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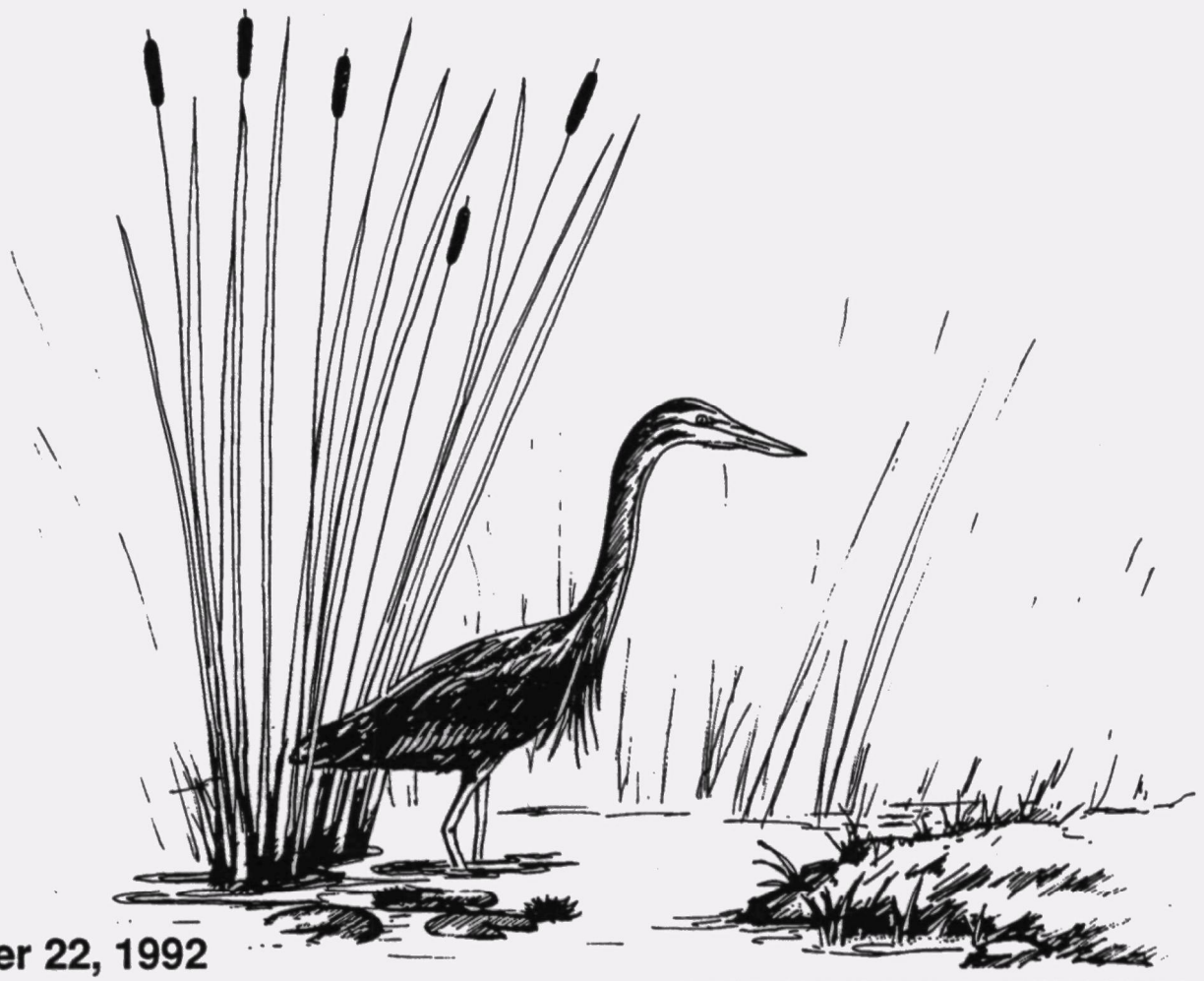
Final Report

# Partnerships in Restoration Workshop
# Mitigation Banking Workgroup



**December 22, 1992**

**Parametrix, Inc.**

Environmental Protection Agency

EPA

# PARTNERSHIPS IN RESTORATION WORKSHOP
# MITIGATION BANKING WORKGROUP

## FINAL REPORT

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# INTRODUCTION

Mitigation banking has been described as a means to comply with policies of no net loss of wetland resources in a manner that optimizes ecological benefits while improving the cost effectiveness of compensatory mitigation. Kusler (1992) provides a relatively comprehensive summary of the pros and cons of mitigation banking.

The U.S. Army Corps of Engineers sponsored a workshop April 16 and 17, 1992 to provide participants opportunities to meet and share information about wetland restoration programs and specific projects and for developing workable concepts and partnerships for wetland restoration.

This forum provided an opportunity to form into smaller workgroups to discuss specific issues (e.g., mitigation banking). The workgroup had about 40 participants representing a broad spectrum of interests. Participants included individuals from local, state, and federal resource agencies, legal offices, consulting firms, port district, and the private sector.

