

FRESHWATER WETLANDS IN DELAWARE:
A FRAMEWORK FOR THEIR
CONSERVATION, PROTECTION
AND MANAGEMENT

REPORT OF THE GOVERNOR'S
FRESHWATER WETLANDS ROUNDTABLE

June 1989

June 1, 1989

The Honorable Michael N. Castle
Governor, State of Delaware
Legislative Hall
Dover, Delaware 19901

Dear Governor Castle:

In response to Executive Order 56, I am pleased to transmit to you the final report of the Freshwater Wetlands Roundtable. The report is appropriately titled, Freshwater Wetlands in Delaware: A Framework for Their Conservation, Protection, and Management. It is the belief of Roundtable members that the recommendations in this report should be the basis for the development of a comprehensive freshwater wetlands legislative package to be submitted to the General Assembly for consideration next session.

This report endorses a policy goal of no-net-loss of freshwater wetlands. The Roundtable members have specified a no-net-loss policy statement and recommended a pro-active public/private partnership strategy to achieve it.

Consistent with your mandate to the Roundtable, the report recommends a workable definition and approach to the delineation of freshwater wetlands. In addition the Roundtable identified those elements that should be considered in the development of a freshwater wetlands conservation program for Delaware.

The Roundtable identified five central issues that need to be addressed in the development of a State freshwater wetlands program. The issues examined by the Roundtable include:

Section 404. We recommend that the State move forward with the development of a freshwater wetlands program with the goal being the eventual assumption of the Federal 404 program.

Permissible and Prohibitive Uses. We recognize that not all freshwater wetlands are alike. We, therefore, recommend that at least three classes or types of freshwater wetlands be formulated and accorded differing levels of protection.

Mitigation, Restoration, and Creation. We recommend that the State develop and formally adopt both a mitigation policy and freshwater wetland restoration and creation strategy. We have specified some guidelines that should be considered in these endeavors.

Acquisition. We note that the surest way of protecting freshwater wetlands is to acquire them. Specific recommendations are offered on how an acquisition program should be approached.

Education. We believe that Delawareans should become more knowledgeable about freshwater wetlands. We recommend a number of education projects that should be undertaken by both the public and private sectors.

In sum, this report by the Roundtable serves to begin to frame the public policy discussion regarding what Delaware's freshwater wetlands program should be. We hope that Delawareans will read the report, react to it, and suggest ways for improving and refining the framework we have laid-out.

We look forward to your comments.

Sincerely yours,



Andrew T. Manus
Chairman, Governors'
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PREFACE

This report represents the response of the Governor's Freshwater Wetlands Roundtable to Executive Order Number 56. The Roundtable was charged with three specific tasks:

- 1) To develop and recommend a workable definition for freshwater wetlands;
- 2) To recommend a freshwater wetlands conservation program for privately held lands; and
- 3) To report on the financial ramifications of such a program on the State's budget and recommend a timetable for implementation.

By way of guidance in undertaking these tasks, Governor Castle challenged the Roundtable by suggesting:

We should look to establish a long term state goal of stabilizing our state's freshwater wetlands acreage. I believe that, in some cases, overriding societal benefits will mean that some of our existing freshwater wetlands must be converted to other uses. However, in such cases, we must find ways to offset these losses by restoring equal, or greater, acreages of degraded wetlands to a productive state or recreating wetlands in appropriate areas. Creative approaches should be enacted that, over the long run, can actually increase the net amount of productive freshwater wetland acres in Delaware.

With our tasks outlined and guidance provided, the Roundtable organized itself to address the challenge of understanding the State's freshwater wetland resources. From December 1988 through March 1989, the Roundtable engaged in an active process of factfinding. Roundtable meetings were structured to hear presentations from Environmental Protection Agency (EPA) and Corps of Engineers (COE) representatives; freshwater wetland program managers from other states; private consultants; State agency officials and technical staff; and the public. In addition to the formal presentations, various reports and legislation related to wetland regulations were reviewed, and four field trips to freshwater wetland sites were conducted. A listing of some of the pertinent documents consulted are noted in the reference section of this report.

The second phase of the Roundtable's effort commenced in mid-March, when we organized into working groups to address specific issues related to our charge. These groups examined the issues of: Definition; Section 404; Permissible and Prohibitive Uses; Mitigation, Restoration, and Creation; Acquisition; and Education. Each group researched its issue, drafted a background paper, and reported its findings and recommendations to the Roundtable. These papers and presentations provided the basis upon which this report is drafted. The background papers and related materials will be compiled into a reference guide during June 1989.

INTRODUCTION

This report concerns itself with the identification, discussion, and recommendations related to those issues that should be considered as key elements to any freshwater wetlands program undertaken by the State of Delaware. This report is not a treatise on the ecological functions and values of freshwater wetlands in Delaware. This topic was the subject of a 1985 report by the U.S. Fish and Wildlife Service titled *Wetlands of Delaware* and a special edition 1987 Vol. 30 Number 3 of the *Delaware Conservationist*. There is consensus among Roundtable members that Delaware's freshwater wetlands serve many useful functions and are valuable to the ecological infrastructure of the State. The Roundtable also recognizes that all freshwater wetlands are not alike and that the issues involved are not necessarily as clear-cut as those related to tidal wetlands.

