Final Environmental Impact Statement

Washington State's Rule on Wetland Mitigation Banks

WAC 173-700 Wetland Mitigation Banks

DEPARTMENT OF ECOLOGY
State of Washington

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Final Environmental Impact Statement

Washington State's Draft Rule on Wetland Mitigation Banks

WAC 173-700 Wetland Mitigation Banks

by
Lauren Driscoll, K. Thompson, C. Merten and T. Granger

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August 18, 2009

Dear Interested Parties:

RE: Final Environmental Impact Statement for the Wetland Mitigation Banks Rule
Chapter 173-700 RCW

I am pleased to present this Final Environmental Impact Statement (FEIS) on the development and implementation of the Wetland Mitigation Banks Rule, Chapter 173-700 WAC. This FEIS satisfies State Environmental Policy Act (SEPA) requirement to evaluate the potential environmental effects of wetland banking and the specific thresholds or procedures published in the final rule.

The Washington Department of Ecology (Ecology) developed the wetland banking certification rule to meet legislative directive in the Wetlands Mitigation Banking Law, Chapter 90.84 RCW. This law requires Ecology to develop a statewide rule for the certification of wetland mitigation banks.

This FEIS:

- Describes the concept of wetland mitigation banking.
- Outlines the key components of a wetland mitigation banking program.
- Identifies potential environmental consequences of various alternatives considered by Ecology and the rule development team.
- Explains the rationale for Ecology's selection of the final rule language for the major sections of the rule.
- Explains the steps taken by Ecology through the rule development process to determine the preferred alternative for rule language.

This document also serves as an educational resource. It provides extensive information on wetland mitigation banking and the certification program.

A number of alternatives were considered during the negotiated rule development process. The "no action" alternative for developing a rule was not addressed during the rule development process since the department was directed to adopt a rule by the legislature. Other alternatives were evaluated as each specific subject was considered by the development team. Rather than presenting several full alternative proposals, this FEIS discusses the preferred alternative for key specific subjects in the main

document. It then discusses the alternatives considered for each specific subject. This discussion on alternatives as well as the no action alternative (not adopting a rule) can be found in Appendix E.

Sponsors of wetland mitigation bank proposals may use this document to address the general effects of banking when completing SEPA analysis of their banks. Because this document evaluates the effects of banking on a programmatic level, individual bank proposals will need to do additional evaluation on the site-specific effects of their proposal.

The Draft EIS was issued March 18, 2009 for a 52 day comment period. We have included the comments on the draft EIS as well as Ecology's responses to those comments in Appendix F.

Sincerely,

Gordon White
Program Manager
Shorelands and Environmental Assistance Program

Fact Sheet

Title:	Washington State's Rule on Wetland Mitigation Banks.
Description:	The proposal is to develop a rule and certification program for wetland mitigation banks that provides a unified, predictable and efficient process for the approval of ecologically successful and sustainable wetland mitigation banks.
Proponent:	Shorelands and Environmental Assistance Program, Department of Ecology.
Proponent Contact Person:	Kate Thompson
SEPA Lead Agency:	Shorelands and Environmental Assistance Program, Department of Ecology.
SEPA Responsible Official:	Gordon White, Program Manager Shorelands and Environmental Assistance Program Department of Ecology P.O. Box 47600 Olympia, WA 98504-7600
Lead Agency Contact Person:	Kate Thompson
Action Required:	Finalize Environmental Impact Statement. Adoption of a statewide wetland mitigation banking rule and certification process under the authority of RCW 90.84
Revised DEIS Editors:	Kate Thompson and Lauren Driscoll
Date DEIS Issued:	March 18, 2009
Date DEIS Public Comments Due:	April 23, 2009
Public Hearings:	April 8, 2009 Workshops: 2:00 p.m. & 6:00 p.m. Hearings: 3:00 p.m. & 7:00 p.m. Spokane, WA

	April 9, 2009 Workshop: 6:00 p.m. Hearing: 7:00 p.m. Lacey, WA April 15, 2009 Workshops: 2:00 p.m. & 6:00 p.m. Hearings: 3:00 p.m. & 7:00 p.m. Mount Vernon, WA April 16, 2009 Workshops: 2:00 p.m. & 6:00 p.m. Hearings: 3:00 p.m. & 7:00 p.m. Seattle, WA
FEIS Date of Issue:	August 18, 2009
Expected Final Rule Adoption:	August 27, 2009
Subsequent Environmental Review:	Individual wetland bank proposals will require additional SEPA review. The site-specific effects of the construction of a wetland bank and its operation will need to be addressed separately during the bank certification process.
Location of EIS Information:	Shorelands and Environmental Assistance Program Department of Ecology 300 Desmond Drive Lacey, WA 98503 Persons desiring to view the DEIS information files are encouraged to make an appointment by telephoning (360) 407-6749 or sending an e-mail to kath461@ecy.wa.gov
Incorporations by reference:	Refer to reference section at the end of the document. These materials are incorporated by reference and copies of these materials may be viewed at the Department of Ecology, Shorelands and Environmental Assistance Program.

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Acknowledgements

The authors would like to thank the Ecology staff who contributed to the original draft EIS (DEIS), issued January 2, 2002. They reviewed drafts and provided critical comments on the document. Special thanks go to Teri Granger and Jeanne Koenings who provided valuable editorial expertise which vastly improved the clarity and readability of the 2002 DEIS. We also want to thank Yolanda Holder for their efforts in revising this document.

The authors would also like to thank the members of the Pilot Rule Advisors Group who took the time to discuss and suggest revisions to the pilot rule: Dee Arntz, Peggy Bill, Sarah Cooke, Theresa Dusek, Steve Erickson, Kim Harper, Eric Johnson, Amy Kurtenbach, Bill Leonard, Sky Miller, Doug Peters, Mike Rundlett, Jodi Slavik, Gail Terzi, and Jackie White.

Thanks are due to the Ecology staff that helped complete the rule development process. Lauren Driscoll and Gretchen Lux who provided guidance, technical and policy advice; and Kate Thompson, Christina Merten and Yolanda Holder who tirelessly recorded the meeting minutes and produced the meeting summaries. Last, but by no means least, we would like to thank those who participated in the pilot program: bank sponsors, local, state, and federal agencies, tribes, the public, and the time spent by Ecology staff who reviewed projects under the pilot program.

Introduction to the Document

Overview of the Document

A Draft Environmental Impact Statement (DEIS) was developed and a public notice was issued to solicit comments in 2002. However, the wetland mitigation banking program was put on hold due to lack of funding and a Final Environmental Impact Statement was never published. In 2004, the Washington State Legislature provided funding for the Wetland Banking Program and directed Ecology to administer a Wetland Mitigation Banking Pilot Program (pilot program). Several projects have been certified under the pilot program and based on the lessons learned during this time, Ecology moved forward in the formal rule adoption process. The 2009 update to the DEIS incorporates comments, lessons learned, and regulation changes since the first DEIS was published in 2002.

This report describes the concept of wetland mitigation banking (banking), outlines the key components of a wetland mitigation banking program and identifies the potential environmental consequences of various alternatives. This report also explains the steps taken by the Department of Ecology (Ecology) through the rule development process to determine the preferred alternative for rule language.

Purpose of this Document

This document identifies and describes the potential effects of wetland mitigation banking as administered under the proposed rule. In doing this, it satisfies the State Environmental Policy Act (SEPA) which requires state and local agencies to evaluate the potential environmental effects of actions that they undertake.

This document also serves as an educational resource. It provides extensive information on wetland mitigation banking and the draft certification program through which individual banks are approved.

Wetland mitigation banks pursuing state certification may use this document to address the programmatic (or general) effects of banking when completing SEPA analysis of specific banks. Because of the programmatic nature of this document, individual bank proposals will need additional SEPA review. The site-specific effects of the construction of a wetland bank and its operation will need to be addressed separately during the bank certification process.

Summary

Organization of Draft EIS

Chapter 1, **Introduction**, provides a description of wetland mitigation banking, its history, and the types of banks. It discusses the legislation regulating banking in Washington State and the rule being proposed to guide implementation of the law.

Chapter 2, **The Effects of Mitigation Banking**, describes the positive and negative impacts of wetland mitigation banking includes an extensive discussion of the beneficial impacts of banking.

Chapter 3, **The Rule: Approach, Certification Process and Operational Requirements**, concentrates on describing the rule in detail. Each section describes the topic, the statutory requirements, the rule language, and the rationale for that rule language. The Chapter includes the underlying approach used in developing the rule, how the certification process will work (describing the roles of Ecology, local jurisdictions, federal agencies, tribes, and the public), and concludes with a comprehensive section on how site-specific monitoring, tracking, use of credits, compliance, incentives, and financial assurances will work.

Chapter 4, **The Rule: Technical Requirements**, addresses how service areas are determined, how sites are selected, how credits are determined and how credits are released. As in Chapter 3, each topic is described, the statutory requirements are listed, and the rule language and the rationale for that language are discussed.

The DEIS concludes with References and Additional Readings sections, a Glossary of terms, and five Appendices: Appendix A lists the members of the Negotiated Rule Development Team; Appendix B lists the members of the Pilot Rule Advisors Group; Appendix C provides a copy of the legislation, RCW 90.84; Appendix D is a copy of the Rule, WAC 173-700; Appendix E includes a discussion of the alternatives considered, and Appendix F includes the department's response to comments.

Need for Wetland Mitigation Banks

The concept of wetland mitigation banking has been around since the 1970s. However, most recently there has been a renewed interest in its use as a regulatory tool. Banking generates credits by re-establishing (restoring), creating, rehabilitating, enhancing and/or preserving wetlands and associated ecosystems. These credits are used to compensate for unavoidable impacts to wetlands within a designated service area. Banks typically involve the consolidation of many small wetland mitigation projects into a larger, potentially more ecologically valuable site. Further, banks involve up-front

compensation prior to harming a wetland at another site. This ensures the success of the mitigation before unavoidable damage occurs at another site. With proper implementation and guidelines, banking has the potential to increase ecological benefits of compensatory mitigation and save money for project applicants.

The 1998 Washington State Legislature found that wetland mitigation banks are important tools for providing compensatory mitigation for unavoidable impacts to wetlands and that banking provides certain benefits over concurrent mitigation. Further, they found that the success of concurrent mitigation is extremely variable and the compensatory mitigation usually occurs after project impacts to wetlands, resulting in temporal losses of important wetland functions. In many cases, concurrent mitigation fails, resulting in a complete loss of wetland functions.

Authority

Due to the low success rate of compensatory mitigation, the legislature initiated a review of the implementation of wetland protection rules during the 1997-98 session. Several issues were raised during the review. To help address these issues, the Washington State Legislature adopted RCW 90.84, *Wetlands Mitigation Banking.* For the full text of the law, see Appendix C.

RCW 90.84 solidifies the Legislature's support of wetland mitigation banking as a viable option for providing compensatory wetland mitigation. It affirms the state's authority to regulate wetland mitigation banking. The law set minimum guidelines for the establishment of banks and directed Ecology to develop a statewide rule for the certification of banks using a collaborative process.

Ecology convened a negotiated rule development team to assist in the development of a rule. After an 18-month negotiated rule process, a draft rule (WAC 173-700) was developed. This draft rule was published for public review and comment in January 2002. In spring of 2002, the banking program was placed on indefinite hold due to budget shortfalls. The proposed rule was withdrawn on May 30, 2002, and the notice of withdrawal was published in the Washington State Register (WSR 02-12-058). The 2004 Legislature appropriated funding for Ecology to implement a pilot program for wetland mitigation banking. The funding was used to implement the pilot program and test the draft rule. Ecology used the draft rule (WAC 173-700) that was previously negotiated to implement the pilot program.

Objective of this Proposal

The primary objective of this proposal is to finalize a rule and establish a certification program, based on results of the pilot program. Through this rule, the department seeks to provide a unified, predictable and efficient process for the approval of ecologically

successful and sustainable wetland mitigation banks. A secondary objective is to provide an effective tool for providing compensatory mitigation for unavoidable wetland impacts.

Purpose of the Draft Environmental Impact Statement

The purpose of this DEIS is to review and evaluate the various alternatives associated with key wetland mitigation banking elements; to identify potential adverse effects from the various alternatives and the preferred alternative; and to articulate the potential benefits of banking with a statewide rule and certification process. In addition, this DEIS will satisfy State Environmental Policy Act (SEPA) requirements pertaining to the environmental significance of the concept of banking under the statewide rule and the specific thresholds or procedures published in the final rule. However, the negotiated rule development team and the pilot rule advisors group stressed that the rule language needed to remain flexible in order for the specific conditions and requirements for a bank to be made on a case-by-case basis by an Interagency Review Team (a multi-agency review board). Thus, considerable SEPA review may still be required to evaluate the potential effects of the establishment and use of individual banks. Additionally, SEPA review will be done for most individual debit projects (projects that use bank credits as compensation for unavoidable impacts).

Description and Analysis of Alternatives

A number of alternatives were considered during the negotiated rule development process. The "no action" alternative was not considered during the rule development process since the department was directed to adopt a rule by the Legislature. Other alternatives were considered as each specific subject was considered by the development team. Rather than presenting several full alternative proposals, this DEIS discusses the preferred alternative for key specific subjects in the main document. It then discusses the alternatives considered for each specific subject. This discussion on alternatives can be found in Appendix E.

Alternatives are discussed for these topics:

No Action
3.3.2 Monitoring
3.3.5 Compliance
4.1 Service Area
4.2 Site Selection
4.3 Credit Determination
4.4 Credit Release

Scoping Comments

A determination of significance (DS) and request for comments on the scope of the original DEIS was issued on March 30, 1999. The scoping notice identified 5 areas for discussion in the DEIS:

1. Defining service area
2. Site selection criteria
3. Credit determination
4. Credit release based on performance standards
5. Performance standards.

The public was notified on the proposed scoping through several avenues. The scoping notice was:

- Published in the SEPA register on March 30, 1999;
- Posted on Ecology's website;
- Published in several newspapers across the state including the *Seattle Daily Journal of Commerce, Wenatchee Daily World, Spokesman Review, Tacoma News Tribune,* and the *Aberdeen Daily World; and*
- Mailed to local governments across the state and interested parties who requested information on the development of the wetland mitigation banking rule.

Comments on the DS and the scope of the DEIS were accepted until May 14, 1999. Nine comments were received on the request for scoping. Commenters supported the five areas outlined in the scoping notice and requested the DEIS also address:

- The use of banks for addressing cumulative impacts from small impacts
- Public involvement processes for bank certifications
- Effects of banking on salmon recovery
- In-kind versus Out-of-kind mitigation

Scoping comments that are discussed in this document are:

- Service area criteria
- Discussion of the impact of transferring wetland credits (off-site mitigation)
- Discussion of conversion rates for generating credits
- Discussion of compensation ratios applied to debit projects
- Other issues surrounding the use of credits including in-kind and out-of-kind use of credits
- Use of banking to address cumulative impacts

Issues Identified from the Pilot Program

The pilot program provided Ecology the opportunity to test the draft rule and identify areas of the rule that required further clarification or changes. During the pilot program several issues were identified and addressed in the revised rule:

- **Sequencing**. Different stakeholder groups voiced their concern that banking would allow impact projects to bypass mitigation sequencing. To address these concerns language was included in the rule that requires permitters to ensure that mitigation sequencing has occurred. Mitigation sequencing in the rule is defined as "**sequentially avoiding** impacts, **minimizing** impacts, and **compensating** for remaining **unavoidable impacts** to wetlands or other aquatic resources. The rule states the credits from a bank may be used to compensate for "unavoidable" impacts to wetlands within a designated service area and further defines unavoidable as "adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved". This message is also a part of Ecology's wetland banking outreach efforts.

- **Long-term protection requirements**. There was a need to ensure the text in the rule was clear on the long-term protection requirements for bank sites. The rule contains language that states each bank sponsor (certification applicant) must provide an approved legal mechanism to ensure the bank site is permanently protected and preserved in its natural state.

- **Agricultural land**: A concern that developed during the pilot program was the location of banks on agricultural lands of long-term commercial significance and the potential loss of productive farmlands. To address this concern the rule includes language clarifying the department's commitment to the protection of agricultural lands of long-term commercial significance. The rule contains site selection criteria that discourages the location of banks on prime farmland soils and outlines criteria for minimizing adverse effects on agricultural lands.

- **Role of local government.** Ecology cannot certify a mitigation bank without the prior approval of the local jurisdiction where the bank is located. However, the availability of local staff time for project review varies significantly. A key lesson learned from the pilot program was the importance of involving the local agencies early and throughout the proposal review process. Early local involvement helps streamline the permitting and bank certification process. To encourage local involvement in the certification process, Ecology has clarified the role of local governments in the rule.

- **Urban banks.** High land costs within urban areas can be prohibitive for the establishment of banks. To encourage the location of more urban banks in Washington, Ecology has provided incentives in the rule to encourage sponsors to propose banks in these areas.

- **Ability to deny bank proposals.** Ecology recognized the importance of including denial language of bank proposals early in the rule to ensure that only proposals that had the ability to provide appropriate compensatory mitigation for activities authorized by federal, state or local permits were allowed to move forward in the certification process. The proposed rule includes language that outlines the considerations that Ecology will use to determine whether a proposed bank is ecologically appropriate and able to provide appropriate mitigation for likely authorized impacts. The language in the rule is consistent with the *Federal Rule* on compensatory wetland mitigation.

Frequently Expressed Concerns

During the negotiated rule development process and the pilot program several consistent concerns were raised regarding the implementation of a wetland mitigation banking program:

- Banking could promote impacts to wetlands through bypassing mitigation sequencing requirements.
- Banking is very risky because compensatory mitigation doesn't work and banks will result in larger-scale failures.
- Banks could result in the net loss of wetlands in some sub-basins.
- Use of preservation and riparian and upland areas to generate credits would result in net losses of wetland area and function.
- Banks will result in the loss of wetlands in urban areas and their replacement in rural and agricultural areas. Banks will contribute to a redistribution of wetlands on the landscape and a loss of productive agricultural lands.
- Banks could result in the loss of small, isolated wetlands and their replacement with large, contiguous wetlands.
- Concerns over listed salmon species could result in banks focusing on fish benefits with resulting losses to non-fish-bearing wetlands.
- The public will not have adequate opportunity to provide input on the design and requirements for banks.
- If the bank approval timeline is not reasonable, then the bank projects will incur additional expenses that will cause credit prices to be more than what the market can support. If the market does not support these bank projects, then they will cease to exist.

This document reviews each of these concerns and what the effect of the rule will be on each of them.

Conclusion

Ecology does not anticipate that banking under the proposed rule will result in significant adverse impacts to the environment.

Banks may result in some minor localized adverse effects to the environment including loss of functions in some sub-basins, relocation of wetlands on the landscape and tradeoffs in functions. It should be noted that these same adverse effects occur, and will continue to occur, with status quo mitigation. With banking, however, such adverse effects will be minimized through the use of several safeguard mechanisms incorporated into the certification process such as:

- The use of inter-agency team review of proposals;
- Requirements for detailed baseline information on the bank site and potential wetland impacts within a banks' service area;
- Phasing the release of credits until specific performance measures are attained;
- Requirements for financial assurances;
- A program to provide oversight of operating wetland mitigation and procedures for ensuring banks to comply with the terms of their certification; and finally,
- The analysis of compensatory mitigation from a landscape perspective.

The new *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* (*Federal Rule*), published in April 2008, also views banking as a low risk and environmentally beneficial mitigation option. The *Federal Rule* states that the establishment of banks reduces risk and uncertainty, as well as temporal loss of resource functions and services (Corps and EPA 2008). In addition, use of bank credits can help reduce risk that mitigation will not be fully successful.

The *Federal Rule* lists the following reasons why the use of banks lowers the risk of failure and encourages more successful mitigation (Corps and EPA 2008):

- An approved instrument is required to be in place before credits can be used to compensate for authorized impacts;
- Credits are not released for debiting until specific milestones associated with the bank site's protection and development are achieved;
- Banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation then traditional mitigation; and
- Development of banks requires site identification in advance, project-specific planning, and significant investment of financial resources

In general, we anticipate that banks will provide more ecologically successful compensatory mitigation than status quo, concurrent mitigation.

1.0 Introduction

This chapter provides an overview of wetland mitigation banking (banking) and the history of banks in Washington State (see Section 1.1). It also describes Washington State's wetland banking law (Section 1.2), the process used to develop the rule (Section 1.3) and a brief overview of the rule (Section 1.3.2).

1.1 Wetland Mitigation Banking

Wetlands are protected and regulated because of the functions they provide, their rarity, or uniqueness. Several laws govern the management and protection of the state's wetlands. These include:

- Section 404 of the Federal Clean Water Act[1]
- Section 10 of the Rivers And Harbor Act[2]
- Final Rule for Compensatory Mitigation for Losses of Aquatic Resources[3]
- Washington State Hydraulic Code[4]
- Washington State Shoreline Management Act[5]
- Washington State Growth Management Act[6]
- Washington State Water Pollution Control Act[7]
- Washington State Forest Practices Act[8]

Each of these laws includes mechanisms requiring that damage to wetlands be avoided and minimized. This is accomplished through mitigation sequencing. Sequencing requires that project applicants must first **avoid** impacts to the greatest extent possible. Remaining wetland impacts must be **minimized**. For example, minimization may include limiting the clearing of vegetation in wetlands and the placement of temporary construction roads and staging areas in non-wetland areas. When unavoidable impacts to wetlands will occur, a project applicant is usually required to provide **compensatory wetland mitigation** to replace the affected functions and wetland area.

[1] Federal Water Pollution Control Act (42 USC 4321 *et seq).*
[2] *ibid*
[3] FR Vol. 73, No. 70, April 10, 2008. pp. 19594-19705
[4] RCW 75.20
[5] RCW 90.58, WAC 173-200, as amended
[6] RCW 36.70A
[7] RCW 90.48
[8] RCW 76.09

Compensatory wetland mitigation includes a range of options, from the use of on-site, in-kind mitigation (where the same type and classification of wetland is created on the project site) to off-site, out-of-kind wetland mitigation. Out-of-kind compensation means that the type of replacement wetland is different from the affected wetland (e.g., compensating for impacts to a wet meadow with the restoration of a forested wetland). Most compensatory mitigation is done either at the same time or after the impacts have occurred. This type of mitigation is referred to as "concurrent" mitigation. Concurrent mitigation often results in temporal losses of important wetland functions because there is a time lag between when the wetland functions are lost and when the mitigation site is fully functional.

Wetland mitigation banking, as described below, provides an alternative to concurrent compensatory mitigation. Banking is not the solution to ongoing losses of wetlands or the frequent failure of concurrent mitigation to live up to expectations. Banking is simply one tool which, along with the *Federal Rule* on compensatory mitigation, the state policy for alternative mitigation[9] and the Aquatic Resources Act, RCW 90.74, provides Ecology, the Washington Department of Fish and Wildlife and local governments, with ways to encourage more ecologically successful mitigation than the status quo, on-site mitigation.

1.1.1 Historical Background

The concept of wetland mitigation banking has been around since the 1970s. In the late 1980s and early 1990s, interest in banking increased and several banks were established on an ad hoc basis with the regulatory agencies. In 1995, the federal government codified its support of banking with the development of the *Federal Guidance for the establishment, Use and Operation of Mitigation Banks (Federal Guidance)*[10]. The guidance was developed through a collaborative effort by all of the federal agencies involved in wetland regulation. By 2000, the number of mitigation banks in the county had grown to at least 350 banks (Brumbaugh 2001). The early mitigation banks were primarily single-user banks and most of those were public agency banks. After the *Federal Guidance* was released, the number of entrepreneurial banks increased rapidly. A recent report by the U.S. Army Corps of Engineers report stated that 77% of 454 approved or proposed banks were entrepreneurial (U.S. Army Corps of Engineers 2006).

Congress further supported the federal agencies' position on wetland mitigation banking in 1998 when it included a provision in the federal transportation funding bill, the Transportation Equity

[9] The state Alternative Mitigation Policy was developed in 2000 by Ecology, the state Department of Transportation , the state Department of Fish and Wildlife, and the Office of Community, Trade and Economic Development. The policy outlines how Ecology and Washington Department of Fish and Wildlife will review off-site mitigation options in a watershed context. The policy was developed in response to guidance from the Legislature in the Salmon Recovery Act (RCW 75.46). The agencies developed the guidance to clarify when alternative forms of mitigation (off-site, out-of-kind, the use of preservation alone) may be environmentally preferable to on-site mitigation.

[10] Federal Register, 1995. *Federal Guidance for the Establishment, Use and Operation of Mitigation Banks*. 60(228)

Act for the 21st Century[11] (also known as TEA-21), that expressed a clear preference for the use of banks to compensate for federally funded highway projects (Gardner 2000).

In order to improve and consolidate existing regulations and guidance pertaining to all types of wetland mitigation nationally the Corps of Engineers and Environmental Protection Agency published a draft rule on compensatory mitigation in 2006. In 2008, the federal government announced the release of the *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* (hereafter referred to as the *Federal Rule*)[12]. The purpose of the rule is to clarify how to provide compensatory mitigation for unavoidable impacts to the nation's wetlands and streams. The rule will enable the agencies to promote greater consistency, predictability and ecological success of mitigation projects under the Clean Water Act. Wetland mitigation banking is one of the mitigation options covered under this rule. This rule replaces the *Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks* (60 F.R. 58605 et seq.)

1.1.2 Definition of Wetland Mitigation Banking

Throughout this document, the term "banking" is used. Unless otherwise noted, the term banking refers to wetland mitigation banks or a program of wetland mitigation banking and does not refer to financial institutions or banking of other natural resource benefits.

"Mitigation banking has been defined as a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are re-established, created, rehabilitated, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts. In general, a bank sells credits to permittees whose obligation to provide compensatory mitigation is then transferred to the bank sponsor" (Corps and EPA 2008) (FR Vol 73, No. 70, April 10, 2008, pg. 19671).

Wetland mitigation banks have two components:

- A physical place where wetland "credits" are generated by re-establishing, creating, rehabilitation, enhancing and/or preserving wetlands.
- An organization (or part of an organization) which creates the structure (mitigation banking instrument) and provides the management for the physical place.

Credits can be used (debited) to compensate for unavoidable impacts to wetlands within a designated geographic area (service area). A bank's service area is akin to its "market area" or the area in which credits may be sold or used to compensate for unavoidable impacts. Projects that use bank credits as compensation are called "debit projects."

[11] See US Public Law No. 105-178, 112 Stat. 107 (1998)

[12] The *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* was developed by the U.S. Army Corps of Engineers and the Environmental Protection Agency, in response to a need for a unified federal rule on compensatory mitigation. The final rule was filed in the Federal Register in 2008. (FR Vol. 73, No. 70, April 10, 2008. pp. 19594-19705)

To ensure the long-term success of the bank site(s), the property is permanently protected through the placement of a conservation easement and the designation of a long-term steward. Before credits are released bank sponsors are required:

- To have an approved mitigation bank instrument;
- Record a conservation easement for the site;
- Post financial assurances for construction[13], maintenance, monitoring and contingency measures; and
- Establish a long-term escrow account for the long-term management of the bank site (s) until full success of the bank project is achieved

1.1.3 Use of Wetland Mitigation Banks

Use of credits from a bank may be considered when an unavoidable impact to a wetland within the bank's service area is proposed. Typically, use of credits from a bank is allowed only after the sequence of avoidance and minimization of impacts has been satisfied. If approved during the permitting process, the developer purchases credits from the bank as compensation for the authorized wetland impacts. Credits are then debited from the bank and are no longer available for purchase. This process can be repeated as long as the bank has available credits.

The permitting agency(ies) determines if the credits provide adequate compensation for the wetland losses. Considerations of the appropriate use of credits include whether on-site mitigation for the debit project is practicable and appropriate, if off-site mitigation is ecologically preferable and whether the bank provides similar wetland functions to those affected by the debit project.

1.1.4 Types of Wetland Mitigation Banks

There are several types of wetland mitigation banks:

- Public banks
  - Single user
  - Multiple user
  - Joint-venture banks
- Private banks
  - Single user
  - Multiple user
- Entrepreneurial banks

[13] Project sponsors have the option of not placing financial assurance for construction. If they choose this option then Ecology will not release credits until the as-built report is approved by the agency.

This rule applies to all types of banks; regardless of who is sponsoring the bank or who is using the credits generated at the bank.

Public Banks

Public banks include those banks established by public entities for their own development projects (i.e. infrastructure projects: roads, utilities, ports and municipal storm water management). They may be created for a single user or multiple users.

A single-user public bank is developed by a single organization, such as a county or state transportation department or port authority. They typically use the bank to compensate for wetland losses from their own projects. Washington Department of Transportation's banking program is an example of a single-user public bank program.

A public multi-user bank is developed by one or more public entities to provide mitigation for multiple public entities affecting wetlands in the bank's service area. King County's wetland bank on the Issaquah plateau is an example of a public multi-user bank. This bank was developed by the county transportation department, the water and land resources division and the Sammamish Plateau water and sewer district to provide compensatory mitigation for public projects in the Sammamish watershed.

A public agency may also establish a bank to be used by multiple public and private users. Banks established to implement land-use plans are examples of multi-user banks. The West Eugene Wetland Mitigation bank in Oregon is an example of this type of multiple-user bank. The city of West Eugene oversees and manages the bank and applicants (public or private users) located within the bank's service area may purchase credits to meet permit requirements.

Another type of public bank is a joint-venture bank where a public entity, usually a local government, jointly establishes a bank with a private entity in order to provide compensatory mitigation alternatives for residential and commercial development.

Private Banks

A corporation or private developer may develop a wetland mitigation bank to address their own long-term development needs for compensatory mitigation. Alternatively, a group of developers may jointly develop a bank in order to combine resources and reduce the costs for compensatory wetland mitigation.

Entrepreneurial Banks

A private individual or firm may establish an entrepreneurial bank to sell credits to project proponents needing mitigation in a specified service area. Private entrepreneurial banks serve both private individuals and public entities. The Skykomish Habitat Mitigation Bank and the Snohomish Basin Mitigation Bank in Snohomish County are both examples of entrepreneurial banks in Washington.
Nationally, the business of wetland mitigation banking has evolved considerably over the last 30 years and entrepreneurial bankers have established a National Mitigation Banking Association. The Association works on issues related to banking including lobbying for federal legislation.[14]

1.1.5 Existing Wetland Mitigation Banks in Washington

A total of twelve wetland mitigation banks and banking programs currently exist in Washington State:

- Washington State Department of Transportation (three bank sites in Lewis, King and Grant counties)
- Pierce County Public Works Department
- Paine Airfield, Snohomish County
- King County (one bank site and administrative rules)
- Meadowlands Bank, Clark County
- McHugh Estuarine Wetland Demonstration Bank, Pacific County
- Meadowcroft Mitigation Bank, Stevens County
- Snohomish Basin Mitigation Bank, Snohomish County
- Skykomish Habitat Mitigation Bank, Snohomish County
- Nookachamps Wetland Mitigation Bank, Skagit County

Existing Public Banks

Public wetland mitigation banking activity in Washington State began in earnest in the early 1990s. The Washington State Department of Transportation (WSDOT) initiated the first effort on banking in the state. WSDOT began negotiations with the federal and state regulatory agencies on a mitigation banking Memorandum of Agreement in 1992. The Memorandum of Agreement was completed and signed in 1994. It addresses how WSDOT will establish and operate a wetland mitigation banking program to meet transportation-related wetland compensation needs. The Memorandum contains information on agency coordination, bank site selection, debiting ratios and monitoring requirements for WSDOT banks.

WSDOT has established two banks in western Washington, the North Fork Newaukum in Lewis County and Springbrook in King County. These banks are designed to provide compensatory mitigation for impacts from the proposed upgrade of Interstate 5 and Interstate 405, which are

[14] www.mitigationbanking.org

planned to occur over a 20-year period. WSDOT also has another bank located in Moses Lake, Grant County, which was developed to mitigate for highway impacts in the Columbia Basin.

The Pierce County Public Works Department began its banking program in 1994. The banking program consists of several sites located in various sub-basins in the county. In several cases, the sites were selected to provide compensatory mitigation for specific projects. The bank sites were designed to provide more mitigation than was needed for the initial project. The extra credits produced at the bank sites are used for local permit requirements and occasionally are used to meet federal permit conditions for county public works projects. Although the program is primarily a single-user public bank system, WSDOT has been able to purchase credits out of the county bank system.

The Paine Airfield Wetland Mitigation Bank (1996) was designed to provide compensatory wetland mitigation for impacts anticipated under a 20-year airport expansion plan. This bank is a multiple-user bank. It also provides mitigation for other public agencies affecting wetlands in the bank's service area. WSDOT and the Snohomish County Public Works Department have both used the bank to meet mitigation obligations for road improvements associated with airport operations. In 2008, Paine Airfield became the first fully-accredited bank in the state, approved by local, state, and federal agencies, to meet all of its required ecological performance standards.

King County established a bank on the Issaquah Plateau in 1996. The bank was established to provide mitigation for public projects. It is a joint-venture bank. Although managed by King County, credit ownership is based on cost-share of the project. The credit ownership is divided as follows: 50 percent Sammamish Plateau Water & Sewer District, 25 percent King County Water and Land Resources Division and 25 percent King County Roads Division.

Existing Entrepreneurial Banks

During the last fifteen years, the interest in privately established and managed wetland mitigation banks has increased dramatically. Several factors have probably contributed to this increase.

First, the increasing recognition that wetland systems provide significant public services has increased their economic and social value.

Second, increasing growth, particularly in the Puget Sound area, Skagit and Whatcom counties, southwestern Washington, the Tri-Cities and Spokane areas (The Olympian 2000), provides a consistent level of demand for compensatory wetland mitigation.

Finally, there is a perceived opportunity to produce significant profits from a bank. Developers are willing to pay significant sums in order to provide compensation for their impacts and obtain development approvals. It is, however, not unusual for concurrent compensatory mitigation to cost tens of thousands of dollars per acre, excluding land costs (King and Bohlen 1994). In commercially zoned areas, mitigation costs are especially prohibitive and can exceed hundreds of thousands of dollars per acre when land costs are included (Perkins et al. 1997). Therefore,

developers may choose buying credits from a bank over creating their own compensatory mitigation.

The Meadowlands Bank, constructed in 1996, was the first private entrepreneurial bank established in Washington State. This bank has provided mitigation for a number of development projects in the rapidly developing Salmon Creek Basin of Clark County. Clark County approved the bank to provide compensatory mitigation required under the local critical areas regulation. The bank did not receive approvals on the state or federal levels. However, the U.S. Army Corps of Engineers and Ecology elected to allow use of the bank for compensation required under the Clean Water Act on a case-by-case basis.

The McHugh Estuarine Wetland Demonstration Bank is a six-acre, restored estuarine wetland in Pacific County. It provides mitigation credits for local projects and has also been used to meet U.S. Army Corps of Engineers requirements under a Section 404 authorization. Similar to the Meadowlands bank, this demonstration bank was approved by Pacific County**.** The McHugh demonstration estuarine wetland bank could not be approved on the state level due to the timing of the rule development. The bank was developed to demonstrate the feasibility of developing estuarine banks and restoring estuarine wetlands. Because of its relatively small size, the U.S. Army Corps of Engineers did not elect to approve the site as a federal wetland mitigation bank. However, they have accepted use of credits from the demonstration bank as compensatory mitigation required under their Section 404 permitting program.

Meadowcroft Wetland Bank is an 11-acre project in Stevens County. This was the first bank approved under the Pilot Program in 2005. The sponsor decided to pursue only state and local approval; however the U.S. Army Corps of Engineers have elected to allow use of the bank for compensation required under their Section 404 permitting program on a case-by case basis. The project restored freshwater depressional wetlands that provide functions of water quality improvement, reduction in flooding, improved groundwater recharge, and general improvement of habitat. The bank provides compensation for unavoidable impacts to wetlands that are of similar hydrogeomorphic (HGM) types and that provide similar functions.

Snohomish Basin Mitigation Bank, approved in 2005, is a 225-acred project in Snohomish County and was the first entrepreneurial bank to receive approval from local, state, and federal agencies under the pilot program. Located near the Snoqualmie River, the project is restoring floodplain, depressional, forested, and riverine wetlands that historically dominated the site. Restoration of native stream and wetland vegetation enhances off channel salmonid rearing habitat and improves wetland and wildlife habitat.

Skykomish Habitat Mitigation Bank, approved in 2006, was the second entrepreneurial bank located in Snohomish County. This bank is a 172-acre project located along the north bank of the Skykomish River that is creating and rehabilitating both wetlands and riverine side channels that directly connect to the Skykomish River. This project is a complex effort to increase flood storage capacity to this property and enhances salmonid habitat.

Nookachamps Wetland Mitigation Bank, approved in 2009, is the first bank approved in Skagit County. The bank is located partially within the City of Mount Vernon urban growth boundary

and partially in Skagit County. The bank includes 313 acres located along the Skagit River. The project will establish side channels off of the Skagit River and restore historic floodplain forest and wetland systems. The project includes a trail along the perimeter of the site that will allow directed public access through the site.

1.1.6 Future Wetland Mitigation Banks in Washington

Where Impacts Are Anticipated To Occur

It is anticipated that wetland mitigation banks will be established in areas where increased development and changes to the natural environment are taking place. As part of the initial decision-making for establishing a bank, sponsors perform a market analysis of potential credit demand. Banks are not likely to be established in areas where development is not occurring and where there is not a demand for compensatory mitigation.

The rapidly developing areas of the state are the most likely locations for banks to be established. These include the counties adjoining Puget Sound and the Straits of Juan de Fuca, Clark and Pacific Counties in southwest Washington, the Yakima and Tri-Cities areas and Spokane County (The Olympian 2000).

It is likely that land costs will result in banks tending to be located outside of urban growth areas. While market forces of supply and demand will affect how much a sponsor can charge for credits and hence how much a customer is willing to pay, bank sponsors (sponsor) will attempt to increase their ability to derive a profit by minimizing their costs to produce credits. In most of the urbanizing areas of the state, there is a large disparity between land costs inside of urban growth areas and those areas designated as rural. For example, prices for developable lands in urban areas can run in excess of several hundred thousand dollars per acre compared to a few thousand dollars per acre for lands located in rural areas. Unless the regulating entities require compensatory mitigation to occur within the urban growth boundary area, it is anticipated that there will be a shift of wetland resources to areas outside of the urban growth area where land costs are considerably cheaper.

Types of Banks - Ownership

Three primary types of banks may become more numerous in the state after the adoption of the proposed certification program:

- single-user
- public banks
- private entrepreneurial banks

Single-user banks are most likely to be associated with large corporations with anticipated growth and expansion such as manufacturing, technology and service industries. These large

corporations may establish a bank initially as a single-user bank and then convert it to a multiple-user bank at a later date. Corporations can reduce their financial risks by opening up the bank for other users. If their project doesn't use the credits created through the bank, they can recover their investment through the sale of credits to other parties.

Some local governments may establish **public wetland banks** to implement watershed recovery goals. They could recover the costs of restoring wetlands in a watershed by selling credits that are generated at the sites to the public. In some cases, establishment of a public banking program may require revisions to local budget rules and the establishment of a mitigation revolving fund to administer and track the bank transactions.

Establishment of private **entrepreneurial banks** is anticipated to increase after the rule is adopted. While banking is a speculative business that requires substantial risk on the part of the sponsor, wetland mitigation banking has developed its own industry. The increase in entrepreneurial banking elsewhere in the country reflects the significant profits that can be generated by a successful bank.

1.2 The Legislation Regulating Wetland Mitigation Banking - RCW 90.84

1.2.1 The Need for Legislation

Nationally between 1986 and 1997, 30 percent of all wetland loss was attributed to urban development, 26 percent to agriculture, 23 percent to silviculture, and 21 percent to rural development (Environmental Law Institute 2002). A National Research Council study(2001) tracked how much mitigation the Corps of Engineers required nationally. . This study reported that from 1993 to 2000 over 23,000 acres of wetlands were permitted to be filled in exchange for over 40,000 acres of compensatory mitigation (National Academy of Sciences 2001).

Several studies (Mockler et al. 1998, Johnson et al. 2000, Gwin et al. 1999, National Academy of Sciences 2001, Hoeltje and Cole 2007) indicate that the majority of individual compensatory mitigation sites are not successfully replacing functions lost due to authorized impacts to wetlands both nationally and in Washington State specifically. Each study cites several reasons for mitigation site failures:

- Poor site selection
- Inadequate design
- Lack of water
- Invasive vegetation
- Poor construction techniques
- A lack of follow-up and monitoring of sites

In a few cases, the concurrent compensatory mitigation totally failed, resulting in a complete loss of wetland area and functions. Even when a compensatory mitigation site develops successfully, the replacement of lost functions may take years or even decades and may never attain the level of function performance of natural wetlands (Zedler and Callaway 1999, King et al. 1993, Hilderbrand et al. 2005, Hoeltje and Cole 2007).

Due to the low success rate of compensatory mitigation, the Legislature initiated a review of the implementation of wetland protection rules during the 1997-98 session. Several issues were raised during the review. These included:

- Lack of success of existing wetland mitigation practices
- Unpredictability of permitting processes
- High cost of wetland permitting and compensatory mitigation
- Lack of a consistent regulatory approach to compensation requirements.

To help address these issues, the Washington State Legislature adopted RCW 90.84, *Wetlands Mitigation Banking.* The law originated in a subcommittee of the House Local Government and Regulatory Reform Committee and was originally sponsored by Representative Bill Thompson. For full text, see Appendix C.

RCW 90.84 solidifies the Legislature's support of wetland mitigation banking as a viable option for providing compensatory wetland mitigation. It affirms the state's authority to regulate banking. The statute sets minimum guidelines for the establishment of banks and directs Ecology to develop a statewide rule for the certification of banks using a collaborative process.

RCW 90.84, *Wetlands Mitigation Banking,* directed Ecology to use a collaborative process to develop a rule for certifying banks. The legislation required that the state rule be consistent with the existing *Federal Guidance* on the establishment, operation and use of mitigation banks. Since RCW 90.84 was enacted, the *Federal Guidance* has been replaced by the 2008 *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources*. To ensure consistency with the intent of the Legislature, the rule is consistent with the new *Federal Rule*. All references to the *Federal Guidance* in this document have been revised to reference the *Federal Rule*.

The law identified several aspects of banking that needed to be addressed in the rule. These included provisions for:

- Giving priority to banks that restore degraded or former wetlands
- Adequate assurances of success for banks including creation and re-establishment
- Banks using preservation of wetlands in conjunction with re-establishment, creation or enhancement of wetlands
- The determination of credits
- Credit releases
- Authorizations for the use of credits
- Public involvement in bank certifications
- The coordination of government agencies
- Determination of bank service areas

- Performance standards
- Long-term management, financial assurances and remediation for certified banks
- Local authority in the certification of banks
- Requirement that Ecology must ensure mitigation sequencing has occurred when the department authorizes the use of bank credits.

Creating a certification process was an important part of the legislation. Banking outside a certification process could yield:

- Banks that would not replace the functions being lost.
- Continuation of piecemeal mitigation projects that fail to address larger watershed needs.
- Banks that operate under inconsistent regulation, creating unfair advantages where regulations are more lenient.
- Greatly increased time required for agency approval.
- Potential sponsors would minimize the marketability of bank credits to offset impacts only under local permits.

1.2.2 Objective of the Rule

As directed by the Legislature, Ecology has developed a rule to implement the wetlands mitigation banking law. The legislation emphasizes that the rule should provide a predictable and streamlined regulatory process. This is accomplished through a statewide wetland mitigation bank certification process. Through the certification process, Ecology, in consultation with the Interagency Review Team, evaluates and approves banks using the rule as its guide.

The process also ensures that banks are ecologically sound and desirable[15].

The rule contains two distinct areas of focus. The first addresses the procedural elements of the certification review process, including operational requirements for banks and compliance procedures. These elements can be found in Parts II, IV, V, and VI of the rule. The second area outlines the technical criteria for evaluating bank proposals. Part III includes lists of technical criteria for each of the key components of a wetland banking system:

- Service area
- Site selection
- Determination of credits
- Credit release schedule
- Performance standards
- Financial assurances

The rule seeks to simplify the approval process for banks by articulating how Ecology will evaluate proposals.

[15] See Wetland Mitigation Banking focus sheet, Ecology publication #00-06-028.

1.3 The Rule Being Proposed to Guide Implementation of the Law

1.3.1. Development of the Rule

RCW 90.84.030 requires that Ecology develop the rule "…through a collaborative process." To fulfill this requirement, Ecology used a negotiated rule-making process. Negotiated is defined in the Administrative Procedure Act[16] as a process "by which representatives of an agency and of the interests that are affected by a subject of rule making,…seek to reach consensus on the terms of the proposed rule and on the process by which it is negotiated" (Washington Department of Ecology 1998).

Ecology convened a negotiated rule development team and involved the general public to determine the contents of the rule. During an 18-month negotiated rule process, a draft rule (WAC 173-700) was developed. The draft rule was published for public review and comment in January 2002. A list of the negotiated rule development team members is provided in Appendix A.

However, in late spring 2002, due to budget shortfalls, Ecology placed the banking rule on indefinite hold. The rule was withdrawn and a notice of withdrawal was published in the Washington State Register (WSR 02-12-058). Between 2002 and 2004 the Legislature received several requests from potential bank sponsors for program funding. Bank sponsors offered to enter into Cost Reimbursement Agreements in order to allow Ecology to implement a pilot program. In 2004 the Legislature appropriated funds for Ecology to implement a pilot program for banking and test the draft rule. Ecology convened the pilot rule advisors group to assist in selecting bank projects to participate in the pilot program.

Ecology re-convened the pilot rule advisors group in 2006 to assist Ecology in evaluating feedback from the pilot program on the draft rule and certification process. Meetings were held monthly and were open to the public. The group helped Ecology evaluate the implementation of the draft rule and proposed revisions to the rule. The role of Ecology, the advisors group and the public is described below.

The pilot program provided Ecology an opportunity to assess the rule and its regulatory impacts, identify implementation and administration costs, and review and analyze the results.

[16] Chapter 34.05 RCW

Roles of Participants

Role of Ecology

Ecology's role was advisors group facilitator, rule writer and final decision-maker. As the facilitator, Ecology:

- Provided all of the logistical support for advisors group meetings.
- Collected technical materials on banking.
- Assembled the advisors group, inviting representatives of various stakeholder groups.
- Produced information packets for advisors group discussions outlining background material, and potential rule approaches for each of the topics discussed by the advisors group
- Established the schedule of topics for discussion by the advisors group.
- Produced and distributed summaries of advisors group meetings.
- Developed and maintained e-mail and postal mailing lists to keep team members and interested members of the public apprised of advisors group discussions.

Role of the Pilot Rule Advisors Group

The advisors group played a pivotal role by adding the diverse viewpoints of a wide range of stakeholders. Stakeholders for banking included local, state, and federal agencies, tribes, environmental interests, bank sponsors agricultural and business representatives.

Group members met monthly for thirteen months beginning in October 2006 and ending in November 2007. Ecology sent each member a meeting packet one to two weeks prior to each Advisors Group meeting. Using the materials provided as a starting point, the group discussed each topic and worked to identify key concerns and considerations for the rule and in some cases, precise rule language. In June 2008 members of the advisors group were sent the revised draft rule to provide their input and suggestions on the specific rule language.

Role of the Public

The public helped to shape the rule. In the spirit of a "collaborative process," Ecology invited the public to attend each Advisors Group meeting and comment on the proceedings. Portions of each meeting were set aside to hear comments and suggestions from the audience. Audience members helped the advisors group by identifying potential alternatives and additional concerns not addressed by the group.

Public Outreach

In addition to the members of the public who attended the pilot rule advisors group meetings, Ecology gathered opinions and comments during separate meetings with various constituent

groups. These meetings helped to broaden exposure to other viewpoints on banking in the state. Each workshop helped to identify areas of the rule needing clarification and language revisions. Ecology also solicited advice and feedback from the public through public workshops in eastern Washington during August 2000 and in western Washington in December of 2000, June 2006, and April 2007. Ecology and the U.S. Army Corps of Engineers held joint trainings for local governments around western Washington on the use of banks during 2008.

