cases. In general the loss assessment and projects in this sub-region have applied HEP more uniformly when compared with other sub-regions in the Basin.

Table C-1: Acres and HU by Manager*

Manager	Acres	Current	Protected
Colville Confederated Tribes	59,257	37,731	37,812
Spokane Tribe	4,233	4,487	4,476

USFWS	906	421	421
WDFW	141,345	81,079	63,541
Grand Total	**205,741**	**123,718**	**106,250**

* Note: In general, the Current total is a sum of the Protected, Enhanced and where applicable Minimum HU totals by WMA. Minimum values are summed only when they are greater than the results of HEP surveys or no HEP survey has been entered into Pisces. Colville parcels Brim, Jacobson, and Redthunder have Minimum's greater than HEP results. But the HEP results are presented here for reference.

D . Goose Nesting Sites

The Grand Coulee Loss Assessment identifies the inundation of goose nesting islands. Mitigation for these islands is not part of the HU accounting for this sub-region. Mitigation for loss of nesting islands has yet to be resolved.

E . Ratio Application

The application of any ratios in the Program are not agreed on by all Forum members, but are documented in the Forum Summary Report. Figures E-1 and E-2 below documents how projects in this subregion break out based on the year they were booked to the Ledger and amount of mitigation acquired as protection or enhancement.

