

**ALTERNATIVE MECHANISMS FOR COMPENSATORY MITIGATION:
CASE STUDIES AND LESSONS ABOUT
FEE-BASED COMPENSATORY WETLANDS MITIGATION**

*Prepared as part of the
USACE National Wetland Mitigation Banking Study*

WORKING PAPER

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PREFACE

This report was prepared by Apogee Research, Inc. in conjunction with the National Wetland Mitigation Banking Study (NWMBS) conducted by the U.S. Army Corps of Engineers, Institute for Water Resources (IWR). The report was prepared by Ms. Elise Bacon, Apogee study manager, under the direction of Ms. Lynn Lamar, IWR Principle Investigator, Dr. Robert Brumbaugh, IWR NWMBS manager, and Dr. Eugene Stakhiv, Chief, Policy and Special Studies Division.

In the course of inventorying wetland mitigation banks early in the National Study, a number of fee-based compensatory mitigation arrangements were also identified. IWR tasked Apogee Research, Inc. to undertake studies on a number of arrangements (6) that fit the general description of fee-based compensatory mitigation. This paper presents descriptions of the characteristics of the case study fee-based compensatory mitigation arrangements. For each of the case studies, the paper discusses: the roles and responsibilities of the various parties involved in setting up and implementing each arrangement (i.e. Federal and state agencies, and permittees); the operating agreements; the administration of fees; and other aspects of each arrangement. Detailed information on how the fees were established was not available for most of the case studies, but some general principles and considerations for fee-based compensation are presented. This document is considered a resource for the overall NWMBS, and will not be published as a final report.

EXECUTIVE SUMMARY

The six fee-based compensatory mitigation arrangements described in this report are essentially variations on one theme: permittees compensate for wetlands impacts through monetary contributions to an entity that will apply such funds to ongoing or future wetlands projects. While specific fee-based arrangements may vary, depending on specific objectives, regulatory situations, or existing institutional relationships, the similarities among programs point to several key elements:

- Involvement of relevant state and sometimes Federal agencies other than the Corps (e.g., EPA, FWS, state departments of natural resources) in the development of fee-based compensation programs is important to securing their support and avoid potential conflicts later (even when such agencies may not be involved in implementing or overseeing compensatory mitigation);
- The appropriate Corps district's support of fee-based compensation is essential, either through individual permitting or through granting general permits that include fee-based compensation options;
- Development of an agreement that spells out roles and responsibilities of the various parties involved in implementing fee-based compensation and/or with regulatory oversight. Where several parties are involved, MOUs may be most appropriate, but where only the Corps district and fee-recipient are involved, letters of agreement or permit provisions may be sufficient;
- One organization needs to assume the lead role in fee-based compensation to coordinate the various elements of such programs, including fee collection and disbursement, site selection and mitigation, and site management -- it is not necessary that the lead agency be the fee-recipient;
- A method to determine fees should be agreed on before implementing such transactions so that fees are imposed consistently and fairly -- typical costs included in fees are site selection and acquisition, wetlands restoration, creation, and enhancement, and long-term management and monitoring;
- Some kind of special account, such as a trust fund, is a useful mechanism to collect and disburse compensation fees -- rules for its management and use should be established and clearly specified; and
- Provisions should exist that establish responsibility for long-term management of mitigation sites and secure funding for such management.

Public agencies and conservation organizations have sponsored fee-based compensation as a way to improve the ecological benefits generated by off-site wetlands projects which mitigate for unavoidable wetlands losses. Fee-based compensation arrangements also provide opportunities to

achieve economies of scale that individual mitigation does not generally provide, especially in the areas of site selection, planning, design, construction, and management.

Despite such benefits, several concerns about fee-based compensation exist. For example, some regulators and environmentalists are uncomfortable with the concept of acknowledging fulfillment of mitigation requirements for projects that have not been completed, begun, or in some cases, identified. And while a perception exists that fee-recipients such as state agencies and conservation organizations have a more successful wetlands restoration or protection record, this may not always be the case.

The fee-based compensation approaches illustrated in the case studies indicate that fee-based compensation can be a viable compensatory mitigation option. Moreover, experiences in the case study programs indicate that fee-based compensatory mitigation options, in general, are quite flexible in their organization and implementation. Parties in the case studies have designed fee-based compensation arrangements that are tailored to meet specific objectives within many different organizational and regulatory settings.

INTRODUCTION

Fee-based compensatory mitigation describes arrangements where Section 404 permittees satisfy mitigation requirements by contributing predetermined or negotiated fees to organizations carrying out wetlands restoration, creation, and/or enhancement projects. In-lieu fees, fee-based compensation, and monetary compensation are other terms that have been used to describe this arrangement. This report examines the establishment, operation, use, and management of fee-based compensation in six case studies. The purpose of this evaluation is to provide information that will be helpful in evaluating the potential for these arrangements to satisfy mitigation requirements.

The case study programs were identified and selected with guidance and assistance from the Institute for Water Resources (IWR), through the Corps Wetlands Mitigation Banking Survey and an IWR-sponsored telephone survey of Corps district offices. The six case studies presented in this report are:

- Arkansas Nature Conservancy;
- Dade County, Florida;
- Ohio Wetlands Foundation;
- Maryland Nontidal Wetlands Compensation Fund;
- St. Tammany Wetlands Mitigation Bank, Louisiana; and
- U.S. Army Corps of Engineers Vicksburg District Office.

After each case study was identified, the state resource agency, the nonprofit organization, or Corps district that has taken the lead in coordinating fee-based compensation were interviewed by phone. Through these interviews, other principal parties were identified and subsequently interviewed to gain a more complete picture of the fee-based program. The case study interviews focused on the legal authority, administrative transactions, eligibility requirements, and operating procedures of the programs. The case studies are structured similarly to allow easy comparisons across programs and are presented in alphabetical order by sponsor.

Three additional fee-based compensation mitigation programs identified and investigated as possible case study candidates were not pursued as case studies due to various circumstances (e.g., too early in program development and planning stage, insufficient information available at this time, program severely limited in scope and function). These three programs are: the South Florida Regional Wildlife Conservation Area, Collier County, Florida; the Winfield Creek Wetlands Mitigation Bank, Dupage, Illinois; and the Elk Grove West Vineyard Urban Study Area, Placer County, California.

Key Features of Fee-Based Compensation as Represented by the Case Study Programs

Fee-based compensation arrangements involve trusts and special financial accounts, and programs or ad-hoc agreements where money is paid to a conservation entity for implementation of either specific or general wetland projects. Such projects can include wetland restoration, creation or enhancement, and as well as various aspects of management of the sites. Where impacts are frequent and small, formal fee-based compensation programs can be established to accommodate the mitigation requirements through memoranda of agreement and other guiding documents. Fees are usually combined to fund projects that are larger and expected to be more ecologically beneficial than mitigation implemented individually. The program managers may either use the mitigation fees alone to fund the wetland projects, or combine them with programmatic or other sources of funds (e.g., penalty fees, voluntary contributions). In instances where the need for alternatives to on-site mitigation are infrequent, ad-hoc arrangements have been utilized where regulatory agencies determined that fee-based compensation is appropriate.

Fee-based compensatory mitigation has several key features. First, the regulatory agency, whether state, regional, or Federal consider mitigation requirements fulfilled (on the part of the permit applicant) upon payment of the fees. These fees are charged in-lieu of the direct provision of mitigation by permittees. At the time of payment, most fee-funded wetland mitigation projects have either not yet broken ground, or are incomplete. Second, organizations receiving compensatory mitigation fees--fee recipients--may pool fees and fund wetland projects that are larger than the sum of the individual impacts of permittees contributing fees. Fee-recipients may fund projects with fees from five permittees or from 100 permittees. Such wetland projects may be funded solely with compensation fees, or some combination of compensatory fees and other sources of funds (e.g., penalty fees, voluntary contributions). In such cases, it is possible that credits could accrue and as such, a banking operation would be effected. Another term is sometimes used, synonymous to fee-based compensatory mitigation--"in lieu fee" compensation. However, the term "in-lieu" fees can have different meanings. Most typically, the term is used to refer to collection of fees for some future, perhaps unidentified program in-lieu of a specific compensatory mitigation action.

A key feature of many fee-based compensation arrangements is the establishment of a trust fund, or similar account, that receives compensatory mitigation fees and disburses such funds to appropriate wetlands restoration, creation, and enhancement projects. These funds can also be used for management of the sites. In four case studies, Dade County, the Ohio Wetlands Foundation, Maryland Department of Natural Resources, and the Louisiana Nature Conservancy, trust funds have been established as part of fee-based compensation programs. Trust funds have not been established in conjunction with fee-based compensation involving the Arkansas Nature Conservancy or the Vicksburg District.

Several terms help distinguish the various arrangements observed in the case studies. Fee-based compensation in Dade County, Florida, Ohio, Maryland, St. Tammany Parish, and the Vicksburg District (under the hydrocarbon exploration general permit) is institutionalized and occurs on a regular basis. As a result, this report sometimes refers to these arrangements as fee-based compensation "programs." Several case studies describe fee-based compensation that occurs on an irregular or case-by-case basis, and these arrangements are sometimes referred to as "ad-hoc" in this report. Ad-hoc arrangements characterize fee-based compensation arrangements involving the

Arkansas Nature Conservancy and the Little Rock District, and the Vicksburg District (under individual permitting).

Organization of Report

The six fee-based compensation case studies follow this introduction. These case studies describe the development, implementation, and operation of compensatory mitigation. In the section following the case studies, this report compares how specific elements of fee-based compensation were implemented in each of the case study programs. This comparison includes an discussion of the strengths and drawbacks of each approach.

The concluding section identifies several principal elements of fee-based compensation drawn from the case study programs. This section discusses the benefits that attracted state agencies, Corps districts, and non-profit conservation organizations to fee-based compensation options, and identifies several concerns about fee-based compensation as a mitigation option. Finally, this section presents several lessons about the development, implementation, and operation of fee-based compensation arrangements gleaned from experiences with such arrangements in the case studies.

THE ARKANSAS NATURE CONSERVANCY AND THE LITTLE ROCK DISTRICT

The Little Rock District allowed fee-based compensatory mitigation in at least six instances after other mitigation options were rejected. In each case, permittees paid compensatory mitigation fees to the Nature Conservancy's Arkansas field office. On at least one occasion, the Memphis District, which shares regulatory jurisdiction in Arkansas with the Little Rock District, allowed a permittee to pay such a fee to the Arkansas Nature Conservancy (the Conservancy) to satisfy mitigation requirements. The Conservancy applied compensation fees to wetlands acquisition and enhancement projects. For all permits, the District determined the amount and type of mitigation required, applying mitigation ratios of greater than 1:1 for certain kinds of wetlands. When fee-based compensatory mitigation has been allowed, the District determined fees based, in large part, on the Arkansas Nature Conservancy's estimated cost for purchasing the land and performing the amount and type of mitigation dictated by the District. As a result, compensatory mitigation fees per acre varied in each instance, reflecting mitigation ratio requirements that take into account the type and extent of wetlands impacted.

Impetus for the Arkansas Nature Conservancy Accepting Compensatory Fees

The relationship between the Arkansas Nature Conservancy and Corps Districts has developed largely as a result of three circumstances: (1) a mutual interest in wetlands enhancement and restoration; (2) an occasional need for permittees to perform (or otherwise pay for) compensatory off-site mitigation; and (3) consistent willingness on the part of the Conservancy to accept such fees and apply them to its wetlands restoration and enhancement projects. As early as 1987, the Little Rock District allowed a permittee to pay a compensatory mitigation fee to the Conservancy (permit number 26-5729). The Memphis District engineer signed a permit allowing fee-based mitigation in September of 1988.

According to Conservancy staff, District and Conservancy personnel share information about Conservancy restoration projects and permittee mitigation needs on an informal basis. District regulatory staff may visit Conservancy offices to determine if the Conservancy has any projects suitable for permittee participation. District personnel then visit the site prior to making any decisions about whether permittees may satisfy compensatory mitigation requirements through payments to the Conservancy.

Operating Agreements

Permits have provided the legal basis for fee-based compensation in the Little Rock and Memphis Districts; no formal operating agreements exist between the Arkansas Nature Conservancy and the Districts. Special conditions of the permit specify that compensatory mitigation shall be satisfied in the form of a specific payment to the Conservancy. Special conditions also specify the compensation amount and how the funds are to be used. Four examples of requirements that appeared as special conditions in permits where fee-based compensation was allowed are presented in Exhibit A.

In letters from permittees to the Conservancy accompanying compensatory fees, the District frequently require that permittees specify in writing the purpose for which the Conservancy may use

compensatory fees. The District also may require written notification from the Conservancy that it has received compensatory fees specified in permits. Additionally, in some cases, the District has furnished the Conservancy with copies of permits or responses to permittee inquiries when the Conservancy has been named as a recipient of compensatory fees.

Exhibit A

Examples of Permit Special Conditions Specifying the Terms of Fee-Based Compensation

- *The permittee shall provide for the enhancement of 53 acres of wetlands located in the Blackwell Joint Venture Project. This action shall be accomplished by the contribution by the permittee of \$2,000 to the Arkansas Nature Conservancy with the specific stipulation that the money be used for the enhancement of wetlands on this tract. No construction shall begin on the site until the Arkansas Nature Conservancy has notified the Little Rock District Corps of Engineers that it has received the contribution. (Special Conditions a. and b., Little Rock District permit number 5729-2).*
- *As previously agreed, compensatory mitigation in the form of a contribution of \$2,875 shall be made to the Arkansas Nature Conservancy for the purchase of wetlands. (Special Condition 1, Little Rock District permit number 6258).*
- *A donation of \$750 shall be given to the Nature Conservancy by the applicant for purchase and restoration of wetlands. Proof of the donation shall be submitted to our office prior to commencement of any work. (Special Condition 4, Little Rock District permit number 6547).*
- *The applicant has elected to provide a \$6,500 donation to the Arkansas Nature Conservancy for the acquisition of at least eight acres of land, in lieu of acquiring and holding mitigation land. The Arkansas Nature Conservancy has agreed to purchase on the applicant's behalf, cleared land, preferably land previously in agricultural production, that has soil and hydrological characteristics similar to those on the proposed site. The Arkansas Nature Conservancy will provide verification that at least eight acres of suitable property will be secured by the donation made by the applicant. The permit is not valid until the District Engineer has received appropriate verification that mitigation funds have been received by the Arkansas Nature Conservancy. (Special Conditions 1 and 2, Memphis District permit number Tenmile Bayou-3).*

Eligibility for Fee-Based Compensation

The Little Rock and Memphis Districts determine eligibility for fee-based compensation on a case-by-case basis. In the six fee-based compensation cases allowed by the Little Rock District, other means of compensation (e.g., on- or off-site mitigation) were infeasible for all or a portion of permittees' mitigation requirements. Sometimes, fee-based compensation was used to satisfy only a portion of compensatory mitigation requirements. In the instance where the Memphis District allowed fee-based compensation, no viable on- or off-site mitigation options existed. According to the Memphis District, it is not averse to the practice of fee-based compensation, but few permittees have ever proposed such an alternative.

The Little Rock District neither encourages nor discourages fee-based compensation. When an applicant proposes fee-based compensation as part of his mitigation plan, the District provides the applicant with information about what agencies and nonprofit conservation organizations might be able to apply compensatory fees to wetlands projects that would satisfy the permittee's mitigation requirements. District staff generally conduct site visits to mitigation projects to which compensatory fees may be dedicated.

Table 1 below describes the instances identified by the Little Rock and Memphis Districts in which permittees satisfied all or part of their compensatory mitigation requirements by paying fees to the Arkansas Nature Conservancy.

Table 1

Fee-Based Compensation Cases Where Arkansas Nature Conservancy Received Fees

Permittee (date)	Acres Impacted	Acres Compensated	Mitigation Fee
LR6258 (11-13-89)	0.25	3	\$2,875
LR6263 (11-6-90)	28.0	40 off-site (and 35.5 on-site)	\$30,000
LR5729 (11-3-87)	2.0	4	\$2,000
LR5729-2 (5-11-91)	2.7	53	\$2,000
LR6547 (12-11-91)	0.58	1 (and 0.3 on site)	\$750
Memphis Tenmile Bayou-3 (9-12-88)	7.28	8	\$6,500

Determination of Fees

Little Rock District regulatory staff determine compensatory mitigation fees on a case-by-case basis, according to the nature and extent of impacts and the cost of the project to which compensatory fees will be paid. The District requests project cost information from the Conservancy

for this purpose. To date, the permit applicant's total compensatory reflects a mitigation ratio of greater than one to one.

Administration of Fees

Payment of compensatory mitigation fees is made directly to the Conservancy, which holds the funds until they are applied to a specific project or type of project as specified in the permit and the permittee's letter to the Conservancy. In at least one instance, the Little Rock District required a permittee to stipulate in his letter to the Conservancy that the funds must be placed in an escrow account if, for some reason, the Conservancy was unable to apply compensatory fees to the purchase of wetlands in a specified tract. In such an event, compensatory fees would remain in escrow until the Conservancy could use them to acquire wetlands elsewhere in Arkansas (Little Rock District permit number 26-5729).

Current Status

At the time this report was completed, the District reported that it is processing several permits that may result in compensatory fees being paid to the Arkansas Nature Conservancy.

Evaluation

The advantages of the fee-based compensation arrangements described in this case study are several, benefitting permittees, the District, and the Arkansas Nature Conservancy. The permittee is afforded an opportunity to mitigate quickly and easily, after he has avoided, minimized, and mitigated on-site to the extent possible. This opportunity is important for those permittees that have financial difficulty accessing the technology and equipment necessary to carry out mitigation and cannot afford land for mitigation sites.

Under these arrangements, the District is confident that the Conservancy will adequately and successfully fulfill mitigation requirements that it imposes. District staff specifically mentioned the Conservancy's mission to protect, preserve, and restore wetlands and related ecosystems as a goal in common with mitigation.

The Arkansas Nature Conservancy benefits from additional funds to apply to its wetlands projects, furthering its mission and wetlands objectives in the state. Conservancy staff said they worked with the District to review plans for wetlands projects that received compensatory fees to ensure that the project met specified mitigation requirements. Both the Conservancy and the District see the Conservancy's missions and goals as consistent with permittees compensatory mitigation obligations.

Under current practice, the Conservancy is concerned that the letters between the permittee and the Conservancy constitute a contractual arrangement. The Conservancy would prefer to have an agreement with the District that it would accept compensatory fees and apply them to appropriate or approved wetlands projects. In the future, the Conservancy and the District may formalize their arrangement in a Memorandum of Understanding or similar agreement.

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References:

Little Rock District Permits: W-D-050-03-6258 (11-13-89); W-D-050-03-6263 (11-6-90);
Nationwide Permit 5729 (11-3-87) and 5729-2 (5-11-91); and Standard Permit 6547 (12-11-91).

Memphis District Permit: Memphis Tenmile Bayou-3 (9-12-88).

DADE COUNTY, FLORIDA

The U.S. Army Corps of Engineers (the Corps) and its wetlands regulatory counterpart at the County level -- The Department of Environmental Resource Management (DERM) -- have offered fee-based compensation as an option in Dade County, Florida over the last several years. The practice was initially sanctioned by the Jacksonville District when it conditioned individual permits to allow permittees to make monetary contributions to Dade County for a large-scale wetlands enhancement initiative to fulfill Federal mitigation requirements. Eventually, the District issued a general permit, providing all Section 404 permittees with similar impacts within a designated geographic area the option of contributing funds to the County initiative. Part I of this case study describes the origins, administration and status of fee-based compensation in the East Bird Drive Basin area of Dade County, as provided for under the District's general permit.

Currently, the DERM and the District, in coordination with other agencies, are developing a separate fee-based compensation program that will involve mitigation of wetlands impacts in two distinct Dade County basins with a large-scale, off-site wetlands restoration project. Planning this program is a complex endeavor as it involves not only the Jacksonville District and DERM, but the State agency with regulatory authority over wetlands. Part II of this case study describes the fee-based compensation program currently being developed for the Bird Drive and North Trail Basins. These two basins are adjacent to, but distinct from, the East Bird Drive Basin where fee-based compensation has been allowed under a Jacksonville District's general permit.

Part I - East Bird Drive Basin

Overview of Fee-Based Compensation in the East Bird Drive Basin

Agreements between three principal parties provide for fee-based compensation practices in the East Bird Drive Basin of Dade County, Florida: the Jacksonville District, DERM, and the Everglades National Park (the Park). The Jacksonville District allows DERM to administer the Federal permitting process for selected types of wetlands impacts in an area of the East Bird Drive Basin. In conveying their authority, the District endorses DERM's fee-based compensation program. DERM's fee-based compensation program allows individuals proposing to impact wetlands to contribute monies to the Wetlands Mitigation Trust Fund (the Fund) in lieu of directly undertaking mitigation activity. Money from the Fund is channeled to the Park expressly for a wetlands enhancement program in the East Everglades. The Park implements enhancement activities in the East Everglades -- exotic vegetation control -- with contributions from the Fund in accordance with a Memorandum of Agreement signed by the Park and DERM. In addition to permittee contributions from the Fund, the Park receives contributions from the Florida Department of Environmental Regulation (DER), the South Florida Water Management District, and other public and private corporations.

Origins of Fee-Based Compensation in the East Bird Drive Basin

Fee-based compensation in Dade County originated in June 1987 with a resolution of the Dade County Board of County Commissioners that authorized voluntary monetary contributions to the East Everglades Exotic Vegetation Control Program for wetlands enhancement. Developers in Dade County whose activities required a Class IV permit from DERM (required for any impact to freshwater wetlands as defined by the County) were given the option to make a monetary contribution to the East Everglades program to fulfill county mitigation requirements.

