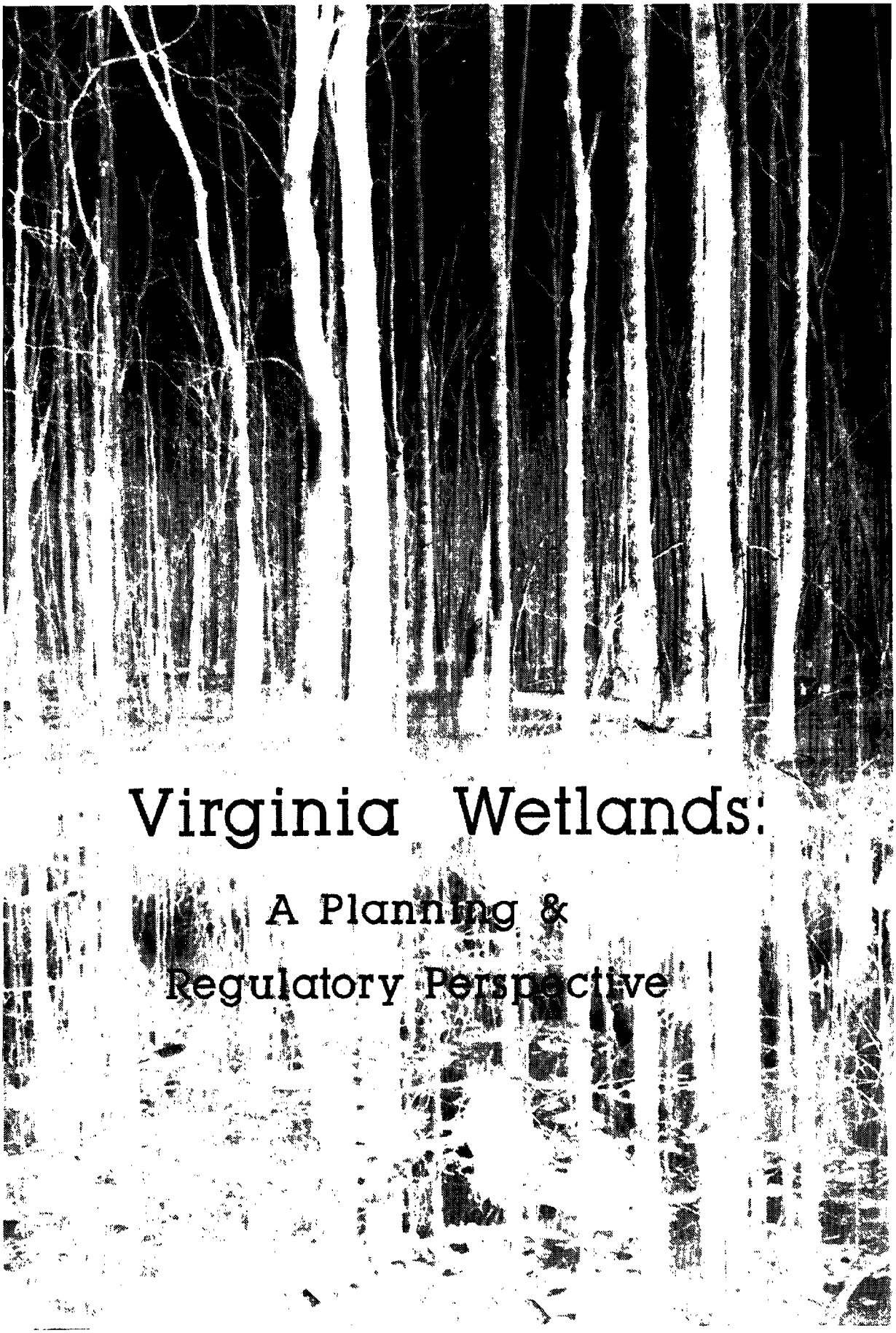

Virginia Wetlands:

A Planning & Regulatory Perspective

VIRGINIA WETLANDS:

A PLANNING AND REGULATORY PERSPECTIVE

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Prepared By
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TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

A. TABLES

B. FIGURES

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EXECUTIVE SUMMARY

INTRODUCTION

Wetlands are no longer thought of as merely waste lands. Today more is known about the valuable contributions that wetlands make to the environment.

This increased understanding has lead to increased federal and state efforts to protect wetlands. One purpose of this report is to discuss wetland definitions and functions and federal and state wetland protection measures. Another is to examine what local governments can do to protect and preserve these natural areas.

DEFINING THE RESOURCE

Wetlands can be defined in several ways. Perhaps the most important for local governments is the definition shared by the U.S. Corps of Engineers (Corps) and the Environmental Protection Agency (EPA). This definition is important due to the role these agencies play in regulating certain types of activities in wetlands. These agencies define wetlands based on the presence of hydric (or wet) soils, hydrophytic plants (plants adapted to live in water-saturated conditions) and hydrology (water level). While all three conditions are necessary to be considered jurisdictional wetlands, these conditions do not have to be present all of the time.

The presence of federal jurisdictional wetlands is determined by an on-site delineation process. The actual delineation of a wetland can be difficult and controversial. This is due in part to the difficulty in determing wetlands during dry seasons of the year as well as disagreement over the precise criteria for delineating or describing a wetland. The Corps and EPA, along with the Soil Conservation Service (SCS) and the Fish and Wildlife Service (FWS), are currently reviewing a new manual to aid in delineation.

Wetlands are also defined as tidal and nontidal. Tidal wetlands, located in the coastal plain, are influenced by the tides. Nontidal wetlands, located in all portions of Virginia, are not influenced by tidal action.

The differentiation between tidal and nontidal wetlands is important in Virginia. The Virginia Wetlands Act only regulates development in tidal wetlands. Although the state and federal definitions differ, both cover essentially the same tidal wetlands. The federal definition also includes nontidal wetlands in Virginia.

According to one estimate, Virginia contains approximately 1,045,000 acres of wetlands. It is also estimated that approximately 63,000 acres of wetlands were lost between 1956 and 1977. The principal cause of the loss of tidal wetlands was urban development. Agriculture accounted for most of the losses of nontidal wetlands.

WETLANDS FUNCTIONS AND VALUES

Wetlands provide a variety of benefits (or values). These values fall into three basic categories: environmental, socio-economic, and fish and wildlife habitat.

An important environmental value is described by the term primary productivity; that is, the conversion by plants of energy and chemicals into compounds that can be utilized by other species as food. In addition, when wetlands plants die, they decompose to form detritus. This is the base material for the aquatic food chain. In fact, wetlands possess some of the highest food producing values of any natural system.

Wetlands also play an important role in water quality protection. Wetlands filter water as it passes through. This filtering process reduces sediment flows into open water and removes nutrients and chemical and organic pollutants. Work is underway investigating the ability of wetlands to treat wastewater.

Socio-economic values are also provided by wetlands. Wetlands assist with flood control by slowing and storing flood waters, thus reducing the impact of flood waters. Wetlands also protect upland areas from erosion. Other socio-economic values include groundwater discharge and recharge, the production of timber, commercial and sport fishing, and the provision of recreational, scenic, historic, and archeological opportunities.

Wetlands serve as fish and wildlife habitat. They provide spawning and nursery grounds for a variety of fin and shell fish, birds, and other animals. Thirty five percent of all animals on the federal list of rare and endangered species depend heavily on wetlands for food or shelter.

Wetlands can also create hazards if improperly used. These hazards include potential problems due to flooding and soil erosion, soils that are unstable for supporting buildings, and problems with waste disposal.