Ecology sends out updates on the status of the pilot program and rule development on the wetland banking listserv and routinely posts events on public event calendars and on Ecology's wetland banking website. The public also has an opportunity to provide comments on specific bank proposals. Ecology issues a public notice on a bank's prospectus and a second notice prior to issuing a certification decision. The comments submitted on pilot program bank projects have influenced the revisions made to the rule.

After the rule is filed, Ecology will hold public hearings to obtain additional feedback from members of the public before the rule becomes law.

Coordination with Federal Agencies

The U.S. Army Corps of Engineers and the Environmental Protection Agency participated on the state's pilot rule advisors group and represented the federal wetland perspective. The U.S. Fish and Wildlife Service and the NOAA[17] National Marine Fisheries Service (NOAA Fisheries Service) were invited, but were unable to participate on the group.

Federal approval of state-certified banks should be easier to obtain because the rule is consistent with the *Federal Rule* on compensatory mitigation. Being consistent with current federal rules and regulations for wetland mitigation banking was a requirement in RCW 90.84.
Federal regulation on banking is provided in the *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* (*Federal Rule).*[18] The rule was published in the Federal Register in 2008 and replaces the 1995 *Federal Guidance* on mitigation banking. The *Federal Rule* improves and consolidates existing regulations and guidance, to establish equivalent standards for all types of mitigation under the Clean Water Act Section 404 regulatory program. The new rule also provides one set of regulations for compensatory mitigation, including the process that the U.S. Army Corps of Engineers[19] uses for approving banks. The rule establishes a preference for the use of credits from banks when the bank has the appropriate number and resource type of credits available. The banking section of the rule focuses on the technical and administrative elements of banks.

[17] National Oceanic Atmospheric Administration (NOAA)
[18] Federal Register Vol. 73, No.70, April 10, 2008, pg. 19594-19705
[19] Except for banks developed for Food Security Act (FSA) Swampbuster activities. In those cases, the National Resource Conservation Service is the lead federal agency.

1.3.2. Overview of the Rule-WAC 173-700

The rule, WAC 173-700, contains eight parts:

- **Part I** provides an overview of the wetland mitigation banking legislation (RCW 90.84), articulates the intent of the rule, and covers the definitions of terms used in the rule.
- **Part II** lays out the application and review process for certification.
- **Part III** covers the technical requirements for establishing banks.
- **Part IV** sets the requirements for the operation of banks, particularly for monitoring and credit tracking and reporting.
- **Part V** provides guidance for the use of credits.
- **Part VI** outlines Ecology's compliance and enforcement procedures for certified banks.
- **Part VII** states the roles and responsibilities for the Interagency Review Team and the signatories throughout the bank certification process.
- **Part VIII** covers the appeal process for certification decisions.

In the overview that follows, the discussion is broadly divided into three primary components:

- The certification process, including roles and responsibilities
- Technical requirements
- Compliance

More detail on these areas can be found in the discussion in Chapter 3.

The Certification Process

The proposed rule creates a certification process for reviewing and certifying wetland mitigation banks. Certification is a negotiated process between the sponsor and the regulatory agencies with jurisdictional authority over bank construction and debit projects. Negotiations occur to formulate a mitigation banking instrument (instrument).[20] In addition to meeting the requirements stated in the proposed rule, the instrument "describes in detail the physical and legal characteristics of the bank, including the service area, and how the bank will be established and operated."[21] For a bank to receive state certification, Ecology and the local jurisdiction in which the bank will be located each must approve the instrument.

The certification process relies on the formation of an Interagency Review Team. This is a team composed of local, state, federal and tribal agencies with a jurisdictional interest in the bank site.[22] An Interagency Review Team will be formed for each bank that is proposed. Ecology,

[20] The mitigation banking instrument is essentially the legal contract between Ecology and the bank sponsor on how the bank will be established and operated.
[21] Draft rule WAC 173-700-103.
[22] Entities typically invited to participate on an Interagency Review Team include the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, NOAA Fisheries Service, Natural Resources Conservation Service, Tribes, Washington Department of Fish and Wildlife,

the U.S. Army Corps of Engineers, and the Environmental Protection Agency have formed a statewide Interagency Review Team. This team has designated points of contact for each agency. It meets on a semi-monthly basis to discuss bank projects and related policy issues.

The purpose of the Interagency Review Team is to coordinate the review of bank proposals to avoid duplicative approval processes. Because so many different agencies may have approval authority over debit projects, it is important to gain as much consensus on the instrument as possible. The Interagency Review Team will work with Ecology and the sponsor regarding specifics of each bank proposal. Ecology will make final determinations on the state certification.

If Ecology intends to approve a bank for certification, it notifies the local jurisdiction where the bank is located and requests a decision on certification. The local jurisdiction must determine whether or not to concur with Ecology's intent to certify the bank. If the local jurisdiction does not concur with Ecology's intent to certify, Ecology cannot certify the wetland mitigation bank [RCW 90.84.040(1)]. If the local jurisdiction concurs, it indicates approval of the certification through a signature on the instrument. Other agencies (such as the federal regulatory agencies) are invited, but not required, to sign the instrument. It is in the best interest of the sponsor to obtain as many signatures as possible on the instrument.[23] Signing an instrument indicates that the agency or entity agrees with the terms of the instrument and certification.

Technical Criteria

The rule contains a section (Part III) that outlines the technical criteria used by Ecology and the Interagency Review Team to evaluate bank proposals. The purpose of Part III is to allow for a transparent decision-making process. Bank sponsors should be able to identify the key elements from the rule that will be evaluated and design their proposal to address these elements. This should result in some streamlining of the process since sponsors will be able to know what is expected prior to entering the certification process.

The rule also contains language that emphasizes the integration of banks with landscape-based watershed management plans (WAC 173-700-100, 211, and 222). The rule includes several incentives for sponsors to site and design a bank where it will provide regionally significant benefits and restore watershed processes (WAC 173-700-300).

Compliance

Part VI of the rule outlines the compliance process that Ecology will use to ensure that banks comply with the terms of their certification. The compliance section provides clear direction to

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the local jurisdiction where the bank is located and other interested local jurisdictions located within the bank's proposed service area. See WAC 173-700-220.

[23] FR Vol.73, No. 70, April 10, 2008. Pg. 19594-19705

Ecology to ensure that the interests of the public are protected and the protection of wetland resources is achieved. The compliance process is described in more detail in chapter 3.3.5.

2.0 The Effects of Wetland Mitigation Banking

This chapter identifies some of the weaknesses and strengths of wetland mitigation banking (banking). It begins with the potential adverse effects of banking on a programmatic level and concludes with a discussion of some of the environmental benefits that can be achieved with banking.

2.1 Concerns Regarding the Environmental Effects of Wetland Mitigation Banking

2.1.1 Increased Wetland Impacts

One of the most prevalent concerns about banking is that it will be used to justify avoidable impacts to wetlands thereby resulting in more wetland losses. This concern stems from the belief that if bank credits are available, regulators will jump to compensation or replacement of wetlands without requiring applicants to go through the initial sequence of mitigation: avoidance and minimization. Another concern is that wetland losses could increase because of pressure on agencies to use credits from a bank that is experiencing financial difficulties due to lack of demand for their credits.

Likely Effects Under the Rule

Requirements to apply mitigation sequencing and avoid and minimize wetland impacts may reduce the degree of wetland loss; however, losses of wetlands will continue to occur as a result of unavoidable impacts from growth and development. Impacts to wetlands are anticipated to occur whether or not a bank exists in an area.

The presence of a bank does not relieve an applicant of the requirement to first avoid and minimize impacts to wetlands. Use of credits from a bank is not considered until the compensation phase of a project's mitigation sequencing is reached. Shabman and Scodari (2005) points out that regulators require permit applicants to do everything the regulator deems practical to avoid wetlands impacts, and regulators determine what kind of offsets will be required and where they can be located. Regulatory reviews drive the permittee towards zero impacts, and then require off-sets for the impacts that remain. (Shabman and Scodari 2005)

On the state and federal levels, the use of mitigation sequencing – avoid first, then minimize and finally compensate for unavoidable impacts – is applied to all projects. However, on a local level, mitigation sequencing is not always rigorously enforced either by rule or implementation. As Race and Fonseca noted (1996), land use decisions and the political weight of private property rights issues often influence local permitting decisions. Many local ordinances provide exemptions for impacts to very small wetlands or for impacts from single-family dwellings.

Accordingly, some local jurisdictions may choose to bypass avoidance and minimization requirements and go directly to compensating with bank credits. The rule includes some safeguards to minimize this potential, however, it should be noted that these are not entirely foolproof and the use of banks for impacts that are avoidable is possible. The proposed rule states that bank credits may be used for "unavoidable" impacts to wetlands. The rule further defines "unavoidable' as follows: "Unavoidable means adverse impacts that remain after all appropriate and practicable avoidance and minimization have been achieved" (WAC 173-700-103).

In WAC 173-700-500(3), the rule directs that permitting agencies "should ensure that mitigation sequencing has occurred before approving the use of credits." RCW 90.84.040(2) states that state agencies and local governments may approve the use of bank credits for any mitigation required under a permit issued or approved by that agency to compensate for the proposed impacts of a specific public or private project. Mitigation is further defined in RCW 90.84.010(6) as "sequentially avoiding impacts, minimizing impacts and compensating for remaining unavoidable impacts." The requirement to ensure that mitigation sequencing occurs will help keep agencies accountable by requiring that they support the decision to allow impacts. Other agencies and local citizens can then follow up if sequencing is routinely being bypassed.

2.1.2 Wetland Resource Tradeoffs

Wetland tradeoffs can happen when compensation occurs off-site or out-of-kind, since the same wetland resources are not replaced. This section discusses the potential effects of off-site compensation and out-of-kind compensation from wetland impacts on a programmatic basis, and the likely effects of banking under the rule.

Off-site mitigation means that the replacement wetlands are not provided on or near to the project affecting wetlands.

Out-of-kind mitigation means that the compensatory wetlands and the associated functions provided are of a different kind than those that were lost. Out-of-kind mitigation is a fairly common practice, for example, when the affected wetlands are highly degraded (e.g., wet pastures dominated by exotic species); they may be replaced by a native scrub-shrub wetland.

Before discussing the effects of banking, it is important to look at the current trends in the types[24] and distribution of wetlands in the landscape. The loss of wetlands will continue regardless of the introduction of banks. The 2000 census figures show that some areas of the state are experiencing growth rates in excess of 30 percent (Olympian 2000). The development of land to meet those growth rates will continue to result in the loss of wetlands.

Off-site Compensation

Distribution of wetlands

In the past, off-site mitigation was often allowed only if:

- On-site mitigation would not succeed and be sustainable;
- Mitigation on the project site was not practicable for the applicant; or
- If off-site was environmentally preferable to on-site compensation (Johnson et al. 2002).

Ecology's review of best available science shows that mitigation standards should emphasize that mitigation activities must occur in a location where the targeted functions can reasonably be performed and sustained. Mitigation banks offer an opportunity to implement compensatory mitigation at a regional scale and provide larger, better-connected habitat in advance of impacts (Granger et al. 2005).

However, the use of banks could result in a relocation of wetlands particularly from areas of rapid growth and urbanization to more rural areas (BenDor 2009). Banks in Florida have resulted in a transfer of wetland resources from the highly urbanized areas to less densely populated rural areas (King 1997, Rhul and Salzman 2006). Land in urban areas is more valuable for development than as wetlands. Land in rural areas is less costly and in lower demand for development.

The potential effects of a relocation of wetlands to more rural areas include:

- Net loss of wetlands in urban sub-basins and net gains in rural areas.
- Alterations of hydrologic patterns.
- The loss of aesthetic values, open space areas, and recreation opportunities for urban dwellers.
- Small wetlands replaced by credits generated from large wetland systems.

The use of banks could also result in wetlands in one sub-basin being replaced in a different sub-basin in the same watershed, since most banks are anticipated to have service areas that cover several sub-basins. As a result, some sub-basins within a bank's service area could have net losses while others would experience net gains in wetland area. A study of wetland impacts and compensation in the Cuyahoga River Watershed in Ohio found that although there was an overall

[24] Types of wetland can include Cowardin types such as palustrine forested, shrub or emergent wetlands, and also include hydrogeomorphic types of wetlands such as depressional or riverine wetlands.

increase of wetland area based on permit requirements, the watershed experienced a decrease in wetland acreage (Kettle et al. 2008).

The tendency to lose wetland areas may be especially true in designated urban growth areas. Space is at a premium in urban areas and land costs can be prohibitive for on-site mitigation. Bank credits, therefore, may be used more frequently than concurrent mitigation in these areas.

There is a special risk in regard to the loss of small wetlands. Small wetlands may not be replaced by other small wetlands, but may instead be replaced by credits generated from large wetland systems often used in banks. Therefore, small wetlands may become fewer in number. It should be noted that banks do not have to consist of large wetland systems. A complex of small wetlands and their adjacent upland areas can comprise a bank.

There can be significant impacts to the landscape as a result of the loss of small wetlands. Collectively, wetlands can provide significant hydrologic functions such as reducing downstream erosion, reducing peak flows, and recharging groundwater (Loukes 1990, Leschine et al. 1997, Kelly 2001).

These wetlands can provide vital habitat for native amphibians (Richter 1996) and serve as habitat islands for birds and urban wildlife. Small wetlands can also provide residents in urban areas with recreational opportunities. Natural areas are considerably more socially valuable when located within developed areas (King and Herbert1997).

A 2004 study concluded that the greater the distance between the impacted wetland and the replacement wetland, the greater the potential for broad-scale and systematic differences in landscape conditions that could affect their relative value. This is particularly important when assessing the cumulative impacts of mitigation at the scale of a watershed or a water basin (King and Price 2004). Banks can be designed to address the cumulative impacts seen by years of impacting small wetlands in a watershed that are not properly mitigated for (BenDor and Brozovic 2007a). Banks need to be designed so that they will fit into the landscape and enhance the wetland and riparian systems in the watershed.

Existing Conditions

Historically, many of the policies on compensatory wetland mitigation emphasize on-site replacement of wetland losses. This has resulted in many wetland mitigation sites being constructed on sites that do not naturally contain the conditions necessary to support wetlands. Mitigation needs drive the design of the compensation rather than the site's conditions driving the wetland design. The requirements for wetland areas have resulted in wetland mitigation site designs that ensure the establishment of wetlands by emphasizing open water areas ringed by vegetation (Kentula et al. 1992).

While in the past the majority of wetland mitigation does occur on or near the site of the project (Mockler et al. 1998) affecting wetlands, much of the mitigation does not provide adequate compensation for, or replace functions lost (Johnson et al. 2002, National Academies of Sciences

2001). On-site mitigation has resulted in wetland sites that are often referred to as "postage stamp" mitigation. These mitigation sites are often isolated from other natural areas and wetlands due to roads, commercial and residential development. Their isolation from native seed sources and wildlife populations could affect their ability to recolonize after catastrophic disturbances.

A problem associated with on-site mitigation in urban and developing areas is the increased nature and frequency of human disturbances and inputs of toxins and pollutants. Many on-site mitigation sites serve as sinks for trash and waterborne contaminants washing off of surrounding impervious surfaces. These sites are often located within urbanizing areas and are degraded along with remaining remnant wetlands due to hydrologic regime alterations and inputs of contaminants, excess nutrients and disturbances (Booth 2000, Azous and Horner 1997, Kentula et al. 2004). Increases in impervious surfaces and reductions in infiltration and storage capacity in the upper parts of basins result in widely fluctuating hydrologic regimes and decreased plant and animal diversity. A smaller number of species that are able to tolerate wide changes in depth and duration of inundation tend to replace the native diverse species in these communities (Azous and Horner 1997).

While much of the emphasis has been for on-site mitigation, regulatory agencies now allow more flexibility in determining the best location for mitigation (Washington Department of Ecology et al. 2006, Corps and EPA 2008). As a result of regulatory experience and scientific research, the preference from requiring on-site mitigation is changing to the use of off-site mitigation (Washington Department of Ecology et al. 2006, Washington Department of Ecology et al. 2008).

A recent study in the Chicago area analyzed how this change is occurring in Illinois. The study showed that for mitigation project permitted in the Chicago area, approximately 60% of the mitigation was approved as off-site mitigation (BenDor and Brozovic 2007b). The same study found that the distance of the mitigation project from the impact site varies based on the type of mitigation method. BenDor et al.(2007) determined that banks mitigated for impacts an average of 16 miles from where they occurred. The majority of impacts using a bank are small impacts less than 1 acre (BenDor et al. 2007).

This use of off-site mitigation and the habitat fragmentation resulting from wetland alterations has resulted in a redistribution of wetland systems at the landscape scale (BenDor et al. 2007, Gwin et al. 1999, Kelly 2001).

Distribution and Location of Wetland Functions

The use of banks will result in the relocation of some wetland functions on the landscape. Tradeoffs in functions need to be evaluated at the site and basin scale. If a function is effectively being performed in a wetland or in a sub-basin, then it may be appropriate to prioritize a function that is currently lacking or being performed at a low level in the basin (Granger et al 2005).

In a paper discussing a method for evaluating wetland tradeoff decisions within a landscape context for making sustainable watersheds, King (1997) noted:

> "The landscape context affects different functions and values in different ways. For example, fish and wildlife spawning, breeding, and feeding habitats are provided best by wetlands that are surrounded by healthy ecological landscapes and are relatively inaccessible to humans. Other functions, such as sediment and nutrient trapping, generate more benefits if the wetland is closer to disturbed landscapes where sediment, nutrient, and storm water runoff are a problem. Similarly, certain wetland benefits (such as aesthetics, scientific research, education, and flood protection) require that people reside in nearby proximity to the wetlands, while others (such as endangered species habitat) require the opposite condition." (King 1997)

If a function such as reduction of peak flows or reduction of downstream erosion is lost in one basin and replaced in another, the donor basin would experience effects from increased flooding and scour and those effects would not be offset by less flooding in a different basin. The exchange would not be desirable in the donor basin where increased flooding (from the loss of water quantity functions) would affect populated areas and infrastructures. Alternatively, it may be acceptable to relocate the water quantity functions off-site if, for instance, there weren't any population centers downstream of where the loss of function occurred and the downstream basin area had sufficient floodplain area available.

Likely Effects Under the Rule

As noted above, the use of banks can result in the relocation of both wetland types and functions on the landscape since banks provide off-site mitigation.

Under the rule, adverse impacts from the relocation of wetlands and their functions on the landscape will be minimized in two ways. First, the service area of a bank will be based upon the functions provided at the bank and the distance from the bank where impacts can be adequately offset. Second, when debit projects propose to use bank credits, the permitting authority determines whether the use of credits is appropriate. The regulating agency first determines whether to allow off-site mitigation. If it is determined that off-site mitigation is acceptable or desirable, the permitting agency will decide whether the bank provides the appropriate functions to replace those functions lost. If the bank is not appropriate for replacing the necessary functions, then its use is not likely to be authorized. This decision is made on a case-by-case basis, taking into consideration the functions and landscape relationships of the bank's wetlands versus the unavoidable impacts of the debit projects.

Under the banking rule, it is anticipated that many of the impacts to functions that are linked to landscape position, such as hydrologic functions and fish habitat, will be mitigated on or near the development site since they cannot be adequately mitigated for elsewhere. Because hydrologic functions are dependent on landscape position (National Cooperative Highway Research Project 1996, Bedford 1996), the use of a bank to compensate for water quality and quantity impacts will

not be appropriate unless the bank is located close enough and downstream from the proposed impact area. Often, alterations in water quantity and quality are addressed on-site through structural compensations such as storm water detention and treatment facilities so that changes in the timing and volume of surface runoff due to increased impervious surfaces are taken care of.

The wild salmonid policy (Washington Fish and Wildlife Commission 1997) requires that impacts to fish habitat must be mitigated on or near the impact site because of the landscape dependency of the habitat. If on-site mitigation is not practicable and off-site mitigation must be used, the compensatory mitigation must be on the same stream reach (Washington Fish and Wildlife Commission 1997, Washington Department of Ecology et al. 2000).

However, other functions provided by the affected wetlands may be adequately replaced farther off-site. General habitat functions may be more significant and sustainable on a landscape level if they are replaced in an area with sufficient buffering, connectivity for dispersal and size to support a variety of niches and species rather than being squeezed into isolated openings in an urban and suburban landscape (Diamond 1975,Shabman and Scodari 2004). The use of bank credits could be acceptable for replacing functions that would be more beneficial off-site, such as wildlife habitat and maintenance of biologic diversity (King and Herbert 1997). Bank credits may also be appropriate compensation if the impacted wetland is functionally inferior and located within a degraded landscape (Kettle at el. 2008)

Adverse effects from off-site compensation can be minimized and the benefits maximized if compensatory mitigation decisions are made in consideration of the watershed or landscape context rather than at the site-specific level (Race and Fonesca 1996, Scodari and Shabman 2001). The rule supports the use of watershed-scale information in the location and design of banks. The National Academy of Sciences study on compensatory wetland mitigation (2001) supports the use of off-site mitigation when appropriate and concludes "watershed goals may often best be served by placing compensatory wetlands off-site."

The study also recommends that:

> "Site selection for wetland conservation and mitigation should be conducted on a watershed scale in order to maintain wetland diversity, connectivity, and appropriate proportions of upland and wetland systems needed to enhance the long-term stability of the wetland and riparian systems. Regional watershed evaluation should greatly enhance the protection of wetlands and/or the creation of wetland corridors that mimic natural distributions of wetlands in the landscape." (National Academy of Sciences 2001)

The recent Mitigation that Works Forum,[25] convened by Ecology, emphasized the need to locate mitigation in priority areas for restoring watershed processes that had been disrupted but which are important for watershed functioning. Both Ecology's rule and the *Federal Rule* strongly encourage banks sites to be located and designed to be consistent with watershed-based restoration priorities. Incentives have been built into the certification and bank establishment

[25] Washington Department of Ecology. 2008. *Making Mitigation Work, the Report of the Mitigation that Works Forum.* (Publication No. 08-06-018). Olympia

process to encourage the protection and restoration of ecological processes in a basin or watershed.

Out-of-Kind Compensation

There are several types of out-of-kind trades that could occur with banking. Exchanges which could occur include:

- Exchanges in wetland functions when bank credits are used which are not the same as the functions lost.
- Compensation of impacts to wetlands with credits generated by upland portions of bank sites.
- Potential net losses in area when credits generated by preservation areas are used to compensate for direct wetland losses (Brown and Lant 1999).
- Shifts in the distribution of wetlands when impacts to small wetlands are replaced with larger wetland systems.
- Conversions of freshwater, emergent wetlands to estuarine or forested wetland system.

Whether exchanges of type and functions of wetlands are ecologically appropriate will depend upon the context in which the exchange occurs. When impacts occur to a highly degraded and altered wetland, compensatory mitigation is often designed to provide higher-quality wetlands rather than to exactly replace those lost. These are out-of-kind tradeoffs. The state's Alternative Mitigation Policy (Washington Department of Ecology et al. 2000) specifically addresses out-of-kind mitigation and states that such mitigation is acceptable when it will provide an overall net gain for the resources of the watershed.

Existing Conditions

The traditional regulatory preference for compensatory wetland mitigation focuses on in-kind and on-site wetland replacement. In-kind has been generally construed as meaning of the same Cowardin[26] class, e.g., palustrine forested wetland, estuarine and riverine wetlands. The preference for in-kind mitigation is based on the assumption that similar wetland types provide similar functions.

While the goal of compensatory mitigation is generally to replace wetland function and area (National Academy of Sciences 2001), biologists rarely have the time or resources to directly measure the degree to which a specific wetland performs individual functions. When determining wetland impacts and compensation requirements, wetland biologists qualitatively assess a wetland's performance using best professional judgment. By developing sites that

[26] **Cowardin class** means the classification of a wetland area as described in Cowardin et. al 1979. *Classification of Wetlands and Deepwater Habitats of the United States* U.S. Fish and Wildlife Service publication FWS/OBS 79/31.

provide the same (or often greater) area and wetland type, it has been assumed that the mitigation provides similar functions as those lost.

While the rate of wetland losses has declined significantly from the 1970s (Dahl 2000), wetlands continue to be lost from filling and draining activities associated with urbanization, agriculture and silviculture. Trends show increases in the area and distribution of some wetland types, such as open water ponds and shrub wetlands (Dahl 2000, Gwin et al. 1999, Johnson et al. 2002, Scozzafava et al. 2007, Hoeltje and Cole 2007). There continue to be declines in forested (Dahl 2000) and emergent wetlands due to direct impacts and conversions to other wetland types (Johnson et al. 2002).

Studies in Washington (Johnson et al. 2002), Oregon (Gwin et al. 1999) and elsewhere (Bedford 1996, Hoeltje and Cole 2007) have shown that compensatory wetland mitigation has not resulted in replacement of similar wetland types. Presumably, functions have not been replaced as well (Tilton 1995, Faulkner 2004, Houlahan et al. 2006). In many cases, created wetlands contain morphology, vegetative communities and hydrologic regimes that do not exist naturally in the landscape (Hoeltje and Cole 2007). The overall effect of concurrent mitigation has been the gradual replacement of naturally occurring wetland types with more simplified, less diverse and in some cases, atypical wetland types (Gwin et al. 1999, Hilderbrand et al. 2005). The policy has resulted in a distinct increase in open water wetland types, as well as atypical wetlands (those that do not occur naturally within hydrogeomorphic subclasses) (Gwin et al. 1999, Bedford 1996. Kettlewell et al. 2008, Cole and Shafer 2002). The effects of this reconfiguration of the types and spatial distribution of wetlands include losses in the performance of some functions, loss of biodiversity and altered hydrologic patterns (Bedford 1996, Kentula et al. 1992, Minkin and Ladd 2003).

Potential Out-of-Kind Tradeoffs

Banking may change the types of wetlands that persist in the landscape and the functions they provide.

Some banks may include a variety of wetland types while other banks may focus on a single wetland type. Because the precise impacts to wetlands that will use the bank are not known, some wetland types may be exchanged during the use of the bank. This is particularly true if the regulating agency(ies) allows the use of credits from a bank that provides different functions or different wetland types than those that were lost.

In situations where credits are not allowed for upland areas within a bank, replication of a naturally occurring mosaic of wetlands and uplands may be less likely in banks. These wetland and upland mosaics may be ecologically significant ecosystems for a particular area. Economic considerations, however, would tend to drive bank design to maximize the wetland area that generates marketable credits. A sponsor may, therefore, maximize the creation of wetlands at the bank site, eliminating the use of uplands as part of a wetland/upland mosaic. Maximizing the wetland area at a bank site may result in more large wetland systems and fewer mosaics of

wetlands and uplands. The rule allows upland areas within a bank to generate credits if these areas contribute to the ecological functions performed by the wetlands in the bank. While the use of credits from such a bank to mitigate for impacts to wetlands could result in a net loss of wetland area, the benefits gained would include the establishment of a sustainable wetland ecosystem which is representative of the landscape profile of wetlands in the watershed (Bedford 1996). In areas where local regulations under the Growth Management Act or Shoreline Management Act require compensation for impacts to wetland buffers or upland habitats[27], net losses of wetlands would be reduced if bank credits from a mosaic bank are used to compensate for upland impacts as well as wetland impacts.

It should be noted that in the absence of wetland banks, mosaics continue to disappear when on-site mitigation areas are surrounded by pavement, roads and other development.

Out-of-kind trades may also occur when preservation of high-quality wetland systems generates credits in a bank. The state's Alternative Mitigation Policy allows the use of preservation as compensation when the impacts are small and are occurring to low-functioning wetland systems. The state views wetland preservation as a viable mitigation strategy for several reasons:

- Wetland creation and re-establishment have not fully been able to mimic naturally occurring systems (Kusler and Kentula 1990).
- Even with wetland regulations aimed at protecting wetlands and avoiding impacts, unavoidable wetland losses continue to occur (National Academy of Sciences 2001).
- Habitat fragmentation and disruptions to watershed processes are resulting in cumulative degradation of watershed health and functioning (National Research Council 1996).
- Preserving the remaining high quality wetland systems in a watershed provides the greatest long-term benefits for the watershed (Washington Department of Transportation 1999).

A potential downside of banking is that in order to maximize potential profits from a bank, sponsors will be enticed to create easily mimicked wetland systems rather than developing more complex wetland systems. For instance, some wetland types have been easier to recreate than others (Kusler and Kentula 1990, National Academy of Sciences 2001). Estuarine marshes have been relatively easy to replace, while forested wetlands and groundwater-driven wetland systems are successfully developed less frequently. Some systems such as bogs and fens may not be reproducible at all because of the complex physical and chemical processes that define these systems (Washington Department of Ecology 1993, National Academy of Sciences 2001). Sponsors will want to minimize their risks by developing banks where the proposed mitigation activities (e.g., re-establishment, creation, rehabilitation, and enhancement) have a high likelihood of success. Hence, sponsors are unlikely to develop banks which depend upon the development of a bog system and instead may opt to breach a dike to restore tidal marshes.

[27] For example, Lewis, Pierce and King Counties' regulations require mitigation for buffer areas around wetlands.

Likely Effects Under the Rule

Clear rules on the use of bank credits in the instrument should reduce the potential for losses in specific functions and types of wetlands in a watershed. The rule specifies that each instrument should include guidance on the appropriate use of its credits. Generally, banks that do not provide functions similar to those that are lost in a watershed are not likely to see their credits approved for use as compensation. Thus, sponsors will want to develop banks that will provide adequate function exchange in order to minimize their risk of financial losses.

"Ultimately, the risks and costs of banking should limit effectively its application to those situations in which banking will:

1. Contribute to a broad-based ecosystem restoration project that has a high probability of producing significant net environmental benefits and
2. Provide for some meaningful replacement of wetland functions and values lost due to the cumulative adverse effects of many small-scale wetland losses." (Goldman-Carter and McCallie 1996)

The failures of existing compensatory wetland mitigation projects to replace function and area (National Academy of Sciences 2001, Johnson et al. 2002) are already resulting in tradeoffs in wetland functions. The 2001 Phase 2 of the Mitigation Evaluation Study (Johnson et al. 2002) shows that existing on-site mitigation is resulting in some replacement of water quality and quantity functions, but is failing to replace habitat losses. Banks can be used to offset wildlife habitat losses and result in sites that are more connected with other natural areas, migration corridors and other wetland habitats. Additionally, banking provides a context for making conscious decisions on tradeoffs of functions rather than unplanned tradeoffs that occur now.

Finally, one of the goals of the state's wetland mitigation banking program is the development of ecologically sustainable aquatic ecosystems. To that end, the rule provides various incentives for banks to be located and designed from a landscape or watershed perspective. It encourages sponsors to restore watershed processes and prioritizes the use of restoration of wetlands over other mitigation activities. More sustainable compensatory wetland mitigation will assure that future net losses won't occur from failed or degraded mitigation sites.

2.1.3 Large-Scale Failures

Concerns have been raised that because banks are generally larger wetland mitigation sites, their failure will result in greater losses of wetland resources.

Wetlands are complex systems (Mitsch and Gosselink 1993). Though we increase our knowledge of how wetland ecosystems function and refine our restoration techniques, sites do not always turn out as anticipated (Simentad and Thom 1996, Zedler and Callaway 1999,

Hilderbrand et al. 2005). The number of variables involved in the development of a site increases the potential that the site will fail to attain the planned communities and/or functions.

Existing Conditions

As noted in the previous section, Washington's success rate for compensatory wetland mitigation has been less than stellar. The Phase 2 Mitigation Evaluation Study conducted by Ecology showed an overall success rate of only 33 percent for the 24 sites reviewed (Johnson et al. 2002).

Many of the same factors that result in failures of project-specific mitigation sites can apply to banks. Technical problems of mitigation sites include inappropriate hydrology; inadequate or incorrect baseline information on hydrology, soils and elevations; invasive species and unenforceable performance standards (Marble and Riva 2001, Mack and Micacchion 2006)). Administrative problems include lack of follow-through by agencies, lack of contingency plans or actions, and lack of monitoring requirements (Storm and Stellini 1994, Hornyak and Halvorsen 2003).

A 2006 Environmental Protection Agency study conducted on Ohio wetland mitigation banks showed mixed results on the degree of success the banks were achieving. One major conclusion of the study was that banks succeed or fail for the same reasons other wetland mitigation projects succeed or fail: poor design, lack of adequate planning and/or management (Mack and Micacchion 2006). The banks that were successful followed the 1995 *Federal Guidance* on mitigation banking.

The factors that resulted in successful banks included:

- Active reintroduction of key floral and faunal assemblages.
- Good site selection, design, and planning.
- Stringent hydrologic and invasive species management.

The elements that caused banks to fail include:

- Poor design and site selection.
- Inadequate performance standards.
- Credit release schedule that was not based on achieving performance standards.
- Lack of regulatory oversight.

The authors conclude that although success of banks in Ohio has not been consistent, a successful banking program is achievable.

Since banks generally include larger wetland areas and types of wetlands, when a bank fails, the potential losses in wetland resources could be greater. However, the way banking and the regulatory review of banks is practiced minimizes the potential for bank failures. While nationally there have been several bank "failures" where the banks have failed to meet expectations or achieve the correct type and amount of wetland area, there has been minimal net loss of wetland area (Tabatabai and Brumbaugh 1998). Minimal losses occurred because:

- Few banks allowed complete up-front debiting of credits.
- Contingency actions were implemented to improve the bank's success.
- Debiting was deferred until ecological gains were realized.
- The entire bank site was permanently protected even when only part of the bank was able to be debited.

Banks may involve greater acreage of wetland mitigation; however, the built-in mechanisms to ensure success should reduce the level of net loss of wetland area and function compared to current mitigation practices.

Likely Effects Under the Rule

Banks in Washington are unlikely to result in large-scale failures and are more likely to have much higher success rates than concurrent mitigation for several reasons:

- Banks have early and detailed technical review by multiple agencies with diverse technical expertise.
- Banks generally have greater amounts of baseline information available.
- Sponsors have economic incentives to ensure site success.
- The rule includes several risk management mechanisms such as financial assurances, phased credit release, monitoring requirements, and the ability for the department to suspend credits if a bank is not meeting requirements.
- The experiences from the pilot program provided the opportunity to assess the effects of the rule and identify areas for improvement before formal rule adoption.
- The success and failures of other bank programs around the country, has influenced the certification process in Washington and the development of rule language.

Banks under the rule undergo early technical review by the Interagency Review Team. The team generally includes the Department of Ecology, U.S. Army Corps of Engineers, the Environmental Protection Agency, and the local government where the bank is located. The Interagency Review Team includes a range of technical expertise. Ecology and the Interagency Review Team co-chair, the U.S. Army Corps of Engineers, extend invitations to tribes, Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the NOAA Fisheries Service, and other appropriate parties. The team reviews the site selection rationale for a bank as well as the technical feasibility of the design proposed for the bank. This level of review far exceeds what is normally provided for all but the largest projects with significant wetland impacts.

The certification process requires higher levels of baseline information on the proposed bank site from sponsors than is usually provided for project-specific, concurrent mitigation. Since bank credits are generated by net gains in wetland functions, banks that include enhancement must have detailed information on existing site conditions and an assessment of the potential level of functions already being performed on the site. Only the net ecological benefit or "lift" resulting from the enhancement activities generates credits.

Ecology can release bank credits for use when the proposed bank meets specific performance standards. Under the rule, credits are not released until success is shown through the attainment of performance standards. If a bank site is not successful, its credits will not be released and hence cannot be used as compensatory mitigation for unavoidable impacts to other wetlands. This requirement for success prior to release of credits minimizes the risk of failed mitigation. Thus, the use of banks should result in lower losses of wetland from unsuccessful mitigation as compared to concurrent mitigation. The Phase 2 Mitigation Evaluation Study for Washington showed that only one-third of the existing compensatory mitigation projects studied were successfully replacing the impacts they were intended to mitigate (Johnson et al. 2002).

Since a sponsor cannot obtain credit releases without the site successfully attaining its required standards, a sponsor has a vested interest to closely follow the development of the site and apply contingency actions when necessary. An example of this occurred early in the pilot program at a public bank located in Snohomish County where monitoring showed problems with water levels in one of the sites. The sponsor corrected the problem with the water control structure on the site in order to protect its investment for future mitigation.

Finally, the rule contains several risk management techniques to minimize the potential for site failures and losses of wetlands. While the phasing of the release of credits is one of the most effective of these, the use of financial assurances, ability to suspend credits, detailed site monitoring, long-term management and maintenance, and compliance oversight by Ecology also serve to reduce the potential bank failure.

The presence of all of these factors contributes to lowering the chance of bank failure and should result in banks that are more successful than existing mitigation sites. The Institute of Water Resources report of bank program status concluded that wetland losses from failures of banks has been minimized because, only a portion of the bank's total projected credits, were released up front. Also, the sponsors either performed adaptive management activities to correct deficiencies or the total number of credits generated at the bank was adjusted to account for the reduced performance of the banks (Tababatai and Brumbaugh 1998).

2.2 Beneficial Effects of Wetland Banking

Wetland mitigation banking can help local and state agencies achieve more of a balance between the protection and restoration of important areas for watershed functioning and economic development. Banks can help provide the replacement of wetland functions and habitats lost to development in a more holistic manner from a landscape-level perspective. Local governments can also use banking as a management tool for addressing cumulative impacts from future development plans and implementing Shoreline Master Program restoration priorities.

Recent studies have shown that nationally the average impact size requiring mitigation has reduced over time due to changing regulatory requirements for wetland mitigation. Since 1993 the Corps of Engineers' threshold at which mitigation became mandatory has changed from 10 acres of impact to 0.25 acres of impact (BenDor and Brozovic 2007b). Given this shift in

regulatory requirements, banking is being utilized as a cost effective option to mitigate small impacts that would not have been mitigated before (BenDor and Brozovic 2007a, BenDor and Brozovic 2007b). Having this additional, cost-effective option allows regulatory agencies to come closer to the national goal of no-net loss of wetlands (Shabman et al. 1998).

The Legislature recognized some of the promise of wetland mitigation banks in RCW 90.84.005. This section describes some of the benefits of banks, which include:

(a) The maintenance of the ecological functioning of a watershed by consolidating compensatory mitigation into a single large parcel rather than smaller individual parcels;

(b) An increased potential for the establishment and long-term management of successful mitigation by bringing together financial resources, planning and scientific expertise not practicable for many project-specific mitigation proposals;

(c) Increased certainty over the success of mitigation and reduction of temporal losses of wetlands since banks are typically implemented and functioning in advance of project impacts; and

(d) The potential for enhanced protection and preservation of the state's highest value and highest functioning wetlands.

2.2.1. Benefits for Watershed Restoration

The value of compensatory mitigation to maintaining and restoring watershed health has come to the forefront of policy and regulatory discussions (Scodari and Shabman 2001, Kentula 2000, King 1997, Scozzafava et al. 2007, Kettlewell et al. 2008).

Studies on how to achieve no-net loss are supportive of conducting mitigation using landscape scale planning. The success of a project is increased when the mitigation is placed in the proper location within the landscape. Sites that are designed on a landscape scale will help to maintain and enhance wetland diversity, connectivity and proportions of upland and wetland within wetland and riparian systems (Turner et al. 2001).

As stated in the *Federal Rule*:

> "The primary objective of the watershed approach …is to maintain and improve the quantity and quality of wetlands and other aquatic resources in watersheds through strategic selection of compensatory mitigation project sites. The watershed approach accomplishes this objective by expanding the informational and analytic basis of mitigation project site selection decisions and ensuring that both authorized impacts and mitigation are considered on a watershed scale rather than only project by project." (FR Vol 73, No. 70, April 10, 2008, pg. 19598)

The *Federal Rule* requires the U.S. Army Corps of Engineers to use watershed plans where available to consider the location of wetland mitigation banks (FR Vol 73, No. 70, April 10, 2008, pg. 19674).

Many studies have shown that restoration efforts[28] tend to fail when they do not consider watershed processes. The success of restoration projects would increase if these processes were considered at a site design level (Buffington et al. 2003, National Research Council 2001, Reid 1998, Frissell and Ralph 1998, Beechie and Bolton 1999, Kauffman et al. 1997, Roni et al 2002). Studies in the Pacific Northwest, show that watershed processes play a key role in building and maintaining aquatic ecosystems. These process include the movement of:

- Water
- Sediment
- Heat
- Nutrients and toxins, and
- Large woody debris (Naiman et al. 1992, Beechie and Bolton 1999, Beechie et al. 2003, Gersib et al. 1997, Washington Department of Ecology 2009).

The larger scale of banking and its potential for landscape level evaluation of wetland replacement allows consideration of processes that operate at the watershed landscape scale during the bank site selection and design stages (National Academy of Sciences 2001). [29] Banks can provide watershed ecosystem support through providing functions that are limited within a watershed or by restoring watershed processes.

Existing Conditions

Land-use changes significantly affect the types and distribution of ecosystems and ecological processes within watersheds. Despite the landscape-level significance of land-use decisions, larger ecological-process considerations are rarely included in land-use planning decisions (Dale et al. 2000). While ecological processes occur over the private and public landscape, resource decisions, particularly wetland management decisions, are made at the site scale. Individual decision-making focused on the site level often conflicts with the landscape approach to resource management (Race and Fonseca 1996).

One of the purposes of land use planning is to protect public values, reduce harm and ensure orderly timing of development and associated services (Dale et al. 2000). Until recently, with the advent of watershed planning and the listing of endangered salmon in Washington, ecological principles have rarely been included in land-use decision-making. Watershed planning provides part of the basis for identifying areas and processes that are significant from a larger perspective in order to provide an appropriate context for making site specific decisions. In 2005 Ecology

[28] Restoration in this context refers to the action of restoring wetland functions, not non-regulatory restoration projects.

[29] For example, over bank flooding is a natural process for western Washington where water is delivered on a semi-regular basis to large floodplain areas in the lower reaches of a watershed.

published “Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to Understand Watershed Processes” to assist local planners in making land-use decisions on a landscape scale (Stanley et al, 2005).

Compensatory mitigation, as it has been practiced, relies more upon opportunistic development of compensation sites rather than focusing the site selection and design of mitigation sites in the larger context of watershed functioning and restoration. The emphasis for concurrent mitigation has been on attempting to replace functions and area at the site level, often ignoring considerations of whether or not the compensation will provide ecologically significant benefits to the larger landscape. Compensation sites have been selected based on their availability and proximity to impact areas.

Watershed planning efforts may identify and prioritize restoration sites based on the identified needs in a watershed and the degree of ecological contribution that can be achieved on the sites. However, these sites may not be available for restoration or use as compensation sites. The small size of required compensation (generally < 2 acres) often does not provide sufficient incentive for applicants to obtain and restore sites that are identified as priority sites for watershed restoration.

Additionally, while watershed plans may identify priority sites necessary for restoring watershed functioning and health, the funding to complete restoration actions (including acquisition and construction activities) is limited and local jurisdictions lack sufficient funds to implement priority watershed restoration activities.

Banking can provide one mechanism to achieve ecological watershed goals and priorities.

Likely Effects Under the Rule

Wetland mitigation banking provides an opportunity to focus compensatory mitigation in areas that contribute to watershed function and health. Through incentives such as credit determination, service area and credit release, the proposed rule emphasizes that banks should be integrated with watershed management plans.

Banking can complement watershed planning in two ways:

- Through providing a mechanism for implementing restoration activities on priority sites in the watershed. Watershed plans are often developed to address either the restoration of watershed processes and resources that have been degraded over time, or they are developed to guide future development in an environmentally sound manner. In many cases, the funding and resources to implement watershed priorities are not available.
- Banks can be used to direct the replacement of wetland losses to priority sites where the replacement wetlands will contribute to the overall health of the watershed.

Ongoing efforts in watershed planning could benefit from the establishment of a bank on priority restoration sites which may have land costs or land ownership issues that preclude non-regulatory restoration activities.

Banks that are developed within the context of watershed planning will have their risks reduced through several mechanisms:

- Site selection will be based on landscape perspective and will most likely include restoration elements.
- Greater amounts of baseline data are often available in watershed planning areas.
- Disruptions to watershed processes may be identified.
- Limiting functions in the watershed may be identified.
- Watershed plans may include or reference comprehensive land-use plans that identify the types and locations of wetlands that are likely to be affected by future development.

By being able to predict what types of wetlands and their associated functions are likely to be lost in a developing watershed, the sponsors can site and design their banks to meet anticipated market needs. Sponsors can be more confident that agencies will allow use of their banks because the location and design of it provides ecological benefits which are important within the watershed.

2.2.2 Sustainable Wetland Systems

When sustainability is used in the context of wetlands, it usually refers to a wetland's ability to persist in the landscape without loss or decline, its ability to continue to provide functions and its ability to rebound from episodic disturbances (Dale et al. 2000). When compensatory mitigation sites are unsuccessful and cease to perform functions for which they were designed, net losses of wetland area and function will occur.

Ensuring that sites are sustainable requires that the processes and systems of the surrounding watershed or ecosystem are considered during site location and design. Banks lend themselves to consideration of factors affecting sustainability more so than individual small mitigation sites since banks tend to be larger than individual mitigation sites and can be designed in the watershed landscape context.

Existing Conditions

Most compensatory wetland mitigation is done on an individual project level. The mitigation is done in a piecemeal fashion on an opportunistic basis. Rarely do individual mitigation project proponents spend the extra money and time to select mitigation sites based on their ecological values to the larger watershed. Sites are selected which are available for purchase (or already owned by the developer) and which are the most cost-effective for producing the required compensatory mitigation. Aside from requirements to permanently protect the compensatory

mitigation site, the long-term sustainability of the mitigation site is only superficially addressed during the permitting process.

As a result, a large majority of mitigation sites are located in highly developed areas, adjacent to developments. As studies in King County (Azous and Horner 1997) and nationally (Kentula et al. 2004, Hoeltje and Cole 2007, Shabman and Scodari 2004)show, wetlands in urbanizing areas are adversely affected by changes in the hydrologic regime of an area. Many small, depressional wetlands in urbanizing areas will be adversely affected since they are often low spots in the landscape and storm water runoff will accumulate in them. When this occurs, the hydrologic regime becomes more extreme in depth fluctuations and the resultant hydrologic regime of the wetland becomes flashier with rapid increases and decreases in the depth and volume of water in the wetland. Vegetation communities respond to these hydrologic changes by becoming less diverse and the habitat suitability of the site is significantly reduced (Azous and Horner 1997).

Additionally, the isolation of many individual mitigation sites hinders their ability to recover from catastrophic events. If disease or another natural disturbance process (e.g., fire, flood) occurs at a mitigation site, its connectivity to other natural areas and populations is critical to whether or not the site will re-colonize or not. When sites are isolated from other habitat areas, their ability to rebound from population crashes is limited by the lack of connectivity to other populations (Diamond 1975). This occurs when other populations are either too far away to re-colonize the site or if they are blocked from accessing the site.

Likely Effects Under the Rule

Certified wetland mitigation banks are anticipated to result in sustainable wetland ecosystems because of:

- The emphasis on using a broader landscape perspective when selecting suitable bank site locations.
- The prioritized use of restoration which reduces the degree of human manipulation necessary to establish wetland conditions.
- The larger size of banks which is more conducive for performing restoration activities.
- The larger size of the compensatory mitigation which provides an economy of scale for collecting and analyzing watershed information to guide decision-making on site selection and design that is not feasible with small on-site mitigation projects.
- The integration of banks with watershed and land-use planning.

One of the goals of the state's banking program is the development of ecologically sustainable aquatic ecosystems. To that end, the rule provides various incentives for banks to be located and designed from a landscape perspective. It encourages sponsors to restore watershed processes and prioritizes the use of restoration of wetlands over other mitigation activities.

In addition, the rule emphasizes elements that are necessary to develop sustainable sites in the site-selection criteria section of the rule. These elements include ensuring that the proposed site:

- Has the biological, physical and chemical characteristics necessary to support wetland conditions;
- Can contribute to the restoration of ecological processes and functions in a watershed;
- Is surrounded by land uses that are compatible with the maintenance of wetland systems; and
- Can be protected from future degradations from actions occurring off-site.