At the beginning of the discussion, the participants in this workgroup were asked if, based on their current perception of its advantages and disadvantages, mitigation banking should be actively pursued in Washington State. About 90 percent felt that mitigation banking should be actively pursued at this time; 10 percent felt unsure, and no one expressed clear opposition to active pursuit of the concept. This crude poll perhaps emphasizes what many have considered inevitable—namely, that compensatory mitigation for loss of wetlands using banking concepts is likely to occur in Washington State in the near future.

For the purposes of this workgroup, a "mitigation bank" is defined as a wetland or other aquatic habitat creation, restoration, or enhancement project that replaces several impacted wetlands in advance of the actual impact (Lewis 1990); Washington Department of Ecology [WDOE] 1992; Environmental Protection Agency [EPA] 1992). Starting with this broad, inclusive definition, the workgroup explored a range of mitigation banking models in order to determine the relative strengths, weaknesses, commonalities, and appropriate applications of each model.

The workgroup's premise was that there are different types of mitigation banks, each with its own distinct application. In this respect, the group explored the conclusion that developing and testing several types of mitigation banks may be appropriate if the full scope of wetland management goals is to be achieved. Ideally and pragmatically, both regulatory and resource planning processes would be used to determine the specific objectives of a given type of mitigation bank. The planning process could be used as the primary mechanism for bank site selection and design; regulatory program guidance could provide the administrative and regulatory agreements for mitigation bank use.

## APPROACH

### MITIGATION BANKING MODELS EVALUATED

The group considered and discussed three generic mitigation bank models to represent the range of compensatory mitigation banking options that could be incorporated into existing planning and regulatory processes. For comparative purposes, the three bank models were also evaluated against compensatory mitigation as currently required. The criteria for determining which mitigation banking models would be discussed were generally characterized as:

- The size of the impact and corresponding mitigation (i.e, could the model be used to offset both small and large impacts?).
- The types of impacts and corresponding regulatory authorities (e.g, could the model be applied more broadly than to just the Clean Water Act [CWA] 404 process?).
- The degree of need for comprehensive planning (i.e., is the model likely to be part of longer term proactive and concerted resource management efforts?).

The resulting models are described below.

#### Model 1—Comprehensive Mitigation Bank

This form of mitigation bank is established primarily within a locally based comprehensive management and land use planning effort such as a Special Area Management Plan (SAMP) or Advanced Identification Process (AIP) (e.g., Mill Creek SAMP, Gray's Harbor SAMP, Eugene AIP, Juneau AIP) typically supported by state and federal regulatory programs. A comprehensive mitigation bank could be used to mitigate for large and small wetland impacts regulated by any level of government. This type of bank could be used by both public and private development entities.

#### Model 2—Consolidated Mitigation for Small, Unrelated Projects

This form of mitigation bank is established to provide cost-effective, simple compensatory mitigation for two types of small project impacts: 1) those for which compensation would not likely be required otherwise because of the lack of practicable mitigation options (e.g., federal 404 nationwide permits) and 2) those from which the ecological benefit of mitigation would be marginal because of small size or isolated location. Furthermore, this type of mitigation bank could potentially be used to compensate for impacts beyond 404 requirements (e.g., impacts regulated under local shoreline permits). Because this approach would likely result in out-of-kind mitigation, regional restoration goals—based on state and federal planning—would need to be developed. Both private and public development entities could use this model.

Model 3—Advanced Consolidated Restoration

This type of mitigation bank would most likely be developed to consolidate mitigation requirements for a number of related projects. For example, a single development entity such as a port district may have long-term plans that would impact a number of wetlands over many years and involve several 404 permits. Assuming that all other criteria for using a mitigation bank are met (i.e., impact avoidance, minimization, and then emphasis on replacement of unavoidably impacted functions), the developer may choose to consolidate the anticipated compensatory mitigation requirements. Alternatively, two or more distinct development entities each may expect to have compensatory mitigation requirements for work in a geographically similar area (e.g., a given watershed or estuary).

This model differs from Model 2 in that the development projects could be of any size and would likely be required to provide compensatory mitigation whether or not a mitigation bank were available. This form of mitigation banking could be used by either public or private developers. Although this model would not necessarily require integration with a wetland/aquatic resource planning process, such integration would clearly be advantageous.

Model 4—Mitigation as it Currently Exists

The workgroup included present mitigation as a basis for comparing the status quo and the three bank models. The current regulatory process does not regularly use comprehensive planning approaches for identifying, selecting, and proactively implementing mitigation priorities. The existing process also does not easily allow consolidation of compensatory mitigation debts. In addition, the current regulatory and mitigation process is not likely to require mitigation for smaller projects because of the high cost per unit, limited ecological benefit, and limited regulatory application (i.e., narrow emphasis on federal CWA 404 permit impacts).