PROTECTING THE RESOURCE

The federal government has taken a variety of actions which impact wetland use and development. One of the most significant

is Section 404 of the Clean Water Act. Section 404, administered by the Corps, requires that a permit be issued for the discharge of dredged or fill material into the waters of the United States. Over time, the term "waters of the United States" has come to include tidal and nontidal wetland areas.

A Section 404 individual permit is obtained by filing an application with the Corps. This request is reviewed by the EPA, the SCS, the FWS, and the National Marine Fisheries Service (MFS). The EPA has the right to veto a permit if the discharge of dredged or fill material will have an unacceptable adverse affect on municipal water supplies, shellfish beds, or fishery, wildlife, or recreation areas. State and local agencies may also be involved in this review.

Section 401 of the Clean Water Act grants states the authority to certify that activities requiring a federal 404 permit meet applicable state water quality standards. If the state denies the water quality certification, the federal permit can not be issued. In 1989, the General Assembly enacted legislation which requires that all activities needing a Section 401 certification follow the provisions of the Clean Water Act and protect instream beneficial uses. The State Water Control Board (SWCB) issued, but then withdrew, regulations to implement this new permit process. In the meantime, the SWCB is continuing to issue Section 401 certifications under existing regulations.

In addition to individual permits, there are a series of nationwide permits (NWPs) which allow activities which are considered to have minor impacts on wetlands. The most controversial of these permits is NWP 26 which allows certain specified fill activities in wetland areas up to 10 acres in size. Certain activities are exempt from Section 404 requirements. These include ongoing farming, silviculture, and ranching activities.

The Commonwealth of Virginia has taken several steps to protect wetlands. As a signatory to the Chesapeake Bay Agreement, the Commonwealth is party to a multi-state policy to achieve a net gain in acreage of wetlands in the Chesapeake Bay basin. The General Assembly has considered nontidal wetlands legislation several times. To date, no action has been taken.

The Commonwealth has also adopted several laws which impact wetlands. Two notable pieces of legislation are the Virginia Wetlands Act and the Chesapeake Bay Preservation Act. The Virginia Wetlands Act governs development in tidal areas. Any activity that affects tidal wetlands requires a permit from the Virginia Marine Resources Commission (VMRC). Activities that require both state and federal permits are handled through a joint permitting and public review process.

The Chesapeake Bay Preservation Act requires that Tidewater localities establish Chesapeake Bay Preservation Areas to protect water quality. Regulations implementing the Act require the designation of Resource Protection Areas (RPAs) and Resource Management Areas (RMAs). Development in RPAs is restricted to water dependent uses and redevelopment. RMAs provide further water quality protection through the use of required site design techniques that reduce the flow of pollutants entering the RPAs and local rivers and streams. Wetlands benefit from these reductions in pollutants and are to be considered when determining the locations of RPAs or RMAs.

LOCAL MEANS OF WETLANDS PROTECTION

Local governments have a variety of tools available to protect the natural environment, including wetlands. These tools include the comprehensive plan, development ordinances, and land acquisition and assessment programs. While some believe that localities are limited in their ability to regulate development in wetlands areas due to the Dillon rule, others believe that local governments have a variety of powers that can be used to preserve and protect wetlands.

The key to any local wetlands protection program is the incorporation of wetlands into the local comprehensive plan. To do this, the location and extent of wetlands must be determined. Localities can map this information or rely on existing sources such as the National Wetlands Inventory (NWI) maps or maps from the Virginia Institute of Marine Science.

Once wetlands have been mapped, a locality can proceed to develop goals, objectives, strategies, and polices for protecting wetlands, just at it would for other types of land uses or natural resources. As with other issues, there must be internal consistency between the plan's goals and objectives and recommended development strategies and polices.

The next step is to incorporate wetlands protection measures into local ordinances. These ordinances include zoning, subdivision, site planning, flood plain, stormwater, erosion and sediment control, and landscaping ordinances. Coastal localities must, and other localities may, adopt ordinances to implement the Chesapeake Bay Preservation Act. In addition, Tidewater localities may create local wetlands boards to aid VMRC in the enforcement of the Virginia Wetlands Act.

Another tool that localities may use to protect wetlands is acquisition. The Virginia Open-Space Act permits localities to protect open space, including wetlands, through outright purchase or the purchase of an easement. Full ownership guarantees the ability to use the property as a locality sees fit. The purchase

of an easement may meet protection objectives at a reduced cost. Several state agencies and nonprofit organizations are involved in the purchase of land or open space. These include the Virginia Outdoors Foundation, the Chesapeake Bay Foundation, and several state departments.

Localities can also use land value assessment programs to protect wetlands. Two such programs are the Virginia Land Use Assessment Law and the Agricultural and/or Forestal District Act. While each program has slightly different requirements, both are designed to assist in the protection of agricultural, horticultural, forestal, and open space lands. These programs allow for land to be assessed and taxed at use value as opposed to development value. This can reduce the owner's tax burden and aid in the preservation of these types of land.

All levels of government must deal with the issue of takings. The implementation of any wetlands protection measure which limits the owner's use of the land has a potential for being challenged as a taking of the land, without just compensation.

CONCLUSION

Wetlands regulation is here to stay. The federal and state governments are becoming more involved in wetlands protection. Local governments also have an important role to play in the preservation and protection of wetlands.

INTRODUCTION

Historically, wetlands have been considered by many to be wasted space. They were either obstacles to be overcome or places to be ignored. Sometimes wetlands were considered fit only for the disposal of items no longer needed.

Times have changed. More information has come to light about the important functions that wetlands perform. These functions include water purification, flood control, sediment filtration, and the provision of habitat for plants and animals. Wetlands also offer a variety of recreational opportunities.

This increase in understanding of wetland values and functions, coupled with concerns over wetlands losses, has led to stricter protection measures. A variety of federal and state actions have been taken to protect wetlands and other environmentally sensitive areas from the effects of inappropriate development.

This increased awareness has been accompanied by a debate over exactly what areas should be classified as wetlands and what actions should be taken to protect wetlands. There is also debate over the appropriate role of federal, state, and local governments in the area of wetland protection.

Some consider the wetlands issue to be a purely coastal matter. While it is true that a significant portion of wetland areas are located in the Coastal Plain, wetlands are also found in the Piedmont and the Appalachian regions of the Commonwealth. Therefore it is important that individuals in all portions of Virginia become more familiar with the issues surrounding wetlands.

One purpose of this paper is to examine some of the issues that local officials and planners need to be aware of regarding wetlands. These issues include how wetlands are defined, the benefits that wetlands provide, and federal and state laws and regulations governing development in and adjacent to wetlands.

A second purpose is to examine actions local governments can take to preserve and protect wetlands. The role of the comprehensive plan in wetlands protection is discussed. Also discussed are the tools available to local governments to implement a wetlands protection program. These tools include development ordinances, wetland acquisition, and special land assessment programs.

The reader is cautioned that the entire wetland subject is very dynamic. Any paper on this topic is dated as soon as it is published. Hopefully, this report will give local governments a basic understanding of the issues involved in the wetlands debate.

DEFINING THE RESOURCE

Historically, the definition of a wetland was primarily the concern of the scientific community. Most people had little interest in wetland definitions or the criteria used to delineate wetland areas. This situation has changed as the importance of wetlands has become better known and as federal and state agencies have taken a stronger role in regulating wetland development.

The purpose of this section is to examine ways in which wetlands are defined and classified. This examination will focus on federal and state definitions which most directly impact local governments and land development. This section also examines the extent of wetland areas and losses in Virginia and the reasons for these losses.

DEFINING WETLANDS

"Conceptually, wetlands lie between well-drained upland and permanently flooded deep waters of lakes, rivers and coastal embankments"[1] Some wetlands are fairly easy to determine, especially those located along the coasts of rivers and oceans. Other wetlands, especially those that are not "wet" throughout the year, are more difficult to determine.

