Making Mitigation Work

The Report of the Mitigation that Works Forum December 2008

DEPARTMENT OF ECOLOGY
State of Washington

This report is available on the Department of Ecology Web site at:
www.ecy.wa.gov/biblio/0806018.html

For a printed copy of this report, order from the website above, or contact:
Address: WA State Dept. of Ecology, PO Box 47600, Olympia WA 98504-7600
E-mail: tisc461@ecy.wa.gov
Phone: (360) 407-6096
Refer to Publication Number #08-06-018

All photographs, unless where noted, were taken by Andy McMillan, Dept. of Ecology, and are used with his permission.

Front cover: An undisturbed wetland in Turnbull National Wildlife Refuge near Cheney, WA.

Back cover: Pierce County Recycling, Composting and Disposal constructed 65 acres of new wetlands and wetland buffers to mitigate for solid waste landfill expansion that will fill 21.5 acres of wetland over the next 20 years. Photo courtesy of The Watershed Company.

Making Mitigation Work
The Report of the Mitigation that Works Forum

Washington State Department of Ecology
Olympia, Washington
December 2008

Publication No. 08-06-018

This report prepared under Ecology Contract #C0800201
by ESA and Ross & Associates Environmental Consulting, Ltd.

MITIGATION FORUM PARTICIPANTS

Neil Aaland, Washington State Association of Counties

Dee Arntz, Audubon Washington, Washington Wetlands Network

Josh Baldi, Washington State Department of Ecology

Jessi Belston, Port of Vancouver

Allison Butcher, Master Builders Association of King and Snohomish Counties

Margen Carlsen, Washington Department of Fish and Wildlife

Michelle Connor, Cascade Land Conservancy

Rich Doenges, Washington Department of Natural Resources

Jim Fox, Washington Recreation and Conservation Office

John Grettenberger, U.S. Fish & Wildlife Service, Pacific Region

Tim Gugerty, Association of Washington Cities

Steve Landino, NOAA Fisheries

Faith Lumsden, Governor's Office of Regulatory Assistance

Douglas Peters, Department of Community Trade and Economic Development

Dave Remlinger, Skykomish Habitat, LLC

Bill Robinson, The Nature Conservancy

Ron Shultz, Washington State Conservation Commission

Jodi Slavik, Building Industry Association of Washington

John Stuhlmiller, Washington Farm Bureau

Michael Szerlog, U.S. EPA, Region 10

Chris Townsend, Puget Sound Partnership

Muffy Walker, U.S. Army Corps of Engineers Seattle District

Megan White, Washington State Department of Transportation

TABLE OF CONTENTS

SUMMARY OF OUR RECOMMENDATIONS

1. *Reinforce the importance of avoiding and minimizing impacts to resources that are highly valuable and difficult to replace.*
2. *Establish an ecosystem- or watershed-based approach to mitigation.*
3. *Develop and implement a wide variety of compensatory mitigation tools.*
4. *Develop more coordinated, predictable approaches to reviewing development projects and associated mitigation plans.*
5. *Support making mitigation work.*

An intertidal forested wetland at Nisqually National Wildlife Refuge, Olympia, WA.

THE CHARGE TO THE FORUM

Aquatic resources mitigation should create a real opportunity to sustain both our economic vitality and our environmental resources. Unfortunately, this opportunity is seldom realized and we continue to erode the quality and quantity of our wetlands and other aquatic resources, or lose them altogether. There is ample evidence and broad agreement among all members that our return on this spending is low:

- Estimates of mitigation success vary, but local, regional, and national studies show that most mitigation projects fail to fully achieve their intended goals and are not effectively replacing lost or damaged resources, habitats, and functions. We are not even close to achieving the goal of no net loss for wetlands and other aquatic habitats.
- Land use planning and permit decisions are not adequately informed by an understanding of ecosystem processes or watershed conditions. Opportunities to direct mitigation dollars to the most beneficial restoration and conservation efforts likely are being lost. As a result we may be inadvertently driving development into the areas that are more appropriate and suited for restoration or conservation. At the same time, there is not confidence that conservation and restoration priorities are harmonized with other local efforts to maintain a buildable lands inventory and protect resource lands, especially agricultural lands.
- The process for reviewing and permitting development projects and making mitigation decisions lacks transparency and is too slow, complex, costly, and unpredictable.
- Permit decisions and mitigation requirements often are fragmented across multiple federal, state, and local decision makers, creating a

confusing patchwork of standards and impeding efforts to recognize or act upon landscape level impacts.

- Alternatives to on-site mitigation have not been adequately explored or put into place, limiting choices and encouraging site-scale mitigation efforts even when these efforts are not likely to be sustainable over time. Local governments, especially cities, often are reluctant to approve off-site mitigation if it occurs outside their jurisdictional boundaries.
- There are few widely accepted tools or methods to identify and account for the multiple benefits that some, especially larger-scale, mitigation projects may offer.
- Long-standing regulatory approaches to mitigation fail to take advantage of the latest science on the benefits of ecosystem- or watershed-based actions.

Many of the problems with environmental mitigation are well studied and well understood. Over the years a number of multi-stakeholder groups have made recommendations to improve the mitigation process in Washington State and across the country. While some progress has been made to improve mitigation as a result of these efforts, there remains broad dissatisfaction with both the mitigation process and its environmental outcomes.

In this setting, the Mitigation that Works Forum was convened in December 2007 to develop and agree on a shared vision for successful mitigation and identify practical actions that could be taken to make all aspects of environmental mitigation work better and improve outcomes.

What is Mitigation?

Mitigation means reducing the severity of an action. As used in this document, mitigation refers to the process and measures taken to avoid, minimize and/or offset adverse impacts to aquatic and terrestrial habitats and species. Under Washington State law, proponents of development projects, including capital projects and development on private lands, must 'mitigate' impacts using the following sequence of actions (called the 'mitigation sequence').

1. Avoid the impact altogether by not taking a certain action or parts of an action;

2. Minimize impacts by limiting the degree or magnitude of the action and its implementation;

3. Rectify the impact by repairing, rehabilitating, or restoring the affected environment;

4. Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action;

5. Compensate for the impact by replacing, enhancing, or providing substitute resources or environments; and

6. Monitor the impact and take appropriate corrective measures.

This report addresses many aspects of mitigation. It places particular emphasis on the need to avoid impacts and provides recommendations for ensuring that our efforts to compensate for impacts are more successful.

OUR SHARED VISION OF SUCCESSFUL MITIGATION

The key element of our shared vision for successful mitigation is that it *works.* This means:

- Strong avoidance and minimization programs will reduce the need for compensatory mitigation.
- Communities will be assured that habitats and species are protected, that the quality and quantity of environmental resources will improve, and that resources will become self-sustaining over time.

- Businesses and development interests will have better choices about how and where to mitigate impacts, and more confidence that well-designed mitigation projects can be approved or disapproved in a predictable and timely fashion.
- Regulatory and permitting agencies will have the confidence, tools, and resources to make decisions efficiently, ensure that mitigation occurs in the places where it will produce the greatest ecological benefit, and monitor and enforce mitigation implementation so that environmental outcomes are achieved.

Mitigation that *works* will be recognized by the results it achieves. Our shared vision is that successful mitigation:

- Takes a data-driven ecosystem or watershed approach to offsetting development impacts and fully replacing like-kind ecosystem functions in the right ways and in the right places so we do more than simply "tread water" in terms of meeting the no net loss goals, but actually improve ecosystem functions and values.
- Is better integrated with local land use plans, regional transportation planning, and salmon recovery efforts, and supports the twin goals of sustaining resource lands and providing for growth.
- Focuses mitigation spending on the areas and functions that are sustainable, have the highest need for protection, and the highest potential for successful restoration, so that the health of watersheds improves over time.
- Is predictable and timely—because agency policies and decision-making processes have been clearly articulated providing clear and consistent paths to decision points; project proponents know in advance what to expect during the permitting process.
- Makes use of a broad set of compensatory mitigation options such as banking, in-lieu fee programs, and advance mitigation, in addition to off-site and traditional on-site approaches so that mitigation occurs in the locations that are most beneficial to natural processes in the watershed. In many cases, mitigation should occur close to, but not necessarily on, the sites where impacts occur.
- Relies on programmatic decisions where possible to further improve the efficiency of the permit process.

These words may seem familiar. In fact, these same outcomes have been sought by many past efforts to improve environmental mitigation. We emphasize that, in our view, this shared vision is NOT yet being widely achieved by regulatory agencies, permit decision makers, or project proponents. Many mitigation projects continue to be poorly sited, poorly designed and implemented, and poorly maintained (if they are maintained at all), and not enough attention has been devoted to monitoring, compliance, and adaptive management. As a result, ecological values and functions continue to be lost and the cumulative impact of many poor decisions (or failure to mitigate at all) is increasingly degrading watershed conditions, especially in developing areas.