BACKGROUND

It is the purpose of this report to provide a focus and framework from which to begin the public policy discussion on how to best conserve, protect, and manage Delaware's remaining freshwater wetland resource base. We acknowledge that freshwater wetlands provide many benefits. A summary of these benefits by function and value is noted in the sidebar titled, "Why Save Freshwater Wetlands?"

Why Save Freshwater Wetlands?

It is the consensus of the Governor's Freshwater Wetlands Roundtable that we must conserve and protect and, where feasible restore Delaware's freshwater wetland resource base. Freshwater wetlands are a critical component to the State's ecological infrastructure and to our quality of life. They are the interface between our upland and aquatic areas, and as such ultimately influence the quality of life in both. However, all freshwater wetlands are not alike in the functions and values they provide. The size, type, location, and composition of freshwater wetlands determines the extent and quality of the benefits provided. When taken collectively, the benefits of freshwater wetlands include:

- Flood Control — freshwater wetlands temporarily store and gradually release flood waters, thereby reducing flood impacts on downstream properties.
- Water Supply — freshwater wetlands can be either an important source of groundwater recharge into drinking water aquifers or a source discharge providing surface water availability during drought depending on the individual site.
- Water Quality — as natural purification mechanisms, freshwater wetlands act as sediment traps and filters which absorb many chemical and nutrient pollutants.
- Shoreline Stabilization — freshwater wetland vegetation adjacent to waterways protects the shoreline from natural and man-induced forces of erosion.
- Wildlife Habitat — freshwater wetlands provide food, cover, and water for a variety of wildlife species, many of which must have wetlands in order to survive and reproduce.
- Rare and Endangered Species — Freshwater wetlands are the last remaining habitats for many of Delaware's most interesting and unique plant and animal species.
- Food Chain Support — freshwater wetlands are breeding areas for aquatic invertebrates, which are an important food source of young waterfowl.
- Fishery Habitat — freshwater wetlands can serve as important breeding, nursery, and feeding areas. Many commercially harvested and recreationally valuable fishes are dependent upon freshwater wetlands.
- Recreation — freshwater wetlands are important for active and passive recreation activities such as hunting, fishing, trapping, bird watching, photography, and nature walks.
- Aesthetics — as natural habitats, freshwater wetlands frequently contain a variety of beautiful plants, many of which produce flowers. Wetlands function very well as open space amenities to complement ongoing development.
- Research and Education — freshwater wetlands provide unique biological research and education opportunities and are frequent locations of important cultural resource finds.
- Food and Timber Production — freshwater wetlands are naturally very productive, many times more productive than cultivated lands. Although effective ways to utilize wetland vegetation are limited, under proper management, freshwater wetlands can be an important source of timber production.

The Current Situation

A recent report by the National Wetlands Policy Forum (1988) noted that the nation has lost half of its wetland resource base since colonial times. The same situation holds true for the freshwater wetland resource base in Delaware. Further, from 1956 to 1979, the State lost 38,000 acres of freshwater wetlands. Of the remaining approximately 120,000 acres of freshwater wetlands, the Department of Natural Resources and Environmental Control (DNREC) estimates present losses to average more than 1,500 acres annually.

These losses, at both the national and state level, have received considerable attention. In part, this attention is based on the finding that the nation's and State's wetland resources are not adequately protected. Recent reports by the U.S. Fish and Wildlife Service (1985), the General Accounting Office (1988), and the National Wetlands Policy Forum (1988) note that federal and state programs designed to protect wetlands are neither comprehensive nor consistent. A 1985 joint publication by the U.S. Fish and Wildlife Service (USFWS) and the DNREC observed that the State's tidal wetlands appear to be well protected. However, it went on to state that the outlook for inland [freshwater] wetlands is not promising. It noted that these wetlands are not protected by State law and existing Federal regulations are not comprehensive at providing the necessary protection.



Nearly 75 percent of all Delaware species of special concern are found in freshwater wetlands (*Coreopsis rosea*).

No-Net-Loss: An Approach for Delaware

In recognition of this situation, there has been a call for the adoption of a no-net-loss goal for wetlands. This goal is intended to guide federal legislation and all government programs affecting wetlands. Governor Castle challenged the Roundtable to consider such a goal for Delaware's freshwater wetlands. To date, several organizations have endorsed a wetlands policy goal of no-net-loss. These groups include the EPA, the National Governors' Association, the Chesapeake Bay Commission, and the American Forestry Council. The Roundtable supports the concept of no-net-loss of freshwater wetlands. We recommend that State policy be consistent with Federal policy. To that end, we suggest the policy for Delaware be: **the State establish a statewide freshwater wetlands protection policy to achieve no-net-loss of the State's remaining freshwater wetland base, as defined by acreage and function; and to restore and create freshwater wetlands where feasible to increase the quantity and quality of the State's freshwater wetland resource base.** We further recommend that this no-net-loss policy be accompanied by a specific strategy that places the burden for implementation on both the public and private sectors. The guiding principles behind such a program are highlighted in the sidebar titled, "No-Net-Loss: The Development of a Restoration Partnership Program."