Figure E-1. Upper Columbia Hus Lost, Acquired, Enhanced & Protect

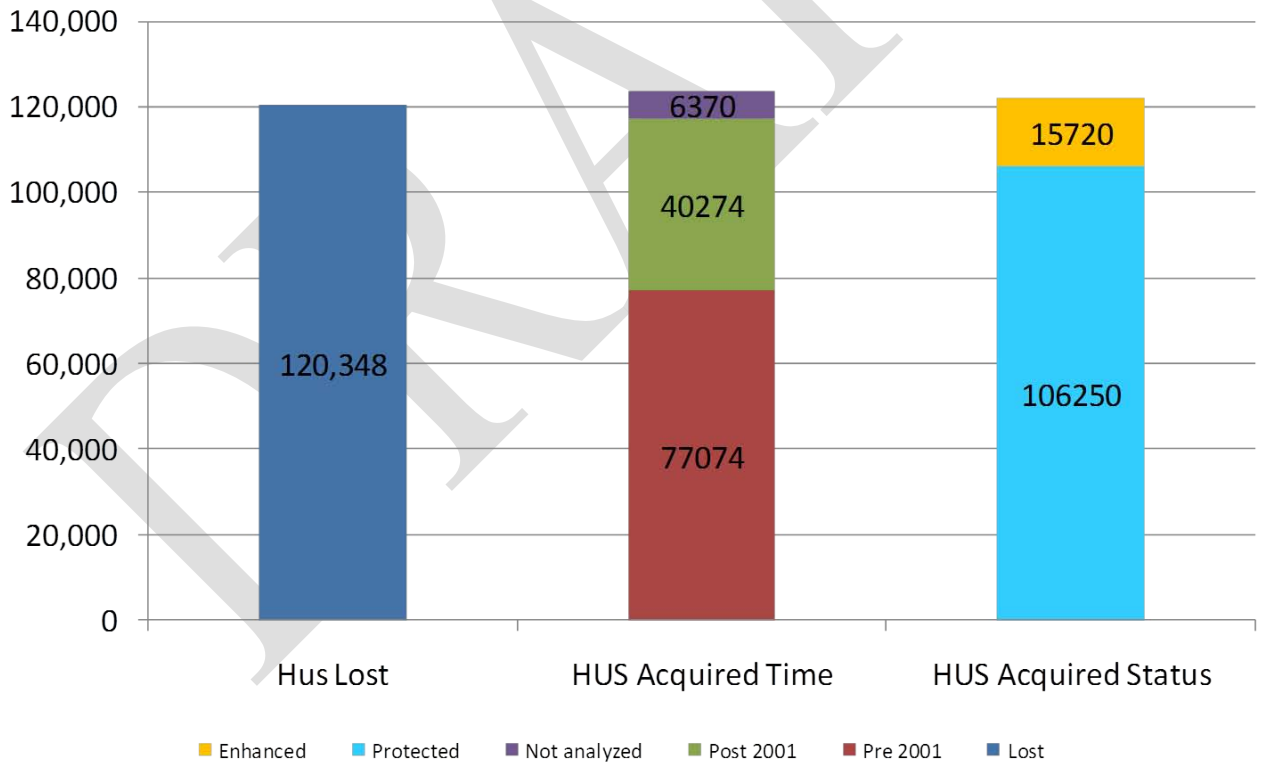
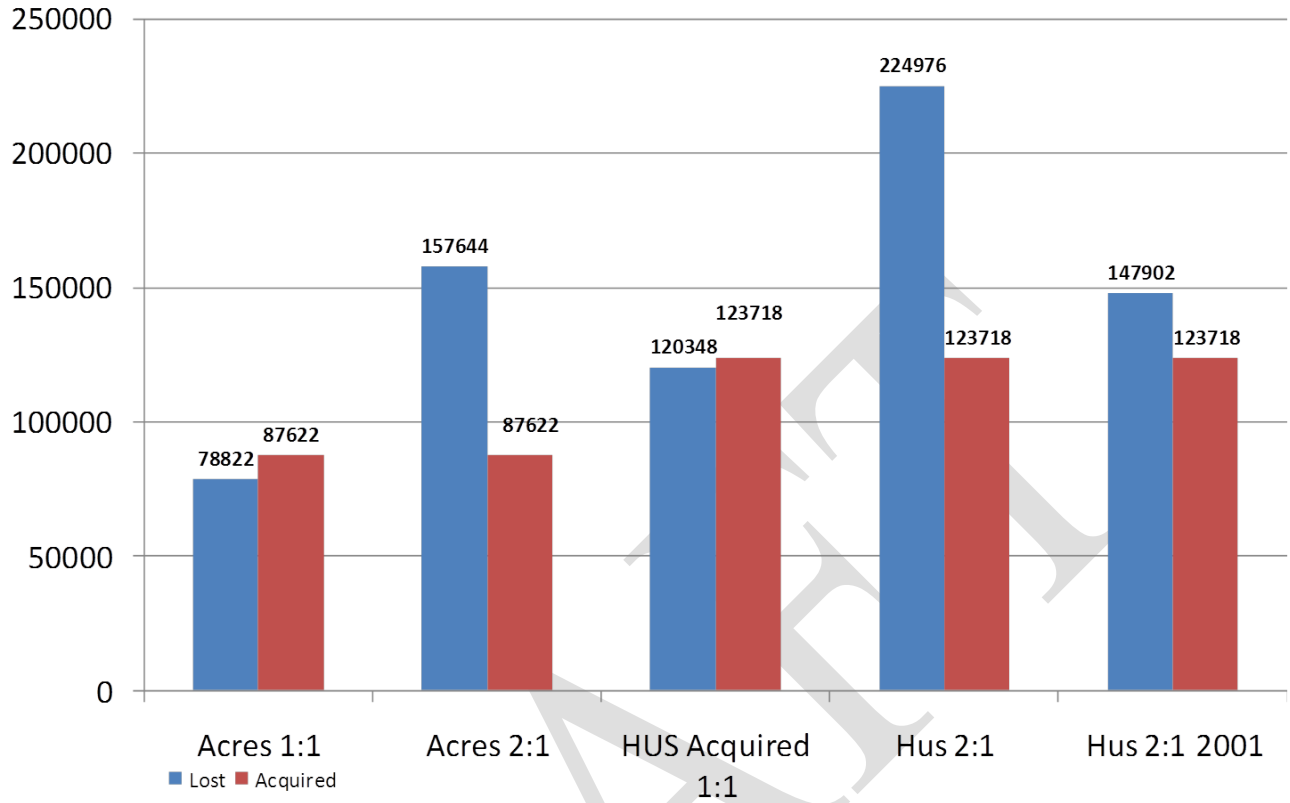


Figure E-2 – Up Columbia Acres and HUs Lost and Acquired Under Various Policy Assumptions



F . Facility Assignment

Assignment of habitat units to facilities is most clear for this sub-region. Please note that in Table F-1, a number of projects are combined together and it is not clear how to separate out the portion of HU's assigned. This creates composite projects with multiple facilities listed.