We need a whole new way of approaching mitigation—moving away from the past narrow and often confrontational view of site-by-site piecemeal solutions, and towards a broader ecosystem or watershed scale view to achieve a more functional and resilient natural system. To achieve our vision of successful mitigation, significant changes are needed in state policies, implementation, and adaptive management strategies.

Bringing about the changes necessary to achieve our shared vision of successful mitigation forms the basis for our recommendations.

BUILDING ON RECENT IMPROVEMENTS

In our deliberations on successful mitigation we heard stories of failed programs and projects but also stories of progress. These stories of progress include:

- Ecology published guidance, *Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to Understand Watershed Processes*, to help communities implement watershed characterization. Ecology is actively assisting characterization efforts in several counties and cities.
- By taking advantage of state and federal grant funds, local communities, such as Whatcom County, developed specific watershed plans based on characterization work. The plans identify key areas for development, protection, and restoration to be integrated with local land use plans and regulations. One notable example includes the Birch Bay watershed management unit.
- The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) announced innovative new rules to promote no net loss of wetlands by improving wetland restoration and protection policies, increasing the effective use of wetland mitigation banks, and strengthening the requirements for the use of in-lieu fee and permittee-responsible mitigation. The new wetlands compensatory mitigation standards emphasize watershed-based approaches, promote innovation, and focus on results.
- Ecology, EPA, and the Corps are working on joint guidance to address when off-site mitigation is appropriate and how to make decisions about off-site mitigation.
- Ecology convened a Mitigation Banking Advisors group to facilitate completion of the state banking rules.

A mitigation site for Aberdeen Athletic Fields, Grays Harbor County, WA.
Photo courtesy of Perry Lund, Dept. of Ecology.

- NOAA Fisheries and U.S. Fish and Wildlife Service (USFWS), collectively the Services, are working with private banking interests to establish the state's first habitat bank that will provide credits for improvements in salmon production to aid in the recovery of threatened salmonid stocks.
- Some local governments, such as the City of Duvall, have updated their critical area regulations to allow and encourage use of mitigation banks and other mitigation tools.
- Some entities, such as the Port of Tacoma, have successfully used innovative mitigation approaches authorized under RCW 90.74 to provide advance mitigation for impacts to marine resources such as eelgrass and salmon habitat.
- The Washington State Department of Transportation (WSDOT) has used advance mitigation strategies to develop compensatory mitigation ahead of project impacts regulated by local, state, and federal laws. Using this approach, WSDOT has succeeded in developing ecosystem functions in advance of unavoidable impacts and successfully mitigated impacts to aquatic resources.
- The Washington State Governor's Office of Regulatory Assistance (ORA) has developed an Integrated Project Review and Mitigation Tools Initiative—an electronic permitting pilot project for Clark County that streamlines the permit application and review process and provides links to information on potential mitigation sites.
- Ecology, for the first time, has dedicated resources for mitigation compliance monitoring and enforcement. As a result, Ecology has verified the status of 100% of projects within two years of when the permit was issued. Problem sites have received technical assistance from Ecology staff. Technical assistance appears to be prompting higher likelihoods of mitigation success. A recent review of mitigation sites visited since mid-2006 (56 sites), revealed that 80% are predicted likely to achieve ecological success. Many of these sites are still quite young. This prediction assumes these sites will continue to steadily mature and that technical assistance and adaptive management will continue for the entire monitoring period.
- Wetland banks continue to increase in number around the state. Since 2004, four new banks have been certified by Ecology (three banks were certified prior to 2004). Another eight banks are in the certification process. There are also five banks operating in the state not subject to Ecology certification.

Successes like these begin to create a foundation for more improvements to mitigation programs and outcomes.

THE FORUM PROCESS

The Mitigation that Works Forum was convened by the Washington State Department of Ecology (Ecology). The Forum was made up of 22 members representing state and federal agencies with mitigation responsibilities, local governments, ports, business, environmental, and land use/conservation interests. Tribal government representatives were invited to participate in the Forum but, due to scheduling conflicts and other obligations, were not able to participate as often or as fully as they or Ecology would have liked. Tribes have a critical role in making mitigation work. Near the end of the Forum process, Tribes offered their perspective on improving mitigation (see Attachment 1).

The Forum met 11 times beginning in November 2007 and ending in October 2008. Meetings were open to the public and opportunities for public comment were provided at each meeting. Forum members heard presentations by experts and practitioners in mitigation, and engaged one another in dialogue to identify and focus their recommendations. A consultant team supported the Forum process by carrying out research, developing materials and facilitating meetings.

The Forum took a consensus-based approach to its deliberations. Rather than taking votes, which might have perpetuated a dynamic of winners and losers, Forum members engaged one another in dialogue and study to determine a set of recommendations they all can support. The materials used by the Forum and summaries of its meetings can be found on Ecology's Mitigation That Works web portal, http://www.ecy.wa.gov/mitigation.

A COMPREHENSIVE APPROACH

For purposes of developing a set of recommendations, we have divided the actions needed to make mitigation work into manageable "buckets" of related work. We emphasize that this should not be taken as a call to further compartmentalize or fragment the mitigation system. We anticipate that the guidance, training, and support functions called for in these recommendations will be integrated and applied across agencies and with tribal governments to the maximum extent possible. This type of integration and cross-agency and government-to-government commitment to taking similar evaluation and decision making approaches should be possible in every case contemplated by this report.

For example, the guidance documents contemplated in Actions 1.1, 2.5, 2.6, 3.1 and 3.5 might be combined into a single, integrated, multi-agency document. Similarly, the new policy statements called for in Actions 2.1 and 5.3 might be combined. Policy and guidance development, education, technical assistance, and outreach should be integrated or coordinated as much as possible to develop and present one comprehensive approach to improving mitigation processes and outcomes.

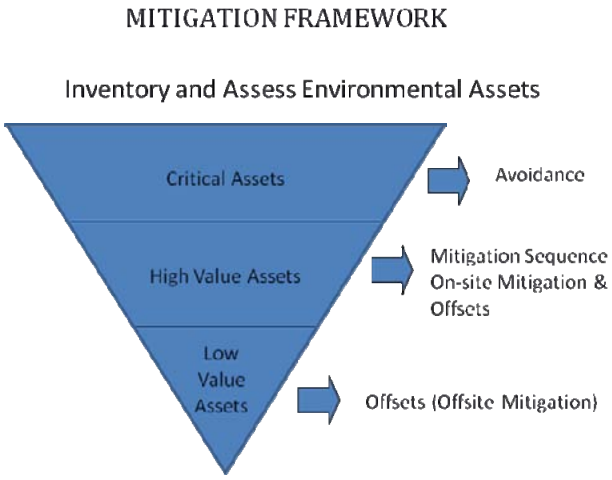
A mitigation project for impacts from Stafford Creek Prison. Newshkah Creek, Grays Harbor County, WA. Photo courtesy of Perry Lund, Dept. of Ecology.

RECOMMENDATION 1: REINFORCE THE IMPORTANCE OF AVOIDING AND MINIMIZING IMPACTS TO RESOURCES THAT ARE HIGHLY VALUABLE OR DIFFICULT TO REPLACE

One of the keys to meeting our goal of no net loss is preventing impacts before they occur. This is why permitting agencies at the local, state and federal levels have long followed the mitigation sequence, which requires avoiding and minimizing impacts as the first step in protecting wetlands and other aquatic resources, and why this sequence continues to be critical to successful mitigation programs. Impact avoidance is especially important when it comes to protecting aquatic resources that are exceptional, rare, unique, or have proven difficult or impossible to replace. Bogs, fens, vernal pools, native grasslands, and mature forested wetlands are examples of habitats that are becoming increasingly rare and are almost impossible to replicate. We cannot afford to lose any more of these systems, even small ones, and need to redouble our efforts to protect them. We also need to clearly communicate that some high value resources will be off-limits to development. We need to strengthen our approach to impact avoidance and minimization in these situations. This renewed emphasis on avoidance and minimization should be balanced and tailored to the value of the affected resources. It should recognize that complete impact avoidance may be impossible for some projects; in these cases minimizing impacts may be the best outcome. In all cases:

- High value resources identified through an appropriate watershed characterization should have a very high bar for impacts.
- Impacts to lower-value resources that have limited function, potential, and opportunity to be sustained should be considered within the context of the watershed and whether other mitigation/restoration projects would provide greater environmental benefits.

Recognition of a high-value resource depends heavily on watershed conditions. Different types of resources might be considered high value in different types of watersheds. For example, in some watersheds, resources that might otherwise be considered of lower-value may be critical and need diligent protection.



SHORT TERM ACTIONS

1.1. Create additional avoidance and minimization guidance

Ecology, the Washington Department of Fish and Wildlife (WDFW), the Corps, and EPA should work with local government planners, permit writers, and project proponents to develop a checklist of practical avoidance and minimization best practices. This should include suggestions on how to evaluate whether a wetland and other aquatic habitats that are "avoided" would be naturally sustainable considering adjacent project-related changes to drainage, vegetation, soils, and other features. It also should include a list of items to be considered in

A natural cedar bog near Quinault Lake, Olympic National Park, WA.

the early planning and review stages of a project (drainage plans, lot layout, road configuration, stormwater management approaches, vegetation retention, etc.) and tips on ecologically sensitive design that local planners can use when reviewing development applications. The goal of this effort is not to create a cookbook approach to avoidance and minimization, since every site is different, but rather to create a practical way for project proponents and local governments to document—and have confidence—in their avoidance and minimization decisions. The ORA project review tools and "lessons learned" described in Actions 2 and 3 also can help inform development of the best practices checklist and avoidance guidance.

