MEMORANDUM OF UNDERSTANDING
between the
U.S. DEPARTMENT OF INTERIOR
FISH AND WILDLIFE SERVICE
and
NATIONAL BIOLOGICAL SERVICE
and
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WETLANDS PARTNERSHIP IN THE CHESAPEAKE BAY REGION

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to sanction the wetlands partnership among the Fish and Wildlife Service's (FWS) Chesapeake Bay Field Office (CBFO) and National Biological Service's (NBS) Patuxent Environmental Science Center (PESC) in the U.S Department of Interior and the Natural Resources Conservation Service's (NRCS) Wetland Science Institute (WSI) and Maryland State Office (MSO) in the U.S. Department of Agriculture. This MOU provides for coordination of efforts of the NBS and NRCS in serving the scientific needs of resource managers in the Chesapeake Bay Region. Further, this MOU implements the existing MOU between the NBS and NRCS, which establishes a framework for the coordination of biological research, inventory, assessment and monitoring, and information and telecommunications technology services.

The purpose of the Wetlands Partnership is to work together to develop, test, communicate, and implement wetland technology necessary for the restoration, creation, and enhancement of tidal and non-tidal wetlands; thereby providing a means for greater success in wetland restoration, creation, and enhancement. It is the intent of the partners that their actions and activities directly and indirectly benefit the Chesapeake Bay's region.

The WSI and PESC, and the MSO and CBFO have related responsibilities in a number of programmatic areas, especially in wetland ecology and conservation. The WSI and PESC conduct research and develop wetlands technology and CBFO and MSO are management organizations that conduct or recommend wetland restoration/creation and conservation. It is in the Nation's best interest that such programs be closely coordinated and mutually supportive. This partnership will facilitate such interaction and the coordination of biological research, inventory, assessment, and monitoring, and information and technology transfer. The partnership will also provide for mutual intra-agency and inter-agency cooperative efforts which will better manage information and strengthen the conservation and management of natural resources.

II. AUTHORITIES:

The FWS, NBS, and NRCS derive their authorities from specific legislation, annual appropriation acts, and various Executive and Secretarial Orders. Mission and background information for each of the partners is provided in Appendix I.

III. ROLES OF PARTNERS

The roles of the partners under this agreement are as follows:

Chesapeake Bay Field Office, FWS

1. Identify and communicate scientific information needs, giving adequate direction and feedback;
2. Provide research questions and sites;
3. Assist NBS and WSI in developing research proposals; and
4. Provide PESC and WSI with current information on wetland management activities.

Patuxent Environmental Science Center, NBS

1. Work with the FWS and NRCS in identifying those current issues needing research attention;
2. Conduct research to understand wetland functions and to evaluate the effectiveness of management techniques for restoring and creating wetlands;
3. Provide scientific and technical advice to management agencies through technical assistance and information transfer;
4. Support FWS and NRCS efforts for the Chesapeake Bay Program.

Wetland Science Institute, NRCS

1. Develop applied scientific techniques;
2. Develop reference domains and models to refine new wetland techniques;
3. Develop and sponsor field trials of new techniques;
4. Develop and disseminate technical literature and guidance documents;
5. Serve as technical liaison with other government, private sector, and university wetland research and technology centers to ensure the coordination and cooperative development and dissemination of emerging wetland scientific information; and
6. Work with the MSO, FWS, and NBS in identifying those current issues needing research attention.

Maryland State Office, NRCS

1. Identify and communicate scientific information needs, giving adequate direction and feedback;
2. Provide research questions and sites;
3. Assist NBS and WSI in developing research proposals; and
4. Provide PESC and WSI with current information on wetland management activities.

IV. PARTNERSHIP GOALS AND OBJECTIVES

The goals and objectives of the partners are listed below. See Appendix II for a current list of specific projects and activities. The list of projects and activities will be amended as necessary through mutual agreement among the partners.

A. Identify and address management needs for scientific information:

1. Contribute joint capabilities to wetlands restoration, creation, and enhancement;
2. Improve the efficiency and effectiveness of research efforts;
3. Coordinate research agendas;
4. Pool human, physical, and financial resources.
5. Support management plans and policies with sound science; and
6. Work collectively with other government and conservation organizations to complement mutual interests in the context of the Chesapeake Bay Program; and

B. Enhance communication among the partners:

1. Share wetlands information, knowledge, and research, including activity report items pertaining to wetlands and any other items that may be beneficial to the partnership;
2. Translate research findings into usable information for management; and
3. Form and actively participate in a wetlands committee. The committee will meet at such times and locations as determined by the Chairperson in consultation with the members. The committee will meet as necessary to plan projects and activities to be undertaken by the partnership during the current and succeeding fiscal years.

V. PRODUCTS AND SERVICES:

A. This MOU broadly defines, in general terms, the basis on which the parties concerned will cooperate and, as such, it does not constitute a financial obligation to serve as a basis for expenditures.

