Section 11

WILDLIFE

The development of the hydropower system in the Columbia River Basin has affected many species of wildlife as well as fish. Some floodplain and riparian habitats important to wildlife were inundated when reservoirs were filled. In some cases, fluctuating water levels caused by dam operations have created barren vegetation zones, which expose wildlife to increased predation. In addition to these reservoir-related effects, a number of other activities associated with hydroelectric development have altered land and stream areas in ways that affect wildlife. These activities include construction of roads and facilities, draining and filling of wetlands, stream channelization and shoreline riprapping (using large rocks or boulders to reduce erosion along streambanks). In some cases, the construction and maintenance of power transmission corridors altered vegetation, increased access to and harassment of wildlife, and increased erosion and sedimentation in the Columbia River and its tributaries.

The habitat that was lost because of the hydropower system was not just land, it was home to many different, interdependent species. In responding to the system's impacts, we should respect the importance of natural ecosystems and species diversity.

While the development of the hydropower system harmed wildlife, it also resulted in a number of beneficial effects. For example, the creation of reservoirs provided important resting, feeding and wintering habitat for waterfowl. In addition, where reservoir storage is used for irrigation as well as power generation, the irrigation water promoted extensive growth of grass and food that could not otherwise exist in such a dry climate. These areas have provided important habitat for wildlife; on the other hand, a large body of scientific evidence shows that some of the species have not sustained initial population increases. Programs to protect, mitigate and enhance wildlife affected by hydroelectric development should consider the net effects on wildlife associated with hydropower development.

Although the Northwest Power Act refers to them as "hydropower facilities," the dams serve multiple purposes: hydropower, flood control, navigation, irrigation, recreation and other purposes. Congress encouraged a comprehensive response to the fish and wildlife impacts of dams on the Columbia River and its tributaries, and rejected the piecemeal, fragmented approach that characterized past mitigation efforts. The Council believes the region will benefit from a coordinated approach to wildlife mitigation. At the same time, as Congress specified, consumers of electric power should pay only the cost of measures to deal with the effects of electric power. The Act gives Bonneville the responsibility to allocate expenditures to the various project purposes, in consultation with the Corps of Engineers and the Bureau of Reclamation and in accordance with existing accounting procedures.

The Council's program will address the full impacts of the "hydropower facilities" in the broad sense that Congress intended, including all effects traceable to any of the projects' purposes. Bonneville, in consultation with the Army Corps of Engineers and the Bureau of Reclamation, should allocate implementation costs, and develop any cooperative agreements needed to ensure coordinated and expeditious program implementation.

It is critical, however, that implementation of wildlife measures not be delayed by these allocations. Bonneville funding for the ratepayer share of wildlife mitigation should proceed expeditiously, pursuant to short-term

agreements. There is no reason for ratepayer wildlife mitigation in the short term to wait for a determination of the financial responsibility of other project purposes. For the longer term, if there is no agreement on funding allocations, the federal agencies should work with the Council and the congressional delegation to arrive at a solution.

11.1 WILDLIFE PROGRAM GOAL: FULLY MITIGATE FOR WILDLIFE LOSSES FROM HYDROPOWER IN THE COLUMBIA RIVER BASIN

The goal of this program's wildlife strategy is to achieve and sustain levels of habitat and species productivity as a means of fully mitigating wildlife losses caused by construction and operation of the federal and non-federal hydroelectric system.

11.2 WILDLIFE PROGRAM POLICIES

11.2A Ratepayer Share of Funding

Bonneville

11.2A.1 Through consultation with the Corps of Engineers, the Bureau of Reclamation, Wildlife Managers, state and federal land management agencies, tribes, utilities, the Council and other interested parties, allocate wildlife mitigation expenditures to the various project purposes in accordance with existing accounting procedures. Complete this process by July 30, 1994.

11.2A.2 In consultation with other responsible operators and managers, coordinate ratepayer-funded measures with measures to deal with impacts caused by non-electric power development and operations to develop a comprehensive coordinated wildlife mitigation strategy. The parties should develop any cooperative agreements necessary to ensure coordinated and expeditious program implementation and should submit them to the Council for review and approval by December 1, 1994. Should the parties fail to develop agreements necessary to ensure coordinated program implementation, the Council will take the actions necessary to ensure such agreements are developed.

11.2A.3 Report to the Council yearly on progress to date on all coordinated wildlife mitigation activities.

11.2B Determine Allocation of Effort

Bonneville, Corps of Engineers, Bureau of Reclamation and Wildlife Managers

11.2B.1 Using the process described in 11.2A.1, determine the allocation of expenditures by the relevant federal entities needed to achieve full mitigation of wildlife losses attributable to the construction and operation of the federal hydroelectric facilities.