The Jacksonville District began employing the County's established fee-based compensation mechanism by conditioning individual Section 404 permits for wetlands impacts in areas of the East Bird Drive Basin to allow permittees to fulfill Federal mitigation requirements with monetary contributions to the County's East Everglades Program. In this initial stage of Section 404 permittee participation in the county's fee-based compensation program, the hydrogeologic area of the East Bird Drive Basin did not constitute a wetlands according to DERM regulations, and thus impacts did not require a county permit. According to Corps of Engineers criteria, however, some areas of the East Bird Drive Basin were wetlands, and thus impacts required a Federal Section 404 permit.

An increase in the number of Section 404 permits that were similarly conditioned to allow monetary contributions to DERM in lieu of mitigation prompted the Jacksonville District to streamline and simplify the process by issuing a general permit in April of 1989. Residential development was rapidly increasing in the East Bird Drive Basin in the late 1980s due to the expansion of the Miami metropolitan area. Increasingly, Section 404 permit applicants for small residential development negotiated with the District for the opportunity to contribute money rather than undertake small mitigation projects off-site (after demonstrating that wetlands impacts could not be avoided, minimized or mitigated on-site).

The general permit issued by the Jacksonville District served to streamline the permit process and simplify the monetary contribution transaction by:

- Granting authority to DERM to issue and administer Federal Section 404 permits for uniform impacts in the designated geographic area of the East Bird Drive Basin (see Eligibility for Fee-based Compensation - East Bird Drive Basin), subject to several special conditions; and
- Providing eligible permittees the opportunity to participate in the Dade County/East Everglades National Park - East Everglades Exotic Vegetation Control Program to fulfill their mitigation requirements.

Since the issuance of the general permit, it has facilitated streamlining of another dimension due to the fact that the County has redefined wetlands. Since 1989, DERM has redefined wetlands under its code, subjecting areas of the East Bird Drive Basin to county permit and mitigation requirements, in addition to Federal requirements. Despite the overlapping jurisdiction in areas of the East Bird Drive Basin, applicants whose proposed impact meets the eligibility criteria of the general permit need only file one application with DERM.

Mitigation for Impacts in the East Bird Drive Basin: The East Everglades Exotic Vegetation Control Program

The East Everglades Exotic Vegetation Control Program is the off-site enhancement project funded, in-part, with monies from DERM's Wetlands Mitigation Trust Fund. The program involves eradication of melaleuca trees, a type of exotic vegetation, in an area adjacent to the eastern boundary of the Everglades National Park to prevent spreading of the non-native species into the Park. The program began with eradication of the exotics in the expanse closest to the eastern boundary of the Park and has continued eastward, expanding what is referred to as the "buffer zone." The East Everglades program area encompasses two recognized geographical areas: the East Everglades Acquisition Area (tangent to the northeastern boundary of the Park) and the Southeast Saline Glades (tangent to the southeastern boundary of the Park). The 110,000 acre East Everglades Acquisition Area is privately owned, but the Park is scheduled to acquire it by 1996.

The introduction and spread of melaleuca trees is believed to be the result of human alterations to the ecosystem (i.e., construction of canals, soil disturbance, fires) and the absence of natural controls (i.e., disease, predators, parasites). The spread of melaleuca trees represents a significant threat to the native plant communities of wetlands, and thus the condition of the ecosystem, because the exotic is able to out-compete the less resilient, native vegetation. The most efficient means of eradicating melaleuca is by locating the plants from a helicopter and treating them as found, as opposed to using aerial photographs which do not always identify the plants. Treatment involves both mechanical (pulling seedlings) and chemical (herbicide application) practices.

The East Everglades Exotic Vegetation Control Program is the result of a plan developed in 1985 by the South Florida Exotic Pest Plant Council. Recognizing as critical the spread and development of exotic plants, and the subsequent deteriorating environmental conditions in southern Florida, the Council prepared an exotic vegetation control plan for the East Everglades. The Everglades National Park has been directing control efforts since 1986 in accordance with the plan, receiving funds from various sources, including: the Dade County Wetlands Mitigation Trust Fund, the Florida Department of Environmental Regulation (DER) Pollution Recovery Trust Fund, the South Florida Water Management District, and other public and private organizations.

Operating Agreements for Fee-Based Compensation in the East Bird Drive Basin

Three documents provide the necessary administrative framework for fee-based compensation in the East Bird Drive Basin: General Permit No. 59 issued by the Jacksonville District; Resolution 793-87 of the Dade County Board of County Commissioners; and a Memorandum of Agreement (MOA) between DERM and the Park.

General Permit No. 59. This Jacksonville District general permit, issued in April 1989, grants DERM the authority to administer Federal Section 404 permits for selected impacts in a District-designated geographic area of the East Bird Drive Basin. This permit allows such impacts to be offset through participation in DERM's fee-based compensation program. The general permit stipulates that DERM apply a 1.5:1 mitigation ratio in determining the fees per acre charged to

program participants (i.e., for every acre impacted, permittees must pay for 1.5 acres of wetlands restoration, enhancement or creation). The general permit does not preclude permittees' option to perform mitigation activity if they so choose, provided they also comply with the 1.5:1 acre mitigation ratio requirement (i.e., for every acre impacted, permittees must restore, create or enhance 1.5 wetlands acres). The general permit has no expiration date.

Resolution 793-87. Resolution 793 (1987) of the Dade County Board of County Commissioners authorizes voluntary monetary contributions to the East Everglades Exotic Vegetation Control Program and provides for the establishment of the Wetlands Mitigation Trust Fund. The Fund is the depository of voluntary contributions from the following sources: Section 404 permittees in the District's general permit area of the East Bird Drive Basin; other Section 404 permittees provided permits are conditioned appropriately by the Jacksonville District; and DERM Class IV permittees. The Fund is but one source of funds contributed to the East Everglades enhancement effort.

The Jacksonville District had no involvement with establishment of the Fund, nor does it prescribe the fund's management practices. The District does, however, have control over monies in the Fund to the extent that the General Permit No. 59 stipulates the purposes for which Section 404 permittee contributions are to be used.

Memoranda of Agreement. Successive MOAs (1986, 1988, and 1990) between DERM and the Park have provided for the transfer of funds from DERM (via the Fund once it was created) to the Park for the East Everglades Exotic Vegetation Control Program, and have detailed the commitments of each party. In accordance with the most recent MOA, signed in December of 1990, Fund monies support helicopter costs (to transport mitigation crews) associated with the East Everglades Program. The MOA describes the anticipated progression of enhancement activity performed by the Park as follows: (1) initial treatment and re-treatment to eradicate melaleuca trees within a three-mile-wide zone of land adjacent to the boundary of Everglades National Park (buffer zone); and (2) subsequent elimination of these and other exotics in successive one-mile-wide strips to the east, to the extent that funding and personnel allow.

Under the terms of the 1990 MOA, DERM is obligated to reimburse the Park for helicopter costs, a minimum of \$60,000 and a maximum of \$120,000 annually, for two years (the effective time period of the MOA). The MOA also obligates DERM to contribute additional funds on behalf of Florida's DER, signifying the State's commitment to match 50 percent of the County's contribution with a reimbursement from the DER Pollution Recovery Trust Fund.

Although the 1990 MOA has officially expired, DERM and the Park have agreed to continue the terms of the agreement for an additional year to close out the current phase of the East Everglades Program -- eradication of melaleuca from the fourth mile of the buffer zone. It has not been determined whether another MOA will be executed to provide for the continued transfer of funds from Dade County's Fund to the Park after the one year extension.

Eligibility for Fee-Based Compensation: Impacts in the East Bird Drive Basin

General Permit No. 59 defines the types and location of impacts that automatically qualify a Section 404 permittee to participate in the East Everglades Exotic Vegetation Control Program, and thus fee-based compensation. The following criteria qualify a Section 404 permittee for participation:

- The wetlands fill is for residential construction and other minor, noncommercial and nonagricultural structures;
- The wetlands fill is within the East Bird Drive Basin bounded by 144th Avenue to the east, 139th Street to the west, U.S. Route 41 to the North, and Bird Road to the south; and
- The permitted construction is on a parcel less than or equal to 8 acres.

While these criteria automatically qualify a Section 404 permittee to contribute to the DERM Fund, other individual Section 404 permittees may be allowed to fulfill Federalmitigation requirements by contributing to the Fund if their permit is conditioned appropriately by the Jacksonville District.

Determination of Fees - East Bird Drive Basin

DERM determines fees based on the estimated cost per acre of enhancement in the East Everglades and a mitigation ratio of 1.5:1. The estimated cost per acre of enhancement is based on information reported by the Park to DERM regarding enhancement activities, including: helicopter costs, staff time, equipment, and materials. The District has been appraised of increases in the fee per acre charged to permittees participating in the program.

The fee per acre contributed by permittees in the East Bird Drive Basin has ranged from \$2,003 in 1989, to the current fee of \$3,005. The change in the fee per acre over time reflects the change in melaleuca eradication costs in the East Everglades as the program has progressed. As enhancement work moves farther away from the Park, the density of melaleuca increases, requiring more effort in terms of mechanical and chemical treatment. Helicopter expenses also increase as mitigation efforts move further from the Park boundary.

Administration of Fee-Based Compensation - East Bird Drive Basin

DERM coordinates fee-based compensation practices in the East Bird Drive Basin. Section 404 permittees contribute compensatory mitigation fees to DERM's Wetlands Mitigation Trust Fund, which is then drawn on to make payments to the Park for mitigation activities. Because the Park receives funds from several sources, and because sites may require more than one treatment for melaleuca to be fully eradicated, it is difficult to invoice DERM for a definitive acreage of mitigation. Therefore, the Park invoices DERM for helicopter expenses, a more tangible cost and one that draws most if not all of the estimated money accumulating in the Fund annually. Billing from the Park to the County occurs as work progresses, with bills being submitted at a minimum of every six weeks.

DERM reports to the Jacksonville District the number of Section 404 permits issued under General Permit No. 59. The Park issues annual reports on its progress in implementing the East Everglades Exotic Vegetation Control Program to DERM and other stakeholders contributing to the effort.

Current Status of Fee-Based Compensation - East Bird Drive Basin

To date, the Fund has received \$295,809 in fees from Section 404 permittees in the East Bird Drive Basin as compensation for their wetlands impacts. The Fund has received additional contributions from other Section 404 and Class IV permittees. As of November 2, 1992, \$169,595 had been paid out of the Fund to the Park (part of which was interest accruing in the Fund). An additional \$60,000 payment will be made to the Park for fiscal year 1991 - 1992 helicopter expenses, after which the remaining balance will be \$85,693.

Fee-based compensation cannot continue in the East Bird Drive Basin of Dade County under current operating agreements because of changing circumstances. Several factors necessitate modification to existing agreements, or execution of new agreements all together, including: regulatory entities redefining wetlands; other programs exacting varying fees for similar impacts to similar ecosystems; completion of a phase of the East Everglades Exotic Vegetation Control Program which serves as the mitigation site; and expiration of the MOA. These factors are discussed below.

Redefinition of Wetlands. Since the issuance of General Permit No. 59, DERM and DER have each redefined wetlands more broadly. As a result, state and county regulatory requirements now apply to areas of the District's general permit area in the East Bird Drive Basin. This was not the case in 1989. These circumstances necessitate some coordination among the regulatory bodies that now have overlapping jurisdictional authority to facilitate the continuation of a cooperative fee-based compensation program in the East Bird Drive Basin.

Programs Exacting Varying Fees. DERM is developing a distinct fee-based compensation program in two basins adjacent to the East Bird Drive Basin, separated only by a canal (see Part II of this case study). The nature of the off-site mitigation project under this forthcoming program demands a fee per acre of wetlands impacted of \$24,750 (more than eight times that of the fee currently charged for wetlands impacts in the East Bird Drive Basin). Given this circumstance, DERM does not feel that it is reasonable to charge such a disparate fee for impacts in the East Bird Drive Basin -- an area that has a very similar hydrologic make-up to that in the two adjacent basins.

Completion of Program Phase. The phase of the East Everglades Program undertaken pursuant to the most recent MOA between DERM and the Park is nearing completion and the next phase scheduled is considerably more expensive, requiring a substantial increase in the fee per acre of wetlands impacted.

Expiration of 1990 MOA. The MOA between DERM and the Park officially expired as of September 1992. The parties have agreed to continue the terms of the agreement for an additional year to close out the current phase of the East Everglades Program -- eradication of melaleuca from the forth mile of the buffer zone. A new MOA is required if DERM is to continue to transfer

monies from the Fund to the Park for implementation of the next phase of the East Everglades program.

Potential Options for Continued Fee-Based Compensation in the East Bird Drive Basin

DERM is attempting to coordinate the development of a framework that will allow fee-based compensation to continue in the East Bird Drive Basin. The biggest challenge is facilitating agreements among all parties with different wetlands mitigation requirements pursuant to their jurisdictional authority: DERM, DER, and the Jacksonville District.

These parties are considering the options identified below as a mitigation site to offset future East Bird Drive Basin impacts.

- *The next phase of the East Everglades Exotic Vegetation Control Program.* This phase involves expanding the buffer zone to a fifth mile. Melaleuca population is considerably more dense in the fifth mile (approximately 550 stems per acre) than in areas treated thus far (approximately 100 stems per acre). Based on projections provided by the Park, DERM has estimated the cost per acre of enhancement in the fifth mile of the East Everglades to be \$9,500. If this option is chosen, the fee per acre of wetlands impacted in the East Bird Drive Basin would increase from \$3,005 to \$14,250, assuming all parties agreed to the same 1.5:1 acre ratio.
- *Enhancement of a Dade County Park that is also infested by melaleuca.* Cost estimates for this proposed project have yet to be developed.
- *The "Hole-in-the Donut" restoration project in the Everglades National Park.* This project is the planned mitigation site for impacts in two basins (Bird Drive and North Trail) adjacent to the East Bird Drive Basin (See Part II). Under the planned Bird Drive/North Trail Basin fee-based compensation program, fees for wetlands impacts will be based on the cost of restoring an acre of the Hole-in-the-Donut and a 1.5:1 mitigation ratio. In fiscal year 1992-1993 the fee would amount to \$24,750 per acre of wetlands impacted. It is not clear whether fees for impacts in the East Bird Drive Basin would be determined on the same basis as fees for impacts in the two adjacent basins under the proposed program.

Part II - Bird Drive and North Trail Basins

Overview of Fee-Based Compensation in the Bird Drive and North Trail Basins

Following the finalization of memorandums of understanding (MOUs) and other contracts between three parties, the Jacksonville District is expected to issue a general permit granting DERM the authority to issue Section 404 permits to selected individuals in a designated geographic area spanning the Bird Drive and North Trail Basins of Dade County. In doing so, the District would in effect sanction fee-based compensation under the County's program.

The County's fee-based compensation program is contingent upon three pending agreements: a DER/DERM MOU; a DERM/Park MOU; and a Section 4040 permit from the Jacksonville District. MOUs between DER and DERM, and the Park and DERM have been drafted and are anticipated to be signed before the end of 1993. The Park has applied to the Jacksonville District for a Section 404 permit to undertake a restoration project within the Park boundaries, which will serve as the mitigation site to collectively offset wetlands impacts in the designated area of the basins, and other impacts provided permittees have received appropriate approval. Dade County has already enacted appropriate legislation mandating that Class IV (County) permittees whose activities impact wetlands in either basin within a development boundary (the 2010 Urban Development Line) make a monetary contribution to a newly established trust fund -- the monies to be used for off-site mitigation.

Collectively, these agreements will provide the necessary administrative framework for fee-based compensation in area of the Bird Drive and North Trail Basins. Provided all anticipated agreements are finalized, the fee payment will fulfill mitigation requirements of all regulatory parties.

Under the planned program, unavoidable wetlands impacts in a designated area of the Bird Drive and North Trail Basins will require a per acre monetary contribution to the Freshwater Wetlands Mitigation Trust Fund, an account separate from that receiving optional contributions from permittees in the East Bird Drive Basin. DERM will disburse monies from the Freshwater Wetlands Mitigation Trust Fund to the Park for a restoration project, known as the Hole-in-the-Donut, within the Park's boundaries. Impacts outside the designated area of the basins may also be offset through monetary contributions directly to the Park for the Hole-in-the-Donut, provided the appropriate approval is acquired from regulatory agencies exercising their jurisdictional authority over wetlands (i.e., the Jacksonville District, DERM, and DER). The planned restoration project will entail eradication of Brazilian Pepper, and exotic plant, within a 4,000 acre area.

Impetus for Proposed Fee-Based Compensation in the Bird Drive and North Trail Basins

Wetlands ecosystem degradation and the associated failure of attempts to restore wetlands within the Bird Drive and North Trail Basins led authorities to seek new management alternatives for the concentrated areas increasingly affected by development in Dade County, Florida. The hydrological conditions of the Bird Drive and North Trail Basins are such that past drainage and invasion of exotic plant species have adversely impacted wetlands, making restoration of portions of these basins neither practical nor feasible. Historical alterations of natural water flow patterns (to provide better farm land) dissected, and in many cases hydrologically isolated, wetlands in the basins and throughout the Everglades system.

The Corps recommended that DERM develop Special Area Management Plans (SAMPs) for the Bird Drive and North Trail Basins to: evaluate the environmental resources; identify the types, locations and time-phasing of acceptable development; identify water management activities and regulations; identify the location and type of wetlands protection and mitigation areas; and identify implementation strategies, including a financing plan and required environmental regulations. DERM prepared several resource identification studies, including:

- *Bird Drive Everglades Basin SAMP: Baseline Studies and Resource Evaluation;*
- *North Trail Basin SAMP: Baseline Studies and Resource Evaluation;* and
- *Bird Drive Everglades Basin SAMP: Off-Site Mitigation Alternatives* (because the North Trail Basin has similar hydrologic conditions and faces similar development pressures, it was not necessary to develop distinct off-site mitigation alternatives).

In the first two documents, DERM concluded, and the SAMP Committee agreed, that both basins had been adversely impacted and that future unavoidable wetlands impacts in some areas would have to be mitigated outside the basins (or off-site) due to lack of feasible on-site restoration opportunities. The consensus was that additional benefits which would not be realized from small-scale mitigation projects could be expected from the rehabilitation of a single, large project that is part of a larger, protected ecosystem. The SAMP Committee consisted of representatives from the Corps, DERM, DER, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the Florida Game and Freshwater Fish Commission, the South Florida Water Management District, and the Dade County Planning Department.

Proposed Mitigation for Impacts in the Bird Drive and North Trail Basins: The Hole-in-the-Donut Project

The SAMP Committee selected the Hole-in-the-Donut project in the Everglades National Park as the most appropriate off-site mitigation project. Reasons supporting the selection of the Hole-in-the-Donut project include: (1) the restoration project area is already in public ownership; and (2) the success of a 1990 pilot project which involved a developer that funded restoration activity in the Hole-in-the-Donut to fulfill mitigation requirements of several regulatory agencies.

The invasion of exotic plants in the 4,000 acre area of the Everglades National Park known as the Hole-in-the-Donut poses one of the greatest threats to the integrity of the Everglades ecosystem. Historical land practices (rock-plowing) once employed in the area to make the soil more conducive for farming altered the nutrient condition dramatically. The effect of these changes was the area's increased susceptibility to exotic vegetation growth when the land was later taken out of production and left idle so that it could return to its natural wetlands state. The Hole-in-the-Donut restoration project will involve eradication of Brazilian pepper, among the most prevalent exotic vegetation found in concentrated areas, which requires vegetation burning and landscape alterations (substrate removal) to counter the effects of rock plowing.

The Hole-in-the-Donut restoration project will be funded in part with required contributions from permittees whose wetlands impacts are within the designated area of the Bird Drive and North Trail Basins in Dade County, as well as other permittees allowed to make a monetary contribution to compensate for wetlands impacts. Thus, restoration of the Hole-in-the-Donut will serve as a large

scale, off-site mitigation project.¹ Permittees impacting wetlands in the designated area will pay a fee to DERM's Freshwater Wetlands Mitigation Trust Fund, from which DERM will make disbursements to the Park according to the terms of an MOA between DERM and the Park. It is unclear at this time how monetary contributions from permittees outside the designated basin areas will be collected and conveyed to the Park.

A 1990 Brazilian pepper eradication pilot project in the Hole-in-the-Donut set the precedent for the institutional arrangements proposed under the fee-based compensation program, and serves as a model for mitigation activities as described in the draft MOA between the Park and DERM. Agreements among appropriate regulatory bodies and the Everglades National Park provided a developer the opportunity to fund the pilot project to fulfill wetlands mitigation requirements. The cooperative efforts of Everglades National Park, the Jacksonville District and DERM ensured that the project met the compensatory mitigation needs mandated under Federal, State and local regulations, as well as the Park's needs to design a management tool for rehabilitating the area. The pilot project succeeded in accomplishing mitigation utilizing an off-site compensatory mitigation regulatory framework and served to support the selection of the Hole-in-the-Donut from among other alternatives considered.

Operating Agreements for Fee-Based Compensation in the Bird Drive and North Trail Basins

The planned fee-based compensation program in the designated area of the Bird Drive and North Trail Basins is complex. Its success is contingent upon five operating agreements, four of which are still pending finalization. These operating agreements are summarized below, and described in more detail in Exhibit B.