The state and federal agencies should seek peer-to-peer engagement with tribal technical staff early in the development of this guidance. Prior to public review and comment on the guidance, the state and federal agencies should formally notify tribal governments at the executive level and consult with interested tribal governments.

The combination of this guidance with implementation of the actions in Recommendation 2 will enable more effective impact avoidance and minimization. The watershed characterization information and decision guidance prepared in response to Recommendation 2 will help permit reviewers more readily and reliably identify high-value resources and priority protection sites at the watershed and site scales; this guidance will help planners and permit writers efficiently review proposed avoidance and minimization activities.

1.2. Invest in conservation

Ecology, WDFW, the Washington Department of Natural Resources (DNR) and the Puget Sound Partnership (Partnership) should work with the federal government and non-governmental organizations to increase funding for acquisition and protection of priority areas, so they are "off-limits" to impacts. State conservation grant programs (the Recreation and Conservation Office [RCO], Ecology, the Washington State Conservation Commission, and WDFW) should align funding priorities with the conservation priorities identified in watershed characterizations. Funding priorities should also recognize projects that complement or leverage (but do not supplant) compensatory mitigation actions.

1.3. Develop a menu of techniques the marketplace can use to monetize the value of land with high ecological function

Ecology, WDFW, DNR, the Washington State Department of Community, Trade and Economic Development (CTED), and the Conservation Commission should work with local government planners, permit writers, and land owners to develop and pilot a menu of market-based

techniques that can be used to establish a true market value for land with high ecological function. This effort should build on the Conservation Commission's Conservation Markets project. At a minimum this work should explore the following:

- Direct payments for ecosystem services (restore or protect natural systems that provide water supply, cleaner air, water filtration services, habitat restoration, flood control).
- Ecosystem services markets (wetland banking, conservation banking, water banking, carbon credits).
- Tradable permits (cap and trade).
- Tradable development rights (Transfer Development Rights [TDRs], conservation easements).

RECOMMENDATION 2: ESTABLISH AN ECOSYSTEM OR WATERSHED-BASED APPROACH TO MITIGATION

There is clear evidence that one of the key causes of mitigation failure is inadequate understanding of how a mitigation site or project will be affected and shaped by the environment within which it exists. Too often decisions about where or how to "build" a mitigation site or project are dictated by factors of convenience, so we use whatever land is readily available and we implement complex engineered solutions to try to mimic natural systems. The Forum believes, and the scientific evidence suggests, that when mitigation is needed, better outcomes will be achieved by carefully considering ecosystem processes and watershed conditions when we locate and design mitigation sites and projects. Our recommendation echoes recent federal guidance on compensatory aquatic resource mitigation, which requires EPA and the Corps to consider watershed-based approaches in making mitigation decisions.

The fundamental goal of an ecosystem- or watershed-based approach to mitigation is to put mitigation in the "right place" in the landscape. Establishing such an approach to mitigation means that decisions about where and how to allow impacts and, when impacts are allowed, where and how to place mitigation will be based on an understanding of ecosystem processes and their effects on ecosystem functions. By integrating this information into land use decisions over time, we will improve the sustainability of planning, development, and mitigation efforts over approaches that consider impacts only on a project-by-project basis. By approaching mitigation at the ecosystem or watershed level, we will direct mitigation investments to the places and ecosystem processes that are most likely to be successful and meaningful, leveraging mitigation efforts to improve ecosystems over time. This is a notable departure from past approaches which tended to place mitigation on the same site where impacts occur

A watershed approach to planning ensures consideration of the broader processes that govern the formation of structure and function at the site scale.

("on-site" mitigation) regardless of whether the mitigation would be successful and sustainable over time or contribute in a meaningful way towards the overall health of watershed processes. The Forum supports the idea that mitigation generally should occur in proximity to impact sites—and that on-site mitigation is appropriate in some cases—but we eschew the practice of simply defaulting to on-site mitigation without understanding the broader landscape.

When we use the words "ecosystem- or watershed-based" to describe our preferred mitigation approach, we are recommending that mitigation decisions be based on an understanding of the ecological processes and the dynamic physical and chemical interactions that form and maintain the landscape. The geographic context for this broad understanding is most commonly a watershed. The term "watershed" should be construed generally as a geographic area within which all living things are inextricably linked by a common water course. As used here, a watershed could include a fairly small catchment (e.g., a sub-basin) or a larger drainage area, such as a Water Resource Inventory Area (WRIA).

A watershed approach is an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation actions address those needs. We can use a landscape perspective to identify the types and locations of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by development activities permits. This approach may involve consideration of landscape scale, historic and potential aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements.

In recommending watershed-based mitigation approaches, the Forum recognizes that the portion of any WRIA that is evaluated may vary depending on the specific ecological questions and issues being addressed. We also recognize that adequately addressing some issues such as terrestrial wildlife habitat and movement may require consideration of a different geographic unit—one that is not

Site of a proposed bulkhead enlargement project to protect the peninsula from coastal erosion. Many acres of high salt marsh would have been lost. Significant pre-application review modified project design, and impacts were avoided. Tokeland Peninsula, Pacific County, WA. Photo courtesy of Perry Lund, Dept. of Ecology.

necessarily defined by water and/or drainage and may encompass multiple watersheds.

The Forum believes that a watershed-based approach to mitigation is critical to facilitating more successful mitigation using a broad range of mitigation tools including mitigation banks, in-lieu fee programs, and permittee-responsible mitigation (including on- and off-site mitigation).

SHORT TERM ACTIONS

2.1. Articulate policy priorities for the use of watershed characterization information to expedite mitigation decisions

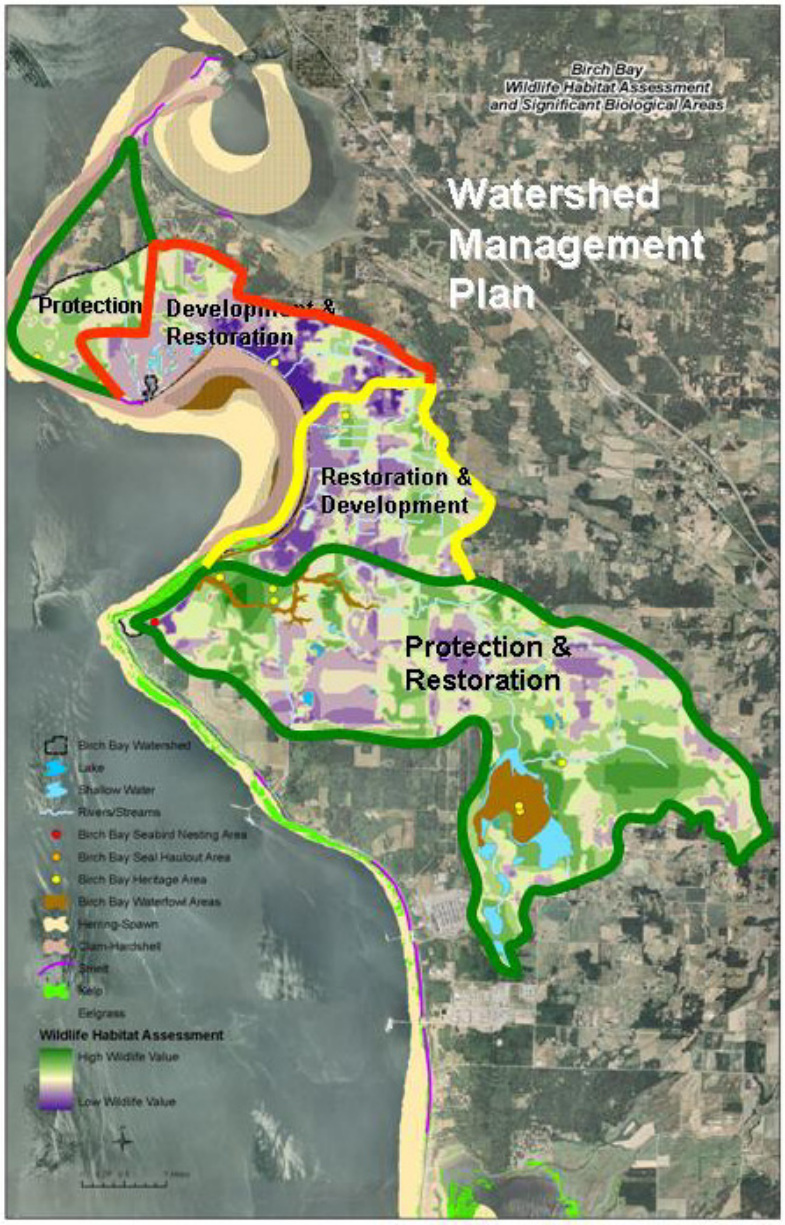
Ecology, WDFW, the Corps, and EPA should make a clear policy statement supporting the use of watershed characterizations as a means for making watershed-based mitigation decisions. This policy statement would build on and reiterate the guidance contained in the April 2008 federal rule on Compensatory Mitigation for Losses of Aquatic Resources (73 FR 19594). The policy statement also should indicate the importance and value of having a comprehensive inventory of potential mitigation sites to inform decision-making at the project level. State and federal agencies should establish the expectation (consistent with the new federal mitigation rule) that watershed characterization information will be used in state mitigation decisions, including decisions about when off-site mitigation is appropriate. The state should encourage local permit writers to rely on watershed characterization information, when available, in their decision making. Consistent with this new policy direction, Ecology and WDFW should clearly describe the process for how permit applicants and other project proponents (e.g., mitigation bankers) can obtain a timely mitigation decision by proposing projects that are consistent with the areas/sites identified in accordance with Actions 2.2 and 2.4.