The rule requires that all bank sites have sufficient buffers to protect the long-term viability of the site. The rule also provides an incentive for sponsors to include uplands and other habitats that will increase the ecological values and functions generated by the bank site. Bank sites with uplands and other habitats which provide connectivity to other habitat areas are expected to receive better conversion rates for their credits.

The rule encourages restoration of wetland systems over enhancement and preservation through the use of better conversion rates for the generation of credits. In many cases, restoration of wetland systems cannot be done on a small scale (typical of many concurrent mitigation projects) and the larger size of banks enables a sponsor to undertake restoration that would not likely occur under concurrent mitigation.

The larger size of banks also provides an economy of scale for performing more detailed watershed analysis than would be feasible for a small wetland mitigation site. The amount of information required by an Interagency Review Team for a bank is much greater than is required for most individual projects. More complete information on watershed conditions and functioning provides a defensible basis for regulators to consider and approve off-site mitigation options that result in more significant improvements in watershed health (Scodari and Shabman 2001).

Finally, the integration of banks with watershed management and land-use plans should result in banks being located on sites that are important for the maintenance and restoration of watershed function. The rule provides incentives for sponsors to integrate their banks with existing watershed plans through credit determination, service area and an expedited review process. Banks which are established in areas where watershed analyses have been completed should have a good understanding of what the natural disturbance regimes are and can be designed (and have performance standards developed) to anticipate future disturbances (e.g., flooding, channel migration, fire or mass wastings).

2.2.3 Addressing Cumulative Effects

The *Federal Rule* states that it is intended to improve the performance of compensatory mitigation required for Department of the Army permits, which will reduce cumulative wetland losses. (FR Vol 73, No. 70, April 10, 2008 pg. 19666)

Bedford (1996) noted that

> "From a policy perspective, ***the central issue in wetland mitigation is not effects on a single site but the cumulative effects of numerous mitigation decisions on landscapes.*** Mitigation must be recognized as a policy that has the potential to re-configure the kinds and spatial distribution of wetland ecosystems over large geographic areas. Within that policy, choices are made to allow some wetland ecosystems to be destroyed; others are created or restored. The patterns of destruction are not random (Dahl 1990, Dahl and Johnson 1991), nor are the patterns of replacement. Palustrine forested wetlands suffered the greatest losses from the mid-1970s to mid 1980s. Some types of wetlands (e.g., salt marshes and freshwater emergent marshes) are preferentially restored or created. Other types of wetlands are seldom, if ever replaced (e.g., bogs, fens, forested wetlands) (Kusler and Kentula 1990, Zedler and Weller 1990). Habitats of endangered species are frequently affected (Kentula et al. 1992). The net effect is the loss of wetland diversity in terms of both hydrologic functions and biological communities, and a consequent homogenization of wetland landscapes. ***One way to avoid such cumulative effects is to make decisions about individual projects within a framework focused at larger scales"*** (Lee and Gosselink 1988). (emphasis added)

Banks can provide significant benefits by addressing the cumulative effects from minor impacts in an efficient and cost-effective manner.

Existing Conditions

The past patterns of wetland mitigation have resulted in a loss of functions and biological communities. Several studies of wetland mitigation show that created wetland mitigation has resulted in an increase of open water wetland habitats (Gwin et al. 2000, Johnson et al. 2002, Cole and Shafer 2002, Minkin and Ladd 2003, Hoeltje and Cole 2007). The design of these sites focused on ensuring sufficient hydrology and establishing vegetated wetlands along the gradient from open water to uplands (Kentula et al. 1992, Hoeltje and Cole 2007).

Under existing practices, such as the federal Nationwide Permit Program and local ordinances, minor wetland impacts may occur without the need for compensation. Part of the reason behind this practice is that the impacts themselves were believed to have minimal effect. Another reason is that the small scale of compensatory mitigation necessary was cost prohibitive and ecologically insignificant to justify a requirement for replacement.

However, the cumulative effect of these minor impacts has been significant. As development has occurred, the cumulative effect of small individual losses includes disruptions in watershed processes and the ecosystem structures supported by those processes. Studies have shown that disruptions to watershed processes, such as the delivery and routing of water and woody debris, can have detrimental effects. These include reduction in the number of species that can be supported by an area (Azous and Horner 1997) and the quality and diversity of habitat niches provided (Dale et al. 2000, Beechie and Bolton 1999). Listing of Pacific salmonids clearly

illustrates that the cumulative effect of development in the urbanizing watersheds has been significant.

Banks can help to address cumulative losses in a watershed by providing wetland functions anticipated to be lost in the future. Banks also provide an option for mitigation of small impacts that may not have been financially practicable. A study conducted in the Chicago region found smaller impacts (<0.25-3 acres) used banks heavily for their mitigation. For impacts between 0.25 and 0.5 acres the bank usage rate was between 60% and 70%. Many of these impacts were authorized under the Nationwide Permit Program and were not being mitigated for previously. (BenDor and Brozovic 2007b)

Likely Effects Under the Rule

Where banks are established, they can provide an efficient and cost-effective means to mitigate for small unavoidable losses of wetlands. As noted above, part of the reason for not requiring mitigation of minor impacts has been a consideration of the financial hardship that would be imposed on small landowners and homeowners if they were required to provide compensation for small impacts. Where banks are located, applicants having minor impacts to wetlands would be able to simply purchase bank credits to meet their compensation requirements instead of needing to hire a consultant to figure out how they can squeeze the necessary mitigation onto their development site. A successful banking program should generate affordable credits that can be purchased by a variety of permit applicants and be used to mitigate for a wide range of wetland impacts (Shabman et al. 1998). For example, the Meadowlands bank in southwestern Washington provided a successful in-basin mitigation alternative for small impacts occurring in the Salmon Creek basin of Clark County.

Accordingly, some local jurisdictions may choose to incorporate banking in their land-use planning in order to balance economic and environmental needs and address cumulative impacts. The presence of a bank may encourage some local jurisdictions to require mitigation for impacts to small low quality wetlands which are currently exempt from regulation under land use regulations to minimize additional cumulative effects. The listing of salmonids as an endangered species in Washington has provided additional incentive for some jurisdictions to address continuing cumulative losses.

2.2.4 Reducing Temporal Losses

Existing Conditions

Washington State is experiencing significant amounts of temporal losses in wetland functions under its existing regulatory framework. Wetland losses usually occur prior to the construction of a compensatory wetland mitigation site. After construction, mitigation sites may take several

years to develop and begin to provide wetland functions resulting in additional temporal losses (King et al. 1993).

The time needed for a newly created, restored or enhanced wetland to fully perform wetland functions varies considerably based on the type and location of the wetland (Castelle et al. 1992a, King et al. 1993). Decades may pass before a newly planted wetland area is mature enough to function as a forested wetland. Studies of mitigation in Ohio show that the number of years required to achieve functional equivalency of all floristic indicators ranges from 7 to 44 years with a median of 14 years (Gutrich and Hitzhusen 2004). In the Salmon River estuary of Oregon, the estuarine wetland was fully vegetated within eight years after tidal influence was restored, but the plant community had changed considerably in diversity and species during that time (Frenkel 1997).

Between the time when an existing wetland is affected and when the replacement wetland is fully developed, a temporal loss of wetland function takes place (BenDor 2009). Existing compensatory wetland mitigation requirements use increased ratios for area replacement to account for this loss in functions (McMillan 1998, Castelle et al. 1992a). However, at present, all of the "credit" or value of concurrent wetland mitigation is immediately available for use and the wetland impacts usually occur before the replacement wetland is even constructed.

Likely Effects Under the Rule

Temporal losses of wetland functions will still occur with banking, however, it will result in reduced temporal losses compared to concurrent mitigation.

The primary reason that temporal losses will be reduced under the rule is because of phased releases of credits. "Phased release" means that the credits from a bank are released over a period of time as the bank site matures instead of being immediately available, as is the case with concurrent mitigation. Under the rule, some credits from a bank may be released when the bank site is initially constructed; however, the majority of the banks credits are not released until the bank begins to attain specific performance standards. These performance standards are designed to serve as indicators of the successful development of a wetland ecosystem on the bank site.

This means that rather than the age of the mitigation being zero when the impacts occur, bank credits could represent compensatory wetlands that are several years old. For example, some credits would be released when the site is constructed and additional credits would be released after a year or two when the site attains its hydrology performance standards. Other credit releases occur in subsequent years as the bank meets its required performance standards. For projects that have gone through Washington's pilot program, credits are released over a period of 10 to 15 years depending on the wetland system proposed.

In addition to the phasing of credit releases, additional reductions in temporal losses are expected when credits are not used immediately after they are released. When a credit is released by Ecology, it means that the sponsor can use or sell the credit. Impacts do not occur until a credit

is "used" for compensation. This means that a bank may have a balance of released credits which have not been used for compensation. The net result is a temporal gain in wetland functions since impacts have yet to occur.

While it is still too early to tell how much temporal losses may be reduced by a banking program in Washington, a look at Florida's experience with mitigation banking may be useful. According to Florida Department of Environmental Protection figures, only 58 percent of the credits that have been released and are available for use have been used to meet compensation requirements. In addition, most of the existing banks in Florida have only had a portion of the total potential credits released (Bersok 2001). This means that a significant number of acres in wetland mitigation banks have been constructed and are maturing prior to the impacts that they will offset occurring.

2.2.5 Higher Success Rates

Existing Conditions

As noted earlier, concurrent compensatory mitigation is not as successful as had been hoped (Kunz et al. 1988, Mockler 1998, Storm and Stellini 1994, Johnson et al. 2000, Johnson et al. 2002, Gwin et al. 1999). In 2005 Ecology published "Wetlands in Washington State: Volume 1 – A Synthesis of the Science" (Sheldon et al., 2005). Chapter 6 of this document discusses the review of over 50 articles, government reports, and conference proceedings that have been published since 1990 on the topic of compensatory mitigation. Five of the studies focused on compensatory mitigation projects in Washington State from between 1995 and 2005. Most of these studies found that less than half of wetland compensation projects are fully effective. Studies in Washington and Oregon found that approximately half of projects received some regulatory follow-up and that follow-up had a positive influence on the level of compliance and success for compensatory mitigation projects.

Likely Effects Under the Rule

Banks in Washington are anticipated to have a higher rate of success than the approximately 50 percent success rate recently shown in Washington State for project-specific mitigation (Johnson et al. 2002). As discussed in section 2.1.3, there are two key reasons for banks to have higher levels of success. First, banks are subject to significant, early technical review by an interagency team, and second, the sponsor has an economic incentive to ensure the success of the site.

In the process laid out in the rule and in the *Federal Rule*, banks are put through a rigorous review by the Interagency Review Team. The team reviews bank proposals on their site selection rationale, design and technical feasibility. Bank proposals are required to include a large amount of baseline information addressing the site's ability to support wetland conditions.

The ability of a sponsor to sell or use credits depends upon the successful development of the bank site. Credits also cannot be used until they are released by Ecology. The rule allows for credits to be released in phases as the site meets specified success criteria. Tying a sponsor's ability to sell their credits to the attainment of success at the bank provides the strongest incentive for a bank to be successful. If a bank is not ecologically successful, it won't generate the necessary credits to provide a return on the sponsor's investment. By requiring that Ecology reviews requests for release of credits, the rule ensures that there is on-going regulatory follow-up on bank projects.

Additionally, the structure of a banking system lends itself to other factors that are anticipated to increase the likelihood of success for banks. Because banks are intended to provide mitigation over larger areas, they can be integrated into watershed management planning, and they are generally created at a scale that is conducive to wetland restoration unattainable under individual project mitigation.

The rule encourages and provides incentives for banks to be integrated with watershed management plans and be located in preferable locations for wetland restoration. The integration of bank site selection and design with larger-scale watershed needs and priorities can result in banks that are located in the right place on the landscape and which are sustainable over the long-term. When mitigation sites are located in appropriate places, such as where wetlands can be restored through management activities, the banks have a greater likelihood of success than mitigation that is forced on to a development site.

Finally, the rule includes several mechanisms to manage the risk of unsuccessful mitigation. These include:

- Requirements for financial assurances for construction, monitoring and maintenance, and long term management of the bank site.
- Credit releases are tied to the results of monitoring which provides incentives for sponsors to monitor the site and to implement adaptive management activities if necessary.

2.2.6 Benefits to Salmon

Existing Conditions

Over the last century, Pacific salmon have disappeared from about 40 percent of their historical spawning and rearing habitat (National Research Council 1996). Since the early 1990s several species of salmonids in Washington have been listed as threatened or endangered under the federal Endangered Species Act. The declines in salmon populations are largely due to human impacts on the environment resulting from development and urbanization, agriculture, forestry, dams and fishing (National Research Council 1996).

Development activities, which affect wetlands and their upland buffer areas, affect salmon and their habitat. Coho salmon lose over-wintering and rearing habitat when riparian and floodplain wetlands are lost to development. Estuarine wetland losses affect critical transition and rearing habitat for coho, chum, chinook, bull trout, and sea-run cutthroat trout. Historical losses range from 25 percent of estuarine wetlands in the Skagit River estuary to 98 percent losses in the highly developed Duwamish estuary (National Research Council 1996).

Changes in riverine wetlands from diking, draining, and agricultural uses reduce native marshes and simplify watercourses into primary channels lacking the complexes of side and braided channels utilized by fish (National Research Council 1996). Historically, lower river valleys were the most productive spawning and rearing habitat have had limited protection due to agricultural exemptions. These areas are under increasing threat from development as larger numbers of agricultural producers go out of business and sell off farmland for residential or commercial development.

Likely Effects Under the Rule

Recently, there has been a shift from simply replacing structural elements of an ecosystem to a broader, landscape-based approach of understanding and repairing processes within a watershed (Kauffman et al. 1999, Beechie and Bolton 1999).

The National Research Council noted in their study on Pacific salmon (1996):

> "…rehabilitating watershed processes to the extent possible given human development, including the re-establishment of riparian functions – such as providing shading, organic matter, and large woody debris – is probably more effective in improving salmon habitat over the long-term…"

When unavoidable impacts to wetlands are authorized to occur, wetland mitigation banks can benefit listed salmonid species by mitigating the effects of development projects that affect salmon habitats. Banks can be established which:

- Restore estuarine wetlands and mudflat habitats, which are important for out-migrating juvenile salmonids, food chain support, and habitats for salmon prey species;
- Restore wetlands in the upper watershed, which provide storage of surface flows, reduce downstream erosion and scour, and recharge groundwater sources, providing temperature moderation and maintenance of stream base flows;
- Restore riverine wetlands, which provide refuge from high flows, flood storage, and production export;
- Protect and restore riparian areas that provide recruitment of large woody debris, shade, detritus, bank stabilization, and reduced downstream erosion; and
- Restore access to spawning and rearing areas.

While banking cannot change the trends in losses, it can provide a mechanism through which watershed processes are restored. For instance, large parcels of floodplain can be reconnected

with river systems and restored to higher levels of ecological functioning. Banking can provide the incentive and capital necessary to retain and restore these areas to natural conditions rather than have them developed in a piecemeal fashion.

Banks can restore salmonid habitat, create new habitat areas, and provide water quality and quantity functions that affect the ability of water bodies to support salmon. Additionally, banks can address cumulative effects of many small wetland impacts as well as providing ecologically significant replacement of those functions.

Several sections of the rule can be used to support salmon recovery. Portions of the site selection criteria, integration with watershed plans, site design, use of credits, and preservation criteria support the establishment of banks which contribute to achieving properly functioning condition for salmon in a watershed.

However, it is important to note that the rule only addresses wetland mitigation banks. It does not address the generation and use of "habitat" or "fish" credits, otherwise known as conservation banking. Conservation banking is defined as:

> "A conservation bank is a single parcel, or a series of contiguous or non-contiguous parcels, of habitat which is managed for its natural resource values. The resource benefits derived from this management regime are sold as "credits" to project proponents who seek mitigation opportunities to compensate for resource impacts elsewhere. Credits may be generated to meet any number of resource conservation needs, including compensation for impacts to wetlands, threatened or endangered species, Environmentally Sensitive Habitat Areas, mudflats, sub-tidal areas, and less sensitive resources." (Wheeler and Strock 1995) [30]

Conservation banks are designed to address potential take issues under section 10 of the Endangered Species Act of 1973, as amended. Section 10 allows landowners and others to enter into an agreement (a Habitat Conservation Plan) with the NOAA Fisheries Service or the U.S. Fish and Wildlife Service on the management of lands within a specified area (U.S. Fish and Wildlife Service 1980). Habitat Conservation Plans are usually used by large landowners, such as timber interests, in order to obtain an incidental take permit from the Services to protect the landowner from increasing regulatory restrictions on listed[31] species located on their property.

NOAA Fisheries Service recently approved the first conservation bank for salmon habitat in western Washington. It remains to be seen if NOAA Fisheries Services and the U.S. Fish and Wildlife Service will use conservation banks as a reasonable and prudent measure for avoiding takes to listed salmon and other species. It is clear, however, that wetland mitigation banks can be located where they would benefit salmon and can provide wetland functions necessary to maintain properly functioning conditions for salmon.

[30] http://ceres.ca.gov/wetlands/policies/mitbank.html

[31] One example is the Plum Creek Native Fish and the Plum Creek Cascades Habitat Conservation Plan in Washington.

2.2.7 Efficient Use of Agency Resources

State certification of wetland banks can result in reducing agency workload in the following ways:

- Reduce the number of compliance reviews conducted by the department since mitigation for multiple projects occurs at one site.
- Reduce the time required to review a compensatory mitigation proposal during permitting for debit projects since bank design and monitoring are already approved.
- Reduce the amount of time spent in review and negotiations bank proposals since Ecology serves as the lead for coordinating regulatory review.
- Expedite resolution of agency disagreements during bank proposal reviews with the dispute resolution process outlined in the rule.

Existing Conditions

When a project is required to provide compensatory mitigation for unavoidable impacts, agency staff reviews the proposed mitigation plan and determines whether the proposal is likely to be successful and will provide adequate replacement of impacts.

In the past, the lack of agency resources for follow-up has effectively prevented comprehensive enforcement of individual concurrent wetland permit requirements. The bulk of staff resources for regulatory programs at the state and federal levels are dedicated to permit processing and limited funds are available to perform enforcement and follow-up actions on individual concurrent mitigation sites (National Academy of Sciences 2001). With the inception of a new compliance program, the state now regularly conducts site visits and completes close out visits for mitigation projects required as a part of the state water quality certification. Prior to this program, the state did not regularly check up on mitigation projects. Without the specter of enforcement actions for lack of performance, little impetus exists for project applicants to ensure the success of the compensatory mitigation or to implement adaptive measures (Storm and Stellini 1994, Hornyak and Halvorsen 2003).

Likely Effects Under the Rule

Banking requires extensive agency review and participation during the development of the instrument. While the initial permitting for the bank will require significant resources, agencies should realize significant time savings during the enforcement and follow-up stage of permitting for banks versus site specific mitigation.

Banking differs from concurrent compensatory wetland mitigation in several significant ways. First, the sponsor shoulders the burden for achieving a successful wetland site. Since most

banking scenarios call for the partial or phased releases of credits, it is in the sponsor's economic self-interest to ensure that the site is as successful as possible.

The design, implementation and monitoring were found to be the most critical factors for successful functioning of compensation projects (Castelle et al. 1992a). Banking moves the emphasis to these areas rather than the existing focus of concurrent mitigation: obtaining the permit to affect wetland resources.

The proposed certification process for banks provides a more effective use of regulatory and compliance staff time. Under the rule, Ecology works with the U.S. Army Corps of Engineers to co-facilitate the Interagency Review Team process.

Other bank review processes in this state and others have been front-loaded with extensive negotiation between the applicant and the regulatory agencies. The rule outlines the considerations that will be used by Ecology and the Interagency Review Team to determine site selection, how credits will be determined and service areas. This creates a form and process for what was formerly an ad hoc review of bank proposals.

The majority of regulatory streamlining comes in the debit project stage. Rather than reviewing many individual mitigation plans, the agencies will only need to follow the design and development of one bank.[32] Evaluating the adequacy of compensatory mitigation will be much simpler since the staff need only determine if the bank provides the appropriate functions and wetland types rather than needing to determine if an individual mitigation site is likely to be successful. The number of plans and designs that staff will need to evaluate for small impacts will be reduced if bank credits are used instead of project-specific mitigation.

Finally, agencies will have to devote less enforcement staff time to follow-up on a bank than would be necessary to follow-up on all of the individual mitigation sites that would have been developed in lieu of the bank.

2.2.8 Streamlined Process

Existing Conditions

Each permitting agency currently reviews concurrent mitigation projects separately. Changes to projects based on permitting requirements must be coordinated by the project applicant. If regulatory agencies place conflicting requirements on a proposed project or a disagreement occurs during the review of a concurrent mitigation project, the project may experience long delays in the timeline for its approval or the project may never receive approval.

[32] A single bank project may include one or several distinct sites.

During the pilot program the bank certification process did not include timelines for agency review of bank sponsor submittals. Ecology received many comments about streamlining the review process and accountability for agency response to submittals. The department addressed these comments by including agency review timelines in the rule.

Likely Effects Under the Rule

The proposed rule provides streamlining in three areas. First, Ecology serves as the lead for coordinating regulatory review of bank proposals. Second, the rule contains sideboards and criteria that are used by Ecology and members of the Interagency Review Team to evaluate the bank proposal. Last, the rule contains timelines for the certification process that are consistent with the timelines and process outlined in the *Federal Rule*. Re-organization of the certification process and the addition of timelines provide greater predictability and consistency between the state and federal banking programs. These changes benefit both the sponsor and regulatory agencies by streamlining the certification processes while providing successful and ecologically appropriate wetland mitigation.

Prior to the adoption of a state rule, the onus for coordinating the regulatory review lay with the sponsor. The sponsor must meet with each of the appropriate regulatory agencies to develop agreements for banks. Under the draft rule, Ecology, rather than the sponsor, will facilitate the agency review of bank proposals. For proposals seeking both federal and state approval, the U.S. Army Corps of Engineers and Ecology routinely coordinate their review.

The rule clearly identifies the elements that require decision-making by the Interagency Review Team and the considerations that the Interagency Review Team will address. The rule also outlines a dispute resolution process to help resolve concerns a team member may have with a particular decision or element of the instrument (WAC 173-700-232). As a result, sponsors will be able to anticipate agency expectations and can design their proposals accordingly. The transparency of the decision-making process brings an increased level of predictability to the regulatory process and thus removes much of the financial risk associated with permitted activities. While the certification process requires a significant investment of time up front during the development of the proposal, significant timesaving can be realized by both the sponsor and the agencies during the review process for development projects using the bank as compensation.

Banks that implement watershed plans and priorities should also experience a streamlined certification process. This is in part because in those cases, significant baseline information exists on the bank site and the encompassing watershed. Other areas where bank review could be expedited for banks in watershed planning areas include service area determinations and credits determination. In cases where function assessment and resource prioritization activities have occurred, the credit determination methodology may already be developed, thus reducing the time necessary for the Interagency Review Team to agree upon the types and number of credits to be generated by the bank.

Banking provides economic benefits for debit project proponents and resource agencies. Banks make for faster permit processing and decision-making for debit projects once an impact is determined to be unavoidable. The permitting review time is reduced because the compensation element is taken care of in advance. The agencies can see upfront what they are receiving in terms of wetland resources at the bank, and agency staff time, therefore, does not need to be used to review the design and negotiate the specifics of a compensatory mitigation site. For the debit project proponent, once the agencies agree to the use of bank credits for compensation, they only need to provide documentation of the purchase of bank credits in order to satisfy permit requirements.

Economies of scale are inherent in banking, especially for developers with wide ranging impacts such as transportation agencies. Thus, it is normally less costly to establish and manage one large wetland unit than many small compensatory wetland areas. Also, by streamlining the permit review process applicants will realize cost savings over having bank projects reviewed by each permitting agency separately. Those projects requesting use of bank credits will also see a cost savings due to streamlined review of their mitigation proposal.

2.3 Future Actions to Mitigate Adverse Effects

Ecology recognizes that the overall long-term effect of banking in the state is difficult to determine at this point with a limited number of banks currently in existence. In order to ensure that banking does not result in further degradation of watershed functioning or inappropriate tradeoffs in wetland types or locations, Ecology will perform programmatic monitoring of the bank certification program. Programmatic monitoring includes the long-term monitoring and tracking of bank development and credit use. Long-term monitoring is needed to determine the effect of banks on the environment.

Programmatic monitoring should address the following questions:

- Has banking resulted in changes in the types and distribution of wetlands on the landscape?
- Has banking provided adequate replacement of affected functions or has it resulted in tradeoffs in wetland functions?
- Has banking resulted in the exchange of small individual wetlands for large wetland systems?

Part of the analysis will include spatially-oriented tracking of credit use. In other words, to evaluate potential trends in the use of banks, we must understand the spatial relationship between the bank site and the wetlands that are affected by development and the larger landscape. Should the analysis show that the use of banks and off-site replacement of functions is occurring too far from the impact area to be ecologically beneficial, Ecology may review the criteria used for establishing service areas and provide more guidance on selection of appropriate service areas, and/or make revisions to the rule.

3.0 The Rule: Approach, Certification Process and Operational Requirements

This chapter explains how the rule for bank certification was developed, how the certification process will be implemented and it concludes with the requirements for operating wetland mitigation banks (banks).

For each section the statutory requirements are outlined, rule language is described and the rationale for selecting the draft language is explained.

3.1 Approach Used in the Rule: Flexible Versus Prescriptive

A rule can be written to be flexible or prescriptive. *Prescriptive* means that the various aspects of a bank, for example, financial assurance mechanisms, have standard requirements specified in the rule. *Flexible* means that the rule may provide limits or sideboards on a specific element, such as credit releases, while leaving the determination of the exact requirements up for review by the regulator.

To be in compliance with federal, state and local regulations, there are certain protective standards that must be met in order to assure banking will adequately compensate for lost wetland functions at a given impact site. These generally appear as prescriptive parts of the rule. Examples of prescriptive elements include:

- Requirements of the prospectus and mitigation banking instrument (instrument)
- Application process
- Accounting and credit tracking.

The negotiated rule development team and the pilot rule advisors group recognized that there will be a considerable amount of variability in each site and that bank sponsors (sponsors) will have a range of experience creating, enhancing or restoring wetlands functions on their bank site. Providing flexible language in the rule, where appropriate, will allow Ecology and the Interagency Review Team to tailor the requirements for banks to case-specific circumstances. Increased flexibility in rule language also allows sponsors to maximize their ability to sell credits. The rule provides flexibility in several areas including credit conversion rates, amount and timing of credit release, service area size, performance standards, monitoring protocols and site selection. For each of these, the rule provides criteria for determining the appropriate standards on a site-specific basis.

3.2 Wetland Mitigation Bank Certification Process and the Roles of Participants

The rule establishes a new program for the certification of wetland mitigation banks. Prior to the banking law, Chapter 90.84 RCW, the state did not have a process for approving banks, although it did have a state policy on wetland banking (WSDOT Memorandum of Agreement 1994, Castelle et al. 1992c).

The rule outlines the state certification process from submittal of the prospectus through appeals of certification decisions. The certification process contains two distinct steps: 1) submittal of a prospectus to determine the feasibility of the proposed bank and 2) the submittal of an instrument that includes detailed technical information on the proposed bank. The rule clearly outlines the content and submittal procedures of the prospectus and instrument.

To start the certification process an applicant submits a prospectus to the department. The rule contains language that allows Ecology to make an initial evaluation on the ecological appropriateness of the proposed bank and its ability to provide appropriate compensatory mitigation. If a bank proposal is not appropriate, Ecology can deny the proposal. Based on the experience of the pilot program, Ecology recognized the importance of including denial language of bank applications early in the rule to ensure that only proposals that had the ability to provide appropriate compensatory mitigation activities authorized by federal, state or local permits were allowed to move forward in the certification process.

Once an applicant has submitted their prospectus and is approved to move forward in the certification process, the sponsor, in consultation with the Interagency Review Team, develops an instrument. The development of the instrument involves negotiations between the sponsor and the Interagency Review Team and undergoes extensive technical review before the sponsor submits a final instrument. The rule allows Ecology the ability to deny a wetland bank certification if the applicant does not fully address all the required elements and requested revisions to the instrument by the Interagency Review Team.

3.2.1 Role of Ecology

Description

Ecology is designated as the lead state agency for certification. It also has a role in the use of bank credits for debit projects when it requires compensatory wetland mitigation under one of the permits or authorizations that it administers. Bank sponsors apply to Ecology for certification and Ecology implements the certification review process. Ecology coordinates with the other regulatory agencies and tribes comprising the Interagency Review Team on the review of a proposal.

Under the rule, Ecology has several responsibilities regarding banks and their certification. Ecology certifies only those banks that meet the requirements of the rule and the intent of the law. Certification is complete once Ecology, the local jurisdiction, and the sponsor sign the instrument. The approved and signed instrument serves as the state certification.

Ecology is responsible for maintaining a master ledger and complete files on certified banks. The department may perform random audits to verify that a bank's ledger and credit balance are consistent with the legally recorded credit transaction documents.

Ecology retains responsibility for verifying compliance with the terms of the instrument during the establishment and operation of the bank. It also retains the authority to ensure the long-term management and protection of the bank site after the bank's operational life is complete.

The U.S. Army Corps of Engineers may also co-chair the Interagency Bank Review Team for banks where federal approval of the bank is sought.

Under its regulatory authorities, Ecology may authorize the use of bank credits to meet compensatory mitigation required under 401 Water Quality Certifications, administrative orders under RCW 90.48, and the Shoreline Management Act (RCW 90.58).

Statutory Requirements

The law(90.84 RCW) directs Ecology to adopt rules for a certification program for private and public wetland mitigation banks. The law also requires Ecology to ensure that mitigation sequencing has occurred before approving the use of bank credits to offset unavoidable impacts. In RCW 90.84.050, the law sets specific requirements for Ecology's approval of the use of credits. Specifically, the law states that Ecology may approve the use of credits if one of three conditions is met:

1. The bank credits represent estuarine wetlands when the impact being offset is to estuarine wetlands or
2. There is no practicable opportunity for on-site compensatory mitigation or
3. If the use of bank credits is environmentally preferable to on-site mitigation.

Rule Language

The role and responsibilities of Ecology are outlined throughout the rule. Ecology directs the certification process and makes the final decision on bank certifications. The rule also emphasizes Ecology's role as the oversight and monitoring agency for the wetland mitigation banking program (WAC 173-700-600).

Ecology's role as a permitting agency authorizing the use of bank credits is addressed in WAC 173-700-500.

Rationale for Rule Language

In order to achieve the goals outlined in the wetland banking law (RCW 90.84) for an efficient and predictable regulatory process, Ecology provides a leadership role in the certification process. As noted in Chapter 1, the previous lack of a clear process for bank approvals placed the onus of coordinating with all of the regulatory agencies on the sponsor. The lack of a clear regulatory lead for banking resulted in lengthy review times and inconsistent standards for banks in the state. With Ecology acting as the lead agency for certification, the burden for coordinating with all of the regulatory agencies has been shifted to the state. For the sponsor, this removes some of the expense and unpredictability from the certification process.

To accomplish the Legislature's goal of achieving compensatory mitigation in an environmentally responsible manner, Ecology acts as the overseer for the banking program. Since voluntary compliance is not always effective, Ecology plays an important role in ensuring that certified banks are operated in a manner consistent with the terms of their certification. Ecology may access financial assurances for with the project or suspend the use of a bank's credits if the bank is not in compliance with its certification. Suspension of credit use means that suspended credits at a bank cannot be used to mitigate for impacts to wetlands.

Under the rule, Ecology is responsible for monitoring the use of banks. As the program develops, Ecology will track the use of credits to determine how effective the banking program is at providing ecologically appropriate mitigation (See section 2.3 for a description of this).

Finally, the rule includes language on the role of permitting agencies for debit projects. The language directs permitting agencies to ensure that mitigation sequencing has occurred prior to the use of credits. This language was included to satisfy the statutory intent that bank credits be used for unavoidable impacts to wetlands.

3.2.2 Role of Local Jurisdictions

Description

The banking law requires a joint effort between state and local governments in the certification of banks. Even though Ecology certifies a bank proposal, the local jurisdiction in which the bank is located has veto authority. For Ecology to certify a proposed wetland bank, the local jurisdiction in which the bank is located must concur with the certification by providing a signature on the instrument. That signature indicates that the bank proposal does not conflict with local ordinances and that the local jurisdiction concurs with Ecology's certification decision.

As a permitting entity, local jurisdictions may allow the use of bank credits to offset unavoidable adverse impacts (to wetlands) that they authorize. Some local jurisdictions may support the establishment and use of banks to minimize adverse effects of planned development on wetland resources while balancing economic growth.

Local jurisdictions generally have information on what watershed or landscape planning has been conducted in their area. Their involvement in the review and approval of a bank project will help ensure that the bank complies with and complements local planning efforts.

Statutory Requirements

RCW 90.84.040 states that:

- Local governments must sign the bank instrument for certification to be complete; and
- Local governments can approve the use of credits for compensatory mitigation that they require.

Rule Language

The rule outlines the role of local jurisdictions in the certification of banks in WAC 173-700-210, 173-700-220 and 173-700-230. The role of local jurisdictions as permitting agencies for debit projects (projects that use bank credits as compensation) is addressed in WAC 173-700-500.

Rationale for Rule Language

The banking law dictates that local jurisdictions shall be signatory to the instrument (RCW 90.84.040). Local jurisdictions are encouraged to participate on the Interagency Review Team for a bank located within their boundaries (WAC 173-700-220). Ecology notifies the local government where the proposed bank is located once it determines that a prospectus is complete (WAC 173-700-210). If the department determines that a proposal may proceed to the development of a draft instrument, invitations are extended to the local jurisdiction to participate in the certification process. While some jurisdictions have wetlands programs and technical staff, many other local planning departments do not have the staff time or the expertise to evaluate bank proposals. The flexible language in the rule allows a local jurisdiction to delegate the technical review of a proposal to Ecology and simply concur with Ecology's certification decision if they don't have the time, staff or expertise to participate. If the rule required local jurisdictions to participate on the Interagency Review Team, it could pose a burden on smaller jurisdictions.

In order to meet the statute's intent that bank credits be used to offset unavoidable impacts to wetlands, WAC 173-700-500 requires that permitting agencies ensure that mitigation sequencing was used to evaluate debit projects.

3.2.3 Role of other State Agencies

Description

The construction of a bank may require permits from other state agencies. It is important that these agencies have an opportunity to participate in the certification process so that Bank sponsors are informed early of the permits that may be required for the bank construction. It is also important for these agencies to be involved during project review so that if changes in site design are required based on permit requirements or during review of the site design, all agencies can be aware of the changes

Banks can also be used by various state agencies that issue permits to mitigate for unavoidable impacts. In addition, involvement of state agencies in the certification process will facilitate their approval of bank credits for mitigation. State agencies are invited to participate on the Interagency Review Team when the team is convened at the prospectus stage.

Statutory Requirements

The law (RCW 90.84) requires Ecology to establish rules for coordination with other governmental agencies. The law also allows for state agencies to approve the use of bank credits for any mitigation required under a permit issued or approved by that state agency to compensate for authorized unavoidable impacts of a specific public or private project.

Rule Language

The rule states that Ecology will notify state agencies and other entities as part of the initial public notice on a complete prospectus. Ecology will use comments received to determine whether a proposed bank can proceed to the development of a draft instrument. If the department determines that the proposed bank may proceed with the preparation of the draft instrument (WAC 173-700-220(1)) they will convene the Interagency Review Team. The Interagency Review Team will include representatives from the appropriate federal and state regulatory and resource agencies. Members of the Interagency Review Team are also encouraged to sign the banking instrument (173-700-231(3)).

Rationale for Rule Language

The law requires Ecology to coordinate with other governmental agencies. Appropriate regulatory and natural resources state agencies are invited to participate on the Interagency Review Team. Similar to local jurisdiction, State agencies may not have the staff time to evaluate bank proposals. The rule provides Ecology with the flexibility to invite any agency that might have a vested interest in the bank certification process. The flexible language in the rule allows a state agency to delegate the technical review of a proposal to Ecology and simply concur with Ecology's certification decision if they don't have the time, staff or expertise to participate.

3.2.4 Role of Federal Agencies

Description

Banks will be designed to offset authorized impacts for a variety of permits on state, local and federal levels. Because of the different regulatory authorities involved, most sponsors will want to have federal approval of their bank in order to allow the greatest flexibility for the use of credits. Federal agencies must approve banks if they plan on allowing the use of the bank for debit projects to meet their compensatory mitigation requirements.

Statutory Requirements

The law requires that the rule be consistent with the current *Federal Rule* on compensatory mitigation (RCW 90.84.060). Since the rule does not apply directly to federal agencies, there are no other statutory requirements. The *Federal Rule* directs the U.S. Army Corps of Engineers[33] to chair the Interagency Review Team for bank proposals seeking federal approvals (Corps and EPA 2008).

Rule Language

The rule states that the U.S. Army Corps of Engineers may co-chair the Interagency Review Team with Ecology (WAC 173-700-220(2)).

[33] Except in the case of banks established under the Food Security Act. In such cases, the Natural Resources Conservation Service is the lead agency in place of the U.S. Army Corps of Engineers.

Rationale for Rule Language

The language in the rule allows for the participation of federal agencies, but does not require it, since state law is not binding on federal agencies. Ecology has chosen to coordinate the federal agency participation on bank certifications. The federal agencies involved include the:

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- NOAA Fisheries Service (invited to participate)
- U.S. Fish & Wildlife Service (invited to participate)

Because the certification process in the rule is consistent with the *Federal Rule*, the Interagency Review Team process outlined in the rule will suffice for the federal Interagency Review Team process. Sponsors will not need to work with two different Interagency Review Teams in order to obtain both state certification and federal approval of their bank. Sponsors will be able to obtain federal review and comment on their proposals at the same time as the project moves through the state's certification process.

3.2.5 Role of Tribes

Description

Tribal governments are managers and important stakeholders in decisions regarding the natural resources within the state. Treaties with tribes in Washington protect tribal rights within their usual and customary hunting and fishing grounds. Tribes that have usual and accustomed hunting and fishing grounds within a bank's service area may review and provide input on bank projects during the state certification process or through the federal Section 404 process.

Statutory Requirements

Although the wetland banking law (RCW 90.84) does not require tribes to be involved in bank certification, Ecology believes that tribal involvement in the process is important. Ecology invites affected tribes to participate on the Interagency Review Team and encourages their feedback on proposed certification materials. Tribes who do not wish to participate in the certification process are encouraged to become involved in public involvement opportunities.

The *Federal Rule* states that the Interagency Review Team is made up of federal, tribal, state, and local regulatory and resource agency representative (FR Vol 73, No. 70, April 10, 2008, pg. 19671). The *Federal Rule* goes on to say that in cases where a mitigation bank program is proposed to satisfy the requirements of a tribal program it may be appropriate for the tribal agency to serve as co-chair of the Interagency Review Team (FR Vol 73, No. 70, April 10, 2008, pg. 19680).

Rule Language

Rule language states that Ecology shall notify appropriate tribes when a complete prospectus is received. WAC 173-700-220(1) specifies that tribes located within a proposed bank's service area will be invited by Ecology to participate on an Interagency Review Team. Tribes may participate on the Interagency Review Team or they may decline. They are also invited, but not required, to sign the instruments.

Rationale for Rule Language

Many tribal governments actively engage in land-use decision making, resource permitting programs and watershed planning processes. Their participation on the Interagency Review Team can help assure that establishment and operation of a bank occurs in a manner consistent with their interests.

In some cases, tribes may allow the use of a bank to meet mitigation requirements under a tribal program. In such circumstances, tribes may wish to be involved during the development of an instrument and certification.

Tribal Banks

Some tribes may establish wetland banks within their reservation boundaries. On tribal lands where the state does not have jurisdiction, the rule contains language that allows the federal interagency review process to substitute for the state process. Tribal banks that receive federal approvals and which are designed to provide mitigation for projects under state jurisdiction can be considered state certified provided that:

- The state has participated on the interagency review team for the project;
- Concerns raised by the state have been addressed to the state's satisfaction, and
- The state has notified the US Army Corps of Engineers that it concurs with the approval of the bank (WAC 173-700-102).

This language was needed to meet the legal requirement that only credits from state certified banks can be used to meet state permit requirements. The rule language preserves tribal sovereignty while meeting the state's legal requirements.

3.2.6 Role of the Public

Description

It is important that the public have adequate and meaningful opportunities to provide comments to the Interagency Review Team and Ecology during the review of proposed banks.

Timing of public involvement in the bank certification process is important. If the notification occurs extremely early in the process, the public may be commenting on a proposal that may change substantially during the Interagency Review Team process. If the public notification occurs later in the process, then significant decisions may have already been made.

Statutory Requirements

RCW 90.84.030 directs that the certification process within the rule language include provisions for public involvement during the review of a bank. The law also directs that the public involvement process for bank certifications be done with existing authorities [RCW 90.84.030(3)]. The Legislature intended that the rule would not develop a new duplicative process for public involvement. The law requires Ecology to look to laws other than RCW 90.84 for establishing public involvement in individual bank certifications.

Rule Language

The rule, in WAC 173-700-240 through 242, outlines Ecology's goals and process for public involvement in bank certifications. The rule specifies formal public notification and commenting at two distinct phases in the certification process: 1) when an applicant's prospectus is determined complete by Ecology and 2) when the applicant submits the final mitigation banking instrument. Agency, tribal, and stakeholder input will be sought, documented and evaluated through the Interagency Review Team forum.

The general public, agencies, tribes and other stakeholders can review and comment on a proposal during the certification evaluation process. When bank certification also includes other approvals for construction, public notice for the bank certification will be issued jointly with that program's public notification process. If construction permits are not needed, (e.g., a bank involving only preservation) Ecology will issue a separate public notice to solicit public comments.

Ecology will fully consider all comments received and will not issue a certification decision until the public comment period for a certification application is completed. If Ecology determines that significant public interest exists, it may hold a public hearing on the proposal. Public input will be collated and distributed to the sponsor and members of the Interagency Review Team.

Ecology also advises sponsors to solicit public input early in the process.

Rationale for Rule Language

The public must have a voice in the certification process because they are stakeholders in wetland resource management. The success or failure of banks affects the public. Banks can alter the functions and distribution of wetlands in a watershed and, therefore, affect watershed processes. Disruptions to watershed processes can significantly affect human populations. For example, wetlands reduce flooding and support biological diversity (such as salmon), both of which have economic as well as ecological impacts.

The banking law requires that Ecology use existing public involvement processes to solicit public input when available. In order to avoid redundant public review processes, Ecology will use other available opportunities to solicit public input. This includes using a joint public notice on the proposed certification in circumstances where the construction of a bank requires an authorization under another state, local or federal program which has its own public involvement process. When another process is not available, Ecology will issue a separate public notice to ensure that the public has adequate opportunity to review and comment on wetland bank certifications.

3.3 Operational Requirements

3.3.1 Financial Assurances

Description

Financial assurances are mechanisms that ensure that a sponsor will have the financial resources necessary to operate the bank. Financial assurances ensure that funding will be available for construction, remedial or contingency actions on a bank site, and for ongoing maintenance on a bank site (Gardner and Radan 2006). Ongoing maintenance may include management for noxious or invasive species or payment of property taxes.

Financial assurances come in a variety of forms. Performance bonds, irrevocable letters of credit or trusts, escrow accounts and legislatively dedicated funds for government-operated banks are all forms of financial assurances.

Financial assurances guarantee that the public does not pay for failed bank projects. They make the sponsor fiscally responsible for the long-term viability of a bank.

Statutory Requirements

The wetland banking law requires that Ecology adopt rules that include financial assurances for certified banks (RCW 90.84.030(7)).

The proposed rule must be consistent with the *Federal Rule* on compensatory mitigation. The *Federal Rule* states that:

> "The district engineer shall require sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with applicable performance standards…The amount of the required financial assurances must be determined by the district engineer, in consultation with the project sponsor, and must be based on the size and complexity of the compensatory mitigation project, the degree of completion of the project at the time of project approval, the likelihood of success, the past performance of the project sponsor, and any other factors the district engineer deems appropriate… In determining the amount, the district engineer shall consider the cost of providing replacement mitigation, including costs for land acquisition, planning and engineering, legal fees, mobilization, construction, and monitoring." (FR Vol 73, No. 70, April 10, 2008, pg.19676)

Rule Language

WAC 173-700-351 through 354 outlines the requirements for financial assurances for certified banks. The rule allows Ecology to require financial assurances for three purposes: construction, monitoring and maintenance, and long-term management. It requires Ecology to approve the amount and form of financial assurances prior to certifying a bank.

The rule does not specify which financial assurance mechanisms should be used, but outlines the elements that must be considered when the amount of the financial assurance is established. For example, financial assurances for monitoring and maintenance must include costs to implement contingency actions, costs for all monitoring activities and costs for actions such as irrigation or weed control.

Under the compliance process in the rule (WAC 173-700-602), Ecology may use posted financial assurances to complete any necessary contingency actions if the sponsor does not perform specified actions within the timeframe required by Ecology.

WAC 173-700-351(4) allows Ecology to reduce the amount of financial assurances for a bank over time as the risks are reduced.

Rationale for Rule Language

The rule requires financial assurances to minimize the risk to the environment from failed banks. Reducing the possibility of bank failure through funds for remedial actions is essential to the goal of replacing wetland function and acreage. Without financial assurances, wetland losses could occur if banks fail to meet their goals. The language in the rule provides Ecology the enforcement mechanism and access to funds to ensure that actions necessary to avoid a total failure of a bank site can be completed.

It is essential that the rule language be flexible in regard to financial assurances to be effective and fair. The rule sets sideboards for financial assurances while giving Ecology and the Interagency Review Team the flexibility necessary to tailor the financial amounts and mechanisms to the individual conditions of each proposal.

For instance, banks where credits are not released until after construction will not be required to post a financial assurance for construction. Alternatively, proposals that contain risky or unproven techniques will be required to post higher financial assurances. For example, for bank proposals that depend upon the elimination of a highly aggressive, non-native plant such as reed canary grass, Ecology will require higher financial assurances to ensure that contingency actions can be implemented and that there will be sufficient funds for continuing control of the non-native species.

The rule requires that financial assurances be based on the cost to have a third party perform the necessary work. This ensures that Ecology will have sufficient funds available to contract out the necessary items if the sponsor does not perform any required actions.

The rule also allows Ecology to change the amount of financial assurances it requires over time. Thus, as a bank site matures and the risk of failure is reduced, the sponsor is not penalized by having to continue to provide the level of financial assurances originally required.

3.3.2 Site-Specific Monitoring

Description

The proposed rule addresses two types of monitoring for banking:

1. Site-specific monitoring for verifying the successful development of the site,
2. Long-term management and maintenance, and

Tracking is discussed in section 3.3.3 of this document.

Site-specific monitoring determines whether a specific bank is in compliance with the terms of its Mitigation Bank Instrument. Monitoring can identify when additional actions (i.e.,

contingency or remedial actions) are necessary to prevent bank failure. The requirement to perform remedial actions is based on information from monitoring reports indicating that performance standards or other elements required by the banking instrument are not being met.

Monitoring also plays a critical role in regard to the timing and release of credits. The release of credits from a bank site is related to the attainment of performance standards. Performance standards represent benchmarks of function performance or ecological gain. Particular attributes of the bank are observed and measured to determine if and when performance standards are met. If the bank successfully attains or maintains the performance standards identified in the bank instrument, then it is considered successful (Ossinger 1998) and credits can be released.