## MITIGATION BANKING ELEMENTS AND SUB-ELEMENTS CONSIDERED

Based on a limited literature review, the workgroup developed a list of procedural and technical elements and sub-elements associated with mitigation banking (Table 1). These elements were then evaluated and discussed in the context of the different mitigation models. Because the workgroup discussed only a limited number of these elements, the amount of detail provided in the following sections varies considerably. Summary documents on mitigation banking by WDOE (1992), Short (1988), Boulé (1991), Ford (1991), and EPA (1992) elaborate on the various mitigation banking elements identified.

**Table 1. Elements of a mitigation bank.**

| | |
|---|---|
| **Planning elements** | • Establish regional geographic boundaries for consolidating off-site mitigation requirements.<br>• Establish regional restoration priorities.<br>• Establish participant consensus.<br>• Define participation obligations and responsibilities. |
| **Technical elements** | • Select site(s). |
| **Policy elements** | • Develop policies and procedural guidelines for site administration.<br>• Establish administrative agent.<br>• Develop legal agreement (MOAs).<br>• Define relationship to regulatory framework. |
| **Site administration/ management elements** | • Administer credit brokering.<br>• Track credit.<br>• Perform contingency work.<br>• Conduct long-term management.<br>• Conduct monitoring/reporting. |
| **Financial elements** | • Obtain up-front financing.<br>• Determine how reimbursement costs are calculated.<br>• Identify funding and other resources for establishment and administration.<br>• Conduct financial management. |
| **Ownership elements** | • One owner, one user—public or private sector.<br>• Public owner, multiple users.<br>• Private owner, multiple users. |

## ASSESSING THE RELATIONSHIP BETWEEN THE FOUR MODELS AND VARIOUS BANKING ELEMENTS

Using the identified elements of a mitigation bank and the four models (three types of mitigation banks and mitigation status quo), a matrix was created and presented (Table 2). The goals were to identify those elements considered the most important in developing the various mitigation banking models and to discuss the necessary information and procedural aspects necessary for satisfying these elements. Through this process, the group attempted to fill in the matrix with the following information:

1. Whether the relationship between the bank model and a given bank element was generally advantageous or disadvantageous with respect to establishing a responsive and effective management tool.

2. Whether a particular sub-element was necessary or unnecessary in order to pursue and implement a given bank model.

3. Whether a given bank model could be used by different combinations of user groups (i.e., development entities).

Table 3 summarizes a pre-workgroup run-through of the matrix based on literature findings and professional judgment.

Table 2. Mitigation banking models matrix.

| Mitigation Banking Elements | Model 1 Comprehensive mitigation bank | Model 2 Consolidated mitigation for small projects | Model 3 Advanced consolidated mitigation | Model 4 Mitigation as exists |
|---|---|---|---|---|
| **Planning** | | | | |
| Establish consensus mechanism | | | | |
| Establish restoration priorities | | | | |
| Establish units for consolidating off-site mitigation | | | | |
| Develop and commit to criteria for bank use | | | | |
| Accept risk burden | | | | |
| **Technical** | | | | |
| Consolidate site selection effort | | | | |
| Consolidate site design | | | | |
| Develop technical criteria for crediting and debiting mitigation units | | | | |
| Develop/agree on functionally based monitoring scheme | | | | |
| Undertake up-front construction | | | | |
| **Policy** | | | | |
| Define participation obligations and responsibilities | | | | |
| Define relationship to regulatory framework | | | | |
| Develop policies and procedural guidelines for site administration | | | | |
| Develop formal agreements | | | | |
| Establish administrative agents | | | | |
| **Site administration/management** | | | | |
| Administer credit brokering | | | | |
| Develop cost-recovery mechanism | | | | |
| Track credit | | | | |
| Maintain site | | | | |
| Perform contingency work | | | | |
| Monitor/report | | | | |
| Conduct long-term management | | | | |
| **Financial** | | | | |
| Obtain up-front financing | | | | |
| Costs decrease per unit effort | | | | |
| Identify funding and other resources for establishment and administration | | | | |
| **Ownership/potential users** | | | | |
| One private owner, one user | | | | |
| One public owner, one user | | | | |
| Public owner, multiple users | | | | |
| Private owner, multiple users | | | | |

Table 3. Matrix based on literature and professional judgment (notes on page 7).