2.2. Compile and expand watershed characterization information

Ecology, WDFW, and the Partnership, in cooperation with Tribes, local government planners, and permit writers, should compile existing watershed characterization information for cities and counties where characterizations have been completed, and should complete watershed characterizations in other areas. Characterization should evaluate three elements: water processes, local fish and wildlife habitat and connectivity, and land use build-out patterns. As a first priority, this work should be done for Puget Sound watersheds and high-growth watersheds outside the Puget Sound, including east of the Cascades. Coarse-scale characterization maps should be prepared to first identify key areas for restoration, protection, and development within these fast-growing watersheds. Subsequent characterization efforts should “drill down” to more precisely indicate: the high-priority areas for protection; ecologically-important areas that are minimally altered and can be effectively restored; unique, rare, or otherwise intrinsically-valuable resources; areas where more intensive development can occur without major additional adverse effects on water quality, water flow, or habitat; and areas where development pressures are most likely to conflict with or confound future mitigation and/or restoration efforts. This effort is not intended to supplant the excellent work done to prioritize salmon recovery projects or other resource management efforts, but to augment them with a broad characterization of watershed processes and functions for all species.

In its most basic form, the characterization information described above should be used to help identify areas that are priorities for acquisition (or protection via conservation easements), areas that are appropriate for restoration and/or highly suitable for mitigation/conservation banks, and areas where development can occur with less impact on or risk to ecosystem or watershed processes. Designation of protection and restoration areas should consider salmon recovery goals, conservation

of biodiversity, connectivity, and ecosystem adaptation to long-term stressors such as climate change. These types of areas, and the major resources in each, should be identified and mapped, with maps provided to federal, state, and local agencies, project proponents, Tribes, and the public. Where watershed characterization reveals major conflicts between ideal and actual land uses, planners and permit writers should acknowledge these conflicts and learn from these situations to reduce future siting conflicts. Local governments can and should use characterization information to support the development of local shoreline master plans and critical area ordinances. As described in 2.7, CTED, Ecology and WDFW should support pilot local government efforts to connect watershed characterization information with other ongoing land use planning efforts.



Map of Priority Protection, Restoration and Development Areas from the Birch Bay Pilot Study

An example of the type of characterization effort the Forum is recommending is Whatcom County's Birch Bay Characterization and Watershed Planning Pilot Study. The Birch Bay study was a collaborative effort by local, state, and federal agencies to create a comprehensive set of watershed management recommendations using integrated watershed characterization tools. The primary participants in the study were the Whatcom County Planning and Development Services Department, EPA, Ecology, WDFW, and the Partnership. The Birch Bay study provides preliminary recommendations for land use planning and resource management that will maintain—or preferably improve—the quality and condition of local wetland, stream, nearshore, and terrestrial resources in the Birch Bay watershed. The study had the following main components.

- The watershed was delineated into 32 drainage sub-basins based on surface water flows. The sub-basins were grouped into four Watershed Assessment Areas (WAAs) to identify management recommendations. Wetlands and streams within the WAAs were mapped and categorized at relatively fine resolution.

- A futures-based land use and development scenario was developed to understand potential development patterns within the basin based on current regulatory and zoning frameworks.
- Patterns of water, nitrogen, and pathogen movement through the watershed were identified to determine the relative importance of each basin for these processes.
- Fish and wildlife use and available habitat conditions within the watershed were assessed to provide greater context for understanding overall ecological conditions and future management options.
- A general framework was developed to depict the potential suitability of individual sub-basins for future development and to determine management priorities and recommendations for each sub-basin based on current conditions and anticipated build-out scenarios.

Whatcom County is planning to evaluate options for implementing the recommendations in the Birch Bay study in cooperation with watershed residents in the future. Those efforts may help to guide and refine future characterization efforts throughout the state.

2.3. Create and maintain a state-wide wetlands status and trends inventory

Building on the watershed characterization efforts described in Action 2.2, Ecology should develop a status and trends inventory for Washington wetlands. The effort should inventory the approximate amount and extent of existing wetlands using land cover data provided and maintained by the National Oceanic Atmospheric Administration (NOAA) as part of the Coastal Change and Analysis Program (C-CAP) and hydric soil data provided and maintained by the Natural Resource Conservation Service (NRCS). (This will allow for identification of wetlands that are 3/4 acre or greater in size.) In addition, Ecology should monitor changes in vegetative cover over time as a general approximation of the losses or gains in wetland areas at a broad scale. The inventory also should track trends in losses or gains of various types of wetlands to provide a general indication of changes in wetland function that may be occurring across the landscape.

Over time, Ecology should enhance the C-CAP analysis with field assessments to provide an understanding of whether wetland functions are trending better, worse or being maintained. As resources become available, Ecology should explore information technology strategies that allow the exchange of data between state, local and tribal governments to enhance the C-CAP analysis.

2.4. Continue WDFW efforts to compile watershed and salmon recovery plan information to create an inventory of potential mitigation sites/projects

WDFW, DNR and Ecology working with the Corps, EPA, the Services, Tribes, and local government planners and permit writers should use existing plans to create an inventory of potential sites and projects that might be candidates for mitigation. This should include consideration of:

- Watershed management plans
- Watershed and shoreline restoration plans
- Salmon recovery plans
- Washington Biodiversity Council Conservation Opportunity maps
- WDFW Conservation Action Plans
- Strategic Needs Assessment for the Puget Sound Nearshore Ecosystem
- DNR Aquatic Lands Habitat Conservation Plans

This effort should start with the Puget Sound Basin and areas outside the Puget Sound under intense development pressure.

As an initial step, Ecology and the Corps should identify criteria for which projects/sites or types of projects/sites may be eligible for consideration as

Springer Lake Preserve in Thurston County, WA. This site was previously under development pressure and is now a preservation site owned by Capitol Land Trust.

mitigation for wetland, stream, shoreline and nearshore impacts. These criteria are necessary to ensure that implementing projects from existing restoration, recovery, and conservation plans will provide appropriate replacement for authorized impacts and still make meaningful contributions towards salmon recovery and other types of ecosystem improvement. The mitigation site identification tool created in 2007 as part of the Shared Strategy might serve as a starting point for this process. Good candidate sites for mitigation should be mapped on the watershed characterization maps recommended in Action 2.2 and, over time, be integrated with electronic permitting systems such as the one being developed by ORA and Clark County.

2.5. Establish clear expectations about what information is needed to make various types of mitigation decisions

By December 2009, Ecology, WDFW, the Corps, and EPA, in consultation other agencies with mitigation interests or responsibilities (including CTED, RCO, DNR and WSDOT), and local government planners and permit writers should publish an integrated, multi-agency guidance document to identify the types of characterization information and level of detail needed to support different types of mitigation decisions. At a minimum, the agencies should determine the type and level of information needed to identify priority areas for protection, areas that have the highest potential and/or highest value for restoration through, for example, mitigation or conservation banks, and areas where more intense development can occur without significant risks to, or impacts on, ecosystem processes. The process should acknowledge that not all mitigation decisions require the same level of information and should give decision makers greater confidence that they can recognize when information is adequate. The work this Forum did to outline a "sliding scale" of mitigation-related information and decisions might be the basis for this guidance.

The state and federal agencies should seek peer-to-peer engagement with tribal technical staff early in the development of this guidance. Prior to public review and comment on the guidance, the state and federal agencies should formally notify tribal governments at the executive level and consult with interested tribal governments.

The guidance should build on and not duplicate Ecology's 2005 Wetlands in Washington State documents (Volumes I and II, Ecology Publications # 05-06-006 and #05-06-008, respectively) and the mitigation guidance documents prepared by Ecology, the Corps and EPA in 2006 (Ecology Publications #06-06-011a and #06-06-011b). The guidance should focus specifically on streamlining the process for making watershed-based mitigation decisions. It should address decisions to allow off-site mitigation, and support use of innovative mitigation tools such as banks, in-lieu fee programs and advance mitigation more readily. Ecology should work with the Corps and EPA to ensure that the new guidance is compatible and consistent with the April 2008 federal rule on Compensatory Mitigation for Losses of Aquatic Resources. It also should help planners and permit writers make decisions about fisheries and shoreline/nearshore mitigation by describing how characterization information can be used for Hydraulic Project Approvals (HPAs) and shoreline substantial development permits, and what types of information are needed for each.