Some examples of attributes used for monitoring during the active life of the bank include:

Vegetation
- Percent cover of native vegetation
- Percent cover of invasive vegetation
- Species richness and diversity

Hydrology
- Soil saturation
- Water dimensions, such as extent, depth, duration, and timing of inundation
- Flow rates

Habitat Structures
- Placement of snags
- Placement or recruitment of large woody debris
- Construction and maintenance of riffle/pool complexes

Substrates
- Soil color
- Soil texture

Water Quality
- pH
- Temperature
- Biochemical oxygen demand
- Nutrient concentrations
- Conductivity

Monitoring is also part of the long term management for bank sites. Bank sites must have long term management and maintenance plans as part of their mitigation bank instrument and these plans must contain information on the long term management needs of the site and identify funding sources to meet those needs. Examples of the long-term monitoring needed for bank sites include:

Noxious and Invasive Weeds
- Identification and control of regulated noxious weeds
- Identification and control of any specific invasive weeds that would harm the aquatic ecosystem and habitat resources of the bank

Vandalism or trespassing

- Periodically inspect the site for signs of vandalism or trespassing
- Check condition of site signage, fencing, or other structural elements

Statutory Requirements

RCW 90.84.030(1) requires that monitoring be included in the certification rules.

The *Federal Rule* identifies several standards for monitoring banks (Corps and EPA 2008):

- Monitoring provisions or plans should be identified in the instrument.
- The monitoring plan should be based on scientifically sound performance standards specified for that particular bank.
- The sponsor is the party responsible for monitoring the bank according to the monitoring provisions set forth in the instrument.
- Monitoring should be conducted at times and at a frequency appropriate for the particular bank project.
- Monitoring should be conducted for a period that is sufficient to demonstrate that the bank has met performance standards. This should not be less than five years. A longer monitoring period must be required for aquatic resources with slow development rates (e.g., forested wetlands, bogs.
- Monitoring reports should be prepared and distributed by the sponsor to the signatory agency(ies). The monitoring report must include information that shows how the bank is progressing towards meeting its performance standards.

The *Federal Rule* also mentions that monitoring periods may be extended if it is determined that performance standards have not been met or the bank is not on track to meet them. Monitoring requirements may be revised when remediation and/or adaptive management is required (Corps and EPA 2008).

Rule Language

The rule prescribes how monitoring must be addressed in the instrument. The monitoring requirements can be found in Part IV of the rule in WAC 173-700-400 through 173-700-403 and 173-700-420.

These sections include the following elements on bank monitoring:

- Goals of monitoring bank sites
- Contents of a monitoring plan
- Adaptive management plan elements
- Monitoring schedule

- Monitoring reporting requirements
- As-built[34] reporting requirements
- Long-term management and maintenance plan requirements

The rule identifies the goals of monitoring sites in WAC 173-700-400. These goals include documentation of baseline conditions, documenting the development of the site over time and the attainment of (or failure to attain) performance standards. The rule contains prescriptive requirements for monitoring elements that must be included in an instrument such as the contents of a monitoring plan. Other elements of monitoring in the rule are more flexible. Using the basic criteria prescribed, Ecology and the Interagency Review Team can tailor specific requirements based on the individual conditions and goals of a bank.

In WAC 173-700-402(1)(b), Ecology is given the authority to increase monitoring requirements at banks where remedial actions have been implemented to ensure that the remedial actions are successful.

Rationale for Rule Language

Monitoring the actual progress and development of banks is critical to ensuring successful compensatory mitigation and replacement of lost wetland area and function. Without adequate monitoring and oversight, there may be considerable chance that the site will fail to attain its ecological goals. While our knowledge of wetland science continues to grow, the process of restoring, creating and enhancing wetlands is still subject to considerable variability. The amount of project oversight and the use of adaptive management techniques are critical to attaining success (National Cooperative Highway Research Program 1996, National Academy of Sciences 2001, Hilderbrand et al. 2005).

A combination of prescription and flexibility was chosen to ensure protection to the environment, while addressing the unique circumstances of each bank. For example, the rule prescribes that the monitoring plan must be included in the instrument and that the plan must include the monitoring schedule and methods. However, the rule does not specify the schedule requirements (e.g., monitoring in years 1, 3, 5, 7, and 10). It allows Ecology and the Interagency Review Team to determine the appropriate monitoring schedule on an individual basis.

The rule does require that the department shall require a ten year monitoring period in general. Studies have shown that most sites will not reach equivalency to their reference site functions within the commonly used five-year monitoring period (Turner et al. 2001). One study conducted in the Ohio showed that mitigation sites achieved functional equivalency within a range from 7 to 44 years with a median of 14 years (Gutrich and Hitzhusen 2004). The rule provides flexibility for the department to require longer monitoring for those sites that will be restoring systems that take longer to mature.

[34] "As-builts" is commonly used to refer to plans that document the construction condition of a mitigation site. They generally include final grading and site elevations, locations of structures and the locations of plantings.

The bank's goals and objectives determine which variables need to be measured (Ossinger 1998). Objectives focusing on different wetland functions often need different variables measured. For example, an objective requiring a specific type of habitat may necessitate monitoring vegetative structures (e.g., thin-stemmed, emergent vegetation, large woody debris, edge and vegetation/open water interspersion), while an objective for removal of nutrients would require monitoring of the wetland's water regime to document areas of seasonal inundation.

Monitoring is also an important trigger for contingency plans and remedial actions when a site isn't attaining its performance standards. For instance, if monitoring water levels indicates insufficient water depths, a contingency plan for re-grading of the site could be required.

3.3.3 Tracking of Credit Use

Description

There are two levels of tracking of bank credits: the individual bank level where Ecology ensures compliance with the terms of certification regarding the accounting of credits and withdrawals, and programmatic monitoring of the use of banks statewide. Programmatic monitoring of banking under WAC 173-700 is discussed in chapter 2.

The rule defines different types of credits. Credits may be considered potential, available, reserved, or debited depending on whether they have been released by the Interagency Review Team, purchased by a bank client, or used for permitted activities.

Tracking requires recording the use of bank credits, including available, reserved and debited credits at bank sites. It involves simple accounting (bank credit balances, additions and withdrawals). Tracking may also include verifying that credits are used in ways that are consistent with any requirements in the instrument. For example, a bank may have a geographic restriction (smaller service area) for the use of credits to compensate for impacts to fish habitat functions.

Statutory Requirements

The law requires that the certification rule include provisions for the operation and monitoring of wetland mitigation banks in RCW 90.84.030(1). Tracking the use of bank credits is part of the operation of a bank.

Rule Language

WAC 173-700-104 defines the various types of credits associated with a bank project. WAC 173-700-411 through 173-700-413 outlines the requirements for the tracking and reporting of bank credit use. Under the rule, the sponsor must:

- Record and report all credit transactions.
- Maintain a separate credit tracking ledger for each bank.
- Submit a copy of the ledger to Ecology 1) annually on the status of the bank's credit balance and 2) within 30-days of credit receipt, sale, or when any credit is debited for permit requirements.
- Record at the auditor's office of the county where the bank is located when a credit is debited from a bank to meet a permit requirement and the credit sale is complete.

Under the rule, Ecology must:

- Maintain a ledger template for sponsor use.
- Maintain a master ledger for all banks.
- Verify the annual ledgers submitted by sponsors against the master ledger.
- Notify the sponsor of any discrepancies found.

The sponsor's responsibility for tracking of bank credits is outlined in WAC 173-700-411. The rule clarifies that it is the sponsor's responsibility to rectify any discrepancies found during Ecology's review of annual ledgers or audits.

Rationale for Rule Language

Tracking the use and establishment of certified banks is necessary to ensure the ecological success of the state's banking program. To protect the environment and avoid additional losses of wetland resources and function, credit use must be monitored to ensure that bank credits aren't "overdrawn." Such an overdraft could occur if credits were used prior to them being released, or if a credit were used to meet compensation requirements for two different projects under different jurisdictions.

A challenge to tracking credits in Washington is the multiple levels of regulatory authorities in this state. Since wetlands are regulated on the local level in addition to the state and federal levels, there is no single entity that has oversight or that tracks all wetland impacts and compensations. A potential exists for bank credits to be sold for use on more than one project. If there is not an accurate method for tracking the use of credits, Ecology may not know when credits are used only for local requirements. Tracking should ensure that the same credit is not used to meet compensation obligations for multiple projects

The proposed credit tracking and accounting process in the rule should result in sufficient protection against fraudulent use of bank credits. Under the rule, sponsors are required to record

a transaction document at the auditor's office of the county where the bank site is located. This legal recording provides a paper trail for the transfer and use of bank credits. Sponsors are required to submit a copy of the transaction document to Ecology within 30 days of the auditor's recording.

The sponsor is also required to submit annual reports on the bank's ledger. Ecology verifies the information on the annual transaction report with the master ledger that it maintains. In addition, the sponsor must submit a copy of the ledger when any credits are received and when credits are sold from the bank.

WAC 173-700-413 allows Ecology to randomly audit certified banks to ensure compliance. This auditing provision means that Ecology can audit a bank at any time rather than waiting for the submission of the sponsor's ledger.

3.3.4 Use of Credits

Description

As described previously, bank credits are produced in order to provide compensatory mitigation for unavoidable impacts to wetlands. Development projects using bank credits to meet compensatory mitigation requirements are called *debit* projects. Impacts from debit projects must meet specific conditions in order to use bank credits. Generally, it must be located within the service area of the bank and the credits in the bank must provide adequate compensation for the project's impacts.

Statutory Requirements

RCW 90.84.040 authorizes local governments and state agencies to use bank credits to meet compensatory mitigation requirements under a permit that they approve.

The banking law requires Ecology to include procedures regarding credits in the rule authorizing the use of credits to offset adverse impacts [RCW 90.84.030(2)].

The rule also specifies three requirements for Ecology to use when it approves the use of credits from a bank (RCW 90.84.050). Ecology must ensure that:

- Mitigation sequencing has been applied to the proposed debit project;
- Estuarine impacts are mitigated with credits from an estuarine bank; and
- There is either no practicable opportunity for on-site mitigation or the use of bank credits is environmentally preferable to on-site mitigation.

The *Federal Rule* notes that use of mitigation bank credits does not relieve the applicant of the need to comply with the federal Clean Water Act section 404(b)(1) guidelines (Corps and EPA 2008). The 404(b)(1) guidelines require that applicants first avoid and then minimize impacts to the greatest extent possible.

Projects located within a bank's service area are eligible to use credits from a bank to meet federal permit requirements if use of the bank is the environmentally preferable mitigation option. The *Federal Rule* identifies a preference hierarchy to mitigation where bank credits are the preferred mitigation option. It states:

> "When permitted impacts are located within the service area of an approved mitigation bank, and the bank has the appropriate number and resource type of credits available, the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor…The district engineer should give preference to the use of mitigation bank credits when… applicable…." (FR Vol 73, No. 70, April 10, 2008, pg. 19673)

The rule also states that generally, impacts to tidal wetland systems should not be compensated with non-tidal compensation.

Regarding how credits may be used, the *Federal Rule* states:

> "Under no circumstances may the same credits be used to provide mitigation for more than one permitted activity; however, where appropriate, compensatory mitigation projects… may be designed to holistically address requirements under multiple programs and authorities for the same activity." (FR Vol 73, No. 70, April 10, 2008, pg.19675)

Rule Language

Rule language addressing the use of credits is in WAC 173-700-222(11) and 173-700-500 through 173-700-502.

The rule states that the instrument must contain a description of the general types of impacts that are appropriate for compensation by the bank, as well as any restrictions on credit use [WAC 173-700-241(10) and (11)].

The rule also provides guidance, in WAC 173-700-501, for determining replacement ratios when bank credits are used. The section notes that replacement ratios for bank credits should generally be lower than those used for concurrent mitigation since bank credits are often already constructed and banks have extensive risk management mechanisms in place to reduce the risk of failure.

Credits from a certified bank may not be used to compensate for more than one impact (WAC 173-700-500). WAC 173-700-500 addresses the requirement that impacts offset by the use of bank credits for compensation must be unavoidable.

Projects that are located in a bank's service area are eligible to apply to use bank credits to meet compensation requirements. Being located within a service area means that the debit project is eligible to use bank credits, but it does not mean it is entitled to those credits. The agency requiring compensatory mitigation determines whether the use of bank credits is appropriate [WAC 173-700-500(4)].

In some instances, the rule allows for the use of credits to compensate for impacts located outside of the bank's service area upon written approval by Ecology and other signatories of the instrument. For example, the rule states that linear projects may use bank credits to compensate for impacts located outside of a bank's service area provided that at least one impact from the project is located within the bank's service area [WAC 173-700-502(2)].

Rationale for Rule Language

Addressing the use of credits in the rule is important to guard against inappropriate compensation for impacts to wetland area and function. The *use* of bank credits, not the *establishment* of banks, has the potential to change the distribution of wetlands and the functions they perform on the landscape. .

This is particularly true when losses in some functions are exchanged for gains in others. For example, if a riverine bank is used to compensate primarily for impacts to depressional wetland systems, then some losses of those functions provided by depressional wetlands (e.g., reduction of downstream erosion, amphibian breeding and dispersal habitat, and nutrient removal) would be expected. If the bank credits are used to replace similar resources and functions that are lost, potential net losses are minimized.

The rule requires that an instrument identify what constitutes an appropriate use of bank credits. The Interagency Review Team and the certification process (which approves the bank instrument) are the safeguards ensuring that the appropriate use of credits is articulated. Since credits may be determined differently for different banks, the instrument for each bank must not only describe what the credit represents, but how those credits may be used [WAC 173-700-222(10 and11)].

Since different functions performed by wetlands have different scales of influence, the instrument may limit where credits can be used to offset losses of specific functions to a part of the bank's service area. For example, fish habitat improvements are generally considered on a stream reach (Washington Fish and Wildlife Commission 1997), while hydrologic functions of wetlands located in the upper reaches of a watershed affect all of the downstream areas in the watershed (Loukes 1990). A bank that provides fish habitat functions in addition to other functions may have a large service area which encompasses a watershed, while limiting the use of credits for fish habitat impacts to the stream reach where the bank is located.

Guidance for determining replacement ratios for debit projects in the rule notes that replacement ratios will often be lower than those required for projects using concurrent mitigation. Lower ratios are allowed because bank credits aren't released until risk management mechanisms[35] are in place and specific benchmarks of success are met. This results in reductions in temporal losses of wetland area and functions and the risk of failure. Additionally, depending upon the credit determination method used, an acre of credit will often represent more than one acre at the bank site[36].

Since Ecology already requires mitigation sequencing for all permits it issues, there is no need to replicate the requirement from RCW 90.84.050 in the bank certification rule. The rule states that bank credits are for use as compensation for unavoidable impacts and that the permitting agency authorizing the use should ensure that mitigation sequencing has occurred.

The rule recognizes that linear projects, such as transportation projects and utility projects, are fundamentally different from other types of development projects. Linear projects often have many small unavoidable wetland impacts within more than one sub-basin. Linear projects regularly use off-site and out of sub-basin compensation under current wetland mitigation programs.

The rule encourages local and state agencies to use banks as a tool for implementing various management and restoration plans, such as watershed management plans, priorities identified through watershed characterizations, and shoreline master programs (WAC 173-700-500). Banks are one tool that can be used to restore processes, habitats and function identified as priorities within a watershed.

The rule restricts use of credits outside of a watershed, except in special cases, because some losses of wetland functions cannot be adequately replaced outside of the sub-basin where the impact occurs. Impacts to fish habitat in one stream reach would not be adequately replaced by mitigation activities in a different stream reach even though there is no net loss on a watershed level. Hydrologic functions are also dependent upon landscape position. Wetlands in the upper reaches of a watershed provide storage of precipitation, reducing downstream erosion and moderating fluctuations in water regimes. These wetlands, therefore, may not be adequately mitigated through the development of banks in the lower reaches of a watershed.

[35] Such mechanisms include posting of financial assurance, permanent protection of the bank site and completion of a certified bank instrument.

[36] Note that in the methods for determining credits for banks (WAC 173-700-312 through 173-700-319) ratios are applied to acreage in the bank to account for the varying levels of ecological gain produced by different activities (re-establishment, creation, rehabilitation, enhancement, preservation and upland enhancement and preservation) on the bank site. For example, re-establishment of wetlands at a bank site may require 2 acres of restoration to generate 1 acre of credit.

3.3.5 Compliance

Description

Compliance involves verifying that a bank is operated in a manner consistent with the instrument. Compliance is different from monitoring. Monitoring was discussed in section 3.3.2. Monitoring focuses on how the bank site is developing and whether the wetlands on the site are attaining performance standards (benchmarks for success). Compliance, however, involves ensuring that the operation of a bank (the generation and sale or use of credits) complies with the bank's terms of certification.[37] This section focuses on the compliance aspects of banking.

Statutory Requirements

RCW 90.84.030(1) requires that Ecology develop rules for the operation of wetland mitigation banks. The law also requires[38] adequate assurances that the bank will result in an overall environmental benefit for banks which involve the creation or enhancement of wetlands.

The *Federal Rule* states that the "instrument must clearly indicate the party or parties responsible for the implementation, performance, and long-term management of the compensatory mitigation project. The instrument must also contain a provision expressing the sponsor's agreement to assume responsibility for a permittee's compensatory mitigation requirements… If the sponsor fails to provide the required compensatory mitigation, the district engineer may pursue measures against the sponsor to ensure compliance." (FR Vol 73, No. 70, April 10, 2008, pg. 19676) These measures include adaptive management, decreasing available credits, suspending credit sales, and accessing financial assurances. If necessary the district engineer can take appropriate legal action to compel compliance.

Rule Language

The rule articulates Ecology's goal that certified banks operate consistent with the terms of their certification. The rule (WAC 173-700-600) authorizes Ecology to use a range of actions to bring banks into compliance with their certification.

The rule outlines four compliance mechanisms to bring banks into compliance (WAC 173-700-601 through 173-700-603):

1. Monitoring triggers implementation of adaptive management.

[37] The terms of certification are specified in the bank instrument for the wetland bank.
[38] In RCW 90.84.030(b).

2. If adaptive management activities fail or are not implemented, Ecology may choose to order remedial actions or use the sponsor's posted financial assurances. (See section 3.3.1. of this document).
3. Ecology may choose to adjust the total number of credits available from a bank site if it is unable to attain all of its performance standards.
4. Ecology may choose to suspend the further sale or use of credits from the bank until the bank achieves compliance.

Rationale for Rule Language

As with any regulatory program, appropriate checks must be in place to ensure that the regulated entity abides by the requirements of the bank certification so that the interests of the public are protected. Studies on wetland mitigation have noted that the lack of follow-up and enforcement of permit conditions is one factor in the lack of complete success in compensatory wetland mitigation programs (Storm and Stellini 1994, Johnson et al. 2000, Kunz et al. 1992, National Academy of Sciences 2001, Hornyak and Halvorsen 2003, Kettlewell et al. 2008).

Ecology must have the ability to enforce compliance with certification in order to minimize the risks to the environment and ensure that the public does not bear the costs of failed bank projects. The purpose of the compliance mechanisms above is to ensure that banks that fail to attain their performance standards can be rectified or that their use will not result in uncompensated impacts to wetlands.

Sponsors need a clear, predictable process and the opportunity to come into compliance before enforcement actions are taken. Recognizing that restoring, creating and enhancing wetlands is not entirely predictable, and that the final outcome on a site may be significantly different from the intended result, the rule uses adaptive management as the first mechanism to gain compliance. The rule gives banks an opportunity to get back into compliance before Ecology implements enforcement actions.

3.3.6 Incentives

Description

A wide range of benefits can be derived from banks. The rule ensures that certified banks will be held to a standard for success. The standards require that sites selected for banks have the physical and biological characteristic necessary to achieve the bank's goals and objectives.

However, even when a bank successfully creates wetland resources, the significance of that benefit can vary based on where and how the site supports watershed health and functioning. For example, a bank may provide for a particular species of wildlife. While the bank provides adequate habitat, if the bank is located where there are corridors to other habitat areas, the value

of the bank site to the wildlife would be much greater than if the bank site were isolated from other natural areas.

Various incentives, such as more favorable credit conversion rates, can be used to encourage sponsors to locate and build banks that provide greater benefits to watershed functioning.

Statutory Requirements

The state wetland banking law and the *Federal Rule* do not specifically address incentives. However, the *Federal Rule* states that there is a preference for the use of mitigation bank credits when looking at various compensatory mitigation options. This preference for bank credits provides incentive for bank sponsors to establish successful banks.

Rule Language

WAC 173-700-300 explains the incentives available to sponsors to develop ecologically significant banks. The incentives include more favorable credit conversion rates and larger service areas. The rule outlines the elements Ecology considers when evaluating and making decisions on bank proposals. Bank proposals that more fully address these considerations for each element generally receive more favorable conditions.

The rule also includes incentives for sponsors to increase the level of ecological gains realized at a bank site (WAC 173-700-334). The rule allows Ecology to increase or decrease the number of credits at a bank based on the actual level of performance of the bank.

The rule also provides incentive for banks established within urban areas. WAC 173-700-317 provides Ecology flexibility to provide more favorable credit ratios for banks established within urban areas. Ecology may look at several different factors when considering credit ratios for urban banks. For example, if an urban bank can show that they are helping to implement documented local restoration priorities, shoreline master programs, local land use management plans, or watershed plans they would receive more favorable credit ratios.

Rationale for Rule Language

During the negotiated rule development team process, the team advocated that sponsors should be encouraged to select a bank site that is important for the functioning of the watershed or one that is identified as a priority restoration site. Unfortunately, the priority sites for watershed restoration are not always identified or available. Identification of a site as an important restoration site can drive up the cost of the site. Additionally, the owner of a priority site may

not be willing to sell the site for restoration purposes. In such cases, a sponsor must devote more energy and capital in order to establish a bank on a priority restoration site. The negotiated rule development team decided that incentives should be used to encourage sponsors to select priority restoration sites and develop more regionally significant mitigation.

Several of the incentives in the rule are designed to increase the economic return for the sponsor since many of the elements needed for a more ecologically significant bank could add to the sponsor's bank development costs. Better credit conversion rates and larger service areas provide incentives that increase economic returns. These incentives are justifiable if the bank location and design provide greater functions.

Incentives are included in the rule for projects proposed in urban areas due to lack of land availability, higher costs, and local significance for restoring habitats and retaining urban open spaces. It is difficult to find property within urban settings that are large enough to sustain wetland mitigation activities. As discussed in Section 2.1.2, there is a possibility that without incentives for urban banks there may be a shift in wetland resources from urban areas to rural ones.

The negotiated rule development team also wanted to provide incentives for sponsors to perform management activities over the life of the bank to increase the functions performed at a bank site. The rule allows Ecology, in coordination with other bank signatories (agencies or entities which are signatory to an instrument[39]) to increase the number of credits at a bank site if the bank exceeds the originally projected levels of function at the site.

[39] Each bank will have a unique group of signatories for their bank instrument. Signatories to a bank instrument agree to the terms and conditions of the bank instrument and bank certification.

4.0 The Rule: Technical Requirements

This chapter discusses how the rule addresses the technical requirements for wetland mitigation banks (banks). The technical requirements addressed include service area, site selection, credit determination and credit release.

4.1 Geographic Extent of the Service Area

4.1.1 Description

A service area is defined in law as "the designated geographic area in which a bank can reasonably be expected to provide appropriate compensation for unavoidable impacts to wetlands" [RCW 90.84.010(8)]. Debit projects located within the service area of a bank may request credits from the bank to meet their compensatory mitigation needs. However, their presence within a bank's service area does not guarantee that the use of bank credits will be approved.

The service area of the bank can be described as its "market area." The most important consideration for a service area is determining the geographic extent in which the functions the bank provides can compensate for losses, particularly when viewed from a landscape scale. Thus, the determination of a bank's service area requires consideration of what functions are provided at the bank and how the bank's performance contributes to watershed health.

A bank may have a single service area, or it can have multiple service areas based on functions.

4.1.2 Statutory Requirements

RCW 90.84.030(2) restricts the maximum extent of the service area of a wetlands mitigation bank to the water resource inventory area (WRIA) in which the bank is located except where a service area may include parts of other WRIAs if it is ecologically defensible and appropriate.

RCW 90.84.030(5) directs Ecology to adopt rules for the "establishment of criteria for determining service areas."
The *Federal Rule* describes a service area as the watershed, ecoregion, physiographic province, and/or other geographic area within which the mitigation bank is authorized to provide compensatory mitigation (Corps and EPA 2008). The service area must be appropriately sized to ensure that the aquatic resources provided will effectively compensate for adverse environmental impacts across the entire service area. The *Federal Rule* uses hydrologic unit codes as one tool

to help determine appropriate service areas. The rule does require that the service area must take into consideration any locally-developed standards and criteria that may be applicable. The economic viability of the mitigation bank program may also be considered in determining the size of the service area. The basis for the proposed service area must be documented in the instrument. (FR Vol 73, No. 70, April 10, 2008, pg. 19682)

4.1.3 Rule Language

The rule is flexible in regard to the geographic extent of the service area. In general WAC 173-700-301(3) establishes that the maximum extent of a service area will be the Water Resource Inventory Area where the bank is located unless the department determines it is ecologically appropriate to include adjacent areas. The rule outlines a process and supplies general criteria for determining service area using available site-specific information.

The rule states that Ecology, with the Interagency Review Team, determines each bank's service area. The determination of service areas is based upon consideration of criteria listed in section WAC 173-700-302.

WAC 173-700-302(1) emphasizes that the extent of the service area is based upon the functions provided by the bank and the distance from the bank that those functions can reasonably provide compensation for impacts.

The rule articulates that integration with watershed management plans is one consideration for determining service area (WAC 173-700- 300). WAC 173-700-302(2) specifically encourages the integration of banks with watershed management plans and other land-use plans.

4.1.4 Rationale for Rule Language

The success of a bank will partially depend upon selecting a service area where the bank can provide greater environmental benefit over on-site mitigation, and where there is a sufficient market and demand for credits.

Early in the negotiated rule development team process, the team decided that service areas for banks needed to be set on a case-by-case basis and that the rule should include criteria for determining the service area. The team felt that a single service area requirement (e.g., a watershed or river basin) would not address the differences between wetlands and the differences in the spatial extent of functions. Rather than take a one-size-fits-all approach, the team decided that a more flexible approach with decision-making criteria would be more effective and environmentally protective. This more flexible approach using criteria allows the Interagency Review Team and Ecology to establish a service area that addresses the variability in wetlands and watersheds while minimizing the potential for adverse environmental effects and providing some predictability for bank sponsors (sponsor).

The Environmental Law Institute noted in their study of wetland mitigation banking that while service area determinations are best made in the context of watershed or area-wide planning, in the absence of such planning, the use of hydrologic and biologic criteria for service area determinations makes the most sense (Environmental Law Institute 1993).

WAC 173-700-302 lists the considerations for determining service area. These include the types of functions provided by the bank, the watershed (WRIA) and ecoregion in which the bank is located, and the landscape setting of the bank and the degree to which the bank restores watershed processes. The anticipated impacts for which the bank will provide compensation are also considered in the determination of service area.

WAC 173-700-301 allows service areas to include portions of adjacent watershed where it is ecologically appropriate. In the case where a bank is located in an estuarine area, estuarine areas in adjacent WRIA's would be more ecologically appropriate than including areas in the upper reaches of the WRIA where the bank is located.

4.2 Site Selection

4.2.1 Description

The selection of a site is one of the most critical elements for attaining an ecologically successful bank. Site selection determines if wetlands can be sustained over the long term. Site-selection criteria, therefore, must address whether a specific site is suitable to support wetlands. The site where a bank is located affects the design of the bank and what functions can be achieved. The functions provided by a bank in turn affect what impacts can be mitigated there. Locations that would be desirable for banking should provide multiple ecological and societal benefits and be sustainable over the long-term.

Considerations for site selection should include factors that are necessary for achieving success at a bank site, as well as those that would identify a high potential for failure. Elements that influence the success or failure of a bank site include having sufficient water at a site to support wetlands, appropriate soils, the seed bank present at the site and whether the site has sufficient buffers to protect it from off-site disturbances and provide connectivity to other aquatic and upland habitat areas.

4.2.2 Statutory Requirements

By directing Ecology to develop rules for a wetland mitigation bank certification program, the Legislature intended that banking in Washington State be administered in an ecologically sound manner. While the law does not specifically address the selection of bank sites, site selection is

part of the certification of banks listed in section RCW 90.84.030(1). The Legislature did direct Ecology to give priority to banks providing the restoration of former wetlands.

The *Federal Rule* requires the following when considering site selection for a compensatory mitigation project:

> "The compensatory mitigation project site must be ecologically suitable for providing the desired aquatic resource functions. In determining the ecological suitability of the compensatory mitigation project site, the district engineer must consider, to the extent practicable, the following factors:
>
> - Hydrological conditions, soil characteristics, and other physical and chemical characteristics;
> - Watershed-scale features, such as aquatic habitat diversity, habitat connectivity, and other landscape scale functions;
> - The size and location of the compensatory mitigation site relative to hydrologic sources (including the availability of water rights) and other ecological features;
> - Compatibility with adjacent land uses and watershed management plans;
> - Reasonably foreseeable effects the compensatory mitigation project will have on ecologically important aquatic or terrestrial resources (e.g., shallow sub-tidal habitat, mature forests), cultural sites, or habitat for federally- or state-listed threatened and endangered species; and
> - Other relevant factors including, but not limited to, development trends, anticipated land use changes, habitat status and trends, the relative locations of the impact and mitigation sites in the stream network, local or regional goals for the restoration or protection of particular habitat types or functions (e.g., re-establishment of habitat corridors or habitat for species of concern), water quality goals, floodplain management goals, and the relative potential for chemical contamination of the aquatic resources (FR Vol 73, No. 70, April 10, 2008, pg 19674)."

4.2.3 Rule Language

The rule states, "Banks must be sited, planned, and designed to be self-sustaining over time. The department shall carefully consider ecological suitability and ecological sustainability, and land-use compatibility when determining if a site is an appropriate location for a bank." [WAC 173-700-303(1)]

During the prospectus phase for bank certification, sponsors are required to present the rationale for selection of the proposed bank site(s). The rationale must include a discussion on how the site meets the site-selection considerations listed in section173-700- 303 of the rule. Ecology is required to determine whether proposed sites are suitable for establishing a bank based on these considerations.

Another element of site selection is evaluating if the bank's location would adversely affect surrounding land uses. The rule discourages banks from being located on prime farmland soils

within areas designated by the local jurisdictions as agricultural lands of long-term commercial significance [WAC 173-700-303(2)]. If a proposed bank is located within areas with this designation the rule provides criteria a sponsor must follow to determine if the bank location could be approved [WAC 173-700-300(2)(b)].

4.2.4 Rationale for Rule Language

The long-term viability of ecologically sound wetland mitigation banks is a central goal of the wetland mitigation banking certification program. The selection of a bank site is most critical for the ecological viability of a bank.

In a national review of wetland mitigation bank programs the Environmental Law Institute found that "detailed siting criteria are generally not outlined in the majority of bank authorizing instruments. Nor are they consistently found in banking guidance and statutes issued by regulatory agencies." (Environmental Law Institute 2002) Through the review of project proposals received in the pilot program and review of other programs nationally, Ecology determined that this should be a strong component of the rule language.

A well-functioning bank cannot be developed on a site that does not have the physical characteristics necessary to support it. The physical and biological constraints of a site affect the long-term functioning of the site and its contribution to the condition of the watershed (Bedford 1999, Amezaga et al. 2002, Houlahan and Findlay 2003). The proposed language on site selection ensures that the sponsor (when selecting a bank site) and the Interagency Review Team (when evaluating a bank proposal) each consider those physical and biological factors and landscape considerations which affect the likelihood for successful banks.

Elements that influence the long-term sustainability and function of a bank site include:

- Adequate sources of water
- Appropriate soils
- Size of the site
- Compatibility with surrounding land uses
- Historical land uses
- Existence of a native seed bank
- Presence of invasive species
- Buffer size and quality
- Connectivity to other aquatic systems and habitat areas

While the presence of water is the most critical factor in the development of wetlands, it is one of the least studied elements in most mitigation plans and the most common cause of failures in compensatory mitigation sites (Kusler and Kentula 1990**,** Mitsch and Gosselink 1993, National Cooperative Highway Research Program 1996). The type of soil present on a site influences the vegetation composition and the ability of wetlands to perform some functions such as nutrient and toxin removal (Hruby et al. 1999). The rule echoes the *Federal Rule* in requiring that the

physical and chemical conditions on a proposed site are adequate to support the bank's goals and objectives. The site-selection criteria emphasize the need for adequate information as to whether or not the sources of water for the site are sufficient to support the proposed hydrologic regime.

The negotiated rule development team recognized that activities outside of a bank site can significantly affect the sustainability of the bank and its ability to perform specific functions. The site selection considerations in the rule address adjacent land-uses and whether they contribute to the bank's goals or whether they could compromise the functioning of the bank.

Banks that are located in areas where they provide either a large habitat enclave or connectivity to other habitat areas are desirable. Large sites provide interior habitats that are protected from disturbance and provide refuge for species that are more sensitive to disturbances or intrusions. Principles of ecology and biological diversity show that larger sites tend to support larger number of species and are less susceptible to catastrophic events (Dale et al. 2000, Breaux et al. 2004).

Banks can also be located to provide connective corridors between other habitat areas. Areas with good habitat that are linked to each other can support a higher diversity of organisms and are often considered more valuable than isolated patches of habitat (Diamond 1975). Terrestrial animal species that have large ranges can be supported through a network of habitat areas that are connected with protected corridors. Banks that are located adjacent to existing natural preserves can increase the value of those sites through providing additional habitat and buffers to the preserve.

The existence of a native seed bank can contribute to re-vegetation of the site by native wetland vegetation while the presence of highly invasive non-native vegetation (e.g., reed canarygrass, *Phalaris Arundinacea*) can severely compromise the ability of the site to support diverse native plant communities (Johnson and Schirato 2000).

Because the selection of sites that restore specific functions or habitat types can help meet watershed restoration goals, bank sites should be planned to address specific resource needs in watersheds (Corps and EPA 2008, Scodari and Shabman 2001). The rule emphasizes the selection of sites that are integrated with watershed plans through the site-selection criteria and the incentives for integrating banks and watershed plans (see section 3.3.6 of this document).

To ensure that bank proposals do not unnecessarily remove highly productive lands from agricultural uses, sponsors are required to determine whether the proposed bank site is located on prime farmland soils within areas designated as agricultural lands of long-term commercial significance. Ecology recognizes the need to keep valuable farmland in production to provide land for mitigation and discourages the location of banks on prime farmland soils. Wetland mitigation and farming can be compatible uses of Washington's landscape. Proposed banks and their effects on farmlands are important and are carefully considered during the early evaluation of proposals. The department will consult with the Local Conservation District and the Conservation Commission to ensure that bank siting does not conflict with local and statewide goals for agricultural land preservation and advances local priorities and goals (Washington State Department of Ecology 2006).

In order to ensure that, in the event of a failure, the bank site still contributes something to the watershed, site selection is particularly important. Prior to release of any credits, a sponsor must have placed at least a conservation easement on the proposed bank site. The conservation easement ensures the land comprising the bank is permanently protected (WAC 173-700-421) in the event of an economic or ecological failure of a bank. While a bank failure may mean that all of the proposed wetland functions are not attained, if the site is located in an area that provides connectivity to other natural areas, it can still provide important ecological functions.

4.3 Credit Determination

4.3.1 Description

A central component of banking is the establishment of a trading medium or "currency" that is used to quantify the ecological gains generated at a bank (Environmental Law Institute 1993). The currency is usually described as credits. Credits are generated at a bank site when a sponsor performs actions that increase the area, quality and performance of functions of wetlands on a bank site.

Determination of credits includes the identification of the trading medium for credits (e.g., area or function) and the calculation of the number of credits produced at a bank site. Credits can be determined based on simple indices such as acreage and wetland type or they can be based on single or multiple measurements of function. To determine the amount of bank credit necessary to offset debits incurred, it is critical that the methods used to determine credits at a bank site can also be used to determine the number of debits at an impact site (Marsh and Young1996). Regulatory agencies require that compensatory mitigation replace not only wetland areas lost, but also the functions affected. The currency used, therefore, influences the amount of credits that must be withdrawn for a particular project.

4.3.2 Statutory Requirements

RCW 90.84.010(3) defines credit as "a unit of trade representing the increase in the ecological value of the site, as measured by acreage, functions and/or values, or by some other assessment method."

RCW 90.84.030(2) requires that rules be developed for the determination of credits.

The *Federal Rule* defines credit as:

> "A unit of measure representing the accrual or attainment of aquatic functions at a compensatory mitigation site; the measure of aquatic functions is based on the resource restored, established, enhanced, or preserved." (FR Vol 73, No. 70, April 10, 2008, pg. 19671)

The *Federal Rule* permits credits for upland areas "when those resources are essential to maintain the ecological viability of adjoining aquatic resources." (FR Vol 73, No. 70, April 10, 2008, pg. 19686)

4.3.3 Rule Language

The proposed rule outlines credit determination in sections WAC 173-700-310 through 321. For ease of discussion, the sections are broken out into 5 major topics:

- Generation of credits
- Default credit determination method
- Conversion rates by mitigation activity
- Alternative credit determination methods
- Non-wetland areas

Generation of Credits

The rule states that credits may be generated at a bank site through the re-establishment, creation, rehabilitation, enhancement or preservation of wetlands. Credits may also be generated by uplands and other habitats within the bank to the degree that they contribute to the overall ecological functioning of the system.

Banks located in urban settings may generate credits at the more favorable ratios outlined in the rule. WAC 173-700-317 identifies what information the agency should consider when looking at urban banks and determining if their activities warrant the more favorable rates.

Default Credit Determination Method

The proposed rule specifies that the default currency for banks is described by area of wetland, functions provided and wetland rating.[40] The bank instrument describes what the "credit" represents. The credits represent the value in the bank after it has achieved all performance

[40] Wetland rating refers to the wetland category of the site as determined by using the Washington State Wetland Rating System for western and eastern Washington (Washington Department of Ecology 1993 and 1991, respectively).

standards. For example, a credit in a bank could represent an acre of Category II[41] riverine wetland that reduces down-stream erosion, provides fish and aquatic mammal habitat and provides nutrient cycling functions.

Under the default system, bank credits aren't broken out by the Cowardin class (e.g., credit X is emergent wetland while credit Y is forested wetland), rather they represent a percentage of the overall wetland ecosystem provided at the bank site.

Conversion Rates for Activities

Under the default method, credits are determined by applying conversion rates for each type of mitigation activity on the bank site, i.e., re-establishment, creation, rehabilitation, enhancement or preservation of wetlands and adjacent upland habitats. The conversion rates are a ratio of area of activity to credits generated at the bank site. For example, one to two acres of re-establishment may generate one credit. The applicable conversion rates for specific bank sites will be determined by Ecology in consultation with the Interagency Review Team. The conversion rates are specified in the instrument for the bank.

The rule lists the ranges of conversion rates for determining credits generated for each at a bank (WAC 173-700-313). The conversion rates for area of activity to credit are as follows:

> **Re-establishment (restoration)** of wetlands shall generate credits at a rate of 1:1 to 2:1
>
> **Creation (establishment)** of wetlands shall generate credits at a rate of 1:1 to 2:1
>
> **Rehabilitation** of wetlands shall generate credits at a rate of 2:1 to 3:1
>
> **Enhancement** of wetlands on bank sites shall generate credits at a rate of 3:1 to 5:1.
>
> **Preservation in combination** with re-establishment, creation, rehabilitation, or enhancement of wetlands shall generate credits at a rate of 5:1 to 10:1 area of activity to credit.
>
> **Preservation alone** of wetlands on bank sites shall be determined on a case by case basis.

Preservation in conjunction with re-establishment, creation or enhancement of wetlands on a bank site is preferred over preservation alone. However, in some limited cases preservation alone may generate credits. The decision to allow preservation-only banks is at the discretion of Ecology and the Interagency Review Team.

[41] In this example, Category II refers to the Washington State Wetland Rating System.

Alternative Credit Determination Methods

WAC 173-700-321 allows credits in a bank to be determined differently from the default method described above. A bank could use a function assessment method to determine credits that represent relative levels of performance of wetland functions. Alternatively, a bank may have credits that represent on-the-ground acres of different wetland types or mitigation activities (e.g., enhancement, re-establishment, creation or preservation) without using the conversion rates. For example, a bank may have credits delineated as X acre-credits of enhanced wetland, X acre-credits of created wetland and X acre credits of preserved wetland.

Under the proposed rule, if an alternative method to determine credits is used, it must meet three criteria:

1. The department, through the Interagency Review Team process, approves of the method;
2. The method is applicable and appropriate for the Pacific Northwest;
3. The method is applicable for use on projects debiting from the bank;

Non-wetland Areas (Buffers, Uplands and Other Habitats)

The rule allows credits to be generated by non-wetland areas in the bank. The Interagency Review Team requires a minimum perimeter buffer for the bank. This buffer does not generate credit, however, the quality and functions of the buffer are included in determining the credit conversation rates for wetland on the bank site. Uplands and other habitats included within the bank boundary are eligible to generate credit to the extent that these areas contribute to the overall ecological functioning and sustainability of the bank The rule contains criteria for determining the minimum buffer width (WAC 173-700-304) and for determining the credit conversion rate for uplands and other habitats (WAC 173-700-318). The rule also allows for the establishment of other types of recourse credits (WAC 173-700-310(2).

4.3.4 Rationale for Rule Language

Generation of Credits

Bank crediting poses similar difficulties as current mitigation processes where the “value of compensation provided" is weighed against the “value of wetlands lost" to determine the adequacy of the proposed compensation. Compensatory mitigation requirements generally require the replacement of wetland acre and function. While the determination of area replacement is fairly straightforward, determining adequate function replacement has proven much more difficult.

Currently, two predominant approaches are used to address the issue of identifying the relative level of performance of functions in individual wetlands for compensatory mitigation requirements. One technique is the use of classification and characterization systems to group wetlands by common characteristics or distinguishing properties. These classification and characterization systems identify characteristics of wetlands that serve as indicators of the wetland's potential performance of specific functions (Environmental Law Institute 1993).

A second approach to determining compensation requirements is the use of assessment methods to determine qualitatively and quantitatively a wetland's ability to provide certain functions. Most of the assessment methods available currently are qualitative methods that use the presence of indicators to infer the ability of a wetland to perform functions and to gauge its expected level of performance in relation to a reference wetland which represents the highest level of performance for specific functions. These assessment methods do not, however, provide quantitative information on the wetland's actual level of performance.

Default Credit Determination Method

In Washington, area of activity has been the basic unit of trade for concurrent mitigation.[42] Mitigation requirements use compensation ratios to determine the amount of wetland area necessary to provide adequate compensation. Most compensation ratios vary to account for differences in the impacted and replacement wetlands types, rating categories, Cowardin classes, temporal losses, risk of failure, and off-site and out-of-kind considerations.

However, a direct comparison of impact with compensation is not available with banking, since the credits represent a portion of the whole bank site, rather than a specific area within the bank. In the determination of bank credits, the credits usually represent mature, successful mitigation. During the compensatory mitigation process, multipliers (ratios) are usually applied to the impacts on an area basis to determine the amount of mitigation necessary to compensate for temporal losses of wetland function, risks of failure, off-site relocation of mitigation and out-of-kind tradeoffs. With banking, conversion factors for off-site or out-of-kind considerations are addressed at the debit stage (see section 3.3.4 of this document).

The rule recommends that as a default, credits be determined based on area of activity and wetland type because at this point in time we do not have the easily used tools available to develop function-based currency.[43] Therefore, surrogate indicators of function performance such as wetland type,[44] quality and area must be relied on.

[42] The Corps of Engineers, however, does not use ratios and determines all compensatory mitigation requirements on a case-by-case basis.

[43] There are some promising tools for assessing functions that might work for determining credits, such as the Washington function assessment methods. However, assessment methods are not currently available for all hydrogeomorphic classes in the state and it is not clear how well those methods will work for extremely small wetland impacts at the debit end.

[44] Wetland type refers to wetland category and hydrogeomorphic class.

Conversion Rates for Activities

As described earlier, the default method for determining credits uses area of activity and conversion rates to calculate the number of credits generated at a bank. The default method uses conversion rates as a way of quantifying the ecological gain at a bank site. The conversion rates are applied to an area based on the type of mitigation activity performed. The rule includes ranges of conversion rates for each mitigation activity because the negotiated rule development team recognized that different activities, such as creation or re-establishment, have different risks associated with them and different net levels of gain possible depending upon the original condition of the bank site.

For instance, with enhancement, under-planting an existing deciduous forested wetland with conifers provides less ecological gain than would establishing a forested wetland on a highly degraded wet pasture dominated by non-native vegetation where grazing is still occurring.

To encourage the location of banks in urban settings, Ecology recognized the need to provide incentives for sponsors to propose banks in these areas. As discussed in Section 2.1.2, the use of wetland banks may result in the relocation of wetlands from urban settings to rural areas. Ecology's intent in providing for the ability for urban banks to receive better credit ratios and smaller buffer requirements is to encourage the proposal of more urban banks in the state.

Providing ranges for conversion rates allows the Interagency Review Team and Ecology to address the variability in the level of ecological gain possible at bank sites.

Alternative Credit Determination Methods

The rule allows for the use of other methods to determine credits aside from the use of conversion rates and area. For example, a sponsor may wish to use the Washington Function Assessment Method for determining credits in their bank. Using this method, credits could be based on the relative level of performance of each function per acre.

Alternatively, a sponsor may prefer to determine credits simply on an acre basis by mitigation activity (e.g., creation, restoration, etc).

This alternative allows the determination of credits for banks to be adapted based on local needs and conditions. For example, if the local critical areas ordinance requires specific replacement ratios (e.g., 2:1 for creation, 6:1 for enhancement) based on wetland category for all compensatory mitigation, then a sponsor would not want to use the default method which includes conversion rates since the local regulations will require additional ratios to be applied to credits generated at the bank.

Non-Wetland Areas (Uplands and Other Habitats)

Comments received from the negotiated rule development team and members of the public indicated that the original proposal, to not allow upland and other habitat areas to generate credit, would result in disincentives to attaining a high-quality mosaic habitat on bank sites and would effectively penalize sponsors.

If sponsors do not receive credits for non-wetland areas within the bank, the most cost-effective option would be to minimize the acreage on the bank site that doesn't generate credits. This will encourage bank sites that are more compact in area and provide a significant disincentive for banks that are more linear in nature such as those including river or stream corridors, such as wetland/riparian bank sites or those that provide a mosaic of small wetlands and uplands.

The rule recognizes the value uplands and other habitats as an important part of wetland ecosystems. Allowing credits for uplands and other habitat areas provides the opportunity to encourage more ecologically sound banks where additional non-wetland areas contribute significantly to the site's functioning.

The department recognizes that other regulatory programs may allow the development and use of credits for resources that they regulate (e.g. ESA species, buffer areas, flood storage, etc.). Some bank sites may have the opportunity to provide mitigation for multiple resources and a holistic development of the site is appropriate. To support this, section WAC 173-700-310(2) address requirements for the establishment of other types of resource credits. Ecology developed the requirements for establishing other resource credits on a wetland bank to ensure that the ecological values on the bank site are not "overdrawn". The establishment of wetland banks that can also generate credits for other resources types is supported by the Mitigation that Works Forum (Washington State Department of Ecology 2008). Banks that can generate credits for multiple resource may increase the chance that project proponents can meet their mitigation obligations efficiently and effectively. (Washington State Department of Ecology 2008).

4.4 Credit Release

4.4.1 Description

Unlike concurrent mitigation where all of the "credit" is available concurrent with, or even prior to, site construction, bank credits are released over an extended period of time (Marsh and Young 1996). In many cases, credits are not released for use until the site has met performance-based success criteria (Scodari and Shabman 1995, Marsh et al. 1996). In Washington State some credits may be released after administrative performance standards, have been completed because value has been realized at the site by the preservation of the property and placement of financial assurances so that activities may be completed if the site fails to be constructed. These

initial credits from a bank are not released until after the following administrative performance standards have been met:

- The instrument has been signed and approved.
- The permanent protection mechanism for the site is established.
- The proof of financial assurances has been received by the department.
- The long term management and maintenance endowment fund escrow account is established.
- All necessary permits and authorizations for site construction have been obtained[45].

When a bank is developed, the Interagency Review Team and the sponsor determine the number of wetland credits that will be produced by the bank. The Interagency Review Team sets specific success standards that the bank must attain in order for credits to be generated and released for use (Marsh and Young 1996). These standards for success and schedule, outlining the timing and amount of credit releases for banks, are documented in the instrument (*Federal Rule* 2008). The release of credits from a bank generally take place over an extended period and a bank must meet all of its performance standards in order to obtain complete release of credits generated (Scodari and Shabman 1995).

