

A Scoping Investigation of Approaches to Preserving Habitat

Task 104

June 5, 2006

Executive Summary

This task report: (1) outlines different approaches that have been used by BPA and other organizations to acquire and preserve habitat, (2) examines the attributes of these approaches, and (3) proposes areas for future analysis. Section 2 of this report begins with a short review of BPA's wildlife habitat mitigation program. Section 3 gives short descriptions of the alternative methods that can be used to acquire and protect habitat and describes the criteria that should be used to evaluate the cost-effectiveness of the alternative methods. Section 4 provides several examples of how these methods are used in practice.

The two methods of habitat preservation that we address in the most detail are fee simple acquisition and conservation easements. We conclude that:

- Where the landowner offers the choice, one can often attain the same objective through either purchase or easement -- both tools can be very useful.
- There is no one method of habitat acquisition that is best in all cases, so each proposal for habitat preservation needs to be examined in terms of the specifics of the proposal. The ecological and economic consequences are specific to the parcel and context.
- Fee simple purchase is often the most expensive in terms of up front purchase price since all the rights to the property are being acquired, but it generally provides the greatest long-run certainty of habitat protection.
- The cost of acquiring a conservation easement will approach the cost of fee simple acquisition as more rights to the land are acquired. Where habitat goals require that the primary land use rights not be exercised, for example, development rights in the case of urban land, timber rights in the case of forested land, and water rights in the case of irrigated land; fee simple acquisition is likely to be cost-effective.
- Changes that affect a small share of the acreage, for example, protecting a riparian corridor or a unique habitat parcel on a large parcel of land; or changes in land use practices that are not very expensive for the landowner may be accomplished cost-effectively using a conservation easement.
- Transactions costs can be much higher for conservation easements than purchases because the contract terms are often quite complex. Transactions costs per acre on small parcels can be substantial.
- Both fee simple acquisitions and conservation easements involve future land management costs that should be considered in habitat acquisition decisions.
- Conservation easements add uncertainties about compliance with the terms of the

conservation easement by subsequent landowners and enforcement of the easement provisions. Enforcement by a third-party can be incorporated into the terms of a conservation easement.

- Conservation easements and fee-simple land held by a land trust or other entity relieve the agency of the obligation to manage the land, but they expose the agency to financial and management problems that the land trust may encounter.
- Purchase may be a first step in a process. Purchased land may be re-sold subject to a conservation easement. In some cases the land may be divided, and an existing house or developable land sold. The important habitat land can be retained or sold subject to an easement.
- Local community acceptability may be an important consideration in the choice between fee simple acquisition and conservation easements, especially in rural areas.

We reached several conclusions of a more general nature:

- BPA has made good use of settlement agreements in its wildlife mitigation program. In this way, BPA has provided money to the states and tribes, who then assume the tasks of acquiring and protecting habitat, relieving BPA of those obligations.
- A number of other methods of habitat acquisition and protection have not been widely used in the Northwest (at least not used as part of BPA's habitat acquisition program). We conclude that these other alternatives deserve a closer look, and that with partnering and coordination these methods could play a useful part in habitat protection in the region.
- The choices among the alternative methods of habitat acquisition, and the procedures for implementing options such as conservation easements are complex. The Council should continue to develop its expertise and to make use of existing expertise in the region to help address these complexities.
- Although BPA has not yet defined habitat units for salmon, the principles in this paper can be generally applied to acquisitions of fish habitat, whether through acquisition of water rights or riparian land.

This report represents our “scoping investigation.” That is, it is an initial exploration of the topic, which can serve as the foundation for a more detailed examination of habitat protection alternatives. If we are directed by the Council to proceed with a follow-on project, this should include several case studies illustrating the alternative methods for preserving habitat parcels and the application of evaluation criteria. In addition, when habitat acquisition proposals come before the Council, the IEAB is prepared to assist the Council in the application of the principles and criteria described in this paper. Finally we recommend additional analysis of historical acquisition costs for cost benchmarking and cost-effectiveness analysis.

1. Introduction

The Bonneville Power Administration (BPA) is required to mitigate the impacts to wildlife caused by the development of the Federal Columbia River Power System (FCRPS). The Northwest Power and Conservation Council (Council) also has responsibilities to plan for the mitigation and recovery of the region's fish and wildlife. The Independent Economic Analysis Board (IEAB) was asked¹ for a scoping investigation that would (1) outline different approaches that have been used by BPA and other organizations to acquire and preserve habitat, (2) examine the attributes of these approaches, and (3) propose areas for future analysis.

The report is organized as follows. A brief background of Bonneville Power Administration's Integrated Fish and Wildlife Program is provided in Section 2. Section 3 describes alternative approaches to protecting fish and wildlife habitat and the attributes of these alternative methods, with a focus on fee simple acquisitions, conservation easements, and settlement agreements. The fourth section contains examples drawn from an IEAB meeting with organizations in the region that have preserved fish and wildlife habitat.

2. Background – BPA Wildlife Habitat Mitigation and Acquisition

Losses of Columbia Basin wildlife habitat as a result of the construction of the FCRPS have been quantified by the Region's fish and wildlife managers through the completion of "loss assessments" for each dam. These form the basis of the losses identified in the Northwest Power and Conservation Council's Columbia River Basin Fish and Wildlife Program. Loss assessments identify "habitat units" (HUs) lost due to construction. A habitat unit is an acre of habitat adjusted for suitability for use by target species that typically rely on a particular kind of habitat. The suitability is measured by wildlife experts and expressed as a "habitat suitability index" (HSI) which ranges from zero (zero carrying capacity for the species of interest) to 1 (highest quality habitat). Habitat units are then calculated as the acres of habitat multiplied times the suitability index. As BPA implements a mitigation activity, it takes credit for its effort in HUs. The habitat units are measured or estimated and then counted against the loss assessment for the particular dam project under consideration. BPA takes one habitat unit of credit for each habitat unit it mitigates.