Table F-1: Habitat Unit Assignment to Facilities

Projects	Current	Protected
Chief Joseph	3,941	3,941
Chief Joseph, Grand Coulee	41,884	40,145
Chief Joseph, John Day WA, McNary WA	1,193	776
Grand Coulee	76,700	61,388
Grand Total	**123,718**	**106,250**

Table F-2: Loss Assessment by Facilities

Facility	Habitat Units (Exc. Gains)
Chief Joseph	-8,833
Grand Coulee	-111,515
Total	**-120,348**

G Inundation Gains

The 2009 Program includes totals for species gains from inundation, but does not specify the role of these gains in evaluating mitigation. The data is presented here as additional issue to be addressed at the sub-region. One species is included in the adopted 2009 *Program Table C-4* for this sub-region. It is:

Table G-1: Inundation Gains by Species

Species	HU
Lesser Scaup	1,440
Total	**1,440**

H Pre-Act Mitigation

Pre-Act mitigation does not apply to this sub-region.

I. Parcel Accounting Concerns

Parcel data has been updated with assistance from managers and the HEP regional team leader. This is reflected in the parcel data attached to this report. WDFW data is one area that may require extra review. Colville parcels Brim, Jacobson, and Redthunder have Minimum's greater than HEP results. These parcels may need to be reviewed.

Parcel Data for the Sub-Region

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Agency Butte	Agency Butte (Colville Tribal Land)	Colville Confederated Tribes	948	948	0		No purchase (enhance-	1999	2,388	Grand Coulee
Agency Butte	Hinman	Colville Confederated Tribes	368	368	0		Fee Title	1998	770	Grand Coulee
Asotin Creek - BPA	Schlee (BPA portion)	WDFW	7,642	7,642	0	7,000	Fee Title	2004	8,459	Grand Coulee
Asotin Creek - WDFW	Schlee (WDFW portion)	WDFW	496	259	237	0	Fee Title	2004	1,218	Grand Coulee
Asotin Creek - WDFW	Bickford	WDFW	670	349	321		No purchase (enhance-	2006	1,646	Grand Coulee
Berg	Berg 20%	Colville Confederated Tribes	1,524	1,524	0	0		Pre 1997	1,927	Chief Joseph, Grand Coulee
Berg	Berg Brothers	Colville Confederated Tribes	3,564	3,564	0		Easement	1995	5,672	Chief Joseph, Grand Coulee
Berg	Nespelem Bend	Colville Confederated Tribes	263	263	0		Fee Title	1997	516	Chief Joseph, Grand Coulee
Blue Creek Winter Range	Allotment 322	Spokane Tribe	140	140	0		Fee Title	1991	78	Grand Coulee
Blue Creek Winter Range	Blue Creek (Land Swap)	Spokane Tribe	1,121	1,121	0		Exchange	1997	701	Grand Coulee
Blue Creek Winter Range	Blue Creek (Tribal Contribution)	Spokane Tribe	60	60	0		None/ unknow	1999	36	Grand Coulee
Bridge Creek	Henry Kuehne	Colville Confederated Tribes	41	41	0	0			74	Grand Coulee
Bridge Creek	William Kuehne	Colville Confederated Tribes	41	41	0	0			63	Grand Coulee
Brim	Brim	Colville Confederated Tribes	138	338	0	138	Fee Title	2009	324	Grand Coulee
Cottonwood	Allotment 13-B	Spokane Tribe	31	31	0	21	Fee Title	2006	60	Grand Coulee
Cottonwood	Allotment 314	Spokane Tribe	60	60	0	36	Fee Title	2006	80	Grand Coulee
Cottonwood	Allotment 599	Spokane Tribe	89	89	0	40	Fee Title	2006	100	Grand Coulee
Cottonwood	Allotment 1074-Mercer	Spokane Tribe	119	119	0	55	Fee Title	2006	100	Grand Coulee
Cottonwood	Allotment 1074-Hill	Spokane Tribe	234	234	0	56	Fee Title	2006	120	Grand Coulee