Metropolitan Dade County Environmental Protection Ordinance. The ordinance, as amended in July of 1992 by County resolution, is central to fee-based compensation in the Bird Drive and North Trail basins for two reasons: it requires that Class IV permit applicants (required by the County for any work impacting freshwater wetlands) within a designated area of the basins contribute a fee to DERM for unavoidable adverse impacts, and it grants DERM the authority to establish the Freshwater Wetlands Mitigation Trust Fund to receive such contributions and disburse funds for off-site mitigation efforts. The designated area spanning the two basins, as identified in the ordinance, where wetlands impacts require a monetary contribution is within the County's 2010 Urban Development Boundary Line. The July 1992 resolution amending the ordinance also adopts the North Trail Wetlands Basin and Bird Drive Everglades Wetlands Basin SAMPs, which contain detailed management objectives and goals for each basin.

¹ Dade County Documents have referred to the Hole-in-the-Donut project as a mitigation bank. However, some agencies may not view this as a bank since the impacts mitigated with monetary contributions to the project (particularly those under the fee-based compensation program in the Bird Drive and North Trail Basins) generally precede the mitigation activities for which they provide.

The Dade County Environmental Protection Ordinance provides an established funding mechanism for fee-based compensation in the designated area of two basins that is subject to substantial development pressures. The Jacksonville District and DER, which also exercise jurisdictional authority over wetlands in this area, are now in a position to streamline the permitting process of all three regulatory entities through agreements with DERM. Execution of these agreements, centering all mitigation requirements around the county ordinance, would alleviate the possibility that individuals requiring multiple permits would have to pay a compensation fee and physically mitigating their impact. While it is anticipated that such agreements will be finalized, DERM intends to implement the mandatory fee-based compensation program, pursuant to the 1992 amendments to the county ordinance, independent of their regulatory counterparts.

MOU Between DERM and DER. A draft MOU between DERM and DER stipulates DERM's responsibilities to collect mitigation contributions and disperse money from the Freshwater Wetlands Mitigation Trust Fund for acquisition, restoration, enhancement, management or monitoring of wetlands properties located within Dade County.

MOU Between DERM and the Park. A draft MOU between DERM and the Park stipulates the flow of funds from the Freshwater Wetlands Mitigation Trust Fund to the Park for the Hole-in-the-Donut project. The MOU also details the responsibilities of each party.

Corps Section 404 Permit for Hole-in-the-Donut Project. The Park has applied to the Jacksonville District for a Section 404 permit for the Hole-in-the-Donut project itself, which is necessitated by the nature of the restoration work at it impacts wetlands. This permit is crucial to the commencement of work in the Hole-in-the-Donut, and thus the fee-based compensation program as it is currently planned.

Jacksonville District General Permit. The Jacksonville District is expected to issue a general permit granting DERM authority to administer Section 404 permits for selected impacts within the Bird Drive and North Trail Basins. The conditions of the general permit will be similar to those of General Permit No. 59 which the District issued in 1987 to allow DERM to administer Section 404 permits in the East Bird Drive Basin (See Part I of this case study).

Eligibility for Fee-Based Compensation - Bird Drive and North Trail Basins

Pursuant to DERM regulations, any unavoidable impacts to wetlands in areas the Bird Drive and North Trail Basins within the County's 2010 Urban Development Line will require participation in the fee-based compensation program. The total area of the two basins that is within the Urban Development line is approximately 3,950 acres, 2,130 of which constitutes wetlands in their native form -- areas that have not been farmed or developed -- according to DERM's wetlands definition.

Upon finalization of the MOU between DERM and DER, compliance with DERM's mitigation requirements will also satisfy DER requirements. Further, the Jacksonville District's anticipated issuance of a general permit to DERM will allow some individuals planning activity within the 2010 Urban Development line to fulfill their Federalmitigation requirements in conjunction with fulfillment of state and local requirements -- through monetary contributions

Exhibit B

Provisions of Operating Agreements

DERM ENVIRONMENTAL PROTECTION ORDINANCE
<p>For all work performed in the designated area spanning the North Trail and Bird Drive Basins (within the Urban Development Boundary Line), a monetary contribution must be made to DERM as mitigation to compensate for all unavoidable adverse environmental impacts associated with the proposed work.</p> <p>The Freshwater Wetlands Mitigation Trust Fund is created for use in acquiring, restoring, enhancing, managing or monitoring wetlands within Dade County.</p> <p>The Freshwater Wetlands Mitigation Trust Fund shall receive monies from contributions as compensatory mitigation; Federal, state, or other governmental grants, allocations, or appropriations, as well as foundation or private grants and donations for acquisition, restoration, enhancement, management or monitoring of wetlands; allocations from the Board of County Commissioners; and subsequent interest generated.</p> <p>Disbursements from the Freshwater Wetlands Mitigation Trust Fund shall only be made for acquisition, restoration, enhancement, management or monitoring of wetlands properties located within Dade County. Accepted costs associated with acquisitions for which the Freshwater Wetlands Mitigation Trust Fund monies may be used include appraisals, surveys, title search work, real property taxes, documentary stamps and surtax fees, and other transaction costs.</p>
DERM/DER DRAFT MEMORANDUM OF UNDERSTANDING
<p>The maximum percent of funds that DERM may transfer to the Park for the Hole-in-the-Donut project will be specified in the final MOU. The language of the draft MOU is vague because DERM has yet to receive a detailed statement of work from the Park. Upon receipt of the work statement, maximum percentages of funds transferred will be clarified in the MOU.</p> <p>Activities for which contributions may be collected.</p> <p>The amount of fee contribution required must be approved by both regulatory entities.</p> <p>The Park will provide quarterly reports to member agencies of the SAMP Committee communicating progress of the program.</p> <p>DERM will submit to DER monthly statements of the Freshwater Wetlands Mitigation Trust Fund's net balance and annual reports detailing the amounts of money collected and disbursed.</p>
DERM/PARK DRAFT MEMORANDUM OF UNDERSTANDING
<p>DERM will participate in review and planning of the Hole-in-the-Donut project.</p> <p>DERM will calculate the percentage of contributions to the Freshwater Wetlands Mitigation Trust Fund that is to be transferred to the Park for implementation of the project. This amount will be determined by mutual consent of the member agencies of the SAMP Committee. The percentage indicated in the draft MOU, which may be amended to reflect changes in project cost, is 2/3 of each per-acre mitigation contribution made to the Freshwater Wetlands Mitigation Trust Fund for work in the Bird Drive and North Trail Basins.</p> <p>The Park will be responsible for implementing the project in accordance with the forthcoming statement of work.</p> <p>The Park will provide annual reports to DERM and other member agencies of the SAMP Committee communicating progress of the program. These reports will include descriptions of work performed, monitoring results, and cost statement indicating monies received from the Freshwater Wetlands Mitigation Trust Fund and expenditures.</p>

to the Freshwater Wetlands Mitigation Trust Fund. It is not yet clear what limitations the District may place on Section 404 permit eligibility to participate in the fee-based compensation program to fulfill Federal requirements.

Determination of Fees - Bird Drive and North Trail Basins

The fee per acre for wetlands impacts in the Bird Drive and North Trail Basins under the proposed program will be contingent upon the following three factors: the cost per acre of the Hole-in-the-Donut project; the required ratio of acres impacted in the basins to acres restored in the Hole-in-the-Donut; and the maximum percentage of Freshwater Wetlands Mitigation Trust Fund that DERM may transfer to the Park, as determined by member agencies of the SAMP Committee.

Appendix C of the draft MOU between DERM and the Park indicates the following with respect to these factors:

- The 1992-1993 fiscal year cost of restoring an acre of wetlands in the Hole-in-the-Donut is \$16,500;
- The required ratio of acres impacted to acres restored is 1.5:1; and
- DERM will transfer 2/3 of each per-acre mitigation contribution made to Freshwater Wetlands Mitigation Trust Fund to the Park for work in the Hole-in-the-Donut project.

The per-acre fee for wetlands impacted in the Bird Drive and North Trail Basins will be \$24,750, fulfilling the 1.5:1 acre mitigation ratio requirement, provided the MOU is finalized prior to the end of fiscal year 1992-1993. Two thirds of each per acre fee (or \$16,500) will be forwarded to the Park for the Hole-in-the-Donut project, and the remaining \$8,250 will be retained for future land acquisitions.

Evaluation of Fee-Based Compensation in Dade County, Florida

Fee-based compensation in the East Bird Drive Basin, as it is formally sanctioned by the Jacksonville District under General Permit No. 59, benefits several parties, including: the District itself; Section 404 permittees; DERM; and possibly the Park.

- ▶ Section 404 permittees that qualify under the general permit criteria (and those whose individual permits are conditioned appropriately) are relieved of the responsibility of undertaking small-scale, and presumably more expensive, mitigation activities for unavoidable impacts if they choose monetary compensation. Further, where a Section 404 general permittee's activity impacts wetlands that are also regulated by DERM (thus requiring a Class IV county permit), the permittee need only file one application.
- ▶ The Jacksonville District, by issuing the general permit, has streamlined the administrative Federal permitting process for similar impacts in the designated basin

area and conveyed the administrative burden to DERM, thus reducing paperwork and oversight of mitigation responsibilities.

- ▶ DERM has benefitted from the additional monetary contributions to the Fund from individuals impacting areas of the Bird Drive Basin considered wetlands by the Corps but not DERM. As DERM has broadened its definition of wetlands since the issuance of the General Permit, however, the benefit of supplemental contributions to the Fund from individuals requiring only a Section 404 permit has diminished.
- ▶ It is difficult to definitively conclude whether the Park has benefitted from the District's allowance of fee-based compensation. The successive MOA's signed between DERM and the Park only specify that DERM's contributions will come from the Fund, but not the sources of contributions to the Fund. It is unclear whether, in the absence of the District's general permit and thus supplemental contributions from Section 404 permittees, DERM would have: (1) committed fewer resources to the restoration project in the Park or (2) simply come up with additional resources from within the Department.

Under the planned fee-based compensation in the Bird Drive and North Trail Basins, similar benefits are expected. Additional anticipated benefits include those to DER and the Everglades ecosystem as a whole as determined by the DERM and the SAMP Committee.

- ▶ On behalf of DER, DERM will collect mitigation contributions and disperse money from the Freshwater Wetlands Mitigation Trust Fund for acquisition, restoration, enhancement, management or monitoring of wetlands properties located within Dade County.
- ▶ The failure of recent attempts by individuals to mitigate for unavoidable impacts on-site within the basins and the success of the 1990 pilot project suggest that the collective mitigation of all unavoidable impacts in the Hole-in-the-Donut will benefit the Everglades ecosystem more than traditional, individual mitigation activities elsewhere.

Several lessons can be learned from fee-based compensation practices in the East Bird Drive Basin. The broadest lesson is that where more than one regulatory entity exercises jurisdictional authority over wetlands (due to criteria that define a wetland), a Corps general permit can facilitate streamlining of multiple permitting processes. In the East Bird Drive Basin, individuals proposing to impact a Federal and county wetlands jurisdictional area may fulfill mitigation requirements of both regulatory entities simultaneously. It is important to note that this advantage that revealed itself in the East Bird Drive Basin situation was not the intent behind the Jacksonville District's issuance of General Permit No. 59 -- at the time the general permit was issued, most of the general permit area was not subject to DERM wetlands regulations.

Fee-based compensation in the East Bird Drive Basin reveals that the practice can be an effective means of consolidating the mitigation efforts of individuals as required by distinct regulatory agencies whose jurisdictional authorities do not necessarily overlap. In the East Bird Drive Basin, the Fund was already receiving voluntary monetary contributions from Class IV

(county) permittees for the off-site mitigation project when the Jacksonville District issued General Permit No. 59. Issuance of the general permit provided for supplemental contributions to the Fund because, as previously mentioned, most of the general permit area was not subject to DERM wetlands regulations at that time.

Multi-jurisdictional areas such as the East Bird Drive Basin also present problems in establishing and maintaining fee-based compensation programs. The redefinition of wetlands by individual regulatory authorities -- in this case DER and DERM -- subsequent to the finalization of agreements may call for agreement modifications. Further, should one regulatory entity that is a party to a fee-based compensation program sanction a distinct program that exacts a substantially different fee per acre of mitigation impacted, they may need to reconcile the difference in charges by modifying operating agreements for one or both of the programs. DERM is currently faced with this situation as the fee per acre of wetlands impacted in the East Bird Drive Basin is \$3,005 and the soon to be instated fee per acre of wetlands impacted in the Bird Drive and North Trail Basins is \$24,750.

The fee-based compensation arrangement in the East Bird Drive Basin is most applicable to situations where anticipated voluntary contributions coincide with the needs of a particular program or project. Unfortunately both of these measurements are sometimes difficult to estimate. An element of fee-based compensation in the East Bird Drive Basin that has resulted in complications is the fact that the operating agreements of the two regulatory agencies (the Jacksonville District and DERM) specify a particular enhancement project for which compensatory mitigation fees may be used (the East Everglades Program). However, the agreement that provides for the continuation of the specific enhancement project (the MOA between DERM and the Park) has expired, and there is some question as to whether succeeding MOA will be executed.

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Memorandum of Agreement between Everglades National Park (U.S. Department of Interior, National Parks Service) and Metropolitan Dade County Department of Environmental Resource Management, December 1990.

Exotic Vegetation Control Plan for the East Everglades, South Florida Exotic Pest Plant Council, November 8, 1985.

General Permit No. 59, Department of the Army permit for residential fill in wetlands east of 144th Avenue in Bird Drive - Everglades Basin, Dade County, Florida, April 12, 1989.

Draft Memorandum of Understanding between Metropolitan Dade County Department of Environmental Resource Management and Florida Department of Environmental Regulation, provided by DERM.

Draft Memorandum of Understanding between Metropolitan Dade County Department of Environmental Resource Management and Everglades National Park, provided by DERM.

Memorandum from Joaquin Avino, County Manager, regarding Alternate Ordinance Implementing Basin Management Plans for North Trail Basin and Bird Drive Everglades Basin, July 21, 1992.

THE OHIO WETLANDS FOUNDATION

The Ohio Wetlands Foundation, a private, non-profit organization, administers a program that will fulfill mitigation. Funds will be provided via a wetlands trust fund that will receive fees for compensatory mitigation. The Foundation will provide permittees required to mitigate wetland impacts under Section 404 of the Clean Water Act an opportunity to participate in a program that aggregates small, individual mitigation efforts. This program results in the restoration or creation of wetland areas on state land that are managed by the state. The U.S. Army Corps of Engineers (Corps) retains all permit authority and determines whether participation in the trust is acceptable. The Foundation will determine the cost per constructed or restored wetland acre. To date, no fees have been paid to the trust, although the Foundation has identified and selected its first mitigation site and drafted a preliminary site design plan.

Origin of the Ohio Wetlands Foundation

In September, 1992, the Ohio Home Builders Association established the Ohio Wetlands Foundation, a private, non-profit organization, to provide a mechanism where individual wetland mitigation requirements associated with §404 Corps development permits may be aggregated to create new wetland habitat in the State of Ohio. The Foundation's mission is to fulfill wetlands compensatory mitigation requirements, reduce the time and cost involved in implementing the mitigation, and improve the quality of mitigation. The Foundation received initial funding from the Ohio Home Builders Association, but anticipates to be eventually financially self-sufficient.

Operating Agreements

The Ohio Department of Natural Resources (DNR), Division of Wildlife, and the Ohio Wetlands Foundation signed an agreement to implement a program where the Foundation will select, design, restore, and construct wetlands on state-owned land that will be managed and maintained by the Division of Wildlife. Although the Corps' Huntington District Office was not a signatory to the agreement, it will have a significant review role in the selection, design, and construction phases of the program. By pooling funds of several §404 permittees, the Foundation will be able to perform large scale wetlands creation projects that are expected to be more effective, in terms of ecological quality, than the cumulative gain from equivalent individual mitigation projects. The Foundation anticipates that the majority of contributions to the trust will result from projects impacting between one and five acres of wetlands.

As the Huntington District is not a signatory of the overall agreement between the Foundation and the Ohio DNR, it may require an individual Wetlands Bank Participation Agreement (described below) that specifically sets forth the Foundation's agreement to construct/restore a specific number of acres of wetland of a particular wetland habitat type(s). Within one year of the signing of the Wetlands Bank Participation Agreement, the mitigation bank will supply the Corps with documentation identifying the wetlands that have been created and the entities that purchased mitigation credits.

Eligibility for Fee-Based Compensation

All permittees and all types impacts are eligible to participate in the Foundation's program. The Huntington District, upon receipt of a §404 permit application, determines whether mitigation is an option/condition to permit issuance. The District retains all regulatory authority and responsibility and reviews all permit applications according to the appropriate regulatory standards and procedures, including an evaluation of potential impacts to endangered species and water quality. The District, in issuing a permit, decides whether off-site mitigation is permissible and, if so, determines the number of acres permittees must mitigate. The Huntington District has not established a set of conditions or criteria by which it determines whether contribution to the trust is an option to the permittee.

Determination of Fees

To determine the per acre mitigation fee charged to the §404 permittee, the Foundation must first select a future mitigation site and finalize a site design and construction plan. Once the mitigation plan is complete and has been approved by the Huntington District and Ohio DNR, the Foundation calculates the expected total cost of design and construction at the selected mitigation site, and divides this amount by the total acreage to arrive at the per acre mitigation fee.

The Foundation expects that its projects will accomplish the restoration/creation of wetlands to as close to their natural historical state as possible and will be of high quality in terms of value and function. The Huntington District has not officially established (and does not intend to establish) mitigation ratios. Statewide, the District usually requires a 1.5:1 wetlands mitigated to wetlands impacted ratio.

Administration of the Wetlands Foundation Trust

The Foundation operates a trust into which compensatory mitigation fees from §404 permits are paid to fund the restoration and creation of wetland mitigation projects in preselected sites. Compensation monies are to be collected after a site has been selected and the site design is completed and approved, and prior to the construction or restoration of the wetlands on that site. All collected funds are placed in a dedicated account at a private bank. The Foundation acts as a management organization which handles all transactions between developers and the Ohio DNR. Conservation Technologies, Inc., (CTI), a private, for-profit engineering firm, has been retained by the Foundation to assist in all phases of the mitigation program.

Site Identification and Mitigation Planning. The Foundation, with assistance from the Ohio DNR Division of Wildlife, will review sites on state land that provide the greatest opportunity for successful creation of valuable wetland habitat requiring minimal maintenance. The Foundation will identify sites that allow for the restoration/creation of a variety of habitat types. The agreement signed between the Foundation and the Ohio DNR states that efforts will also be made to identify sites in, at a minimum, the four quadrants of the state to ensure that future mitigation efforts will result in the construction of valuable wetland habitat throughout the state. In addition, the Foundation will select mitigation sites in geographic regions where development activities are anticipated to occur. The Huntington District participates in making such decisions, since it is likely

to know where demand for off-site mitigation will be and the geographic region in which they will allow such permit applicants to mitigate.

When the Foundation has identified a suitable site, the Huntington District will inspect and review the land to preliminarily determine whether suitable mitigation opportunities exist. After the Corps and the Ohio DNR approve the potential mitigation site, the Foundation will prepare mitigation plans, which contain the following information:

- ▶ A narrative description of the ecological types of wetlands to be created and the general methods of construction to be employed;
- ▶ Topographic maps showing original and anticipated post-construction elevations;
- ▶ A description of the vegetation to be planted on the site;
- ▶ A description of the anticipated hydroperiod on the wetlands and the source(s) of water; and
- ▶ A description of the maintenance which is expected to be necessary to maintain the created wetland.

Wetlands Restoration and Construction. The Huntington District and the Ohio DNR Division of Wildlife will separately review and approve the site designs. The Foundation will restore/construct wetlands in accordance with site designs. The Foundation has two years upon receipt of site design approval to substantially complete all tasks set forth in the final mitigation site design. At such time, the Corps will confirm that sites are in compliance with final mitigation plans.

Maintenance. Once the construction of the wetlands is complete, the Division of Wildlife will permanently maintain the mitigation site. The Division is not prohibited from allowing public access to the site, as long as there is no adverse impact to the ecosystem. The Foundation will pay the Division of Wildlife, Wetland Habitat Fund (Fund No. 816) \$1000 per acre of constructed/restored wetlands to assist in the maintenance, monitoring, and study of wetlands in the State of Ohio.

Current Status of the Ohio Wetlands Foundation

To date, the Foundation has not yet collected any compensatory fees. The Foundation has identified and selected its first proposed mitigation site on state land. The site has been delineated and the Huntington District and Ohio DNR Division of Wildlife have approved the preliminary site design. Construction of wetlands is anticipated to begin in the Fall of 1992.

First Mitigation Site Selected. The Foundation has selected its first mitigation site. The site is located northeast of the Village of Buckeye Lake, Union Township, Licking County, Ohio (east of Columbus) and is approximately 25 acres. The Foundation will use the mitigation site for development projects located in the central Ohio area. The property is owned by the Ohio DNR and is managed by the Division of Wildlife. The Foundation has retained CTI to determine the extent

of the existing wetlands on the site and to design a plan to create or restore wetlands for mitigation.

CTI's proposed site delineation indicates that 2.1 acres of wetlands currently exist on the site. The existing wetlands are characterized as palustrine persistent emergent. The Corps determined that the presence of wetland vegetation and hydrology and hydric soils indicates that the 2.1 acres meet the criteria for identification as jurisdictional wetlands (as per the 1987 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*).