Table 1 summarizes the amounts of habitat lost, regained or protected at each of 20 FCRPS projects in the Columbia basin (with the four dams shared by two states being listed twice). Column 1 is the HUs lost from building the dam (mostly riparian habitat) and column 2 is the HUs gained from building the dam (usually reservoir habitat or newly inundated land). Thus the difference is a general indicator of the HUs lost which are to be mitigated by BPA under the Northwest Power Planning and Conservation Act. Column 3 is HUs acquired that were in danger of destruction, and column 4 is estimated HUs that should be gained from improving habitat productivity on acquired land. The sum of columns 2, 3 and 4, less column 1 gives the net gain/loss of HUs after BPA's mitigation activities, as shown in column 6. Over half of the roughly 404 thousand acres of wildlife habitat losses at 20 dams have been mitigated. According

¹ The issue was initially raised by Doug Marker, Director of the Council's Fish and Wildlife Division in a meeting with the IEAB. This request was subsequently designated as IEAB Task 104 by the Council.

to BPA, wildlife habitat mitigation is complete for the construction impacts of Hungry Horse, Libby, Dworshak, Bonneville, The Dalles, John Day, and McNary and nearly complete for the Lower Snake projects at Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams.

We note that the habitat units (HUs) listed in Table 1 represent acres of habitat for a variety of species (e.g. eagles, beaver, deer, warblers) as assessed by biologists. Since more than one species may inhabit a given acre of habitat, the total HUs lost or gained at a particular dam site is the summation of HUs for multiple species. Hence, these figures may double- or triple-count acres of land which are suitable habitat for more than one target species. Among the wildlife biologists and agencies who deal with habitat restoration there is no general agreement on the meaning or appropriateness of this summary of habitat units.

The methods used by BPA to acquire wildlife habitat have included fee simple acquisition, easements, leases, and exchanges of land. As shown in Table 2, of the 170.8 thousand habitat acres acquired, fee simple acquisition makes up the vast majority, 144.3 thousand acres or 82% of the total. The cost per acre of habitat acquired varies widely. For fee simple acquisitions, the average cost is \$430.53 and for conservation easements the average cost is \$1,035.57. The relative size of the average costs for various approaches does not indicate how costly these alternatives will be in the future. So, for example, the conservation easements acquired by BPA may have been concentrated on more highly valued land that could not have been purchased at lower prices, while the fee simple acquisitions may be concentrated in relatively lower priced land. Also, costs have not been adjusted for inflation and cost-shares (if any).

As noted in the NPCC 2000 Fish and Wildlife Program (FWP), there is a great advantage in being able to move quickly and flexibly to acquire interests in land and water rights for the purpose of protecting or enhancing fish and wildlife habitat. Often the opportunity for an important acquisition exists only for a short period of time, and often there is a substantial price advantage in being able to quickly close the transaction. The time and uncertainty of the current project selection process, and the procedural constraints on real estate acquisition by federal agencies, have made these transactions relatively difficult and more costly than necessary.

Consequently, the FWP recommended that Bonneville establish a funding agreement for land and water acquisitions. The Council will establish a mechanism, including an advisory entity that can act flexibly, quickly, and responsibly in approving funding for land and water acquisition proposals. The primary elements are:

- A dedicated budget within Bonneville's fish and wildlife fund will establish the amount of funding for land and water acquisitions available per year, for a multi-year period. The budget is known as the "Land and Water Acquisition Fund."
- An advisory board will be appointed by the Council after consultations with representatives from Bonneville, federal and state fish and wildlife and land management agencies, Columbia Basin Indian tribes, non-profit organizations specializing in habitat and water acquisitions, and the Council. The board will recommend for Council approval all land and water acquisitions from the dedicated budget. The Council will make all final recommendations and decisions regarding land and water acquisitions from the fund.

- Specific procedures and criteria for the board to use in identifying, reviewing, and deciding whether to recommend proposals for land and water acquisitions need to be developed. These criteria will be reviewed by the Independent Scientific Review Panel, but specific land and water acquisitions would not require Independent Scientific Review Panel review. An element of these criteria will be a preference for proposed actions that 1) address imminent risks to the survival of one or more species listed under the Endangered Species Act and 2) are broadly recognized as achieving direct fish and wildlife benefits. The criteria should emphasize consistency with the program's biological objectives and subbasin plans, standardized terms for implementing acquisitions, including matters of contracting, management, crediting, operation and maintenance costs, and monitoring and evaluation requirements.
- The development of accountability provisions for reporting on monies spent, properties acquired, biological gain, and consistency with program and subbasin objectives. The program as a whole will receive periodic review by the Independent Scientific Review Panel.

The fund does not take title to acquisitions except on an interim basis, but will, for each transaction, identify an appropriate entity to hold the interest acquired. The fund works in cooperation with other efforts that are already underway to benefit fish and wildlife through acquisitions of land and may provide cost sharing or full funding for transactions that have been arranged by others. In appropriate circumstances the fund may provide for the continuing payment of local taxes and fees on an acquisition.

These habitat acquisition procedures and accounting mechanisms have not been applied to salmon and resident fish habitat because habitat units have not been defined for salmon and fish. However, the principles discussed in this report, based upon the experience of BPA and other institutions in habitat mitigation, could be applied to acquisitions for fish habitat including water acquisitions.

Table 1. BPA Wildlife Accounting as of 1/26/2006²

Dam	(1) HUs Lost	(2) HUs Gained	(3) HUs Acquired	(4) HUs Estimated	(5) Total HUs Acquired + HUs Estimated = (3) + (4)	(6) Net HU
						Gain/Loss = (5) – (1)
Albeni Falls	28,658	171	2,306	2,717	5,023	-23,464
Anderson Ranch	9,619	0	1,047	0	1,047	-8,572
Big Cliff	413	40	0	32	32	-341
Black Canyon	2,170	76	57	0	57	-2,037
Bonneville OR	6,159	1,335	590	0	590	-4,234
Bonneville WA	6,159	1,335	3,875	7,786	11,661	6,837
Chief Joseph	8,833	1,440	1,433	0	1,433	-5,960
Cougar	11,124	1,637	207	100	307	-9,180
Detroit	11,298	3,233	0	58	58	-8,007
Dexter	6,648	1,214	0	150	150	-5,284
Foster	3,544	926	0	96	96	-2,522
Grand Coulee	111,785	0	61,212	17,707	78,919	-32,866
Green Peter	16,432	4,742	0	0	0	-11,690
Hills Creek	19,489	853	1,496	0	1,496	-17,140
John Day OR	18,280	7,199	14,057	0	14,057	2,976
John Day WA	18,280	7,199	16,798	0	16,798	5,717
Lookout Point	25,454	2,636	0	513	513	-22,305
Lower Snake	26,775	0	24,305	961	25,266	-1,509
McNary OR	4,710	2,749	6,465	0	6,465	4,504
McNary WA	18,834	10,995	22,041	728	22,769	14,930
Minidoka	10,503	5,129	1,721	112	1,833	-3,541
Palisades	37,070	0	16,080	0	16,080	-20,990
The Dalles OR	1,165	289	0	0	0	-876
The Dalles WA	1,165	289	1,899	0	1,899	1,023
Total	404,567	53,487	175,589	30,960	206,549	-144,531