Advantages of a Freshwater Wetlands Program

It is the recommendation of the Roundtable that the State needs to develop a freshwater wetlands program. The major elements of the program are discussed in the issue and recommendation sections that follow. Briefly, the key components to a successful program should include education and acquisition, regulation, and restoration of freshwater wetlands. The advantages of such a program would be the protection and conservation of a diminishing natural resource base; the establishment of a coherent and consistent State decision-making framework to assess the affect of public and private projects on freshwater wetlands; provide for a consistent State position to be conveyed to Federal agencies charged with wetland protection programs; develop a track record of State responses to freshwater wetland decisions; move to expedite the time for permit approvals or denials; and provide for more creative approaches to freshwater wetlands conservation.

A Regulatory Program for Delaware

The Roundtable recommends that Delaware exercise control of freshwater wetlands through a permit program authorized by statute. The issuance of permits would be governed by regulations adopted pursuant to guidelines set out in the statute. This approach is designed to require an evaluation of proposed uses, in order to permit those uses which will not adversely alter the freshwater wetland and to deny uses which will have a significant adverse effect. Because all freshwater wetlands are not alike, the permit system recommended utilizes a matrix evaluation format. The matrix format will require freshwater wetlands to be categorized by type and subject all proposed activities in freshwater wetlands to an objective evaluation on a case-by-case basis. The issuance of a permit and mitigation requirements will be tied to the type and quality of the wetland affected.

THE ISSUES

What follows is a description of what a state program should look like. This description is organized by the major issues that must be addressed by any program developed. Along with the statement of each of the six issues identified by the Roundtable are specified recommendations, an implementation timeline, and a fiscal note. **We believe that the recommendations in this report should be the basis for the development of a legislative package titled, The Freshwater Wetlands Conservation, Protection, and Management Act of 1990, to be submitted to the General Assembly for consideration next session.**

No-Net-Loss: The Development of a Restoration Partnership Program

In order to achieve a goal of no-net-loss of freshwater wetlands over the short-term and increase the freshwater wetland resource base over the long-term, an aggressive program of restoration must be initiated. Although there is general agreement in the scientific community that there can be no exact duplication of wetlands lost, there is evidence that some kinds of wetlands may be restored to fulfill many of the same functions.

To a certain extent, information on the degree of success in wetlands restoration is limited because few attempts at restoration have been made, and the ability to evaluate those attempts is equally limited because accurate techniques for measuring and monitoring functions do not exist. Therefore, it will be very difficult to achieve a policy goal of no-net-loss without supporting a specific implementation strategy. What is clear is that a casual approach to freshwater wetlands restoration aimed at achieving the goal of no-net-loss through strictly a regulatory program will not succeed. A more deliberate and aggressive approach is needed.

The Roundtable believes that for a restoration strategy to be successful we must have a basis upon which to evaluate it. This basis should be the number of acres of wetlands that a restoration program is able to restore annually. For example, one must accept (for illustrative purposes) that Delaware currently contains approximately 120,000 acres of freshwater wetlands. Another given would be that Delaware is currently losing 1500 acres per year from this amount as a result of conversions to other uses. Under this scenario for the State to stay even (no-net-loss), it must restore, create, or avoid the loss of 1500 acres annually.

If we depend strictly upon traditional regulatory programs to balance out this equation and provide for no-net-loss, we will fail. At present, the best available data on mitigation efforts (Krohe, 1989) estimates that success is only achieved in 50% of the projects undertaken.

To overcome this inherent deficit, we recommend a pro-active public/private sector technical assistance and restoration partnership program be established. The underpinnings of the program will include the development of a restoration inventory, demonstration projects on private and public lands, and the development of economic incentives to participate in the program. Specific recommendations for such a program are included in the issue section of this report under "Mitigation, Restoration, and Creation of Freshwater Wetlands."

ISSUE: DEFINITION

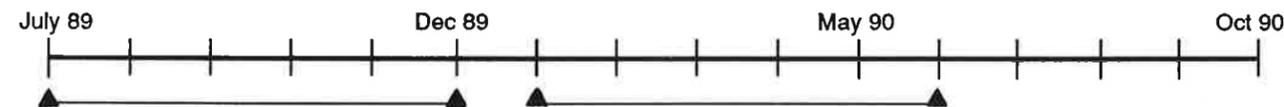
Wetlands comprise an appreciable portion of the land surface of Delaware. The USFWS estimates approximately 200,000 acres (Tiner, 1985) are wetlands. Some 40 percent of these are classified as estuarine, while the balance is dominated by palustrine (freshwater). The latter includes riverine tidal wetlands and those that have no surface drainage, such as DelMarVa Bays. These wetlands may be herbaceous plant-dominated marshes or tree-dominated swamps.

Wetlands possess three essential characteristics: (1) wetland hydrology, (2) hydric soils, and (3) hydrophytic vegetation, all of which are involved in the creation of all wetlands. While there have been literally dozens of definitions of wetlands created to meet various needs, these three technical criteria have been identified by federal agencies as mandatory and must be met for an area to be identified as wetland. See sidebar titled, "Delineation of Freshwater Wetlands."