11.2C Definition of Mitigation

Relevant Parties

11.2C.1 For purposes of this program, mitigation is defined as achieving and

sustaining the levels of habitat and species productivity for the habitat units lost as a result of the construction and operation of the federal and non-federal hydropower system.

11.2D Mitigation Plans and Agreements

Bonneville and Wildlife Managers

11.2D.1 In developing wildlife mitigation plans and projects, demonstrate the extent to which the plans comply with the following principles:

- Are the least-costly way to achieve the biological objective.
- Have measurable objectives, such as the restoration of a given number of habitat units.
- Protect high quality native or other habitat or species of special concern, whether at the project site or not, including endangered, threatened or sensitive species.
- Provide riparian or other habitat that can benefit both fish and wildlife.
- Where practical, mitigate losses in-place, in-kind. When a wildlife measure is not in-place, in-kind, the habitat units protected, mitigated or enhanced by that measure will be credited against mitigation due for one or more hydroelectric projects.
- Help protect or enhance natural ecosystems and species diversity over the long term.
- Complement the activities of the region's state and federal wildlife agencies and Indian tribes. In

particular, state clearly how plans or projects would complement agency and tribal policies or programs to protect or enhance natural ecosystems and species diversity over the long term.

- Encourage the formation of partnerships with other persons or entities, which would reduce project costs, increase benefits and/or eliminate duplicative activities.

- Do not impose on Bonneville the funding responsibilities of others, as prohibited by Section 4(h)(10)(A) of the Northwest Power Act.

- Address special wildlife losses in areas that formerly had salmon and steelhead runs that were eliminated by hydroelectric projects (for example, societal and tribal wildlife losses).

- Address concerns over additions to public land ownership and impacts on local communities, such as reduction or loss of local government tax base, special district tax base or the local economic base; or consistency with local governments' comprehensive plans.
- Use publicly owned land for mitigation or management agreements on private land, in preference to acquisition of private land, while providing permanent protection or enhancement of wildlife habitat in the most cost-effective manner.

11.2E Mitigation Priorities

Bonneville and Wildlife Managers

11.2E.1 Ensure that wildlife mitigation projects implemented in fulfillment of this program are consistent with the basinwide implementation priorities described in Tables 11-1, 11-2 and 11-3, below.

Table 11-1
Lower Columbia Subbasin Wildlife Mitigation Priorities

Habitat Types--Target Species	**Priority**
Riparian/Riverine	High
• Great Blue Heron	
Old Growth Forest	High
• Northern Spotted Owl	
Wetlands	High
• Great Blue Heron	
• Band-tailed Pigeon	
• Western Pond Turtle	
Coniferous Forest	Medium
• Ruffed Grouse	
• Elk	
• American Black Bear/Cougar	

Table 11-2
Upper Columbia Subbasin Wildlife Mitigation Priorities

Habitat Types--Target Species	**Priority**
Riparian/River	High
• Bald Eagle (breeding)	
• Black-capped Chickadee	
• Peregrine Falcon	
Shrub-Steppe	High
• Sharp-tailed Grouse	
• Pygmy Rabbit	
• Sage Grouse	
• Mule Deer	
Wetlands	High
• Mallard	
• Redhead	
Islands	Medium
• White Pelicans	
Agricultural Lands	Low
• Swainson's Hawk	
• Ring-necked Pheasant	

Table 11-3 *Snake River Subbasin Wildlife Mitigation Priorities*	
Habitat Type--Target Species	**Priority**
Riparian/Riverine	High
• Bald Eagle (breeding)	
• Bald Eagle (wintering)	
• River Otter	
• Black-capped Chickadee	
• Peregrine Falcon	
• Ruffed Grouse	
Wetlands	High
• Mallard	
Native Grasslands and Shrubs	Medium
• Mule Deer/Elk	
• White-tailed Deer	
• Sharp-tailed Grouse	
Coniferous Forest	Medium
• Elk	
Old Growth Forest	Medium
• Pileated Woodpecker	
Lowland Forest	Low
• White-tailed deer	

11.3 IMPLEMENT WILDLIFE MEASURES

11.3A Identify Measures Based on Losses

Bonneville and Wildlife Managers

11.3A.1 Use the loss estimates in Table 11-4, as they may be adjusted by the Council after further deliberation on the Audit of Wildlife Loss Assessments, as the starting point for identifying wildlife measures and developing short-term and long-term wildlife mitigation agreements.

Council

11.3A.2 Within one year, adopt final loss estimates.