Data in columns 1-4 derived from data on BPA's website at:

http://www.efw.bpa.gov/Integrated_Fish_and_Wildlife_Program/WildlifeCrediting_files/WL_10.pdf

² HUs gained represent habitat units created by the project. HUs acquired are habitat acquisitions in which a habitat evaluation procedure (HEP) has been completed. HUs estimated are projected HUs for approved projects but a HEP has not been completed and the HUs include proposed restoration work.

Table 2. Summary of Wildlife Habitat Acquired (acres), Purchase Cost, and Cost per Acre by “Purchase Type”

Purchase Type	BPA Acres Acquired	BPA Purchase Cost	Average Cost \$/Acre
Easement	3,119	\$3,229,955	\$1,035.57
Exchange	1,493	\$1,003,889	\$672.40
Fee simple acquisition	144,316	\$62,132,033	\$430.53
Lease	613	\$570,250	\$930.26
Mix	20,337	\$6,338,725	\$311.68
Unknown	1,004	\$1,720,124	\$1,713.27
Total	170,882	\$74,994,976	\$438.87

From June 2005 data contained from BPA website at:

http://www.efw.bpa.gov/Integrated_Fish_and_Wildlife_Program/WildlifeCrediting_files/WL_13.pdf

Note: Costs per acre should not be taken as an indicator of future costs because they have not been adjusted for inflation. Also, costs have not been adjusted for cost-shares, habitat quality, location (urban versus rural), etc.

3. Methods to Acquire and Preserve Fish and Wildlife Habitat

Government agencies may want to protect land for its habitat, scenic, access, recreation, historic or endangered species values. There are many alternative approaches that can be used to preserve fish and wildlife habitat. Our goal is to outline the major approaches that may be useful to the Council and BPA in meeting their obligations for habitat planning, endangered species recovery, and fish and wildlife mitigation requirements. Since this is intended to be a scoping investigation, we will begin with a short description of each of the alternatives, followed by short descriptions of the criteria that the Council and BPA might use to evaluate the appropriateness and potential effectiveness of these approaches. We then suggest a table which could be used as a template to compare the alternative methods used to acquire and preserve the habitat values of a particular proposed land parcel. Completion of the table would be a follow-on task to this report.

The following section will begin with a discussion of the three most important alternatives for wildlife habitat preservation: fee simple acquisition, conservation easements, and settlement agreements. We will also discuss in lesser detail a range of other possible ways of mitigating the impacts on wildlife.

A. Alternative methods for habitat preservation

Fee simple acquisitions. This is the most straightforward of the approaches to habitat acquisition. Fee simple ownership of property means ownership of all rights to the property – the right to use it in any way the owner wants consistent with applicable laws, to develop it as they want, to grant others access to the property or to exclude others, to pass it on to heirs, or to sell the property to whomever they wish. Fee simple acquisition of property for fish or wildlife habitat means that you acquire the entire bundle of rights associated with the property – usually by buying it outright from a willing seller (or perhaps by accepting a donation of land).

Since fee simple means acquiring all of the rights to land, the cost to acquire fee simple ownership is often more than the cost to acquire a conservation easement for only some of the rights to the land. However if the rights acquired via easements comprise the bulk of the value of the land -- as might be true for developable urban land -- then easements and fee simple acquisitions will have approximately the same cost.

Conservation easements. Conservation easements are legal agreements between a landowner and either a nonprofit agency, such as a land trust, or a government agency. The agreement protects the conservation values of the land by placing limits on how the land can be used. A conservation easement affects only some of the bundle of rights associated with land ownership. The agreement may restrict the owner's ability to develop the land or constrain how the land is used. However, the owner is free to continue to use the land subject to these restrictions, sell it, or pass it on to heirs. The easement runs with the land, so all future owners are also bound by the terms of the agreement.

The agency may retain ownership of easements, or an easement may be developed in cooperation with a non-profit land trust that will assume ownership of the easements, and assume the responsibility for seeing that the terms of the easement are followed. Passing ownership, management and enforcement to a land trust relieves the agency of these responsibilities, but the non-profit land trust's management and enforcement costs will still have to be funded somehow -- perhaps by fundraising efforts by the land trust, perhaps by endowment from the landowner, or perhaps by agreement with the agency. A third-party enforcement agency -- which can enforce the conservation easement if the land trust fails to do so -- can be designated when negotiating the conservation easement.

Landowners may have various incentives for voluntarily agreeing to conservation easements. Owners may be motivated by a desire to see the conservation values of their property protected in perpetuity, or by the desire to protect heirs from having to disperse the property to satisfy estate taxes. For easements that serve a government purpose, the agency may be willing to buy easements from willing sellers. In other cases owners may be willing to donate easements because of the other benefits they may get from a conservation easement. If the easement meets the standards set by the IRS, these benefits may include income tax benefits since the reduced land value can be counted as a charitable donation, and property and estate tax benefits from the reduced value of the property. If a conservation easement reduces the market value of a parcel from \$500,000 to \$200,000, then the \$300,000 difference can be counted as a charitable deduction on income tax returns, and the \$200,000 remaining land value will be used as the basis for estate taxes.

Property tax benefits to landowners from a conservation easement are less certain, since these may be subject to state property tax law and the vagaries of the county property tax assessment process. In some jurisdictions, agricultural land is assessed at its "use value", based on the estimated returns from using land for agricultural purposes, rather than the potentially much higher market value of the land. In such cases property taxes may already be quite low, and there may be little reduction in property taxes from a conservation easement.