The table on the following page generally describes different levels of watershed characterization and the types of information that would typically be required for each.

2.6. Expand and improve watershed characterization tools and guidance

Well-understood, implementable watershed characterization tools and guidance are the critical complement to the new guidance on information requirements for mitigation decisions described above. Ecology, WDFW, WSDOT, and DNR should expand upon and improve the methods and tools for watershed characterization so the information needs described in Action 2.5 can be reliably met.

This work should build on the existing freshwater watershed characterization methods and guidance described in *Protecting Aquatic Ecosystems By Understanding Watershed Processes: A Guide for Planners* (Ecology Publication #05-06-027 June 2008, Version 3). It should incorporate and fully describe the fish and wildlife habitat assessment and build-out analysis components. The guidance should also build on and incorporate past work by the Transportation Permit Efficiency and Accountability Committee (TPEAC) on watershed characterization for highway projects as well as the Biodiversity Council's efforts to develop and implement the December 2007 Washington Biodiversity Conservation Strategy, the Strategic Needs Assessment for Puget Sound Nearshore Ecosystems, and the DNR Aquatic Lands Habitat Conservation Plan effort. The agencies should develop an example or, if possible, create a model that standardizes use of existing readily available information and data necessary for characterizing watershed conditions.

A low-quality, isolated wetland.

Analysis Components	Questions Answered	Data and Information needs
Level of Effort: Basic		
• Water Flow Process • Water Quality Processes	• Which areas are intrinsically most important for water flow processes? • Which areas are most highly altered for water flow processes? • Which areas are intrinsically important for nutrient and pathogen removal? • Which areas are most at risk for nutrient and pathogen inputs? • Which areas should be prioritized for restoration of water flow or water quality processes? • Which areas should be prioritized for protection of water flow or water quality processes? • Which areas can accommodate development with limited adverse effects on water quality and water flow processes?	• Basic mapping of sub-basin boundaries, geologic features, topography, and land cover • Precipitation data • Wetland inventory maps • DNR stream mapping (and ditches, if available) • Locations of pollutant sources • Road network/density • Impervious surface • More refined wetland and stream mapping from aerial photos (and LiDAR, if available) • High value habitats/resources • Wetland and stream buffers • Quantitative ranking of sub-basins for water quality and hydrology processes
Level of Effort: Moderate		
• Water Flow Process • Water Quality Processes • Local Habitat Assessment	• Where are the highest quality, most sensitive, or most vulnerable wetlands located? • Where are the highest quality (least altered) fish and wildlife habitats? • What are the priority areas for wetland protection? • What are the priority areas for fish and wildlife habitat protection? • Where are the most productive/highest value salmon habitats? • What are the priority areas for salmon habitat protection? • What are the most important corridors for fish and wildlife movement?	• Qualitative assessment of habitat based on aerial photos and land cover information • Quantitative ranking of sub-basins for water quality and hydrology processes • Local knowledge/assessment of target species guilds • Mid-scale mapping of land cover types (historic and existing), critical habitats, salt marshes, productive salmon streams, natal & pocket estuaries, forage fish spawning areas, fish and wildlife concentration areas, feeder bluffs & drift cells, fish passage barriers, road network/density, development type/density, impervious surface using available data sources (no field work required)
Level of Effort: Detailed		
• Water Flow Process • Water Quality Processes • Local Habitat Assessment • Build-Out Analysis	• How will projected growth under current zoning affect priority areas identified above? • Which areas are most vulnerable to increased density and increased impervious surface? • Which areas can be developed with relatively limited impacts on water flow, water quality, and habitat?	• Field inventory of habitat conditions • GIS analysis of buildable lands inventory • Assessment of existing development intensity relative to zoning • Projected increases in dwelling unit density • Quantitative calculations in impervious surface/land cover due to growth projections
Level of Effort: Nearshore Conditions (methods need to be more fully developed)		
• Drift Cell Function • Watershed Stressors • Site-scale Stressors	• Where are the most important feeder bluffs/sediment sources? • Where are the highest functioning nearshore areas? • What nearshore areas are most altered/stressed? • Which nearshore areas should be prioritized for restoration? • Which nearshore areas should be prioritized for protection?	• DNR ShoreZone data • Ecology Coastal Atlas and shoreline aerial photography • Other information to be determined

Characterization approaches for the nearshore marine environment also should be refined or new approaches developed. Such approaches could build on guidance being developed by the Puget Sound Nearshore Ecosystem Restoration Program (PSNERP), Battelle's nearshore restoration prioritization methods recently used in Bainbridge Island and Jefferson County (Battelle Marine Laboratory, Report No. PNWD-3762) and/or People for Puget Sound's work in Northern Skagit County (the Northern Skagit County Bays and Shoreline Habitat Conservation and Restoration Blueprint, 2005 Update).

As with other guidance documents described in our Recommendations, the state and federal agencies should seek peer-to-peer engagement with tribal technical staff early in the development of this guidance. Prior to public review and comment on the guidance, the state and federal agencies should formally notify tribal governments at the executive level and consult with interested tribal governments. If the guidance development timelines support it, this guidance might be combined with the guidance on decision making described in Action 2.5.

LONGER TERM ACTIONS

2.7. Use watershed characterization to inform land use planning

Watershed characterization information will be most useful in areas where local jurisdictions are amenable to linking the findings to current land use and long-range planning decisions. Watershed characterization information should be used to inform two types of land use planning: local comprehensive plans and critical area ordinances and local shoreline master program updates. For local comprehensive plans, CTED, with the support of Ecology and WDFW, should work with local government partners and stakeholders interested in piloting the connection of watershed characterization information to ongoing land use planning efforts. The Forum emphasizes that this does not assume that watershed characterization information will define land use planning. Local governments are required to balance many, sometimes conflicting, land use mandates. At the same time, the Forum believes that no one is well served when development is driven towards wetland areas and other aquatic habitats where permits may be difficult to obtain and substantial avoidance and mitigation may be required. At a minimum, communities should be aware of where these conflicts exist in their land use plans. CTED, with Ecology and WDFW, should support consideration of watershed characterization information during comprehensive and Shoreline Master Program planning by providing appropriate technical and financial resources and incentives. This support would allow local communities to analyze different build-out scenarios in light of watershed characterization results and to identify conflicts (if any) and opportunities to minimize conflicts where possible.

Where information on high-priority areas for conservation, restoration and development does not match existing land use planning and zoning designations (including designations for agricultural land) or planned build-out, CTED using the information gathered/lessons learned from the pilot process should actively engage the affected local jurisdictions, residential and commercial development and environmental interests in a dialogue about how best to connect watershed characterization information to decisions about where and how development will be placed to help local governments balance Growth Management Act (GMA) goals. Where possible, over time, closer alignment of land use planning efforts with watershed characterization will serve all interests by reducing conflicts and providing for growth more effectively. This dialogue should support strategies for maintaining the total amount of buildable land

and resource lands and foster mechanisms to value in market terms (and reward) water quality, water flow, and habitat services that conserved and resource lands may provide. The collaboration with local government should include creation of a menu of approaches for local governments to consider such as low impact development, urban forestry and urban density design models to reduce the impacts of development on aquatic and terrestrial resources, and, as described in Action 1.3, should develop a menu of techniques to establish a market value for land with high ecological functions.

RECOMMENDATION 3: DEVELOP AND IMPLEMENT A WIDE VARIETY OF COMPENSATORY MITIGATION TOOLS

Successful mitigation will require a wide variety of tools and options for decision makers and project proponents including wetland and multi-resource banks, in-lieu fee programs, advance mitigation, and traditional on- and off-site approaches. By working together to improve the effectiveness of all the mitigation approaches and to clearly identify how decisions about use of alternatives to on-site mitigation will be made, Ecology, WDFW, DNR, EPA, the Corps, and the Services, (collectively "the Agencies") can increase the predictability and performance of the entire mitigation process.

SHORT TERM ACTIONS

3.1. Publish clear guidance on how to make site-scale or project-scale decisions about off-site mitigation

By December 2009, the Agencies should issue joint guidance describing circumstances under which off-site mitigation may be appropriate, and the specific information needed to approve an off-site mitigation approach. This guidance would accompany (and possibly be part of) the watershed characterization guidance noted in Action 1.1 but would be geared more toward site- or project-scale decisions. This guidance should provide a predictable set of criteria for decision making and identify issues to address so that there are uniform and reasonable expectations about when and where off-site mitigation might be used and how decisions to implement off-site mitigation will be made. This is not to create a cookbook approach to decision outcomes. Site-specific decisions always will require some level of professional judgment on the part of the decision maker—the purpose is to make the decision process and timing more predictable and less cumbersome for project proponents and developers. Every effort should be made to leverage the watershed characterization information described in Recommendation 2 to create as much predictability as possible on when off-site mitigation may be appropriate.