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Desert - WDFW	Desert - WDFW	WDFW	1,193	776	417	0	No purchase (enhance-	2006	1,000	Chief Joseph, John Day WA, McNary WA
Eder	Eder	WDFW	3,857	3,857	0	3,857	Fee Title	2007	3,337	Chief Joseph
Fox Creek	Kieffer	Spokane Tribe	38	38	0		Fee Title	1997	40	Grand Coulee
Fox Creek	Smith	Spokane Tribe	141	141	0		Fee Title	1998	160	Grand Coulee
Hellgate Winter Range	Rattlesnake	Colville Confederated Tribes	7,421	7,421	0	7,421	Fee Title	2006	10,293	Grand Coulee
Hellgate Winter Range	Covington	Colville Confederated Tribes	69	52	0	69	Fee Title	2000	129	Grand Coulee
Hellgate Winter Range	Bill Kuenhe	Colville Confederated Tribes	4,089	4,089	0		Fee Title	1993	4,805	Chief Joseph, Grand Coulee
Hellgate Winter Range	Friedlander	Colville Confederated Tribes	12	12	0		Fee Title		60	Grand Coulee
Hellgate Winter Range	Henry Kuehne	Colville Confederated Tribes	3,795	3,795	0		Fee Title	1994	4,800	Chief Joseph, Grand Coulee
Hellgate Winter Range	Redford Canyon	Colville Confederated Tribes	118	118	0		Fee Title	1997	215	Chief Joseph, Grand Coulee
Hellgate Winter Range	Sand Hills	Colville Confederated Tribes	613	613	0		Fee Title	1995	1,400	Grand Coulee
Jacobson	Jacobson	Colville Confederated Tribes	1,313	1,280	0	1,313	Fee Title	2007	1,457	Chief Joseph, Grand Coulee
Little Pend Oreille NWR	Kaniksu Addition	USFWS	315	315	0	0	Fee Title	2000	706	Grand Coulee
Little Pend Oreille NWR	Weir	USFWS	106	106	0	0	Fee Title	1998	200	Grand Coulee
McCoy Lake	Lantzy West	Spokane Tribe	38	27	0	38	Fee Title	2004	124	Grand Coulee
McCoy Lake	Yepa	Spokane Tribe	36	36	0	13	Fee Title	2006	35	Grand Coulee
McCoy Lake	Gribner Swap	Spokane Tribe	60	60	0	28	Fee Title	2006	80	Grand Coulee
McCoy Lake	Lantzy East	Spokane Tribe	88	88	0	33	Fee Title	2004	81	Grand Coulee
McCoy Lake	Parson East	Spokane Tribe	163	163	0	83	Fee Title	2004	201	Grand Coulee
McCoy Lake	Parson West	Spokane Tribe	112	112	0	93	Fee Title	2004	301	Grand Coulee
McCoy Lake	Sampson	Spokane Tribe	238	238	0	188	Fee Title	2004	566	Grand Coulee
McCoy Lake	Allotment 401-A	Spokane Tribe	57	57	0		Fee Title	1996	35	Grand Coulee
McCoy Lake	Etue	Spokane Tribe	123	123	0		Fee Title	1999	74	Grand Coulee
McCoy Lake	Harris	Spokane Tribe	291	291	0		Fee Title	1997	180	Grand Coulee
McCoy Lake	Kenworthy	Spokane Tribe	78	78	0		Fee Title	1998	40	Grand Coulee
McCoy Lake	People	Spokane Tribe	528	528	0		Fee Title	1999	317	Grand Coulee
McCoy Lake	People (Tribal)	Spokane Tribe	204	204	0		Fee Title	1999	123	Grand Coulee
North Omak Lake	Jacobson 1 and 3	Colville Confederated Tribes	1,320	1,320	0	689	Fee Title	2009	1,387	Chief Joseph, Grand Coulee