The timing of credit releases affects the economic viability of wetland banks (Scodari and Shabman 1995, Shabman et al. 1998) and the level of risk that authorized impacts to wetlands are inadequately compensated. Credits released later in the development of a bank have less risk of failing to provide anticipated functions and area (Shabman et al. 1994) because these credits represent a wetland that has been developing for a longer period of time and is more likely to be providing significant functions.

4.4.2 Statutory Requirements

The wetland banking law, Chapter 90.84 RCW, allows for a phased release of credits as different levels of performance standards are met. A sponsor may use or sell available[46] bank credits prior to the full success of a bank with phased release of credits.

The *Federal Rule* references the timing of credit release:

> "Release of credits must be tied to performance-based milestones. The credit release schedule should reserve a significant share of the total credits for release only after full achievement of ecological performance standards. When determining the credit release schedule, factors to be considered may include: the method of providing credits (e.g., restoration), the likelihood of success, the nature and amount of work needed to generate the credits, and the aquatic

[45] The *Federal Rule* requires that the bank instrument and mitigation plan have been approved, the bank site has been secured, and appropriate financial assurances have been established for credits to be released from a bank.

[46] Available credits are released by the department for use by the bank sponsor after specified performance standards have been met.

resources types and functions to be provided by the bank." (FR Vol 73, No. 70, April 10, 2008, pg.19686)

4.4.3 Rule Language

The proposed rule allows for the phased release of credits for banks. The proposed rule contains caps on the percentage of credits that may be released when specific types of performance standards are met. The rule allows for release of credits prior to bank construction on a case-by-case basis as determined by the department and the Interagency Review Team.

This approach allows flexibility for the specific elements (e.g., what performance standards will be used), while outlining minimum standards and maximum amounts for credit releases. Providing sideboards on the amounts for credit releases provides predictability for bank sponsors when they are deciding whether to propose a bank project based on how many credits a project may generate.

Performance Standards

WAC 173-700- 340 outlines the minimum standards for performance standards. Performance standards must be measurable and identified in the banking instrument. Performance standards are used as the basis for the credit release schedule. The rule establishes a maximum amount of credit that may be released by the agency based on a site attaining certain performance standards.

The sponsor documents the attainment of performance standards in monitoring reports. These reports are submitted to Ecology. Ecology, in consultation with project signatories, determines whether a project has adequately met their performance standards. If the bank meets performance standards, then Ecology authorizes the release of credits associated with those performance standards. This review of monitoring reports and achievement of performance standards is one of the way that the rule builds in regulatory follow-up for bank projects.

Release of Credits

WAC 173-700-330 states that credit releases must be tied to the attainment of performance standards. This section also identifies:

- The department's responsibility for determining a schedule for the release of credits;
- The considerations the department shall use to determine the number of credits released; and
- The amount of credit released cannot exceed designated maximum amounts.

Caps on Credit Releases

The rule contains requirements and caps for credit releases. WAC 173-700-331 through 333 contains the maximum credit release amounts for different stages of bank site development. These stages include:

- Pre-construction.
- Post-construction.
- Attainment of hydrology.
- Final credit release.

For banks including preservation of wetlands, credits generated by the preservation of existing wetlands or aquatic resources can be released after:

- The site has been protected (under a conservation easement or other approved real estate mechanism).
- Financial assurances for management and maintenance and long term management have been posted.
- The instrument has been approved and signed by the local government, Ecology and the bank sponsor.
- The long term management and maintenance endowment fund escrow account is established. .
- All necessary permits and authorizations for site construction have been obtained.

Other releases may be allowed up to the top limits listed in the rule based on:

- The likelihood of success of the site
- The experience of the entity designing and constructing the bank
- The level of anticipated gains at the bank site at each stage of release.

4.4.4 Rationale for Rule Language

Holding all credits in a bank until the bank is fully successful would provide the greatest benefits and the least risk to the environment (Brumbaugh and Reppert 1994, King et al. 1993). This approach is often purported as the preferred approach to credits being released over time. It is not a practical approach, however (Shabman et al. 1994), and several factors support the incremental releases of credit prior to full success of the bank.

First, concurrent mitigation allows the complete release of credit prior to the full success of a site. Additionally, under existing regulatory practices, an authorized impact to a wetland usually occurs prior to the required compensatory mitigation site even being constructed.

Commonly, concurrent mitigation is "credited" and available for use when the permit is issued. If some credits are not released during the development of the bank, there is a significant disincentive to establish a bank, rather than continuing to rely on concurrent mitigation.

Bank permitting requires the sponsor to commit significant capital during the permitting process, which in some cases can take over two years to complete. Without some early release of credits, sponsors must carry all of the costs of permitting, constructing and monitoring a bank for an extended period, hoping they will recoup all of their costs plus a return on their investment (Shabman et al. 1994). Public banks that do not need to show a profit may be able to make these substantial long-term investments, but such an approach is difficult for private, market-based banks (Shabman et al. 1998). The National Mitigation Banking Study noted that while the risks of failure might prompt regulators to require full success prior to the release of credits, the private market system would not be able to bear the costs associated with full maturation of the bank (Shabman et al. 1994). The market would not bear the true costs of successful mitigation as reflected in the price of credits (Shabman et al. 1998). Developers would always choose concurrent mitigation because of the lower cost. Costs of concurrent mitigation are lower because:

- There is a low risk that the developer will be required to correct failed sites.
- The return on the mitigation investment is immediate (the development project occurs concurrently with the mitigation).
- Long-term maintenance costs are rarely included (or required).
- The regulatory process is much shorter and hence less expensive.

Sponsors must be able to sell or use portions of the credits in a bank prior to full success in order to have a level playing field with concurrent mitigation and to allow for some recouping of the initial investment in the bank.

As noted in a 1998 banking study (Battelle 1998), funding to initiate and complete a bank project is one of the primary limiting factors for implementation of banking programs. If sponsors are required to wait until their site is fully functional (five years or more) before they can begin to realize a return on their investment, the financial risks associated with banking are more likely to outweigh any potential benefits.

Alternatively, the release of too many credits too early in the development of a bank could result in overdrafts or unmitigated impacts if credits are withdrawn and the bank is not able to successfully attain the agreed-upon goals and objectives (Goldman-Carter and McCallie 1996).

While early release of bank credits can result in increased risk to the environment, the amount of risk can be minimized through several mechanisms. Some risk management techniques include:

- Ensuring that performance standards for early release reflect some level of environmental gain
- Requiring monitoring to document attainment of performance standards
- Limiting the number of credits released commensurate with the level of ecological gains at the site
- Requiring financial assurances to cover the costs of repairing a bank site if it fails to develop as expected.

In order to ensure that early release of credits does not result in undue risk of environmental losses, the timing and release of credits should reflect increases in ecological benefits at a bank site (Corps and EPA 2008). Therefore, tying the release of credits to attainment of specific performance standards that reflect the ecological gains and performance of functions at a site will ensure that the credits represent some level of ecological increase over existing conditions. In this way, releasing fewer credits up front would reduce the environmental risks for banks that have higher risk of failure. Withholding a larger percentage of the potential credits in a bank would provide a greater incentive for a sponsor to monitor and actively work on the bank's successful development. Adaptive management actions could be rewarded with additional releases of credits after management activities are completed.

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Glossary

Adaptive management activities means actions taken by the bank sponsor on their own to correct any deficiencies on the site in order for the site to attain the required performance standards. The adaptive management activities shall be identified in the mitigation banking instrument.

Agricultural Lands of Long-term Commercial Significance means land primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, finfish in upland hatcheries, or livestock, and that has long-term commercial significance for agricultural production. Long-term commercial significance includes the growing capacity, productivity, and soil composition of the land for long-term commercial production, in consideration with the land's proximity to population areas, and the possibility of more intense uses of the land.

Aquatic Resources means those areas where the presence and movement of water is a dominant process affecting their development, structure, and functioning. Aquatic resources may include, but are not limited to, vegetated and non-vegetated wetlands or aquatic sites (e.g. mudflats, deepwater habitats, lakes, and streams).

Available credits means a potential credit that has been released by the department after a bank attains the performance standards specified in the instrument.

Bank or **wetland mitigation bank** means a site where wetlands are restored, created, enhanced, or in exceptional circumstances, preserved, expressly for the purpose of providing compensatory mitigation in advance of unavoidable impacts to wetlands or other aquatic resources that typically are unknown at the time of certification.

Bank sponsor or **sponsor** means any public or private entity responsible for establishing and, in most circumstances, operating a bank.

Buffer means those areas on the perimeter of a bank site that enhance and protect a wetland's functions and values by maintaining adjacent habitat and reducing adverse impacts from adjacent land-uses. These areas are vegetated and can reduce impact to the bank site from adjacent land-uses. Buffers reduce impacts through various physical, chemical, and/or biological processes.

Compensatory mitigation means the restoration, creation, enhancement or in exceptional circumstances, preservation of wetlands or other aquatic resources for the purpose of compensating for unavoidable impacts to wetlands or other aquatic resources which remain after all appropriate and practicable avoidance and minimization has been achieved.

Consensus means a process by which a group synthesizes its ideas and concerns to form a common collaborative agreement acceptable to all members

Cowardin class means the classification of a wetland area as described in *Classification of Wetlands and Deepwater Habitats of the United States* U.S. Fish and Wildlife Service publication FWS/OBS 79/31.

Creation means the establishment of wetland area, functions, and values in an area where none previously existed. Creation may also be known as establishment.

Credit means a unit of trade representing the increase in the ecological value of the bank site, as measured by acreage, functions, or by some other assessment method.

Debited credit means:

(1) An available credit that has been withdrawn from the bank to meet regulatory requirements.

(2) A reserved credit that has been used to meet a regulatory requirement.

Debit project means those projects that use credits from a bank to fulfill regulatory requirements for compensation of impacts. These projects may require more than one regulatory approval under federal, state and local rules.

Department means the Department of Ecology.

Ecoregions means those areas that are considered to be regions of relative homogeneity in ecological systems or in relationships between organisms and their environments.

Enhancement means the manipulation of the physical, chemical, or biological characteristics of aquatic resource to heighten, intensify, or improve a specific aquatic resources function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource functions(s). Enhancement does not result in a gain in aquatic resource area.

Financial assurance means the money or other form of financial instrument (e.g. surety bonds, trust funds, escrow accounts, proof of stable revenue sources for public agencies) required of the sponsor to ensure that the functions of the bank are achieved and maintained over the long-term.

Function assessment means an evaluation of the degree to which a wetland is performing, or is capable of performing, specific wetland functions and processes. Function assessments include the use of scientifically-based quantitative and qualitative methods developed for assessing functions, as well as the use of best professional judgment.

Hydrogeomorphic (HGM) classification means a wetland classification scheme that groups wetlands based on their geomorphic setting and water regime.

Instrument or **Mitigation banking instrument** means the documentation of agency and bank sponsor concurrence on the objectives and administration of the bank. The mitigation banking instrument describes in detail the physical and legal characteristics of the bank, including the service area, and how the bank will be established and operated.

Interagency review team or **IRT** means an interagency group of federal, state, tribal and local regulatory and resource agency representatives that are invited to participate in negotiations with the bank sponsor on the terms and conditions of the bank instrument.

Interagency review team process means a process in which the department strives to reach consensus with the Interagency Review Team members on the terms, conditions, and procedural elements of the bank instrument.

Local jurisdiction means any local government such as a town, city, or county in which the bank site is located.

Maintenance includes all activities and actions necessary to ensure the successful development of a bank.

Mitigation sequencing means sequentially avoiding impacts, minimzing impacts, and compensating for remaining unavoidable impacts to wetlands or other aquatic resources. .

Off-site means outside of the area from where the impact has occurred.

Operational life or **operational life of a bank** means the period during which the terms and conditions of the instrument are in effect. With the exception of arrangements for the long-term management, permanent protection, and financial assurances, the operational life of a mitigation bank terminates at the point when:

(1) Available credits have been exhausted and the bank is determined to be functionally mature and self-sustaining to the degree specified in the instrument; or

(2) The sponsor voluntarily terminates the banking activity with written notice to the department.

Out-of-kind means species, habitat types and/or functions that are different than those at the impact site.

Performance standards are measurable criteria for determining if the project goals and objectives are being achieved. Performance standards document a desired state, threshold value, or amount of change necessary to indicate that a particular function is being performed or structure has been established as specified in the design.

Potential credit means a credit anticipated to be generated by the bank, but is not currently available for use.

Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Preservation means the permanent protection of ecologically important wetlands or other aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection or enhancement of the aquatic systems, or both. Preservation does not result in a gain of aquatic resource area or functions.

Prime farmland soils means land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Prospectus is the conceptual proposal for a bank project.

Re-establishment means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resources. Re-establishment results in rebuilding a former aquatic resources and results in a gain in aquatic resource areas and functions. Re-establishment falls under the broader term of restoration.

Rehabilitation means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic function(s) to a degraded aquatic resources.. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource areas. **Remedial actions** means actions required by the department to correct any deficiencies on the site in order for the site to attain the required performance standards. Remedial actions may be required by the department to gain compliance by the sponsor with this chapter.

Reserved credit means an available credit that has been withdrawn from the bank but which is not associated with a specific regulatory requirement at the time of purchase. Purchase of reserved credits does not provide any guarantee that a project will be authorized under existing regulatory programs. Reserved credits are purchased at the buyer's sole risk.

Restoration is a broad term referring to both re-establishment and rehabilitation.

Service area means the designated geographic area in which a bank can reasonably be expected to provide appropriate compensation for unavoidable impacts.

Signatories mean those entities that have documented their concurrence with the terms and conditions of the instrument through their signature on the document.

Sustainability means the ability of a bank to persist in the landscape and maintain its functions in anticipation of future development needs within the watershed. Sustainable bank sites must have sufficient buffer areas to protect the site from degradations due to activities on adjacent lands.

Unavoidable means adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved.

Urban Areas means areas located within a designated urban growth area.

Water resource inventory areas or **WRIA** refers to Washington State's 62 major watershed basins as described in WAC 173-500, Water Resources Management Program Established Pursuant to the Water Resources Act of 1971, as amended.

Watershed Characterization means an approach to identify and map areas within a watershed that are most important to support a watershed process. It identifies the degree of impairment to these areas, and identifies areas most important for protection and restoration.

Watershed processes means the dynamic physical and chemical interactions that form and maintain the landscape and ecosystems on a geographic scale of watersheds to basins (hundreds to thousands of square miles). The most important factors include the movement of water, sediment, nutrients, pathogens, toxic compounds, and wood**.**

Wetland or **wetlands** mean areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

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Appendix C: Chapter 90.84 RCW - Wetland Mitigation Banking

CHAPTER 90.84 RCW
WETLANDS MITIGATION BANKING

Sections

RCW 90.84.005 Findings--Purpose--Intent.

(1) The legislature finds that wetlands mitigation banks are an important tool for providing compensatory mitigation for unavoidable impacts to wetlands. The legislature further finds that the benefits of mitigation banks include:

(a) Maintenance of the ecological functioning of a watershed by consolidating compensatory mitigation into a single large parcel rather than smaller individual parcels;

(b) increased potential for the establishment and long-term management of successful mitigation by bringing together financial resources, planning, and scientific expertise not practicable for many project-specific mitigation proposals;

(c) increased certainty over the success of mitigation and reduction of temporal losses of wetlands since mitigation banks are typically implemented and functioning in advance of project impacts;

(d) potential enhanced protection and preservation of the state's highest value and highest functioning wetlands;

(e) a reduction in permit processing times and increased opportunity for more cost-effective compensatory mitigation for development projects; and

(f) the ability to provide compensatory mitigation in an efficient, predictable, and economically and environmentally responsible manner.

Therefore, the legislature declares that it is the policy of the state to authorize wetland mitigation banking.

(2) The purpose of this chapter is to support the establishment of mitigation banks by:

(a) Authorizing state agencies and local governments, as well as private entities, to achieve the goals of this chapter; and

(b) providing a predictable, efficient, regulatory framework, including timely review of mitigation bank proposals. The legislature intends that, in the development and adoption of rules for banks, the department establish and use a collaborative process involving interested public and private entities. [1998 c 248 § 1.]

RCW 90.84.010 Definitions.

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1)"Banking instrument" means the documentation of agency and bank sponsor concurrence on the objectives and administration of the bank that describes in detail the physical and legal characteristics of the bank, including the service area, and how the bank will be established and operated.

(2) "Bank sponsor" means any public or private entity responsible for establishing and, in most circumstances, operating a bank.

(3) "Credit" means a unit of trade representing the increase in the ecological value of the site, as measured by acreage, functions, and/or values, or by some other assessment method.

(4) "Department" means the department of ecology.

(5) "Wetlands mitigation bank" or "bank" means a site where wetlands are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.

(6) "Mitigation" means sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts.

(7) "Practicable" means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

(8) "Service area" means the designated geographic area in which a bank can reasonably be expected to provide appropriate compensation for unavoidable impacts to wetlands.

(9) "Unavoidable" means adverse impacts that remain after all appropriate and practicable avoidance and minimization have been achieved. [1998 c 248 § 3.]

RCW 90.84.020 Wetlands or wetlands banks--Authority for regulating.

This chapter does not create any new authority for regulating wetlands or wetlands banks beyond what is specifically provided for in this chapter. No authority is granted to the department under this chapter to adopt rules or guidance that apply to wetland projects other than banks under this chapter. [1998 c248 § 2.]

RCW 90.84.030 Rules--Submission of proposed rules to legislative committees.

(1)Subject to the requirements of this chapter, the department, through a collaborative process, shall adopt rules for:

(a) Certification, operation, and monitoring of wetlands mitigation banks. The rules shall include procedures to assure that:

(i) Priority is given to banks providing for the restoration of degraded or former wetlands;

(ii) Banks involving the creation and enhancement of wetlands are certified only where there are adequate assurances of success and that the bank will result in an overall environmental benefit; and

(iii) Banks involving the preservation of wetlands or associated uplands are certified only when the preservation is in conjunction with the restoration, enhancement, or creation of a wetland, or in other exceptional circumstances as determined by the department consistent with this chapter;

(b) Determination and release of credits from banks. Procedures regarding credits shall authorize the use and sale of credits to offset adverse impacts and the phased release of credits as different levels of the performance standards are met;

(c) Public involvement in the certification of banks, using existing statutory authority;

(d) Coordination of governmental agencies;

e) Establishment of criteria for determining service areas for each bank;

f) Performance standards; and

(g) Long-term management, financial assurances, and remediation for certified banks.

(2) The criteria for determining service areas under subsection (1)(e) of this section shall include a requirement that restricts the maximum extent of the service area of a wetlands mitigation bank to the water resource inventory area (WRIA) as established under chapter 173-500 WAC in which the bank is located except where a service area may include parts of other WRIAs if it is ecologically defensible and appropriate.

(3)Before adopting rules under this chapter, the department shall submit the proposed rules to the appropriate standing committees of the legislature. By January 30, 1999, the department shall submit a report to the appropriate standing committees of the legislature on its progress in developing rules under this chapter.

[2008 c 80 § 1; 1998 c 248 § 4.]

RCW 90.84.040 Certification of banks--Approval of use of credits by state and local governments.

(1) The department may certify only those banks that meet the requirements of this chapter. Certification shall be accomplished through a banking instrument. The local jurisdiction in which the bank is located shall be signatory to the banking instrument.

(2) For a bank for which an application for a banking instrument was filed January 1, 2008, or thereafter, the department may not certify a bank without local

approval of the bank. The local jurisdiction in which the bank is located has final approval over the certification of the mitigation bank. If the local government approves the bank, it shall be a signatory to the banking instrument.

(3) State agencies and local governments may approve use of credits from a bank for any mitigation required under a permit issued or approved by that state agency or local government to compensate for the proposed impacts of a specific public or private project. [2008 c 80 § 2; 1998 c 248 § 5.]

RCW 90.84.050 Approval of use of credits by the department--Requirements.

Prior to authorizing use of credits from a bank as a means of mitigation under a permit issued or approved by the department, the department must assure that all appropriate and practicable steps have been undertaken to first avoid and then minimize adverse impacts to wetlands. In determining appropriate steps to avoid and minimize adverse impacts to wetlands, the department shall take into consideration the functions and values of the wetland, including fish habitat, ground water quality, and protection of adjacent properties. The department may approve use of credits from a bank when:

(1) The credits represent the creation, restoration, or enhancement of wetlands of like kind and in close proximity when estuarine wetlands are being mitigated;

(2) There is no practicable opportunity for on-site compensation; or

(3) Use of credits from a bank is environmentally preferable to on-site compensation. [1998 c 248 § 6.]

RCW 90.84.060 Interpretation of chapter and rules.

The interpretation of this chapter and rules adopted under this chapter must be consistent with applicable Federal Guidance for the establishment, use, and operation of wetlands mitigation banks as it existed on June 11, 1998, or such subsequent date as may be provided by the department by rule, consistent with the purposes of this chapter. [1998 c 248 § 7.]

RCW 90.84.070 Application to public and private mitigation banks.

This chapter applies to public and private mitigation banks. [1998 c 248 § 8.]

RCW 90.84.900 Severability--1998 c 248.

If any provision of this act or its application to any person or circumstance is held invalid, the remainder of the act or the application of the provision to other persons or circumstances is not affected. [1998 c 248 § 9.]

Appendix D: WAC 173-700
The Rule

Chapter 173-700 WAC
WETLAND MITIGATION BANKS

APPEALS

173-700-800 Appeals process

PART I
OVERVIEW

173-700-100 Background and purpose.

(1) The Wetlands Mitigation Banking Act, Chapter 90.84 RCW, identifies wetland mitigation banking (banks) as an important regulatory tool for providing compensatory mitigation for unavoidable impacts to wetlands and declares it the policy of the state to support banking. The act directs the Department of Ecology (department) to adopt rules establishing a statewide process for certifying banks.

(2) The department anticipates that banks will provide compensatory mitigation in advance of unavoidable impacts to wetlands and will consolidate compensatory mitigation into larger contiguous areas for regionally significant ecological benefits.

(3) Banks prioritize restoration of wetland functions and as such should be complementary to the restoration of ecosystems and ecosystem processes as identified in state or locally adopted science-based watershed management plans.

(4) The purpose of this chapter is to encourage banking by providing an efficient, predictable statewide framework for the certification and operation of environmentally sound banks. This chapter sets out to accomplish the following:

(a) Provide timely review of bank proposals;

(b) Establish coordination among state, local, tribal, and federal agencies involved in the certification of banks;

(c) Ensure consistency with existing federal mitigation rules;

(d) Provide incentives to encourage bank sponsors (sponsors) to locate and design banks that provide the greatest ecological benefits.

173-700-101 Applicability.

(1) This chapter applies to private and public banks established under Chapter 90.84 RCW.

(2) All mitigation banking instruments (instruments) approved on or after the effective date of this rule, must meet the requirements of this chapter;

(3) Instruments approved prior to the effective date of this rule, are grandfathered and may continue to operate under the terms of their existing instruments;

(4) Instruments modified on or after the effective date of this rule, must be consistent with the terms of this chapter. Modifications include but are not limited to:

(a) Addition of sites under an umbrella instrument;

(b) Expansion of an existing site; or

(c) Addition of a different resource currency (e.g., flood storage credits).

173-700-102 Applicability to tribal banks.

(1) For proposed tribal banks which are located exclusively in Indian Country, the following section applies:

(a) If the tribal bank has been approved by the U.S. Army Corps of Engineers (Corps) under existing federal rules, the bank will be deemed state certified, solely to allow the use of credits for projects under state jurisdiction, provided that:

(i) The department was a member of the IRT for the proposed bank;

(ii) Any concerns raised by the department, through the IRT process, have been resolved to the department's satisfaction; and

(iii) The department has notified the Corps in writing that it concurs with their approval of the bank.

(b) The department shall determine whether to allow the use of bank credits for projects under state jurisdiction on a case-by-case basis.

(c) Certification under this section does not imply any extension of state jurisdiction or authority by the state on tribal land use activities.

(2) Proposed tribal banks which are located outside of Indian Country and partially or wholly on lands under state jurisdiction are not covered under this section and are subject to the requirements of this chapter.

173-700-103 Public records.

The department must make available for public inspection:

(1) The prospectus;

(2) The final instrument;

(3) Other supporting materials; and

(4) The comments received by the department during the public notice period(s).

173-700-104 Definitions.

"Adaptive management activities" means actions taken by the bank sponsor on their own to correct any deficiencies on the site in order for the site to attain the required performance standards. The adaptive

management activities shall be identified in the mitigation banking instrument.

"**Agricultural Lands of Long-term Commercial Significance**" or "**ALLCS**" means land primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, finfish in upland hatcheries, or livestock, and that has long-term commercial significance for agricultural production. Long-term commercial significance includes the growing capacity, productivity, and soil composition of the land for long-term commercial production, in consideration with the land's proximity to population areas, and the possibility of more intense uses of the land.

"**Aquatic Resources**" means those areas where the presence and movement of water is a dominant process affecting their development, structure, and functioning. Aquatic resources may include, but are not limited to, vegetated and non-vegetated wetlands or aquatic sites (e.g. mudflats, deepwater habitats, lakes, and streams).

"**As-built plans**" means a document which describes the physical, biological, and, if required, the chemical condition of a bank site after complete construction of each phase of an approved construction plan. As-built plans serve as a baseline from which to manage and monitor the site.

"**Available credits**" means a potential credit that has been released by the department after a bank attains the performance standards specified in the instrument.

"**Bank**" or "**wetland mitigation bank**" means a site where wetlands are restored, created, enhanced, or in exceptional circumstances, preserved, expressly for the purpose of providing compensatory mitigation in advance of unavoidable impacts to wetlands or other aquatic resources that typically are unknown at the time of certification.

"**Bank sponsor**" or "**sponsor**" means any public or private entity responsible for establishing and, in most circumstances, operating a bank.

"**Buffer**" means those areas on the perimeter of a bank site that enhance and protect a wetland's functions and values by maintaining adjacent habitat and reducing adverse impacts from adjacent land-uses. These areas are vegetated and can reduce impacts through various physical, chemical, and/or biological processes.

"**Compensatory mitigation**" means the restoration, creation, enhancement, or in exceptional circumstances, the preservation of wetlands or other aquatic resources for the purpose of compensating for unavoidable impacts to wetlands or other aquatic resources which remain

after all appropriate and practicable avoidance and minimization has been achieved.

"**Consensus**" means a process by which a group synthesizes its ideas and concerns to form a common collaborative agreement acceptable to all members.

"**Cowardin class**" means the classification of a wetland area as described in *Classification of Wetlands and Deepwater Habitats of the United States* USFWS publication FWS/OBS 79/31.

"**Creation**" means the establishment of wetland area, functions, and values in an area where none previously existed. Creation may also be known as establishment.

"**Credit**" means a unit of trade representing the increase in the ecological value of the bank site, as measured by acreage, functions, or by some other assessment method.

"Cultural resources" means sites, structures, buildings, districts, lands, landscapes, and objects that have historical, archeological, and traditional cultural significance. Cultural resources are the tangible and material evidence of the human past.

"**Days**" means calendar days.

"**Debited credit**" means:

(1) An available credit that has been withdrawn from the bank to meet regulatory requirements.

(2) A reserved credit that has been used to meet a regulatory requirement.

"**Debit project**" means those projects that use credits from a bank to fulfill regulatory requirements for compensation of impacts. These projects may require more than one regulatory approval under federal, state, and local rules.

"**Department**" means the Department of Ecology.

"**Enhancement**" means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resources function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

"**Financial assurance**" means the money or other form of financial instrument (e.g. surety bonds, trust funds, escrow accounts, proof of stable revenue sources for public agencies) required of the sponsor to ensure that the functions of the bank are achieved and maintained over the long-term.

"**Function assessment**" means an evaluation of the degree to which a wetland is performing, or is capable of performing, specific wetland functions and processes. Function assessments include the use of scientifically-based quantitative and qualitative methods developed for assessing functions, as well as the use of best professional judgment.

"**Hydrogeomorphic classification**" or **"HGM class"** means a wetland classification scheme that groups wetlands based on their location in the landscape and water regime.

"Indian Country" means:

(1) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;

(2) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; and

(3) All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

"Instrument" or "**Mitigation banking instrument**" means the documentation of agency and sponsor concurrence on the objectives and administration of the bank. The mitigation banking instrument describes in detail the physical and legal characteristics of the bank, including the service area, and how the bank will be established and operated.

"**Interagency review team**" or "**IRT**" means an interagency group of federal, state, tribal, and local regulatory and resource agency representatives who are invited to participate in negotiations with the sponsor on the terms and conditions of the instrument.

"**Local jurisdiction**" means any local government such as a town, city, or county in which the bank site is located.

"**Maintenance**" includes all activities and actions necessary to ensure the successful development of a bank.

"**Mitigation sequencing**" means sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts to wetlands or other aquatic resources.

"**Operational life**" or "**operational life of a bank**" means the period during which the terms and conditions of the instrument are in effect. With the exception of arrangements for the long-term management, permanent protection, and financial assurances, the operational life of a mitigation bank terminates at the point when:

(1) Available credits have been exhausted and the bank is determined to be functionally mature and self-sustaining to the degree specified in the instrument; or

(2) The sponsor voluntarily terminates the banking activity with written notice to the department.

"**Performance standards**" are measurable criteria for determining if the project goals and objectives are being achieved. Performance standards document a desired state or amount of change necessary to indicate that a particular function is being performed or structure has been established as specified in the design.

"**Potential credit**" means a credit anticipated to be generated by the bank, but is not currently available for use.

"**Practicable**" means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

"**Preservation**" means the permanent protection of ecologically important wetlands or other aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection or enhancement of the aquatic systems, or both. Preservation does not result in a gain of aquatic resource area or functions.

"Prime farmland soils" means land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

"**Prospectus**" is the conceptual proposal for a bank project.

"**Re-establishment**" means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions. Re-establishment falls under the broader term of restoration.

"**Rehabilitation**" means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

"Remedial actions" means actions required by the department to correct any deficiencies on the site in order for the site to attain the required performance standards. Remedial actions may be required by the department to gain compliance by the sponsor with this chapter.

"Reserved credit" means an available credit that has been withdrawn from the bank but which is not associated with a specific regulatory requirement at the time of purchase. Purchase of reserved credits does not provide any guarantee that a project will be authorized under existing regulatory programs. Reserved credits are purchased at the buyer's sole risk.

"**Restoration**" is a broad term referring to both re-establishment and rehabilitation.

"**Service area**" means the designated geographic area in which a bank can reasonably be expected to provide appropriate compensation for unavoidable impacts.

"**Signatories**" means those entities that have documented their concurrence with the terms and conditions of the instrument through their signature on the document.

"**Sustainability**" means the ability of a bank to persist in the landscape and maintain its functions in anticipation of future development needs within the watershed. Sustainable bank sites must have sufficient buffer areas to protect the site from degradations due to activities on adjacent lands.

"**Unavoidable**" means adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved.

"Urban Areas" means areas located within a designated urban growth area.

"**Water resource inventory areas**" or "**WRIA**" refers to Washington State's 62 major watershed basins as described in Chapter 173-500 WAC, Water Resources Management Program Established Pursuant to the Water Resources Act of 1971, as amended.

"**Watershed Characterization**" means an approach to identify and map areas within a watershed that are most important to support a watershed process. It identifies the degree of impairment to these areas, and identifies areas most important for protection and restoration.

"**Watershed processes**" means the dynamic physical and chemical interactions that form and maintain the landscape and ecosystems on a geographic scale of watersheds to basins (hundreds to thousands of square miles). The most important factors include the movement of water, sediment, nutrients, pathogens, toxic compounds, and wood**.**

"Watershed-based approach to mitigation" means 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 projects address those needs. A landscape perspective is used to identify the types and location of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by authorized activities. The watershed 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.

"**Wetland(s)**" mean areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

PART II
CERTIFICATION PROCESS

173-700-200 How do other laws and rules relate to banks?

(1) Banks certified under this chapter must be consistent with existing federal, state, and local laws and rules and treaty rights which relate to the establishment of a bank.

(2) Certification of a bank does not serve as authorization for other federal, state, or local permits or approvals.

(3) Interagency Review Team (IRT) members shall advise the sponsor of pertinent federal, state, or local rules that may apply to a specific bank proposal and that may delay the certification process.

(4) The sponsor is responsible for obtaining all required federal, state, and local permits and approvals for the construction and establishment of the bank.

(5) The sponsor is strongly encouraged to coordinate with the local jurisdiction(s) early in the development of their proposal. Each local jurisdiction has its own local permitting process and there is not a standard sequence for integrating with the bank certification process.

173-700-201 Decision making procedure.

(1) All decisions made by the department must fully consider IRT, tribal, and public comments submitted to the department as part of the certification evaluation process.

(2) The department shall strive to achieve consensus with the IRT on the terms and conditions of the instrument.

(3) If the department determines that consensus cannot otherwise be reached on any term, condition, or procedural element of the instrument within a reasonable timeframe, the department shall be responsible for making the final decisions.

173-700-210 Purpose of the prospectus.

(1) The purpose of the prospectus is to provide a conceptual plan for a bank project.

(2) The department uses the prospectus to notify the public, tribes, and the local government of the proposed bank project.

(3) The prospectus initiates dialogue between the department, sponsor, and IRT members on a proposed bank project.

(4) The department uses the prospectus and comments received during the public notice period to make an initial determination on whether there are critical issues that may affect the ability of the bank to be certified.

173-700-211 Content of the prospectus.

At a minimum, the prospectus must contain information on the following elements:

(1) The goals and objectives of the project;

(2) Location including city or county, proximity to existing roads and other landmarks, and a vicinity map showing location of the proposed site(s);

(3) A statement of how the bank meets any watershed restoration needs and how its design and location are ecologically appropriate.

(4) The rationale for site selection addressing the considerations listed in WAC 173-700-303;

(5) The general need for the proposed bank project;

(6) General site map(s) that includes, but is not limited to:

(a) Total area of site;

(b) Location, size, and number of existing wetlands;

(c) Location of all streams, ponds, and other water features on or adjacent to the site;

(d) Location and type of all known water-control features on or adjacent to the site; and

(e) Presence of rights-of-way, easements, or other encumbrances.

(7) A description of existing conditions of the proposed site(s) including, but not limited to:

(a) Land ownership;

(b) Local land-use or zoning designation;

(c) Current use;

(d) Presence of liens, rights-of-way, easements, or other encumbrances;

(e) The landscape position of the site including water resource inventory area (WRIA), basin, and sub-basin location;

(f) Wetland types present on the site including Cowardin classification and Hydrogeomorphic (HGM) class of each wetland;

(g) Other habitat types present;

(h) Available information on water sources including surface water features, preliminary groundwater information, soil types, and vegetation;

(i) A preliminary analysis of functions provided by on-site wetlands;

(j) Adjacent land-uses that might affect the bank's function;

(k) Site constraints, conflicts, or known risks that could affect bank development or function;

(l) Identification of all buildings, structures, and other built features that would remain on the site after construction; and

(m) Identification of existing mitigation sites and whether they will remain on site after construction.

(8) Description of conceptual site design, including but not limited to:

(a) Proposed types and approximate sizes of wetlands;

(b) Other proposed habitat types to be provided;

(c) Proposed functions that the bank is anticipated to provide;

(d) Description of alterations to hydrology;

(e) Location of grading, if applicable; and

(f) Proposed structures (e.g. perch poles, weirs, trails, etc.)

(9) Figures illustrating the conceptual bank design;

(10) Proposed service area and accompanying rationale that demonstrates the service area is ecologically appropriate;

(11) Discussion of whether water rights have been applied for or secured for the site, if needed;

(12) Identification of proposed permanent protection mechanism, such as a conservation easement;

(13) The proposed ownership arrangements and long-term management strategy for the bank;

(14) Description of how the proposed bank project meets federal, state, and local laws and rules;

(15) Identification of whether the bank site is fully or partially located on agricultural lands of long-term commercial significance; and

(16) The qualifications of the sponsor to successfully complete the proposed bank project(s), including information describing any past such activities by the sponsor.

(17) The qualifications of the main design team and their areas of expertise.

173-700-212 Submittal of the prospectus.

(1) The sponsor must submit a complete electronic and a hard copy of the prospectus to the department.

(2) A prospectus must contain all of the information identified in WAC 173-700-211 to be complete.

(3) When the department receives a prospectus, it will notify affected tribes and the local jurisdiction's planning department where the bank site is located.

(4) The department will notify the sponsor in writing within 30 days of receipt of a prospectus whether or not the document is complete.

(5) If the department determines that the prospectus is not complete, the department shall identify any additional information necessary to complete the prospectus.

(6) Within 30 days after the department notifies the sponsor that the prospectus is complete, it shall provide public notice of the prospectus, as specified in WAC 173-700-240 and 173-700-241.

(7) At the beginning of the comment period, the department will ask appropriate agencies and affected tribes to provide written comments on the prospectus. The comments should address, but are not limited to:

(a) Any technical and ecological concerns regarding the prospectus;

(b) Potential conflicts with existing rules and ordinances; and

(c) Any critical issues that the sponsor needs to address prior to moving forward to developing the draft instrument.

(8) The department will review the comments received in response to the public notice and make a written initial evaluation. The department makes an initial evaluation on the ecological appropriateness of the proposed bank and its ability to provide appropriate compensatory mitigation for activities authorized by state or local permits. This initial evaluation letter must be provided to the sponsor within 30 days of the end of the public notice comment period.

(a) If the department determines that the proposed bank is ecologically appropriate and has potential for providing appropriate compensatory mitigation, the initial evaluation letter will inform the sponsor they may proceed with preparation of the draft instrument consistent with WAC 173-700-222.

(b) If the department determines that the proposed bank is not ecologically appropriate or does not have potential for providing appropriate compensatory mitigation, the initial evaluation letter will provide the reasons for that determination.

(i) The sponsor may revise the prospectus to address the department's concerns and submit a revised prospectus to the department.

(ii) If the sponsor submits a revised prospectus, the department may provide a revised public notice, as specified in WAC 173-700-240 and 173-700-241.

173-700-220 Convening the Interagency Review Team.

(1) If the department determines that the proposed bank may proceed with preparation of the draft instrument, the department shall invite representatives from the appropriate federal and state regulatory and resource agencies, the local jurisdiction(s) where the bank site is located, and affected tribes to participate on the IRT.

(2) The department shall serve as chair of the IRT. For bank proposals seeking federal approvals in addition to state certification, the U.S. Army Corps of Engineers may co-chair the IRT.

173-700-221 Purpose of the instrument.

(1) An instrument details all of the physical characteristics, legal obligations, operational procedures, monitoring, and maintenance requirements for a bank.

(2) Requirements for instruments may vary based on the specific conditions of the bank site.

173-700-222 Content of the instrument.

The minimum technical elements required in the instrument are:

(1) The goals and objectives of the project;

(2) Site location including city or county, proximity to existing roads and other landmarks, and a vicinity map showing location of the proposed site(s);

(3) A description of existing conditions of the proposed site(s) including, but not limited to:

(a) Local land-use or zoning designation;

(b) Current uses;

(c) Presence of liens, rights-of-way, easements, or other encumbrances;

(d) The landscape position of the site including water resource inventory area (WRIA), basin, and sub-basin location;

(e) Wetland types present on the site including Cowardin classification and Hydrogeomorphic (HGM) class of each wetland;

(f) Other habitat types present;

(g) Technical information on wetland delineations, soil types, vegetation, and water sources, including surface water features and groundwater information;

(h) An analysis of functions provided by on-site wetlands;

(i) Adjacent land-uses that might affect the bank's function;

(j) Site constraints, conflicts, or known risks that could affect bank development or function;

(k) Identification of all buildings, structures, and other built features that would remain on the site after construction; and

(l) Identification of existing mitigation sites and whether they will remain on site after construction.

(m) Detailed site map(s) that includes, but is not limited to:

(i) Total area of site;

(ii) Location, delineated boundaries, size, and number of existing wetlands;

(iii) Location of all streams, ponds, and other water features on and adjacent to the site;

(iv) Location and type of all known water control features on and adjacent to the site; and

(v) Presence of rights-of-way, easements, or other encumbrances.

(4) A statement of how the bank meets any watershed restoration needs and how its design and location are ecologically appropriate.

(5) The rationale for site selection addressing the considerations listed in WAC 173-700-303;

(6) A detailed description of the proposed bank site including, but not limited to:

(a) The bank size;

(b) The Cowardin, HGM classes, wetland rating, and sizes of wetlands and other aquatic resources proposed;

(c) A description of the buffers for the site and any other habitats provided on the site;

(d) The functions to be provided by the bank and level of increase over existing conditions;

(e) Detailed site design plans and specifications to include grading plans, planting plans, and specifications for any structures; and

(f) Construction timing and schedules;

(7) Documentation of the ownership of bank lands and a legal description of the bank site;

(8) A detailed description of sponsor responsibilities for construction implementation, monitoring and reporting, and maintenance;

(9) A description and map of the service area and accompanying rationale that demonstrates the service area is ecologically appropriate;

(10) The potential number of credits to be generated by the bank and a credit description consistent with WAC 173-700-310;

(11) A description of any restrictions on use of credits;

(12) Documentation of water rights for the proposed bank, if required;

(13) An evaluation of historic, cultural, and archeological resources on the bank site;

(14) Credit tracking and accounting procedures including reporting requirements;

(15) Performance standards for determining bank success and credit release including a schedule for the phased release of credits, if necessary;

(16) Monitoring plan and reporting protocols including a clear statement of responsibility for conducting the monitoring and reporting;

(17) An adaptive management plan and statement of responsibility for adaptive management activities;

(18) Financial assurances;

(19) The ownership arrangements and long-term management plan for the bank;

(20) Provisions for permanent protection of the bank site;

(21) Force Majeure Clause (identification of sponsor responsibilities in the event of catastrophic events that are beyond the sponsor's control);

(22) Any supporting documentation requested by the department;

(23) A provision stating that legal responsibility for providing the compensatory mitigation lies with the sponsor once a permittee secures credits from the sponsor; and

(24) Default and closure provisions.

173-700-223 Preliminary review of the technical elements of the draft instrument.

Prior to submitting the draft instrument, the sponsor may elect to have meetings with the IRT to discuss technical elements of their proposal. This preliminary review is optional, but is strongly recommended. It is intended to identify potential issues early, so the sponsor may attempt to address those issues prior to the start of the formal draft instrument review process.

173-700-224 Submittal of the draft instrument.

(1) If the sponsor chooses to proceed with the certification process, they must prepare a draft instrument and submit an electronic and hard copy to the department.

(2) The sponsor must develop the instrument using feedback from the department, the IRT, and comments received during the prospectus phase.

(3) The draft instrument must contain all of the information identified in WAC 173-700-222 to be complete.

(4) After receiving the draft instrument, the department shall determine whether the instrument is complete and notify the sponsor within 30 days. If the draft instrument is not complete, the department shall notify the sponsor in writing of its determination and identify any additional information that is necessary to complete the instrument. Once a modified draft instrument is submitted, the department must notify the sponsor as soon as it determines that the draft instrument is complete.

173-700-225 Review of the draft instrument.

(1) Upon receipt of notification by the department that the draft instrument is complete, the sponsor must provide an electronic and a hard copy of the complete draft instrument to each member of the IRT.

(2) The IRT will have 30 days to comment on the draft instrument to the department. The 30 day comment period begins 5 days after the department receives its copy of the complete draft instrument as described in subsection (1) of this section.

(3) Following the comment period, the department will discuss any comments with the appropriate agencies and the sponsor. The department will:

(a) Notify the sponsor of the recommendations and comments received from the IRT;

(b) Identify any additional information that the sponsor must submit; and

(c) Identify additional terms and conditions required as part of the certification.

(4) If the department requests additional information, the certification process shall stop until the requested information is received.

(5) Within 90 days of receipt of the complete draft instrument by the IRT members, the department must notify the sponsor of the status of the review. Specifically, the department must indicate to the sponsor if the draft instrument is generally acceptable and what changes, if any, are needed.

(6) The department will seek to resolve concerns using a consensus-based approach, to the extent practicable.

(7) If there are significant unresolved concerns that may lead to a formal objection from one or more IRT members to the final instrument, the department will notify the sponsor of the nature of those concerns.

173-700-230 Submittal of the final instrument.

(1) The sponsor shall submit a final instrument to all members of the IRT in electronic and hard copy format for approval by the department.

(2) The final instrument must contain the items listed in WAC 173-700-222, in addition to other supporting information as required by the department. This supporting information may include, but is not limited to:

(a) An explanation of how the final instrument addresses the comments provided by the department and the IRT;

(b) Financial assurance documents;

(c) Legal mechanisms for the permanent protection of the bank site; and

(d) Hydrologic and other ecological studies.

(3) Within 30 days of receipt of the final instrument, the department shall provide public notice on the proposed certification.

(4) At the end of the public comment period, the department shall direct the sponsor to incorporate changes as needed based on the comments received. After incorporating the required changes, the sponsor shall submit the revised instrument to the department.

(5) Within 30 days of receipt of the revised instrument, the department notifies the local jurisdiction(s) of its intent to approve or deny the certification. If the department intends to certify the bank, it will request a decision on certification from the local jurisdiction(s).

(6) The local jurisdiction(s) reviews the intent to certify, determines whether it concurs with the certification, and notifies the department in writing.

(a) If the local jurisdiction(s) does not concur with the intent to certify, the notice shall state the reasons for the local jurisdiction's decision.

(b) The department shall not certify the bank if the local jurisdiction(s) does not concur with the certification.

(c) If the local jurisdiction(s) concurs with the intent to certify, the notice shall state the local jurisdiction's intent to sign the instrument.

(7) After receipt of the local jurisdiction's decision, the department must send a notice on its certification decision to the IRT.

(8) Within 15 days of receipt of the certification decision, if no IRT member objects by initiating the dispute resolution process, the department will notify the sponsor of the final decision. If the instrument is approved, the sponsor will arrange for it to be signed by the appropriate parties.

173-700-231 Signatories of the instrument.

An instrument must contain signatures from the department, the local jurisdiction(s), and the sponsor for certification to be complete.

(1) Signature on the instrument shall indicate that entity's concurrence with the terms and conditions of the instrument.

(2) No agency, except for the department and the local jurisdiction(s), is required to sign an instrument in order for certification to be complete.

(3) IRT member agencies and tribes are encouraged to sign the instrument.

173-700-232 Dispute resolution process.

An IRT member(s) who has concerns with a particular decision or element of an instrument shall submit the concern and accompanying rationale in writing to the chair(s) of the IRT within 15 days of the decision. The following dispute resolution process for resolving concerns shall be used:

(1) The chair(s) of the IRT shall outline the majority position on the area of concern and shall work with the IRT member(s) to develop potential solutions to those concerns.

(2) The department shall make every effort to resolve concerns within the IRT before the conflict is elevated to the program manager of the department's Shorelands and Environmental Assistance Program.

(3) In the event that the IRT is still unable to reach consensus, within 30 days of receipt of the concern by the department, the IRT member with the concern may request, through written notification, that the department's program management review the issue. The written notification must be directed to the program manager of the Shorelands and Environmental Assistance Program or the program manager's designee. Such a notification must include:

(a) A detailed description of the issue; and

(b) Recommendations for resolution.

(4) Within 30 days of receipt of a notification, the program manager or designee shall contact the IRT member with a final decision on the resolution. The decision of the program manager shall be the final decision of the department. The resolution shall be forwarded to the other IRT members.

173-700-233 Review timelines.

(1) When additional information or changes to documents are requested by the department, the review timelines shall stop until the requested information is received. If the requested information is not received by the department within 180 days, the department has the option of cancelling the certification process. If the certification process is cancelled, the sponsor may apply to restart the certification process.

(2) The timelines in WAC 173-700 212, 173-700-225, and 173-700-230 may be extended by the department at its sole discretion in cases where:

(a) It is necessary to conduct government-to-government consultation with affected tribes;

(b) Timely submittal of information necessary for the review of the proposed bank is not accomplished by the sponsor;

(c) Information that is essential to the department's decision cannot be reasonably obtained within the specified time frame; or

(d) Other permits or authorizations needed for certification cannot be completed within the specified time frame.