B. Should it become necessary to provide or exchange specific services between the signatory agencies, such services will be arranged through separate Letters of Agreement under this MOU. Such acquisitions shall be prepared under the authority of the appropriate legislation and the scope of this MOU. These interagency agreements will contain detailed descriptions of the required services and products, the expected delivery dates, costs, and performance period.

VI. DURATION AND PROVISIONS FOR MODIFICATION AND TERMINATION:

A. This MOU shall become effective on the date of the last signature affixed hereto and remain in effect until terminated by one or more parties upon written notice to the other parties.

B. This MOU may be amended or modified by mutual consent of the parties.

C. This MOU does not modify any existing agreements between the parties.

VII. SIGNATURES:

John P. Wolflin

JOHN P. WOLFLIN
FIELD SUPERVISOR, FWS
CHESAPEAKE BAY FIELD OFFICE

7/5/95
DATE

David L. Trauger

DAVID L. TRAUGER
ACTING CENTER DIRECTOR, NBS
PATUXENT ENVIRONMENTAL
SCIENCE CENTER

July 5, 1995
DATE

Acting for

JERI L. BERC
STATE CONSERVATIONIST, NRCS
MARYLAND STATE OFFICE

7/5/95
DATE

Billy M. Teels

BILLY M. TEELS
DIRECTOR, NRCS
WETLAND SCIENCE INSTITUTE

7/5/95
DATE

Mission and Background of Partners

Fish and Wildlife Service

Mission: The mission of the FWS is to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.

To accomplish its mission, the FWS acquires, manages, and protects unique ecosystems; operates fish hatcheries to maintain the Nation's fisheries at a level and in a condition that will assure their continued survival; renders financial and professional technical assistance to States through Federal aid programs for the restoration and enhancement of fish and wildlife resources; promulgates and enforces regulations for the protection of fish and wildlife resources pursuant to Federal law; conducts programs of planning, evaluation, and professional technical assistance to provide other agencies advice for the proper use and protection of fish and wildlife resources and their habitats; and conducts outreach programs to communicate the importance of fish and wildlife resources and to foster a stewardship ethic in the American public.

Research, inventory and monitoring, and information and technology transfer services were transferred from the FWS to the NBS upon its creation in 1993. This transfer left the FWS with no mission-related research program and without research and development capability.

National Biological Service

Mission: The mission of the NBS is to work with others to provide scientific understanding and technologies needed to support the sound management and conservation of our Nation's biological resources.

To accomplish its mission, the NBS enters into partnerships with scientific collaborators to produce quality scientific information, and users of scientific information to ensure its relevance and application to real problems.

The NBS gathers, analyzes, and disseminates the biological information necessary for sound stewardship of our Nation's natural resources through research, inventory and monitoring, and information and technology transfer programs. NBS research not only serves other Interior bureaus but frequently supports the interests of other Federal and State agencies.

The Secretary of the Interior created the NBS in 1993 by combining the biological science programs of selected bureaus in the Department of the Interior.

Natural Resources Conservation Service

Mission: The mission of the NRCS is to provide leadership and administer programs to help people conserve, improve, and sustain our natural resources and environment.

To accomplish its mission, the NRCS assists landowners and communities in taking a comprehensive approach to conservation planning that considers all natural resources; and develops and provides technologies that reduce soil erosion, improve cropland and rangeland health, protect water quality, conserve wetlands, and provide fish and wildlife habitat.

Responsibility for assisting landowners and communities lies with NRCS State offices such as the Maryland State Office. Responsibility for developing and providing technologies lies with the Wetland Science Institute.

The Soil Conservation Service (SCS) in 1994 changed its name to the Natural Resources Conservation Service to more accurately reflect the Agency's total resource orientation. The NRCS then reorganized in 1995 which included segregating wetland technology development from field operations, policy development, and oversight.

Appendix II
(DRAFT) June 30, 1995

Projects and Activities

NOTE: This list of projects and activities is amended as necessary through mutual agreement among the partners.

1. **Plant Materials** - Develop plant materials for wetland restoration/creation activities.

   a. Develop regionally adapted plant materials for planting in restored wetlands
   b. Develop effective cultural practices for establishing wetland vegetation
   c. Establish cost effective source of plant materials for wetland restoration plantings

   Purpose: To ensure that a ready source of seed, plants, or other germ plasm is available for planting in wetlands restored in the Mid-Atlantic region.

   Justification: Wetlands restored under the various federal wetland programs require the development of a plan that specifies the planting rates, dates, and percent survival for planted vegetation. Success in establishing and maintaining wetland vegetation is largely dependent on the type and source of plant materials available. Many restoration projects are limited due to lack of wetland plant materials adapted to the region, lack of plant material sources, or scarcity of local seed sources, which in turn makes planting in some instances cost prohibitive.