Mitigation Site Design Plan. The preliminary mitigation site design for the first wetlands site, also prepared by CTI, proposes to establish two wetland areas. The goal of the design plan is to re-establish the hydrology that once existed on the site and create waterfowl habitat. The site is divided into two parcels. Site 1 will involve the creation of a 7.3 acre pond with depths no greater than 1.5 feet. A low dam across the existing valley will result in the restoration and creation of 15.8 acres of wetlands along the adjoining areas of the pond. Site 2, formed by the construction of a low dam and the diversion of ditch, will subsequently drain into site 1. Additional water will be available from the Hubron Fish Hatchery located near the site. The entire project will result in the creation of 8.8 acres of new wetlands.

The Ohio DNR Division of Wildlife and the Huntington District Office have approved the preliminary site design. The District has determined that the proposed wetlands would improve water quality and increase the diversity and quality of habitat for wildlife. The District has required that the Foundation submit a monitoring and maintenance plan for the site and that monitoring will continue for five years with progress reports submitted annually. The cost per acre of mitigation at this site is estimated at \$7,500.

The Foundation anticipates initiating restoration/creation work at the identified site by fall 1992. Other sites have been identified in various regions of the State. The Foundation will not initiate a new projects in a region until a project already underway in the area is complete.

Evaluation of the Ohio Wetlands Foundation

The Ohio Wetlands Foundation provides an option to permittees to participate in a program that aggregates small, individual mitigation efforts, resulting in the restoration/creation of wetland areas on state land. This mitigation arrangement represents a unique situation where a developers' association has taken the lead in establishing a mechanism to fulfill mitigation requirements. Because the Foundation has not yet collected compensatory fees and is in the process of finalizing the design plans of the first mitigation site (currently being funded by seed money from the Home Builders Association), it is difficult to evaluate the program at this time. However, the Foundation's organizational and institutional characteristics provide some indications of the program's potential effectiveness.

The benefits from this type of program that accrue to §404 permittees include lower costs due to economies of scale and mitigation on state land, reduced risk of mitigation failure (the Foundation will contract mitigation work and ensure its integrity and completion), and alleviation from the burden of contracting or performing mitigation. There is uncertainty about the effectiveness of *individual* mitigation projects due to the lack of incentive on the part of permittee to mitigate to the extent required (fully and effectively). The program also provides for long-term

management of the restored/created wetland areas through management by the Division of Wildlife of the Ohio DNR and funding (\$1,000 per acre) by the Foundation.

The Foundation operates within a state where an estimated 90 percent of original wetlands have been lost to development and agriculture activities. Thus, it is unknown what demand will be fulfilled, as avoiding impacts is heavily favored and mitigation of any kind faces resistance. In addition, the Foundation does not enjoy the blanket blessing of the Ohio EPA, and the Huntington District participates on a case-by-case basis only. Furthermore, because the Foundation was established by a developers association (the Ohio Home Builders Association), it faces a certain element of general skepticism from the regulatory community.

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References:

Agreement Between Ohio Department of Natural Resources, Division of Wildlife, and the Ohio Wetlands Foundation, Ohio DNR, Ohio Wetlands Foundation, September, 1992.

Written correspondence between Conservation Technologies and U.S. Army Corps of Engineers, Huntington District Office, September, 1992.

Memorandum for Record, (several), Sheryl L. Morris Meyer, U.S. Army Corps of Engineers, Huntington District Office, undated.

THE MARYLAND NONTIDAL WETLANDS COMPENSATION FUND

The Maryland Nontidal Wetlands Compensation Fund is one element of a Maryland nontidal wetlands protection program that originated from the 1987 Chesapeake Bay Agreement. The Maryland Department of Natural Resources (DNR) may accept fee-based compensation for mitigation requirements if it determines that creation, restoration, or enhancement of nontidal wetlands is not feasible. In most cases, monetary compensation is acceptable if the size of the nontidal wetland loss is less than one acre and mitigation is not feasible on-site. DNR determines the mitigation acreage requirements as a function of the size of the permitted impact and an established mitigation ratio -- either 3:1, 2:1, or 1:1. Per acre mitigation fees are determined based on the cost to buy land in the affected county, plus design, construction, and monitoring costs.

Origin of the Maryland Nontidal Wetlands Compensation Fund

The Maryland Nontidal Wetlands Compensation Fund is part of a larger, Nontidal Wetlands Protection Program established by the Maryland Nontidal Wetlands Protection Act. The Act was a product of a legislative task force that originated from the 1987 Chesapeake Bay Agreement. (This agreement and resulting task force are briefly described in Exhibit C). The protection program provides an option to individuals impacting nontidal wetlands to satisfy their mitigation requirements in certain circumstances by contributing fees to a Nontidal Wetlands Compensation Fund that DNR uses to fund nontidal wetland projects. DNR representatives on the legislative task force proposed the compensation fund option to reduce the number of small, isolated wetland mitigation projects that the new law would require.

The fee option enables DNR to collect and pool compensatory mitigation fees from small development impacts to fund larger nontidal wetlands restoration, creation, and enhancement projects. DNR presented the fee option as a mechanism to not only reduce the administrative burden on the regulatory process, but also as a means of fulfilling its responsibility to mitigate for impacts of less than 5,000 square feet for which it does not require mitigation under a Letter of Authorization (formerly referred to as a Letter of Exemption).

The Maryland Nontidal Wetlands Protection Program is a comprehensive resource protection program that regulates all activities which may impact nontidal wetlands, including areas within a minimum 25 foot buffer surrounding all wetlands and a 100 foot buffer surrounding Wetlands of Special State Concern. Mitigation is required for all losses authorized under Maryland's regulatory program. Generally, losses greater than 5,000 square feet must be authorized by a Maryland Nontidal Wetlands Permit. Under these permits, permanently impacted wetlands are mitigated by the applicant. Losses greater than 5,000 square feet are generally authorized under a Maryland Nontidal Wetlands Letter of Authorization and the state is responsible for the mitigation. This practice enables the state to combine numerous small impacts into larger scale mitigation activities that provide maximum environmental benefit.

Exhibit C

The Chesapeake Bay Agreement, Nontidal Wetlands Task Force, and The Maryland Nontidal Wetlands Protection Act

In 1987, the governments of Maryland, Virginia, the District of Columbia, and Pennsylvania adopted the Chesapeake Bay Agreement to provide for comprehensive resource management of the watershed. In signing this historic agreement, the states made commitments to work with each other and the Federal government to protect and manage the Chesapeake Bay and its surrounding areas. A series of initial work groups highlighted the gaps in Federal and state protection and regulatory authority with respect to nontidal wetlands.

In 1988, Maryland's governor, William Donald Schaefer, assembled a task force to evaluate options to protect Maryland's nontidal wetlands and make recommendations for legislative action. The task force comprised representatives from the state's environmental agencies as well as representatives from the development, agricultural, and forestry sectors. The task force produced a report which set an ambitious state goal of net resource gain in wetland acreage and function over present conditions. The report contained a section, entitled *Elements for Possible Inclusion in a Nontidal Wetlands Statute*, that became the basis for the Maryland Nontidal Wetlands Protection Act. The legislature passed the Act in April 1989 and its provisions became effective January 1, 1991. The Nontidal Wetlands Protection Act established a Nontidal Wetlands Protection Program and the Nontidal Wetlands Compensation Fund.

Nontidal wetlands are inland, freshwater areas not subject to tidal influence, and are usually covered or saturated with water for long periods of time during the growing season. Nontidal wetlands refer to a variety of environments such as marshes and swamps, bottomland hardwood forests, wet meadows, inland bogs, and the shallow areas of lakes and ponds. Approximately 275,000 acres of nontidal wetlands currently exist in Maryland, comprising 4.3 percent of the state's land area. Nontidal wetlands provide numerous ecological, recreational, and economic benefits. The health of the Chesapeake Bay ecosystem is inextricably linked to the abundance and condition of the wetlands in the bay watershed.

Reaction to the compensation fund proposal was initially mixed. The regulated community generally supported the concept as it would enable those impacts totaling less than one acre of wetlands to fulfill mitigation requirement quickly (if no-site mitigation was not feasible or practicable), placing the burden of site selection, design, construction, and monitoring on DNR. Environmental groups viewed the fee option as an allowance for the permittee to "buy" impacts. The U.S. Army Corps of Engineers (Corps) Baltimore District Office adopted a cautious attitude, supporting the concept because it would remove the numerous, small impacts from mitigation review (relieving a significant administrative burden on the Baltimore District and small landowners -- the length and burden of the regulatory process for mitigation is disproportionate to small impacts of less than 1 acre).

Operating Agreements

Maryland's General Programmatic Permit (MDGP-1) and the Maryland Nontidal Wetlands Protection Act (Maryland Natural Resources Article Section 8-1209(2)(b)) establish the legal and regulatory basis for fee-based compensation in Maryland. MDGP-1 is the primary operating agreement between the Corps and the state with respect to fee-based compensation; the Baltimore District is currently not a signatory to any formal agreement relating to the compensation fund. The Nontidal Wetlands Protection Act is the enabling legislation and establishes requirements for the compensation fund.

MDGP-1. The Baltimore District accepted the compensatory fee option as part of its acceptance of the overall general permit program adopted by the state. The District authorized issuance of Maryland General Programmatic Permits (MDGP-1) for certain activities that impact nontidal wetlands on January 31, 1991. This permit was developed to facilitate a single project review service at the state level. Permit applicants submit several copies of a single application form, the Joint Permit Application for Construction in any Floodplain, Waterway, or Wetland in Maryland, to DNR. The permit service center, located in Annapolis, distributes the completed forms to the appropriate Federal or state agencies (e.g., Maryland Department of the Environment). If a Maryland Nontidal Wetlands Permit or Letter of Authorization is obtained, a separate Corps of Engineers permit may not be required. Two key provisions define the MDGP-1:

1. For impacts to nontidal wetlands totalling less than five acres, the Baltimore District may authorize activities under the MDGP-1, while projects over five acres require both a Federal and state permit; and
2. The Baltimore District notifies DNR within 42 days of receiving an application as to whether the project can be authorized under MDGP-1.

The general permit requires mitigation for activities that are authorized through the state program and would result in a permanent loss to wetlands. A task force comprised of DNR nontidal wetlands staff and Baltimore District representatives is currently meeting and may develop a more formal agreement document between the District and the state of Maryland, such as a memorandum of agreement or understanding.

Nontidal Wetlands Protection Act. Under the Nontidal Wetlands Protection Act, Natural Resources Article Section 8-1209(b)(2), DNR may accept monetary compensation only if it determines that creation, restoration, or enhancement of nontidal wetlands are not feasible alternatives. Monetary compensation may not be a substitute for the requirement to avoid and minimize nontidal wetland losses. The legislation states that monies in the fund may be used only for the creation, restoration, or enhancement of nontidal wetlands, and that the funds must remain available until expended. Maryland law defines *creation* as the establishment on nontidal wetlands on an upland site. *Restoration* is defined as the establishment of nontidal wetlands on former nontidal wetlands sites. *Enhancement* is the additional protection of, or functional improvement of, a nontidal wetland.

Eligibility for Fee-Based Compensation

In most cases, permittees impacting nontidal wetlands areas of greater than 5000 square feet and less than one acre in size are automatically eligible to contribute appropriate fees to the fund to satisfy their mitigation requirements if on-site mitigation is not feasible. Generally, impacts less than 5000 square feet qualify for Letters of Authorization and are mitigated by the state. Permittees impacting areas greater than one acre may qualify to use the Fund at the discretion of DNR.

Property owners in Maryland's Critical Area (a 1,000 foot band of shoreline, from mean high tide, around the Chesapeake Bay to which special land use regulations and laws apply) who must create nontidal wetlands as a requirement their Corps permits or Maryland Department of the Environment (MDE) water quality certifications may also satisfy their requirements by contributing appropriate fees to the Nontidal Wetlands Compensation Fund. This allowance applies to landowners in the Chesapeake Bay Critical Area as the Baltimore District, and not the state, regulates nontidal wetlands in such areas. A Corps or MDE permittee may only use the fund after DNR and the permitting entity, the Baltimore District and/or MDE, grant approval.

Activities that require a Maryland Nontidal Wetland Permit and eligible for fee-based compensation include filling, excavating or dredging, changing existing drainage patterns, disturbing the water level or water table, grading, or destroying or removing vegetation. Activities *exempted by regulation* are not generally required to fulfill mitigation requirements. Such activities include landscape management, soil investigations, maintenance activities which drain, dredge, fill, or convert additional wetlands, mowing and devegetation control, percolation tests, and other similar activities with minimal adverse impacts approved by DNR. Most agricultural and forestry activities are also exempt from nontidal wetlands permits, but usually require the emplacement of best management practices

Once it has been established that a wetlands permit, and thus mitigation by the applicant, is required, DNR may accept monetary compensation under one or more of the following circumstances:

- (1) The size of the nontidal wetlands loss is less than 1 acre and on-site mitigation is not feasible;
- (2) In-kind mitigation of nontidal wetlands losses is technically infeasible (springs, bogs, etc.);
- (3) For impacts greater than one acre, an acceptable mitigation site cannot be located within the sub-basin or county of the nontidal wetlands loss. A permittee must provide proof that a minimum of seven sites were evaluated, including justification as to why each site was unsuitable; and/or
- (4) For impacts greater than one acre, DNR may allow for the use of the compensation fund (e.g., in instances where applicants are grandfathered under Maryland's Nontidal Wetlands Protection Act, and Baltimore District issued an individual permit for a small isolated impact).

In order to satisfy state nontidal wetlands permit requirements through the fund, permittees must submit a proposal to do so with their permit application. DNR makes decisions on such proposals as part of the final permit decision, according to the decision criteria listed above. DNR may reject a proposal if:

- ▶ it determines that on-site mitigation opportunities exist;
- ▶ it is feasible to recreate the lost wetlands (ability to recreate wetlands varies by wetland type); and/or
- ▶ the permittee has not made a good faith effort to locate off-site mitigation opportunities.

Exhibit D presents general guidelines for mitigation under nontidal wetland permits.

Exhibit D	
Summary Guidelines for Mitigation	
Impacts	Requirements
Less than 5,000 square feet (SF), no significant plant and wildlife value:	<ul style="list-style-type: none"> ▶ no permit required ▶ Letter of Authorization required ▶ state mitigates the impact
Less than 5,000 square feet (SF), significant plant and wildlife value:	<ul style="list-style-type: none"> ▶ state permit required ▶ applicant mitigates the impact ▶ approval to use fund granted if on-site mitigation is not feasible
Between 5,000 sq.ft. and one acre:	<ul style="list-style-type: none"> ▶ state permit required ▶ applicant mitigates the impact ▶ approval to use fund granted if on-site mitigation is not feasible
Between one and five acres:	<ul style="list-style-type: none"> ▶ state permit required ▶ applicant mitigates the impact ▶ approval to use the fund not automatic
Over five acres:	<ul style="list-style-type: none"> ▶ Federal and state permits required ▶ applicant mitigates the impact ▶ approval to use the fund not automatic
<p>Note: The Corps may require Federal authorization for any of the above scenarios.</p>	

Procedures to Use the Compensation Fund. In order to contribute to the compensation fund, a permit applicant conducting development activities must follow the steps listed and described below.

1. Applicant submits a request to use the compensation fund as part of the joint (Department and Corps) permit application. The request must include a justification to use the compensation fund based on the criteria listed in the nontidal wetlands regulations.
2. The Department notifies the applicant if the project qualifies under compensation fund provisions, as part of the correspondence from the Department concerning completeness of the application and accuracy of the wetlands delineation within 45 days of receiving application. The Department notifies the applicant, as part of the final permit decision, on the amount of money the permittee must submit to the Nontidal Wetlands Compensation Fund.
3. Applicant sends a bank certified check for the required amount made out to the Maryland Department of Natural Resources, Nontidal Wetlands compensation fund, to the designated contact in the agency. DNR notifies applicant that payment has been received after receipt of payment. Applicant receives the final permit. The Department cannot issue the final permit until it has received the bank certified check.

Letters of Authorization. Activities that qualify for a *Letters of Authorization* include impacts in isolated (not hydrologically connected, through surface or subsurface flow, to streams, tidal or nontidal wetlands, or tidal waters) nontidal wetlands of less than one acre and having no significant plant or wildlife value (determined by DNR's Division of Nontidal Wetlands), or activities having a cumulative loss of less than 5,000 square feet of nontidal wetlands, and 25 foot buffer, with no significant plant or wildlife value. Letters of Authorization are granted only after a application for a permit is received. The application is processed with full technical review, but without public notice and hearing requirements. Projects that qualify for Letters of Authorization do not require mitigation by the applicant, but do require the application of best management practices by the applicant. DNR must assume the responsibility for creating, restoring, or enhancing nontidal wetlands in order to compensate for impacts which are granted under a Letter of Authorization. DNR may use the Compensation Fund or any additional state, Federal, or local sources for these activities. In general, DNR subjects its compensatory and programmatic (mitigation required by the state) mitigation projects to the same requirements promulgated for permittees conducting their own mitigation, including holding itself responsible for the compensation ratios and the 5 year monitoring requirements.

Determination of Fees

DNR applies three factors in determining fees permittees must pay to compensate for nontidal wetlands loss: the county impacted, the acreage impacted, and the type of wetlands impacted. Compensation fees per acre vary by county, according to prevalence of hydric soils, land acquisition costs, and design/construction costs. DNR multiplies the county-based compensation fee by the number of acres required for mitigation to determine the total compensation fee. The acres

DNR requires for mitigation may not always be equal to the acreage impacted. For certain types of wetlands, permittees must replace twice the acreage impacted, and for some wetlands types, three times the acreage lost. The resulting fee is equal to the county-base fee multiplied by the acreage lost multiplied by the replacement rate.

Wetland Restoration and Construction Costs by County. The base mitigation fee varies by county and was determined by a combination of estimated design/construction costs and land acquisition costs in each county. The resulting fee schedule was developed through consultations with the Soil Conservation Service (provided information about hydric soils), the Department of General Services (provided information about land acquisition costs), and consulting firms involved in wetlands design and construction in the state of Maryland. The fee schedule will be promulgated in regulations sometime in 1993.

Wetlands design and construction costs are closely correlated to the presence or absence of cropped hydric soils. As a result, design and construction cost estimates are lower for counties where hydric soils are prevalent, and higher where they are less prevalent. A DNR-sponsored survey of wetlands consulting firms in the state identified major differences in the costs of designing and constructing wetlands based on soil types. Croplands that have hydric soils provide excellent sites for enhancing, restoring, or creating nontidal wetlands at low cost because soils and hydrology typical of nontidal wetlands are already present at such sites (hydric soils usually develop because the amount of oxygen in the soil is limited due to standing water or saturated conditions for brief periods during the growing season). The likelihood of implementing a successful mitigation project at these sites is high.

For the eight Maryland counties with a relatively high percentage of cropped hydric soils (greater than 10 percent), DNR established design, construction, and monitoring costs of \$10,000 per acre, based on the average cost of creating wetlands on cropped hydric soils. For the remaining 15 counties with less than 10 percent of their acreage classified as cropped hydric soils, DNR established design, construction, and monitoring costs of \$50,000, based on the average cost to create wetlands on upland sites.

Land Acquisition Costs by County. The base mitigation fee for each county is the sum of the established design, construction, and monitoring cost per acre and the land acquisition cost per acre. DNR calculated the land acquisition cost per acre for each county by averaging the typical price paid for agriculturally zoned or low density land with limited or no development potential, using information the Department of General Services provided. The resulting base acreage fees range from \$800 per acre (Allegany County) to \$8000 per acre (Howard County).

Nontidal Wetlands Compensation Fee Schedule. Table 2 presents the established design and construction cost, the established land acquisition cost, and the resulting total base mitigation fee for each county. To determine the total compensation fee due, the base mitigation fee is multiplied by the number of acres impacted and the replacement rate. Compensation fees are prorated to the nearest one-hundredth of an acre.

DNR expects to adjust the fees upward to reflect increasing design and construction costs when it submits the schedule for promulgation in regulation in 1993. At the outset of the program, DNR did not promulgate the compensation fund fee structure in regulation. After the Nontidal

Wetlands Act became effective in 1991, the state's Attorney General's Office issued a decision that DNR must promulgate the fee structure in regulation. In the interim, the applicant must sign a waiver which binds both the DNR and the applicant to the existing fee structure.

Table 2
Compensation Fund Fee Structure

County	Design, Construction, and Monitoring Costs	Land Acquisition Costs	Compensation Fee Per Acre
<u>Category A</u>			
Caroline	\$10,000	\$1,500	\$11,500
Dorchester	\$10,000	\$1,650	\$11,650
Kent	\$10,000	\$3,050	\$13,050
Queen Anne's	\$10,000	\$4,150	\$14,150
Somerset	\$10,000	\$1,100	\$11,100
Talbot	\$10,000	\$5,750	\$15,750
Wicomico	\$10,000	\$1,600	\$11,600
Worcester	\$10,000	\$2,800	\$12,800
<u>Category B</u>			
Allegany	\$50,000	\$800	\$50,800
Anne Arundel	\$50,000	\$6,700	\$56,700
Baltimore	\$50,000	\$6,400	\$56,400
Calvert	\$50,000	\$5,750	\$55,750
Carroll	\$50,000	\$2,700	\$52,700
Cecil	\$50,000	\$3,250	\$53,250
Charles	\$50,000	\$1,800	\$51,800
Frederick	\$50,000	\$2,800	\$52,800
Garrett	\$50,000	\$1,025	\$51,025
Harford	\$50,000	\$3,250	\$53,250
Howard	\$50,000	\$8,000	\$58,000
Montgomery	\$50,000	\$6,000	\$56,000
Prince George's	\$50,000	\$5,000	\$55,000
St. Mary's	\$50,000	\$1,400	\$51,400
Washington	\$50,000	\$2,750	\$52,750

Mitigation Ratios and Replacement Rates. Depending on the type of wetlands impacted, permittees must mitigate 1, 2, or 3 times the acreage lost. Established mitigation ratios determine the replacement rate. For example, if the mitigation ratio is 2:1, the permittee must compensate the state with 2 acres of wetlands, for every acre lost. Table 3 presents the mitigation ratios DNR has established for nontidal wetlands.