Placing a conservation easement on forestland may also present property tax problems. In some jurisdictions forestland taxes are low or deferred as the trees grow, and then collected at the time the trees are harvested. If a conservation easement precludes harvest, the effect that this will have on property taxes is uncertain. Property taxes may not change if a conservation easement includes a management plan that does not preclude harvest.

Conservation easements at first appear to offer significant cost effectiveness advantages over fee simple acquisition. However, the cost of a conservation easement in urban areas often approaches the cost of fee simple because most of the land value is in its development potential, which presumably is precluded by the conservation easement. At the same time, a conservation easement is a complicated contractual agreement, so the transaction costs are usually higher than for a fee simple acquisition. Conservation easement contracts must be enforced, which may result in monitoring and enforcement costs significantly above those for fee simple land. Holders of conservation easements must be concerned about what happens once the landowner sells the property although sometimes a conservation easement contract gives the easement holder a first right of refusal to buy the land to help address this uncertainty about successor owners.

Conservation easements often work best for larger parcels, since the costs of setting up a conservation easement are mostly per transaction, rather than per acre. Prospective holders of conservation easements need to think geographically in terms of the cost of managing dispersed units, and the advantages of acquiring easements on land adjacent to land they already control. The transactions costs of fee simple acquisitions are often less than the cost of negotiating a conservation easement, but if owners do not want to sell the land, then a conservation easement may be the best alternative to protect the habitat.

Sometimes a property is purchased in fee simple, then a conservation easement put on it, and finally the property resold subject to the easement. This may significantly reduce the transaction costs for setting up the conservation easement. Sometimes, especially if the parcel contains an existing residence, the parcel is subdivided and the conservation easement is placed only on the unimproved portion.

The choice of fee simple versus a conservation easement depends in part on the objectives. Easements can be a very effective tool for protecting riparian corridors. Conservation easements can be used to specify management practices, but monitoring and enforcement can be very difficult, so easements work best when monitoring is inexpensive. An easement “will not tell a landowner what to do, but it does tell him what he can’t do.” Easements are most effective when the easement use restrictions can be easily observed, and where the restrictions are not very costly or restrictive for the existing land use.

During a joint meeting of the IEAB and the ISRP, several ISRP members expressed concerns about using conservation easements held by land trusts because of the loss of control over how the land is managed compared to fee simple land acquisitions by BPA. This seems to be one of the more important limitations of relying on contracts rather than ownership to preserve habitat.

Settlement and land management agreements. A settlement agreement resolves a lawsuit (or a legal dispute prior to filing a complaint or petition) without going forward to a final court judgment. Settlement agreements are usually negotiated by the parties, and may be subject to approval by a court.

Settlement agreements have proven to be a very useful tool for BPA to meet their required habitat mitigation quota. BPA reached agreement with the State of Montana on a lump sum payment, which Montana uses to acquire and manage habitat land. In return Montana agreed that BPA had satisfied its mitigation obligations in that state.

Similarly, BPA reached agreement with the State of Idaho and the Nez Perce Tribe that a lump sum payment used to acquire and manage land would satisfy the wildlife habitat mitigation obligations incurred for the construction of Dworshak Dam and Reservoir.

Such settlement agreements have a real advantage to BPA, since they bring closure to the need to provide habitat mitigation for past dam construction, and because they transfer the responsibility for acquiring and managing the habitat land to another entity such as a state or tribe.

The possible uses of settlement agreements and land management agreements go beyond the examples cited above. When federal environmental regulations are violated, the result is often litigation, and the litigation often ends in a settlement agreement. Many of these settlement agreements have habitat consequences, and might provide a mechanism to help achieve Council and BPA habitat objectives.

Habitat Conservation Plans. Habitat conservation plans are agreements between a non-Federal entity (usually private landowners and/or local governments) and the “Agencies” (the US Fish and Wildlife Service and/or National Oceanic and Atmospheric Administration) responsible for Endangered Species protection. If the landowners and local governments can collaboratively agree with the Agencies on a habitat conservation plan that will conserve the species, they are granted an “incidental take” permit and will not later be charged with unintended taking.

The Agencies encourage the development of habitat conservation plans, since this is one way to collaboratively promote habitat protection and improvement, and because this is one of the few tools the Agencies have to protect the habitat of listed species on private land. Landowners and local governments like habitat conservation plans because the plan gives them certainty that allowable development can proceed with “no surprises.” The no surprises rule only applies to species that are expressly included in the habitat conservation plan, so the process encourages planners to take a broad look at all species of potential concern whether listed or not.

HCPs have not been used to mitigate for FCRPS impacts on wildlife, and BPA and the Council are not normally parties to a habitat conservation plan. However, the Council and BPA habitat interests do overlap with the habitat interests of FWS and NOAA, meaning that it may be worthwhile to look at the possibilities of partnering.

Land leases. One alternative to acquiring fee simple title to land is to lease land from willing owners. A lease is a contract which conveys specified uses of land to the lessee for a specified time period. Some owners of land with desirable habitat values may be willing to lease the land, but are not willing or ready to sell it or put a conservation easement on it. The terms of the lease will stipulate the duration of the agreement, the rights acquired by the lessee and the rights retained by the lessor, and the payment required. A lease may convey only some of the land use rights. A lease might convey hunting rights, the right for public access to a stream, or the right to build a fence to exclude cattle from the stream.

Leases might be used in conjunction with some of the other tools described in this paper. For example, a landowner might be willing to lease land for 5 years, at which time a sale or a conservation easement is anticipated.

The fixed duration of a lease may be a problem for the BPA habitat mitigation plan, which requires the acquisition of permanent habitat. In practice BPA has interpreted permanent as being more than 60 years, so very long-term leases would qualify and might be cost effective depending on the terms of the lease. There are budget implications for BPA since land that is purchased is a capital expenditure while payments for leasing land comes from the agency's annual budget, and BPA has a limit on the amount of debt it can take on.

Options to purchase and right of first refusal. An option to purchase gives the holder the right to buy a specified parcel of land at a specified time and predetermined price. Right of first refusal gives the holder the right to meet any other purchase offer before the proposed offer is accepted.