Recommendations

- Freshwater wetlands of Delaware should be defined as those areas that meet the following conditions: (1) are inundated or saturated by surface or ground water during the growing season at a frequency and duration to deprive the soil of oxygen; (2) are comprised of hydric soils as determined by the Munsell methodology; and (3) have a predominance of obligate wetland and facultative wetland hydrophytes. Areas that meet these criteria are wetlands, and the Governor's Freshwater Wetlands Roundtable concurs with the Federal criteria for wetland delineation as specified in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (January 1989).
- Wetland Hydrology. Permanent or periodic inundation, or soil saturation to the surface, at least seasonally, are the driving forces behind wetland formation. The presence of water for seven consecutive days during the growing season (1 March through 30 October) typically creates anaerobic conditions in the soil which affects the types of plants that can grow and the types of soils that develop.
- Hydric Soils. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season (1 March through 30 October) to develop anaerobic conditions in the upper part. In general, hydric soils are flooded, ponded, or saturated for seven consecutive days or more during the period when soil temperatures are above biologic zero (41°F). The Munsell methodology compares soil colors against a collection of standard color charts.
- Hydrophytic Vegetation. Hydrophytic vegetation is defined as macrophytic plant life growing in water, soil, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Implementation Guide Line



Schedule and require training of all wetland staff in the new federal unified approach to wetland identification and delineation.

Ensure the adoption of the new federal unified approach in any enacted state freshwater wetlands program.

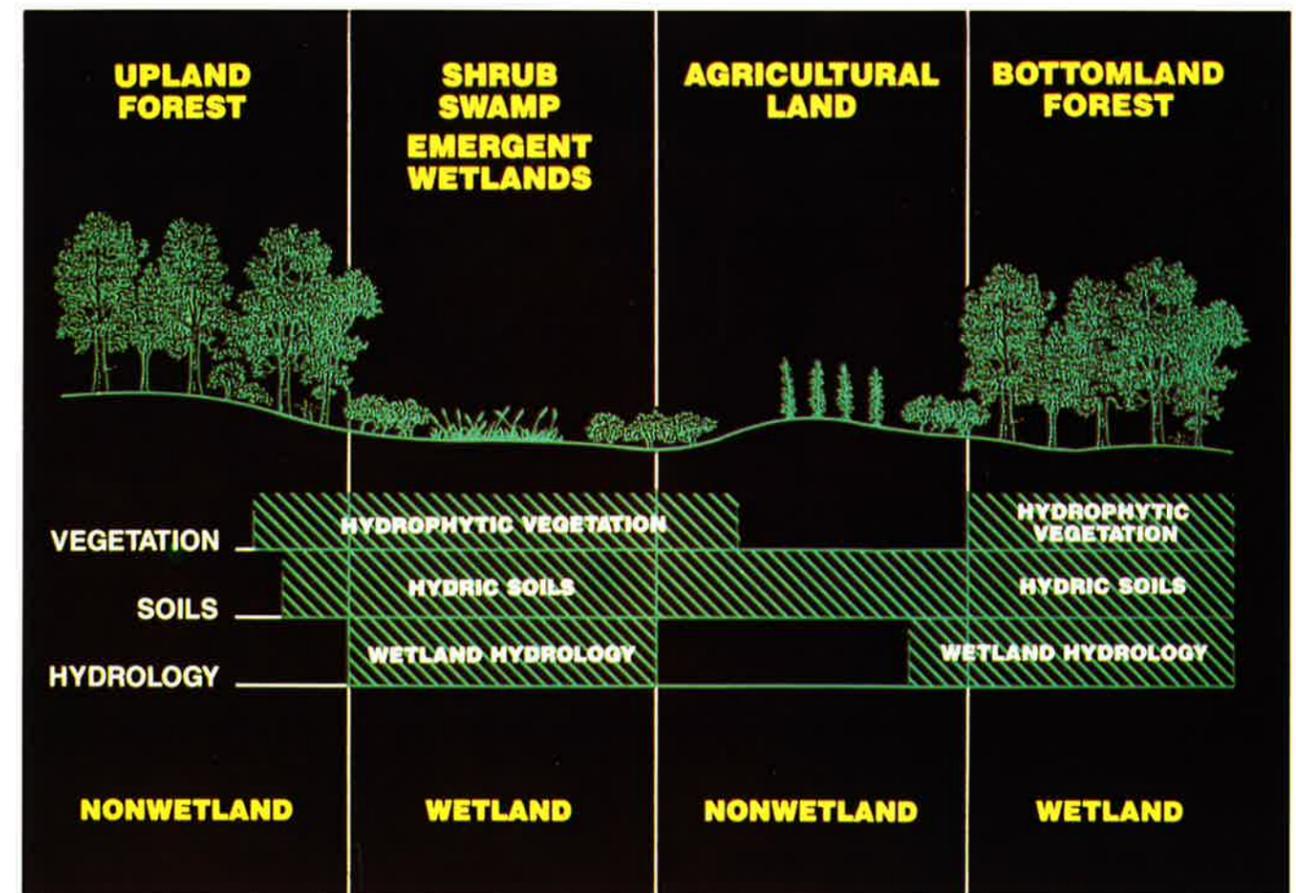
Fiscal Note

The cost for a comprehensive on-site one week intensive training workshop by national wetland experts is \$ 15,000. The State could recover some of this cost by offering enrollment on a space available basis to private sector interests.