(3) In such cases, the department must promptly notify the sponsor in writing that the review timelines have stopped or have been extended, with an explanation of the reason. Such extensions shall be for the minimum time necessary to resolve the issue.

173-700-240 Public notices.

(1) It is the department's goal to ensure that accurate information on the prospectus and the proposed bank certification is made available to the public, and to avoid duplicative processes for public comment.

(a) When an existing public notice process is available to solicit public comment, the department shall strive to provide a joint public notice.

(b) When an existing public notice process is not available, the department shall issue a public notice.

(2) A public notice comment period must be at least 30 days.

(3) If the department holds a public hearing, the comment period may be extended to one week after the hearing date.

173-700-241 Notification on the prospectus and proposed certification.

At a minimum, the department shall notify the following entities:

(1) The local jurisdiction(s) where the bank site is located;

(2) Affected tribes located within the proposed service area;

(3) The latest recorded real property owners, as shown by the records of the county treasurer, located within:

(a) 300 feet of the contiguous boundaries of the proposed bank property; or

(b) The distance from the property boundary as specified in local regulations.

(4) The general public within a bank's proposed service area through:

(a) A published notice in a newspaper of general circulation in the service area of the proposed bank and in other counties as deemed appropriate;

(b) A notice posted by the sponsor in a conspicuous manner on the proposed bank property which is consistent with local regulatory requirements and adjacent to a public right-of-way; and

(c) A notice posted on the department's website.

(5) Other interested persons and organizations that have requested information on bank certifications, and all others deemed appropriate by the department.

173-700-242 Public hearings.

(1) The sponsor, any interested government entity, any group, or any person may request a public hearing on the bank certification.

(2) The written request must be received by the department during the comment periods for the prospectus or the proposed bank certification.

(3) Any request for a public hearing shall indicate the interest of the party filing it and why a hearing is warranted.

(4) The department shall determine, in its sole discretion, if significant public interest exists to hold a public hearing.

(5) The department shall provide at least 14 days notice prior to any hearing.

PART III
BANK ESTABLISHMENT

173-700-300 Ecological design incentives.

(1) One goal of this chapter is to encourage the development of banks that provide significant ecological benefits and are sustainable. In order to achieve this, incentives have been built into the certification and bank establishment process to encourage the siting and designing of banks that provide significant ecological benefits and restore watershed processes in areas identified as high priorities under a watershed-based approach to mitigation.

(2) The incentives may include, but are not limited to, more favorable credit conversion rates and larger service areas.

(3) The department shall make decisions regarding the application of specific incentives on a case-by-case basis.

173-700-301 Service area.

(1) The department must determine the appropriate service area for proposed banks.

(2) The sponsor must provide a detailed text description and a map of the bank's proposed service area in the instrument.

(3) The maximum extent of a service area shall be the WRIA in which the bank is located, except when inclusion of portions of adjacent WRIAs is ecologically appropriate and defensible.

173-700-302 Considerations for determining service area size.

The department considers the following elements when determining the size of the service area:

(1) The functions provided by the bank and the distance from the bank that the ecological functions can reasonably be expected to compensate for impacts;

(2) Whether the bank addresses existing watershed-based mitigation planning efforts;

(3) How far the ecological and hydrological benefits of the bank extend beyond the bank site location;

(4) The position of the bank within the watershed;

(5) The degree to which the bank restores processes within the watershed;

(6) The size and characteristics of the WRIA in which the bank is located;

(7) The quality, diversity, and regional significance of the habitats provided;

(8) Local needs and requirements, such as consistency with land-use or watershed management plans;

(9) Types of impacts that may be compensated through the use of credits from the bank; and

(10) The degree to which the bank supports priorities found in, but not limited to, watershed management plans, watershed characterizations, wetland mapping or inventories, storm water management plans, shoreline master programs, salmon recovery plans and comprehensive land-use plans.

173-700-303 Site selection.

(1) Banks must be sited, planned, and designed to be self-sustaining over time. The department shall carefully consider ecological suitability, ecological sustainability, and land-use compatibility when determining if a site is an appropriate location for a bank.

(a) The department shall consider the following factors when determining if a proposed bank site is ecologically suitable for providing the desired aquatic resource functions, to the extent practicable:

(i) Whether the proposed location and design are consistent with watershed-based restoration priorities;

(ii) Whether the proposed location and design allow for the protection and restoration of ecological processes within the basin or the watershed;

(iii) Whether the proposed location and design protect or enhance wetland functions that can be sustained over time;

(iv) Whether the proposed location will possess the physical, chemical, and biological characteristics to support a sustainable wetland ecosystem;

(v) Whether the size and location of the bank are appropriate relative to the ecological features found at the site, such as sources of water;

(vi) Whether the proposed location has a high potential to connect or complement existing wetlands;

(vii) Whether the process of establishing the bank at the site will protect, enhance, or negatively affect ecologically significant aquatic or upland resources or habitat for threatened, endangered, or candidate species; and

(viii) The types of unavoidable impacts that are anticipated to use bank credits for mitigation.

(b) The department shall consider the following factors when determining if a proposed bank site is ecologically sustainable:

(i) Whether the bank site can be protected over time from direct, indirect, and cumulative impacts based on development trends and anticipated land use changes;

(ii) Whether the sponsor has obtained water rights for the site, if necessary; and

(iii) Other factors deemed appropriate.

(c) The department shall consider various factors when determining if a proposed bank site is compatible with the surrounding land. These factors shall include, but are not limited to:

(i) Whether the proposed location contains cultural resources;

(ii) Whether the proposed location and bank objectives are compatible with surrounding land-uses located both up and down gradient;

(iii) Whether the proposed location contributes to the improvement of identified management problems within the drainage basin or watershed, (e.g. sedimentation, water quality degradation, or flood control); and

(iv) What the historical land-uses were at the proposed location (e.g. agricultural, chemical, industrial, and archeological).

(2) Compatibility of banks and Agricultural Lands of Long-term Commercial Significance (ALLCS).

(a) The department discourages the location of banks on prime farmland soils designated as ALLCS due to the important resource and societal values of those resource lands.

(b) If a bank is proposed to be located within an area designated as ALLCS:

(i) Impacts to prime farmland soils both on-site and off-site shall be avoided to the maximum extent possible;

(ii) The bank shall be located on non-prime farmland soils to the greatest extent possible;

(iii) The bank must be designed and constructed to not adversely affect adjacent and nearby agricultural operations. This includes, but is not limited to: adverse affects on water flows to neighboring farms, and minimizing shading effects on adjacent farms; and

(iv) The bank should be designed to support local and regional environmental priorities found in, but not limited to, watershed management plans, watershed characterizations, wetland mapping or inventories, storm water management plans, shoreline master programs, salmon recovery plans and comprehensive land use plans.

(c) The department shall consult with the Local Conservation District and the Conservation Commission to determine whether the bank siting conflicts with local or statewide goals for agricultural land preservation.

173-700-304 Buffers.

(1) The department determines the buffer necessary for each bank. The buffer for a bank must be sufficient to protect the functions at the bank.

(2) The department considers the following elements to determine the buffer necessary for a bank:

(a) The level of sensitivity of the wetlands to off-site activities;

(b) The functions and quality of the buffer (existing conditions and proposed conditions); and

(c) The intensity of adjacent land-uses.

(3) Required buffers shall generally range between 50 and 300 feet in width.

(4) The quality and functions of the buffer are included in determining the credit conversion rates for wetlands and aquatic resources on the bank site. Buffers generally do not directly generate credit on an area basis.

173-700-310 Credit description.

The sponsor must provide a description of what the credits represent in the instrument.

(1) For credits determined using a conversion rate under WAC 173-700-313, the sponsor shall describe the credits in terms of wetland rating, HGM class, and Cowardin class. The credit description must list the ecological functions provided by the bank.

(2) For credits determined using an alternative method under WAC 173-700-321, the sponsor shall describe the credits and the method used to determine the credits.

(3) If different resource currencies are developed for a bank:

(a) The sponsor shall describe the credits and the method used to determine the credits;

(b) Those credits shall be quantified by the appropriate regulatory agency; and

(c) The accounting methods, including the relationship to wetland credits (e.g., the number of resource credits equivalent to a wetland credit), must be approved by the department and included in the instrument or an amendment to the instrument.

173-700-311 Types of credits.

There are four types of credits associated with a bank: potential, available, reserved, and debited.

(1) A potential credit is a credit anticipated to be generated by the bank, but is not currently available for use. Potential credits have not been released by the department.

(2) An available credit is a potential credit that has been released by the department after a bank attains the performance standards specified in the instrument. Only available and reserved credits may be used to compensate for unavoidable wetland impacts authorized under a federal, state, or local permit or other authorizations in accordance with the conditions of the instrument.

(3) Reserved credit is an available credit that has been withdrawn from the bank but which is not associated with a specific regulatory requirement at the time of purchase. Purchase of reserved credits does not provide any guarantee that a project will be authorized under existing regulatory programs. Reserved credits are purchased at the buyer's sole risk.

(4) A debited credit is:

(a) An available credit that has been withdrawn from the bank to meet regulatory requirements.

(b) A reserved credit that has been used to meet a regulatory requirement.

(c) Removed from the ledger and cannot be used again.

173-700-312 Default method for determining credits.

(1) The department shall use area of wetland as the default credit unit for calculating credits at a bank site.

(2) The department shall determine the number of potential credits at a bank using a credit conversion rate.

(3) The credit conversion rate uses a ratio of area of activity such as re-establishment, creation, rehabilitation, enhancement, or preservation to credits generated at the bank site (Area of activity:Credit).

(4) Except as provided in WAC 173-700-320, the department must determine the credit conversion rates for individual banks from within the ranges specified in WAC 173-700-313 and 173-700-318.

173-700-313 Wetland credit conversion rates.

The ranges for establishing conversion rates for wetland areas are as follows:

If the mitigation activity is:	**The conversion rate can range from: Area of activity:Credit**
Re-establishment	1:1 to 2:1
Creation (Establishment)	1:1 to 2:1
Rehabilitation of altered processes	2:1 to 3:1
Enhancement of wetland structure	3:1 to 5:1
Preservation: in combination with re-establishment, creation, rehabilitation, or enhancement of wetlands	5:1 to 10:1
Preservation: alone	Case by case

173-700-314 Considerations for determining credit conversion rates for wetland re-establishment, creation, rehabilitation, and enhancement.

Unless an alternative credit determination method is used under WAC 173-700-321, the department shall use the following considerations to determine specific conversion rates for wetlands on a bank site:

(1) The anticipated net gains in wetland functions at the site;

(2) The degree to which the bank restores ecological processes previously altered by human activity in a watershed, based on predicted success and sustainability of process restoration;

(3) The degree to which the bank is expected to successfully restore or maintain the appropriate HGM class of wetland for the landscape setting;

(4) The degree to which the bank incorporates a watershed-based approach for site location and design;

(5) The rarity of the predicted wetlands and habitats at the site; based on rarity at state, and/or local level;

(6) The site's contribution to the protection, recovery, or both, of state or federally listed threatened or endangered species, protection of state priority species and habitats, and locally significant habitats;

(7) The degree of connectivity to other habitats and open space areas, based on existing connectivity and level of protection for connected areas; and

(8) Public access and education opportunities, where appropriate, as determined by the department.

173-700-315 Considerations for determining credit conversion rates for wetland preservation.

(1) Preserving wetlands may generate credit when the preservation occurs in conjunction with the re-establishment, creation, rehabilitation, or enhancement of a wetland or, in exceptional circumstances, as the sole means of generating credits.

(2) Unless an alternative credit determination method is used under WAC 173-700-321, the department shall use the following considerations to determine specific conversion rates for preserved wetlands on a bank site:

(a) The degree to which the preservation area contributes to the ecological functioning of the overall bank site and the protection of watershed processes.

(b) The site is located in an area identified as a high priority for preservation and restoration in a watershed plan or characterization;

(c) The area proposed for preservation is a high-quality wetland system, as determined using the considerations under WAC 173-700-316; and

(d) The area proposed for preservation is at risk because the wetland is under demonstrable threat of loss or substantial degradation, due to human activities that might not otherwise be expected to be restricted based on local zoning codes, critical areas ordinances, forest practices act, and foreseeable future land-uses in the watershed.

173-700-316 Considerations for determining high-quality wetland systems.

The department shall determine whether a site is a high-quality wetland system including, but not limited to:

(1) Wetlands with special characteristics including:

(a) Estuarine wetlands;

(b) Natural Heritage wetlands;

(c) Bogs;

(d) Old-growth and mature forested wetlands;

(e) Interdunal wetlands;

(f) Vernal pools; and

(g) Alkali wetlands.

(2) Bog-like wetlands, aspen-dominated wetlands, camas prairie wetlands, and marine water with eelgrass beds.

(3) Category I wetlands (Washington State Wetland Rating System, 2004 or as amended).

(4) Category II wetlands with a habitat score > 29 points (Washington State Wetland Rating System, 2004 or as amended).

173-700-317 Considerations for determining credit conversion rates for banks in urban areas.

In urban areas wetlands and uplands may generate credits at the more favorable rates within WAC 173-700-313 and 173-700-318. The department will take into consideration the following when determining how much credit is generated:

(1) WAC 173-700-314, 173-700-315, and 173-700-319

(2) Local land-use zoning, anticipated future build-out, width of the buffer and its ability to protect the wetland or other aquatic resource from further degradation;

(3) Integrated public education and directed access for passive recreation opportunities, where appropriate as determined by the department;

(4) Whether the bank provides multiple functions; and

(5) The degree to which the bank helps to implement local restoration priorities, shoreline master programs, local land-use management plans, and watershed plans.

173-700-318 Credit conversion rates for uplands and other habitats.

(1) Uplands and other habitat areas may generate credits to the extent that those areas contribute to the overall ecological functioning and sustainability of the bank.

(2) Enhancement of upland and other habitats may generate credits at a conversion rate from 3:1 to 10:1. Preservation of high-quality uplands and other habitats may generate credits at a conversion rate from 8:1 to 15:1.

173-700-319 Considerations for determining credit conversion rates for uplands and other habitats.

Unless an alternative credit determination method is used under WAC 173-700-321, the department shall use the following considerations to determine specific conversion rates for uplands and other habitats on a bank site:

(1) Degree of contribution to the ecological functioning of the bank;

(2) The existing or proposed enhanced condition of the uplands and other habitats; and

(3) Connectivity to other habitats and open space areas, based on existing connectivity and level of protection for those adjacent areas.

173-700-320 Exceptions to credit conversion rates.

(1) The department may allow a conversion rate for wetlands, uplands, and other habitat areas that are outside of the ranges specified in WAC 173-700-313 and WAC 173-700-318.

(2) All exceptions for credit conversion rates authorized by the department must be:

(a) Made on a case-by-case basis, considering the specific circumstances of a bank; and

(b) Based on ecological considerations.

173-700-321 Using an alternative method to determine credits.

The department may allow the use of an alternative method to determine credits so long as:

(1) The department approves of the method;

(2) The method is applicable and appropriate for the Pacific Northwest;

(3) The method is applicable for use on projects debiting from the bank; and

(4) The method is documented in the instrument.

173-700-330 Schedule for the release of credits.

(1) The instrument shall include the amount and schedule for release of credits. Releases of credits must be tied to the attainment of performance standards.

(2) The department shall determine a schedule for the release of credits.

(3) The department shall base the number of credits to be released on the following considerations, but not limited to:

(a) The amount of ecological gain at the time of the release;

(b) The sponsor's experience and success with similar types of projects;

(c) The expected length of time necessary to achieve project goals and performance standards; and

(d) The potential for design failure.

(4) The credit release schedule and amount of credits eligible for release may not exceed the maximum amounts under WAC 173-700-332 through 173-700-335. The credit releases in these sections are cumulative in the sense that the percentage of credits available for release under any particular section is the amount stated in that section, minus the percentage of credits released under all prior sections.

(5) The maximum percentages of credits able to be released under WAC 173-700-331 through 173-700-333 do not include credits generated by preservation of wetlands.

(6) The department may release credits generated by the preservation of existing wetlands or aquatic resources after the minimum requirements specified in WAC 173-700-331 have been met.

173-700-331 Credit release - pre-construction.

(1) Up to 14 percent of the total potential credits for the bank, or for the phase, may be released pre-construction. Initial physical and biological improvements must begin within one year following the release of credits.

(2) The following criteria must be met prior to any release of credits:

(a) The instrument is signed and approved;

(b) The permanent protection mechanism for the site is established;

(c) The proof of financial assurances has been received by the department;

(d) The long term management and maintenance endowment fund escrow account or other approved financial assurance for such activity is established; and

(e) All necessary permits and authorizations for site construction have been obtained.

173-700-332 Credit release – post-construction.

(1) Up to 30 percent of the total potential credits for the bank, or for the phase that has been constructed, may be released when the department, in consultation with signatories, approves:

(a) The complete implementation of construction plans; and

(b) The as-built condition of the bank or phase.

(2) Approval of the as-built condition of a bank or phase includes the following:

(a) The sponsor must submit as-built plans that reflect the final grading and planting of the site to the department and signatories; and

(b) The department must inspect the as-built condition of the bank.

(3) If the department approves the as-built plans and the constructed condition of the site, then the department must release the credit(s) specified in the instrument.

(4) If the bank cannot be constructed in accordance with the approved instrument, the sponsor must notify the department and signatories. Any changes to the bank design requires approval from the department and signatories prior to work occurring.

173-700-333 Credit release –attainment of hydrologic performance standards.

(1) Up to 50 percent of total potential credits for the bank, or for the phase of the bank that has been constructed, may be released when the department, in consultation with signatories, determines that the hydrologic performance standard(s), at a minimum, has been attained.

(2) The department may require that additional performance standards be met prior to releasing up to 50 percent of the total potential credits.

173-700-334 Credit release - final release.

(1) The department, in consultation with the signatories, may adjust the final number of potential credits available at a bank based on actual conditions of the bank site at the time of the final release of credits. The number of potential credits may be adjusted in the following ways:

(a) The total number of potential credits may be reduced if all of the required performance standards cannot be attained; or

(b) The total number of potential credits may be increased if:

(i) All of the required performance standards are met; and

(ii) The department determines that the site provides higher levels of function than originally projected.

(2) The department may not release all of the potential credits until the following are requirements are met and approved:

(a) The bank site has attained the required performance standards;

(b) An approved long-term management plan has been submitted;

(c) The long-term management account is fully funded, or in the case of banks developed solely by public agencies a suitable long-term funding mechanism that has been approved by the department; and

(d) The long-term steward has been identified.

(3) If the department concurs that all the above requirements have been met, then the department must release all remaining potential credits specified in the instrument.

173-700-335 Additional credit releases.

(1) Earlier releases of credits may be awarded by the department, in consultation with the signatories, as long as the maximum percentages for the release of potential credits specified in WAC 173-700-331 through 173-700-334 are not exceeded.

(2) Earlier releases of credits may be awarded by the department, in consultation with the signatories, if the sponsor performs approved

actions beyond those identified in the instrument in order to increase the projected functions of the site. Earlier releases of credits will not be awarded for implementation of management activities that are necessary to attain the performance standards required in the instrument.

(3) Any deviation from the credit release schedule shall be documented in an amendment to the instrument.

173-700-340 Performance standards.

(1) Performance standards must be based on the bank's objectives and goals as identified in the instrument.

(2) Performance standards must be measurable.

(3) The department may require multiple years of monitoring data to document the sustainable attainment of specific performance standards, particularly hydrologic performance standards.

173-700-350 Financial viability.

(1) Certification of a bank under this chapter does not imply or guarantee the financial viability of the bank.

(2) Sponsors are responsible for conducting any financial studies prior to implementation of an instrument to determine the financial risks and potential economic viability of the bank.

(3) The department may not consider the economic standing of a bank when implementing mitigation sequencing, determining unavoidable impacts, or evaluating compensation alternatives for debit projects.

(4) The sponsor is responsible for all costs associated with the construction, operation, maintenance, long-term management, permanent protection, financial assurances, and remedial actions, if required.

173-700-351 Financial assurances.

(1) The department must require financial assurances to ensure that the potential risks to the environment from unsuccessful banks are minimized. This may include financial assurances specifically for:

(a) The construction phase (see WAC 173-700-352);

(b) The monitoring and maintenance phase (see WAC 173-700-353); and

(c) The long-term management phase (see WAC 173-700-354).

(2) The amount of financial assurances required by the department must be determined on a bank-specific basis and be commensurate with the degree of risk of bank failure and the nature and extent of site alteration and development.

(3) The department will consider the timing of release of bank credits in determining the amount of financial assurances required.

(4) The department may reduce the amount of financial assurances over the operational life of the bank as the bank matures and the risk of failure is reduced.

(5) The instrument and the financial assurance mechanisms must specify the financial requirements and conditions, and the entity responsible for the release or cashing of the financial assurances.

(6) The department must determine the adequacy of the proposed financial assurances prior to certification.

(7) The department shall require financial assurances for construction, monitoring and maintenance, and long-term management of the site as specified in WAC 173-700-352 through 173-700-354.

(8) The financial assurances shall include department costs for contract administration and overhead, as necessary.

173-700-352 Financial assurances for construction.

(1) If credits are released prior to the construction of a bank, the department must require a financial assurance for construction.

(2) The amount of the financial assurance must be sufficient to cover the estimated costs for construction of a portion of the bank site that the department determines is equivalent to the credits released prior to construction.

(3) Construction cost estimates must be based on the costs of having an independent contractor perform the construction of the bank. The sponsor must provide the department with a written estimate from a qualified contractor.

(4) The department shall authorize the release of the financial assurance mechanism for bank construction after the department has approved the as-built condition of the bank.

(5) If the first release of credits will occur after construction is completed and the department has approved the as-built plans, the department may require a financial assurance that would be adequate to stabilize the bank site in the event of default by the sponsor.

173-700-353 Financial assurances for monitoring and maintenance.

(1) The department must require a financial assurance for monitoring and maintenance for all banks that have credit releases prior to full attainment of all performance standards.

(2) The sponsor must provide the department a written cost estimate, including an adjustment for inflation, from a qualified contractor. The cost

estimates for monitoring and maintenance must be based on the costs to have the work specified below performed by an independent contractor.

(3) The amount of the financial assurance must be sufficient to cover all monitoring and maintenance activities listed under WAC 173-700-402 for the operational life of the bank and the below activities, but not limited to:

(a) Estimated costs for a contractor to implement the adaptive management activities identified in the instrument;

(b) Estimated costs of all monitoring activities required in the monitoring plan.

173-700-354 Financial assurances for long-term management.

(1) The department must require financial assurances for the long-term management of a bank site.

(2) The sponsor must provide the department a written estimate for the costs of annual maintenance of the bank, including an adjustment for inflation, from a qualified contractor.

(3) The sponsor must secure sufficient funds for the anticipated long-term management costs. Appropriate long-term financing mechanisms include, but are not limited to, non-wasting endowments, trusts, contractual arrangements with future responsible parties, and other appropriate financial instruments. In cases where the long-term management entity is a public authority or government agency, that entity must provide a plan for the long-term financing of the bank site.

(4) Any provisions necessary for long-term financing must be addressed in the instrument.

(5) If the ownership of the site is transferred in the future, the financial mechanism for long-term management must remain with the entity responsible for the long-term management of the bank site.

PART IV
BANK OPERATION

173-700-400 Monitoring plan.

(1) The goals of monitoring bank sites are to:

(a) Document the post-construction baseline conditions at the site;

(b) Document the condition of the site as it develops over time;

(c) Document the attainment of performance standards; and

(d) Provide early identification of problems in the site's development that would trigger potential adaptive management activities.

(2) The sponsor must develop a monitoring plan for each bank site and include it in the instrument. The monitoring plan must include, but is not limited to:

(a) A description of the variables that will be monitored, a description of the methods or protocols used to monitor those variables, and how they will be evaluated;

(b) The monitoring protocols must be sufficient to provide an accurate representation of site conditions;

(c) A schedule of monitoring including the time of year, frequency, and duration; and

(d) A description of proposed photo documentation of the site.

173-700-401 Monitoring and as-built reporting.

(1) The sponsor must submit to the signatories an electronic and a hard copy of the monitoring reports. The monitoring reports must accurately document the conditions and progress of the bank's development. The reports must be submitted according to the schedule specified in the instrument.

(2) The monitoring report must include, but is not limited to:

(a) A list of the bank's performance standards;

(b) A narrative summary of the results of the monitoring;

(c) Discussion of whether applicable performance standards were attained;

(d) Data collected during the monitoring;

(e) Location of transects, plots, and monitoring wells;

(f) Photo points or referenced locations where photographs of the site are taken periodically to document site progress;

(g) Identification of any probable causes for failure of the bank to attain any performance standards;

(h) Discussion of recommended adaptive management activities to improve attainment of performance standards or performance of functions at the site;

(i) Discussion of any adaptive management activities performed on the site;

(j) Name and qualification of the persons and organizations conducting the monitoring.

(3) The sponsor must submit to the department an as-built report that accurately documents the post-construction conditions of the site within 90 days after the completion of grading, planting, or both.

(4) The sponsor must identify in the as-built report any variations from the approved site design plan.

173-700-402 Monitoring and maintenance.

(1) The department shall determine a monitoring schedule for the bank.

(a) The schedule shall be of sufficient duration to show that the bank is progressing toward ecological success and a sustainable condition. Generally, the department shall require a 10 year monitoring schedule.

(b) Longer monitoring periods may be required for banks that contain wetland or other aquatic systems that require more time to reach a stable condition or where adaptive management activities or remedial actions have been undertaken

(2) Monitoring and maintenance includes the following activities, but is not limited to:

(a) Regular monitoring of the site;

(b) Ongoing maintenance activities required during the operational life of the bank as specified in the instrument. These activities may include, but are not limited to, control of invasive species, irrigation, or maintenance of a water control structure; and

(c) Implementation of adaptive management activities or remedial actions, if required.

173-700-403 Adaptive management plan.

(1) Each instrument must include an adaptive management plan.

(2) The adaptive management plan for a bank site must include the following elements, but is not limited to:

(a) Goals and objectives of the bank;

(b) Identification of potential causes for site failure;

(c) A management strategy to address unforeseen changes in site conditions or if the monitoring indicates that the site will not achieve performance standards specified in the instrument; and

(d) The sponsor's responsibilities and process for reporting and implementing adaptive management actitivies.

(3) The sponsor shall notify the department within thirty days, if adaptive management activities are implemented to address unforeseen problems with site conditions.

(4) If the adaptive management activities are not effective in correcting deficiencies at the site, the department may require remedial actions as specified in WAC 173-700-601.

173-700-410 Obtaining credit releases.

(1) Once the bank has met the required performance standards, the sponsor must petition the department in writing in order to obtain a release of credits.

(2) For pre-construction credit releases, the sponsor must include documentation that the minimum requirements in 173-700-331 have been met.

(3) For post-construction credit releases, the sponsor must send the department supporting monitoring data demonstrating that the required performance standards have been met.

(a) The department shall conduct an on-site inspection, as needed, to verify that performance standards have been met.

(b) The sponsor must allow the department access to the site and to all documentation relevant to the requested credit release.

(4) The department must grant the release of credits upon its approval that the bank met the required performance standards. The department must respond to the petition in writing.

173-700-411 Ledger tracking and reporting.

(1) The sponsor must maintain a separate ledger for each bank.

(2) The ledger must be formatted to be consistent with the department's ledger template.

(3) The sponsor must submit a complete copy of the ledger at the following times:

(a) An annual ledger for the previous calendar year must be submitted by February 1.

(b) An updated ledger must be submitted within thirty days after any credits are received, sold, or debited. This requirement also applies to other resource credits available at the bank.

(4) When a credit is debited from a bank to meet a permit requirement, and the credit sale is completed, the bank sponsor must record the permitted transaction at the auditor's office of the county in which the bank is located.

(a) Any recording fees or other costs are the responsibility of the sponsor.

(b) The sponsor must submit a copy of the recorded transaction to the department within 30 days of recording it at the auditor's office.

173-700-412 Master ledger.

(1) The department shall maintain a master ledger for each bank and must cross check the sponsor's annual ledger against the master ledger.

(2) The department must notify the sponsor within 60 days of receipt of the sponsor's annual ledger if the ledger conflicts with the master ledger.

(3) The sponsor is responsible for reconciling any discrepancies between the sponsor's ledger and the department's master ledger. If the sponsor fails to resolve any discrepancies, the department may suspend the further use of available credits under WAC 173-700-603.

173-700-413 Random audits.

(1) The department may conduct random audits during the operational life of a bank.

(2) The audit may include the department contacting the local jurisdiction(s) and the county auditor's office to verify all transactions listed in a bank's ledger.

(3) In the event of an audit, the sponsor must provide all supporting documentation requested by the department in order to verify transactions listed in the bank's ledger.

(4) Unexplainable discrepancies between the public records and the bank's ledger may result in the department initiating compliance actions under WAC 173-700-600 through 173-700-603.

173-700-420 Long-term management plan.

(1) The instrument must identify the party responsible for the ownership and long-term management of the bank.

(2) A long-term management plan should include a description of long-term management needs, annual cost estimates for these needs, and identify the funding mechanism that will be used to meet those needs.

(3) The instrument may contain provisions allowing the sponsor to transfer the long-term management responsibilities of the bank site to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager, after review and approval by the department. This land stewardship entity need not be identified in the instrument, as long as the future transfer of long-term management responsibility is approved by the department.

(4) The owner of a bank may not complete any conveyance of title, easement, lease, or other interest directly related to the bank without adequate and complete provision for the continued management of the bank as specified in the instrument.

173-700-421 Permanent protection.

(1) Bank sites must be permanently protected and preserved as specified in the instrument. The department requires that the sponsor use a legal mechanism to ensure the permanent protection and preservation of the site. Generally, the department shall require a conservation easement.

(2) The department may approve other legal and administrative mechanisms, in lieu of a conservation easement, if it determines they are adequate to protect the site.

(3) The legal mechanisms must:

(a) Be approved by the department and secured prior to any release of credits;

(b) Limit site activities that are incompatible or interfere with the goals, purposes, and ecological functioning of the site;

(c) Transfer with the property;

(d) Contain a provision requiring a 60-day advance notification to the department before any action is taken to void or modify the mechanism, including transfer of title, or establishment of any other legal claims over the bank site;

(e) Require the easement holder of the bank to notify and receive approval from the department for any proposal to use the bank in a manner that is inconsistent with the conservation easement or other approved legal mechanism; and

(f) Grant the department and its designated representatives the right to enter the bank at reasonable times for the purpose of evaluating compliance with the terms of the instrument and the conservation easement or other approved legal mechanism.

PART V
USE OF BANK CREDITS

173-700-500 Use of bank credits.

Banks can be a preferable option for compensating for authorized impacts. Use of a bank can help reduce risk and uncertainty as well as temporal loss of resource functions and services when used to compensate for authorized impacts. Local and state agencies are encouraged to use banks as a tool for implementing various management and restoration plans. These plans may include, but are not limited to, watershed management plans,

watershed characterizations, storm water management plans, shoreline master programs, salmon recovery plans, and comprehensive land-use plans. Banks can restore processes, habitats, and functions identified as priorities within the watershed.

(1) The department requires an approved instrument that includes a mitigation plan, appropriate real estate protections, and financial assurances for a bank. The department requires that the bank attain performance standards before credits can be used.

(2) Projects located within the bank's service area are eligible to apply to use credits from that bank to compensate for authorized unavoidable impacts.

(3) Permitting agencies for debit projects should ensure that mitigation sequencing has occurred before approving the use of credits.

(4) The permitting agencies determine whether the use of credits from a bank provides appropriate compensation for a debit project's unavoidable impacts.

(5) Under no circumstances may the same credits be debited as compensation for a different impact authorized under another regulatory program.

(6) Some debit projects may require authorization under more than one regulatory program (e.g. Section 404 authorization, local grading permit, and a hydraulic project approval). Where appropriate, banks may be designed to holistically address requirements under multiple programs and authorities for the same activity.

(7) The sponsor is responsible for obtaining all approvals from the signatories when proposing to use credits in a manner that is inconsistent with the terms and conditions of the instrument.

173-700-501 Replacement ratios for debit projects.

(1) Replacement ratios used to determine compensation requirements for debit projects should generally be lower than those required for permittee-responsible mitigation because of the reduced risk of failure and reduction in temporal losses.

(2) The replacement ratios for debit projects should take into consideration that credit conversion rates for banks include adjustments for the site's overall ecological benefit. One credit at a bank is not necessarily equal to one acre on the ground. In many cases, one credit from a bank represents more than one acre at the bank site.

(3) Replacement ratios for debit projects should reflect the extent to which the bank site adequately compensates for lost wetland functions at the impact site.

(4) Recommended replacement ratios are generally included in the instrument.

173-700-502 Use of bank credits outside of the service area.

(1) The department, in consultation with the signatories, may authorize the use of credits to compensate for impacts outside of the bank's designated service area if the department deems that use to be reasonable and environmentally desirable.

(2) Linear projects that contain at least one impact within the bank's service area, such as roadways, transmission lines, distribution lines, pipelines, or railways, may be eligible to use a bank even though not all of the projects' impacts are located within the bank's service area. However, the following conditions must be met:

(a) The bank must provide appropriate compensation for the impacts; and

(b) The determination to allow use of credits for impacts lying outside of a bank's service area must take into consideration the elements used in determining the bank's service area.

PART VI
COMPLIANCE WITH CERTIFICATION

173-700-600 Compliance with the terms of certification.

It is the department's goal to ensure that the establishment and operation of a bank is consistent with the terms and conditions of the certification as specified in the instrument. The department may use one or more of the methods in WAC 173-700-601 through 173-700-603 to gain compliance of certified banks.

173-700-601 Remedial actions.

(1) If a bank does not attain the required performance standards or meet other requirements specified in the instrument or this chapter, the sponsor shall implement adaptive management activities. If such activities do not achieve compliance within a reasonable time, the department may require remedial actions, which may include additional adaptive management activities or other activities necessary to achieve compliance.

(2) If the sponsor determines that the bank will not attain performance standards, the sponsor shall notify the department and the signatories.

(3) Any agency, entity, or person may also notify the department if it has supporting documentation that a bank site is not successfully

meeting the required performance standards. The notification must include:

(a) A clear statement of the issue;

(b) Supporting documentation of the problem, such as photographic evidence, documentation from field reviews, the submitted monitoring report, or the credit release petition; and

(c) Recommendations for remedial actions or other alternatives to address the problem.

(4) If the department determines that remedial actions are necessary:

(a) The department shall consult with the signatories to determine appropriate remedial actions;

(b) During consultation, the signatories may recommend remedial actions to the department and may comment on remedial actions proposed by the department; and

(c) The department shall consider the recommendations and comments of the signatories, if any, and shall make the final decision regarding appropriate remedial actions.

(5) The department shall issue, in writing, its determination for required remedial actions to the sponsor and the signatories.

173-700-602 Compliance with required remedial actions.

(1) If the sponsor does not complete the required remedial actions within the schedule specified by the department, the department must send a notice of non-compliance to the sponsor and to the signatories.

(2) The sponsor must respond in writing to the department within 15 days of receipt of the notice. The response shall include an explanation of why the sponsor has not implemented the required remedial actions and a proposed schedule for completion.

(3) The department, in consultation with interested signatories of the bank, shall determine whether the reasons provided by the sponsor constitute extenuating circumstances and shall determine whether to extend the schedule for implementing remedial actions.

(4) If the department determines that the schedule should be extended, the department must notify the sponsor in writing.

(5) If the department determines that the schedule should not be extended, the department must notify the sponsor by certified mail with return receipt requested that it intends to proceed with one of the following actions:

(a) Use the posted financial assurances to have the required remedial actions completed;

(b) Adjust the total number of potential credits at the bank under WAC 173-700-334; or

(c) Suspend the use and sale of available credits at the bank under WAC 173-700-603.

(6) The department may initiate the actions specified in subsection (5) of this section thirty days after the date of mailing of the department's notice to the sponsor.

173-700-603 Suspension of credit use.

(1) The department may suspend the sale of credits to bring a bank into compliance. If the department suspends the sale of credits, credits may not be debited until the department lifts the suspension and notifies the sponsor in writing that credit use may be resumed.

(2) The suspension shall include all available credits at a bank.

(3) Use of available credits may be suspended if the department determines that:

(a) A bank is out of compliance with the terms of its certification and the sponsor has not implemented the remedial actions required by the department;

(b) The sponsor has not made reasonable efforts to bring the bank into compliance;

(c) There is documented fraudulent use of the bank; or

(d) Initial physical and biological improvements have not been initiated within one year following the initial release of credits, unless the sponsor and signatories agree to a longer construction timeline.

(4) If credit use is suspended by the department, the department must notify the sponsor by certified mail with return receipt requested that further sale of credits has been suspended.

(5) The department shall maintain the suspension until compliance is achieved.

PART VII
RESPONSIBILITIES AND ROLES

173-700-700 Role of the interagency review team.

(1) The IRT assists in the development of the terms and conditions of the instrument by participating in negotiations with the sponsor.

(2) The IRT reviews proposed bank certifications and makes recommendations to the department.

(3) The IRT assists the sponsor in identifying any permits or approvals that may be required from their agency.

(4) The IRT ensures that certified banks are technically feasible and ecologically appropriate.

173-700-701 Role of the signatories.

(1) Signatories provide assistance to the department in overseeing the establishment and operation of that bank.

(2) Signatories provide input to the department on whether a credit release petition should be granted.

(3) Signatories review and provide comments to the department on any proposed uses of bank credits that are not consistent with the terms of the certification.

(4) Signatories notify the department if they determine that the bank is out of compliance with the terms of its certification and recommend whether remedial actions are warranted to bring the bank into compliance.

(5) Signatories must notify the department if they have any comments regarding the department's proposed remedial actions required under WAC 173-700-601.

PART VIII
APPEALS

173-700-800 Appeals process.

A decision to issue or deny a final certification may be appealed to the pollution control hearings board under RCW Chapter 43.21B.

Appendix E: Alternatives Considered

Chapters 3 and 4 of the DEIS discuss the rationale for selecting the approach taken in the rule. As required by SEPA (RCW 43.21C), various alternatives were considered for each subject area deemed to have the potential to affect the environment. This appendix discusses the different alternatives considered for these subject areas. First, the "no action" alternative is discussed. Then, the alternatives are listed below in order of the topic's discussion in chapters 3 and 4.

"No Action" Alternative

The "No Action" alternative entails wetland mitigation banking (banking) without a state certification rule. Without a rule for bank certification, the approval process would either: 1) default to the federal wetland bank process and criteria as outlined in the *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (Federal Rule)*[47] or 2) be done on an ad hoc basis at the local level.[48]

Under both of these scenarios, the bank sponsor (sponsor) generally shoulders the burden for coordinating and soliciting agency reviews of bank proposals.

While the *Federal Rule* provides general sideboards and process for bank establishment, considerable flexibility and ambiguity exists in the rule. This broad flexibility leaves most decisions on components of individual banks to a case-by-case review. Until Washington has as wetland mitigation bank state certification rule, which will set clear requirements for banks, it can be expected that the bank review process will require significant time to complete as the Interagency Review Team (IRT) negotiates each component of a bank.

Without clear guidance and standards for bank establishment and operation, the bank approval process will continue to be unpredictable. As a result, it is anticipated that there will be inconsistent standards for banks across the state.

[47] FR Vol. 73, No, 70, April 10, 2008. Pg. 19594-19705

[48] King County is the only local government which has adopted wetland bank rules. The rules outline the review and approval process for wetland banks in King County. Additional guidance on the county bank rule identifies some standards for technical requirements for wetland banks in the county.

3.3.2 Monitoring

Alternative #1: ***Prescribe specific monitoring requirements – schedule and duration in rule*****.** This alternative has the rule prescribe the length (duration) of the monitoring period and when monitoring will occur. It notes what must be included in a monitoring plan but does not require any specific variables to be measured. The IRT would determine what variables will be measured and what performance standards are necessary for the bank to achieve success. This alternative provides the greatest predictability for sponsors.

One example of this alternative is in the Washington State Department of Transportation Compensatory Wetland Mitigation Banking Memorandum of Agreement (WSDOT MOA). The WSDOT MOA outlines a specified monitoring schedule, such that emergent, scrub-shrub, and forested wetlands are to be monitored at the acceptance of "as-built" documents and then again in years two, four, six, eight, and ten (after the as-built has been accepted). The agreement also specifies a less frequent schedule for long term monitoring. The WSDOT MOA states that monitoring of bank sites will continue for a period of thirty years after the performance standards have been met, at a frequency of once every ten years.

Another example is the Minnesota rules[49] for wetlands. These specify the reporting schedule and information that must be in the monitoring report. The sponsor submits an annual report to the local government with jurisdiction on a date determined by the local government until monitoring is completed. The annual monitoring report is to contain the following information:

- A description of the project location, size, current wetland type (Cowardin), and the desired wetland type (i.e. the goal).
- Hydrology measurements of at least three seasonal water level elevations during the period April through October.
- A list of the names and coverage estimate for the dominant vegetation in the wetland, where dominant is any plant species exceeding 20% coverage.
- Color photographs of the project area taken anytime during the period June through August from a referenced, fixed photo point identified in the monitoring plan.

This alternative was rejected because the negotiated rule development team felt that a wide variety of bank types are likely to occur. Depending on the goals and objectives of a specific proposal a longer or shorter detailed monitoring schedule may be necessary. The team determined that selecting one standard schedule and duration for monitoring of bank sites was not feasible and supportable by science. For example, restoration of an estuarine wetland bank may require monitoring of tidal inundation during the winter

[49] Monitoring is discussed in the Minnesota Rules under Wetland Conservation in chapter 8420.0750 subpart 2.

months, while a forested wetland bank would require monitoring during the growing season.

Alternative #2: ***Have the IRT determine the required monitoring for each bank on a case-by case basis*.** In this alternative, the rule would only specify that monitoring is required. The specific contents of the monitoring plan, schedule, duration and methods would be developed on a case-specific basis. This approach would allow the IRT to tailor the monitoring of the bank site to address the needs and risks of each bank.

This approach was rejected because it would provide the least amount of predictability to sponsors and may require longer negotiations with the IRT during the certification process. The team agreed that providing some minimum guidance and predictability for sponsors was an important goal of the rule.

3.3.5 Compliance

In addition to the tiered approach authorized in the statute, the development team considered having one procedure in the rule for bringing banks into compliance. This alternative was eliminated on the basis that the tiered approach was more realistic, enabled us to take an adaptive management approach to site development, and provided more ability to work with sponsors and bring the banks into compliance.

4.1 Service Area

Four additional approaches for determining service area were considered, representing different classification systems that could serve as the basis for the geographic scope of service area.

Alternative #1: *Use ecologically-based classification systems*. These include the use of hydrologic units and vegetation and/or soil-based units for classifying the landscape. This approach focuses on the use of ecological systems and processes to determine service areas.

Potential ecological criteria or classification systems that could be used include hydrologic and ecosystem classifications. Hydrologic classification systems include the Hydrologic Unit Codes (HUCs) system developed by the United States Geological Survey or the Washington State's Water Resource Inventory Areas (WRIA) system. Ecosystem classification systems include regional classifications such as those developed

by Omernik and Gallant (1986) and Bailey (1995). These systems strive to map regions of relative homogeneity of ecological systems to aid the management of resources. Another regional classification system can be found in the publication *Natural Vegetation of Oregon and Washington*, by Franklin and Dyrness (1984). This classification system outlines the physiographic provinces (similar to ecoregions) of Washington and Oregon.

This alternative was integrated into the preferred alternative which outlines criteria for determining service areas.

Alternative #2: ***Use jurisdictional-political boundaries for determining service areas*****.** This includes the use of city/town growth area boundaries or county boundaries. This approach would minimize the potential number of jurisdictions that would be involved in the certification of a bank and simplify the designation of service area. However, since political boundaries are not usually consistent with hydrologic or biological units on the landscape, there is a potential for the losses of functions within hydrologic units (watersheds/basins).

This alternative was rejected because wetland functions and watershed processes are not limited to jurisdictional boundaries and use of such boundaries could result in losses of functions where a jurisdiction such as a county extends over multiple watershed and ecological regions. Alternatively, the team noted that using jurisdictional boundaries could unduly limit the market area of a bank reducing its financial viability.

Alternative #3: ***Designate by wetland functions (nested service areas) or function-specific service areas.*** In theory, nested service areas would require that credits represent actual gains in functions. Each service area and function-specific credits would need to be tracked separately. However, at this time, our tools for quantitatively measuring functions are limited. While the Washington Function Assessment Method currently under development holds promise, models are only being developed for depressional and riverine systems. It is unknown when models for slope, lacustrine and estuarine systems will be developed. When better tools are available, this model for service areas may provide for a more accurate replacement of functions through banking, however, it will require complicated tracking and accounting procedures.

While this alternative was not selected as the preferred alternative for the rule, the criteria for site selection in the rule require that service areas be based on functions. The rule allows the use of multiple or nested service areas for banks.

Alternative #4: ***Designate by watershed management plan boundaries***. Use of watershed management plans as the only criteria for establishing bank service areas was rejected because not all areas of the state have adopted watershed management plans for wetlands and other resources. Additionally, watershed management plans have varying degrees of scientific validity. Depending upon which resource or development goals the

plans are intended to address, the plan may not be adequate for establishing boundaries for compensatory mitigation.

However, the rule does encourage the integration of banks with watershed management plans (see section 173-700-030) because of the added value that the negotiated rule development team felt such plans would provide and the important role that banks could play in implementing and achieving watershed management plan goals and objectives. This is consistent with the *Federal Rule* which encourages the use of a watershed approach to determine the appropriate location and design of a bank (FR Vol 73, No. 70, April 10, 2008, pg. 19674). The service area considerations in section 173-700-302 include "consistency with land use or watershed management plans" as one criteria used to determine service area.

4.2 Site Selection

During the development team process, the team advocated that the rule should address site selection on two levels. The first is to ensure that banks are established on sites that are sustainable. The second is that a bank site should be selected that is important for the functioning of the watershed, or that is priority restoration site. Such sites would not only be sustainable but they could provide significant ecological benefits to the larger landscape.

The alternatives identified for site selection include:

- A checklist to ensure that the sites proposed for a bank contain the necessary elements important for the success of the site. **Sustainable sites**
- Incentives to encourage the selection of priority restoration sites for bank sites. **Desirable sites**

Both alternatives were included in the rule. The checklist comprises section 173-700-303 and the team agreed that the question of selecting desirable sites for banks was better addressed through the use of incentives rather than through required criteria. This agreement is reflected in the section of the rule on "Ecological Design incentives", section 173-700-300.

4.3 Credit Determination

Alternative 1: ***Establish one set currency for all banks***. Having a uniform currency could facilitate tracking of credit generation and use on a statewide basis. However, this alternative was rejected early in the process. The variety of wetland types, morphology and function vary too much to be adequately addressed by one type of currency. Estuarine wetlands support significantly different habitats, watershed processes and functions than a depressional wetland. These aspects are not interchangeable across wetland types and landscapes.

Currency must provide a way of distinguishing between wetland types and functions. The adequacy and appropriateness of a compensatory mitigation proposal depends upon establishing a nexus between the impact and the compensation. Regulators cannot make that decision until they know what the credit represents in terms of functions and wetland types (e.g. hydrogeomorphic class or Cowardin class). This alternative was rejected because a single currency for all banks would not address the wide range of wetland types and functions that may be provided at one bank and not at others.

Alternative 2: ***Use functions as the currency (e.g. habitat credits, flood attenuation credits, biochemical process credits, etc.).*** This method would require determining the relative level of the wetland's performance of specific functions. Credits would be awarded for gains in functions at a site after the bank's construction. The method must distinguish between pre- and post-bank scenarios. Banks could have a range of credit units based on functions, for instance acre-feet of flood storage or habitat units for individual species.