Prior to public review and comment on the off-site guidance, Ecology and the Corps should formally notify tribal governments at the executive level and consult with interested tribal governments.

3.2. Improve the wetland banking system

Ecology, in consultation with WDFW, the Corps, and EPA, should complete and expand ongoing reforms to the wetland mitigation banking process to ensure that banks can be efficiently identified, permitted and used. The new program should mirror the federal banking requirements and process and reflect recommendations from the Banking Pilot Advisory Group. The new rule should not add additional process above the federal requirements except where required by state statute.

Prior to public review and comment on the wetland mitigation banking rule, Ecology and the Corps should formally notify tribal governments at the

executive level and consult with interested tribal governments.

Ecology should set goals for meeting certification timelines. Ecology should track its timeliness for bank proposal reviews and strive to meet a thirty day turnaround for comments on supporting documents and a ninety day timeline for review of final instruments. Ecology's timelines should be consistent with the ones outlined in the federal rule.

Ecology, EPA and the Corps should develop guidance for wetland bankers that encourages them to locate wetland banks in priority areas for restoring watershed processes. This could include pre-identifying important areas when a watershed characterization has been completed. For banks located in key restoration areas and designed to be consistent with restoration needs, the Agencies should provide incentives such as streamlined processing.

To encourage wetland banking as an important mitigation alternative, the Corps, EPA, and Ecology should continue to provide training for regulators and the development community on wetland banking and the use of banks. Ecology and the Corps should provide at least five trainings per year over the next biennium to local regulators and the development community.

In addition to training, additional resources should be provided to local governments to actively engage in the banking process and update local codes. Ecology and CTED should provide sample language to local governments for updating local codes to allow and encourage banks by July 2009.

The Corps, EPA, and Ecology should expand the crediting system for wetland banks to allow for the use of multiple resource credits on a bank site. The system should reflect a more refined accounting of functional gains and losses.

3.3. Establish multi-resource conservation banks

The Services, Ecology, WDFW, the Corps, and EPA and Tribes should work together to establish additional habitat and conservation banks which integrate their respective mandates under the Endangered Species Act (ESA), the Clean Water Act, and various state laws including the State Hydraulic Code. Habitat and conservation banks might be established independently of wetland mitigation banks or in conjunction with them. In other words, a "wetland bank" might be able to sell "fish credits" and a "fish bank" might be able to sell "wetland credits" provided that credits can be legitimately generated for each resource type (in other words no swapping of fish credits for wetland credits or vice versa). This would potentially expand the market for bank credits and increase the chance that project proponents can meet their mitigation obligations efficiently and effectively. Part of this effort should be to explore development of crediting systems that

***Narbeck** – Snohomish County established this bank to provide mitigation for anticipated Airport related projects. Ecology and the Corps of Engineers recently issued the remaining credits for the bank because the bank has fully met all of its performance standards. The wetlands at the site provide a variety of habitats in an urban area.*
Photo courtesy of The Watershed Company.

can appropriately account for habitat benefits and resources. The Agencies should assess the recent multi-species conservation bank efforts in California to inform this action.

3.4. Support development of a Puget Sound in-lieu fee program

The Partnership has convened an effort to explore establishing an in-lieu fee mitigation program for aquatic habitats in the Puget Sound area. The focus is to allow public and private developers to pay into a restoration fund instead of mitigating for impact on or near the development site. The fund will be invested in larger, more intensively managed restoration projects that are professionally designed, built, and maintained. If used, it is hoped that this approach will significantly improve the performance of mitigation measures and get the Puget Sound region much closer to the standard of "no net loss" of wetlands while, at the same time, streamlining the permitting process for developers and supporting continued growth. The program will be consistent with EPA's new regulations for in-lieu fee approaches. The Forum endorses this effort and encourages continued engagement of all members in developing and piloting sustainable in-lieu fee program approaches.

The Partnership should seek peer-to-peer engagement with tribal technical staff early in the development of the in-lieu fee program. Prior to finalizing program elements, the Partnership should formally notify tribal governments at the executive level and consult with interested tribal governments, particularly for Tribes in watersheds that may be affected by any pilot program.

3.5. Expand appropriate use of advance mitigation

Ecology, WDFW, the Corps, and EPA in consultation with the Services as needed, should work with WSDOT and other interested parties to develop specific guidance on the use of advance mitigation. The guidance should address questions such as: *What information is needed to identify projects that might use advance mitigation? How should the value of an advance mitigation project be determined? What are the baseline information requirements for advance mitigation projects? What are the requirements and approval process for future use of advance mitigation credits?*

3.6. Support local governments in establishing policies, regulations, and processes for using the full suite of mitigation tools

Local governments are critical in implementing mitigation policies. Ecology, WDFW and CTED, in consultation with the Corps and EPA, should work closely with local governments on development of the off-site mitigation guidance described in Action 3.1 to ensure these policies can be implemented by local governments. This should include working with local governments to develop example local policies, regulations, and guidance for individual jurisdictions to consider adopting into their local codes. If necessary, this effort might begin with an assessment of which local governments allow for and are actively using banks and other mitigation tools in their updated CAOs and SMPs and why, and an identification of the concerns or barriers that prevent other local governments from adopting such tools. As part of this effort Ecology and CTED should work with local governments to identify and overcome barriers to approving cross-jurisdiction mitigation where watershed characterizations indicate that such actions are appropriate and to ensure support for locally developed programmatic mitigation approaches.

RECOMMENDATION 4: DEVELOP MORE COORDINATED, PREDICTABLE APPROACHES TO REVIEWING DEVELOPMENT PROJECTS AND ASSOCIATED MITIGATION PLANS

By expanding use of inter-agency agreements, multi-agency permit review teams, programmatic agreements and regional general permits we can reduce the transaction costs associated with mitigation, make decisions more predictably, and ease tensions on all sides of mitigation efforts. ORA, with its ability to reach across agencies, has a central role to play in this process.

SHORT TERM ACTIONS

4.1. Expand use of the multi-agency concept

ORA should work with Ecology, WDFW, the Corps, and EPA to expand use of the multi-agency permit (MAP) team concept for projects that require more than one state or federal permit by establishing in person or on-line MAP teams covering all regions of the state by 2013.

4.2. Complete and expand the ORA's Integrated Project Review and Mitigation Tools System

ORA has built the first part of an on-line tool establishing a uniform system for describing project activities and impacts. The Integrated Project Review and Mitigation Tools (IPRMT) system provides guidance to applicants to help them design to programmatic or otherwise approved standards. The system also allows on-line collaboration between local, state and federal reviewing agencies, and helps avoid conflicting conditions of approval. ORA is currently working with agencies to incorporate a decision tree into IPRMT that will help reviewers choose between various on-site and off-site mitigation options. The system is currently operational in Clark County for transportation and public works projects. The IPRMT should be continued and expanded. Expansions might address: making the system available to additional communities or statewide, adding more mitigation functions to the system, adding content to address other types of permits or activities, and making the system accessible to a broader range of applicants rather than only to certified or public agency applications. This action supports actions 4.1 and 4.4 by using the IPRMT system to build on-line MAP teams and using standardized activity descriptions and conditions that result in more predictable (programmatic) outcomes.

4.3. Document and act on lessons learned from IPRMT

ORA works at many levels to identify overlaps and conflicts between environmental and other regulatory requirements. Through the IPRMT system, ORA has begun to gather information about the consistency of permit conditions across local, state and federal permitting programs. Where

General Permits

General permits are a class of permits issued under Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act. The Corps of Engineers issues general permits for groups of activities that are similar in nature and cause minimal adverse impacts. These permits can be issued nationwide (called Nationwide Permits or NWPs) or regionally (Regional General Permits or RGPs). The Corps can also issue Programmatic General Permits (PGPs) to prevent duplication of regulatory control, so that a permit applicant only needs to apply to one agency as opposed to multiple agencies for the same action.

possible, ORA is helping agencies reconcile conflicting conditions and consolidate similar conditions into more uniform language. The information about where conflicts or inconsistencies exist, and what would need to change to reconcile the differences, if acted upon, has the potential to greatly improve permitting programs. ORA should continue to work with its local, state, and federal partner agencies to resolve discrepancies in permit conditions and identify ways to resolve overlaps and conflicts among environmental requirements and permits.

4.4. Expand use of programmatic agreements and general permits

Ecology, WDFW, the Corps, and EPA should identify opportunities to expand use of regional general permits for like-types of development projects within specific geographic areas and use of programmatic general permits for avoiding unnecessary duplication of another federal, state, or local agency's regulatory efforts. These agencies should work together to identify categories of projects, especially those that require mitigation, that may be candidates for general permits based on the number and types of permits issued in the past three years. In addition, the Corps and EPA should work with the Services to develop a complementary Section 7 ESA consultation agreement associated with projects carried out under these permits. At least one new programmatic or regional general permit and complementary Section 7 consultation should be completed by December 2009. The Agencies may choose to develop this programmatic approach within the ORA IPRMT Tool (see Actions 4.2 and 4.3).