If a landowner is not ready to sell a property now, but expects to be willing to sell at a specified time in the future, then selling an option to purchase may be appropriate. Likewise, if the needs of the purchasing government agency are satisfied by buying later, rather than sooner, so long as the later availability is assured, then buying an option may be appropriate. Options can also preserve the ability to purchase or lease land in the future, in situations where procedures for purchase or lease can be lengthy.

In visualizing options as a part of BPA's habitat mitigation program, options are sometimes a critical tool for preserving habitat preservation opportunities. There may be budgetary reasons to use purchase options to shift purchase expenditures from one year to another. Purchase of options might be linked to subsequent fee simple property acquisition, or to anticipated acquisition of a conservation easement. Land trusts sometimes use options to encumber land for later acquisition.

Purchase of Development Rights (PDR) and Transfer of Development Rights (TDR). PDR and TDR programs generally operate at the local level. For a PDR program, a local unit of government acquires the development rights from willing landowners, usually preserving agricultural land and open space, and perhaps in the process preserving habitat values. These programs to purchase development rights are usually financed by local taxes. Except for the local government involvement and local tax financing, this option bears a strong resemblance to purchased conservation easements.

A program for transfer of development rights is also a local government program, where there are both buyers and sellers of the rights to develop. The municipality usually designates TDR selling areas where it wants to promote low density and open space, and TDR buying areas where it wants to promote development of a higher density than would be allowed as a use of right. Generally a developer who needs TDRs will buy them directly from landowners who hold excess TDRs, although in some cases the municipality may play an intermediary role, buying from willing sellers and selling to developers. In most cases the role of the municipality is as facilitator, rule-maker and regulator, not purchaser.

Because they are local programs, PDR programs, and especially TDR programs, are closely tied to local land use planning and local zoning processes, which provide the regulations and incentives that make the programs work. In order for a market for TDRs to function, development regulations must be quite restrictive in the base case so developers are forced to buy development rights from willing sellers to achieve a desirable intensity of development.

In addition to the purchase proceeds, sellers of development rights may reap property tax and estate tax benefits because selling development rights will reduce the value of the land.

Despite that fact that PDR and TDR programs generally operate at a local level, they may affect habitat values, suggesting that facilitation, partnering, and even financing by BPA might be worth considering.

Tradable environmental credits. Tradable environmental credits might be thought of as a generalization of the TDR program to other environmental attributes. The most familiar of these market-based regulatory programs limit the rights to emit specific air pollutants in a given region, and allow market forces to move these rights to the highest valued users. It is argued that these market-based programs will result in considerable savings over traditional command and control regulations. In principle, one could visualize tradable credits being applied to discharge of water pollutants and other forms of environmental degradation. One could even think of water markets as an extension of these principles.

Again, it is unclear whether there is an appropriate niche for the Council and BPA in these environmental credit programs, beyond a possible role in facilitating and partnering. If participating in a tradable environmental credits program allows BPA to assure some wildlife mitigation benefits, then an argument could be made that this should count toward its target mitigation requirement.

Federal farm programs. The USDA has a number of programs for land retirement and land conservation. Many of these programs are specifically designed to preserve and enhance the habitat value of cropland. For example, the Council has funded about seven fish habitat enhancement projects on lands where Conservation Reserve Program conservation agreements were signed for 10-15 years; primarily in the Columbia Plateau area of Oregon. Those projects enjoy a large cost-share from the USDA and provide protection of riparian habitat in agricultural areas.

From the perspective of NPCC and BPA wildlife habitat programs, these USDA programs have a problem because they are short-term. Most of the USDA farmland conservation involves contractual terms that range from a few years to 10, 15, or 20 years duration. Only a few of the USDA programs (the Wetlands Reserve Program (WRP) and the Farmland Protection Program (FPP)) allow the possibility of 30 year or even perpetual contracts. Thus most of the more commonly used USDA programs do not satisfy BPA's definition of permanent habitat protection.

It may be worthwhile to develop ways to coordinate USDA programs with some of the other habitat acquisition programs. It might be possible to work out an agreement with a landowner to enroll land in a USDA program for ten years, at which time the landowner agrees to implement a conservation easement with BPA and a local land trust. Other such combinations might also work, and might provide opportunities for leveraging BPA's limited budget for habitat preservation. If such combinations are assured by contract, this should provide the durability of protection needed to count the land for BPA's habitat protection program.

Certification programs. Green certification programs, generally run by industry groupings, are drawing attention as market-based alternatives to promote environmental protection, conservation and sustainability. The intent of these programs is to facilitate consumer selection of products that experts have judged to be sensitive to the environment. While some of these programs have been criticized as "greenscam", they are a growing factor in markets for consumer products.

Certification of forest products is one program that seems relevant to the habitat protection interests of the NPCC and BPA. The Forest Stewardship Council (an international grouping of environmental non-governmental organizations) developed the first forestry certification standards in 1991. This was followed shortly by the Sustainable Forestry Initiative, a forest-industry promoted program. The Forest Stewardship Council has the most participating certified timber companies, while the Sustainable Forestry Initiative has the most land under certification.

Another certification that appears to be very relevant is the "Salmon Safe" program. This program certifies farms, wineries, corporate campuses, parks and other areas as meeting primarily water standards for safety to salmon.

Since certification programs are voluntary, private and non-governmental, any role for NPCC and BPA would probably be partnering, informational and promotional.

Programs to acquire water rights and convert them to instream use. Water is a critical element of habitat for both fish and wildlife. Many streams have been appropriated to the point that instream flows are a critical limit on the habitat value even in normal (average water) years. In recent years, several programs have been developed to acquire water rights, and to use these rights to enhance instream flows.

Section 4 of this report briefly describes the role of the Oregon Water Trust in helping to broker this kind of transaction. Similar transactions are occurring under the sponsorship of the Washington Water Trust, and in Idaho using the vehicle of BPA salmon recovery funding.

While the salmon motivated transactions undoubtedly also have wildlife benefits, there is apparently no mechanism in place for BPA to claim wildlife mitigation credits for these transactions. This appears to be a fruitful area for partnering and program coordination.