| Mitigation Banking Elements | Model 1[1] Comprehensive mitigation bank | Model 2 Consolidated mitigation for small projects | Model 3 Advanced consolidated mitigation | Model 4 Mitigation as exists |
|---|---|---|---|---|
| **Planning** | | | | |
| Establish consensus mechanism | +N(A) | +N(A) | +N(A) | ?N(D) |
| Establish restoration priorities | +N(A) | +N(A) | -N(D) | -N(D) |
| Establish units for consolidating off-site mitigation | Sub-watershed (A) | Large area (A)[2] | Near impact[3] | Typically on site |
| Develop and commit to criteria for bank use[4] | +N | +N | ?N | -N |
| Accept risk burden | +N(D) | +N(D) | +N(D) | N(D) |
| **Technical** | | | | |
| Consolidate site selection effort | +N(A) | +N(A) | +N(A) | -N(D) |
| Consolidate site design | +N(A) | +N(A) | +N(A) | -N(D) |
| Develop technical criteria for crediting and debiting mitigation units | | | | |
| Develop/agree on functionally based monitoring scheme | +N(A) | +N(A) | ?N | ?N |
| Undertake up-front construction | +N(A) | +N(A) | +N(A) | ?N |
| | +N(A) | +N(A) | +N(A) | -N(D) |
| **Policy** | | | | |
| Define participation obligations and responsibilities | +N(A) | +N(A) | +N(A) | +N(A) |
| Define relationship to regulatory framework | +N(A) | +N(A) | +N(A) | +N(A) |
| Develop policies and procedural guidelines for site administration[4] | | | | |
| Develop formal agreements | +N | +N | ?N | ?N |
| Establish administrative agents | +N(A) | +N(A) | +N(A) | ?N |
| | +N(A) | +N(A) | ?N | -N(D) |
| **Site administration/management** | | | | |
| Administer credit brokering | +N | +N | ?N | -N |
| Develop cost-recovery mechanism[4] | +N | +N | -N | -N |
| Track credit | +N | +N | ?N | -N |
| Maintain site | +N(A) | +N(A) | +N(A) | +N(A) |
| Perform contingency work | +N(A) | +N(A) | +N(A) | +N(A) |
| Monitor/report | +N(A) | +N(A) | ?N | -N |
| Conduct long-term management | +N(A) | +N(A) | +N(A) | +N |
| **Financial** | | | | |
| Obtain up-front financing | +N(D) | +N(D) | +N(D) | -N |
| Costs decrease per unit effort | Yes (A) | Yes (A) | Yes (A) | No (D) |
| Identify funding and other resources for establishment and administration[4] | +N | +N | +N | ?N |
| **Ownership/potential users** | | | | |
| One private owner, one user | -P | -P | +P | +P |
| One public owner, one user | -P | +P | +P | +P |
| Public owner, multiple users | +P | +P | +P | -P |
| Private owner, multiple users | +P | +P | +P | -P |

Key

+N = Necessary
-N = Unnecessary
N = May be necessary
+P = Possible
-P = Not possible
(A) = Advantageous
(D) = Disadvantageous

**Table 3. Matrix based on literature and professional judgment (continued).**

Notes

1. These models are defined on pages 3, 4, and 5.

2. Model 2 could be located and designed to provide a practical mechanism for securing mitigation for small impacts scattered throughout a relatively large region and for which compensatory mitigation would not otherwise be required. Given the large number of project impacts that currently fall into this category, this type of bank, if effectively designed, would likely be both financially viable and clearly ecologically advantageous.

3. Locating mitigation projects on site or as close to the site as possible (i.e., within proximity) is desirable in the absence of clearly defined restoration priorities. Ecologically, however, there may be more optimal locations for restoration than at the project impact site. For this reason, Models 1 and 2 are labeled advantageous here.

4 These four elements would be required of Models 1 and 2, may be necessary for Model 3 to a lesser extent, and would not be required for Model 4. The development of these elements would present additional temporal and monetary costs but would not appear to have much intrinsic value in and of themselves. Simply, these elements would be purely additional costs associated with a banking approach.

# DISCUSSION

## PLANNING ELEMENTS

### Establishing Consensus Mechanisms/Integrating with Regulatory Processes

The first step is to determine which entities are going to participate in the development and establishment of a given mitigation bank. Will satisfying resource protection goals and balancing the interests of the economic development community be possible? How are the individual objectives of the resource agencies different with respect to regulatory policies and mitigation priorities? Resource agencies should actively reach general agreement on the concept and procedures of mitigation banking before numerous individual proposals are considered. In order to avoid obstacles once bank design and implementation actually begins, certain ground rules must be set in advance (Ford 1991). The current interagency meetings exploring a mitigation bank agreement with the Washington Department of Transportation (WDOT) could provide valuable guidance in this respect.

The different approaches to mitigation banking will all require coalition and consensus building and a willingness to break from traditional positions and roles if mitigation banks are going to be fairly and objectively evaluated (i.e., tested). Through this process thoughts and attitudes typically associated with mitigation banking can be refined and the real challenges more clearly defined.

### Establishing Regional Geographic Boundaries

This element is deciding on an appropriate regional geographic boundary for a given mitigation bank. Some examples of regional geographic boundaries include:

- Watersheds or basins within watersheds.
- Upper/lower portions of major watersheds or sub-basins.
- More regionalized units such as Northern Puget Sound, Southern Puget Sound, and Hood Canal.
- Areas at high development risk.
- Areas awaiting long-term comprehensive planning.
- Areas where the costs per unit of mitigation effort unit will ensure a high probability of bank success.