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Redthunder	Redthunder	Colville Confederated Tribes	1,257	1,188	0	1,257	Easement	2007	1,355	Chief Joseph, Grand Coulee
Sage Flat - BPA	Chester Butte (MJM Ranch)	WDFW	3,144	2,018	1,126		Fee Title	1978	2,206	Grand Coulee
Sage Flat - BPA	Dormaier	WDFW	456	293	163		Fee Title	1978	320	Grand Coulee
Sage Flat - BPA	West Foster (Smith)	WDFW	2,814	1,806	1,008		Fee Title	1978	1,974	Grand Coulee
Sage Flat - WDFW	Pygmy Rabbit CRMP – DNR	WDFW	1,750	1,750	0	0	Fee Title	1978	3,500	Grand Coulee
Sage Flat - WDFW	West Foster Creek Expansion	WDFW	4,902	4,902	0	4,000	No purchase (enhance-	2005	3,756	Chief Joseph, Grand Coulee
Sage Flat - WDFW	Sagebrush Flat (Douglas County Pygmy Rabbit)	WDFW	146	146	0		None/ unknow	1978	240	Grand Coulee
Scotch Creek - BPA	Happy Hill (Brown)	WDFW	33	13	21		Fee Title	1978	61	Grand Coulee
Scotch Creek - BPA	Tunk (Fisher, Crawfish Lake, and A&M Northland)	WDFW	176	67	108		None/ unknow	1978	320	Grand Coulee
Scotch Creek - WDFW	Scotch Creek – WDFW	WDFW	6,919	5,282	1,637	0	No purchase (enhance-	1996	15,084	Chief Joseph, Grand Coulee
South Omak Lake	Boot Mountain	Colville Confederated Tribes	4,779	4,779	0	0			7,532	Chief Joseph, Grand Coulee
South Omak Lake	Colville Allotments	Colville Confederated Tribes	30	30		22	No purchase (enhance-	2000	80	Grand Coulee
South Omak Lake	Graves	Colville Confederated Tribes	1,453	1,453	0		Fee Title	2000	2,730	Grand Coulee
Swanson Lakes - BPA	Swanson Lakes – BPA	WDFW	17,570	12,031	5,539	12,031	None/ unknow	1978	14,840	Grand Coulee
Swanson Lakes - WDFW	Swanson Lakes – WDFW	WDFW	4,602	1,197	3,406	3,108	None/ unknow	1978	5,225	Grand Coulee
Tshimikain	Allotment 283-A	Spokane Tribe	55	55	0	20	Fee Title	2006	73	Grand Coulee
Tumwater Basin	Tumwater (Joy)	Colville Confederated Tribes	3,078	3,078	0	0	Easement	2005	6,809	Chief Joseph, Grand Coulee
Wellpinit Mtn WA	Allotment 86	Spokane Tribe	17	17	0	12	Fee Title	2006	40	Grand Coulee
Wellpinit Mtn WA	A-75	Spokane Tribe	44	44	0	18	None/ unknow	2006	70	Grand Coulee
Wellpinit Mtn WA	483-B	Spokane Tribe	42	42	0	20	Fee Title	2006	70	Grand Coulee
Wellpinit Mtn WA	Allotment 65-C	Spokane Tribe	25	25	0	21	Fee Title	2004	40	Grand Coulee
Wellpinit Mtn WA	Allotment 1052	Spokane Tribe	93	93	0	48	Easement	2006	79	Grand Coulee
Wellpinit Mtn WA	Allotment 154	Spokane Tribe	73	73	0	69	Fee Title	2005	149	Grand Coulee
Wellpinit Mtn WA	Allotment 67-B	Spokane Tribe	89	89	0		Fee Title	1996	80	Grand Coulee
Wenas - BPA	Roza Creek	WDFW	1,020	1,020	0	0	Lease	1978	2,111	Grand Coulee
Wenas - BPA	S. Umtanum Ridge	WDFW	2,452	5,181	-2,729	0	Lease	1978	9,962	Grand Coulee

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Wenas - BPA	Umtanum Creek	WDFW	5,181	4,552	629	0	Lease	1978	4,326	Grand Coulee
Wenas - WDFW	Roza Creek	WDFW	2,018	1,306	712	0	No purchase (enhance-ment only)	1978	10,738	Grand Coulee
Wenas - WDFW	S. Umtanum Ridge	WDFW	4,057	1,535	1,521	0	No purchase (enhance-ment only)	1978	25,224	Grand Coulee
Wenas - WDFW	Umtanum Creek	WDFW	4,527	2,923	1,604	0	No purchase (enhance-ment only)	1978	21,659	Grand Coulee
West Foster Creek/Dezellem Lake	JoJaCo - Smith 2	WDFW	3,466	3,466	0	3,466	Fee Title	2004	2,638	Chief Joseph, Grand Coulee
West Foster Creek/Dezellem Lake	Dezellem Lake	WDFW	665	196		665	Fee Title	2004	469	Grand Coulee
West Foster Creek/Dezellem Lake	North Bridgeport	WDFW	349			349	Fee Title	2004	321	Grand Coulee
West Foster Creek/Dezellem Lake	SBF Middle	WDFW	223	223	0	223	Fee Title	2004	162	Grand Coulee
West Foster Creek/Dezellem Lake	McClain Lake	WDFW	667	667	0	665	Fee Title	2004	469	Grand Coulee
Western Pond Turtle	Headstart Program	WDFW	84	84	0	80	No purchase (enhance-ment only)	2001	80	Chief Joseph
White Lakes	White Lakes	Colville Confederated Tribes	1,497	1,497	0				4,471	Chief Joseph, Grand Coulee