Several federal agencies and the Commonwealth of Virginia have developed definitions for wetlands. These definitions, as well as ways to classify wetlands, are important to understanding federal and state wetlands law.

Federal Wetlands Definitions

Four federal agencies that have adopted separate wetlands definitions are the Environmental Protection Agency (EPA), the Army Corps of Engineers (Corps), the Soil Conservation Service (SCS), and the Fish and Wildlife Service (FWS). These definitions are used to determine what are called "jurisdictional wetlands"; that is, wetlands that fall under the authority of a federal agency responsible for permitting certain activities in wetlands. For the most part, each definition was developed as part of a specific piece of federal legislation. These definitions are similar, but are not identical.

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[1]Ralph W. Tiner, Jr., Wetlands of the United States: Current Status and Recent Trends, U.S. Fish and Wildlife Service, (1984), p. 2.

The Corps and the EPA are the federal agencies that most land developers and local governments deal with regarding wetlands. These agencies use the following definition for administering the Section 404 permit process (to be discussed later):

> Wetlands are "...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."[2]

While each federal agency has its own wetland definition, three elements are typically found in each. These elements are the presence of hydric soils, hydrophytic plants, and hydrology typical of wetlands. Hydric soils are soils that are saturated, flooded, or ponded for a period of time long enough to produce anaerobic conditions, that is lacking oxygen. Anaerobic conditions create chemical changes in the soil that are recognizable from the soil's composition, color, and texture. Hydrophytic plants are adapted for life in water-saturated conditions. This condition does not have to be year-round, but must be present at least part of the growing season. Typical wetland hydrology is characterized by a water table that saturates or partially covers the top of the soil surface either constantly or periodically. The source of that water can be groundwater, surface water, or precipitation. All three parameters--hydric soils, hydrophytic plants, and hydrology--must be present for an area to be considered a wetland.

In addition to separate, although similar, definitions, each federal agency has developed methods of delineating wetlands or reviewing the delineation of others. In 1987, the Corps and EPA each adopted manuals for delineating wetlands. In 1989, the EPA, the Corps, the SCS, and the FWS adopted the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. The purpose of this document was to provide "a single, consistent approach for identifying and delineating wetlands from a multi-agency federal perspective."[3] The manual set forth mandatory technical criteria for identifying wetlands.

The publication of the joint federal wetlands manual has led to much debate. Some argue that the identification criteria in the

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[2]Federal Interagency Committee for Wetland Delineation, Federal Manual for Identifying and Delineating Jurisdictional Wetlands, a cooperative technical publication of the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, (Washington, D.C., 1989), p. 2.

[3]Ibid., p. 1.

1989 manual expanded what could be defined as wetlands. This was due in part to the procedures set out in the manual regarding identification of wetlands during dry periods. It was also argued that the manual did not take into account the diverse physical characteristics within the United States and that this severely limits the development potential for areas such as coastal Virginia.

On August 14, 1991, the Corps, EPA, SCS, and FWS published proposed revisions to the 1989 manual in the Federal Register. (This version is sometimes referred to as the 1991 manual.) These modifications were to address concerns raised about the 1989 manual.

On August 17, 1991, the President signed the Energy and Water Development Appropriations Act of 1992. This Act contained wording which, in effect, prohibits the use of the 1989 manual by the Corps. The Corps is now using a 1987 manual. (This action did not impact the so-called 1991 manual, which is still under review.)

The debate over the wetlands delineation manual illustrates the complexity of the wetlands issue. This debate is over more than how to delineate wetlands. It also concerns the potential impact of wetland preservation on economic development, agriculture, and private property rights.

Wetlands Classifications

Wetlands can be classified according to tidal influence. Tidal wetlands, also referred to as coastal wetlands, are located in coastal areas and are affected by the ebb and flow of the tides. Tidal wetlands are periodically flooded by salt or brackish waters; however, there are freshwater wetlands in the freshwater portions of some tidal rivers in Virginia. Coastal marshes are the dominant type of tidal wetland, but tidal wetlands also include nonvegetated tidal flats and shrub wetlands.[4]

Nontidal wetlands, also referred to as inland wetlands, are not affected by ocean-driven tides. Found throughout the Commonwealth, the three most common forms of nontidal wetlands are emergent wetlands (called marshes and wet meadows), shrub wetlands (including shrub swamps and bogs), and forested wetlands (largely wooded swamps and bottomland hardwood forests).[5] Figure 1 illustrates typical tidal and nontidal wetlands.

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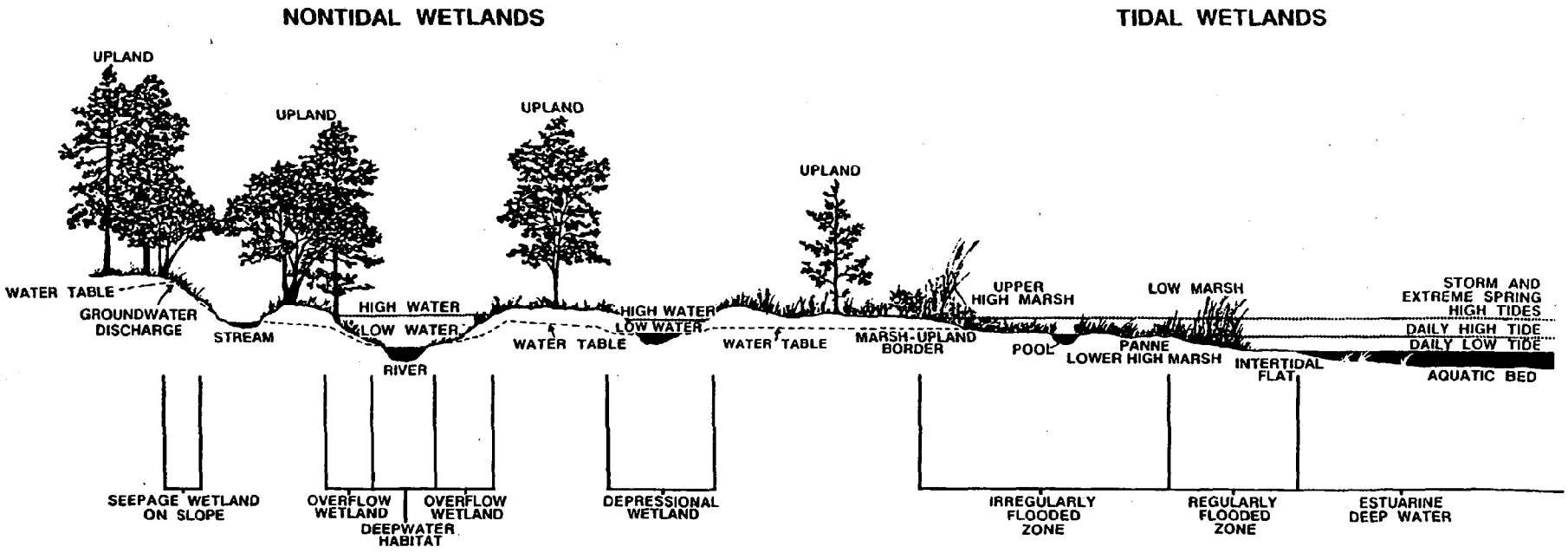
[4]Ralph W. Tiner, Jr., Mid-Atlantic Wetlands: A Disappearing Natural Treasure, a cooperative publication of the U.S. Fish and Wildlife Service and the U.S. Environmental Protection Agency, (1987), pp. 2 - 3.

[5]Ibid.