While the geographic unit for Models 3 and 4 would typically be confined to the vicinity of project impacts, Model 1 would be better suited to a watershed or sub-basin unit, and Model 3 could possibly be applied to a more regional geographic area.

### Establishing Regional Restoration Priorities

National Research Council (1992) states that successful restoration will be achieved only if individual projects and actions acknowledge the (ecological/environmental) system within

which the action is taking place—hence the need to establish geographic units containing system functions of interest and to establish goals and objectives for enhancement. Establishing regional restoration priorities involves local, state, and federal entities, other public entities, private development interest groups, and environmental and conservation organizations.

Models 1 and 2 necessitate that this step occurs; Models 3 and 4 do not, and one could thus argue that Models 1 and 2 would more likely result in a successful restoration approach. Even though this step can be costly, this element would be desirable for Models 3 and 4, as well.

Issues to consider in establishing regional restoration priorities include:

1. Deciding whether mitigation banking can be done in the absence of comprehensive wetland/aquatic resource planning.

2. Identifying the key components (e.g., resource inventory, threat assessment, development of long-range vision) of comprehensive wetland/aquatic resource planning.

3. Identifying the key mechanisms for implementing necessary planning elements (e.g., Growth Management Act, watershed management plans, etc.).

4. Selecting priority restoration objectives. For example, restoration goals could be historic habitat types that have been lost, specific wetland/aquatic resource functions, or benefits to specific fish and wildlife species or assemblages.

5. Deciding whether regional restoration goals are pursued in a manner consistent with accepted mitigation sequencing (i.e., avoidance, minimization, compensation). Is there general agreement that regional restoration goals would supersede the sequencing on-site/in-kind, on-site/out-of-kind, off-site/in-kind, off-site/out-of-kind? In addition, ultimate requirements for on-site vs. off-site and in-kind vs. out-of-kind mitigation will need to be established, to some extent, on a case-by-case basis in consideration of the specific types of resource function impacted.

6. Examining historical and current inventories of wetlands/aquatic resource and planning for future changes in land use and growth.

**Developing Criteria for and Commitment to Bank Use**

This element involves deciding if participation is mandatory or voluntary. Currently participation generally is voluntary for both public and private entities. Some forms of mitigation banking such as a SAMP may require mandatory commitment to a mitigation bank (Ford 1991). This sub-element also involves defining the roles and responsibilities of each participant in the mitigation bank in a detailed agreement.

## Accepting Risk Burden

Each participant must accept a certain level of risk (irrespective of the form of mitigation bank implemented). One option for minimizing the risk of poor policy precedents would be to pursue a pilot-scale mitigation banking project (or projects) in the geographic area of interest (e.g., Puget Sound, State of Washington) before opening the door to a myriad of proposals. The pilot project would provide low risk testing for both the workability and process of establishing and tailoring mitigation banks. Participants must recognize that not all forms of mitigation banking or all established mitigation banks may be successful (based on restoration goals and objectives) or desirable (e.g., benefit per unit effort may be limited; the use of a given type of mitigation bank may hinder the effectiveness of the mitigation sequencing process [avoidance, minimization, compensation]).

Participants also accept other risks. Project proponents may not be able to use a mitigation bank they have "bought" into for each and every permitted project. For example, in some instances, resource agencies may insist on on-site or in-kind mitigation. Project proponents must also recognize that they may be required to go through the sequencing process before a mitigation bank can be used to compensate for impacts—a requirement determined largely by the risk of any associated wetland planning processes and the status of a possible general permit. Furthermore, mitigation credits will depend on the degree of ecological success of the mitigation project as determined by agreed-upon criteria.

For the development entity, significantly more risk may be associated with any form of advance mitigation (Models 1, 2, and 3). As monitoring, performance criteria, performance bonding, and contingency actions become more commonly required for individual mitigation projects, however, the risk burden might be expected to lessen in comparison. For the resource itself, more acreage will likely be restored through mitigation banking Models 1 and 2 than through mitigation as it currently exists, even while mitigation sequencing procedures are maintained.

# TECHNICAL ELEMENTS

## Consolidating Site Selection Effort

For Models 1 and 2 and to a lesser extent Model 3, sites would be selected for a mitigation bank in response to regional aquatic resource protection and restoration priorities identified during the planning process. Site selection criteria that reflect the goals of restoration priorities should be considered and defined. Some criteria may include proximity to project impacts, size, local restoration objectives, development goals, cost, biophysical characteristics, position within the landscape, feasibility of site acquisition, risk of development, et cetera. Consideration must be given to conducting an inventory of land and existing and potential ecological functions to determine which areas meet the criteria.

In contrast to mitigation status quo (Model 4), all of the mitigation banking models (i.e., Models 1, 2, and 3) would better allow consolidation of mitigation efforts. Consolidation

would allow potentially significant improvement in both the cost per unit of mitigation effort and the ecological benefit per unit of mitigation effort.