11.3B Cascade Hydropower Project

Bureau of Reclamation

11.3B.1 Within 90 days from the adoption of this program, fund a study to develop statements of wildlife and/or wildlife habitat losses at the Cascade hydro project. These statements shall take into account all existing information pertinent to the project area and shall address both realized and potential positive and negative effects. Loss

statements shall be submitted to the Council for review and adoption into Table 11-4.

11.3C Develop Statements of Habitat Losses and Gains Due to Hydropower Operation

Bonneville

11.3C.1 Fund studies to develop statements of wildlife and/or habitat losses and gains caused by the operation of the federal hydropower system. The studies should be designed to identify both direct and indirect operational losses and gains to fish and wildlife habitat and should be based on a written plan designed to promote consistency of results between and among projects and encourage early public and local involvement. To the extent practicable, the studies should rely on the information developed in the System Operation Review. The studies should be submitted for review and adoption into the program on or before December 31, 1996.

11.3D Crediting Existing Mitigation

Council

11.3D.1 In consultation with the wildlife managers, tribes, Corps of Engineers, Bureau of Reclamation and Bonneville, determine the amount of credit to be given for existing wildlife mitigation undertaken in association with the federal hydropower projects. The results of the determination shall be submitted to the Council by July 31, 1994.

11.3D.2 By September 1994, based on the results of the determination and the adjusted loss estimates (11.3A.1), initiate an amendment process to amend the wildlife mitigation section of the program.

11.3E Credit for New Actions

Wildlife Managers and Bonneville

11.3E.1 Develop a consistent, systemwide method for crediting new wildlife mitigation actions, while reflecting the following principles:

- The Council endorses the use of habitat units as the preferred unit of measurement for mitigation accounting unless parties to an agreement develop another method that, in the Council's opinion, adequately takes into account both habitat quantity and quality adequate to mitigate for the identified losses.

- The hydropower system must protect, mitigate and enhance wildlife to the extent affected by Columbia River Basin hydropower facilities. This obligation will be discharged when these effects are fully addressed, i.e., when mitigation actually offsets the loss caused by a hydropower facility. Mitigation agreements may predict a certain level of mitigation, as long as provision is made for monitoring and evaluation to determine if the predicted benefits were realized.

- The Council recognizes that there are inconsistencies throughout the basin in how to determine the

amount of credit given for acquisitions of habitat involving the protection of existing habitat. For example, under the Lower Snake Compensation Plan, the Corps has agreed to credit acquisitions for habitat protection at half of the value given to enhancement-type projects, while in the Washington Wildlife Mitigation Agreement the ratio is dependent on the type of lands (public or private) and whether the mitigation is based on acres or habitat units. The Council calls upon Bonneville and the wildlife managers to jointly develop a consistent, systemwide method for addressing this issue.

11.3E.2 The Council recognizes some fish habitat projects provide benefits to wildlife as well as fish. Because of this, the Council calls upon Bonneville and the wildlife managers to develop a method for crediting wildlife benefits from fish projects.

11.3F Short-Term Agreements

Bonneville and Wildlife Managers

11.3F.1 To ensure that wildlife mitigation proceeds expeditiously, within 90 days following the adoption of this program consummate interim five-year agreements, similar to the interim Washington Wildlife Mitigation agreement, with the states of Idaho and Oregon and appropriate Indian tribes

Interested Parties

11.3F.2 If the parties are unable for any reason to reach agreement within this time frame, then by February 15, 1994, submit to the Council a list of wildlife mitigation projects for implementation. Each October 1, thereafter, submit to the Council a list of wildlife mitigation projects for implementation.

Council

11.3F.3 Select and approve those projects to be funded for a given fiscal year.

Bonneville

11.3F.4 Upon Council approval, fund the projects approved by the Council.

11.3F.5 Continue to fund ongoing wildlife mitigation projects and incorporate them into the interim agreements.

11.3G Long-Term Agreements

Bonneville, Corps of Engineers, Bureau of Reclamation and Wildlife Managers

11.3G.1 Within three years following the adoption of this program, develop long-term agreements for all wildlife mitigation. The following elements should be considered and addressed in the development of long-term agreements:

- Clear objectives (e.g., number of habitat units, acres and/or habitat types, sample projects with list of indicator species).
- Demonstration of how the agreement is expected to meet, exceed or fall short of wildlife loss assessments.
- Demonstration that the level of funding provided has substantial

likelihood of achieving stated wildlife mitigation objectives.

- Demonstration of consistency with the Council's wildlife rule policies and standards.

- Incentives to ensure effective implementation of the agreement with periodic monitoring and evaluation (including an audit at least every other year) to ensure progress and document successes and failures.

- Demonstration that the agreements do not impose financial liabilities on states or tribes for third party claims for additional mitigation. State/tribal liability should be limited to good-faith performance of the mitigation agreement and should not include the risk of financial or biological uncertainty.