B. Evaluation criteria for assessing alternative approaches

A number of criteria may be used to assess alternative approaches to habitat protection. These include cost-effectiveness, certainty of protection, durability of protection, ability to finance, economies of scale and scope, opportunities for partnerships and leveraging, incentives for landowner participation and community acceptability.

Cost-effectiveness. Cost-effectiveness is one of the most important criteria for ranking the alternative strategies for preserving habitat values. To measure program cost-effectiveness, key measures of program effectiveness (outcomes) must be identified, and the costs of the alternative strategies that would achieve those outcomes compared. The cost effective strategy is the alternative that achieves program objectives at the lowest cost.

Section §4(h)(6)(C) of the Northwest Power Act requires that the Council "will utilize, where equally effective alternative means of achieving the same sound biological objective exist, the alternative with the minimum economic cost." Section §4(h)(10)(D)(vi) states that "in making its recommendations to BPA, the Council shall determine whether the projects employ cost-effective measures to achieve program objectives."

Despite its central importance, it is often a challenge to do cost effectiveness analysis of a program to preserve habitat, since both effectiveness and costs prove rather difficult to measure. Should effectiveness be measured as numbers of acres or number of stream miles protected, as numbers of birds or number of fish produced, or should some other measure of effectiveness be used? If the measure chosen is a biological one, this brings uncertainty into the picture, because it is often difficult to link habitat measures to biological results such as fish or bird numbers. Both BPA and the ISRP seem to be uneasy about whether the "habitat units" measure now being used to quantify BPA's habitat mitigation requirement corresponds to defensible biological goals. Certainly, BPA would prefer to select habitat preservation measures with more certain and more biologically defensible expected results.

The way BPA calculates habitat units makes it difficult to measure project effectiveness. Since habitat units are calculated for selected target species, it raises the question whether habitat units for species A are additive to habitat units for species B. Is adding another species A habitat unit equally "effective" as adding another species B habitat unit? This raises the possibility that the BPA fish and wildlife program may find itself trading off one species against another in the competition for limited rehabilitation funds. This issue of species tradeoff in habitat rehabilitation goes beyond just the BPA fish and wildlife program. For example, habitat programs aimed at recovery of listed salmon species may also result in tradeoffs of one species against another.

It is also a challenge to measure the costs of habitat protection programs. In order to avoid comparing apples to oranges, the costs of the alternative programs must be estimated on a

comparable basis. Generally this means looking at the cost of each project over its lifetime –presumably in perpetuity since BPA is mainly interested in permanent habitat acquisition. Fee simple acquisition would mean a lump sum payment up front, followed by management expenses through the future years. A conservation easement might also need an initial lump sum payment, but if it is transferred to a land trust, along with a management endowment, the trust may agree to cover the ongoing management and enforcement costs. (This does not mean that the management is thereafter “free”, but it would or could move off BPA’s budget.) A program to lease habitat would most likely mean an obligation to make ongoing annual payments in future years. Land improvements (say a fence to keep livestock out of a stream) will have an initial cost, ongoing maintenance costs, and a finite lifetime after which they will have to be replaced. The uncertainty of costs is also an issue. The upfront costs will be known with a fair degree of certainty. However, the ongoing management and enforcement costs will be less certain. The future costs of maintaining an ongoing portfolio of short-term leases of habitat would depend on future economic conditions, making it quite uncertain.

To compare the cost effectiveness of alternative ways of acquiring habitat protection, one must put their different time-streams of costs on a comparable basis. This means looking at either the present value of the future cost stream or the annual equivalent value. The costs will include the initial acquisition price, the transaction costs of the acquisition, the ongoing costs of managing acquired land, and the ongoing costs of managing and enforcing an easement. In some cases these costs will be partially offset by future revenues from payments for use of the land, and in some cases there will be revenues from the subsequent sale of some of the acquired land.

The question of what discount rate to use is always a contentious one. For BPA, a reasonable interest rate to use is the rate certified annually by the Treasury Department for use by federal agencies in evaluating federal water projects (<http://www.publicdebt.treas.gov/opd/opdirbr.htm>).

Certainty and durability of protection. It is desirable that habitat protection be very certain and very durable. Presently BPA has a strong preference for fee simple acquisitions rather than conservation easements. The agency is more confident that land will be effectively managed for habitat if it owns the land, compared to land with a conservation easement controlled by a land trust. Potential enforcement problems with successor owners, uncertainty about land trust management practices and uncertainty about future financial and management stability of land trusts all contribute to the uncertainty of relying on conservation easements for habitat protection. Of course these uncertainties must be balanced against the possible lower costs of conservation easements and their possible greater attractiveness to landowners and acceptability to the community.

BPA’s fish and wildlife mitigation program requires it to achieve permanent mitigation of the effects of some of its dams. In practice, BPA has interpreted permanent as being 60 years or more. This has meant, however, that habitat protection using leased land has not been extensively used by BPA.

As noted above, one short-term tool, the option to buy, could reasonably be used to tie up land prior to an expected future fee simple acquisition or an expected future conservation easement. Using options in this way should satisfy BPA’s need for permanent mitigation, and perhaps at

lower cost than initial, outright acquisition.

It may be worthwhile considering whether leases could also be used in combination with other methods of habitat preservation, or possibly as a portfolio of habitat leases that may change through time.

Ability to finance under the Fish and Wildlife program or other programs. The specifics of the laws and budgets that agencies operate under will affect their choice of how to acquire fish and wildlife habitat. BPA is a self-financed federal agency that recovers its costs from sales of power, but for capital spending BPA also has access to a limited amount of borrowing from the federal treasury. To the extent that fee simple land acquisition is treated as a capital expense, this means it has a much smaller impact on BPA's power rates, but it also uses a portion of Bonneville's limited borrowing authority. Annual expenses for such things as lease payments, land management, and easement enforcement will have to come out of the agency's annual budget. However, if these annual management expenses are provided for by a one-time endowment payment, then one could argue that they become capital expenses.

Our discussion with Peter Paquet, the Council's Manager for Wildlife and Resident Fish, indicated that policy changes are being considered so that if BPA gets habitat unit credits from a project, the agency will be able to capitalize that project.