**Consolidating Site Design Efforts**

Investing more time in the design and implementation of a consolidated mitigation project would improve the chance for success, promote realization of restoration/mitigation priorities, and be more likely to acknowledge the site's biophysical characteristics, natural constraints, and a larger array of opportunities. Considering more than one site design (preferred design and prioritized alternatives) is probably wise.

**Developing Technical Criteria for Establishing Credit and Debit Mitigation Units**

This sub-element involves defining bank credit and debit units and establishing a credit and debit process. Establishing a credit and debit system could be based on a range of functional units or "currencies" that should acknowledge the value of the pre-restoration site and extent of restoration activity (i.e., restoration versus enhancement). In the context of Models 1 and 2, this element could force the further development and refinement of functionally based evaluation procedures. Such procedures would directly benefit understanding of wetland system functions and assessment of progress toward no-net-loss goals.

Agreement on standard methods for evaluating and quantifying habitat quality and "value" is essential. An alternative to a functional/habitat basis for a credit and debit process is use of a mitigation acreage ratio for establishing exchanges (Ford 1991). It is also possible to combine acreage and functional/habitat replacement into a credit and debit process.

In establishing the technical criteria for debits and credits, consideration of how the timing of credit use (with respect to ecological development) will affect the amount of credit accepted is also important (i.e., is 1 unit of 5-year-old wetland worth less than 1 unit of 20-year-old wetland?).

**Undertaking Up-front Construction**

This element is completely advantageous to both the resource itself and the resource agencies in that temporal losses are minimized, and the increased incentive to the development entity to successfully complete and document the mitigation action as quickly as possible would likely improve compliance with both requirements and mitigation intent.

Even with assurances based on agreed-to criteria, up-front construction and associated costs could be viewed as a substantial risk if a problem with accessing mitigation credit arose. In the case of mitigation banking, however, the advantages of up-front construction are that economies of scale should reduce overall costs even though the initial investment may be large.

### Developing/Agreeing on Functionally Based Monitoring Scheme

This element requires that the mitigation bank participants define and agree to a monitoring scheme that can support identified performance criteria. It is generally agreed that a functionally based monitoring scheme is the most appropriate. Is there an ideal methodology, or would specific monitoring schemes need to be devised using existing methods as guidance? Is any one existing assessment method available for broad use, or would existing methods need to be modified for the particular site and situation? Examples of methods available to evaluate the functions and values of wetlands include HEP, WET II, Wetland Values (Reppert et al. 1979), and Habitat Assessment Protocol (Simenstad et al. 1991) for estuarine areas (habitat function only). All participants in the bank must agree on the method and parameters to be used. Similarly, participants would have to agree on appropriate ecological models and/or reference sites to use in the design and evaluation of monitoring data.

## POLICY ELEMENTS

### Defining the Relationship to Regulatory Processes

The legal framework of the Memorandum of Agreement (MOA) or other legal agreement should acknowledge and incorporate the regulatory frameworks defined by the resource agencies, preferably across all levels of government. Use of a mitigation bank could be directly related to the existing standard sequencing process (e.g., mitigation banking is to be used only after prescribed mitigation sequencing), or, if the mitigation bank is the result of an approved planning process and subsequent issuance of a general permit, such sequencing may not be necessary. Whereas all four models could be applied to just the federal 404 permitting process, the strength of Models 1 and 2 is their ability to accommodate/consolidate similar types of permitting at each level of government. The role of the regulatory process in establishing and implementing a mitigation bank must be defined in detail. Does the regulatory process primarily drive the way a bank is implemented? Or, can available planning processes provide a primary mechanism by which to design and establish a bank? The most effective and integrated approach would likely merge both regulatory and planning entities.

### Defining Participant Obligations and Responsibilities

All participants in a mitigation banking project should clearly identify in writing their assumed responsibilities and obligations in carrying the project forward in order to identify role overlap and gaps and broadly clarify joint expectations.

### Developing Formal Agreements

A formal agreement must reflect the elements specific to each form of mitigation bank established. The agreement should be simple but formal and clearly written and should: 1) define the allowable, required, and prohibited uses of a bank site and 2) describe the formation process, structure, implementation process, and operation. Some items requiring

formal agreement might include specific debit and credit procedures, design of bank development and management plans, bank life, geographic area of applicability, and evaluation methodology for assessing the degree of restoration success (EPA 1992). Maddux (1986) and Short (1988) identify necessary components of a formalized agreement. Other examples of such agreements are included in Boulé (1991). WDOT is currently working on such agreements with regulatory entities.

### Developing Policies and Procedural Guidelines for Site Administration

Up-front agreements for mitigation bank administration need to be established and will depend on the type and specific purpose of the mitigation bank and the participants. Different mitigation banking models may be used under different circumstances. Will policies for site administration differ throughout the range of mitigation bank models (i.e., would WDOT agreements work well as a model for other types of mitigation bank?)?