A variety of function assessment tools have been used in Washington to qualify what functions may be impacted at specific wetlands. It is important to note that the methods do not provide measurements of specific levels of performance of function (Hruby, 1999). The methods evaluate either the potential of a wetland to perform a function or its relative level of performance as compared to a reference wetland representing the highest level of performance for a function. A majority of assessments of wetland functions for impact assessment and compensatory mitigation design do not use a specific methodology but instead rely upon the best professional judgment of a wetland biologist as to what functions a specific wetland provides.
This alternative was rejected because at this time Washington State does not have a quantitative function assessment method that is applicable to all wetland types. The methods that currently exist only cover some wetland hydrogeomorphic types and the methodology is not always applicable to small impacts (debit projects). The rule does, however, include an allowance for this type of crediting approach to be used on individual banks (See section 173-700-321.)

Alternative 3: ***Use wetland area as the currency***. Compensation wetlands are evaluated on their ability to provide similar or higher wetland function to those that have been impacted. Area has been the basic unit of trade for concurrent mitigation in Washington. Mitigation requirements on the state and local levels use compensation (or replacement) ratios to determine the amount of wetland area necessary to provide adequate compensation (McMillan 1998). The US Army Corps of Engineers does not use a ratio system for determining compensation requirements. Instead, they make decisions on compensatory mitigation on a case-by-case basis focused primarily on a best professional judgment of whether a proposed compensation package will replace affected wetland functions.

Ratios provide a management tool for mitigating wetland losses – impacts to higher quality wetlands usually require more acres of replacement wetlands than impacts to lower quality wetlands (Washington Department of Ecololgy 1993). The higher ratios provide significant disincentives to impact a high quality wetland. Ratios provide greater surety for project applicants because they are more predictable and expedient than case-by-case best professional judgment determinations.

In the context of banking, bank credits could be based on the area in the bank. The credits could be tracked by acreage of wetland type or class and a bank may have several types of credits. As discussed in Alternative 1, it is not recommended to have a single "unit" for banks because of the variety of wetlands in the landscape. The same principle applies to an individual bank which includes a variety of wetland types, wetland mitigation activities – such as enhancement, re-establishment, preservation, enhanced buffers – as these areas provide different functions and differences in performance (ecological lift) on a per-acre basis.

This alternative was integrated into the preferred alternative which uses "area-credits" for banks.

4.4 Credit Release

Alternative #1: ***Prescriptive standards***. The rule could set performance standards necessary for credit releases, and specify the interval at which credits are released and how many credits are released at each interval. This alternative would provide complete predictability for sponsors and more efficiency during the proposal review and certification determinations. However, it was rejected because it would not allow the flexibility necessary to address the different types of banks (public, private, joint-venture) and the differing levels of risk associated with different types of wetland bank projects – creation, re-establishment, estuarine restoration, etc.
Public banks can use fewer credit releases in greater amounts than would be advisable for some private banks where the risk of financial insolvency is less. The WSDOT Wetland Compensation Bank Memorandum of Agreement allows for release of 50% of the bank's credits after construction has been approved and the remaining 50% after the bank successfully meets its performance standards (5 Years). It is unlikely that agencies would support a similar arrangement for a private bank.

Alternative #2: ***Flexible standards***. The rule could identify criteria for determining when and how many credits are released, while leaving the actual timing and amounts open. The IRT would set the credit releases for each bank on a case-by-case basis.

This alternative allows the IRT to tailor the timing and amount of credit releases to manage different levels of risk or provide incentives. Banks in areas with highly altered hydrology or without strong documentation of available hydrology could have fewer credits released up front to minimize the risk of losses in the event of bank failure.

Alternatively, banks that focus on priority restoration sites where the likelihood of success is high and the environmental gains are significant could be granted higher numbers of credits released earlier in the bank's operational life to offset the additional costs and work necessary to establish these banks. [50]

One disadvantage to this alternative is that complete flexibility does not provide any predictability for the sponsor and the resulting protracted negotiations necessary on each bank proposal will result in higher credit prices (Shabman et al. 1998). Shabman et al. (1998) noted that the longer the amount of time necessary for regulatory approvals – the higher the price of credits necessary.
This alternative was partially rejected because the lack of predictability for sponsors.

Alternative #3: ***Tiered Approach to performances standards and credit releases***. This rule language would distinguish between two tiers of credit release. At tier one, credits are released because the bank site has met minimum requirements to successfully establish wetland conditions. The second tier would then focus on release of credits tied to the attainment of benchmarks related to the performance of target wetland functions. This alternative is a refinement on what was finally selected as the preferred alternative, which defines two distinct levels of credit releases. Each tier focuses on different aspects and level of ecological functioning for wetland mitigation. The amounts of credits released are tied to the attainment of wetland conditions (*Do we have a wetland?)* and then to attainment of specific function objectives (*Is the wetland doing what we expect it to do at the level we anticipated?).*

The target of the first tier of standards will be to establish the minimum requirements to ensure that, short of a catastrophic event, wetlands are developing at the site. The standard will not determine whether the "correct" kinds of wetlands have developed, but indicate confidence that wetlands will develop on the site. (These wetlands may or may not be the target wetlands for the site). Since hydrology is the primary driver for many wetland functions, failure to achieve at least minimum standards for hydrology indicates that the site has a low likelihood of supporting wetlands. Therefore, attainment of sufficient hydrology to support wetlands will be required prior to a release of a significant percentage of bank credits.

The primary objective of Tier 2 standards is to verify that the bank site is successfully attaining the target wetland functions and non-function elements specified in the bank instrument. (Non-function elements include elements of the bank that are required but which do not directly provide wetland or ecological functions such as signage and

[50] The greater amount of work mentioned stems from the more difficult and/or expensive real estate negotiations necessary to obtain priority restoration sites in a watershed. These sites do not always have willing sellers and can be more expensive once they have been identified as having more value as restoration sites. After the completion of the draft Special Area Management plan for Mill Creek (Green River Watershed), the prices for wet agricultural land along the mill creek corridor jumped from around $7000 per acre to $21,500 per acre. (personal experience, WSDOT – SR 167 Mitigation site selection)

fencing. This tier should include attainment of anticipated wetland communities and structural elements that influence the ability of a wetland to perform specific functions. Since this tier specifically aims at correlating the actual conditions at the bank with the proposed design, the standards will be case specific and should be determined during the bank instrument development stage.

Alternative was rejected because we were not able to come up with blanket performance standards for each of the two tiers which would be applicable to all bank sites.

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Appendix F: Response to Comments and Summary of Changes

The public comment period on the Draft Environmental Impact Statement (EIS) was held from March 18, 2009 to April 23, 2009. Few persons or organizations submitted comments explicitly on the Draft EIS document. Most comments on the Draft EIS were contained in comments submitted on the rule language itself. We made a diligent attempt to find all such comments on the Draft EIS, but Ecology cannot be responsible for improperly submitted comments.

Commentators on the Draft EIS

We organized this list of commentators on the Draft EIS for Washington State's Draft Rule on Wetland Mitigation Banking according to the date of Ecology's receipt of the comment. All of the comments on the Final EIS received during the formal comment period are included in this appendix. Individual comments within each comment submittal are highlighted with a bar and assigned a number. . Responses to each numbered comment follow the comments.

List of Commentators

1. Nolan D. Lattyak – Citizen
2. Gene Derig – President, Friends of Skagit County
3. DeForest Arbogast – Citizen
4. John de Younge – President, Wise Use Movement
5. Mike Shelby – Executive Director, Western Washington Agricultural Association

From: n l
To: Holder, Yolanda (ECY);
Subject: Re: Mitigation Banking Official Comment -addendum-
Date: Tuesday, April 07, 2009 9:49:58 PM

My first paragraph ("1.") is missing a few words; the second to the last sentence should read: "Specific examples need to be codified as law."

Also, please see my two questions at the end of my comments.

Best,

Nolan

Sent from Olympia, Washington, United States

On Tue, Apr 7, 2009 at 9:45 PM, n l <nol.lat@gmail.com> wrote:

> Hello,
>
> Please add these personal comments to the official comments for consideration for rule making:
>
> 1. The term 'avoidable' should be clearly defined. Currently the applicant is referred to federal guidance which is not specific and is not codified as law. All adverse impacts can be avoided: The development can be stopped; a building could be raised above the ground; adaptable architecture can be used to work around sensitive areas; everything is avoidable. A useful term for avoidable needs to be more specific and realistic. A developer can too easily say that if the area to be impacted doesn't fit with the home plans they've bought and are building around, then it's not avoidable. Or they could say that their Return on Investment will be adversely affected and therefore it's not avoidable.
>
> I understand that this issue has come up before and that a new term, "unavoidable" has been defined as "adverse impacts that remain after all appropriate and practicable

avoidance and minimization has been achieved". However the terms "appropriate", "practicable" and "minimization" will mean very different things depending on who the concerned parties are: the developer, the NIMBY neighbor, the state government worker, the concerned citizen, etc. Specific examples codified as law. The term is still ambiguous and open to interpretation, influence and intent.

2. The term 'mitigation sequencing' should be clearly defined, codified as law, given specific examples and enforced. As it stands, mitigation sequencing is defined in Chapter 197-11-768 but it appears that the term is open to interpretation and is optional or discretionary according to research I've done on counties that implement mitigation sequencing. Mitigation sequencing should also be re-thought as it can be arbitrarily applied – terms like "rectifying", "reducing" and "compensating" are not specifically defined. This also leaves room for interpretation, influence and intent.

Projects which are also subject to CWA requirements incorporate the 404(b)(1) guidelines which provide flexibility to mitigation sequencing and the phrase "least environmentally damaging practicable alternative" is open to interpretation.

3. Placement of mitigation banks should not be arbitrary and open to the whims of commerce, entrepreneurs or government. A method should be in place so that mitigation banks can exist in key areas which are lacking or will be lacking guaranteed wild space. An example of a high density growth area is that within the Urban Growth Boundary. As planned, mitigation banks are not required to be within Urban Growth Boundaries and it appears most if not all will not be. Mitigation banks in an Urban Growth Boundary could help provide wildlife corridors in high density growth areas. Wildlife corridors have been shown to be very effective at salvaging

wild populations. This has been a popular and successful method of preservation of wild areas and animal populations in Europe. Moving all wild areas out of an Urban Growth Boundary has several deleterious effects including negative impacts on human health and human morale, decline of certain animal populations and the creation of heat sinks due to large areas of contiguous development.

Though wetland banks are generally going to be located in the area where impacts are to occur this is simply not sufficient. Market forces, whim and convenience cannot successfully dictate true conservation.

4. The Draft EIS (Publication #01-06-022) states on page 20 that "other agencies and local citizens" should be responsible for keeping their county/state/private project in line with regard to mitigation sequencing. This duty should fall to Ecology and there should be enforcement, inspection and investigative capability given to the Department of Ecology to follow-through with this duty.

1-1

5. The Draft EIS (Publication #01-06-022) admits to the concern on page 21 that there can be significant impacts from removing wetlands. But the document does not propose solutions to address specific problem such as the following and therefore does not sufficiently address the issue:

1-2

"Natural areas are considerably more socially valuable when located within developed areas."

"These wetlands can provide vital habitat for native amphibians (Richter 1996) and serve as habitat islands for birds and urban wildlife."

Hydrogeology considerations/compensation watershed considerations/compensation and salmon-stream considerations/compensation will not be sufficient to address this significant quality of life issue.

Nolan D. Lattyak

When and where will I be able to see how the comments are responded to? Will they be aggregated or answered individually?

From: n l
To: Holder, Yolanda (ECY);
Subject: Mitigation Banking Official Comment
Date: Tuesday, April 07, 2009 9:45:59 PM

Hello,

Please add these personal comments to the official comments for consideration for rule making:

1. The term 'avoidable' should be clearly defined. Currently the applicant is referred to federal guidance which is not specific and is not codified as law. All adverse impacts can be avoided: The development can be stopped; a building could be raised above the ground; adaptable architecture can be used to work around sensitive areas; everything is avoidable. A useful term for avoidable needs to be more specific and realistic. A developer can too easily say that if the area to be impacted doesn't fit with the home plans they've bought and are building around, then it's not avoidable. Or they could say that their Return on Investment will be adversely affected and therefore it's not avoidable.

I understand that this issue has come up before and that a new term, "unavoidable" has been defined as "adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved". However the terms "appropriate", "practicable" and "minimization" will mean very different things depending on who the concerned parties are: the developer, the NIMBY neighbor, the state government worker, the concerned citizen, etc. Specific examples codified as law. The term is still ambiguous and open to interpretation, influence and intent.

2. The term 'mitigation sequencing' should be clearly defined, codified as law, given specific examples and enforced. As it stands, mitigation sequencing is defined in Chapter 197-11-768 but it appears that the term is open to interpretation and is optional or discretionary according to

research I've done on counties that implement mitigation sequencing. Mitigation sequencing should also be re-thought as it can be arbitrarily applied – terms like "rectifying", "reducing" and "compensating" are not specifically defined. This also leaves room for interpretation, influence and intent.

Projects which are also subject to CWA requirements incorporate the 404 (b)(1) guidelines which provide flexibility to mitigation sequencing and the phrase "least environmentally damaging practicable alternative" is open to interpretation.

3. Placement of mitigation banks should not be arbitrary and open to the whims of commerce, entrepreneurs or government. A method should be in place so that mitigation banks can exist in key areas which are lacking or will be lacking guaranteed wild space. An example of a high density growth area is that within the Urban Growth Boundary. As planned, mitigation banks are not required to be within Urban Growth Boundaries and it appears most if not all will not be. Mitigation banks in an Urban Growth Boundary could help provide wildlife corridors in high density growth areas. Wildlife corridors have been shown to be very effective at salvaging wild populations. This has been a popular and successful method of preservation of wild areas and animal populations in Europe. Moving all wild areas out of an Urban Growth Boundary has several deleterious effects including negative impacts on human health and human morale, decline of certain animal populations and the creation of heat sinks due to large areas of contiguous development.

Though wetland banks are generally going to be located in the area where impacts are to occur this is simply not sufficient. Market forces, whim and convenience cannot successfully dictate true conservation.

4. The Draft EIS (Publication #01-06-022) states on page 20 that "other agencies and local citizens" should be responsible for keeping their county/ state/private project in line with regard to mitigation sequencing. This duty should fall to Ecology and there should be enforcement, inspection and investigative capability given to the Department of Ecology to follow-

through with this duty.

5. The Draft EIS (Publication #01-06-022) admits to the concern on page 21 that there can be significant impacts from removing wetlands. But the document does not propose solutions to address specific problem such as the following and therefore does not sufficiently address the issue:

“Natural areas are considerably more socially valuable when located within developed areas.”

“These wetlands can provide vital habitat for native amphibians (Richter 1996) and serve as habitat islands for birds and urban wildlife.”

Hydrogeology considerations/compensation watershed considerations/ compensation and salmon-stream considerations/compensation will not be sufficient to address this significant quality of life issue.

Nolan D. Lattyak

When and where will I be able to see how the comments are responded to? Will they be aggregated or answered individually?

Letter 1 – Response to comments to Nolan Lattyak

1-1 Thank you for your comment. Debit projects are regulated under other laws and rules. Ecology is currently following up and inspecting on all certified banks.

1-2 This concern is addressed in Section 2.1.2 Wetland resource tradeoffs within the final EIS.

Recd 4/15/09 @ Mt. Vernon hearing

FRIENDS of SKAGIT COUNTY
110-North First Street, Suite C.
Mount Vernon, WA 98273
360-419-0988

April 14, 2009

Department of Ecology
P.O. Box 46700
Olympia, WA 98504-7600

To Whom It May Concern:

Friends of Skagit County, (hereafter referred to as *Friends*), has many concerns about the Draft Rule on Wetland Mitigation Banking. We believe it is weak and may violate other State and Federal regulations relating to wetland and critical areas protection, shorelines, SEPA, NEPA, GMA and local comprehensive plans and development codes.

The Proposed Rule Making form CR-102 (June 2004) is required when introducing a draft rule. CR-102 asks whether the rule is necessary and being considered because of a Federal Law, Federal Court Decision or State Court Decision. The DOE answered **"NO"** to all 3 questions regarding the Draft Rule for Wetland Mitigation Banking.

Friends has many questions about the use of Wetland Mitigation Banks for compensating the loss of wetlands. Among those questions are these:

--- In that any wetland mitigation banking program is not a requirement of any existing program, rule or law of Washington State or the Federal agencies, why is DOE encouraging this program if the program is only optional?

---Where is evidence that any market analysis was done by the DOE to determine the actual number of acres of wetlands which may require wetland banking as mitigation? If there was no statewide market demand study, why has DOE plowed ahead with the approval of seven banks which are now operating, with ten additional banks proposed?

Attached find DOE's publication 00-06-016 (Evaluation Study 2001). According to the publication, of the 45 compensatory wetland mitigation sites randomly selected:

- 55% were implemented to plan
- 34 projects had performance standards that could be evaluated
- Of those 34 projects, 12 projects (35%) were meeting all performance standards.

---Attached find DOE's publication 02-06-009 (Evaluating Success 2002). Table 6-2 (**Results of studies examining the success of compensatory mitigation**) has the following "Level of Success" percentages cited:

- 13% fully successful
- 33% moderately successful
- 33% minimally successful
- 21% not successful

From another location in Washington, the results were 3% success on 38 sites. On 17 sites, 65% functioned poorly.

From Table 6-3 (**Level of overall compliance of compensation projects**), under the column **"% of Projects in Compliance with all requirements",** compliance percentages range from 29% to 21% to 18%. With percentages such as these why is DOE apparently wasting the public's time and money on considering wetlands mitigation banking as a solution for anything? The evidence of success or even the chance for success is just not there. The following quote is from that same publication: "While the Federal Corps of Engineers conducts regular compliance site visits, **the Washington State Department of Ecology rarely does."** Why would any undertaking with this dismal track record even be considered by DOE?

Friends has even more questions in terms of the openness and fairness of the process that was used to develop the Proposed Rule:

---Why is DOE touting its public process record? If the process is so open, why does the proposed rule state in the Proposed Rulemaking form, sent to the Code Reviser on March 3, 2009 (WSR 09-06-086) that: "...The purpose of this rule is to **encourage** wetland mitigation banking...." Why is DOE holding these public meetings when it appears DOE has already made up its minds on the issue? This does not appear to be a pattern followed by an agency which is truly concerned with what the public says.

---The draft rule changes are not easily tracked: there is no reference to the other laws that might be affected by the rule. New language that was added was labeled "New Section" with no pages that have the strike-throughs -- a reader friendly method which allows the citizen to compare the new with the old.

---It appears the Mitigation Bank Review Team (MBRT) members were selected to advocate for the program. What was the level of scientific ability or experience in Wetland Mitigation Banks which was required of the members? Why aren't scientific credentials listed? Without qualifications listed, a shadow is cast on the unbiased nature of the process. How can the public have confidence in the quality of oversight that is supposed to be provided?

---. Doesn't the promotion of WMBs for agency mitigation purposes negate the very intention of public input policy? Isn't this more of a signal by DOE that the fix is in: that the final decision is a foregone conclusion? And that this is a promise from DOE to the developer that he/she can sell bank credits? How can anyone, looking at the process, come to any conclusion other than that the DOE definitely appears to be promoting WMBs?

Attached is a study by scientists who are recognized as experts in the field of wetland issues by their peers and other professional entities. The study, "Effects of Wetland Mitigation Banking on People", by Professors Salzman and Rhul of Florida State University contains warnings and skepticism about WMBs. It is only one of many professional scientific studies on the subject. I have checked through several volumes of wetland and wetland mitigation studies published by reputable scientists with respected credentials in both academic and field work. I chose the Salzman/Ruhl study for these comments because it is quite comprehensive and not as lengthy as others. While searching through the works of professionals in the wetland science field, I found no papers published as accepted scientific papers or abstracts by any of the individuals listed on the advisory or oversight teams chosen by DOE. Shouldn't a subject as serious as the consideration of wetland mitigation banks be cause for DOE to place crafting of the rule into the hands of recognized scientists who use facts and data to arrive at conclusions?

2-1 ---What credible studies regarding outcomes, not predictions, has DOE staff enlisted in their efforts to work through this rule? Where is the data to convince the public taking part in these proceedings that WMBs have a success rate superior to that of a flip of a coin?

Sincerely,

Gene Derig, President
Friends of Skagit County

Washington State Wetland Mitigation Evaluation Study 2001
Phase 1: Compliance

Washington State Dept. of Ecology. Publication No. 00-06-016

In the Phase I study, out of **Forty-five** compensatory wetland mitigation sites randomly selected:

- **Only 23 projects (55%)** were implemented to plan
- **Only 34 projects** had performance standards that could be evaluated
- Of those 34 projects, **only12 projects (35%)** were meeting all performance standards

While the federal Corps of Engineers conducts regular compliance site visits,
the Washington State Department of Ecology rarely does.

Phase 2: Evaluating Success 2002

Washington State Dept. of Ecology. January 2002, Publication #02-06-009

Table 6-2. Results of studies examining the success of compensatory mitigation

Location of Study and Reference No. a	# Projects Evaluated	Level of Success	Evaluation Criteria
Washington State (10)	**24**	13% fully successful 33% moderately successful **33% minimally successful** **21% not successful**	Wetland acreage, performance standards, goals/objectives, contribution to functions, comparison with wetland lost
Washington/King County (16)	**38**	3% successful **97% not successful**	Replacing functions
Western Washington (20)	**17**	23% functioned well ecologically **65% functioned poorly** 12% were not completed	Vegetation diversity, non-native plant dominance, structural diversity, wildlife use, adjacent land uses, vegetation cover vs. open water

Table 6-3. Level of overall compliance of compensation projects.

Location of Study and Reference No. a	#Projects Evaluated	% of Projects in Compliance with all requirements	Evaluation Criteria
Washington (9)	**45**	**29%**	• Project installed • Installed according to plan • Meet performance standards
Washington (10)	**24**	**29%**	• Establish required wetland acreage • Meet performance standards • Meet goals/objectives
Washington/ western (20) b	**17**	**18%**	• Installation of both development and compensatory mitigation projects as required
Washington/ King County (16) c	**29 (38)**	**21% (16%)**	• Meet performance standards (project installed)

THE EFFECTS OF WETLAND MITIGATION BANKING ON PEOPLE

J.B. Ruhl and James Salzman

(This working paper is under submission for publication.)

Florida State University
College of Law

Public Law and Legal Theory
Working Paper No. 179

January 2006

The Effects of Wetland Mitigation Banking on People

J.B. Ruhl[*] and James Salzman[**]

In the decade since the Corps of Engineers (Corps) and Environmental Protection Agency (EPA) officially blessed wetland mitigation banking for purposes of satisfying mitigation requirements under Section 404 of the Clean Water Act (CWA),[1] the practice has fueled an ongoing debate about its pros[2] and cons.[3] For the most part, however, the debate has focused on the relative advantages and disadvantages of banking programs in terms of administrative efficiency and ecological impact, with little attention being paid to the effects of wetland mitigation banking *on people*. This article presents the first comprehensive empirical study of the demographics of wetland mitigation banking, revealing what has long been suspected—that banking facilitates the redistribution of wetland resources from urban to rural areas, taking with them the important ecosystem service values wetlands provide to human communities.

After an overview of the economic service values wetlands provide, the structural biases inherent in the wetland mitigation banking program, and the lack of information about the effects of wetland banking in general, we present the results of an empirical study of 24 wetland mitigation banks in Florida accounting for over 95 percent of all bank activity. By comparing the demographic attributes of the area around each bank to the areas around the development projects that purchase mitigation bank "credits" to satisfy their mitigation requirements, we show that the loss of wetland resources is concentrated in urban areas, whereas the "compensatory" mitigation provided by wetland banks is concentrated in rural areas, and that the composition of the project area and bank area populations is significantly different. We examine the policy implications of this effect and suggest several steps that can be taken to better understand and respond to its impact on the distribution of ecosystem services associated with wetland resources.

---

[*] Matthews & Hawkins Professor of Property, The Florida State University College of Law, Tallahassee, Florida. This paper would not have been possible without the Herculean research assistance of Adam Schwartz, FSU College of Law Class of 2006. Special thanks are also due to Keith Ihlanfedlt, FSU Eminent Scholar in Economics, and participants in workshops at the University of Minnesota and Georgetown University law schools for project input, and to Kirl Kim and Tom Chapman of the FSU Geography Department for GIS analysis.

[**] Professor, Duke University School of Law and Nicholas School of the Environment.

[1] *See* Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks, 60 Fed. Reg. 58605 (Nov. 28, 1995) [hereinafter Mitigation Bank Guidance]. For a comprehensive explanation of the regulation of land uses in wetland areas under section 404 of the Clean Water Act, see MARGARET N. STRAND, WETLANDS DESKBOOK (2d ed. 1997).

[2] For recent advocacy of the merits of wetland mitigation banking, see Royal C. Gardner and Theresa J. Pulley Radwan, *What Happens When a Wetland Mitigation Bank Goes Bankrupt?*, 35 Envtl. L. Rep. (Envtl. L. Inst.) 10590, 10591-92 (2005).

[3] For a comprehensive discussion of concerns expressed about wetlands mitigation banking, see James Salzman and J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 53 STAN. L. REV. 607, 657-68 (2000).

Wetland Mitigation and Ecosystem Services

When a land development project involves filling of wetland areas regulated under the CWA or similar state laws, one condition of the permit authorizing the activity usually is to require mitigation for the loss of wetland functions. Permittees can accomplish this themselves directly through creation or enhancement of wetlands on the development site (onsite mitigation) or on an offsite location (offsite mitigation), or by paying a fee to fund wetland mitigation by a third party conservation entity in lieu of providing direct mitigation (in-lieu fee mitigation).[4] Wetland mitigation banking provides a third party variation on offsite mitigation by allowing the developer to compensate for the resource loss by purchasing "credits" from another landowner—the wetland banker—who has created or enhanced wetland resources elsewhere.

Although wetland mitigation banking began mainly as a means for state highway departments and other government agencies to satisfy their regulatory wetland mitigation needs by establishing their own banks,[5] several hundred entrepreneurial banks now operate in the nation, selling credits within defined "service area" boundaries to private and public land developers needing to satisfy a regulatory wetland mitigation requirement.[6] Mitigation banking today reportedly accounts for [**X**] percent of all regulatory mitigation carried out under Section 404 nationwide.[7] Moreover, as the shortcomings of onsite and offsite compensatory mitigation provided directly by development project permittees has become increasingly apparent,[8] EPA and the Corps

---

[4] For a comprehensive explanation of wetland mitigation approaches, see ENVIRONMENTAL LAW INSTITUTE, BANKS AND FEES: THE STATUS OF OFF-SITE MITIGATION IN THE UNITED STATES (2002) [hereinafter BANKS AND FEES].

[5] *See* Dennis Durbin, *Wetlands and the Federal Highway Program*, NAT'L WETLANDS NEWSL., Sept-Oct. 2005, at 7; Lawrence R. Liebesman and David M. Plott, *The Emergence of Private Wetlands Mitigation Banking*, 13 NAT. RESOURCES & ENV'T 341, 341 (1998) (before the mid-1990s, 75 percent of all banks were public agency, single-user banks linked to public works projects).

[6] Office of Wetlands, U.S. Environmental Protection Agency, A Watershed Decade 19 (2001), *available at* http://www.epa.gov/owow/home/accomplishments/wetlands.pdf (last visited Oct. 28, 2005).

[7] See [forthcoming Corps report]. The Corps study is based on the first comprehensive nationwide survey comparing the respective shares of mitigation attributable to individual onsite mitigation, individual offsite mitigation, purchase of credits from mitigation banks, and in-lieu fees. A much lower figure of 10 percent for the mitigation banking share had previously been reported by the National Mitigation Banking Association, though the empirical basis for that estimate was not provided. *See* Craig Denisoff, *Banking and Transportation Projects: Merging Ecological Protection and Economic Growth*, NAT'L WETLANDS NEWSL., Sept-Oct 2005, at 9, 10.

[8] Mitigation provided directly by permittees has been described as resulting in numerous "postage stamp" mitigation sites, making it difficult for the Corps and EPA to monitor the permittees' performance. *See* NATIONAL RESEARCH COUNCIL, COMPENSATING FOR WETLAND LOSSES UNDER THE CLEAN WATER ACT (2001). Members of the NRC Committee that produced the report on wetlands mitigation summarized their findings and the findings of numerous other studies in several other publications. *See* R. Eugene Turner, Ann M. Redmond, and Joy B. Zedler, *Count It by Acre or Function—Mitigation Adds Up to Net Losses of Wetlands*, NAT'L WETLANDS NEWSL., Nov-Dec. 2001, at 5; Joy Zedler and Leonard Shabman, *Compensatory Mitigation Needs Improvement, Panel Says*, NAT'L WETLANDS NEWSL., July-Aug. 2001, at 1. *See also* U.S. ARMY CORPS OF ENGINEERS, NEW ENGLAND DISTRICT, SUCCESS OF CORPS-REQUIRED WETLAND MITIGATION IN NEW ENGLAND (2003); WASHINGTON DEPARTMENT OF ECOLOGY, WASHINGTON STATE WETLAND MITIGATION EVALUATION STUDY (2002); NEW JERSEY DEPARTMENT OF

continue to praise the attributes of wetland banking[9] and federal policy now goes so far as to encourage federal agencies to use mitigation banking as their means of compensating for wetlands losses their projects cause.[10] In its ten short years of official endorsement, in other words, wetland mitigation banking has gone from a novel concept to a government promoted and routinely employed wetland mitigation option.

Not surprisingly, because it simplifies offsite wetland mitigation, and thus arguably simplifies development in wetland areas, banking has attracted both praise and criticism focusing on its purported administrative advantages over "first party" onsite or offsite mitigation provided directly by project permittees,[11] as well as on its overall ecological effects.[12] Remarkably, however, what has been missing from this debate is any attention to the *economic* effects of wetland mitigation banking. Wetlands provide important ecosystem service values to human populations, such as flood mitigation, groundwater recharge, water filtration, and sediment capture.[13] These benefits, while unquestionably of economic value if measured in terms of the adverse impacts were they removed or the cost to replace them with technological substitutes, usually are not valued in the marketplace.[14] Recent natural disaster events, such as Hurricane Katrina, make all too clear that this omission is a case of market failure, suggesting that structural barriers exist to rational economic behavior.[15] In particular, because of the complex ecological and geographic attributes of ecosystem services, landowners cannot easily charge for the

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ENVIRONMENTAL PROTECTION, CREATING INDICATORS OF WETLAND STATUS (QUANTITY AND QUALITY): FRESHWATER WETLAND MITIGATION IN NEW JERSEY (2002).

[9] *See, e.g.*, Office of Wetlands, U.S. Environmental Protection Agency, *Wetlands Mitigation Banking*, http://www.epa.gov/owow/wetlands/facts/facts16.html.

[10] *See* 10 U.S.C. § 2694b (authorizing military agencies to use mitigation banks); Pub.L. 108-136, Div. A, Title III, § 314(b), 117 Stat. 1431 (2003) (requiring the Corps of Engineers to promulgate standards facilitating mitigation banking).

[11] *See* Mitigation Bank Guidance, *supra* note __, at 58,607. There is some recently compiled evidence that agencies have greater success monitoring wetland mitigation banks than is the case for "first party" onsite and offsite mitigation provided directly by the project permittee. *See* U.S. GOVERNMENT ACCOUNTABILITY OFFICE, GAO-05-898, WETLANDS PROTECTION: CORPS OF ENGINEERS DOES NOT HAVE AN OVERSIGHT APPROACH TO ENSURE THAT COMPENSATORY MITIGATION IS OCCURRING 19-20 (Sept. 2005). Some studies show the administrative advantages are not necessarily as great as claimed. See MINNESOTA DEP'T NATURAL RESOURCES ET AL., MINNESOTA WETLAND MITIGATION BANKING STUDY 13 (Mar. 1998) [hereinafter MINNESOTA BANKING STUDY].

[12] The debate over the relative merits of "first party" permittee mitigation versus wetlands mitigation banking continues in often heated dialogue. *Compare* Society of Wetland Scientists, *Wetland Mitigation Banking: Clarifying Intent*, NAT'L WETLANDS NEWSL., Sept.-Oct. 2005, at 5 (response of Society of Wetland Scientists to criticism by National Wildlife Federation that Society's prior report on wetland mitigation banking overstated its proven merits), with Julie Sibbing, *Mitigation Banking: Will the Myth Ever Die?*, NAT'L WETLANDS NEWSL., Nov-Dec 2005, at 5 (reply from National Wildlife Federation)

[13] *See* Sandra Postel and Stephen Carpenter, *Freshwater Ecosystem Services*, in NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS 195-211 (Gretchen Daily ed. 1997).

[14] *See* GEOFF HEAL, NATURE AND THE MARKETPLACE: CAPTURING THE VALUE OF ECOSYSTEM SERVICES (2000).

[15] Some wetlands types can absorb over 1.5 million gallons of flood water per acre. Not surprisingly, the most economically destructive flooding in New Orleans was on prior coastal wetland areas that had been drained and developed. *See Nature Destroys, But It Also Can Protect*, THE ENVTL. F., Sept.-Oct. 2005, at 18.

offsite flood or pollutant mitigation benefits flowing from wetlands they own, making the services a positive externality that appears free for the taking to other landowners who benefit from them.[16] Consequently, and understandably, a landowner's decision about whether to convert wetlands to other uses is unlikely to take into account their service value to others. This opens the door to the question whether, if land markets do not adequately take ecosystem service values into account, regulatory programs such as wetland mitigation banking should attempt to fill the gap.

Onsite wetland mitigation, while perhaps administratively cumbersome, is in principle neutral with respect to ecosystem services in the sense that it keeps wetland resources in generally the same location. By contrast, as a convenient "third party" form of offsite mitigation, wetland mitigation banking facilitates moving wetland resources from one location—the development project—to a potentially distant location—the bank site.[17] It may well be that this provides, on balance, a net ecological advantage over onsite mitigation. Even assuming that is the case, however, it *cannot* be the case that the same human population benefits from the ecosystem service values associated with the wetlands when wetlands mitigation banking is the mitigation method of choice. Simply put, if the wetlands move, their ecosystem services go with them.[18] This means that some people inevitably will lose (and others will gain) the economic benefit of wetland ecosystem services when wetland mitigation banking takes hold in a region. On the assumption that people generally object to losing something of value—that is, when they know about it—it seems reasonable to demand that advocates of wetland mitigation banking address the potential the program has to redistribute wetland ecosystem services. Yet the debate over the ecological impacts of wetlands mitigation banking has thus far left out this potential economic impact as a relevant policy concern.

Structural Biases in Wetland Mitigation Banking

To be sure, wetland mitigation banking employs some safeguards designed to ensure ecological performance that can, whether intended or not, also sustain the delivery of ecosystem services to a particular human population. Wetland mitigation banking policy generally requires that the "swap" be for wetlands of similar kind and within a "service area" usually defined by relevant watershed boundaries.[19] Some ecosystem services thus may be provided on the same basis to the human population within the service area

[16] *See* James Salzman, Barton H. Thompson, Jr., and Gretchen C. Daily, *Protecting Ecosystem Services: Science, Economics, and Law*, 20 STAN. ENVTL. L.J. 309, 311-12 (2001).

[17] The propensity for wetlands mitigation banks to be located at significant distances from the development projects to which they sell credits was identified early in the history of banking. *See* MINNESOTA BANKING STUDY, *supra* note __, at 10-11. These early studies did not compile demographic information about the different human populations in the respective locations.

[18] This concern was first raised in Salzman & Ruhl, *supra* note __, at 666-67, and later covered in J.B. Ruhl & R. Juge Gregg, *Integrating Ecosystem Services Into Environmental Law: A Case Study of Wetlands Mitigation Banking*, 20 STAN. ENVTL. L.J. 365 (2001), James Salzman & J.B. Ruhl, *"No Net Loss" and Instrument Choice in Wetland Protection*, NAT'L WETLANDS NEWSL., Jan.-Feb. 2004, at 3, 18, and LEONARD SHABMAN AND PAUL SCODARI, PAST, PRESENT, AND FUTURE OF WETLAND CREDIT SALES 21-23 (Resources for the Future, Dec. 2004).

[19] *See* BANKS & FEES, *supra* note __, at __.

regardless of where the development projects deplete the wetlands and the banks enhance them. But some of the ecosystem services flowing from wetlands are primarily local in terms of who benefits from them, or at least are more pronounced the closer to the wetland one is located. For example, research on the effects of the 2004 Asian tsunami shows that the presence of coastal wetlands significantly mitigated the nearby inland damage caused by the wave forces.[20] Research from Florida has shown that wetlands help regulate local moisture and temperature, which has proven to be of benefit to nearby agricultural lands.[21] Even small wetlands in urban areas, it has been demonstrated, provide important pollutant control services to the local urban population,[22] and clusters of small isolated wetland areas provide important functions as an ecological complex.[23] Hence, moving wetland resources, even within a bank's defined service area, is likely to alter who benefits from the associated ecosystem services.

Indeed, there is good reason to believe that wetland mitigation banking, given its market incentive drivers, will systematically move wetland resources from urban areas to rural areas within a given bank's service area. Entrepreneurial bankers are in the business to make a profit, and thus are likely to seek the least cost land that will produce the desired stream of credits for sale.[24] Land developers are also in their business to make a profit, and are likely to seek the least cost land in the desired development market. It is highly unlikely, however, that bankers and developers will compete for land in the same market—bankers need large tracts capable of wetland restoration, which, if they do exist in a development market area, are likely to be too pricy for the banker to compete with the developers. Indeed, the whole point of wetlands mitigation banking—what makes its economic incentive gears work—is that developers get to wipe out wetland patches in the higher-priced land markets and bankers get to establish wetland banks in the less pricy land markets. One ought not be surprised, therefore, were it to be that development projects using wetlands mitigation banking to satisfy regulatory mitigation requirements are located in urban areas, and that banks are located in rural areas.[25] If so, wetland mitigation banking is likely also to asymmetrically redistribute local ecosystem service values associated with wetlands between those two areas.

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[20] *See* Finn Danielson et al., *The Asian Tsunami: A Protective Role for Coastal Vegetation*, 310 SCIENCE 643 (2005).

[21] *See* C.H. Marshall et al., *Crop Freezes and Land Use Change in Florida*, 426 NATURE 29 (2003).

[22] *See* U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL MANAGEMENT MEASURES TO PROTECT AND RESTORE WETLANDS AND RIPARIAN AREAS FOR THE ABATEMENT OF NONPOINT SOURCE POLLUTION 11-14 (July 2005); Brant Keller, *What We Always Knew: Wetlands Win Hands Down at Pollution Mitigation*, NAT'L WETLANDS NEWSL., Sept-Oct 2005, at 12.

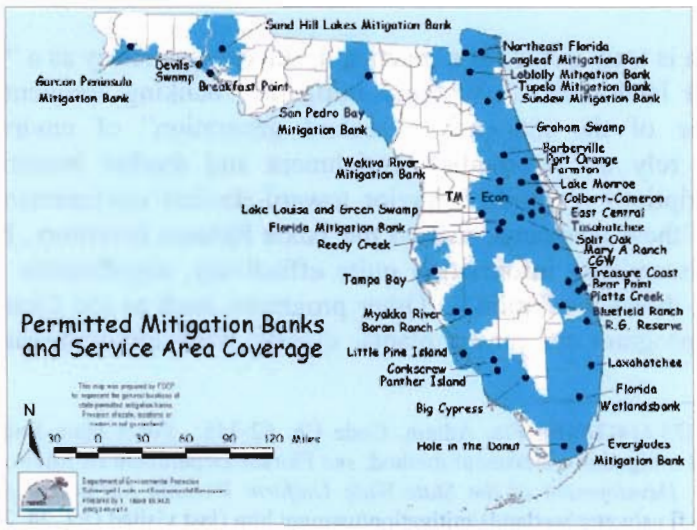
[23] *See* Raymond D. Semlitsch, *Size Does Matter: The Value of Small Isolated Wetlands*, NAT'L WETLANDS NEWSL., Jan.-Feb. 2000, at 5.

[24] *See* MINNESOTA BANKING STUDY, *supra* note __, at 12 (finding that the location of wetland banks is dictated almost entirely dictated by the presence of willing landowners and seldom on ecological or hydrological needs).

[25] A few early empirical studies suggested this urban-to-rural shift effect. *See* Dennis M. King and Luke W. Herbert, *The Fungibility of Wetlands*, NAT'L WETLANDS NEWSL., Sept.-Oct 1997, at 10, 11 (single watershed in Florida); Ann Jennings, Roy Hoagland & Eric Rudolph, *Down Sides to Virginia Mitigation Banking*, NAT'L WETLANDS NEWSL., Jan.-Feb. 1999, at 9, 10.

What We Don't Know about Wetlands Mitigation Banking

The fact of the matter, however, is that we really have no solid empirical foundation on which to assess the impact of wetland mitigation banking on the distribution of ecosystem services, because it is simply not a factor wetland mitigation banking policy has integrated into the decision making calculus or the monitoring protocol. Take Florida's wetland program as an example. Florida's permitted banks include three banks that have sold out of credits, 30 banks actively selling credits, and 10 banks approved for operation but not yet selling credits.[26] So far, over 1000 land development projects have purchased credits from banks in Florida, with over 4800 total credits sold. Credit prices, though not public information, are reported to vary widely, with prices well into the tens of thousands of dollars per credit as the norm.[27] The permitted banks cover over 117,000 acres and have the potential, if they meet all permit conditions, to offer over 36,000 credits for sale. Figure 1 shows the locations of the permitted banks and their combined service areas, which covers about half the land mass of Florida.



That sums up what is known about wetland mitigation banking in Florida. Between the Corps, the Florida Department of Environmental Protection (DEP), and the regional

[26] Florida was an early entrant into wetland mitigation banking, enacting a 1993 statute directing its state wetland agencies to "encourage and participate in the establishment of private and public regional mitigation areas and mitigation banks." Fla. Stat. 373.4135. For information on Florida's wetland mitigation banking program, including the summary information on banks contained in the text paragraph, see Florida Department of Environmental Protection, *FDEP: Mitigation and Mitigation Banking: Questions and Answers*, http://www.dep.state.fl.us/water/wetlands/mitigation/banking.htm (last visited Oct. 28, 2005). Florida operates its state wetlands program, including wetland mitigation banking, in coordination with the federal program the Corp of Engineers administers under Section 404 of the Clean Water Act. *See* OPERATING AGREEMENT BETWEEN THE U.S. ARMY CORPS OF ENGINEERS ET AL., CONCERNING REGULATORY PROGRAMS FOR ACTIVITIES IN WETLANDS AND OTHER SURFACE WATERS, Parts IV – V (1998).

[27] *See* BANKS & FEES, *supra* note __, at __. Liebesman & Plott, *supra* note __, at 371 (one sold out bank in Florida priced its credits at $45,000 per credit in the late 1990s)

water management districts administering wetlands regulation in Florida, none maintains a database of wetland mitigation banking transactions allowing anyone readily to identify the geographic location of land development projects using wetland banks for mitigation or to evaluate the economic, ecological, and demographic impacts of the wetland mitigation banking transactions. Moreover, although Florida, commendably, has recently adopted a uniform method of estimating wetland losses and credits that focuses on wetland functions rather than merely counting acres, the method does not integrate ecosystem service impacts as a factor for approving banks, estimating wetland losses, assigning bank credits, or tracking bank transactions.[28] Overall, nothing about the wetland mitigation banking program in Florida recognizes ecosystem service distribution impacts as a relevant policy consideration, much less provides information with which to evaluate the impacts. Unfortunately, after an exhaustive survey we found that neither the Corps, the EPA, nor any other state administering a wetland mitigation banking program performs any better than Florida in this respect, though the gORM/RIBITS system the Corps and EPA currently are testing would be a significant step forward in wetlands mitigation data management.[29]

This data vacuum is truly ironic for a practice its advocates portray as a "win-win" for the environment and landowners. Wetland mitigation banking frequently is glowingly portrayed as one of the innovative "second generation" of environmental policy instruments that rely on information enrichment and market incentives rather than regulatory proscriptions to guide behavior toward desired environmental management goals.[30] Some of these programs, such as the Toxic Release Inventory, have been shown to collect and disseminate information quite effectively, significantly altering polluter behavior without direct regulation.[31] Other programs, such as the Clean Air Act sulfur dioxide trading program for power plants, closely track environmental behavior and

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[28] *See* Fla. Stat. § 373.414(18)(b); Fla. Admin. Code Ch. 62-345. For a plain English explanation of Florida's impact and mitigation assessment method, see Florida Department of Environmental Protection, *Mitigation Banking: Development of the State-Wide Uniform Wetland Mitigation Assessment Method*, http://www.dep.state.fl.us/water/wetlands/mitigation/uwmam.htm (last visited Oct. 28, 2005).

[29] The Corps and EPA have begun a pilot study in three Corps regional offices of a tracking system, known as Regional Internet Bank Information Tracking System (RIBITS), designed to allow the agency and mitigation banks to monitor bank transactions and ecological performance through an online system. But RIBITS is a restricted access format that limits public access to the information, and it does not track demographic information for a bank or its projects. *See* U.S. Army Corps of Engineers, Engineer Research and Development Center, RIBITS Fact Sheet (June 2005). The Corps and EPA also reportedly are planning to integrate RIBITS with the Corps' GIS-enabled permit tracking data management system, currently under development, called gORM. If successful, gORM/RIBITS will track spatial information associated with all authorized impacts and required compensatory mitigation, including mitigation banks, which will make it much easier to illustrate any spatial redistribution of ecological functions taking place under the 404 permit program.

[30] *See* Gardner & Radwan, *supra* note __, at 10592 (wetland mitigation banking is a "market-based trading system" that creates "economic incentives for mitigation providers to do their jobs well").

[31] *See* U.S. Environmental Protection Agency, *Toxic Release Inventory (TRI) Program*, at http://www.epa.gov/tri (last visited October 28, 2005). For a general discussion of the use and advantages of information disclosure in environmental policy, see Bradley C. Karkkainen, *Information as Environmental Regulation: TRI and Performance Benchmarking, Precursor to a New Paradigm?*, 89 GEO. L.J. 257 (2001).

market trade pricing data to allow evaluation of the program's environmental and economic effects.[32] In sharp contrast, federal and state wetland mitigation banking programs do not assemble data about the land values of development project and bank sites or the price of credit sales, and they do not collect and manage ecological, economic, or demographic data associated with the projects and the banks in any way that makes it easy for landowners, banks, the agencies, or the public to evaluate what is happening. Indeed, if our experience is any indication, it is difficult to obtain even the paper files providing raw data about the projects and banks, much less find an agency that has provided web or archival access to the kind of data compilations that might be useful for evaluating the program.[33]

[32] *See* USEPA, ACID RAIN PROGRAM 2004 PROGRESS REPORT 8-12 (2005) (detailing continuous emission monitoring program).

[33] *See, e.g.*, MINNESOTA BANKING STUDY, *supra* note __, at 14 (finding "there exists a lack of comprehensive, easily-accessible data" on wetlands banking).

Survey of Wetland Mitigation Banking Demographics in Florida

As a first step toward improving the empirical data necessary for opening a dialogue on the ecosystem service effects of wetland mitigation banking, we collected information on all of Florida's active and sold-out wetland banks and all of the land development projects that purchased credits from them to satisfy their regulatory mitigation requirements. Wetland banks are required to maintain paper ledgers documenting their sale of credits.[34] Ledger entries include rudimentary information such as date of sale, number of (but not price of) credits sold, and identification number of the wetland permit issued to the land development project. Taking the 24 banks for which adequate data were available,[35] representing over 900 development projects and over 4000 credits sold, we cross-referenced the permit numbers with other databases to identify the county parcel identification numbers of each land development project location. With parcel identification numbers in hand, we were able to generate the geographic information system (GIS) location, represented as mapped polygon boundaries, for each project and bank. Our first phase of research then focused on mapping each bank and its associated development projects and generating demographic data for all locations to allow comparison of the human populations around them.[36]

Our findings, summarized in Table 1, confirm the hypothesized migration of wetland resources to less densely populated areas, which took place for 19 of the 24 banks studied.