Delineation of Freshwater Wetlands

Much of the frustration faced by agriculture, forestry, development, and regulatory interests is the lack of a consistent definition and delineation method for designating freshwater wetland boundaries. This problem was highlighted in The Final Report of the National Wetlands Policy Forum (1988). In that report, it was noted that "Although, in effect, only two major definitions are used at this federal level, over 50 are employed in the nation's many regulatory, research, survey, and other wetlands programs."

Since this report was issued, a major impasse over wetland definition and delineation has been bridged among the federal agencies (COE, EPA, USFWS, and the U.S. Soil Conservation Service) involved with wetland regulation. In a memorandum of understanding signed 10 January 1989, these agencies have agreed to adopt a unified approach to the wetland identification and delineation issue. Briefly, this agreement requires a three parameter approach to be used to define and delineate wetlands. The three parameters used in this determination are those concerned with hydrophytic vegetation, hydric soils, and wetland hydrology. The accompanying illustration depicts how a delineation will be made using the three parameter approach.



ISSUE: SECTION 404 AND A STATE PROGRAM

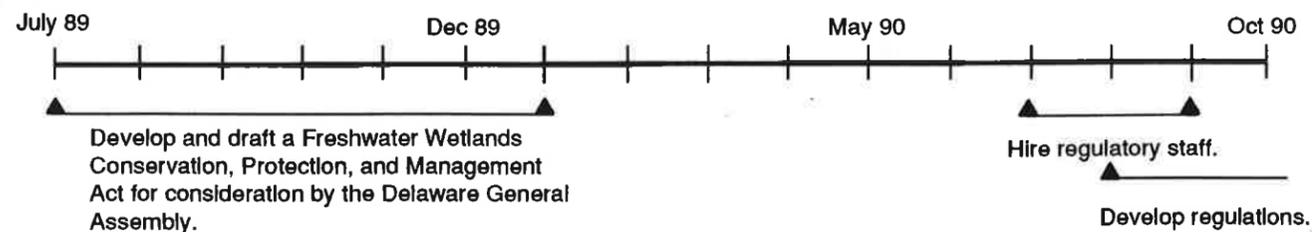
On October 18, 1972, the 92nd Congress enacted the "Federal Water Pollution Control Act Amendments of 1972" (Public Law 92-500). Section 404, is a permit program to control the discharge of dredged or fill materials into U.S. waters. The COE has the responsibility of operating the basic permit program.

The Clean Water Act of 1977 established a system whereby a state could assume a significant part of the 404 Program. The object was to return responsibility for certain decisions affecting land use to the states and to limit duplication of effort. The state programs are essentially to mirror the federal program and must comply with the Section 404 guidelines. As presently enacted, these guidelines do not make it attractive for a state to assume the program. The reasons are: lack of funding to administer the program; cumbersome and time-consuming reporting requirements; and inability of 404 to comprehensively manage freshwater wetlands.

Recommendations

- Delaware should move forward independent of the 404 assumption process and develop a freshwater wetlands conservation program with the goal being that of no-net-loss as noted in this report. The program should be centralized in the DNREC so as to reduce start-up costs. The advantages of such a program include; better protection for freshwater wetlands; improved coordination with the COE on the joint issuance of permits to reduce the timeframe for issuance of a federal permit; and provide for a less cumbersome transition in the eventual state assumption of the 404 program.
- Delaware should re-examine the 404 assumption issue if there are changes in the present guidelines for transferring the program from the COE to the states. The ultimate goal is for Delaware to administer the 404 program.
- Delaware should work closely with the EPA and COE so that once developed, its State program would qualify for State Program General Permits issued by the COE. These permits are issued to the State for those activities that the COE, in consultation with EPA, feels are receiving proper permitting authorization from the State.
- A framework for protecting freshwater wetlands should include: clear goals and policies; education, training, and research programs; regulations and a permit program (with the option of requiring a bond or other instrument to secure compliance with the conditions in the permit); resource mapping (for guidance); acquisition; guidelines for mitigation, restoration, creation, and enhancement of freshwater wetlands; state best management practices for agricultural and silviculture activities; and programs for conservation easements, preservation trusts and purchasing of development rights.
- The regulatory portion of the program should be staffed with two regulatory specialists supported by the general fund with a provision provided for cost-recovery via the establishment of a permit and field delineation fee schedule.

Implementation Guide Line



Fiscal Note

Approximate cost for drafting a freshwater wetland act is \$20,000. The approximate cost for a regulatory program would be \$200,000. These costs include personnel, office equipment, and contract services (guidance mapping). Some of these costs could be recovered by the establishment of a permit and field delineation fee schedule.

ISSUE: PERMISSIBLE AND PROHIBITIVE USES

Given the jurisdictional definition of a freshwater wetland it becomes necessary to consider the method of exercising control, the types of uses or activities permissible, the circumstances and situations in which control is to be exercised, and the types of control subject to use when activities and uses are undertaken. In addressing such considerations the following approach is recommended.