### Establishing the Administrative Agent

The administrative agent should be responsible for at least managing the mitigation bank site and administering credits and debits to the bank. Would the signatories to the legal agreement be the administrative agents for the bank? Which entities would be appropriate to select as representative administrative agents? Will the choice differ depending on bank type? What are the specific criteria for being the administrative agent? Could the administrative agent be the bank developer, or should the administrative agent be an independent third party not associated with the development interest (e.g., land trusts, other non-profit entities)? These questions would be worth considering during mitigation bank development.

## SITE ADMINISTRATION ELEMENTS

### Administering Credit Brokering and Credit Tracking

Are credits given only for those portions of the bank that are "functioning"? Or are credits awarded for the most part based on acreage? If credits are based on acreage replacement, must the mitigation be in-kind only? Can additional credits be given for the same parcel twice (e.g., does the value of the habitat increase over time)? What accounting method is used for crediting and debiting activities? Can credits be sold or transferred to participants of the bank or to parties not included in the original formal legal document? Many of these types of decisions may need to be reviewed and approved by some form of interagency oversight committee.

Bank credits and debits should based on a method of evaluating habitat function. The specific assessment methods and monitored parameters will depend on the bank's specific function objectives. Determining a method for evaluating habitat function is perhaps one of the most difficult elements, but it is also one of the most important because the credit used to offset a project's impacts will depend on the ecological evaluation methodology. The methodology would be used to assess both pre- and post-mitigation functions. Some

examples of evaluation methodologies include Adamus et al. (1987), Zedler and Langus (1990), US Fish and Wildlife Service (USFWS) (1980), Karr et al. (1986), Baird (1989), Reppert et al. (1979), and Simenstad et al. (1991).

### Cost Recovery Mechanisms

Costs include investment of resources in terms of people and money (for restoration, acquisition, monitoring, management, maintenance, and administration). If multiple entities are allowed to use a given bank as needed, up-front funding must be secured to develop the bank. This up-front funding could come from resource agencies, private non-profit entities, or a core of development interests.

As one specific example, the funding for a mitigation bank similar to Model 2 (for small, unrelated projects) would probably have to come from either resource agencies or non-profit funding since development interests would have little direct incentive to provide mitigation that would largely be used by other developers—unless, that is, there were market incentives to provide such a service. Such incentives would have to be grounded on the belief that the regulatory agencies would routinely require mitigation for individual, small projects. These requirements would in turn be practical only if the per-unit cost of the mitigation were within reason.

## SITE MANAGEMENT ELEMENTS

Centralizing long-term management responsibility from a myriad of development interests to a single site-management entity makes implementation and oversight of monitoring, performance criteria evaluation, contingency implementation, and site maintenance easier and potentially less expensive per unit effort. With respect to this element, Models 1 and 2 would be advantageous.

### Managing and Maintaining Mitigation Site

Over what time period should the site be actively managed and maintained (e.g., until all credits have been expended or until the banks goals and objectives are met and documented)? What stewardship entity should oversee long-term management and maintenance needs?

### Contingency Work: Monitoring and Reporting

The same ecological evaluation methodology used to quantify credits should be used to monitor the degree of ecological success of the mitigation project in meeting intended goals. A time schedule for monitoring and report preparation and submittal should be clearly articulated in the formal agreement. Similarly, the financial responsibilities for correcting identified problems or initiating contingency actions must be clearly defined and linked to quantifiable performance standards.

## FINANCIAL ELEMENTS

### Up-front Financing

Establishing a mitigation bank will involve significant up-front expenses. Should up-front costs be the sole responsibility of bank participants? How can financing be guaranteed? Some form of financial assurance will likely be necessary. Such financial assurance could be in the form of a letter of credit with a standby trust, a fully funded trust, or a surety performance bond with a standby trust (EPA 1992).

### Decreasing Costs per Unit Effort

The costs for a bank should be less than for piecemeal mitigation, especially in the long term.

### Identification of Funding and Other Resources for Establishment and Administration

The financial responsibility of the bank should be tied to the parties that develop and receive the credits from the bank.

## OWNERSHIP ELEMENTS

Boulé (1991) describes a number of examples of different ownership/user scenarios. Argonne (no date) identified 40 mitigation banks at some phase of development. Of these, only seven were used by private interests for mitigation; 28 of these banks were related to state development activities. A number of port-development-related mitigation banks were also identified.

### One Owner, One User, Private

An example of this type of participant would be a large housing development or other planned development that results in small encroachments into wetlands.

### One Owner, One User, Public

This type of participant could include state departments of transportation, public port districts, cities, and counties.

### Public Sector Owner, Multiple Users

This type of participant could include port districts, utilities, road, public works, cities, counties, and so on.

**Private Sector Owner, Multiple Users**

No banks of this type exist, but prototypes are proposed in New Jersey and California. A typical participant might be a coalition of developers within a given geographic area.