Table 3

Mitigation Ratios

Ratio	Nontidal Wetlands Type
1:1	<ul style="list-style-type: none"> • emergent nontidal wetlands • farmed nontidal wetlands
2:1	<ul style="list-style-type: none"> • scrub-shrub and forested nontidal wetlands • emergent nontidal wetlands of special state concern
3:1	<ul style="list-style-type: none"> • scrub-shrub and forested nontidal wetlands of special state concern

Administration of Compensation Fees

DNR may use fees deposited into the compensation fund only for the restoration, creation, and enhancement of nontidal wetlands, including site identification, site acquisition, design, construction, monitoring, and maintenance of mitigation sites, as stipulated by regulation. Funds credited to the trust account, and interest accrued, may not revert to the state's general fund. According to regulations, funds payable to the trust account may also include any civil or criminal penalties imposed by courts in accordance with the enforcement of the Maryland Nontidal Wetlands Protection Program. Under the Nontidal Wetlands Protection Act, compensatory fees must remain available to DNR for mitigation activities approved by regulation until such time that DNR expends such fees. Currently, compensatory fees are held in a dedicated account at the First National Bank of Maryland.

There are several avenues available to DNR in order to expend monies deposited in the Nontidal Wetlands Compensation Fund. DNR may award contracts to bidders through the State procurement and competitive bidding process. DNR may also contract with local governments, municipalities or political subdivisions of the state (e.g., soil conservation districts) to disburse monies for programmatic mitigation projects. By working with local governments and soil conservation Districts, DNR is able to draw upon the technical expertise that generally exists within these local agencies.

The Nontidal Wetlands Protection Act provides for DNR to delegate all or part of the nontidal wetlands program, including establishment and operation of a compensation fund, to the counties. By the fall of 1992, only Prince George's county, received delegation of the program. Prince George's county administers the front end of the regulatory program, including application review, approval of wetland delineation, coordination with the Corps and MDE, drafting responses to applicants, and development of draft recommendations on permit disposition. The county has not sought delegation of the compensatory fee option, nor does it intend to.

Current Status of the Maryland Nontidal Wetlands Compensation Fund

DNR is currently involved with 15 projects that are, or will be, funded (at least in part) with compensatory fees. To date, one project has been completed, three are under construction, and 10 are in varying planning and evaluation stages. Table 4 presents information on the mitigation sites funded in part by the Maryland trust fund.

At the end of each fiscal year, DNR must prepare an annual report on the Maryland Nontidal Wetlands Program that includes an accounting of all financial receipts and expenditures to and from the trust fund. According to the 1991 summary report, Maryland achieved a net gain in nontidal wetland resources of 50.7 acres in 1991. This acreage includes wetlands creation activities of the entire wetlands protection program, not only those associated with the Nontidal Wetlands Compensation Fund. Wetland acreage created in fulfillment of DNR's programmatic mitigation responsibilities (impacts less than 5,000 SF) was substantially higher than acreage created in fulfillment of general permit mitigation requirements (impacts greater than 5,000 SF and generally less than one acre).

DNR maintains a tracking system to tabulate permittee impacts, impact locations, mitigation amounts, contributions to the fund, and related data. Tracking data indicates, as to October 22, 1992, that approximately 2.25 acres (97,667 square feet) of wetland impacts resulted from DNR permitted activities compensated through payment to the Maryland Nontidal Wetlands Compensation Fund. In all, 15 DNR permittees contributed \$129,094 to the fund to satisfy part or all of their mitigation requirements. Table 5 lists issued permits and contributions to the Maryland Nontidal Wetlands Compensation Fund.

In addition to the \$129,094 collected from DNR permittees, \$36,241 was deposited into the fund (as of October, 22 1992) by other sources. Total contributions to the fund equal \$165,355. Contributions to the fund by other sources are listed below.

- ▶ \$19,064 was collected from penalties and fees due to enforcement actions;
- ▶ \$2,434 was collected from permittees who were issued permits by the Baltimore District prior to the establishment of the Nontidal Wetlands Compensation Fund, but who later contributed money to the fund; and
- ▶ \$14,742 was collected from permittees who were issued MDE Water Quality certifications prior to the establishment of the Nontidal Wetlands Compensation Fund, but who later contributed money to the fund.

Evaluation of the Maryland Nontidal Wetlands Compensation Fund

The Maryland Nontidal Wetlands Compensation Fund represents one element of a comprehensive state wetlands protection program. The fund, along with the protection program, are an extension of the 1988 Maryland Nontidal Wetlands Protect Act, since promulgated in regulation. As such, the fund is well established in terms of organization, administrative requirements, and program management, and is a centerpiece of the protection program.

The fund has been in place since January 1991, with ten mitigation sites in varying stages of progress (from planned for construction to project completed). The Maryland program is unique in that fee-based compensation paid by permittees with impacts greater than 5,000 square feet subsidizes the states mitigation responsibilities for impacts of less than 5,000 square feet. In effect a tradeoff has been established: in providing a fee-based mitigation option to small impact permittees, the state provides a funding mechanism for mitigation of impacts less than 5,000 square feet. The state captures this subsidy by including land acquisition costs in the mitigation fee. Though mitigation sites may be on DNR-owned land and therefore available at no cost to DNR, in some instances DNR land is unavailable and the development of programmatic mitigation would take place on other private or public land. The Maryland program also includes a detailed fee schedule that accounts for location (county) of impact through a varying schedule of land acquisition costs and design, construction, and monitoring costs. Mitigation requirements also vary according to the type of wetland impacted.

Given the public administration structure of the program, the Maryland DNR has faced obstacles in expending monies from the fund due to contacting and procurement requirements. To partially remedy this situation, the DNR contracts with soil conservation districts to disperse monies for mitigation projects. Again, as the program is complex and extensive, intensive information management and staff-time requirements are necessary characteristics.

**Table 4
Maryland Nontidal Wetlands Mitigation Sites**

Site	Acres	County	Wetland Type	Ownership	Project Status	Mitigation	\$ Expended to Date	Additional \$ Expected ¹
Wye Island	6	Queen Anne's	forested	State of MD	completed	restoration		
Camp Hashawa	2.5	Carroll	forest/emergent shrub-scrub	Carroll County	graded, needs planting	restoration	\$38,786	
Robinson Tract	2.5	Prince George's	emergent	MNCPPC ²	graded, needs planting	creation	\$55,000 ³	
Coverfields	3	Queen Anne's	forested	Queen Ann's County	graded, needs planting	creation	\$35,000 ⁴	
McKee Beshers	5-9	Montgomery	forest/emergent	State of MD	collecting data	creation		
Wye Island - II		Queen Anne's	forested	State of MD	additional work	restoration		\$30,000
Little Patuxent	3	Howard	forested	private ⁵	collecting data	creation		\$50,000
Black Marsh	8-15	Baltimore	forested	State of MD	collecting data	restoration/creation		
German Branch	2+	Queen Anne's	emergent	private	collecting data			
Mark Brown	0.5	Cecil	emergent	private	design complete	creation		\$7,000
Berlin	0.4	Worcester	forest/emergent	Town of Berlin	under design	creation		\$8,000
Bush NRMA ⁶	2.5	Harford	n/a		awaiting MD Transit Authority decision	creation		
Seneca Creek ⁶	2.7	Montgomery	n/a		under design	restoration/creation		

1. Amount is approximate as project has not been completed.
2. Maryland National Capital Park and Planning Commission
3. Funding for the project was obtained through a loan by a sister State agency and will be repaid from the Nontidal Wetlands Compensation Fund.
4. Queen Anne's County provided funding through a cooperative agreement.
5. Ownership will be transferred to Howard County within two years.
6. These projects are being performed to satisfy mitigation permit conditions of previously authorized (grandfathered) permits. These projects will not yield any additional wetland acreage counted toward Maryland's programmatic mitigation strategy. However, the DNR expects to obtain additional monies into the compensation fund due to the construction of these projects.

Table 5
Contributions to the Maryland
Nontidal Wetlands Compensation Fund

Type of Permit	Number of SF Impacted	Wetland Type	Activity Causing Impact*	County	Compensation Fee/Acre	Ratio	Total Fee
NW 14	3,040	Forested	RC	Harford	\$53,250	2:1	\$7,455.00
NW 26	640	Emergent	SS, CM, SM	Prince George's	\$55,000	1:1	\$808.08
NW 14	500	Shrub/Scrub	RC	Baltimore	\$56,400	2:1	\$1,294.00
NW 3, 13	100	Emergent	SS, CM	Montgomery	\$56,000	1:1	\$129.00
NW 26	4,800	Emergent	RC	Montgomery	\$56,000	1:1	\$6,170.79
NW 26	27,261	Forested	RC, RW, SWM	Baltimore	\$56,400	2:1	**\$34,968.00
NW 14	5,227	Emergent	RC	Frederick	\$52,800	1:1	\$6,336.00
MDGP-1	1,260	Forested	RC, SWM	Anne Arundel	\$56,700	2:1	\$3,402.00
NW 26	893	Forested	SWM	Montgomery	\$56,000	2:1	\$2,240.00
MDGP-1	6,551	Forested	BF	Talbot	\$15,750	2:1	\$2,346.75
NW 26	31,799	Forested	LC	Cecil	\$53,250	2:1	**\$24,495.00
NW 7,12	370	Emergent	SWM, UL	Garrett	\$51,025	1:1	\$433.41
NW 26	2,831	Forested	BF	Howard	\$58,000	2:1	\$7,530.46
NW 7, 12, 14, 33	2,875	Forested	RC, UL, SWM	Baltimore	\$56,400	2:1	\$7,444.80
NW 14, 26	9,520	Forested	RC, SWM	Prince George's	\$55,000	2:1	\$24,040.40
	97,677						\$129,094.46

Note: 43,560 square feet equals 1 acre.

* Abbreviations for "Activity Causing Impact"

BF - building, driveway fill, etc. SM - spillway maintenance/repair
 CM - culvert maintenance/repair SS - streambank stabilization (rip rap)
 LC - landfill cell SWM - stormwater management facilities and outfalls
 RC - road crossing UL - utility line
 RW - retaining wall

** Partial payment, also conducting mitigation project

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References:

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**PINE FLATWOOD WETLANDS MITIGATION TRUST,
ST. TAMMANY PARISH, LOUISIANA**

The Louisiana field office of The Nature Conservancy administers a program where it accepts fees in compensation for unavoidable losses stemming from development activities located in southeastern Louisiana. The Louisiana Nature Conservancy uses the compensation fees for off-site preservation and long-term management activities of degraded pine flatwood wetlands. In all cases, the U.S. Army Corps of Engineers (Corps) determines whether fee-based compensatory mitigation is acceptable after potential impacts have been avoided, unavoidable impacts have been minimized, and feasible on-site mitigation measures have been implemented. The Corps also determines the amount of acreage that must be mitigated through a standardized process that quantifies the overall natural quality of the wetlands in the area. The compensatory fees payable to the trust fund take into account the appraised ecological value of the developed property and the estimated loss of ecological value as a result of the development. Valuation calculations are the primary responsibility of the Corps. To date, the Louisiana field office has accepted approximately \$100,000 in compensation fees and is about to make its first purchase of a wetlands mitigation site. The current fee per mitigated acre is \$1700.

The Nature Conservancy characterizes its program as administration of a mitigation *bank*. However, as the program's fundamental characteristics are similar to other identified trust programs, for the purposes of this case study, the St. Tammany program is considered and referred to as a *trust*.

Origin of the St. Tammany Wetlands Trust

In the fall of 1991, the Natural Heritage Program of the Louisiana Department of Wildlife and Fisheries organized a meeting with the Corps' New Orleans District Office, the Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service, the Louisiana Department of Natural Resources, and the Louisiana field office of The Nature Conservancy (Louisiana Nature Conservancy) to discuss their mutual concern about poor mitigation success and lack of preservation efforts to stem the continuous loss of longleaf pine wetlands. The participants, who concurred that the current situation demanded unique solutions, determined that the Louisiana Nature Conservancy was in the best position to identify sites, engage in aggressive management, and retain land-ownership of a southeastern Louisiana wetlands mitigation site.

The Louisiana longleaf pine wetlands of St. Tammany Parish face heavy development pressure, as the parish is fast becoming a bedroom community of New Orleans and may be the fastest growing parish in the state. The New Orleans District has approved numerous permits in St. Tammany Parish and it is likely that losses from development will continue. Most projects on-line for development and Section 404 permitting have involved, and will continue to involve, small impacts on a lot by lot basis. Cumulatively, the impacts are ecologically significant. Because small individual mitigation efforts have been unsuccessful in the past, and because mitigation efforts are likely to remain unsuccessful, the Louisiana Nature Conservancy has entered into an agreement with the New Orleans District and other state and Federal agencies to administer a program that accepts §404 compensation monies to preserve and manage protectable, viable areas of longleaf pine

wetlands. The area of most concern to the Louisiana Nature Conservancy is in St. Tammany Parish, adjacent to the border with the state of Mississippi.

Longleaf Pine Flatwood Savannas. The upland longleaf pine landscape of southeast Louisiana is critically imperiled and threatened by development and lack of appropriate ecosystem management. The habitat has been gradually degraded and divided into smaller fragments by domestication of the landscape (residential development and farming). Originally, the longleaf pine landscape stretched from southeastern Virginia through Florida and across Louisiana. Of an estimated one million acres of original longleaf pine forest in southeastern Louisiana, less than 20,000 acres remain in natural condition. Longleaf pine flatwood wetlands, which include pine flatwoods, pine flatwood savannas, bayhead swamps, and cypress/hardwood forests, are of exceptional biological significance as centers of biotic diversity and exclusive habitat for many rare species. Primarily as a result of habitat conversion and the interruption of the historic natural fire regime, the original range of the pine forests is diminishing.

Longleaf pine flatwood wetlands are found in seasonally flooded, topographically flat or depressional areas with poor drainage. In this ecosystem, the longleaf pine, an unusually fire-adapted species, is the single dominant overstory species. No other extensive over or midstory exists due to the occurrence of natural fires, historically every one to four years. The abundant understory supports a wide variety of wildflower and other plant species. Scientists maintain that these forests are among the most floristically diverse in the nation -- hundreds of plants species may be present in a twenty acre site, many of which are rare today due to habitat loss. The ecosystem is dependent upon fire for its survival, as natural burning clears away hardwoods and other less-fire resilient species which, if allowed to grow unchecked, will eventually overtake and replace the longleaf pines.

Due to the hydrology and other unique factors of this type of wetland, it is difficult, if not impossible to replace and maintain. Both site moisture status and frequent fire are vital for the protection and maintenance of rich, viable pine flatwood areas. Additionally, longleaf pine forests will not survive in small parcels; this type of ecosystem can only survive in larger tracts. Left to itself, smaller wetlands, and even larger tracts, can deteriorate and die off.

Operating Agreements

A Memorandum of Agreement (MOA) among the New Orleans District, EPA, the Fish and Wildlife Service, the Louisiana Department of Natural Resources, the Louisiana Department of Wildlife and Fisheries, and the Louisiana Nature Conservancy was signed in January 1992 for the establishment and use of a pine flatwood wetland mitigation trust in southeastern Louisiana. According to the agreement, the purpose of the trust is "to compensate for unavoidable losses of pine flatwood wetlands caused by development activities in southeastern Louisiana parishes that lie east of the Mississippi River and north of Lake Pontchartrain." The agreement requires active management of the mitigation site for at least 50 years.

Preservation of the pine wetlands is the ultimate goal of the Louisiana Nature Conservancy trust. Due to the unique management needs of longleaf pine flatwood wetlands (fire and hydrology management), this program is accepted by the New Orleans District even though it does not involve the restoration, creation, or enhancement (in the traditional sense) of wetlands. Nonetheless, it does

appear that the program offers significant resource gain in the long run over simple preservation. Without aggressive management by the Louisiana Nature Conservancy, the wetlands will deteriorate. Furthermore, in the absence of preservation, development is a very real threat to the continued health of the ecosystem.

The New Orleans District considers this type of preservation program acceptable for mitigation for several reasons. The unique features of this type of ecosystem and wetlands obscures the line between preservation and restoration/creation/enhancement, as ecological resource gain does occur in the long run. A parcel of property that is envisioned to become part of the trust, if unprotected and unmanaged for 50 years, will deteriorate. It has been generally accepted that areas which are managed properly (controlled burning, protected from invasion of exotics, and regular hydrological maintenance) will survive.

Eligibility for Fee-Based Compensation

According to the Memorandum of Agreement, in all cases, the appropriate regulatory agency (the New Orleans District) will determine whether compensatory mitigation is acceptable only after potential impacts have been avoided to the maximum extent practicable, unavoidable impacts have been minimized to the extent appropriate and practicable, and feasible on-site mitigation measures have been implemented. After the New Orleans District determines that mitigation is required, the permittee, upon approval from the District, has the option to contribute fee-based compensation to the trust fund. The District has the sole authority to set conditions on the development interests' contribution to the trust.

In general, all development activities that are permitted (Federal, state, or local) are eligible to be considered for off-site mitigation. Examples of development activities eligible for consideration include, but are not limited to, the following:

- ▶ Development of new or additions to existing residential subdivisions;
- ▶ Canalization of flatwood areas to improve drainage;
- ▶ Construction of new or additions to existing highways, roads, and places of business; and
- ▶ Development of new or modifications of existing schools, hospitals, and airports.

Determination of Fees

Fee-based compensation must provide the trust fund with sufficient resources to cover inventory, acquisition, management, and administrative costs of the mitigation program. The amount of compensation is determined through a standardized process that quantifies -- as objectively as possible -- the overall natural quality of the pine wetlands in the impacted area. Presently, the New Orleans District determines the acreage equivalent required to satisfy the mitigation requirement. In the past, this equivalent has been 1:1. Recently however, the District has established an evaluation system that requires higher compensation for higher quality impacted wetlands. This evaluation system is comprised of two basic components: (1) a method to assess the impacts of

project implementation on a pine savannah site and determine the appropriate level of mitigation needed to offset those impacts; and (2) a method to evaluate the quality of a particular pine flatwoods mitigation site. The first component is determined through the use of the Impacts Assessment and Compensation Analysis technique. The second component is determined through the use of the Ecological Value Assessment technique developed specially for the mitigation program. Both techniques are discussed below.

Impacts Assessment and Compensation Analysis. The Impacts Assessment and Compensation Analysis technique (IACA) used by the Corps is based on the Habitat Evaluation Procedure (HEP) guide developed by the U.S. Fish and Wildlife Service to provide a standard, quantitative evaluation methodology for use in impact assessment, project planning, and compensation analysis. The IACA measures the relative "value" of different areas at the same point in time and the relative value of the same area at future points in time. These measures are combined to quantify the impacts of a proposed action on a pine savannah site. The IACA supports the requirement that losses in value to wetlands are fully offset by gains in value of wetlands. As this technique is not based on an acre-to-acre concept, replacement of lost values may entail a lesser or greater number of acres than were impacted through the proposed development, depending on the relative quality of the project site and the mitigation site.

Ecological Evaluation Assessment. The Ecological Value Assessment (EVA) guide is used by the Corps to determine the average ecological value per acre at the proposed mitigation site by assigning numeric values to set criteria (such as landscape position, hydrological integrity, presence of unnatural disturbances, encroachment of woody plants, etc). The technique is ultimately used in conjunction with the IACA to balance the relative value of gained wetlands at the mitigation site to the relative value of lost wetlands at the development site.

Fee Determination. Once the appropriate ratio has been determined by the New Orleans District (e.g., 1:1, 1.5:1, 2:1, etc.), the permittee is notified of the reimbursement fee to cover the total per acre cost at the mitigation site. Per acre fees are currently calculated by the Louisiana Nature Conservancy according to average cost to buy land in St. Tammany Parish (appraised at \$1000 per acre), estimated cost to manage land for 50 years (\$500 per acre) and cost to administer program (\$200 per acre, including administration, surveying, title, legal, etc.), resulting in a total mitigation fee of \$1700 per acre. According to the Memorandum of Agreement, administrative costs may not exceed 15 percent of the total contributions to the trust.

Administration of the St. Tammany Trust

The inventory, site selection, acquisition, and management of pine flatwood mitigation sites is the responsibility of the Louisiana Nature Conservancy, with concurrence by all MOA signatory agencies. The New Orleans District, EPA, and Fish and Wildlife Service participate in site inventory and evaluation, and the Louisiana Natural Heritage Program provides assistance in the inventory and management phases of the process. Active management of the mitigation site is required for a term of at least 50 years from the time sites are officially named mitigation projects. After 50 years, the Louisiana Nature Conservancy will continue management or transfer the site to a private conservation organization or government agency so that management and preservation of those areas will continue.