   This proposal is intended to address scientific information needs identified by natural resources managers. Needs identified include:

   a. Ideas on cost effective sources of germ plasm (seed) for restoration. Specifically, can marsh or meadow hay be used to provide both a seed source and mulch? If yes, when should it be cut and how should it be planted?

   b. Alternate seed mixes that can accomplish soil erosion requirements yet provide more for wildlife. Erosion and sediment control specifications and seed sources are not necessarily conducive to wetland or wildlife habitat development.

   c. Identification of native species for use in berm vegetation/planting in Maryland. Of particular concern is the identification of native species, with high wildlife value, that can be successfully used to stabilize excavated subsoil during Maryland's hot dry summer.

d. Information regarding seeding for subsoil vegetation establishment; especially along the edges of shallow ponds which are alternately wet and dry. Specifically, should seeds be incorporated at the time of planting, with or without the use of mulch, or broadcast later in shallow water or moist soil?

2. **Site Preparation** - Research site preparation and the use of amendments to demonstrate the extent to which soil management practices can be used to aid the re-establishment of vegetation in restored/created wetlands.

Purpose: To identify the best soil management practices necessary for the successful establishment of vegetation in forested wetlands.

Justification: One of the major problems in restoring/creating wetlands is finding sites where soils have not been degraded beyond the ability to restore. The same problem occurs with establishment of vegetation in upland areas where erosion or other anthropogenic factors have depleted the soils organic matter and nutrient supply. In upland areas, soil amendments (leaf mulch, wood chips, compro, etc.) have been historically used to supplement degraded soils to enhance the success of vegetative re-establishment. Studies are needed to demonstrate the extent to which soil management practices can also be used to aid the re-establishment of vegetation in restored/created wetlands, particularly in forested wetlands where the success of reestablishing woody wetland vegetation is characteristically low.

This proposal is intended to address scientific information needs identified by natural resources managers. Needs identified include:

a. Determine which soil enhancers (leaf mulch, wood chips, compro) are best to increase growth of trees in created forested wetlands.

3. **Monitoring** - Monitoring/research to determine success of wetland sites restored, enhanced or created on agricultural lands.

a. Sites with levees and open water created through Maryland cooperative agreement with NRCS
b. Bog turtle wetlands
c. Typical restorations done under the Partners or WRP Programs

Purpose: To document the effects of federally assisted wetland projects, including a complete description of the effects on water quality, flora and fauna.

Justification: The benefits of wetland restoration programs receiving federal dollars are continually challenged. Although much anecdotal information has been provided to help justify these programs, very little scientific data has been presented documenting the actual effects of wetland restoration/creations on the environment. Conducting research

on wetlands restored under these programs will provide not only a basis for establishing their success or failure, but provide information on how the programs can be improved to maximize their effectiveness. Similar studies are now being conducted in the Prairie Pothole Region and the Lower Mississippi Valley. Studies are needed in the mid-Atlantic area to represent wetland restorations typical to the region.

This proposal is intended to address scientific information needs identified by natural resources managers. Needs identified include:

a. Monitoring of wetland restoration sites to evaluate their contributions as wildlife habitat and to provide other wetland functions.

b. Comparison of wildlife colonization rates in created and restored wetlands in regard to the availability of adjacent habitat.

c. Comparison of plant colonization rates in created and restored wetlands in regard to availability of adjacent habitat.

d. Develop protocol for monitoring wetland restoration/creation that would build in professional and volunteer involvement.

4. **Noxious Weed Control and Prevention** - Identify methods to select and prepare restoration sites that will minimize noxious plant invasions and develop environmentally sensitive methods of weed control.

Purpose: To identify practices that will help prevent the establishment or will control noxious weeds in wetlands.

Justification: The goal of most federally assisted wetland restoration projects is to restore wetlands back to the natural condition that existed prior to conversion. Similarly, the goal of most wetland creation projects is to simulate the functions of natural wetlands. One of the common problems in achieving restoration to the natural state is the invasion and establishment of noxious weeds, such as Phragmites australis, which often dominates natural wetland vegetation and impairs wetland function. Methods are needed to select and prepare restoration sites that will minimize noxious plant invasions and develop environmentally sensitive methods of weed control to reduce competition until natural wetland vegetation can become established.

This proposal is intended to address scientific information needs identified by natural resources managers. Needs identified include:

a. Identification of best techniques for noxious weed (multiflora rose, phragmites) control and prevention on restoration sites.

b. Evaluation of factors affecting the establishment and distribution of Phragmites australis in an estuarine environment.

c. Determination of growth rates of Phragmites australis in 10-foot diameter mesocosms treated with various levels of sediment and nutrient-laden fresh water.

5. **Herptofauna** - The Smithsonian Environmental Research Center (SERC) is conducting a long-term study of the water quality effects of agricultural run-off into enhanced freshwater depressional wetlands. Several wetlands of varying age and successional level are included in the study. All of these wetlands have been enhanced/created by the Chesapeake Wildlife Heritage Foundation and are located on farms on the eastern shore of Maryland. WSI has proposed to supplement the original SERC study with funding and personnel, and to expand the scope. Under its proposal, the WSI would evaluate the conditions of the herptofaunal community in these wetlands as relates to water quality and adjacent agricultural practices.