Figure 1

SCHEMATIC OF WETLANDS TYPES



Source: The Value of Wetlands: A Guide for Citizens, SEVPDC, 1988.

Virginia's Wetlands Definition

The distinction between tidal and nontidal wetlands is important. Several states specifically regulate development activity in tidal wetlands only. Virginia is one of those states.

The Virginia Wetlands Act defines tidal wetlands as follows:

1. Vegetated wetlands are "all that land lying between and contiguous to mean low water and an elevation above mean low water equal to the factor 1.5 times the mean tide range...upon which is growing" certain plant species which are detailed in the Act.

2. Nonvegetated wetlands are defined as "all land lying contiguous to mean low water and which land is between mean low water and mean high water not otherwise included in the term 'vegetated wetlands' as defined."[6]

The definition of wetlands in the Act differs from the various federal definitions in two ways. First, the Act does not cover nontidal wetlands. The federal definitions includes, but does not distinguish between tidal and nontidal wetlands.

Second, the Act covers both vegetated and nonvegetated tidal wetlands. Since vegetation is one of the three parameters for defining wetlands under the various federal programs, nonvegetated areas such as mudflats are not considered jurisdictional wetlands under Section 404. Mudflats are considered special aquatic sites under federal regulations, however, and are therefore defined as "waters of the United States" and subject to Section 404 requirements. The net result is that tidal areas covered by both the Virginia Wetlands Act and Section 404 are essentially the same.

VIRGINIA'S WETLANDS

A comprehensive field inventory of Virginia's wetlands has not been completed. A study by Tiner and Finn for the U.S. Fish and Wildlife Service attempted to estimate the wetlands areas in a five state region including Virginia. The following are some of the results reported in this study.

1. Virginia contains approximately 1,045,000 acres of wetlands, about 4 percent of the state's total area.

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[6]Va. Code, Section 62.1-13.2, (1991).

2. Approximately 23 percent of the wetlands in Virginia are tidal (237,000 acres). The vast majority of wetlands in the state are nontidal (808,000 acres).

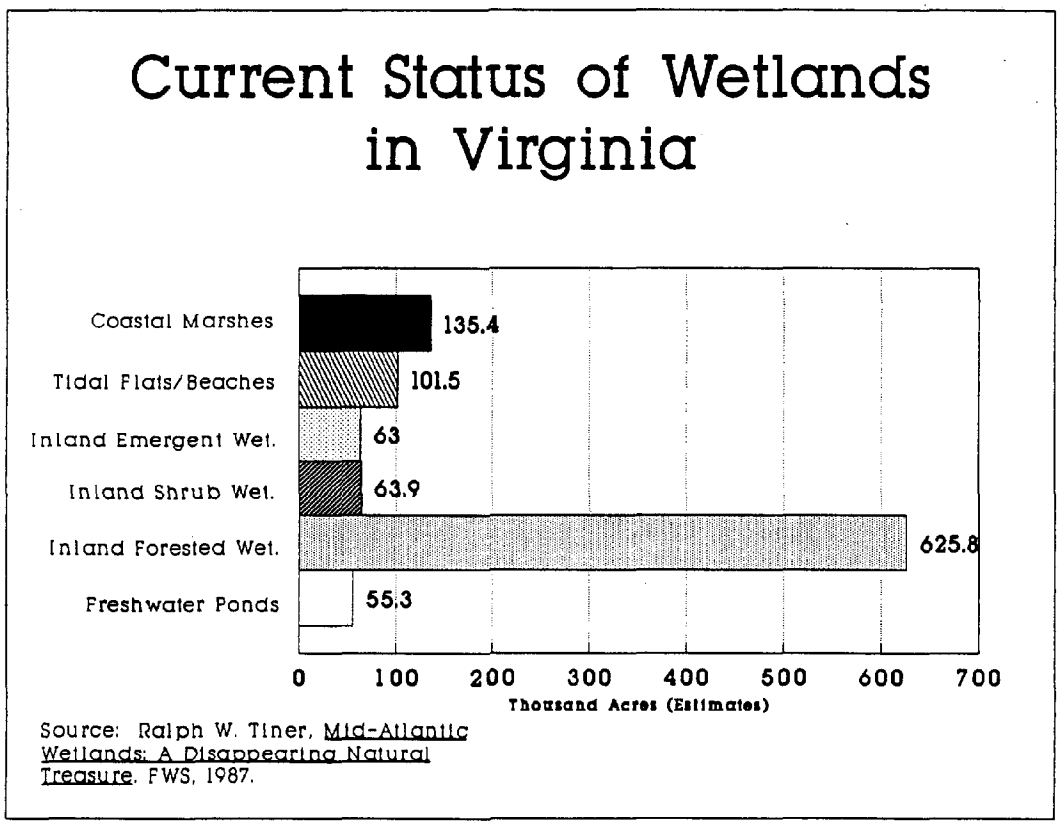
3. The Coastal Plain area of Virginia contains all of the tidal wetlands and 64 percent of the nontidal wetlands.

4. The Piedmont region of Virginia contains 28 percent of the nontidal wetlands.

5. The Appalachian region contains 8 percent of the nontidal wetlands in Virginia.[7]

Figure 2 illustrates the distribution of wetlands in Virginia.

Figure 2



[7]Tiner, (1987), p. 11.

Work is now underway in Virginia to develop a comprehensive wetlands inventory. The 1989 General Assembly assigned the Department of Conservation and Recreation, Division of Soil and Water Conservation, with the responsibility of developing a nontidal wetlands inventory. This agency is using digital files of National Wetlands Inventory (NWI) maps to estimate nontidal wetlands within the state. The localities west of the fall line have recent NWI maps based on 1982-1985 aerial photography, while information for the localities east of the fall line is considered out-of-date and of poor accuracy. New NWI maps are being developed for the eastern portion of the state as funds for current photographs and re-photointerpretation become available.

The Virginia Institute of Marine Science (VIMS) and EPA are also expected to provide estimates of nontidal wetlands. Random sampling will be used to determine different nontidal wetland types in the state. Results are anticipated to be available in 1992.

VIMS has inventoried tidal wetlands in Virginia. These inventories include field investigation work and are considered quite accurate. These inventories do not go upstream as far as the NWI maps, however.

VIRGINIA'S WETLAND LOSSES

Tiner and Finn also estimated wetlands losses in Virginia. They estimated that between 1956 and 1977, over 63,000 acres of Virginia's wetlands were lost. A majority of the wetlands lost were inland vegetated wetlands; the remainder were coastal wetlands. During this same period, acreage in freshwater ponds increased by almost 35,000 acres.[8]

As shown in Figure 3, the greatest single cause of the loss of tidal wetlands was urban development, accounting for 43 percent of the total loss. Losses due to the natural rise in sea level accounted for 36% of the total.[9]

Approximately 45 percent of the nontidal wetlands losses were due to agricultural activities. The second largest contributor to nontidal wetlands losses was classified as other development, mainly channelization projects.[10] These and other reasons for the loss of nontidal wetlands are shown in Figure 4.

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[8]Ibid., p. 21.

[9]Ibid.

[10]Ibid.