Recommendation

I. Method of Control.

- In addition to promoting education, sound land use planning and voluntary practices, the need exists to exercise control through a freshwater wetlands permit program authorized by statute. The issuance of permits would be governed by regulations adopted pursuant to guidelines set out in the statute. The permit program would address activities which have the potential of destroying freshwater wetlands and deal not only with the federally prescribed activity of filling, but also excavation, stripping, placement of structures and other uses which destroy wetland functions. With respect to the activities subject to control the permit system would operate as follows:

A. Permitted Activities. Uses and activities within this category would require the obtaining of a permit via application and would involve mitigation, restoration and creation of wetlands for the loss of wetland area or function resulting from the use or activity.

B. Exemptions Subject to Conditions. Uses and activities within this category would be permitted without the obtaining of a permit, but would be subject to adopted general regulatory controls in the form of Best Management Practices (BMP's). It is anticipated that the majority of activities and uses exempted from the permit requirement would fit into this category.

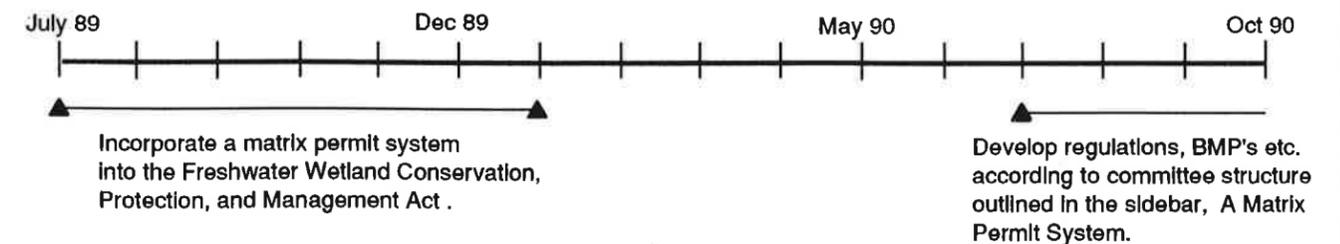
C. Exempt Activities. This category would include activities and uses exempted by statute and regulation. With respect to some activities and uses, certain voluntary non-obligatory BMP's would be encouraged. It is anticipated that such activities classified as exempt would be narrowly defined.

As a guide to dealing with the categories of exemptions subject to conditions and exempt activities, it is recommended that for purposes of consistency the exemptions in the Federal Section 404 regulations and exemptions in the State tidal wetland regulations be used as a guide for adoption in the State freshwater wetlands permit program.

II. Freshwater Wetland Categories.

With respect to the category of uses and activities requiring permits, the issuance of permits and mitigation requirements should be tied to the quality of the wetlands affected. Inasmuch as the jurisdictional definition of freshwater wetlands includes areas divergent in nature and function, including "wetness", it is recommended that at least three classes or types of wetlands be formulated in accordance with the level of protection necessary. For example, extremely valuable areas would be placed in a category requiring the maximum degree of protection and require the most extensive form of mitigation. In effect, a matrix system would be developed under which permit requirements would be imposed under a tiered structure on the basis of the type of wetland involved.

Implementation Guide Line



Fiscal Note

Costs noted under Issue: Section 404 and a State Program

ISSUE: PERMISSIBLE AND PROHIBITIVE USES (cont.)

III. General Principles.

- Under the permit system there would be no per se prohibited uses. In situations in which on-site mitigation is not feasible or effective mitigation would be effectuated through use of an available mitigation bank administered under the mitigation-restoration-creation program. The no-net-loss objective would not be addressed directly by the permit program but rather indirectly through the efforts of the responsible agency implementing the mitigation-restoration-creation program.

For an explanation of how the issue of permissible and prohibitive uses might be approached see the sidebar titled, "A Matrix Permit System."

A Matrix Permit System

A recommendation has been made that a freshwater wetlands permit program be adopted under which a matrix approach would be used to determine the activities and uses allowed subject to various controls in three categories of freshwater wetlands. For activities and uses within the matrix system requiring a permit, it would be necessary for the agency administering the program to adopt, after notice and public hearing, specific regulations imposing controls governing the issuance and denial of permits. Outside of the formal permit process, other uses and activities occurring within jurisdictional areas would be allowed by either exemptions subject to conditions or total exemption. With respect to the category of exemptions subject to conditions, it is anticipated with standard requirements for engaging in such activities would be adopted in the form of BMP's. The BMP's would be tailored to address the specific activity involved and would take the form of generally applicable conditions. Such BMP's would be manda-

tory, and, like regulations, would be adopted by the agency administering the permit program after notice and public hearing. It is also anticipated that certain activities, which are exempt subject to conditions, would require advance notification to the agency administering the permit program, but no formal permit application or agency review process would be involved.

For purely exempt activities, voluntary BMP's would be recommended for use. Rather than taking the form of regulations, such voluntary BMP's would be developed and published by the agency administering the program in an educational format in which the benefits of using the BMP would be expressed, along with the detriment caused by not following the practice. In effect, voluntary BMP's would be more explanatory in nature.