According to the Memorandum of Agreement, the ecological value of a potential mitigation site is assessed through a standardized process. In all cases, areas acquired to serve as mitigation sites shall meet at least the following criteria (as stated in the MOA):

- ▶ Not critically degraded, but exhibits relatively high ecological value;
- ▶ Retains species composition, and structural and functional attributes essentially characteristic of a particular pine flatwood wetland; or must be considered, by best scientific assessment, to be fully recoverable upon application of restorative management practices (high potential ecological value);
- ▶ Ecologically viable according to best scientific assessment; and
- ▶ In need of appropriate ecosystem management for restoration, enhancement, and maintenance of all indigenous species, functions, and values.

Guidelines for selecting the mitigation area include the following (as stated in the MOA):

- ▶ The site should be physically as close to the impact site as possible;
- ▶ The site should support in-kind pine flatwood wetlands; and
- ▶ Variances to in-kind habitat requirements may be granted in those cases where ecologically equivalent habitat is unavailable in existing bank sites and none is available for acquisition in the area of concern.

The Louisiana Nature Conservancy is responsible for establishing and maintaining records that document the activity of mitigation trust accounts, including all transactions and their effect on the balance of those accounts. Principle parties to the Memorandum of Agreement are provided annual statements documenting the status of the accounts.

According to the Memorandum of Agreement, an interagency team will monitor mitigation sites approximately every five years to determine if pine flatwood wetland values are increasing at the predicted rate. If deemed necessary by the interagency team, calculations of values gained through mitigation and acres required for compensation will be adjusted accordingly.

The Louisiana Nature Conservancy has no relationship with permittees other than receiving fees; the New Orleans District has primary responsibility to deal with permittees. The Louisiana Nature Conservancy notifies the District upon receipt of the approved contribution. No other forms of monetary compensation, such as fines or donations, are payable to the trust.

Current Status of the St. Tammany Wetlands Trust

To date, the trust has collected about \$100,000 in compensation fees from permittees. This represents roughly 60 permittees with impacts totalling an estimated 60 to 70 acres. The permittees

are primarily residential developers who have obtained individual 404 permits to fill or drain open pine flatwood areas.

The Louisiana Nature Conservancy has not yet spent the collected fees, but has selected an approximately 200 acre parcel for its first site purchase. This purchase, which has been approved by the signatories of the trust agreement, will cost roughly \$200,000. The Nature Conservancy's headquarters office (TNC headquarters) will loan the Louisiana field office the purchase price and collected fee difference (\$100,000) from its Land Protection Fund. A land management plan drawn up by the Natural Heritage Program for wetlands located adjacent to the proposed 200 acre site will be used by Louisiana Nature Conservancy to guide its management duties of the site.

Compensation fees are currently deposited at a private bank in a dedicated account at TNC headquarters in Arlington, Virginia. After the purchase of the identified site (and until the difference is paid back to TNC headquarters by incremental payments as compensatory mitigation fees are collected) the dedicated account will remain open. Once this first site is "paid for", the Louisiana Nature Conservancy will deposit mitigation fees into a new account to fund another mitigation site purchase and management program. The management portion of the fees will go into an endowment to fund management of the property for the next 50 years.

Evaluation of the St. Tammany Wetlands Trust

Although the St. Tammany wetlands program is relatively new (established January 1992), a general evaluation can be made regarding its characteristics and elements. The program represents a unique mitigation program tailored to specifically offset losses to pine flatwood wetlands from development activities in St. Tammany Parish, Louisiana. Because of the hydrology and other special factors of this type of wetland, it is difficult, if not impossible to replace and successfully maintain ecological function. Both site moisture status and frequent fire are vital for the protection and maintenance of rich, viable pine flatwood savannahs. The organization, focus, and mitigation activities of the program reflect these ecological requirements. The preservation activities of this arrangement also provide a low-cost alternative (presently around \$1,700 per acre) to relatively more expensive restoration and creation mitigation without sacrificing long-term ecological gain.

The scope and mission of the St. Tammany mitigation program conforms to the demand and environmental need for off-site mitigation in St. Tammany Parish. The program enjoys the benefit of signed cooperation of the primary state and Federal environmental regulatory agencies, including the New Orleans District (responsibilities for setting mitigation ratios), EPA (participated in drafting the MOA), and the Louisiana Department of Natural Resources (assists in inventory and management of wetland sites). In addition, the program has the ability to draw upon the financial resources and ecological expertise of The Nature Conservancy, a respected conservation organization. Finally, the Louisiana Nature Conservancy is disengaged from any contact with the permittee, as all transactional details are handled directly by the New Orleans District (including setting the mitigation ratio and determining the contribution requirements).

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References:

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THE VICKSBURG DISTRICT

The Vicksburg District has developed a fee-based compensatory mitigation plan for use by permittees who are required to compensate for the loss of wetland functions and values but are unable to provide: (1) adequate mitigation either on-site; or (2) mitigation in an environmentally acceptable manner off-site. The fees are determined by the type and amount of mitigation required. The fee recipient is typically a state or Federal resource agency or a nonprofit conservation organization. The fees are earmarked for wetland restoration, enhancement, or in rare instances, preservation of existing wetlands

The Vicksburg District has allowed fee-based compensation under hydrocarbon exploration general permits on a regular basis, and under individual permits on a case-by-case basis. Since the general permit expired in 1992, the District has been processing general permit applications as individual permits. This case study first describes monetary compensation under the District's hydrocarbon exploration permit, then describes monetary compensation under individual permits.

Origins of Fee-Based Compensation Under the Vicksburg District Hydrocarbon Exploration General Permit (1987-1992)

The concept for use of a "compensation fee" developed during debates between oil and gas interests and environmental groups over the reissuance of the District's hydrocarbon exploration general permit. The 1987 general permit, called GP-19 for short, was a reissuance of a similar general permit issued in 1981. The proposed reissuance of GP-19 generated strong feelings on the part of environmentally-minded resource agencies and private organizations as well as on the part of the oil and gas industry. The environmental community feared that GP-19 would not sufficiently protect the environment; the industrial community was concerned that overly stringent conditions on a permit would cause an undue burden on their businesses.

In the face of such bipolar opposition, the District used the relatively new "Alternative Dispute Resolution" (ADR) method for reaching a consensus by all parties to a dispute. All affected interested parties participated in a series of meetings designed to state the issues, define the problems and develop an acceptable resolution. As the groups compromised on each issue, the problem of impacts to wetlands was addressed.

The participants put forward the idea of the industry paying a "conservation fee" to be used for the benefit of wetlands in consideration for the time and money industry saves by using GP-19. All the parties agreed and requested the Corps to include the fee as a special condition of the GP-19 when it was reissued. This conservation effort was a forerunner of the compensatory mitigation requirement the Corps implemented three years later in 1990, and became the basis of the mandatory compensation fee included as a condition of GP-19.

Operating Agreement: 1987 General Permit-19

Anyone proposing the use of GP-19 was required to furnish the District with proof that the conservation fee had been received by the appropriate agency or nonprofit. Special condition k in GP-19 describes these requirements. Special condition k required:

- The permittee to contribute \$200 to a wetlands conservation agency or nonprofit;
- Donations to support wetlands conservation in the state of the impact (the Vicksburg District includes parts of Arkansas, Louisiana, and Mississippi);
- The permittee to provide the Vicksburg District with proof of the donation, and if compensatory fees are donated to an organization not listed in the permit, requires fee-recipients to affirm in writing that compensation funds will be used in accordance with the requirements of the permit; and, in addition,
- Lists five nonprofit conservation organizations as approved fee-recipients, and states that recipients are not limited to those listed -- Ducks Unlimited, Inc., MARSH (Matching Aid to Restore State Habitat) Fund; Mississippi Natural Heritage Program, Wildlife Heritage Fund; National Audubon Society, Southeast Wetlands and Waterfowl Project; Nature Conservancy, Bottomland Conservation Fund; and Tensas Conservancy Coalition, Bottomland Conservation Fund.

Special Condition k is presented in Exhibit E.

Letters Confirming Use and Receipt of Funds. Letters between the permittee and the fee-recipient also constitute a type of operating agreement. Permittees typically send a letter along with their fee stating that their contribution must be used for one or more of the wetlands restoration/conservation activities specified in their general permit and/or that their fee must be deposited into a specific fund (e.g., Bottomland Conservation Fund). Upon receipt of such contributions, fee-recipients typically send a letter to the Vicksburg District confirming that it has received a \$200 donation from the named permittee. Such confirmation letters also typically state that the fee-recipient will deposit the contribution into a specific wetland fund or will apply the \$200 toward activities specified in the general permit. These letters constitute legal agreements that the fees are to be and will be used for purposes identified as appropriately compensatory (see k.(2)(a-c) in Exhibit E).

Eligibility for Fee-Based Compensation Under GP-19

Any person proposing activities covered by the 1987 GP-19 was eligible to agree to the terms of the permit and pay the established fee. Alternatively, permit applicants could request the District to review their work under an individual permit procedure. Most operators chose GP-19 over the individual permit when they could. The District processed GP-19s within three weeks, compared to ninety days under an individual permit. Additionally, GP-19 required no Department of the Army permit fee, while the District charged a \$100 processing fee to individual permit applicants.

Exhibit E

GP-19, Special Condition k.

k. Application for authorization under this General Permit shall constitute agreement by the applicant to participate in the wetlands conservation initiative described below which was designed by the parties at interest in the development of this General Permit.

(1) The applicant will contribute \$200 to a conservation agency or nonprofit organization to be used only for the conservation of wetlands in the Vicksburg District within the state in which the permitted activity is to be performed.

(2) Agencies or organizations receiving the donation must agree to use the funds only for: (a) purchase of wetlands; (b) purchase of easements to protect wetlands; or (c) projects designed to accomplish restoration or enhancement of wetland values. Recipients may include, but are not limited to, the following [addresses omitted]:

*Ducks Unlimited, Inc., MARSH (Matching Aid to Restore State Habitat) Fund;
Mississippi Natural Heritage Program, Wildlife Heritage Fund;
National Audubon Society, Southeast Wetlands and Waterfowl Project;
Nature Conservancy, Bottomland Conservation Fund; and
Tensas Conservancy Coalition, Bottomland Conservation Fund;*

This listing may be revised during the term of the General Permit.

(3) The applicant will provide the Vicksburg District with proof of the donation at the time of request for authorization under the General Permit. If the contribution is made to an agency or organization not listed under the preceding paragraph, the applicant must also provided a statement from the recipient that the funds will be used in conformance with paragraph k.(2) above.

General permits cover one hydrocarbon exploration site per permit; the District may grant a single operator a maximum of six general permits (for six wells) each year. To be eligible for general permit coverage, operators may not clear more than one-half acre of wetlands for gas wells less than 4,000 feet deep and may not clear more than one acre of wetlands for oil and gas wells greater than 4,000 feet deep for the exploration phase of the work. Additional clearing for production activities at the deeper wells (greater than 4,000 feet deep) may not exceed one acre (Special Condition d.).

Determination of Compensatory Fees Under GP-19

The \$200 compensation fee established in the general permit did not necessarily reflect actual per-acre cost of restoration or enhancement of wetlands (typically reforestation). Parties involved

in determining this fee included: U.S. Fish and Wildlife Service; U.S. EPA; state agencies from Arkansas, Louisiana, and Mississippi; and the Mississippi Oil and Gas Board; other oil and gas industry representatives; and other interested parties. This fee may be required in addition to on-site mitigation requirements. The Vicksburg District did not suggest this fee.

The \$200 compensation fee under the 1987 GP-19 was a flat fee; each general permittee paid \$200 regardless of whether their impact was one-half acre or one acre. Each well drilling covered under the general permit impacts an average of one acre.

Administration of Fees

Agencies or organizations receiving compensatory mitigation fees must agree to use the funds only for the following activities: purchase of wetlands; purchase of easements to protect wetlands; or implementation of projects designed to accomplish restoration or enhancement of wetland values. Under the 1987 GP-19, fee-recipients typically agreed in writing to use such funds for approved purposes, but were not required to provide an accounting of the total amount of fees received or how such fees were used. The Vicksburg District issued approximately 270 GP-19s between 1987 and 1992. The District has not kept records of how much each conservation organization received in fees between 1987 and 1992, but if each GP-19 permittee opted to pay the \$200 compensatory fee, then such organizations received approximately \$54,000 in compensatory fees during this five-year period.

Current Status of Fee-Based Compensation Under GP-19

The hydrocarbon exploration permit first issued in 1987 expired in January 1992. Since that time, the District processes all applications for hydrocarbon exploration as individual permits. The Vicksburg District has proposed a new general permit for hydrocarbon exploration that includes some modifications of monetary compensation, in addition to some changes in mitigation requirements pursuant to the 1990 Memorandum of Agreement between the Corps and the U.S. EPA. As of this writing, the new general permit is still pending.

The proposed general permit requires a compensatory mitigation fee of \$300 per acre impacted and establishes monetary compensation as optional rather than mandatory. Additionally, the list of approved fee-recipients differs somewhat from that included in the 1987 GP-19, but the District may approve recipients that are not listed in the general permit. The proposed general permit specifically approves the Nature Conservancy in Arkansas, Louisiana, and Mississippi, but omits two organizations that were included in the 1987 GP-19 general permit list: Mississippi Natural Heritage Program's Wildlife Heritage Fund and the National Audubon Society's Southeast Wetlands and Waterfowl Project. Approved recipients would still be required to use funds for wetlands restoration, creation, or enhancement. The proposed permit will require organizations receiving compensatory fees to submit annual reports to the District detailing how they used such funds. Exhibit F presents Special Condition 11 of the proposed general permit detailing fee-based compensation procedure.

Exhibit F

Proposed Hydrocarbon Exploration General Permit, Special Condition 11

11. Appropriate and practicable compensatory mitigation is required for the unavoidable losses of wetland functions and values associated with Department of Army permits. The activities authorized under this General Permit will require mitigation. Acceptable compensation will be 1 acre of restoration/reforestation for 1 acre of wetland functions and values impacted. Applicants shall submit their mitigation plan with their initial request for authorization under this General Permit. The mitigation for proposed exploration activities shall be initiated prior to beginning work authorized under this General Permit. The mitigation for proposed production activities shall be initiated concurrent with beginning work authorized under this General Permit. Any mitigation plan submitted by the applicant will be considered, including the use of existing established mitigation banks.

* * * * *

[The following is listed as an example of acceptable mitigation:]

11.3. A letter from an approved organization indicating that they have received a check in the amount of \$300 per acre for purchasing wetlands, or purchasing easements to protect wetlands, or to construct projects designed to accomplish restoration or enhancement of wetlands values. Recipients may include, but are not limited to, the following:

*Ducks Unlimited, Inc., MARSH Fund
Arkansas Nature Conservancy
Louisiana Nature Conservancy
Mississippi Nature Conservancy
Tensas Conservancy Coalition, Bottomland Conservation Fund*

Recipients of these funds will be required to provide an accounting to the Corps of Engineers of the use of these donations on an annual basis. This is only one option, and a donation is not required to use this General Permit, if issued. Other appropriate and practicable mitigation plans will be considered.

Monetary Compensation in the Vicksburg District Under Individual Permits

Since the 1990 MOA between EPA and the Corps, the District has conditioned some individual permits to allow for fee-based compensatory mitigation. The District cited seven cases where permittees have contributed a negotiated fee to a conservation organization. The permitted impacts ranged from commercial developments to hydrocarbon exploration activities involving multiple wells (not all hydrocarbon exploration activities qualified for GP-19). Table 6 briefly describes seven instances identified by the Vicksburg District in which it allowed fee-based compensation under individual permits.

Table 6

Fee-Based Compensation Cases Under Individual Permits

Permittee (date of permit)	Impacted Acres Mitigated with Fees	Location	Fee/Acre	Total Fee Paid	Fee Recipient
Cross Gates (11-13-91)	103.0	Pearl River Basin, LA	\$1,500.00	\$154,500.00	Louisiana Nature Conservancy
Marshall (4-3-92)	12.8	Chicot County, AR	actual cost of replanting	\$524.80	Arkansas Game & Fish Commission
City of Dermott, Arkansas (7-28-92)	3.0	Chicot County, AR	\$200.00	\$600.00	Arkansas Game & Fish Commission, Wetlands Acquisition/Restoration Fund
Shuler Drilling (8-4-92)	1.0	Caddo Parish, LA	\$200.00	\$200.00	Ducks Unlimited, Southern Regional Office
Fortenberry (8-28-92)	3.5	Adams County, MS	\$300.00	\$1050.00	Mississippi Field Office, The Nature Conservancy
Braswell (9-9-92)	3.5	Adams County, MS	\$300.00	\$1050.00	Ducks Unlimited, Mississippi Office
Leisuremont Villas (9-14-92)	2.0	St. Tammany Parish, LA	\$200.00	\$400.00	LA Office of State Parks

Operating Agreements: Individual Permits

The applicant's acceptance of a permit constitutes an agreement to all the special conditions, including fee-based compensation requirements. No other formal operating agreements between the District and fee-recipients exists. If fee-based compensation is offered, special conditions specify

the compensation amount and the purpose to which the fees are to be dedicated. Exhibit G presents examples of requirements that appeared as Special Conditions in permits listed in Table 6.

Exhibit G

Examples of Special Conditions Detailing Fee-Based Compensation (permittee from Table 6 in parentheses)

- *The permittee will make a cash contribution to the Louisiana Nature Conservancy, not to exceed 1,500 per acre, to purchase 103 acres in a pine flatwoods mitigation bank. (a) This transaction will take place within 1 calendar year of the issuances of the permit and will be documented and such documentation provided to the Corps of Engineers within 30 days of the transaction. (b) Failure to complete this transaction will constitute a violation of the permit. Such a violation will be considered sufficient reason for the permittee to be fined, the permit revoked, and restoration of the site required. (Cross Gates, Special Condition 2).*
- *The permittee shall financially assist the Arkansas Game and Fish Commission in restoration of 12.8 acres of degraded wetlands on the Little Bayou Wildlife Management Area as agreed in the enclosed document [enclosed document an internal Commission memorandum recommending approving the permittees mitigation proposal]. (Marshall, Special Condition 2).*
- *A financial contribution of \$600 will be made to the Arkansas Game and Fish Commission to be used for restoration of 3 acres of degraded wetlands. The Commission plans to obtain matching funds from Ducks Unlimited for work within the watershed. (City of Dermott, Special Condition 2).*
- *In addition to restoring the site, the permittee has paid \$200 to Ducks Unlimited, Incorporated to complete mitigation requirements. (Shuler Drilling, Special Condition 12).*
- *Compensatory mitigation is required for losses of wetland functions and values associated with the authorized activities. In addition to restoring the site, the permittee has paid \$1,050 to the Mississippi Chapter of the Nature Conservancy to complete mitigation. (Fortenberry, Special Condition 11).*
- *In addition to restoring the site, the permittee has paid \$1,050 to Ducks Unlimited, Incorporated to complete mitigation requirements. (Braswell, Special Condition 11).*
- *The permittee will make a \$400 cash contribution to the Louisiana Office of State Parks for restoration of 2 acres of bottomland hardwoods. (Leisuremont, Special Condition 2).*

Eligibility for Fee-Based Compensation Under Individual Permits

Vicksburg District regulatory staff make the decision to allow monetary compensation as part of the process determining the amount and type of mitigation the District will require for a particular project. Fee-based compensation arrangements are negotiated on a case-by-case basis. The applicant is required to develop a mitigation plan for any project where loss of wetland function and values can be identified. Any adequate compensatory mitigation plan that includes on-site or off-site wetland restoration, creation, or enhancement would be acceptable; fee-based compensation may also be an accepted mitigation proposal.

Determination of Fees

Fee determination varied across the examples cited by the District. In most cases, fee-recipients determined the per-acre compensation fee. In a few cases, the District decided the fee, based on average costs for a desired type of wetland restoration activity. In a few other instances, the Mississippi Department of Environmental Quality requested a specific compensation fee (as a part of the water quality certification process, this department sometimes requires mitigation to minimize or offset impacts to water quality).

Administration of Fees

Individual permits allowing fee-based compensation specify the purposes for which fees are to be used. Specified uses have included purchase, enhancement, and restoration, including:

- Purchase or enhancement of wetlands within the same state as the project;
- Restoration of degraded wetlands within a Wildlife Management Area;
- Purchase of acreage in a pine flatwoods mitigation bank (St. Tammany);
- Conservation of wetlands in the same state as the project;
- Acquisition or restoration of wetlands within the same state as the project;
- Restoration of bottomland hardwoods; and
- Purchase of wetlands, protective easements, enhancement, or restoration of wetland values.

In the past, the District has not required organizations receiving fees from either general or individual permittees to keep track of how and when fees are applied to mitigation projects, or to provide the District with reports of such record-keeping. Under the proposed general permit, the District will require such accounting of compensatory fees.

Current Status of Fee-Based Compensation Under Individual Permits

Aside from continuing to offer the fee-based compensation option provided in the expired GP-19 through individual permits until that general permit can be renewed, the Vicksburg District has no immediate plans to expand or alter fee-based compensatory mitigation options. District regulatory staff reported that they think fee-based compensation under individual permits "works pretty well." Nonetheless, the District is looking into the expanded use of mitigation banking as a means of a feasible and successful compensation alternative.

Evaluation of Fee-Based Compensatory Mitigation in the Vicksburg District

The key features of the Vicksburg District's approach to fee-based compensation each carry strengths and weaknesses. For example, pre-approving certain fee-recipients in a general permit means that the District does not have to make decisions about fee-recipients on a case-by case-basis. Such time savings could be significant, especially under general permitting. On the other hand, should the District become displeased with the manner in which one of the pre-approved fee-recipients is handling compensatory fees, it may be administratively difficult to withdraw approval.