The state and federal agencies should seek peer-to-peer engagement with tribal technical staff early in the development of regional general permits. Prior to public review and comment on regional general permits, the state and federal agencies should formally notify tribal governments at the executive level and consult with interested tribal governments.

The goal should be to leverage the watershed characterization information described in Recommendation 2 and the wide variety of mitigation tools described in Recommendation 3 to support development of programmatic agreements and general permits. For example, a general permit might be appropriate for some types of residential development in areas that a watershed characterization has identified as appropriate for development.

RECOMMENDATION 5: SUPPORT MAKING MITIGATION WORK

As we make progress in improving mitigation systems and performance, we must continually evaluate our work and look for opportunities to improve. It is not enough to simply issue the policy statements and guidance documents; we must support implementation with training and technical assistance, incentives, and investment. We also must be able to identify and take action against projects that failed to mitigate, and implement corrective actions when mitigation projects are not achieving environmental results. This is essential if we are to be accountable to our regulatory mandates and to our responsibilities as resource stewards. It is also essential to achieving no net loss and, ideally, to recovering watersheds over time.

SHORT TERM ACTIONS

5.1. Develop and track a suite of standard evaluation metrics and monitoring approaches

In order to win broad support from government, business, and environmental interests, watershed-based mitigation must provide a better path for

meeting the no net loss standard and accommodating sound development efforts compared to the current system. To demonstrate the performance of watershed based mitigation, we need a common approach to monitoring and a set of standard, valid ecological performance standards. Development of such standards can be complex and costly, but new technical tools offer promise. For example, watershed characterization and GIS tools developed through Whatcom County's recent Shoreline Master Program update provide the county with an unprecedented opportunity to map shoreline, wetland, and other critical areas in their watersheds. Such approaches can be coupled with information from more detailed ecological function measurements to assess changes in ecological conditions over time. The regional in-lieu fee program described in Action 3.4 provides an opportunity to develop and test accounting protocols to determine whether no net loss is being achieved in a specific service area. Lessons learned from this effort should inform development of a broader accounting to determine whether the state is meeting its responsibilities in each watershed.

Ecology should work with WDFW, DNR, WSDOT, the Corps, EPA, and the Services to develop a common approach to monitoring including appropriate monitoring design, performance standards, protocols and metrics for different types of mitigation projects (e.g., wetlands, shorelines, and habitat). The state and federal agencies should seek peer-to-peer engagement with tribal technical staff early in the development of metrics. Prior to public review and comment on metrics, the state and federal agencies should formally notify tribal governments at the executive level and consult with interested tribal governments.

Common metrics and standards would not take the place of site- or project-specific performance standards but could serve as a set of minimum requirements that would enable us to better assess whether mitigation efforts are successful. They should complement the statewide wetland status and trends inventory described in Action 2.3.

Previous efforts to assess mitigation success, including *Ecology Wetland Mitigation Evaluation Study Phases 1 and 2* (Ecology Publications #00-06-016 and # 02-06-009, respectively) acknowledged that the wide variability in monitoring approaches and performance standards made it difficult to determine on a programmatic basis which sites or projects were truly successful. A more standardized approach to monitoring would enable us to more accurately document compliance and ecological outcomes. Monitoring and metrics should be focused on determining whether ecological functions are truly being successfully replaced. This will facilitate a common understanding of whether mitigation projects are working or not and will help project proponents and sponsors focus on the outcomes that are most important to environmental success. Monitoring and metrics also should track where alternatives to on-site mitigation are used and evaluate the success of these approaches. WSDOT's experience monitoring over 150 sites should be leveraged to understand what types of measurements would be most relevant to signaling mitigation success.

Use of common metrics and monitoring approaches for multiple mitigation projects over time may allow us to compare the success of various mitigation design, construction, and maintenance strategies. This information could also be used to help us determine whether mitigation actions implemented using certain tools (banks, in-lieu fee programs, on-site, etc.) are more or less successful than others. Results of the metrics program and associated monitoring should be used to make adjustments to the policies and guidance on mitigation approaches and to refine training and outreach. We emphasize that common metrics are only a starting point for development of individual project performance standards, and likely would need to be supplemented with project-specific metrics.

5.2. Create a compliance monitoring and inspection checklist for mitigation projects

Ecology and WDFW, in consultation with the Corps, EPA, and local government planners and permit writers should create a compliance monitoring and inspection checklist for mitigation projects. This checklist should build on Ecology's ongoing compliance monitoring and enforcement work and checklist. It should provide a simple document that can be used by any agency that might inspect a mitigation project and can be used by project proponents to guide their independent project evaluation and monitoring.

5.3. Require adaptation/adjustments if mitigation projects aren't working

Ecology and WDFW, in consultation with the Corps, EPA, and local government planners and permit writers should make a clear policy statement acknowledging that too often our ability to design and engineer natural systems in mitigation projects falls short. In many cases this can be avoided by better site selection; however, when project-specific goals are not met, adaptations or adjustments to projects are needed to ensure that environmental outcomes are achieved. When compliance monitoring efforts show that a mitigation project is not working, prompt efforts should be made to correct the problems so that the mitigation project begins to provide environmental functions and values. The mitigation agencies could require additional planting, different plantings, re-grading of a site, weed control, and other measures to adjust to unanticipated site conditions, poor installation, or other circumstances that prevent projects from performing as intended. At the program level, lessons learned from tracking where adaptation or adjustment is needed should be incorporated into the planning of future mitigation projects by, for example, creating some additional flexibility in the construction and monitoring sequence to allow for

Capitol Lake mitigation site, Olympia, WA. Photo courtesy of Perry Lund, Dept. of Ecology.

planting one year following grading once it is evident that proper grades are established.

5.4. Dedicate sufficient human and financial resources to compliance monitoring and adaptive management programs at all levels of government

This is critical. Ecology, for the first time, has dedicated staff and resources for compliance monitoring and enforcement for mitigation projects. We understand that resources at all levels of government are limited and pulled in many, many directions. At the same time, it is foolish to rely on mitigation to protect and (ideally, over time) recover the ecological health of our watersheds, invest considerable sums of money building projects, and then fail to assess the outcome. The results of this failure to monitor are predictable and have been experienced time and again—failure of many projects and failure of the mitigation system to achieve no net loss. Ecology should convene the state mitigation agencies, tribal governments, local governments, development agencies, developers, mitigation bankers, and other interested parties to develop a strategy to create sustainable resources for compliance monitoring and enforcement of mitigation projects. This should include exploration of opportunities for cooperative monitoring involving local, state, and federal agencies based on mutual aid or inter-local agreements, and of options for more third-party implementation of monitoring, ideally with a dedicated funding source. A sustainable resource strategy is needed both for compliance monitoring for projects that have gone through the mitigation sequence and obtained a permit (i.e., known projects) and for government enforcement actions for projects that failed to avoid or minimize impacts or mitigate (i.e., illegal projects/fills). Projects where efforts were not made to avoid, minimize or mitigate should become the highest priority for enforcement actions.

5.5. Support local governments with training and technical assistance

Local governments are the front line decision makers for most development projects and, therefore, are also in the front lines of decisions about avoidance, minimization and mitigation. The Forum cannot emphasize strongly enough that mitigation will not work unless local governments are involved in program and guidance development and are supported in implementation of their responsibilities. Ecology and CTED should engage in an open dialogue with local governments and with their advisors and associations to understand what support would be most relevant and useful to them and should work diligently to bring that support about.

5.6. Create a common understanding of what it takes to make mitigation work in the community of practitioners

The Forum discussed early in its deliberations that improving mitigation processes and outcomes has the potential to benefit regulatory agencies, local governments, development and business interests, and the environment. In that spirit, Ecology and CTED should continue to involve the broader mitigation community in implementation of the recommendations in this report and in ongoing program assessment and improvement. This should include development of joint outreach and training programs and a shared training curriculum between government agencies and environmental and business interests. Training should address watershed characterization, use of mitigation alternatives, and mitigation decision-making guidance to help develop a common understanding of mitigation practices and expectations among all parties.