With respect to the development of regulations, mandatory BMP's and voluntary BMP's, it is recommended that the enabling legislation provide that such requirements be developed by the agency responsible for administering the program in conjunction with an appointed committee comprised of public and private sector interests. For example, such a committee comprised of nine (9) individuals could have representatives from such State agencies as DNREC, the Department of Agriculture and the Department of Transportation. From the private sector such interests as conservation, real estate development, outdoor recreation, utility construction, agriculture and education could be represented.

The committee would have direct input regarding any proposals pertaining to the development of regulations, mandatory BMP's and voluntary BMP's before such requirements were submitted to public review for adoption. To assure that committee input received adequate agency attention in the process of adopting the subject requirements, it could be specified that the committee's views regarding the proposed regulations and mandatory and voluntary BMP's be made part of the public record subject to consideration in the public hearing process prior to adoption. A more stringent level of control to guarantee committee input could be imposed in the form of a committee approval requirement before draft regulations or draft mandatory BMP's go to public hearing.

Although no specific recommendations have been made regarding the establishment of buffer zones it is anticipated that buffers would be provided as appropriate in the regulations, mandatory BMP's and voluntary BMP's on a case by case basis.

Matrix Permit System

WETLAND TYPE

- I. Wetlands with exceptional or unique biotic assemblages. e.g. DelMarVa Bays, cypress swamps, white cedar bogs.
- II. Moderately-wet or very-wet wetlands with typical biota. (Wetlands not in Types I or III)
- III. Marginally-wet wetlands with typical biota. e.g. PF01A's PF01J's

ACTIVITY TYPE

- A. Permitted specific activity; thus, regulated via specific permits.
- B. Exempt activity from specific permits, but with general regulatory conditions (e.g. BMP mandatory adherence); thus, regulated via general or nationwide permits.
- C. Fully exempt activity; thus, not regulated, no permits, but may have voluntary BMP's.

This matrix is one example of a process regulators could use to determine the permit status of an activity within categories of freshwater wetlands.

ISSUE: MITIGATION, RESTORATION, AND CREATION OF FRESH-WATER WETLANDS

As stated in the Final Report of the National Wetlands Policy Forum, the term mitigation is broadly defined to include a process of "avoiding, minimizing, rectifying, reducing, eliminating, or compensating for adverse environmental effects." Restoration and creation of wetlands are two forms of compensation that may be considered in this process. The issue is whether Delaware should have a mitigation policy and if so, how should it be structured and administered. Some of the recommended guiding principles to consider in the development of a State policy include:

Recommendations

I. Mitigation

- In view of national trends in the wetland policy arena, the goal of freshwater wetland restoration and creation projects undertaken by Delaware should be consistent with the goal of no-net-loss.
- Delaware should establish a statewide freshwater wetland protection policy to achieve no-net-loss of the State's remaining freshwater wetland base, as defined by acreage and function; and to restore and create freshwater wetlands where feasible to increase the quantity and quality of the Delaware's freshwater wetland resource base.
- The functions and values of some wetlands cannot be replaced. These wetlands should be preserved by avoidance of adverse impact. In other cases, avoidance may not be essential or possible, and another form of mitigation may be the only practical alternative. On-site mitigation is preferable to off-site, and in-kind is preferable to out-of-kind mitigation. Mitigation is not to be viewed as undesirable or as a means to deny, but it is also not meant to be the "easy way out".
- A mitigation bank should be established to hold any freshwater wetlands created in excess of the minimal amount required for mitigation compliance or created for reasons other than for mitigation. Mitigation bank credits should be considered a tangible asset credited to the account holder. As an additional incentive, depositors should be able to sell or trade credits with other wetland users. The State should develop an inventory of potential freshwater wetland restoration sites as another bank component.
- Evaluation of success or failure of freshwater wetlands creation or restoration will require functional assessment of the wetland prior to alteration, approval of the mitigation plan before the project begins, and careful monitoring of the compensation activity by a designated state agency. A failed mitigation effort will not result in a penalty for the applicant as long as a good

faith effort was made to comply with the plan. A failed effort could result in acreage being withdrawn from the bank or other state action to compensate for the wetland area lost.

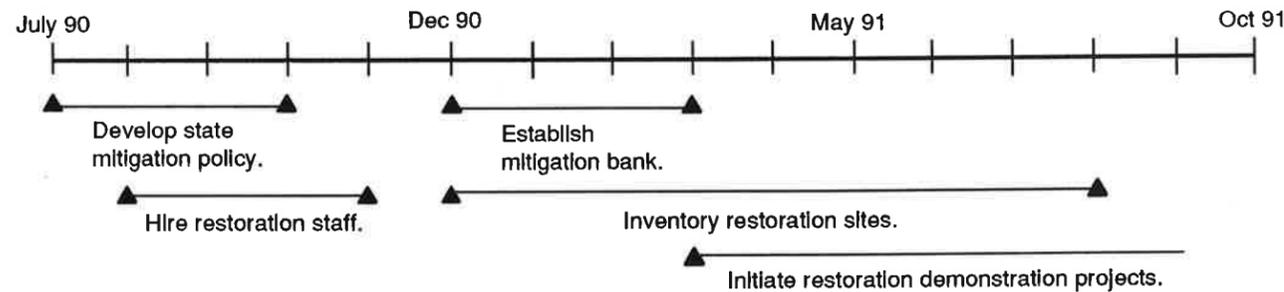
- More research data are needed regarding wetlands compensation, including evaluation of the long-term success of restored and created freshwater wetlands. Lack of long-term data at this time should not deter us, however, from efforts to counteract wetland loss.