Upper Snake

A. Federal Lands

There are no remaining issues on the use of federal lands for wildlife mitigation projects in this sub-region.

B. Credits for Fish Mitigation

This is not a issue in this subbasin.

C. Loss Assessment Variations

The primary source of concern for HEP application is in the loss assessments. In 2009 the Shoshone-Bannock, Shoshone-Paiute, Idaho Department of Fish and Game (IDFG) CBWFA and BPA staff re-examined the Anderson Ranch, Palisades, Black Canyon, Minadoka, and Deadwood loss assessments for accuracy and consistency relative to other loss assessments across the Basin. Any proposed changes to the loss assessments would have to be amended into the program or agreed upon by the parties. Currently BPA does not believe that there is an FCRPS responsibility to mitigate construction and inundation impacts for Deadwood.

Table C-1: Acres and HU by Manager*

Manager	Acres	Current	Protected
IDFG	10,193	14,886	13,059
Shoshone-Bannock Tribes	5,160	8,028	5,898
Shoshone-Paiute Tribes	938	557	
Grand Total	**16,291**	**23,471**	**18,957**

D. Ratio Application

The application of any ratios in the Program are not agreed on by all Forum members, but are documented in the Forum Summary Report. Figures D-1 and D-2 below documents how projects in this subregion break out based on the year they were booked to the Ledger and amount of mitigation acqured as protection or enhancement.