Economies of scale and scope. Owning habitat land and holding conservation easements involve substantial costs for land management and enforcement, and these costs depend on the scale and configuration of the parcels. There are economies of scale to land management – large parcels cost less per acre to manage than small ones. Scattered parcels are more expensive to manage than contiguous ones. It may make sense to acquire a small parcel contiguous to existing holdings, while acquiring a similar small non-contiguous parcel might not make sense.

Similarly, it may make sense for an agency that already has land management responsibilities to acquire more fee simple land for habitat protection. However, an agency that does not already have land management responsibilities may be better served by encouraging and funding conservation easements to be held and managed by another government agency that already has land management responsibilities (such as the state or federal fish and wildlife or parks agencies) or by a land trust.

Opportunities for partnerships and leveraged funding. Several opportunities for partnering and possibly for leveraged funding were mentioned above. These include partnering with other federal agencies to influence the nature and application of settlement agreements, habitat conservation plans, and federal farm programs. The partnering might be with local agencies to influence the terms of purchase of development rights and transfer of development rights programs, or with private activities such as industry certification programs.

Incentives for landowner participation. There are a number of reasons why a landowner might want to participate in one of these habitat protection programs. For the willing seller of fee simple interest in land, one presumes that the selling price was incentive enough to induce participation. The picture is more complicated for a conservation easement. If the easement is

purchased, then the amount of the payment is one incentive. If the easement is donated, then the income tax deductibility of the gift is an incentive so long as the landowner has enough income to have an income tax liability that the donation can be used to offset. In either case, there may be property tax and estate tax incentives.

All of these methods for habitat preservation have one common thread – they benefit from landowners willingness to invest in conservation. Most landowners tend to appreciate wild habitat, and they appreciate the species that depend on that habitat. Most landowners are willing to take action to protect habitat, so long as they don't face too many offsetting costs, or so long as they are compensated adequately.

Community acceptability of ownership. Any actions taken by a federal agency to acquire or preserve habitat will be a matter of intense interest to the local community. In the west, where so much land is already under federal ownership, additional federal land acquisition may be perceived negatively. Even given considerable personal incentives to participate in a habitat preservation program, many landowners will be reluctant to participate if there is strong neighborhood opposition. Organizations that are locally based – land trusts organized and run by local people, local municipalities, local Indian tribes – are likely to be perceived as more sensitive to local needs and local culture and are likely to be viewed more favorably.

The biggest concern is often with the tax impacts on local governments. If the government acquires fee simple ownership of habitat land, this removes land from the tax roles, meaning that all other owners of private land in the area will end up paying more taxes to support local services such as roads, schools and law enforcement. If the acquisition is through a conservation easement held by a local land trust, then there is less of a tax impact since the remainder of the land value remains on the tax roles. Nonprofit holders of land or conservation easements sometimes enter into agreements with local governments to continue paying property taxes or payments in lieu of taxes in order to reduce this local fiscal impact.

Other issues that often concern the local community include issues of public access, water use, weed control, and the possibility that restricting economic activity on this parcel may affect the local economy.

C. A proposal to rank the approaches using these criteria

One of the most important points that the IEAB wishes to make in this report is that each of the alternative methods for acquiring and protecting habitat should be evaluated according to each of the suggested criteria. The assessment of which protection method is best will be case-specific – it will depend on the attributes of the land and on the needs of the participants involved. Also, each method of habitat acquisition has advantages and disadvantages so that no single method will be uniquely better. The empty table presented as Appendix 4 is intended as a template for this evaluation.

We will leave it to a possible follow-on task to flesh out these evaluation criteria, and perhaps to fill in the blank table for one or more example cases. A follow-on study would allow us to address several related issues, such as:

- what relative weight should be given to the alternative evaluation criteria,
- what are the distributional consequences of alternative acquisition methods on different stakeholders, and
- how do these issues relate to the relative absence of monitoring of the effectiveness of past habitat acquisitions.

4. Examples

Many non-profit organizations and government agencies are actively involved in preserving and restoring habitat in the Columbia Basin. BPA has funded a number of projects, such as the Columbia Basin Water Transactions Program and the Lower Columbia Estuary project, that involve partnerships with these organizations. The following examples are based on an IEAB meeting on March 15, 2006 with three experts on habitat protection³:

William Eadie, Real Estate Negotiator, Metro Parks and Greenspaces Program
 Ian Sinks, Conservation Director, Columbia Land Trust
 Fritz Paulus, Executive Director, Oregon Water Trust

Metro's Open Spaces Acquisition Program. Metro, a regional government that encompasses 25 cities within the Portland metropolitan area, used funds from a 1995 natural areas bond measure to purchase more than 8,000 acres within the region. Metro manages these properties or it enters into intergovernmental management agreements. Metro's objective has been to preserve land for its habitat value with passive recreation (bird watching, interpretive centers) occurring on some properties. Target areas are identified using a scientific assessment of their habitat value.

Metro has primarily used fee simple acquisition although it has entered into conservation easements, life estates, estates for years (where Metro owns the property and allows the original owner to live in the house for a specified period of time), and lot line divisions (where the property is divided so the house and land are in different parcels, and the land is protected).

Metro is proposing a ballot measure for November 2006 that will raise additional funds for land acquisition. It is anticipated that 80% of the funds raised from the ballot measure -- approximately \$165 million-- will be used for fee simple acquisitions. Metro will seek to leverage funds from other sources which could provide a partnering opportunity for BPA with the limited dollars that BPA spends in the Willamette relative to the rest of the Basin.

Columbia Land Trust. Columbia Land Trust (CLT) is a regional land trust based in Vancouver, Washington. CLT focuses on the Columbia River region and priority areas outside the region such as Willapa Bay, Grays River, and Youngs Bay. CLT has more than 7,000 acres in conservation and has received funding from BPA through the Lower Columbia Estuary project to acquire 1,000 acres of marshland area that it is actively restoring and monitoring. BPA is receiving habitat unit credits for the Grays River project and for Crims Island.

³ The IEAB also met on April 18, 2005 with Geoff Roach, the Director of the Trust for Public Land's Oregon Field Office.