[34] At the time of our research no agency maintained the ledgers in an online form, and ledgers for some banks had not been properly maintained in any form. Obtaining the ledgers form the various state agencies that monitor the banks thus was a surprisingly painstaking process that took over one year and hundreds of telephone and e-mail communications. Of course, we understand that many agency personnel experience heavy workloads and that satisfying our data compilation requests was not in their general job descriptions, and thus are thankful to the many agency personnel who cooperated with our research.

[35] Our study includes 24 of the 33 banks actively selling or sold out of credits. We eliminated banks that had sold credits to five or fewer development projects, on the basis that no demographic pattern has emerged for those banks, and we were unable to obtain adequate data from agencies to compile a sufficiently complete dataset for several of the banks.

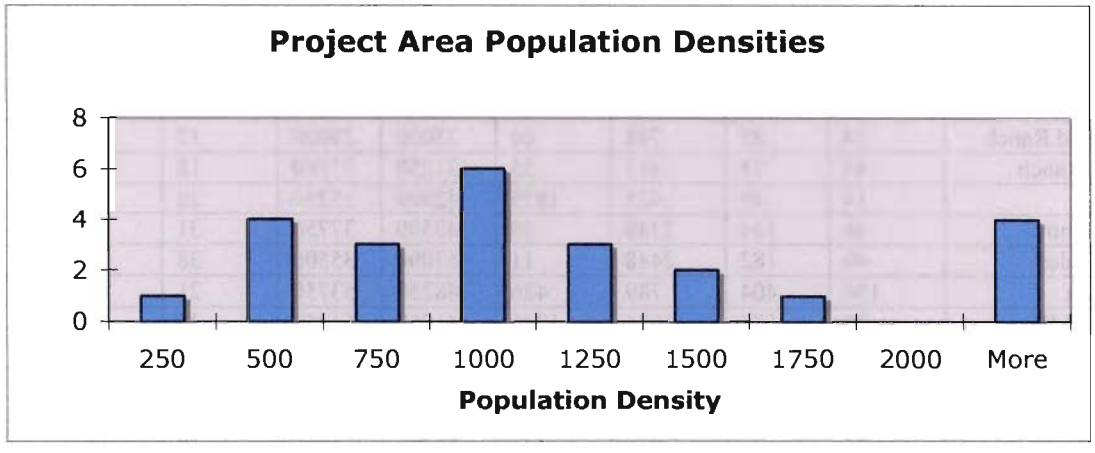
[36] Because our focus is on the relocation of ecosystem services wetlands provide locally, we drew demographic data from a relatively close radius around the locations. For the development projects, we used the demographic data for the census tract in which the centroid of the project was located and computed an average for all projects associated with a bank. For the banks, we used an average of the demographic data for any block group touching within three miles of the bank.

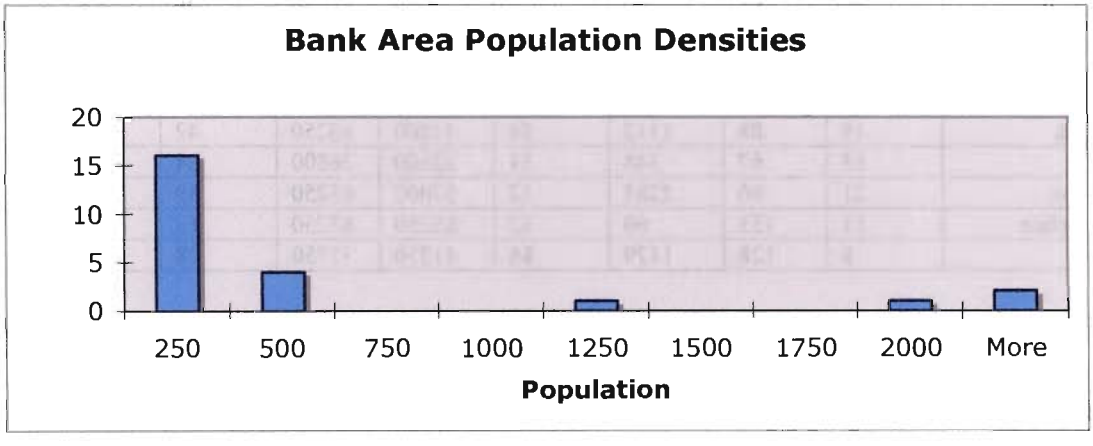
Bank	Projects	Credits sold	Population Density (sq/mi)		Median Income		Percent Minority		Average Distance to Projects (mi)
			Projects	Bank	Projects	Bank	Projects	Bank	
Barberville	15	30	779	34	53750	32250	24	24	21
Big Cypress	20	126	553	4	50500	31250	17	70	35
Bluefield Ranch	24	85	748	66	35000	29000	17	40	17
Boran Ranch	44	74	413	35	31250	37500	18	10	28
CGW	14	40	425	1975	42000	35250	20	29	4
East Central	46	144	2349	39	43500	37750	31	12	16
Everglades	40	182	2448	11	53000	35500	38	42	40
Farmton	136	404	789	486	48250	53750	21	11	20
Florida MB	93	588	1024	1246	41750	64250	37	39	9
Florida Wetlands	63	367	3365	2254	57750	77500	48	41	8
Lake Louisa	25	172	511	116	50000	50000	28	30	19
Lake Monroe	10	233	1713	352	62250	41750	26	18	12
Little Pine	94	97	941	401	44750	37250	18	11	15
Loblolly	20	115	786	211	53500	36250	28	15	11
Loxahatchee	43	157	1376	2469	61250	75750	22	15	13
Mary A. Ranch	18	86	1297	6	39000	66750	28	14	21
Northeast Florida	108	377	987	115	43000	44250	24	21	15
Panther Island	74	935	798	61	55250	35750	12	28	12
Reedy Creek	16	84	460	465	40500	39500	39	40	12
Split Oak	19	88	1112	88	41000	65250	42	10	15
Sundew	13	67	348	31	32500	36500	24	2	18
TM-Econ	21	66	2285	12	57000	65250	39	10	12
Tosohatchee	11	153	60	12	65250	65250	13	10	11
Tupelo	8	128	1179	86	41250	35750	28	13	17

Table 1. This table provides the following information for the 24 mitigation banks in Florida included in our study: (1) number of land development projects that have purchased credits from the bank; (2) total number of credits the bank has sold; (3) the population density of the local populations for the development projects and the bank; (4) the median income of the local populations for the development projects and the bank; (5) the percent minority of the local populations for the development projects and the bank; and (6) the average distance in miles from the bank to its development projects.

The population density distributions in Charts 1 (Projects) and 2 (Banks) illustrate the sharp skewing of project area population density toward the urban end and of bank area population density toward the rural end. For the banks exhibiting this urban to rural shift, the population density around the projects was on average 934 people per square mile higher than for their associated banks. But the pattern for median income and minority population was less clear than for population density. Project area median incomes were higher than bank area incomes for 11 banks, lower for 11, and equal for two. Percentages of minority population were higher in project areas for 15 banks, lower for 7, and within a percentage point for two. Nevertheless, although the directions were mixed, overall there were significant differences in median income and minority populations for project areas and banks. The average difference for median income was $11,750, and the

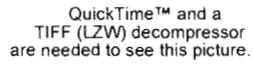
average minority population difference was 13 percentage points. The majority of banks exhibited higher incomes in whichever area had the lower minority population component.





And as shown in Chart 3, the average distance from a bank to its associated project areas was considerable for many banks—over 10 miles for all but three of the 24 banks studied.

When put together, the strong trend of shifting wetlands from urban to rural areas, the significant differences between bank areas and project areas for population density, median income, and percent minority, and the considerable distance between banks and their associated projects all point to the conclusion that completely different populations were winners and losers in terms of locally-delivered wetland ecosystem service values. In many cases, moreover, the projects responsible for filling urban wetlands were tightly clustered, raising the concern that any synergistic effects of an urban wetland complex have been lost. Figure 2, a map showing project and bank locations for the Panther Island bank near Naples in southwest Florida, illustrates this phenomenon.



Hence, even assuming that wetland mitigation banking is administratively and ecologically superior to onsite mitigation, wetlands mitigation banking as implemented has unquestionably redistributed wetland ecosystem services from one set of human populations to another.

Bringing Wetland Mitigation Banking Back Down to Earth

Our research raises more questions than it answers, simply because so little information is available about the economic effects of wetlands mitigation banking. We cannot say, for example, whether the effect of redistributing wetland ecosystem services is to increase or decrease overall social welfare. Moreover, ecosystem services are just one of the values associated with wetlands and land development, so we also cannot say whether any net loss of wetland ecosystem service values is offset by other considerations such as the economic impact of urban development facilitated by the wetlands banking program. Nor would either of those quantifications, if we could perform them, likely remain static. It is certainly possible, for example, that over time the population around wetland banks could grow, meaning that larger populations would enjoy their associated ecosystem services, and that increased economic development values in urban areas losing wetlands far outstrip the costs associated with the lost wetland services. One conclusion we can firmly draw, however, is that wetlands mitigation banking does redistribute some wetland ecosystem services between human populations, and that nothing in federal or state banking programs is tracking this trend, at least not in any way visible to the public.

The question, of course, is whether this should matter for wetlands policy. It is difficult to approach that question intelligently, however, given the data vacuum that exists about the scope and magnitude of the distributional effects. Wetlands mitigation banking procedures do not perform what would be necessary to test the policy implications of the phenomenon—i.e., track the redistribution of wetlands, estimate the effects thereof on ecosystem service values, notify the affected public, and provide opportunity for public input. The "losers" in wetlands mitigation banking—the people in communities losing wetlands to the banking areas—do not even know that they are losing anything of economic value, much less what and by how much. And given that ecosystem services are economically valuable, one could reasonably expect the "losers" at least to be interested in knowing about their loses, so that they may make an informed decision to about whether they care. It only seems appropriate, therefore, to identify the scope and magnitude of the phenomenon before deciding its policy outcome.

But our study suggests more than just a reason to conduct more research. The redistribution effect calls into question two central foundations of wetlands conservation policy. First, it suggests that the national "no net loss" policy is not enough of an answer to the economic pressure to develop in wetlands. Second, it exposes the soft underside of "market-based" environmental management instruments.

No Net Loss Does Not Mean Nobody Loses

Wetland mitigation banking has no doubt played an important role in pursuing the much-heralded goal of "no net loss" of wetlands, which President George H. Bush's administration first ushered in to federal wetlands policy[37] and every subsequent administration has retained as the overarching theme.[38] Even assuming the policy achieves no net loss of ecological function, when the geographic distribution of wetlands changes, one cannot reasonably assert that there has been no net change in the wetlands universe. Wetland banks may provide greater confidence than have other mitigation approaches that compensatory wetland functions are in fact delivered and sustained. That said, however, our study reveals that no net loss does not mean that nobody experiences a loss of wetland service values as a result of wetland mitigation banking. Even assuming a net gain of wetland resources, the redistribution of wetlands inherent in the banking approach has resulted in significant losses of ecosystem service values for some human populations and gains for others. In other words, some people are bearing most of the loss side of the no *net* loss ledger.

Market-Based Does Not a Market Make

Defenders of wetland mitigation banking might be quick to reply that the redistribution of ecosystem services is not a concern because, as a market-based instrument, banking produces the most efficient allocation of resources and therefore the redistribution is, on balance, not only appropriate but desirable. There are winners and losers in any market, the argument would go, so the fact that some people lose ecosystem service values associated with wetlands while others gain is just a consequence of the market.

The problem with this argument is that wetlands mitigation banking is *not* a market, at least not one that can satisfy the principles of efficient allocation. The only reason wetlands mitigation banking exists as a practice is because federal and state laws restrict development in wetlands and mandate compensatory mitigation in return for authorization. The "market" for wetland bank credits, therefore, is purely a construct of the regulatory program. As such, developers seeking to buy credits and bankers seeking to sell them take into account only what is relevant to the regulation-constructed "market" context, and it is clear that the regulatory authorities have not made distribution of ecosystem service relevant to that setting.

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[37] *See* Memorandum of Agreement Between the Environmental Protection Agency and Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, 55 Fed. Reg. 9210, 9211 (Mar. 12, 1990). The United States has lost 50 percent of its original wetland base—about 100 million acres—to draining and filling, mostly for conversion to agricultural uses. The national loss rate has declined over the last 40 years, however, from about 460,000 acres to 60,000 acres annually. *See* Office of Wetlands, U.S. Environmental Protection Agency, A Watershed Decade 19 (2001), *available at* http://www.epa.gov/owow/home/accomplishments/wetlands.pdf (last visited Oct. 28, 2005).

[38] *See* National Wetland Mitigation Action Plan, http://www.mitigationactionplan.gov (last visited Oct. 28, 2005).

Location, location, location is the mantra of any real estate broker, but wetlands mitigation banking has left the location of ecosystem services out of the calculus for evaluating bank credits and development project debits. In that sense, nobody can blame developers and bankers for not taking ecosystem service distribution into account, but neither can anyone reasonably claim that the "market" for credits produces the most efficient allocation of wetland resources. So long as federal and state wetlands regulation programs do not acknowledge the geographic distribution of ecosystem service values as a criterion for regulation and a factor in wetlands mitigation policy, the "market" for wetland mitigation credits will not do so either, and we can only expect what has happened thus far—development projects in urban areas purchasing credits from banks located in distant rural areas.

Next Steps and Pathways of Reform

Our research reveals a conundrum for the evolution of wetlands management policy. Onsite compensatory mitigation keeps wetland resources within the local community, and thus would, if it worked, avoid the problem of redistributed ecosystem service values. But onsite compensation has proven to be unwieldy and unsatisfying given its administrative complexities and inherent disfavor among developers. Wetlands mitigation banking presents just the reverse set of conditions—administrative efficiency and private incentives to produce and sustain mitigation wetlands, but an inevitable redistribution of wetlands and their ecosystem service values. The trick will be how to solve the distribution problem in wetlands mitigation banking, if we decide it should be addressed as a matter of policy, without undermining the administrative and incentive advantages of the banking technique. Several approaches being tested in other resource management regimes seem well-suited to the banking program as well.

Steering Behavior through an Enriched Information Base

Programs such as the TRI reveal the power to change environmentally undesirable behavior in response to the dissemination of information into the public policy marketplace. The impact the TRI had in causing sources of pollution to reduce emissions came down to the fact that it provided citizens in the local area around each source readily accessible data about the quantity and quality of emissions to which they were being exposed. It is not unreasonable to expect, were the public given ready access to the kind of information our research assembled on wetland mitigation banking, that agencies, communities, land developers, and prospective mitigation bankers may alter their perceptions of the pros and cons of particular banking arrangements. This might be motivated by purely passive approaches, such as posting real-time versions of tables and maps like those included herein on the web, leaving it to interested parties to use the data in private and public forums to influence short-term and long-term trends. A more active approach could require development projects and mitigation banks to produce and make public an ecosystem services impact assessment to accompany each credit transaction, thus placing the burden of data collection and transmission on the beneficiaries of the program.

Restructuring Banking Incentives

Whereas information-based instruments rely indirectly on consumers of the information to shape policy responses, the information could also be used by agencies to track the "market" behavior of wetlands mitigation banking and identify points at which active intervention may be justified to alter the incentives structure for particular banks. In other words, to change how wetland mitigation banking influences ecosystem service distribution, we could examine changing the incentive structure. For example, when agency monitoring identifies a region in which migration of wetlands from urban to distant rural areas presents concerns, an incentive premium, such as an enhanced credit allotment, could be awarded to banks that locate closer to the urban areas losing wetland resources. Bankers would have an increased expected revenue stream to offset higher land process, and the urban population would benefit from a bank in closer proximity. Such reforms change expected outcomes but keep wetland mitigation banking market-based in orientation.

Adaptive Regulation

Although structural features give rise to an inherent asymmetry between bank and development project locations, it may be difficult to predict where development projects will locate, at what rates, and in what clustered concentrations. The changing distribution of ecosystem services will be at least as dynamic over time as well. Necessarily, therefore, the decision whether to approve a proposed wetland bank location and service area could, at best, be based on only a rough prediction of future ecosystem service distributions. Information enrichment and market restructuring thus are unlikely to ameliorate all instances in which banking appears to be promoting undue redistribution of wetland ecosystem services. Direct regulatory intervention may be justified in such instances, such as through closing affected areas from further trades while an ecosystem services inventory is conducted and other policy responses evaluated.

Of course, just as with information-based and market-based policies, effective regulation of a dynamic program such as wetlands mitigation banking requires a reliable and continuous stream of monitoring data and room for an agency to make informed adaptive responses. The techniques of adaptive management are well-suited to this kind of large-scale, evolutionary landscape management problem. Rather than define a wetland bank location and service area and never look back, adaptive management involves a process of goal setting (e.g., not to promote unduly disproportionate redistribution of wetland ecosystem services), continuous monitoring (e.g., tracking development locations associated with banks in real time), and decision adjustment (e.g., revisiting service areas, adjusting credit allotments, emphasizing onsite mitigation in certain areas, closer examination of future bank locations, etc.). Agency learning, in other words, should not end at the time of bank approval. The gORM/RIBITS GIS-based mitigation tracking system initiative planned by the Corps and EPA[39] thus would be a step in the right direction.

Conclusion

Our research has revealed a potential downside of wetland mitigation banking—and any form of offsite mitigation for that matter—that had been posited in the literature but never empirically demonstrated to be as systematic and pervasive as our findings suggest. Yet the response should not be to rush to abandon wetland mitigation banking or to radically overhaul its structure. Rather, we suggest further research to identify with more precision the magnitude of ecosystem service redistribution and other socioeconomic effects associated with bank transactions. In short, wetland mitigation banking has been touted as a "win-win" program, but unless someone keeps score we really can't know whether it truly fits that billing.

Furthermore, to the extent we find that wetland mitigation banking has overlooked important effects on ecosystem services, reforms should be measured and adaptive. Corrective measures thus should be implemented carefully, requiring that regulatory

[39] *See* note __, *supra.*

authorities be equipped to conduct adequate monitoring and make adaptive responses as bank transactions progress within a bank's service area. Even with such an approach, it is likely that the any administrative and incentive advantages wetlands mitigation banking has over onsite mitigation will become less pronounced once ecosystem service distribution is taken into account. As it stands now, however, we know that at least part of the advantage wetlands mitigation banking enjoys over onsite mitigation is a function of it not taking ecosystem services distribution into account. We do not know how much this advantages wetland mitigation banking, where, when, or who wins or who loses and by how much as a result. We do not know this because, quite simply, the Corps, EPA, and state wetland agencies have not been asking the right questions. We suggest it is time they begin doing so.

Letter 2 – Response to comments to Gene Derig, Friends of Skagit County

2-1 Ecology used lessons learned nationwide, wetland studies conducted, and experiences from the pilot program to influence the rule language. Please see the list of the wetland studies in the reference section in the final EIS.

From: DeForest Arbogast
To: Holder, Yolanda (ECY);
Subject: DOE WMB Draft EIS comments
Date: Saturday, April 18, 2009 9:00:42 PM

Hi Yolanda,

It was good to meet you, Lauren and Kim face-to-face at the Mount Vernon WMB workshop. You all must have an incredible workload keeping up the WMB Program. Unfortunately, I do not share your optimism for such a program. None-the-less, I wish you the best in making that program work.

Here are my comments on the Draft WMB EIS.

The least sound method for determining the status of the nation's wetlands is data analysis of
regulatory and incentive program data. Unregulated wetlands destruction, wetlands destroyed illegally and losses due to natural events, such as coastal Louisiana erosion, are not even counted. So I will not waste your time recounting all the dismal WMB studies I've read.

3-1 As I see it, the elimination of our natural wetlands to enhance development is an abomination. Your attempts at creating and maintaining man-made wetlands is not even appropriately funded by the
state legislature, thus dooming all the enhanced regulations in Chapter 173-700 WAC. You are, in fact,

3-2 helping to set the stage for further development while at the same time degrading rural communities with the loss of our most valuable farmland.

3-3 One of your stated goals is to "Support sustainable communities and natural resources". Your WMB program appears to be at odds with your goals.

DeForest Arbogast
Camano Island, WA

Letter 3 – Response to comments to DeForest Arborgast, Citizen

3-1 Thank you for your comment.

3-2 Several laws and rules exist for protecting wetlands. These have regulatory processes for reviewing and denying or approving requests that will affect wetlands. This rule does not address these other rules or regulatory processes for authorizing unavoidable impacts to wetlands. Existing laws for wetland protection include but are not limited to: the federal Clean Water Act, the state water pollution control act, and local land use regulations and critical areas ordinances. The rule contains language that discourages the placement of banks on prime farmland 173-700-303 (2).

3-3 Thank you for your comment.

Naturam Expellas Furca *Tamen Usque Recurret*

WISE USE MOVEMENT

P.O. Box 17804, Seattle, WA 98127

April 20, 2009

TO: Yolanda Holder
Department of Ecology
P.O. Box 46700
Olympia, WA 98504-7600
<yhol461@ecy.wa.gov>

RE: Wetland Mitigation Bank Rule and DEIS Comments

The Wise Use Movement has reviewed the proposed rules for Wetland Mitigation Banks (Chapter 173-700 WAC) and submits the following comments on the draft rule and on the draft environmental impact statement (DEIS).

Comments on the DEIS

4-1 The Wise Use Movement strongly objects to the inadequate DEIS. Nowhere does the DEIS comply with the basic requirements of the SEPA rules to "describe the existing environment that will be affected by the proposal." *WAC 197-11-440 (6)(a).* No information is provided to the public concerning the State's historical amount of wetlands or the amount of remaining wetlands which would be filled due to the adoption of the draft rule. Nor does the DEIS provide any appreciation for the age of most of the state's remaining wetlands, which likely date to thousands of years.
We request that the FEIS provide this information.The DEIS is inadequate unless the FEIS is revised to include this information.

4-2 The DEIS is also inadequate because it fails to analyze the requirements of the Growth Management Act (RCW 36.70A.060) to protect critical areas, including wetlands. *RCW 36.70A.030(5).* The GMA does not authorize wetland mitigation banks. The Attorney General has already issued an AG Opinion (2008 No. 1 – January 03, 2008) stating that a certification of a wetland mitigation bank by Ecology does not require a County to issue permits for such a bank. In addition, the purpose of the Growth Management Act is to identify land suitable for development in urban growth areas. RCW 36.70A.110.

Therefore, development should be directed to upland areas within urban growth areas, not to remaining wetlands.

We request that the FEIS address how wetland mitigation banks meet the goals and policies of the GMA to protect critical areas, including wetlands.

4-3 We request that the FEIS address how wetland mitigation banks meet the goals and policies of the GMA to direct development to upland areas within urban growth areas.

4-4 We request that the FEIS address how wetland mitigation banks meet the goal of a net increase in wetland acreage and functions.

Comments on the Draft Mitigation Bank Rule

Overall, the Wise Use Movement is strongly opposed to the adoption of these rules. They fail to protect our remaining existing wetlands. They fail to support the goals and policies of the Growth Management Act or advance the goal of a net increase in wetland acreage and functions. As noted above, the DEIS for the proposed rules is inadequate. In addition, the proposed rules are riddled with loopholes and more weasel words than one typically finds even in Corps of Engineers regulations.

Ecology's News Release dated March 11, 2009, states that Ecology has already certified seven wetland mitigation banks with another seven in the certification process. The Wise Use Movement is strongly opposed to Ecology certifying wetland mitigation banks in the state in the absence of any certification regulations. We request that Ecology decertify all existing banks.

In addition to the wetland mitigation bank problems already listed in the DEIS (p. xiii), there are additional reasons why Ecology should oppose wetland mitigation banking:

4-5 ▪ Banking could promote impacts to wetlands through avoiding mitigation sequencing requirements.

4-6 ▪ Banking is very risky because compensatory mitigation doesn't work and banks will result in larger-scale failures.

4-7 ▪ Banks could result in the net loss of wetlands in some sub-basins.

▪ Use of riparian and upland areas and preservation to generate credits would result in net losses of wetland area and function.

4-8 ▪ Banks will result in the loss of wetlands in urban areas and their replacement in rural and agricultural areas resulting in a redistribution of wetlands on the landscape and a loss of productive agricultural lands.

4-9 ▪ Banks could result in the loss of small, isolated wetlands and their replacement with large, contiguous wetlands.

4-10 ▪ Concerns over listed salmon species could result in banks focusing on fish benefits with resulting losses to non-fish-bearing wetlands.

4-11 ▪ The public will not have adequate opportunity to provide input on the design and requirements for banks.

4-12 ▪ If the bank approval process is not reasonable (i.e. it takes too long) then the environmental benefits of banking will be decreased due to the shorter time frame between bank construction and use of credits.

Wetland Mitigation Banks also compete for wetland restoration sites. According to a 1996 US Geological Survey report:

> "Estimates of presettlement wetland acreage in Washington range from 1.17 to 1.53 million acres, depending on the historical information and research assumptions used (Canning and Stevens, 1989; Dahl, 1990; Washington State Department of Ecology, 1992b). Based on a 1988 estimate by the FWS, about 20 to 39 percent of Washington's wetlands, have been lost during the past two centuries. Other estimates place the total loss as great as 50 percent, and some urbanized areas of the Puget Sound area have experienced losses of from 70 to 100 percent. Estimates of continuing wetland loss range from 700 to 2,000 acres per year. In addition, most of the State's remaining wetlands have been significantly degraded (Washington State Department of Ecology, 1992b,d)." http://wa.water.usgs.gov/pubs/misc/wetlands/

Unfortunately, potential wetland restoration areas such as those where draining can be stopped or dikes breached are the low hanging fruit sought after by mitigation bankers. So instead of having a net increase in wetland area and function, wetland mitigation banking allows these same areas to be used to mitigate for wetland losses elsewhere.

In addition, given the historical loss of wetlands in the state of Washington, there is a critical need to restore wetlands, especially in urbanized areas of Puget Sound. What remains are often isolated wetlands, which still provide needed wetland habitat in a mosaic across the landscape. The filling of isolated urban wetlands doom wildlife that cannot read the map to locate the wetland mitigation bank far away.

Centralized wetland mitigation at a distant wetland mitigation bank site may also doom wildlife at existing wetlands proposed for filling, such as amphibious species that rely on shallow wetlands to avoid fish predation.

Wetland mitigation banks shut out the public from notice and comment on release of credits from such banks. Ecology proposes to allow public comment on the certification of banks, but not on the release of credits. Because the Corps of Engineers has issued nearly 50 nation-wide permits which allow wetland filling without public notice, the public has little to no opportunity to comment on wetland filling in the state of Washington. The Corps will be even less likely to require individual permit applications (which do require public notice and comment) knowing that the applicant can meet nationwide permit mitigation requirements through phony wetland mitigation bank credits.

Wetland mitigation banks substitute wetland preservation or wetland creation for the loss of wetlands which may be thousands of years old.

As noted above, wetland mitigation banks appear to be contrary to the Growth Management Act's requirements to protect critical areas, including wetlands.

Specific comments on the proposed rule are as follows:

***WAC 173-700-100 Background and purpose.** Subsection (2) does not specify that banks will provide mitigation in advance of "unavoidable" impacts to wetlands. By dropping the word "unavoidable," Ecology is signaling that the real purpose of the proposed rules is not wetland avoidance first, but rather, as wetland bankers know full well, to provide mitigation for projects which have no business filling wetlands in the first place. Subsection (3) is also faulty because banks do not prioritize restoration of wetland functions on site. After wetland filling occurs, those wetland functions are destroyed. Restoration of wetland functions should be a priority, but not at the expense, as these rules allow, if filling natural wetlands elsewhere. Subsection (4) is also faulty because it fails to include any role for the public in bank certification.

***WAC 173-700-201 Decision-making procedure.** This section is worthless because Ecology need only "consider" Interagency Review Team, tribal, or public comments submitted to Ecology as part of the certification. Ecology should be required to respond in writing to all substantive comments received.

***WAC 173-700-211 Content of the prospectus.** The proposed rule fails to protect existing wetlands because this section fails to include a requirement disclosing how the bank will alert the public when a credit has been "debited."

***WAC 173-700-212 Submittal of the prospectus.** Subsection (8) should be amended to require that Ecology respond in writing to all substantive comments submitted on the prospectus.

***WAC 173-700-220 Convening the interagency review team.** This section should be amended to include public notice of all IRT meetings.

***WAC 173-700-221 Purpose of the instrument.** Subsection (1) should be amended to include public participation as a purpose of the instrument.

***WAC 173-700-222 Content of the instrument.** This section should be amended to include public participation as an element in the instrument.

***WAC 173-700-223 Preliminary review of the technical elements of the draft instrument.** This section should be amended to clarify that sponsor meetings with the IRT are open to the public.

***WAC 173-700-230 Submittal of the final instrument.** Subsection (4) should be amended to require that the sponsor respond in writing to all substantive public comments.

***WAC 173-700-232 Dispute resolution process.** This section is completely unacceptable. Ecology has shown itself to be a biased agency, incapable of independent judgment. Ecology cannot function as both a signer and a dispute resolution decider. Any dispute must go through an independent dispute resolution process.

* **WAC 173-700-301 Service area.** The proposed rule fails to protect existing wetland because there is no ecological or biological basis for the establishment of banks with a service area in an adjacent WRIA. This option should be deleted.

***WAC 173-700-302 Considerations for determining service area size.** This section fails to account for historical wetland filling in the service area. The higher the wetland loss, the less desirable off-site out of kind mitigation.

***WAC 173-700-303 Site selection.** This section fails to address how allowing the filling of wetlands that may be thousands of years old can be mitigated by banks which can not be guaranteed to be self-sustaining.

***WAC 173-700-312 Default method for determining credits.** The proposed rule fails to protect existing wetland functions by allowing the area of a wetland to function as the default credit unit.

* **WAC 173-700-313 Wetland credit conversion rates.** The proposed rule fails to protect existing wetlands by allowing a 1:1 ratio for wetland creation, the least likely mitigation technique to succeed. The proposed rule fails to protect existing wetlands by allowing preservation of other existing wetlands to substitute for wetland mitigation.

***WAC 173-700-315 Considerations for determining credit conversion rates for wetland preservation.** This section should be deleted, as preservation of existing wetlands does not mitigate for wetland filling elsewhere.

***WAC 173-700-317 Considerations for determining credit conversion rates for banks in urban areas.** This section should be deleted because in urban areas, wetland restoration should take place without tradeoffs for other wetland filling.

***WAC 173-700-318 Credit conversion rates for uplands and other habitats.** This section should be deleted because uplands cannot provide mitigation for filling wetlands elsewhere.

***WAC 173-700-319 Considerations for determining credit conversion rates for uplands and other habitats.** This section should be deleted because uplands cannot provide mitigation for filling wetlands elsewhere.

***WAC 173-700-320 Exceptions to credit conversion rates.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to set a conversion rate outside of the ranges previously specified. This section should be deleted.

*** WAC 173-700-321 Using an alternative method to determine credits.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to use alternative methods to determine credits. This section should be deleted.

***WAC 173-700-330 Schedule for the release of credits.** This section fails to protect existing wetlands because it allows for release of credits without any public notice of comment. Public notice and comment on proposed release of credits should be provided.

***WAC 173-700-331 Credit release--Preconstruction.** This section fails to protect existing wetland by allowing credits to be released prior to construction of a bank and without public notice or comment. This section should be deleted.

***WAC 173-700-332 Credit release--Postconstruction.** This section fails to protect existing wetland by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

***WAC 173-700-333 Credit release--Attainment of hydrologic performance standards.** This section fails to protect existing wetland by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

***WAC 173-700-334 Credit release--Final release.** This section fails to protect existing wetlands by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

*** WAC 173-700-335 Additional credit releases.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to release credits early. This section should be deleted.

***WAC 173-700-410 Obtaining credit releases.** This section fails to protect existing wetlands by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

***WAC 173-700-500 Use of bank credits.** This section fails to protect wetlands by failing to limit wetland filling to "unavoidable" impacts. Just because an impact is authorized does not been that it is not avoidable. In addition, no bank credits should be released without public notice and comment.

***WAC 173-700-502 Use of bank credits outside of the service area.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to approve credits outside of the service area. This section should be deleted.

***WAC 173-700-800 Appeals process.** This section should make clear that any citizen may appeal a final certification or the approval of a bank credit to the Pollution Control Hearings Board.

Conclusion

In summary, the Wise Use Movement remains strongly opposed to the adoption of these rules, because they will likely accelerate wetland loss in the State of Washington.

John de Yonge

John de Yonge
President

Letter #4 – Response to comments from John de Yonge, Wise Use Movement

4-1 Establishment of a bank does not equate to wetland fill. Several laws and rules exist for protecting wetlands. These have regulatory processes for reviewing and denying or approving requests that will affect wetlands. This rule does not address these other rules or regulatory processes for authorizing unavoidable impacts to wetlands. By definition, exactly what wetlands and how much area will be offset by a bank is not known at the time of a bank certification. This EIS evaluates the programmatic effects of the rule and the wetland banking program, not specific banks or impacts.

4-2 The substantive provisions of the GMA do not apply to Ecology certification of a wetlands mitigation bank. The GMA provision relating to the maintenance and enhancement of the agriculture industry and the protection of agricultural lands of long-term commercial significance do not directly apply to siting or permitting a wetland mitigation bank, but are reflected in the regulations that do apply, cited as: AGO 2008 No. 1. Decisions on where to allow and encourage development are made at the local level by the local jurisdiction. The rule does not apply to where or whether wetland impacts are authorized.

4-3 The substantive provisions of the GMA do not apply to Ecology certification of a wetlands mitigation bank. Cited AGO 2008 No. 1. Decisions on where to allow and encourage development are made at the local level by the local jurisdiction.

4-4 Comment noted.

4-5 This rule does not replace existing requirements to avoid and minimize impacts to wetlands. Applicants are required to go through existing regulatory processes when proposing to impact wetlands. Proposing to use credits from a wetland bank does not change existing requirements to apply mitigation sequencing. Whether a wetland impact is unavoidable and authorized is determined through other rules, laws, ordinances and statutes. Regulations protecting wetlands are found under different laws at all three levels of government: federal (Clean Water Act), state (Cht. 90.48 - state water pollution control act) and local land use and critical area regulations. EIS Section 1.1 discusses mitigation sequencing requirements in the state through other regulations. EIS Section 2.1.1 discusses how wetland mitigation banking is not anticipated to increase the amount of wetland impacts in the state. No change needed.

4-6 To ensure banks do not fail, Ecology has built into the rule text numerous safe guards. For example, credits are not released until specific performance standards have been met and financial assurances must be in place. Banks are monitored closely to ensure that problems are caught and addressed early.

4-7 This rule does not change existing requirements to avoid and minimize impacts to wetlands. Applicants are required to go through existing regulatory processes when proposing to impact

wetlands. Proposing to use credits from a wetland bank does not change existing requirements to apply mitigation sequencing. Whether a wetland impact is unavoidable and authorized is determined through other rules, laws, ordinances and statutes. Regulations protecting wetlands are found under different laws at all three levels of government: federal (Clean Water Act), state (Cht. 90.48 - state water pollution control act) and local land use and critical area regulations. Use of bank credits can result in shifts of wetland area and function from one subbasin to another. For additional evaluation of how banks will move wetland resources around on the landscape see EIS Section 2.1.2. This section discusses resource tradeoffs with respect to use of wetland mitigation bank credits.

4-8 The rule does not require that wetland banks be located in rural or agricultural areas. Ecology recognizes that many urban wetlands provide locally significant functions. Ecology included incentives in the rule to encourage the development of banks in urban areas. Decisions on whether bank credits provide adequate compensation for authorized impacts to wetlands are made during the permitting process. Use of bank credits can result in shifts of wetland area and function from one subbasin to another. The concerns raised in this comment are addressed in further detail within Section 2.1 of the final EIS. No change needed.

4-9 Wetland bank credits might be used to mitigate for impacts to isolated wetlands. This rule does not replace existing requirements to avoid and minimize impacts to wetlands. Applicants are required to go through existing regulatory processes when proposing to impact wetlands. Proposing to use credits from a wetland bank does not change existing requirements to apply mitigation sequencing. Whether a wetland impact is unavoidable and authorized is determined through other rules, laws, ordinances and statutes. Regulations protecting wetlands are found under different laws at all three levels of government: federal (Clean Water Act), State (Cht. 90.48 - state Water Pollution Control Act) and local land use and critical area regulations. A wetland bank simply provides one option for offsetting wetland impacts. Without use of a bank, those losses could still be mitigated off site through existing regulatory programs. No change needed**.**

4-10 Potential benefits of a proposed bank to listed species is only one consideration during the evaluation of a proposed bank site and design. The ability of a bank to support salmon recovery does not outweigh the determination on whether use of a bank provides appropriate compensation for a specific wetland impact. No change needed.

4-11 Ecology disagrees. Section 173-700-230, 173-700-240 and 173-700-241 address public notices for banks and specifically require that the department issue a public notice on the final mitigation bank instrument. The purpose of the public notice is to solicit public comments on the proposed certification. The bank instrument contains design and technical requirements of the bank. No change needed.

4-12 Bank credits are not released for use until after a bank is certified. The length of the certification process is not related to the timing of credit releases. No change needed.

Western Washington Agricultural Association

April 22, 2009

Ms. Yolanda Holder
Wetlands Section
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Wetland Mitigation Banks Rule
Review Comments

Dear Ms. Holder,

Thank you for the opportunity to review the proposed administrative rules for the Wetland Mitigation Banks, Chapter 173-700 WAC. We have also reviewed the accompanying documents including the Environmental Impact Statement (EIS), Small Business Economic Impact Analysis Statement, and the Preliminary Cost Benefit and Least Burden Analysis.

Our comments will focus on the principal concern our organization has consistently expressed to the department concerning the development of the Wetland Mitigation Bank Program. The question is 'Aren't we fixing one problem...the loss of important wetlands, by adding to another...the loss of prime farmlands'.

The Wetlands Mitigation Banking statute and implementing rules are the primary regulatory framework that drives wetland mitigation bank project location and design, and ultimately authorizes the construction of these projects. We firmly believe that the proposed rule, in its present form clearly conflicts with the vision and mandate of the state's Growth Management Act (GMA) to protect and preserve farmlands. The GMA calls for the designation of agricultural lands of long-term commercial significance to assure the conservation of agricultural land for their continued use for agricultural purposes. The GMA clearly expresses its desire for the conservation of agricultural lands in order to maintain and enhance the agricultural industry and to discourage incompatible uses. The Wetland Mitigation Banking Program administrative rule must be constructed so as to not defeat the purpose or intent of the GMA or any other state statute that speaks to protecting

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prime agricultural lands for the long-term interest of growing food, fiber and alternative fuels.

5-1 The environmental impact statement provides a reasonable discussion of the agricultural land issues related to siting of wetland mitigation bank projects on farmland. However, we must note that both the economic impact analysis and cost benefit analysis document fail to analyze and quantify loss of farming opportunity or adverse economic impacts related to the agricultural industry affected by the incremental loss of available production farmlands that will result from projects authorized by this program. We were especially discouraged to see a specific statement in the cost benefit analysis which recognizes that "development happens in areas that are being developed, driving up land prices." "While WMB does not allow the mitigation bank to be too far from the impact location, it is likely to be in a significantly more rural area where land is cheaper." The cost benefit analysis acknowledges that development benefits from the program include reducing costs for developers. As we have said before most of the prime agricultural lands in western Washington have already disappeared due to unrestrained growth, development and other land use conversions. **Our remaining farmland base cannot be asked to continue carrying the burden of accommodating these other land uses including developer's wetland mitigation banks**. Our increasingly scarce farmland resources must be preserved, or otherwise protected through mitigation, to assure the sustainability of the few remaining viable local agricultural communities and their economies. For too long we asked ecological systems to subsidize development. Now we are transferring that subsidy to our agricultural natural resource lands. These few remaining prime farmland areas are, like wetlands once were, now the disappearing critical natural resource lands.

As you know, from our conversations and ongoing involvement in the development of this rule proposal we have strongly advocated for the absolute avoidance of authorizing such non-agricultural uses as wetland mitigation banks on prime farmland soils, i.e. those lands designated as "agricultural lands of long-term commercial significance." We will again emphasize our desire to see this exclusion placed in the final adopted rules. To fully address our concerns we would offer the following revisions to the proposed rule language in WAC 173-700-303(2):

(2) Compatibility of banks and agricultural lands of long-term commercial significance (ALLCS).

(a) This program discourages the location of banks on prime agricultural soils designated ALLCS due to the important resource and societal values of those resource lands.

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(b) If a bank is proposed to be located within an area designated as ALLCS:

(i) The project applicant shall provide a showing of 1) extraordinary circumstance and need for the bank project; 2) that there is a local market demand for the bank services; 3) that it will provide significant ecological benefit for the area; and, 4)

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demonstrated steps for avoidance, minimization and mitigation of the project impacts to the agricultural lands.

(ii) A bank proposed to be located on designated ALLCS must be compatible with the intent and purpose of the designated ALLCS, to conserve and maintain agricultural production, food sources, and prime agricultural soils;

(iii) Placement of banks on ALLCS must be consistent with the local government's agricultural natural resource lands goals, comprehensive plan, and zoning and development code;

(iv) The applicant shall demonstrate that the project cannot be sited elsewhere, and will be located on marginal non-prime soils, not as suitable for agricultural purposes, within the designated ALLCS; and

(v) The bank must be sited, designed and constructed to be compatible with and not adversely affect adjacent and nearby agricultural operations. This includes, but is not limited to: Adverse effects on water flows to neighboring farms, and minimizing shading effects on adjacent farms or inflate agricultural land values in the area.

(c) It shall also be demonstrated by the applicant that the wetland mitigation bank, if located on agricultural lands, will not set a precedent for other similar projects that taken together could cumulatively create substantial adverse impact to the designated agricultural lands of long-term commercial significance.

(d)The department shall consult with the local conservation district and the conservation commission to ensure that bank siting is consistent with both local and statewide goals for agricultural land preservation and advances local farmland protection and preservation priorities and goals.

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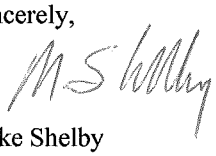
We respectfully request that the department consider the proposed changes recommended above which will provide the necessary provisions to insure that wetland mitigation bank projects will be sited, designed and operated to avoid, minimize and mitigate for the adverse affect of these projects on farmlands. We believe, with the changes recommended, that the program can move forward in a manner consistent with the mandates of the state's Growth Management Act. If the rules remain as proposed we fail to see how they have been reconciled with the intentions of the GMA. And, we are certain that the program will continue to undermine and damage the state's public interest and policy framework enunciated for the protection and conservation of our disappearing prime western Washington farmlands.

Again, thank you for the opportunity to comment on this proposed rule making action. If you have any questions regarding our review, or if you would like to discuss our comments with us, please give me a call (360) 424-7327.

Sincerely,



Mike Shelby
Executive Director

Letter 5 – Response to comments to Mike Shelby, Western Washington Agricultural Association

5-1 Thank you for your comment.

Summary of Draft EIS Changes

Ecology amended the Draft EIS in response to comments, changes to rule language, additional information on wetland mitigation and mitigation banking, and to more clearly describe the rule and impacts.

The changes to the Draft EIS include:

Glossary

- Updated and revised definitions to match definitions in WAC 173-700

1.0 Introduction

- Information concerning the number of entrepreneurial banks approved nationally was added to include information from studies conducted in 2006.
- Updated the historical background with information concerning the *Federal Rule* on compensatory mitigation for losses of aquatic resources, adopted in 2008.
- Revised the last paragraph in Section 1.1.2 to clarify what the rule requires for financial assurances and long-term property protection.
- Updated Section 1.1.5 with information about the Nookachamps Wetland Mitigation Bank, approved in April 2009.

2.0 The Effects of Mitigation Banking

- Updated the chapter in several locations in order to include information from scientific studies conducted since 2001.
- Added text to section 2.1.1 that supports the importance of mitigation sequencing and the role the regulator plays in making permits decisions.
- Revised text on mitigation location preferences in Section 2.1.2 to match with Ecology's *Wetlands in Washington State Volumes 1 and 2* which were published in 2005.
- Updated text to include information from studies conducted in 2007 and 2008 which looked at changes in requirements for mitigation over time and how this impacts mitigation options.
- Included a recent study in Section 2.1.2. on the effects of small cumulative impacts that are not properly mitigated for and the role that banks can play in addressing those impacts.
- Updated information in Section 2.1.3 from a 2006 Environmental Protection Agency study on why banks fail. .

- Included names of specific agencies that are typically part of the Interagency Review Team for banks in order to provide clarity in Section 2.1.3.
- Revised the information on the 2006 EPA study conducted on Ohio wetland banks to clarify the results and conclusions in Section 2.1.3.
- Added long-term management and maintenance to the list of items that reduce potential bank failure in order to match with rule language.
- Included information on assessing wetland functions at the site and basin scale to assist in deciding how to best mitigate for those functions.
- Included how local governments can benefit from wetland banks in Section 2.2.
- Included language in Section 2.2.1. that supports using a watershed approach to mitigation and understanding watershed process to help achieve the goal of no-net loss.
- Added supporting text that addresses the importance of mitigating for temporal loss of wetland functions to Section 2.2.4.
- Updated Section 2.2.5 to include information from studies on the failures of our current approach to mitigation and the positive effects that follow-up have on ensuring compliance of mitigation requirements.
- Added information about Ecology's recent publication of *Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to Understand Watershed Processes.* The document provides a framework and information to assist local planners in making land use decisions on a landscape scale.
- Revised the information on the status of Conservation Banking in Washington State in Section 2.2.6 to reflect the approval of the first conservation bank in the state.
- Added the heading "existing conditions" and text to Section 2.2.8 for consistency with other sections within Chapter 2.
- Included the dispute resolution process for IRT members in Section 2.2.8.

3.0 The Rule: Approach, Certification Process and Operational Requirements

- Updated the chapter in several locations in order to include information from scientific studies conducted since 2001.
- Added language about Ecology's ability to access financial assurance if a bank is not in compliance.
- Included language in Section 3.2.2 to clarify why local jurisdictions should be involved with the review of wetland mitigation bank projects.
- Added Section 3.2.3 "Role of Other State Agencies" in order to provide clarification.

- Removed Environmental Protection Agency from list of agencies that Ecology must notify on the state's concurrence for a tribal bank proposal (Section 3.2.5). This change was made based on final rule language.
- Added long-term management and maintenance information to Section 3.3.2 to provide clarity and support rule language changes.
- Added examples of monitoring for habitat structures to Section 3.3.2 in order to provide examples on additional types of monitoring that may be required on a bank site.
- Included information in Section 3.3.2 on monitoring sites for ten years based on recent studies and revised rule language.
- Added additional credit definitions and changes to the credit tracking process to Section 3.3.3 based on rule language changes.
- Changed "contingency measures" to "adaptive management" in Section 3.3.5 to match rule language.
- Changed compliance mechanisms in Section 3.3.5 from a tiered approach to a Ecology's choice of action in order to match rule language.
- Included information on incentives for urban banks in Section 3.3.6 to clarify on what types of incentives Ecology is providing in the rule.

4.0 The Rule: Technical Requirements

- Updated the chapter in several locations in order to include information from scientific studies conducted since 2002.
- Revised text in Section 4.1.2 regarding the maximum extent of a service areas based on revisions to RCW 90.84.030(2).
- Included additional explanations in Section 4.1.3 on service area determinations in order to provide clarity.
- Revised text regarding prime agricultural soil in Section 4.2.3 and 4.2.4 to match with rule language.
- Added reference to WAC 173-700-313 to Section 4.3.3 to provide additional clarity on credit conversion rates.
- Changed wording in Section 4.3.3 when discussing credit generation from "lower ratios" to "more favorable ratios" in order to match rule language.
- Added additional information on initial credit releases for bank projects in order to provide clarity to Section 4.4.1.
- Included information on why Ecology has set maximum credit release amounts to Section 4.4.3 in order to provide clarity.
- Added additional explanation of performance standards to Section 4.4.3 in order to provide more clarity.

Appendix D

- Revised entire appendix to include final rule language.

Appendix E

- Combined information regarding Alternative#1 and Alternative #2 for Section 3.3.2 Monitoring. These alternatives were the same, so the information and conclusions reached were combined into a single alternative.