Figure 3

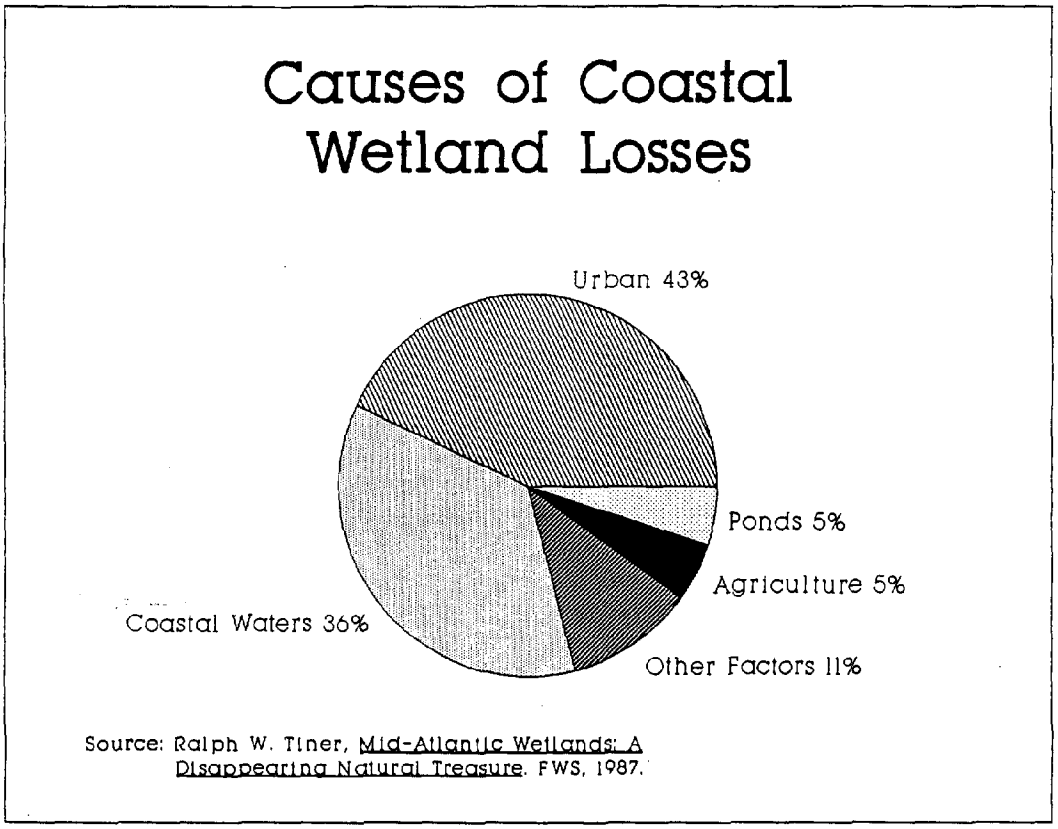
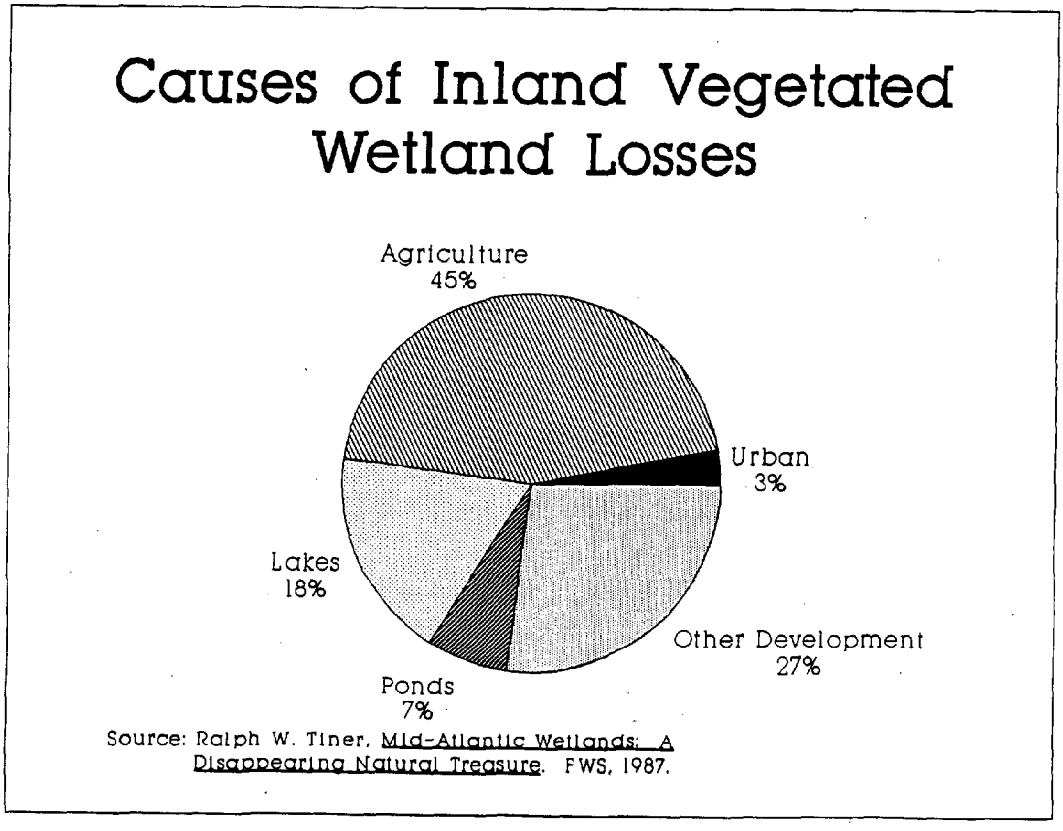


Figure 4



REASONS FOR WETLAND LOSSES

Wetlands are lost for a variety of reasons. Dr. Jon A. Kusler points out that wetlands are lost due to such factors as the loss of physical habitat, chronic stress, construction projects, and pollution. Specifically, these losses are due to:

1. wetland drainage for crop production, timber production, and mosquito control;

2. dredging and stream channelization for reservoir maintenance, access channels, navigation channel maintenance, flood protection, and coastal housing development;

3. dispersion of water inflows through irrigation and flood control;

4. construction of dikes, dams, levees, and seawalls for flood control, irrigation, and storm surge protection;

5. filling for solid waste disposal, roads, bridges, commercial, residential and industrial development, and utility lines;

6. discharges of matter into waters such as herbicides, pesticides, and other pollutants from industrial plants, agriculture, mosquito control efforts; nutrient loadings from domestic sewage and agricultural runoff; and sediments from dredging and filling, agriculture, and land development;

7. surface water extraction and groundwater pumping for municipal water supplies and irrigation; and

8. mining and disturbance of wetlands soils for sand and gravel and coal, peat and other mining."

Many of the above examples are the result of necessary activities. It must be understood, however, that these activities can have detrimental impacts on wetlands. As we increase our understanding of how development can threaten wetlands, we must increase our ability to protect wetlands while allowing these necessary activities to occur.

"Jon A. Kusler, Our National Wetland Heritage: A Protection Guidebook, (Washington, D.C.: Environmental Law Institute, 1983), p. 8.

WETLANDS FUNCTIONS AND VALUES

Wetlands perform a variety of functions in the natural environment. Some of these functions, such as providing habitat for wildlife, can be obvious. Other functions, such as improving water quality, are not as obvious. Furthermore, not all wetlands serve the same functions and, therefore, not all wetlands are considered to be of equal value.

The collective values that wetlands perform in the environment can be divided into three basic categories: (1) environmental, (2) socio-economic, and (3) fish and wildlife habitat. This section discusses these values. The section also discusses the hazards that can be created when wetlands are misused.

ENVIRONMENTAL VALUES

Wetlands are an important component of the earth's ecosystem. They provide nutrients that support the most basic as well as advanced forms of life. Wetlands serve as the bridge between land and water. This places wetlands in an ideal location to influence water quality.

Primary Productivity

Primary productivity is the term that describes the conversion of solar energy and inorganic chemicals by plants into energy containing compounds that can be utilized by other species. The conversion is accomplished by most plant species through the process of photosynthesis. Primary productivity is the first link in the food chain.