Figure D-1. Upper Snake Hus Lost, Acquired, Enhanced & Protect

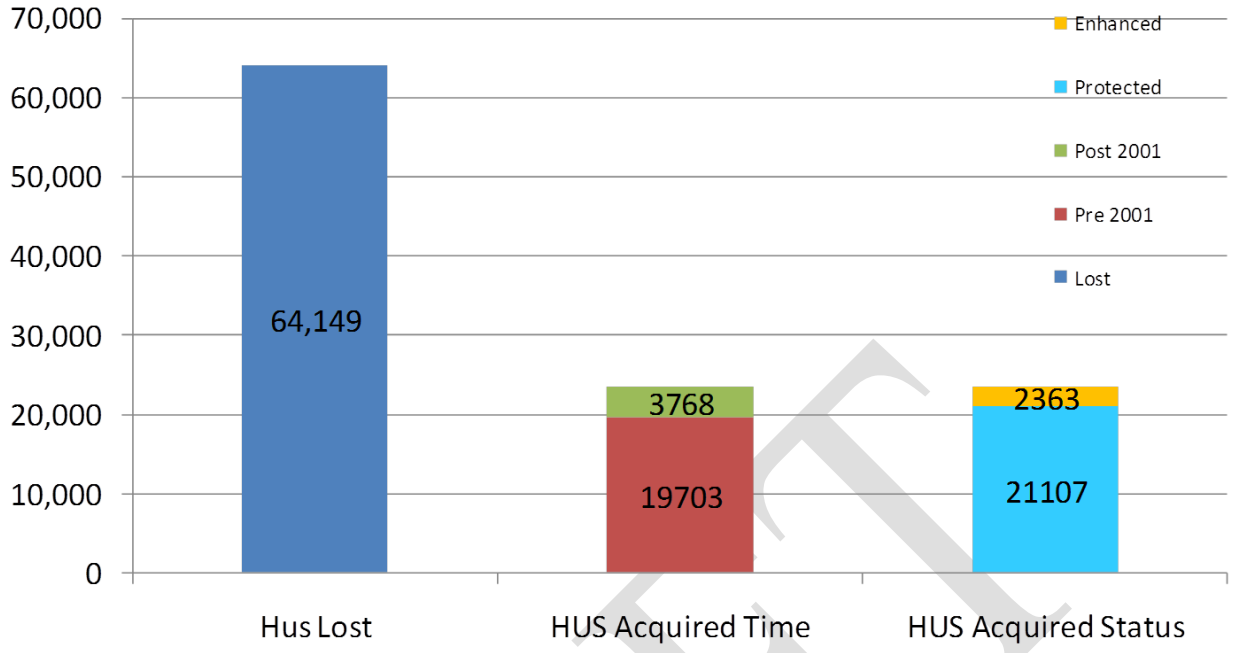
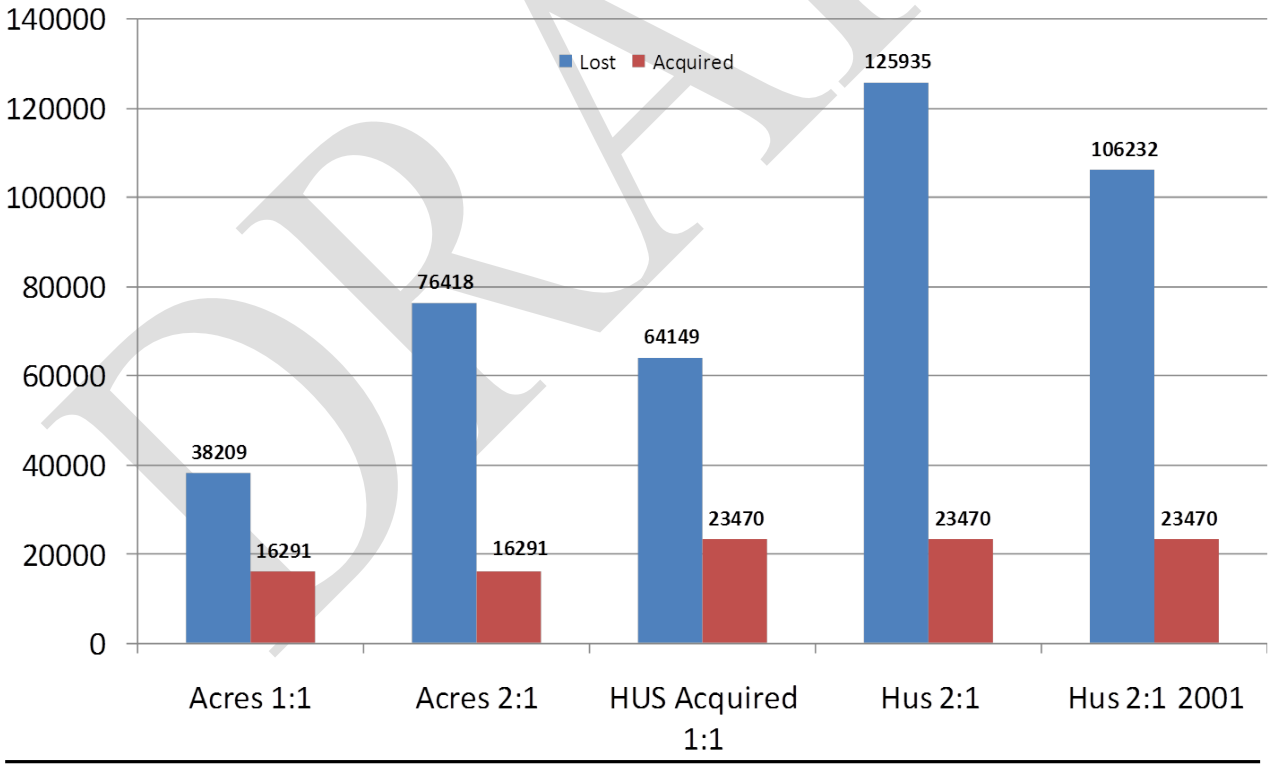


Figure D-2 – Upper Snake Acres and HUs Lost and Acquired Under Various Policy Assumptions



E. Facility Assignment

Please note that in Table E-1, a number of projects are combined together and it is not clear how to separate out the portion of HU's assigned. This creates a series of composite projects with multiple

facilities listed.