II. Restoration and Creation

- There should be a statewide freshwater wetland creation and restoration program. DNREC should be the lead agency in administering this program.
- Delaware should establish a pro-active restoration program aimed at achieving the goal of no-net-loss. This program should be a public/private partnership that includes a technical assistance component; demonstration projects; and the development of a freshwater wetlands restoration inventory. The restoration program should interface, where opportune, with the more established, broader-based resource management programs and take advantage of proven delivery systems.
- The restoration program should be staffed with two statewide restoration specialists supported by the general fund. These individuals should be knowledgeable in the areas of freshwater wetland ecology, forestry, federal and state resource management funding programs, and regulations. These restoration specialists should interact and coordinate their activities with broader-based land and resource managers.
- Provide for the possibility of cost - recovery for state - funded restoration projects through grant applications to federal agencies, demonstration project grant proposals to private foundations, cost sharing with private land-owners, or by allowing permit applicants who must mitigate by monetary compensation to reimburse the State for completed restoration projects.

ISSUE: MITIGATION, RESTORATION, AND CREATION OF FRESH-WATER WETLANDS (cont.)

Implementation Guide Line



Fiscal Note

Approximate cost for the staffing of the restoration program \$ 200,000 annually. These costs include personnel, office equipment, contract services, field sampling and monitoring equipment, and the initiation of a restoration inventory. Some cost recovery may be possible by allowing permit applicants who must mitigate by monetary compensation to reimburse the State for completed restoration projects.



ISSUE: ACQUISITION

The surest way of protecting freshwater wetlands is the acquisition by the State, appropriate federal agencies, and conservation groups, of valuable and threatened sites. These sites should possess values such as unique and rare natural ecosystem assemblages and wildlife habitat. Since freshwater wetlands are critical to the ecological infrastructure of Delaware then their preservation is the legacy we must leave future generations.

But, before acquisition of critical freshwater wetlands sites can be accomplished, a number of fundamental concerns must be addressed. These concerns include developing a system that evaluates and prioritizes sites meriting protection; setting annual acreage acquisition targets; identifying funding sources; and providing funds for the management of acquired sites.

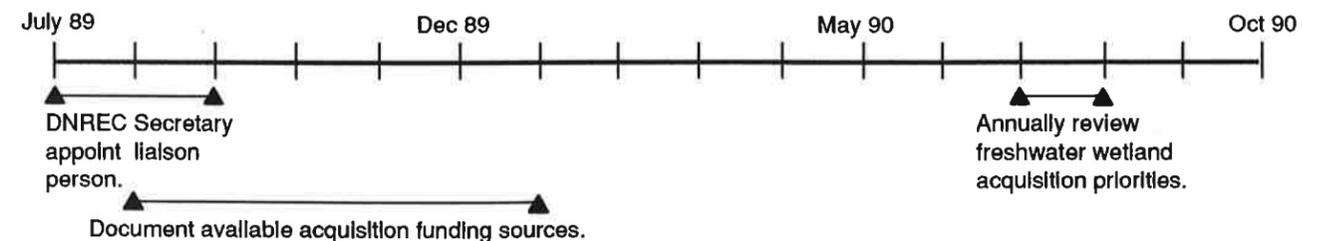
The Recommendations

- Given the special functions and values of freshwater wetlands, attention should be given to their acquisition. Priority should be given to those sites that have been identified in the USFWS's National Wetlands Conservation Plan.
- A minimum of 2,000 acres per year of freshwater wetlands should be protected through an aggressive acquisition and conservation easement program.
- Tax relief should be provided for owners of freshwater wetlands that are subject to State restrictions. Owners should be entitled to a revaluation of their property to reflect the fair market value in light of the restrictions placed on it.
- Any comprehensive land acquisition program established by the State should be required to estimate the costs of maintaining and managing acquired sites so that those costs can be budgeted for annually.
- A DNREC liaison person should be designated to coordinate the land acquisition of the State with private organizations so as to maximize and leverage fund.
- The Roundtable supports the establishment of a dependable revenue stream for the acquisition of freshwater wetlands. To generate this revenue we recommend the State consider: a surcharge on the realty transfer tax for a specified period; user fees; bond sales; and/or appropriated state funds to match available federal funds.



DelMarVa Bays are considered one of the most important freshwater wetland types in Delaware. Only 7 of the almost 200 DelMarVa Bays are permanently protected under the States' nature preserve system.

Implementation Guide Line



Fiscal Note

Approximate annual acquisition costs could range from \$ 1.5 million (2000 acres @ \$ 750 / acre) to \$ 2.0 million (2000 acres @ \$1000 / acre) annually. Costs could be reduced through the use of conservation easements and the leveraging of public acquisition funds with private conservation groups.

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