The naming of several approved recipients also has advantages and disadvantages. Such an approach spreads compensatory fees to different areas and different types of wetlands mitigation projects throughout the District, creating broad benefits. Nonetheless, such dispersion of funds makes it difficult for agencies and non-profits potentially receiving fees to plan for applying such funds to its projects. Under other fee-based programs where only one entity is receiving compensatory fees, that organization can more easily estimate the amount of funds it might expect to receive and thus identify appropriate projects to which fees can be applied.

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References:

Public Notice CELMK-OD-FE-14-GPD(Vicksburg District)-19, For: Regulatory Activities in Waters of the United States Associated with the Exploration and Subsequent Production of Hydrocarbons (proposed new general permit), June 11, 1992.

Public Notice LMKOD-FE 1522-14-GPD(Vicksburg District)-19, For: Construction Activities in Waters of the United States Conducted in Conjunction with the Exploration for and Subsequent Production of Hydrocarbons and for the Associated Discharge of Dredged and Fill Material (GP-19), January 20, 1987.

Vicksburg District Permits: CELMK-OD-FE 14-3R3120 (Cross Gates); CELMK-OD-FE 14-3K2011 (Marshall); CELMK-OD-FE 14-3K18-6 (Dermott); CELMK-OD-FE 14-2A21-3 (Shuler Drilling); CELMK-OD-FE 14-2J27-43 (Fortenberry); CELMK-OD-FE 14-2K26-13 (Braswell); and CELMK-OD-FE 14-3R31-33 (Leisuremont).

COMPARING AND CONTRASTING ELEMENTS OF FEE-BASED COMPENSATION APPROACHES

The six fee-based compensation arrangements described in this report are essentially variations on a single theme: permittees compensate for wetlands impacts through monetary contributions to an entity that will apply such funds to ongoing or future wetlands projects. The six programs reflect a broad range of legal, institutional, and administrative arrangements to accomplish mitigation objectives. The arrangements differ largely in the following respects: degree of complexity; number of parties involved; types of legal agreements in effect; formalization of the fee-based compensation arrangement; and scope of restoration projects funded in whole or part through compensatory mitigation fees.

This section compares and contrasts fee-based compensation as observed in the case studies along eight primary elements:

- the role of the relevant Corps district office;
- the role of other public and private entities in development and implementation;
- operating agreements covering fee-based compensation arrangements;
- eligibility for fee-based compensation options;
- determination of fees;
- management of fees (collection and expenditure);
- scope of mitigation projects funded with compensatory fees; and
- provisions for long-term management of wetlands projects funded with compensatory fees.

This section also examines the strengths and drawbacks of the various ways in which the case study programs have designed and implemented fee-based compensation.

Table 7 summarizes fee-based compensation in each of the six case studies along the eight comparison elements identified above. A detailed discussion comparing and contrasting each element, including an identification of advantages and disadvantages of specific implementation choices, follows the table.

Table 7

Fee-Based Compensation in the Case Studies

Element	Arkansas	Dade Co.	Maryland	Ohio	St.Tammany	Vicksburg
Corps District Involvement	Direct	Indirect	Indirect	Direct	Direct	Direct
Role of Other Public or Private Entity	Nature Conservancy receives fees, mitigates	Dade County administers program, collects fees; Everglades Natl Park mitigates	MD DNR administers program, collects fees, some mitigation; other public agencies help identify sites	Ohio Wetlands Foundation collects fees; OH DNR manages mitigation sites; private firm does mitigation	LA Nature Conservancy collects fees, manages sites; other public agencies help identify and monitor sites	Several conservation nonprofits and state resource agencies receive fees
Operating Agreements	individual permits, letters of agreement	MOA, general permit	legislation, regulation, general and individual permits	MOA, individual permits	MOA, individual permits	general and individual permits, letters of agreement
Eligibility	Corps district determines case-by-case	Option automatic under general permit	Option automatic under general permit, others case-by-case	Corps district determines case-by-case	Corps district determines case-by-case	Option automatic under general permit, others case-by-case
Fee Determination	Varies per acre Based on cost of mitigation	Fixed per acre Based on cost of mitigation	Fixed per acre Based on cost of mitigation in each county	Varies Based on cost of mitigation	Fixed per acre Based on cost to mitigate and manage	Flat fee under general permit; varies under individual permit
Management of Fees	No special accounts	Trust	Trust	Trust	Trust	No special accounts
Scope of Mitigation Projects	wetlands in Arkansas	eradication of exotics in East Everglades	nontidal wetlands in Maryland	wetlands in Ohio	pine flat-wood wetlands in St. Tammany parish	wetlands in district (AR, LA, and MS)
Long-Term Project Management	Not specified No funding earmarked	Partially specified: Park will manage site it plans to acquire, \$ not included in fee	Specified: public and private site owners manage according to plan for site, \$ not included in fee	Specified: Ohio DNR manages sites, \$ included in fee	Specified: LA Nature Conservancy for 50 yrs, \$ included in fee	Not Specified No funding earmarked

Role of the Corps in Fee-Based Mitigation Varies from Major Involvement to Oversight

The Corps' level of involvement and role in fee-based compensation varies according to the type of permit under which such mitigation is offered. In the Arkansas, Ohio, and St. Tammany case studies, where fee-based compensation occurs under individual permits, the respective Corps districts have been significantly involved in the development and implementation of such mitigation arrangements. The Maryland and Dade County programs offer fee-based compensation through general permits, and the respective districts' involvement is more limited, occurring through their granting and approval of general permits under which fee-based compensation options are offered. The Vicksburg District is somewhat of an anomaly among the districts discussed in this report: the District Office implements fee-based compensation through both general and individual permits.

A significant Corps role holds several advantages for districts and for other entities implementing fee-based compensation arrangements. For the Corps, a significant role offers districts the opportunity to directly oversee the many aspects of fee-based compensation and develop a good working relationship with the fee-recipient and other involved parties. With respect to implementation, district staff can identify the types of wetlands and geographic areas that might benefit from fee-based compensation. Corps staff may also be in a good position to identify organizations that could successfully implement such a program. Involving the district in the development of fee-based compensation programs generally results in the district's explicit or tacit approval and avoids policy and regulatory problems later on. For example, the New Orleans District was involved in conceiving and establishing the St. Tammany program, and is a signatory to a MOA that specifies the program's purpose and details roles and responsibilities of the six signatories. This program has been running smoothly since its inception.

Several drawbacks to a significant Corps role also exist, both for the district and for other parties. Significant involvement may carry with it a substantial time commitment on the part of district staff. Such level of commitment may be manageable during program development, but become less so during implementation. Many district offices already report being understaffed. Unless fee-based compensation minimally impacts workload -- for example, if it is offered under general permits, or only several times a year -- a lead role may be better assumed by a state or local agency through a general permit or other delegated authority.

There are several examples among the case studies where district offices have been able to effectively maintain their regulatory oversight role through a general or individual permit without making a significant time commitment to fee-based compensation. For example, the Baltimore and Jacksonville Districts are involved in an oversight role, but have not assumed other responsibilities in these programs.

The most advantageous role for any single Corps district will depend on the organizational and institutional relationships within that district. Where state and local agencies are strong in their authority and program operation, significant district involvement may not be necessary. The ability of Corps districts to devote staff time to fee-based compensation will also determine the best arrangement for any given district. In general, district offices can probably play as significant a role as regulatory staff can or want to commit.

Role of Other Public and Private Entities Has Been Important to Developing and Administering Fee-Based Compensation

Other public agencies and private organizations, including several Nature Conservancy field offices, have assumed a variety of roles and responsibilities in the six fee-based compensation programs studied in this report. These roles and responsibilities include: program conception and development; coordination; fee-recipient; and mitigation project implementation and support. In each program studied, at least one public agency or nonprofit conservation organization has played a major role in developing and implementing fee-based compensation, either as a sponsor or as a fee-recipient. In four of six programs, nonprofit conservation organizations have taken a lead role. In two programs, a state or county department of natural resources has sponsored fee-based compensation, and in one program, the department is a managing partner. In one program, a National park receives fees from the county collecting them and is responsible for mitigation. Table 8 on the following page summarizes the public and private entities that have been involved in fee-based compensation in the case study programs.

Several private entities, which are not conservation organizations, have occasionally played a role in fee-based compensation. For example, the Ohio Wetland Foundation contracts wetland mitigation site design and construction to an engineering firm. A Maryland wetlands consulting firm assisted the state in developing cost estimates for wetlands construction that formed the basis for the fee-schedule.

The strengths and weaknesses of any one organization in a specific role will vary across organizations and situations. Nonetheless, several general strengths and weaknesses can be identified as typical of each type of organization observed to have played a role in fee-based compensation.

- *State and local resource agencies:* have staff with expertise in wetlands project siting and mitigation; are familiar with region of impacts and projects, and have access to public land. But, typical of large bureaucracies, they are: subject to cumbersome rules and procedures to spend money, sometimes slow to react to opportunities, and without special provisions, fees may become fungible.
- *The Nature Conservancy:* have staff with expertise in wetlands restoration and ecosystem management; usually have ongoing projects that are good candidates for compensatory fees; can react quickly to opportunities to acquire suitable sites; have experience in managing money; have proven success in restoration and site management. But without specific agreements or controls, they are not subject to the same accountability as are public agencies.
- *Other nonprofit conservation organizations:* have strengths similar to those of the Conservancy with respect to staff expertise and ecosystem knowledge, but track records are more organization-specific. Weaknesses are similar to that of the Conservancy with respect to lack of accountability.

- *Federal agencies:* can provide broad experience during program development and their support may be important to the smooth operation of a program and its longevity. But sometimes Federal agencies are seen as an obstacle to program development and implementation.
- *Private organizations:* can provide benefit of their experience as contractors during development and implementation of program; can play an important liaison role between permittees and the Corps; can often move quickly to lobby for such an option. But the involvement of private parties, particularly those related to permittee groups, may have agendas that are at odds with wetland protection.

Table 8

Role of Public Agencies and Nonprofits in Case Study Programs

Program	Public Agency	Role	Nonprofit Organization	Role
Arkansas	none		Arkansas field office of The Nature Conservancy	development, coordination, fee-recipient
Dade County	Dade County Department of Environmental Resources	development, coordination, collects fees	none	
	Everglades National Park	fee-recipient		
Maryland	Maryland Department of Natural Resources	development, coordination, fee-recipient	none	
	Soil Conservation Service	assists in site identification		
Ohio	Ohio Department of Natural Resources	development, site-owner, assumes management responsibilities	Ohio Wetlands Foundation	coordination, fee-recipient
St. Tammany	LA Department of Natural Resources; LA Department of Wildlife and Fisheries, Natural Heritage Program; US EPA and Fish and Wildlife Service.	development, participate in site identification and evaluation, may participate in monitoring	Louisiana field office of The Nature Conservancy	development, coordination, fee-recipient
Vicksburg	EPA; FWS; LA Departments of Environmental Quality, Wildlife and Fisheries, and LA Office of Conservation; MS Departments of Environmental Quality, Wildlife and Fish, and Parks; MS Oil and Gas Board; Arkansas Game and Fish Commission; and representatives from the oil and gas industry.	development, involved in general permit consensus building process	Ducks Unlimited, Inc., MARSH Fund; National Audubon Society, Southeast Wetlands and Waterfowl Project; Nature Conservancy, Bottomland Conservation Fund; and Tenses Conservancy Coalition, Bottomland Conservation Fund.	pre-approved fee-recipients (GP-19)

Operating Agreements: Permits and Memorandums of Agreement Most Utilized

The programs studied in this report rely on one or more of four types of agreements to govern the operation and implementation of fee-based compensation arrangements: memoranda of agreement or understanding (MOA, MOU); legislation and/or regulation; general and individual permits; and letters of agreement between participating parties. The type and number of operating agreements guiding fee-based compensation is generally directly proportional to the scope of the program. Scope may be defined by several factors, including, but not limited to, the number of agencies and private parties involved, and the number and sizes of impacts eligible or potentially eligible. In fee-based compensation transactions involving the Arkansas Nature Conservancy, for example, no formal operating agreements govern such transactions. Instead, letters from the permittee to the Conservancy and the Conservancy to the Corps serve as agreements about the use of compensatory fees. In these cases, only the Arkansas Nature Conservancy and the Little Rock District are involved (in addition to the permittee) and such transactions occur infrequently (seven cases cited since 1989). In contrast, the Dade County program operates an MOA, a county council resolution, and a general permit. The Dade County Department of Environmental Resources Management, the Everglades National Park, and the Jacksonville District each play a role in the fee-based compensation program and wetlands impacts potentially eligible for monetary mitigation are numerous.

The types of agreements observed in the case study programs and their application is described below.

Memoranda of Agreement/Understanding. MOAs and MOUs appear to be particularly important when numerous public agencies are involved in developing and/or implementing fee-based compensation programs, or where private parties sponsor such programs. The strength of well written agreements is that they specify responsibilities; signatures to them represent a legal commitment to carrying out or supporting the agreement provisions. Their drawback is that they can take a significant amount of time to develop, and the consensus required to craft a document that all parties will sign can weaken important provisions. MOAs and MOUs have been used in the cases described below.

- The St. Tammany program operates under a MOA signed by six parties with interest or role in the program: Louisiana field office of The Nature Conservancy; Corps (New Orleans); EPA; FWS; LDNR; and LDWF. The MOA states the purpose of the St. Tammany trust, requires active management of mitigation sites for 50 years, and identifies the roles and responsibilities of the signatories.
- The Dade County program operates, in part, under an MOA between DERM and the Park that provides for the flow of funds from DERM (which are partially derived from permittees in the county) to the Park for wetlands enhancement in the East Everglades.
- The Ohio Wetlands Foundation and the Ohio Department of Natural Resources, Division of Wildlife have signed a MOA that details the Foundation's responsibility

to select, design, restore, and construct wetlands on state-owned property and the Division's responsibility to manage and maintain those constructed wetlands sites.

Legislation and/or Regulation. Only one of the case study programs has enabling legislation and regulation. Maryland's program, perhaps the most complex studied, was initiated through legislation that granted authority to establish the Nontidal Wetlands Compensatory Mitigation Fund and prescribes how the fund is to be managed. The Maryland Department of Natural Resources (DNR) has promulgated provisions of the enabling legislation in regulation that prescribes DNR's authority and responsibilities, and establishes eligibility criteria for fee-based compensations. DNR also plans to promulgate its compensatory mitigation fee schedule in regulation.

Like MOAs, the advantages of well written legislation and regulation are that responsibilities and expectations are clearly specified. In the case of legislation and regulation, such requirements clearly carry the weight of law and provide detailed guidance to those implementing the program. Two major drawbacks to legislation and regulation exist: (1) they take a long time to develop; and (2) during their development, political and parochial concerns may weaken provisions or result in vague guidance to implementing agencies.

Section 404 Individual and General Permits. Individual and general permits are the primary legal agreement between the Corps and permittees that detail permittees' obligations to contribute a specified amount to a conservation organization or a specified trust fund. In individual permits, such requirements typically appear as special conditions; in general permits they may be listed as general conditions or special conditions. In most cases, special conditions do the following: specify the amount to be contributed and the agency or organization to receive the fee; require the permittee to convey in written form the purpose for which fees are to be used; and require the fee-recipient to acknowledge in writing its receipt of compensatory fees.

Specifying terms of fee-based compensation agreements in permits is an easy task when general permits are involved -- such terms simply become a uniform special condition. Relying on special conditions may be more time consuming when individual permits are involved, especially when such arrangements occur frequently. Nonetheless, writing such conditions in individual permits provides a great deal of flexibility to the Corps in how such arrangements are handled.

When a Corps district and permittee are the only parties involved in fee-based compensation, with the exception of a third party receiving the fees, using permits as operating agreements may be the most efficient approach. Yet, when additional parties are involved, such an approach may prove time consuming for districts and cumbersome to other entities that are taking a lead role in fee-based compensation.

Letters of Agreement. Where fee-based compensation has occurred on a case-by-case basis under individual permits, letters from permittees to fee-recipients and from fee-recipients to Corps districts have been part of the operating agreement. Letters from permittees to fee-recipients have indicated purposes for which contributions must be used. Letters from fee-recipients to the Corps

acknowledge receipt of compensatory fees and intent to use funds for appropriate purposes. These letters lay out roles and obligations that are legally binding. The Vicksburg District also requires such letters for fee-based compensation under its hydrocarbon exploration general permit.

Letters may be sufficient supplements where permits are the primary form of agreement about fee-based compensation. They are easy to write and easily transmitted, and if properly written, represent legally enforceable contracts. Nonetheless, they may be weak contracts at best, and when many parties are involved and take an interest in such compensatory arrangements, they may be insufficient instruments to assign roles and responsibilities.

Other Agreements. Other types of formal agreements may be developed and tailored to serve specific needs. For example, the Huntington District may require the Ohio Wetlands Foundation to enter into a "Wetlands Mitigation Bank Agreement." This agreement would specifically set forth the Foundation's obligation to construct/restore a specific number of acres of wetland of a particular wetland habitat type(s). This agreement would also require the Foundation to supply the District with documentation identifying wetlands created, entities that contributed mitigation fees, and wetland acreage and habitat developed with compensatory mitigation fees.

Eligibility For Fee-Based Compensation Generally Follows Specific Criteria

In general, fee-based compensation options are offered to permittees according to specific eligibility criteria. Such criteria may involve one or more of the following factors: type wetlands impact; area of impact; activity causing impact; and size of impact. Dade County, Maryland, the Louisiana Nature Conservancy, and the Vicksburg District (general permits) have each established eligibility requirements. In contrast, fee-based compensation involving the Arkansas Nature Conservancy, the Ohio Wetlands Foundation, and that occurring under the Vicksburg District's individual permits has not been offered according to any specific eligibility criteria. In these cases, the Little Rock, Huntington, and Vicksburg Districts, respectively, determine eligibility on a case-by-case basis. In all cases, eligibility for fee-based compensation is dependent on first avoiding impacts and minimizing and compensating on-site all unavoidable impacts. Examples of established eligibility criteria are presented below.

- Under the Dade County program, small residential development impacts within a specified geographic area that is eligible for general permit coverage is eligible for fee-based compensation.
- Under Maryland's program, all nontidal wetlands impacts eligible for general permit coverage may mitigate impacts by contributing established fees to the Nontidal Wetlands Compensation Fund, while impacts under individual permit coverage may be eligible for fee-based compensation at DNR's discretion.
- At the discretion of the New Orleans District, most impacts occurring in St. Tammany Parish are eligible to mitigate impacts by contributing established fees to the St. Tammany wetlands mitigation fund.

- Within the Vicksburg District, activities eligible for hydrocarbon exploration general permit coverage from 1987-1992 were required to contribute \$200 in mitigation fees in addition to required on-site mitigation; under the general permit proposed for 1993-1998, a compensation fee of \$300 per acre is a mitigation option expressly approved in the general permit.

There are several advantages to establishing specific eligibility criteria. Explicit criteria should make decisions about whether fee-based compensation may be offered clear and efficient. Such explicit criteria also help inform permittees about possible options during the application process. Eligibility criteria can be established as conditions in general permits, as the Vicksburg District did. In cases where eligibility criteria are numerous or complex, it may be necessary to promulgate them in a policy statement, MOA, or in regulation, depending on the structure and organization of the program. Such efforts can be time consuming up-front, but will generally result in time-savings later during the permit application and fee-based compensation decision process.

Making decisions about fee-based compensation on a case-by-case basis offers advantages in the flexibility this approach maintains for the Corps district or designated authority. Eligibility criteria may not foresee every circumstance in which fee-based compensation may be appropriate. Alternatively, even well crafted criteria may allow such an option when it may not be appropriate. Where fee-based compensation occurs frequently, case-by-case decisions could overwhelm district staff's ability to make such decisions in a timely manner. Additionally, where no rules for such arrangements exist, such decisions may appear arbitrary, especially if several people are involved in permitting.

Scope of Mitigation Projects Funded With Compensatory Mitigation Fees Linked to Type/Location of Impacted Wetlands

Although wetlands mitigation projects funded with compensatory fees vary both in type and in geographic area across the case study programs, in general, mitigation projects involve the type of wetlands impacted by permitted activities and are sited according to a specified relationship to the impacted area. Some programs have focused on a specific type of wetlands because the majority of impacts occur in that specific wetland type. For example, the Arkansas Nature Conservancy's fee-funded projects have largely involved bottomland hardwoods, reflecting the type of wetland impacted, but the program is not restricted to bottomlands. On the other hand, Maryland's program is restricted by law to nontidal wetlands, and as a result, mitigation projects include only forested, shrub-scrub, and emergent nontidal wetlands. Dade County's program is unique among those studied in that it mitigates residential development impacts (e.g., filling) through eradication of exotic plant species from the East Everglades, a portion of which will become part of the Everglades National Park. The relationship between area of impacts and mitigation sites varies from one that is close, for example, the same watershed or ecosystem, to one that represents political rather than hydrological jurisdictions, for example, in the same state. Table 9 presents the range of mitigation projects represented by the case study programs.

The advantages or disadvantages of a particular scope of mitigation projects varies depending on the financial and personnel resources available to implement the program. For example, a narrow scope, focusing on a specific wetland type or a single geographic location allows for the concentration of resources. On the other hand, programs with narrow scopes are limited in the types

of wetlands projects they may fund, and may be unable to target compensatory fees to areas that could benefit from such funds.