- Criteria for re-evaluation or reopening to consider whether mitigation actually has been achieved.

- Provisions for public involvement during implementation (e.g., advisory council, hearings, etc.).

Council

11.3G.2 Before any agreement is signed, the Council will review the agreement in an open, public process, and determine whether it is consistent with this program.

11.3H Complete and Implement Snake River Compensation Program

The Corps of Engineers is in the final stages of implementing mitigation plans for the Lower Snake River Fish and Wildlife Compensation Plan. The Compensation Plan was authorized by Congress in 1976. The Corps has acquired 97 percent of the acreage called for in the plan and intends to acquire the remaining acreage by September 1994. Final habitat developments on acquired lands will be completed by September 1996. The Council believes that when complete, the wildlife portion of the Compensation Plan developed by the Corps will meet acreage/funding obligations mandated by Congress. However, based on preliminary findings, the Council is concerned that the plan enacted by the Corps may not fully mitigate the habitat unit losses identified for the Lower Snake River hydroelectric projects. Accordingly, the Council will review the Corps' plan and, as outlined below, amend its program to address unmitigated wildlife losses associated with the Lower Snake River Projects.

Council

11.3H.1 Upon submission of the Corps final report, amend wildlife losses and mitigation credit for the Lower Snake River Fish and Wildlife Compensation Plan into the Columbia River Basin program.

Corps of Engineers

11.3H.2 Within 90 days following adoption of this program, the Corps will develop a process to more fully involve the Nez Perce Tribe. This involvement will include, if determined possible, funding, the Nez Perce Tribes' assistance and participation in analyzing mitigation credits associated with land acquisition and development under the Lower Snake River Compensation Plan. The Tribe will participate in the coordination of

interagency meetings which may be necessary during the final stages of Compensation Plan completion. The Corps will coordinate with the appropriate agencies, tribes, Bonneville and the Council regarding activities related to completing work under the Compensation Plan. A preliminary summary of the losses and mitigation credit for the plan will be submitted to the Council by the end of December 1994.

11.3H.3 The Corps will complete wildlife mitigation as authorized under the Lower Snake River Fish and Wildlife Compensation Plan. Upon completion of all activities in 1996, the Corps will submit a report to the Council documenting the work completed and the mitigation credited in terms of habitat units.

11.3H.4 The Corps will report any inconsistencies or delays to the Council regarding implementation of 11.3H.1. and 11.3H.2.

Bonneville

11.3H.5 Within 90 days following adoption of this program, report to the Council all costs reimbursed to the U.S. Treasury by Bonneville associated with the wildlife mitigation portion of the Lower Snake River Fish and Wildlife Compensation Plan. The Council will review this information and make further judgments, if appropriate, regarding Bonneville's ability to financially assist the implementation of 11.3H.2.

11.3H.6 Upon Council adoption of the loss estimates and the mitigation credit as submitted to the Council in 11.3H.1, fund implementation of the hydropower share of unaddressed mitigation according to Section 11.3F of the program. Highest priority should be given to unaddressed losses sustained by the Nez Perce Tribe and Yakama Indian Nation.

11.4 MONITOR AND EVALUATE WILDLIFE EFFORTS AT FEDERAL DAMS

The Council is interested in ensuring that mitigation actually occurs on the ground and accordingly is providing for monitoring to determine projected benefits to wildlife that result from the program.

11.4A Biennial Monitoring Report and Scientific Review

Bonneville

11.4A.1 Fund the coordinated preparation of a biennial monitoring report. The report should compile information on wildlife implementation, habitat units gained, and the status of wildlife populations. The report should reflect broad technical review and input, including the Council. The final report should be submitted to the Council by June 15, every other year.

11.4A.2 Fund an independent scientific review group to evaluate the progress and success of wildlife mitigation efforts.

11.5 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.

11.5A Mitigation Considerations in Dam Licensing Decisions

Federal Energy Regulatory Commission

11.5A.1 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, and Section 12.1A.2 of this program. In particular, it is important to take into account the mitigation projects 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

11.5A.2 The Council will monitor the Federal Energy Regulatory Commission licensing and relicensing proceedings and comment or intervene where appropriate.

Table 11-4
Estimated Losses 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
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

Table 11-4 (cont.) *Estimated Losses 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

Table 11-4 (cont.)
Estimated Losses Due to Hydropower Construction
(losses are preceded by a "-", gains by a "+"

Species	Total Habitat Units
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
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

Table 11-4 (cont.) *Estimated Losses Due to Hydropower Construction* *(losses are preceded by a "-", gains by a "+"*	
Species	**Total Habitat Units**
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 11-4 (cont.)
Estimated Losses 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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