## SUMMARY AND RECOMMENDATIONS

1. There is more than one type of mitigation bank. Many of the broad conceptual criticisms of mitigation banking appear to be based on a single and overgeneralized conceptual model of what a mitigation bank is. Each type of mitigation bank has a specific potential application and its own strengths and drawbacks. A number of these mitigation bank types merit close consideration and test application before myriad banks are proposed and accepted—that is, mitigation bank options should be actively but methodically pursued.

2. Many critical and yet common elements are associated with the range of mitigation banking models. Policies and guidance on these common elements should take place in a regional context rather than on a case-by-case basis to ensure predictability, consistency, and efficiency in the design, testing, and acceptance of mitigation banking approaches.

3. Mitigation bank development can be approached through regulatory and/or planning processes. Nationally, most existing mitigation banks have been developed and implemented almost completely with a relatively narrow regulatory focus. From this perspective, most mitigation banks developed to date have resulted from reactive rather than proactive resource agency efforts—that is, resource agencies have been responding to development-oriented proposals rather than formulating various best-case mitigation bank models. Currently, however, a number of mitigation banking projects under development are being proposed as part of comprehensive planning activities (e.g., Eugene, Mill Creek).

4. Discussion and design of mitigation banks need to be incorporated into non-regulatory resource agency planning processes. Examples of such planning processes might include the Puget Sound Management Plan's wetlands program and local government watershed and wetland management plans. Although SAMPs and AIPs are examples of such locally based planning processes, both require extensive time commitments on the part of the regulatory programs that may hinder the efficient transfer of useful mitigation banking models.

5. Regional planning forums and processes should be utilized in the design and implementation of mitigation banks. The permit-by-permit regulatory approach will not likely be able to effectively or efficiently handle the workload associated with developing, testing, and transferring mitigation banking applications. Where localized restoration goals are not yet developed, regional restoration goals and objectives could be used to objectively guide the design of mitigation bank sites. The Puget Sound Management Plan's wetland restoration element is one potential example of such a regional planning forum/process.

## REFERENCES


Adamus, P.R., ARA Inc., E.J. Clairain, Jr., R.D. Smith and R.E. Young. 1987. Wetland Evaluation Technique (WET). Vol. II. Methodology. U.S. Army Corps of Engineers Waterways Experiment Station. 178 pp.

Argonne National Laboratory. 1992. Wetland Mitigation Banking Project Summary, Argonne National Laboratory, Argonne, Illinois.

Baird, K. 1989. High quality restoration of riparian ecosystems. Restoration and Management Notes, 7: pp. 60-64.

Boule, M.E. 1992. Mitigation Banking: Opportunities and Constraints, presented to the Snohomish County Planning Department, Everett, Washington.

Environmental Protection Agency. 1992. Mitigation Banking Guidance, Region IV, Atlanta, Georgia.

Ford, K.E. 1991. Wetland Mitigation Banking: A Potential Tool for Resource Management Planning, Masters Thesis. University of Washington.

Karr, J.R., Fansch K.D., Angermeier, P.L., Yant P.R., and L.J. Schlosser. 1986. Assessing biological integrity in running waters: a method and its rationale, Special Publication 5, Illinois Natural History Survey, Urbana, Illinois.

Kusler, J. 1992. The Mitigation Banking Debate in: Natural Wetlands Newsletter. Vol. 14, No. 1.

Lewis, R. R. 1990. Wetland restoration, creation, enhancement terminology: suggestions for standardization. pp. 417-422 In: J.A. Kusler and M.E. Kentula (eds) Wetland Creation and Restoration. The Status of the Science. Island Press. Washington, DC.

Maddux, R.D. 1986. Estuarine mitigation banking: a chance for predictability. University of Washington. Master of marine affairs thesis, Seattle, Washington. 202 pp.

Natural Research Council, 1992. Restoration of Aquatic Ecosystems, National Academy Press.

Reppert, R.T., W. Sigleo, E. Stakhiv, L. Messman, and C. Meyers, 1979. Wetland Valves Concepts and Methods for wetlands evaluation. U.S. Army Corps of Engineers, Institute for Water Resources, Research Report 79-R1.

Short, C. 1988. Mitigation Banking. U.S. Fish and Wildlife Service, Biol. Report. 88 (41) Washington DC.

Simenstad, C.A., C.D. Tanner, R.M. Thom, and L.L. Gonquest. 1991. Estuarine Habitat Assessment Protocol, U.S. Environmental Protection Agency, Region 10, Seattle, WA.

U.S. Fish and Wildlife Service. 1980. Habitat Evaluation Procedures. ESM 102. Fish and Wildlife Service, Division of Ecological Services, Washington, D.C.

Washington Department of Ecology. 1992. Wetlands Mitigation Banking, Washington Department of Ecology, Olympia, Pub. No. 92-12.

Zealer, J.B. and R. Langes. 1990. A manual for assessing restored and natural coastal wetlands. Pacific Estuarine Research Laboratory, San Diego State University, California.