Broader programs provide more opportunities to match wetland projects to wetlands impacts and spread fee-funded wetlands projects over a larger region. Nonetheless, such programs require significantly more planning effort, including site identification and site evaluation. For example, in the Maryland and Ohio programs, staff involved in locating appropriate wetlands project sites must be familiar with wetlands throughout the state. Such programs typically require that some type of wetland inventory exists in order to operate efficiently. However, such broad focus may result in small improvements in many areas, when larger improvements in fewer locations might generate greater ecological benefits.

Table 9

Mitigation Wetlands and Sites by Case Study Program

Program	Mitigation Wetlands	Mitigation Sites
Arkansas	predominantly bottomland hardwoods	state of Arkansas
Dade County	eradication of exotics in everglade wetlands	East Everglades
Maryland	nontidal wetlands	state of Maryland
Ohio	type impacted	state of Ohio
St. Tammany	longleaf pine	St. Tammany Parish, LA
Vicksburg	type impacted (includes longleaf pine and bottomlands)	state of impact (AR, LA, or MS)

Fee Determination Based on Cost to Mitigate

Compensatory fees are typically based on the cost of mitigation, but factors included as mitigation costs and the resulting fee calculation vary across the case studies. Generally, it makes sense to include the full costs that are incurred in implementing the wetlands projects that satisfy mitigation requirements. In most programs, mitigation costs incorporated into fees include such planning related costs as site selection, land acquisition, design, and construction related costs for restoration, creation, and/or enhancement. Table 10 identifies the elements that are included in compensatory mitigation fees in the case study programs.

Basing fees on actual costs enhances the fairness of the fee determinations among permittees and ensures that enough money will be available to restore, create, or enhance the number of wetland acres required to mitigate each permittee's impact. The Vicksburg District's flat \$200 compensatory fee is the only fee among those studied that is not based directly on mitigation costs. Such fees may appear arbitrary to some and insufficient to others. The Vicksburg District is

proposing a \$300 per acre compensatory fee for its next hydrocarbon exploration general permit that is more closely related to the costs of implementing bottomland reforestation projects.

Table 10

Costs Included in Compensatory Mitigation Fees

Program	Planning	Land Acquisition	Project Implementation	Site Management
Arkansas	No	Yes	Yes	No
Dade County	No	No	Yes	No
Maryland	No	Yes	Yes	No
Ohio	Yes	No (publicly-owned)	Yes	Yes
St. Tammany	Yes	Yes	Yes	Yes
Vicksburg	No	No	Yes	No

When wetlands project sites funded in whole or in part with compensatory fees are publicly-owned, including land acquisition costs in fees provides "more bang for the buck." In such circumstances, that portion of the fee that would have gone to site acquisition can pay for additional wetlands restoration. Maryland is able to implement wetland projects on more acres by siting such projects on public land when possible, than it would if it had to acquire each site at market cost. Nonetheless, charging permittees for land acquisition costs remains necessary to ensure sufficient funding in the event that sites must be purchased.

When programs expect that many permittees will be eligible for fee-based compensation, or where wetlands project costs vary by a known set of circumstances, establishing a fee-schedule may be an efficient fee-determination method. While schedules may require more up-front time and analysis to develop, once developed, fee-determination becomes relatively simple and quick. For example, Maryland's nontidal wetlands compensation fees are published in a schedule that will be promulgated as regulation. In the fee schedule, per acre fees vary by county, to account for variances in land acquisition costs and availability of hydric soils for wetlands restoration or creation.

Securing long-term management funds through compensatory fees is perhaps the most efficient manner in which to pay for necessary maintenance. The St. Tammany program is the only one studied that specifically includes a component for long-term management, although the Ohio Wetlands Foundation has agreed to pay the Ohio Department of Natural Resources \$1,000 per acre in management fees, presumably from the fee proceeds.

Financial Management: Establishing Trust Funds and Special Accounts to Handle Fees

Four of six compensatory mitigation programs have established a trust fund to collect, hold, and disburse compensatory mitigation fees: Dade County; Maryland; Ohio; and St. Tammany. Fee-based compensation involving the Arkansas Nature Conservancy has occurred on a case-by-case basis and a trust fund has not been necessary to manage the few fees that have been collected. Under the Vicksburg District-sponsored program, \$200 in fees are sent to several conservation organizations, none of which have established specific trust funds for those fees.

Trust funds are most advantageous in situations where the fee-recipient will be collecting and holding a significant amount in fees over a period of time. For example, the Louisiana Nature Conservancy collected over \$100,000 in fees before it made its first site purchase. The Maryland Department of Natural Resources also may collect and hold several tens of thousands of dollars before funds are disbursed to cover mitigation expenses. In Dade County, the agreement between the Department of Environmental Resource Management (the direct recipient of the fees and manager of the trust fund) and the Everglades National Park (the ultimate recipient of the fees) provides for the conveyance of funds upon invoice.

Organizations managing fees have used both trust fund principal and interest for approved mitigation activities; that is, interest is allowed to accumulate and may be applied to mitigation projects but may not be used for other purposes. In no case is the sponsor required to return interest accrued on fees to permittees.

Generally, all the proceeds from compensatory fees are deposited into one trust fund, even if fees cover a variety of expenses. One exception is the St. Tammany program. The Louisiana Nature Conservancy has established an endowment fund in addition to the primary trust to manage and provide funding for long-term management (generally, endowment funds differ from trust funds in that fund managers may not spend endowment principal while they may withdraw principal from trusts). St. Tammany's compensation fee of \$1,700 includes \$500 for long-term management. This management portion of fees is deposited into the endowment fund, from which interest, and principal if necessary, will pay for managing compensatory mitigation sites for 50 years.

When establishing compensatory fee trust funds, it is important to place appropriate safeguards on how and when such funds may be spent. For the Dade County, Ohio, and St. Tammany programs, MOAs exist that include language, of varying specificity, about how wetland mitigation trust funds must be managed. Maryland's Nontidal Wetland Protection Act and related regulations establish the state's trust fund and terms of its use. In most programs, compensatory mitigation fees may be used for the variety of tasks related to wetland mitigation, including: site identification and evaluation; land acquisition; planning and design; construction and other restoration, creation, and enhancement costs (e.g., seedlings for reforestation); and maintenance, monitoring, and management. Equally as important as safeguards on trust funds are provisions in operating agreements that allow funds to be dispensed in a timely manner, coinciding with the progression of mitigation projects.

Trust fund provisions that require annual reporting of trust activities are beneficial in ensuring accountability and affording oversight opportunities. Several programs are required to prepare annual reports that document trust fund deposits and expenditures. For example, the Maryland Department of Natural Resources is required to submit an annual report to the legislature; the Ohio Wetlands Foundation may be required to submit an annual report to the Huntington District. The Louisiana Nature Conservancy is also required to submit an annual report documenting trust fund transactions and mitigation projects for distribution to MOA signatories.

Trust funds may not always be necessary or appropriate, especially where few cases occur or fee-recipients are numerous no one organization receives large sums. In such circumstances, trusts could be a disadvantage to maintaining flexibility as they can be cumbersome and require a significant amount of time and effort to establish and manage. In the Arkansas and Vicksburg cases where trust funds have not been created, fee-recipients, the Arkansas Nature Conservancy and Vicksburg District-approved conservation organizations, deposit compensatory fees into whatever account they deem appropriate -- special accounts are not required. Both the Little Rock and Vicksburg Districts exercise oversight authority by requiring fee-recipients to state in writing that compensatory fees will be used in accordance with individual or general permit provisions for monetary compensation.

Management of Mitigation Sites: Few Fee-Based Compensation Arrangements Specifically Address Long-Term Management Responsibilities

Responsibility for managing mitigation sites after projects have been completed typically rests with site owners. This responsibility is sometimes spelled out in management plans developed for the mitigation site or area. For example, publicly-owned Maryland nontidal wetlands mitigation sites are managed by the landowner, subject to Sensitive Management Area provisions and privately-owned sites require a legally binding management plan that protects the site. St. Tammany sites are also subject to specific management provisions: under a MOU, the Louisiana Nature Conservancy is responsible for managing mitigation tracts for 50 years (unless transferred to a state agency which guarantees management for the remainder of the 50 year period) and will be assisted in monitoring by an interagency team. While management, monitoring, and maintenance responsibilities may be included in MOAs, management plans, or other agreements, such plans and agreements generally do not obligate the site owner or other participating party to achieve a specific level of success over the long-term.

In several of the fee-based compensation arrangements described in this report, long-term management tasks and responsibilities are not specifically identified. For example, the Vicksburg District has not included long-term management provisions in general or individual permits special conditions stipulating other fee-based compensation requirements. The Little Rock District has also not specified long-term management requirements in fee-based compensation arrangements involving the Arkansas Nature Conservancy, but the District has the opportunity to review the Conservancy's management plans for wetlands projects partially funded with compensatory fees.

Fee-based compensation programs and arrangements that specify long-term management responsibilities will probably prove more successful as compensatory mitigation options over the long run than where such responsibilities are not spelled out and assigned. Because districts consider

permittees as having fulfilled their mitigation requirements upon payment of compensatory fees, it is important to clearly specify who is responsible for site management as the permittee will not be responsible. In the Dade County program, it appears that a responsible party has been identified for only a portion of the mitigation site: the Everglades National Park is planning to acquire a portion of the mitigation site and will be responsible for overall management of only that acreage. However, the nature of the mitigation activity there -- eradication of exotics -- may not require long-term management once the species are killed off.

Success of long-term management when such responsibilities are assigned also may depend on identifying a source of funds for such tasks. As mentioned above, a portion of each compensatory fee covers the Louisiana Nature Conservancy's expenses for long-term management. In Ohio, the Ohio Department of Natural Resources is responsible for monitoring, maintaining, and studying Ohio Wetland Foundation Mitigation sites and the Foundation pays the Department \$1,000 per acre for such tasks.

Summary of Fee-Based Compensation Comparison

As is evident from this comparison of fee-based compensation across the six case studies, at least six different arrangements exist for fee-based compensation, and many more are possible. Each element of fee-based compensation -- e.g., a strong Corps role, a major role for a conservation non-profit, offering fee-based compensation only for certain types of impacts -- may have some inherent strengths and drawbacks that will exist, regardless of the circumstance in which it is implemented. Nonetheless, taking advantage of such strengths and minimizing drawbacks depends on carefully tailoring the elements of fee-based compensation to specific institutional authorities, organizational relationships, and wetlands restoration objectives.

FEE-BASED COMPENSATION: PRELIMINARY CONCLUSIONS AND LESSONS

This section presents some preliminary conclusions about fee-based compensation drawn from the experiences in the six case study programs. These conclusions focus in three areas: (1) identification of several principal elements of fee-based compensation; (2) a discussion about why state agencies, Corps districts, and non-profits have turned to fee-based compensation as one mitigation option; and (3) several lessons about designing and operating fee-based compensation options.

Principal Elements of Fee-Based Compensation

The fee-based compensation case studies presented in this report represent a broad range of approaches to designing and implementing such arrangements. These arrangements include: offering fee-based compensation on a case-by-case or regular basis; employing formal and informal operating agreements; a major role or one of oversight for the Corps; utilizing informal and formal financial arrangements; and funding a narrow or broad scope of mitigation projects with compensatory fees. While specific fee-based arrangements may vary, depending on specific objectives, regulatory situations, or existing institutional relationships, the similarities among programs point to several key elements:

- Involvement of relevant state and sometimes Federal agencies other than the Corps (e.g., EPA, FWS, state departments of natural resources) in the development of fee-based compensation programs is important to securing their support and avoid potential conflicts later (even when such agencies may not be involved in implementing or overseeing compensatory mitigation);
- The appropriate Corps district's support of fee-based compensation is essential, either through individual permitting or through granting general permits that include fee-based compensation options;
- Development of an agreement that spells out roles and responsibilities of the various parties involved in implementing fee-based compensation and/or with regulatory oversight. Where several parties are involved, MOUs may be most appropriate, but where only the Corps district and fee-recipient are involved, letters of agreement or permit provisions may be sufficient;
- One organization needs to assume the lead role in fee-based compensation to coordinate the various elements of such programs, including fee collection and disbursement, site selection and mitigation, and site management -- it is not necessary that the lead agency be the fee-recipient;
- A method to determine fees should be agreed on before implementing such transactions so that fees are imposed consistently and fairly -- typical costs included in fees are site selection and acquisition, wetlands restoration, creation, and enhancement, and long-term management and monitoring;

- Some kind of special account, such as a trust fund, is a useful mechanism to collect and disburse compensation fees -- rules for its management and use should be established and clearly specified; and
- Provisions should exist that establish responsibility for long-term management of mitigation sites and secure funding for such management.

Why Fee-Based Compensation Arrangements Are Offered: Benefits and Concerns

Public agencies and conservation organizations have sponsored fee-based compensation as a way to improve the ecological benefits generated by off-site wetlands projects which mitigate for unavoidable wetlands losses. Fee-based compensation arrangements also provide opportunities to achieve economies of scale that individual mitigation does not generally provide, especially in the areas of site selection, planning, design, construction, and management. Other factors that have led to establishing and implementing fee-based compensatory programs include: source of supplemental funds for ongoing wetlands projects; opportunity to focus on regional wetlands or a specific type of wetland; enhance efficiency in mitigation; improve quality of mitigation; increase ease and timeliness in which permittees satisfy mitigation requirements; preservation and management of wetlands that would not otherwise be protected and cannot be recreated.

Parties involved in developing fee-based compensation arrangements in the case studies cited the following specific reasons for offering this mitigation option:

- Arkansas -- occasional need of Little Rock District permittees for off-site mitigation opportunities and Conservancy's ability to apply donations to wetlands projects;
- Dade County -- coordinate mitigation efforts associated with urban development toward a single, larger wetlands mitigation project;
- Maryland -- fund ecologically viable nontidal wetlands projects and reduce the number of small isolated mitigation projects;
- Ohio -- aggregate individual wetlands mitigation requirements and reduce mitigation time and cost, and improve quality of mitigation;
- St. Tammany -- lack of preservation efforts to stem the loss of longleaf pine wetlands and a poor success rate in mitigating such losses; solution to identify, purchase, and aggressively manage longleaf pine wetlands for long term preservation; and
- Vicksburg District -- under hydrocarbon exploration general permit, collect funds to support wetlands restoration projects in the District since on-site mitigation was not feasible; under individual permits occasional need for off-site mitigation opportunities.

Collecting appropriate fees for unavoidable wetlands losses enables public agencies and other organizations to consolidate what might otherwise be numerous, small (e.g., 5,000 square feet) mitigation projects into larger wetlands restoration, creation, and enhancement projects. In many watersheds, larger wetlands projects may be more ecologically beneficial and may have a higher probability for success than smaller, individual mitigation projects. Larger mitigation sites are typically better able to provide the hydrology necessary to sustain wetlands, in contrast to smaller, isolated sites that are more vulnerable to changes in hydrology and exogenous threats.

Fee-based compensation also provides economic benefits. Where fee-recipients can site mitigation projects on relatively cheap land, collected fees fund more enhancement or restoration than where land is more expensive -- maximizing ecological benefits per dollar. For example, Maryland's Nontidal Wetland Compensation Fund managers try to site mitigation projects on state-owned land. Economies of scale associated with mitigating numerous, small impacts collectively on large wetlands tracts can also be achieved.

Additionally, fee-recipients -- to date, predominantly state resource agencies and non-profit conservation organizations -- generally have a more successful track record in wetlands restoration, creation, and enhancement, relative to individual permit applicants. This is because such agencies and organizations generally have the technical expertise and financial resources to plan and implement mitigation projects.

Despite such benefits, several concerns about fee-based compensation exist. For example, some regulators and environmentalists are uncomfortable with the concept of acknowledging fulfillment of mitigation requirements for projects that have not been completed, begun, or in some cases, identified. Corps districts consider mitigation requirements fulfilled upon payment of compensatory mitigation fees, when, at the time of payment, many fee-funded wetlands mitigation projects have either not yet broken ground, or are incomplete. Fee-based compensation arrangements may also be susceptible to charges that permittees are essentially buying the right to degrade wetlands. And while a perception exists that fee-recipients such as state agencies and conservation organizations have a more successful wetlands restoration or protection record, this may not always be the case.

Some Lessons for Design and Implementation

The variation of principal elements of fee-based compensation observed in the case studies provides clues about how others considering such arrangements might tailor those principal elements to their specific needs and situations. This report concludes by identifying several lessons based on experiences of programs examined in the case studies. These lessons are put forward as rules of thumb for fee-based compensation and do not represent blueprints, recipes, or hard and fast recommendations.

The type, number, and complexity of operating agreements should reflect the number and types of organizations involved in fee-based compensation. For example, letters of agreement from the Arkansas Nature Conservancy to the Corps appear sufficient as only these two organizations are involved and fee-based compensation occurs infrequently. On the other hand, MOUs may be

necessary when several public agencies are involved and when private organizations assume significant responsibilities, as in the cases of Ohio, St. Tammany, and Dade County.

The structure and complexity of fee-based compensation programs can vary in proportion to the likely demand and eligibility for this mitigation option. When designing such programs, consideration should be given to the number of transactions likely to occur. For example, Maryland anticipated that numerous permittees might exercise a fee-based compensation option if provided, and consequently established specific eligibility criteria in regulation and developed a fee-schedule that established per acre fees by county. Vicksburg also anticipated that demand for such an option could be great, and "pre-approved" several nonprofit conservation organizations as fee-recipients within a general permit. In contrast, parties involved in the Ohio program have spent considerable effort establishing a new entity to take the lead in implementing compensatory mitigation, developing an MOU, and planning for fee-based compensation, but it is not yet clear how many transactions the Corps district will approve. In another example of a potential problem in meeting demand for such options, the Jacksonville District conditioned the Dade County general permit to allow compensatory fees to be contributed to only one specific project. As a result, the fee-based compensation option may be discontinued when that project is completed.

Fee-based compensation programs can benefit from forging links with institutions already involved in wetlands projects and may even take advantage of opportunities to ride "piggyback" on such projects. For example, the St. Tammany program not only benefits from the Louisiana Nature Conservancy's expertise in preserving and managing longleaf pines, but also benefits from its purchase of a wetlands tract that is next to a Louisiana Natural Heritage Program site (the Conservancy also is using a management plan for its site developed by the Natural Heritage Program for its site). The Dade County program has also forged such a link, channeling monetary resources toward an ongoing enhancement and restoration effort in nearby East Everglades.

The type of fee account established to hold compensatory fees and the organization authorized to make disbursements from such accounts determine the pace and manner in which compensatory fees may be applied to mitigation projects. Consideration should be given to constraints on spending that may exist on account options when choosing fee accounts and account managers. For example, the Maryland Department of Natural Resources has not been able to disburse collected fees to mitigation projects as quickly as it might if the Department did not have to follow procurement rules requiring competitive bidding on some projects. The Department has gotten around such requirements by contracting site selection and mitigation to other public agencies, such as the Soil Conservation Service, that then conducts such tasks themselves, or can more easily hire and pay private contractors. Private organizations, such as nonprofits, typically do not encounter such spending difficulties.

Trust funds can meet the financial management needs of many types of fee-based compensation programs. They provide a segregated, dedicated account in which fees earn interest that may also be applied to wetlands mitigation. Trust funds, or similar accounts, may be essential where fee contributions are likely to be significant and fees held for some time until they are applied to mitigation projects. For example, Dade County, the Ohio Wetlands Foundation, Maryland, and the Louisiana Nature Conservancy have each established a trust fund to manage compensatory mitigation fees. Each program involves a significant number of permittees

contributing relatively substantial fees (with the possible exception of Ohio as participation rates are not yet evident). Each organization managing trust funds has established rules governing how trust funds may be used. In Arkansas, where fee-based compensation occurs infrequently, and in the Vicksburg District, where fees are contributed to several organizations, trust funds have not been established.

Where monetary compensation-eligible impacts are similar in size, type, or location, a general permit may be an effective and efficient regulatory mechanism under which to administer fee-based compensation. Three of the six programs studied offer fee-based compensation under general permits: Dade County, Maryland, and Vicksburg. In Dade County, all eligible impacts, as defined in the general permit, are within a specific geographic area, and each permittee choosing the monetary compensation option deposits fees to the same account. Similarly, Maryland's program involves nontidal wetlands exclusively and most of the eligible impacts are alike in size. Vicksburg's program is administered directly through its hydrocarbon exploration permit and impacts are similar in type and size by virtue of the applicants eligibility for the general permit.

Special conditions in individual and general permits can be used to detail permittees' obligations under a fee-based compensation option, including required fees, stipulated uses, and identification of fee-recipient. Each of the six Corps districts involved in the case studies has included special conditions in individual and/or general permits regarding such obligations.

Including long-term management costs in mitigation fees is a means to wholly or partially finance long-term management of mitigation sites. The mitigation fee in St. Tammany parish explicitly includes a \$500 per acre charge for long-term management. The Ohio Wetlands Foundation will be paying the Ohio Department of Natural Resources \$1,000 per acre to cover management costs, and presumably will include this cost in fees charged to permittees.

The principal elements of fee-based compensation have been designed and implemented in several permutations and combinations across the case studies. The arrangements described in the case studies reflect flexibility in tailoring fee-based compensation to the following: specific regulatory situations; the number and types of organizations involved; a range of sizes, types, and number of impacts eligible for fee-based compensation; a variety of viable mitigation opportunities; and different ecological impacts and objectives. The relevancy of the lessons identified above to other programs will depend on the given situation in which fee-based compensation is being considered.