Wetlands serve an important role in the food chain. Through photosynthesis, wetland plants convert solar energy (sunlight) and inorganic nutrients (primarily nitrogen and phosphorus) into materials needed for plant development. Oxygen is produced as a by-product. These plants then serve as food for fish, birds, and mammals.[12] Figure 5 compares the primary productivity of several types of wetlands with other selected food producers.

Wetlands provide food in another form. When wetland plants die, they decompose and form what is know as detritus. This material is the base of the aquatic food chain. Animals such as

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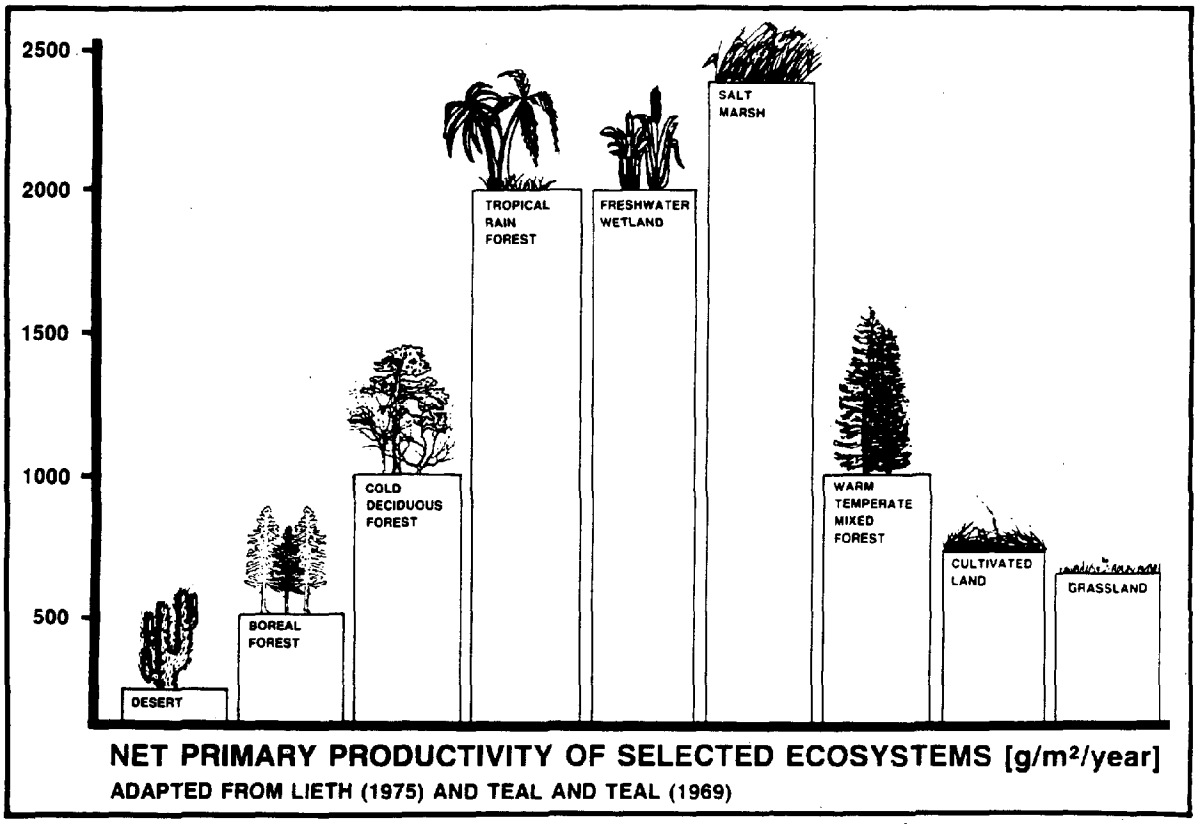
[12]J.H. Sather and R.D. Smith, An Overview of Major Wetlands Functions and Values, U.S. Fish and Wildlife Service, (1984), p. 21.

Figure 5

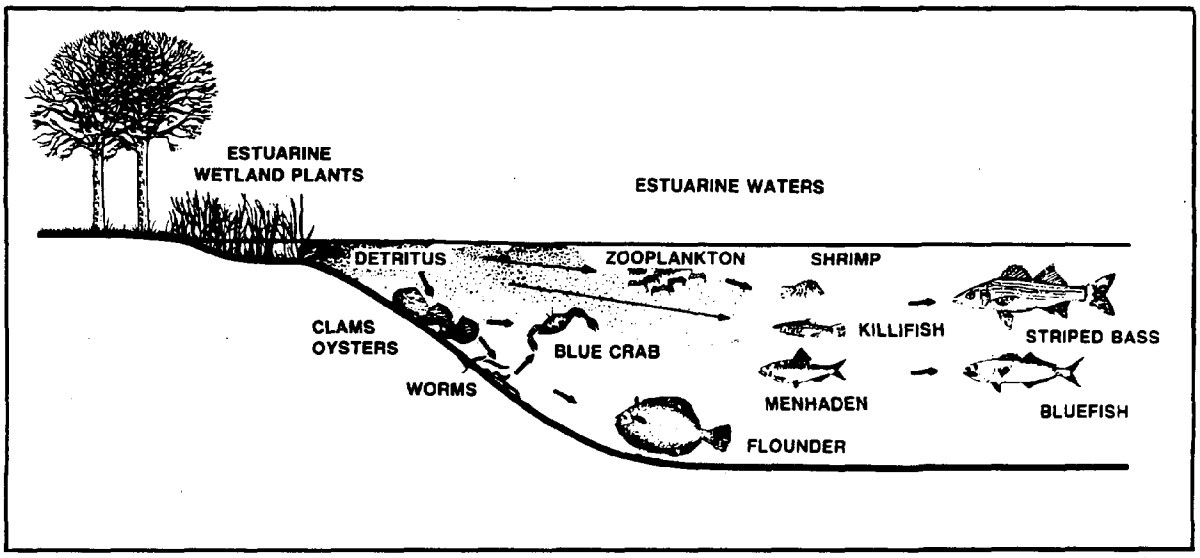
Relative Productivity of Wetland Ecosystems



Source: Ralph W. Tiner, Wetlands of the United States: Current Status and Recent Trends, FWS, 1984.

Figure 6

Simplified Food Pathways



Source: Ralph W. Tiner, Wetlands of the United States: Current Status and Recent Trends, FWS, 1984.

shrimp, snails, clams, worms, killifish, and mullet eat detritus or the bacteria and other life forms that grow on its surface. These animals are in turn eaten by larger species, such as commercial and recreational fishes. Some believe that this form of food production is the major food value provided by wetlands.[13] Figure 6 illustrates a simplified wetland food chain.

Water Quality

Wetlands act as filters to the waters that pass through them. This filtering action reduces sediment flows into open water and removes nutrients and chemical and organic wastes.

As flowing water passes through wetlands, the velocity of the flow is reduced. This reduction in velocity causes suspended solids to fall to the bottom. In addition, wetlands vegetation itself acts as a block to certain sediments.[14]

Once these sediments have been deposited in the wetlands, various chemical and biological processes act on the sediments. Plants use nutrients such as phosphorus and nitrogen for growth and maintenance. Bacteria found in wetlands transform some nutrients into forms that can be more easily taken in by plants. These processes help to prevent the overenrichment of open waters with nutrients.