In addition to using conservation easements, the CLT recently entered into a 50-year conservation lease that allowed CLT to restore lands that would otherwise be unavailable. The tax benefits from a conservation lease are uncertain, and the lease provides more flexibility to the lessee than an easement, so this approach may not be attractive to many property owners and would not satisfy the durability of protection required for BPA's program. A conservation lease, however, could be combined with an agreement for a future conservation easement or an option for future fee simple acquisition.

CLT is a non-profit organization and is therefore not subject to property taxes. It has agreed, however, to pay property taxes and to have its properties assessed at their full market value (usually based on an open spaces zoning). Properties are open for public access with prior notification; holdings in Klickitat County have been used for hunting.

While conservation easements are permanent, monitoring and enforcement can be expensive with legal costs of a contested conservation easement estimated at \$100,000. Using an easement to require certain management practices, for example, sustainable forest management, may be difficult because this objective may not be clearly understood by all parties involved in the transaction. Conservation easements can be an effective tool when management objectives are clear such as for protecting riparian corridors.

CLT makes an annual visit to each property and maintains a close relationship with landowners. However, the transfer of property with a conservation easement to a new landowner raises questions about the certainty of protection. Some land trusts have conservation buyer programs where the trust markets a property with a conservation easement and helps find a buyer with a "conservation ethic."

Columbia Basin Water Transactions Program (CBWTP). The CBWTP was established in 2002 in response to Reasonable and Prudent Alternative 151 of the 2000 Federal Columbia River Power System Biological Opinion and Provision A.8 of the Council's 2000 Fish and Wildlife Program. It is administered through a partnership between BPA and the National Fish and Wildlife Foundation (NFWF), with an objective of funding water transactions that restore streamflow on ecologically significant Columbia Basin tributaries. Inadequate streamflows are cited by many subbasin plans as a key factor limiting the productivity of both anadromous and resident fish species. The CBWTP has recently expanded its efforts beyond water transactions to riparian conservation easements in the Columbia Cascade Province.

The CBWTP works through nine qualified local entities (QLEs). The QLEs include three state water agencies and six nonprofit organizations, one of which is the Oregon Water Trust, described below. These QLEs submit proposals to the CBWTP for funding to implement and monitor water transactions in priority watersheds throughout the Columbia Basin. Since 2002, the QLEs have completed over 100 water right transactions of varying terms through a number of methods, including split-season leases, source switches, permanent purchases and water produced through significant capital investments in irrigation efficiency projects. The number of transactions showed a declining trend for the first three years of the CBWTP, and has now leveled out (BPA Proposal 200201301).

Oregon Water Trust. The Oregon Water Trust (OWT) is one of the QLEs participating in the CBWTP. Based in Portland, Oregon, it was the first water trust in the United States. OWT acquires water rights for instream flows through gifts, leases or purchases.

OWT's priorities include smaller tributary streams where small amounts of water can have a big impact. Their focus has been on salmon, steelhead, and resident trout bearing streams with a recent focus on bull trout.

OWT uses dry lease options (time limited transfer of rights), and forbearance agreements (an agreement not to divert), split-season leases (a shut-off date is negotiated) in addition to more traditional approaches, such as leases and purchases, to achieve its objectives.

The matching of land acquisitions with water rights is an area for additional research and represents a potential partnering opportunity for BPA. Under this approach, land could be purchased and the water right changed to allow for a split-season right. Easements could also be placed on riparian corridors and the land enrolled in the Conservation Reserve Program. The land would then be sold with the restrictions in place.

Appendix 1: Annotated Bibliography with Relevant Literature

Byers, Michelle and Karin Marchetti Ponte, Conservation Easement Handbook, 2nd Edition, The Land Trust Alliance and The Trust for Public Land, 2005.

This is the “bible” for anyone interested in conservation easements. It offers information useful to landowners considering entering into a conservation easement and information useful to land trusts interested in promoting and managing conservation easements. The volume provides case studies, model agreements and IRS guidelines.

It will be left to a future task to expand on this section.

Appendix 2: Links to Related Web Sites

BPA’s wildlife mitigation page:

http://www.efw.bpa.gov/Integrated_Fish_and_Wildlife_Program/wildlife.aspx

Council’s Fish and Wildlife Program:

<http://www.nwcouncil.org/library/2000/2000-19/AppendixC.pdf>

<http://www.nwcouncil.org/library/2000/2000-19/frame.htm>

(In the second link use the index at the left side of the screen to go to “Basinwide Provisions” section D.7. Also look at “Implementation Provisions” section A.8.)

National Land Trust Organizations:

Land Trust Alliance: <http://www.lta.org/index.shtml>

Trust for Public Land: <http://www.tpl.org/>

The Nature Conservancy: <http://www.nature.org/>

Local Land Trusts:

Columbia Land Trust: <http://www.columbialandtrust.org/>

Columbia Basin Trust: <http://www.cbt.org/main/default.asp>

Water Transactions Programs

Columbia Basin Water Transactions Program: <http://www.cbwtp.org/jsp/cbwtp/program.jsp>

CBWTP website has links to QLE partners

Certification programs:

Salmon Safe: <http://www.nature.org/>

Forest Stewardship Council: <http://www.fsc.org>

Sustainable Forestry Initiative: <http://www.aboutsfi.org/core.asp>

Environmental credit programs:

Willamette Partnership: <http://clev17.com/~willamet/?q=>

Ecotrust: <http://www.ecotrust.org/forestry/markets/>

Programs by other government agencies:

Oregon Watershed Enhancement Board: <http://www.oregon.gov/OWEB/index.shtml>

Metro: <http://www.metro-region.org/pssp.cfm?ProgServID=5>

Interest rates for Federal Water Projects:

<http://www.publicdebt.treas.gov/opd/opdirbr.htm>

Appendix 4: Evaluation of Alternative Wildlife Protection Methods

	Cost-effectiveness.	Certainty and Durability of protection.	Ability to finance under the Fish and Wildlife program or other programs.	Economies of Scale and Scope	Opportunities for partnerships and leveraged funding.	Incentives for landowner participation.	Community acceptability of ownership
Fee simple acquisitions.							
Conservation easements.							
Settlement agreements.							
Habitat Conservation Plans.							
Land leases							
Options to purchase.							
PDR and TDR Programs							
Tradable environmental credits							
Federal farm programs							
Certification programs.							