Table E-1: Habitat Unit Assignment to Facilities

Projects	Current	Protected
Anderson Ranch	2,988	1,063
Black Canyon	57	57
Deadwood	0	0
Minidoka	338	112
Minidoka, Palisades	3,769	2,576
Palisades	16,319	15,149
Grand Total	**23,471**	**18,957**

Table E-2: Loss Assessment by Facilities

Facility	Habitat Units (Exc. Gains)
Anderson Ranch	-9,619
Black Canyon	-2,170
Deadwood	-4,787
Minidoka	-10,503
Palisades	-37,070
Grand Total	**-64,149**

F. Inundation Gains

The 2009 Program includes totals for species gains from inundation, but does not specify the role of these gains in evaluating mitigation. The data is presented here as additional issue to be addressed at the sub-region. Six species are included in the adopted 2009 *Program Table C-4* for this sub-region. They are:

Table F-1: Inundation Gains by Species

Species	HU
Black-capped Chickadee	68
Mallard	174
Marsh Wren	207
Redhead	4,475
Western Grebe	273
Yellow Warbler	8
Total	**5,205**

G. Pre-Act Mitigation

Pre-Act mitigation does not apply to this sub-region, except perhaps the 22,000 acre Minidoka National Wildlife Refuge adjacent to Minidoka dam and reservoir.

H. Parcel Accounting Concerns

Parcel data has been updated with assistance from managers and the HEP regional team leader. This is reflected in the parcel data attached to this report.

HEP reports entered into PISCES show that many HEPs, even recent ones, do not use matrixes with habitats and species applicable to the mitigation sites being evaluated, or the HEPs use species models or model inputs that do not reflect on-the-ground conditions. There are some questions about HEP reports and analysis that may need to be reexamined. Difference of opinion on the applicability of the models used in this area

Parcel Data for the Sub-Region

WMA	Parcel	Proponent	Current HU	Protected HU	Enhancement HU	Minimum HU	Purchase Type	Purchase FY	Acres	Mitigated Dams
Bannock Creek	Bannock Creek	Shoshone-Bannock Tribes	226			226	Fee Title	2008	147	Minidoka
Big Cottonwood WMA	Big Cottonwood	IDFG	112	112	0	112	No purchase (enhancement	1998	230	Minidoka
Boise River WMA	Smith	IDFG	17			17	Fee Title	2008	59	Anderson Ranch
Boise River WMA	Krueger	IDFG	57	57	0		Fee Title	1999	166	Black Canyon
Camas Prairie	Rice Property	IDFG	1,063	1,063	0		Fee Title	2002	1,364	Anderson Ranch
Centennial Marsh	Bliss Point/Faulkner	IDFG	1,351			1,351	Fee Title	2008	1,802	Anderson Ranch
Deer Parks WMU	Allen	IDFG	215	222	-8		Fee Title	2002	81	Minidoka, Palisades
Deer Parks WMU	Boyle Ranch	IDFG	6,774	7,019	-245		Fee Title	1999	2,556	Palisades
Deer Parks WMU	Horkley	IDFG	339	351	-12		Fee Title	2002	128	Minidoka, Palisades
Deer Parks WMU	Menan (Kinghorn I)	IDFG	371	384	-13		Fee Title	1997	140	Palisades
Eastern Idaho	Palisades Noxious Weed	IDFG	499	499	0	0	No purchase (enhancement	1997		Palisades
IDFG-Beaver (Kinghorn II)	Beaver (Kinghorn II)	IDFG	1,134	901	233	901	Fee Title	1998	310	Palisades
Kruse Pine Creek Easement	Pine Creek (Kruse)	IDFG	1,317	813	504		Easement	1997	800	Palisades
Rudeen	Rudeen	Shoshone-Bannock Tribes	3,215	2,002	1,213		Fee Title	2000	2,450	Minidoka, Palisades
Soda Hills	Soda Springs Hills	Shoshone-Bannock Tribes	4,587	3,896	691		Fee Title	1998	2,563	Palisades
Tex Creek WMA	Quarter Circle	IDFG	1,254	1,254	0	1,254	Fee Title	1998	2,135	Palisades
Wilson	Wilson	Shoshone-Paiute Tribes	557			557	Fee Title + Easement	2010	938	Anderson Ranch
Winterfeld Easement	Winterfeld	IDFG	383	383	0		Easement	1997	422	Palisades