Wetlands have been studied for their potential to treat wastewater and for their ability to remove toxins and excess nutrients from natural waters. In some locations, wetlands have been utilized for the treatment of point source wastewater discharge. Nutrients are removed from wastewater as a result of the high degree of primary productivity; the settling of solids into the sediments as the wastewater slowly passes through the wetland; the anaerobic (oxygen deficient) conditions that are conducive to removing toxic metals and the breakdown of nitrogen compounds; and the high populations of decomposers (bacteria) that are particularly effective at breaking down organic compounds found in wastewater.[15]

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[13]David B. Burke, Erik J. Meyers, Ralph W. Tiner, Jr., and Hazel Groman, Protecting Nontidal Wetlands, Planning Advisory Service Report Number 412/413, (Chicago: American Planning Association, 1988), p. 8.

[14]Wetlands Protection: A Handbook for Local Officials, Environmental Planning Information Series Report #7, (Harrisburg, Pa.: Department of Environmental Resources, 1990), p. 3.

[15]Sather and Smith, pp. 11 - 12.

The removal of nutrients by wetlands varies and the levels of nitrogen and phosphorus in wetlands are determined by the form of the nutrient, the wetland type, and the season of the year. Wetlands function as "traps" of nutrients. To varying degrees they can remove nutrients from water. Wetland efficiency varies with many factors including vegetative characteristics, geographic location, nature of substrate (the base upon which wetland plants are rooted), size, water chemistry, temperature, and pH.[16]

SOCIO-ECONOMIC VALUES

Our society benefits from the presence of wetlands in many tangible ways. Wetlands assist with flood and erosion control and provide a variety of natural products for our use. They also provide a variety of recreational and scenic values.

Flood Control

Studies by the U.S. Army Corps of Engineers have shown that the most economical way to prevent flood damage is to protect and preserve the wetlands in the watershed. Wetlands reduce the severity of floods through their ability to store and slow flood waters, reduce flood peaks, and increase the duration of the flow. A study in Wisconsin indicated that flood peaks were reduced by 60 to 80% in watersheds which contain a wetland or lake area of 30 percent, as compared to watersheds with no wetland or lake area.[17]

Characteristics of wetlands considered most important in flood control are size, location in drainage basin, texture of substrate, and type of vegetation. The Wetlands Guidelines, prepared by the Virginia Institute of Marine Science (VIMS) and Virginia Marine Resources Commission (VMRC), contains descriptions of different wetland types and how their attributes help to mitigate flood damage.

Erosion Control

Wetlands lie between uplands and waterways. Wetland vegetation plays a major role in protecting uplands from eroding by binding and stabilizing the substrate, dissipating wave and current energy, and trapping sediments. The effectiveness of wetlands vegetation in this process depends on the type of vegetation, the width of the vegetation, the efficiency of the vegetative shoreline band in trapping sediments, the soil composition of the bank or shore, the height or slope of the bank or shore, and the elevation of the toe of the bank with respect to

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[16]Ibid., p. 16.

[17]Ibid., p. 5.

mean storm high water. Studies indicate that wetland shoreline widths as small as 2 feet can have a significant effect on erosion prevention. The greater the width of a wetland, the greater its ability to deter erosion.[18]

Groundwater Recharge and Discharge

The precise role that wetlands play regarding groundwater is unclear. Wetlands serve as sources of groundwater discharge and are good indicators of the availability of potential water supplies. Although wetlands are believed to impact groundwater recharge, less is known about this relationship.[19]

Natural Resources

Wetlands are home to a variety of plant and animals resources. Most commercial and game fish depend on wetlands for food sources, spawning grounds, and nurseries. The U.S. Department of Commerce estimated that 66 to 90 percent of the commercially important fish and shellfish species on the Atlantic and Gulf coasts depend on coastal marshes or estuaries for at least part of their life cycle.[20]

Timber has been harvested in wetlands for many years. The value of timber in southern wetland forests is estimated to amount to $8 billion.[21]

Recreational and Scenic Values

Hunting and fishing are important recreational activities that take place in wetlands. In the United States, an estimated 5.3 million people hunt waterfowl annually.[22] In addition, $13.1 billion was spent in 1975 to catch wetland-dependent fishes.[23] Nearly all freshwater fishing, and more than half of saltwater fishing, is wetland dependent.

Many more people enjoy wetlands for their scenic values. Hiking, boating, swimming, and photography are some of the activities that take place in wetlands. The popularity of the many

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[18]Ibid., pp. 6 - 7.

[19]Ibid., p. 6.

[20]Ibid., p. 44.

[21]Tiner, (1984), p. 23.

[22]Ibid., p. 24.

[23]Ibid.

federal and state parks that contain wetlands is a testimony to the aesthetic value they possess.

Historical and Archeological Values

Some wetlands, particularly those in Tidewater Virginia, offer special values; these are historical and archeological resources. Native American settlements have been found in close proximity to wetlands which offered fishing and hunting opportunities. The first European colonists likewise settled in or near wetlands. This was due both to the availability of fish and game and to the transportation opportunities offered by the adjacent rivers.[24]

FISH AND WILDLIFE HABITAT VALUES

Wetlands provide animals with protection from adverse weather conditions and predators, resting areas, and sites for reproduction. It is estimated that 35 percent of all animals listed by the federal government as being rare and endangered depend heavily on wetlands for food and/or shelter.[25]

Fish and Shellfish

Two-thirds of the major commercial fish caught in the U.S. use wetlands as spawning and nursery grounds. Wetlands are the primary nursery grounds for shellfish, including blue crabs, oysters, and clams. Major factors influencing a wetland's habitat value for fisheries are water quality, water quantity, vegetative cover, and characteristics of the bottom.[26]

Birds

Many species of birds find year-round habitat in wetlands. Migratory birds inhabit wetlands temporarily, using them as feeding and breeding grounds, and as areas in which to overwinter. Wetland values that have been identified as attracting waterfowl and other birds include availability of cover, freedom from disturbance, abundance of food, and the availability of specialized habitat.[27]

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[24]Kusler, p. 5.

[25]Ibid., p. 3.

[26]Tiner, (1984), p. 13.

[27]Sather and Smith, p. 47.

Mammals

Few mammals are truly wetland dependent, but there are some which utilize wetland resources through most or part of their life cycle. Those mammals considered wetland dependent in Virginia include muskrats, beavers, and certain species of rabbits. Mammals partially dependent are otter, raccoon, meadow mice, and white-tailed deer. Wetland values most important to these mammals are water quality, water depth, and emergent wetland plants.[28]

Other Vertebrates and Invertebrates

Many other vertebrates and invertebrates inhabit Virginia's wetlands including snakes, turtles, slugs, snails, as well as other reptiles and amphibians. There has been little research done on invertebrates that inhabit wetlands other than scientific listings and general descriptions.[29] There appears to be a link between plant types and the invertebrate species that utilize them. As these plant types become more abundant so do the invertebrate species associated with them.

WETLANDS HAZARDS

Just as wetlands have environmental values and functions, they can create environmental hazards if used improperly. These hazards include flooding, erosion, lack of soil suitability for development, and limitations to onsite wastewater disposal. Following is a discussion of some of these hazards as set forth in Our National Heritage: A Protection Guidebook by Dr. Jon A. Kusler.[30]

Flood Hazard

As stated previously, certain wetlands store flood water during floods and slowly release it, lessening the impact on downstream areas. The filling of a wetland reduces its ability to retain excess water during flood periods. This can result in increased flood heights and velocities and lead to flooding in areas not previously subjected to these problems.

In addition, buildings in wetlands areas may be subject to flooding and drainage problems. This may be a continual problem or only occur when the water table rises during certain times of the year. A typical solution to such a problem is the construction

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[28]Ibid., p. 45.

[29]Ibid., p. 43.

[30]Kusler, pp. 6 - 8.

of drainage structures. Such structures can increase runoff from the site, decreasing groundwater recharge and creating flooding problems downstream.