ATTACHMENT 1: TRIBAL PERSPECTIVE ON THE MAKING MITIGATION WORK PROCESS

The level of participation by Indian tribes in the Mitigation That Works Forum was not what either the tribes or Ecology would have desired. However, Ecology did receive some comments on the process from the Northwest Indian Fisheries Commission. These comments support the following concepts:

- The Commission supports the recognition that there needs to be improvement in selecting, designing, implementing, and maintaining mitigation projects.
- Mitigation must occur within the same watershed as needed to assure that there is meaningful compensation for the functions that are lost.
- Any mitigation must fully replace the function that was lost. There also needs to be agreement on how function is measured.
- Tribes need to be part of the decision-making process regarding selection of mitigation sites and prioritizing actions.
- Tribes need to be able to provide input on the choice of avoidance, minimization, on-site mitigation, or off-site mitigation as the appropriate course of action.
- The Commission supports the Forum's efforts to improve both transparency and opportunities for timely participation in permitting processes. Without significant improvements in these areas, efforts to improve mitigation will likely fail.
- The Commission has concerns about the "streamlining" provided by Regional General Permits. Given chronic failures to adequately coordinate with tribes, it is difficult to support this approach until the communications issues are resolved.
- Use of in-lieu-fee programs for compensatory mitigation of wetland impacts and other important habitats need to be developed in consultation with affected tribes. Such programs should also be governed and implemented at the watershed level by interested tribes and other management entities in a manner that is consistent with salmon restoration plans and the habitat requirements of other non-listed salmonids. In addition, watershed characterizations need to heed and complement the relatively robust analyses that have already been performed in salmon restoration plans.

ATTACHMENT 2: AGENCY LEADS FOR IMPLEMENTING RECOMMENDATIONS

Key: ● Lead ◐ Co-Lead ✓ Supporting/reviewing RECOMMENDATIONS:	State									Federal			Tribes	Local[1]
	Ecology	WDFW	ORA	DNR	CTED	WSDOT	RCO	Puget Sound Partnership	Conservation Commission	Corps	EPA	Services (NOAA Fisheries, USFWS)	Tribes	Local government planners and permit writers
1.1: Create avoidance and minimization guidance	◐	◐				✓				◐	◐		✓	✓
1.2: Invest in conservation	◐	◐		◐			◐	◐	◐					
1.3: Develop a menu of techniques the marketplace can use to monetize the value of land with high ecological function	◐	◐		◐	◐				◐					✓
2.1: Articulate policy priorities for the use of watershed characterization information to expedite mitigation decisions	◐	◐								◐	◐			
2.2: Compile and expand watershed characterization information	◐	◐						◐					✓	✓
2.3: Create and maintain a state-wide wetlands status and trends inventory	●													
2.4: Continue WDFW efforts to compile watershed and salmon recovery plan information to create an inventory of potential mitigation sites/projects	◐	◐		◐						✓	✓	✓	✓	✓
2.5: Establish clear expectations about what information is needed to make various types of mitigation decisions	◐	◐		✓	✓	✓	✓			◐	◐		✓	✓
2.6: Expand and improve watershed characterization tools and guidance	◐	◐		◐		◐							✓	
2.7: Use watershed characterization to inform land use planning	✓	✓			●									✓
3.1: Publish clear guidance on how to make site-scale or project-scale decisions about off-site mitigation	◐	◐		◐						◐	◐	◐	✓	
3.2: Improve the wetland banking system	●	✓								✓	✓		✓	

[1] Participation by non-governmental entities, project proponents, landowners, and the general public is assumed as part of the public participation process during implementation of these various recommendations.

Key: ● Lead ◐ Co-Lead ✓ Supporting/reviewing RECOMMENDATIONS:	State									Federal			Tribes	Local[1]
	Ecology	WDFW	ORA	DNR	CTED	WSDOT	RCO	Puget Sound Partnership	Conservation Commission	Corps	EPA	Services (NOAA Fisheries, USFWS)	Tribes	Local government planners and permit writers
3.3: Establish multi-resource conservation banks	✓	✓								✓	✓	●	✓	
3.4: Support development of a Puget Sound in-lieu fee program	✓	✓				✓		●		✓	✓	✓	✓	✓
3.5: Expand appropriate use of advance mitigation	◐	◐				✓				◐	◐	✓		
3.6: Support local governments in establishing policies, regulations, and processes for using the full suite of mitigation tools	◐	◐			◐			✓		✓	✓			◐
4.1: Expand use of the multi-agency concept	✓	✓	●							✓	✓			
4.2: Complete and expand the ORA's Integrated Project Review and Mitigation Tools System	✓	✓	●											
4.3: Document and act on lessons learned from IPRMT			●											
4.4: Expand use of programmatic agreements and general permits	◐	◐								◐	◐	✓	✓	✓
5.1: Develop and track a suite of standard evaluation metrics and monitoring approaches	●	✓		✓		✓				✓	✓	✓	✓	
5.2: Create a compliance monitoring and inspection checklist for mitigation projects	◐	◐								◐	✓			✓
5.3: Require adaptation/adjustments if mitigation projects aren't working	◐	◐								✓	✓			✓
5.4: Dedicate sufficient human and financial resources to monitoring and adaptive management programs at all levels of government	●	✓			✓	✓				✓	✓	✓	✓	✓
5.5: Support local governments with training and technical assistance	◐	◐			◐									✓
5.6: Create a common understanding of what it takes to make mitigation work in the community of practitioners	◐				◐				◐					

ATTACHMENT 3: PRODUCTS

Recommendations	Associated Deliverables
1.1: Create avoidance and minimization guidance	A checklist of practical avoidance and minimization best practices.
1.2: Invest in conservation	Aligned funding priorities.
1.3: Develop a menu of techniques the marketplace can use to monetize the value of land with high ecological function	A menu of market-based techniques that can be used to monetize the value of land with high ecological function.
2.1: Articulate policy priorities for the use of watershed characterization information to expedite mitigation decisions	A clear policy statement supporting the use of watershed characterizations as a means for making watershed-based mitigation decisions.
2.2: Compile and expand watershed characterization information	Compiled existing watershed characterization information for cities and counties, and complete watershed characterizations in other areas.
2.3: Create and maintain a state-wide wetlands status and trends inventory	A baseline status and trends inventory for Washington wetlands. Protocols for information collection and analysis.
2.4: Continue WDFW efforts to compile watershed and salmon recovery plan information to create an inventory of potential mitigation sites/projects	An inventory of potential sites and projects that might be candidates for mitigation.
2.5: Establish clear expectations about what information is needed to make various types of mitigation decisions	An integrated, multi-agency guidance document to identify the types of characterization information and level of detail needed to support different types of mitigation decisions.
2.6: Expand and improve watershed characterization tools and guidance	Guidance that expands upon and improves the methods and tools for watershed characterization. Characterization approaches for the nearshore marine environment should also be refined or new approaches developed.
2.7: Use watershed characterization to inform land use planning	Pilot the connection of watershed characterization information to ongoing land use planning efforts.
3.1: Publish clear guidance on how to make site-scale or project-scale decisions about off-site mitigation	Guidance describing circumstances when off-site mitigation may be appropriate and ecologically preferable. Guidance on the specific information needed to evaluate and approve proposals for off-site mitigation.
3.2: Improve the wetland banking system	Complete and expand ongoing reforms to ensure that banks can be efficiently identified, permitted and used. Guidance that encourages banks to locate in priority areas for restoring watershed processes. Trainings. Sample language for incorporating in updated local codes to allow and encourage banks by July 2009. Expand crediting and refine accounting systems.
3.3: Establish multi-resource conservation banks	Additional habitat conservation banks established.
3.4: Support development of a Puget Sound in-lieu fee program	A state and federally approved in-lieu fee program, and piloted in 2-3 watersheds.
3.5: Expand appropriate use of advance mitigation	Specific guidance on the use of advance mitigation.

Recommendations	Associated Deliverables
3.6: Support local governments in establishing policies, regulations, and processes for using the full suite of mitigation tools	Guidance for off-site mitigation as described in Action 3.1 to ensure these policies can be implemented by local governments. Working with local governments to develop example local policies, regulations, and guidance for individual jurisdictions to consider adopting into their local codes.
4.1: Expand use of the multi-agency concept	Establish in person or on-line MAP teams covering all regions of the state by 2013.
4.2: Complete and expand the ORA's Integrated Project Review and Mitigation Tools System	Continue and expand IPRMT.
4.3: Document and act on lessons learned from IPRMT	Continue to work with partner agencies to resolve discrepancies in permit conditions and identify ways to resolve overlaps and conflicts.
4.4: Expand use of programmatic agreements and general permits	Identify opportunities to expand use of regional general permits and programmatic general permits.
5.1: Develop and track a suite of standard evaluation metrics and monitoring approaches	Develop a common approach to monitoring including appropriate monitoring design, performance standards, protocols and metrics for different types of mitigation projects.
5.2: Create a compliance monitoring and inspection checklist for mitigation projects	A compliance monitoring and inspection checklist for mitigation projects.
5.3: Require adaptation/adjustments if mitigation projects aren't working	A policy statement acknowledging that sometimes the design and development of mitigation projects falls short.
5.4: Dedicate sufficient human and financial resources to monitoring and adaptive management programs at all levels of government	A strategy to create sustainable resources for compliance monitoring and enforcement of mitigation projects.
5.5: Support local governments with training and technical assistance	A curricula and training on mitigation policies, guidance and tools for local governments. Interagency trainings on the implementation and use of alternative mitigation options.
5.6: Create a common understanding of what it takes to make mitigation work in the community of practitioners	Joint outreach and training programs and a shared training curriculum between government agencies and environmental and business interests on the components of successful mitigation program.