Erosion

Wetlands protect uplands from erosion. The development of wetlands, including the removal of vegetation, can increase erosion in upland areas. This loss of soil can eventually threaten development in these upland areas.

Lack of Soil Support

Wetlands soils are high in organic and water content. These factors cause wetland soils to have very low and/or uneven load carrying abilities. These characteristics can lead to different settling of any structure built upon wetland soils. This can in turn lead to shifts and eventually cracks in foundations, walls, and roadways built in wetlands.

Limitations to Onsite Waste Disposal

Wetlands soils are very slow to absorb the effluent of septic tanks and other forms of onsite waste disposal. Construction of disposal systems in wetland areas can lead to surface discharge of sewage with associated health hazards and odors. The high water table in wetland areas can also lead to the mixing of waste with groundwater, threatening any users of groundwater. Wetlands are poor sites for the construction of solid waste land fills for the very same reasons.

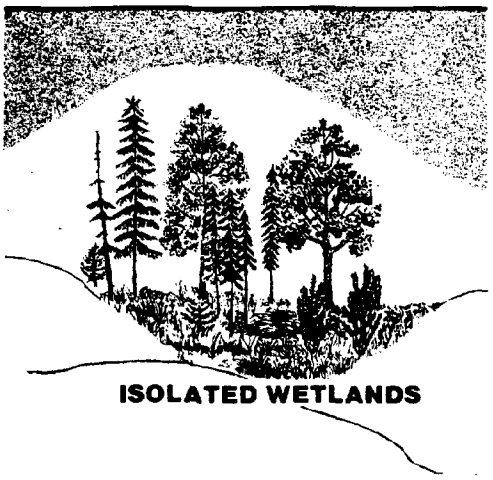
Figure 7

Wetland Values and Hazards

VALUES

Isolated Wetlands
(Permanently high ground water levels due to discharge and drainage)

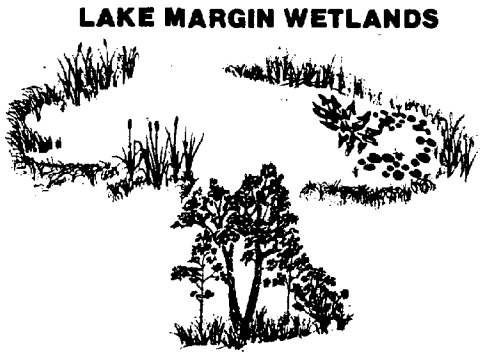
1. Waterfowl feeding and nesting habitat
2. Habitat for both upland and wetland species of wildlife
3. Flood water retention area
4. Sediment and nutrient retention area
5. Area of special scenic beauty



HAZARDS

Isolated Wetlands
1. Flooding and drainage problems for roads and buildings due, in some instances, to widely fluctuating surface and ground water elevations
2. Serious limitations for on-site waste disposal
3. Limited structural bearing capacity of soils for roads and buildings due to high content of organic materials

Lake Margin Wetlands
1. See values for permanent wetland above
2. Removal of sediment and nutrients from inflowing waters
3. Fish spawning area



Lake Margin Wetlands
1. See hazards for isolated wetland above

Riverine Wetlands
1. See values for isolated wetlands above
2. Sediment control, stabilization of river banks
3. Flood conveyance area

Riverine Wetlands
1. See hazards for isolated wetlands above
2. Flood conveyance areas subject to deep inundation and high velocity flows
3. Sometimes erosion areas

Estuarine and Coastal Wetlands
1. See values for isolated wetlands above
2. Fish and shellfish habitat and spawning areas
3. Nutrient source for marine fisheries
4. Protection from erosion and storm surges

Estuarine and Coastal Wetlands
1. See hazards for wetlands associated with rivers above
2. Often severe flood hazard due to tidal action, riverine flooding, storm surges, and wave action
3. Sometimes severe erosion area in major flood due to wave action

Barrier Island
1. Habitat for dune-associated plant and animal species
2. Scenic beauty

Barrier Island
1. Often high energy wind and wave zone
2. Often severe erosion problem
3. Protect backlying lands from high energy waves

PROTECTING THE RESOURCE

Our increased understanding of the functions and values of wetlands has resulted in increased demands for the protection of wetlands. Legislation has been passed at the federal and state levels to regulate development activities in and adjacent to wetlands.

While federal and state agencies work together to coordinate wetlands protection activities, there is not one overall encompassing piece of legislation or program which deals with development in tidal and nontidal wetlands. The purpose of this section is to provide an overview of federal and state legislation and regulations aimed at protecting wetlands, either directly or indirectly.

FEDERAL WETLANDS LAW

Table 1 illustrates the variety of federal legislation and actions related to wetlands. The principal federal legislation which protects wetlands and impacts land development in or adjacent to wetlands is the Federal Water Pollution Control Act of 1972, as amended, commonly referred to as the Clean Water Act (CWA). The goal of the act was "to eliminate by 1985 the discharge of pollutants into navigable waters by prohibiting the discharge into such waters of toxic pollutants in toxic quantities."[31] The overall objective was "to restore the physical, biological, and chemical balance of the nation's waters."[32]

The CWA contains a variety of sections which set forth the roles of the EPA and the Corps regarding the protection of the waters of the United States from pollution. There is one section of the CWA, however, that is most often discussed regarding the protection of wetlands--Section 404. In fact, the phrase "404 requirements" is generally used to refer to the federal wetlands protection program in general, not just the specific requirements of that one section.

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[31]Lawrence Liebesman, A Developer's Guide to Federal Wetlands Regulations, (Washington, D.C.: National Association of Home Builders of the United States, 1990), p. 1-2.

[32]Ibid.

Table 1

Federal Wetlands Activities

1899	The Rivers and Harbors Act gave the Corps power to regulate construction activities in navigable waters by issuing permits for those activities. This act authorized the Corps as the agency with permitting authority over construction in water.
1972	The Federal Water Pollution Control Act included Section 404, which authorized the Corps to issue permits for the discharge of dredge and fill materials into the waters of the United States.
1975	The Corps' regulations were changed to include a broader definition of waters over which they had authority; wetlands were included.
1977	The Federal Water Pollution Control Act was amended and became known as the Clean Water Act. EPA and Corps regulations pursuant to that act included a regulatory definition for wetlands that continues to be used.
1979	The Fish and Wildlife Service (FWS) published a wetland definition and guidelines for identification used by some federal and state agencies (Classification of Wetlands and Deepwater Habitats of the United States).
1985	EPA and the Corps signed a memorandum of agreement spelling out the roles of the agencies and the procedures they would follow in issuing 404 permits.
	The Food Security Act (Farm Bill) of 1985 denied federal-assistance program participation to farmers who altered wetlands for agricultural purposes (swampbuster program). The Soil Conservation Service's (SCS) Food Security Act Manual included a wetland definition used for identifying wetlands on agricultural lands.
1987	The Corps of Engineers Wetlands Delineation Manual was published, giving optional technical guidelines for district engineers' use in identifying and delineating wetlands under Section 404.
1989	The Corps, EPA, FWS, and SCS formally adopted the Federal Manual for identifying and Delineating Jurisdictional Wetlands, which provided mandatory technical criteria, field indicators, and determination methods for identifying wetlands under federal jurisdiction and tracing their upper boundaries.
	President Bush announced his administration's "no net loss" policy for wetlands.
1990	EPA and the Corps signed a memorandum of agreement clarifying environmental criteria to be used in evaluating compliance with Section 404 guidelines.
1991	July: EPA released revisions of the 1989 manual to Congress. Negotiations with the executive branch followed, resulting in further changes.
	August: Proposed changes to the 1989 manual were published in the Federal Register.
	August: Congress directed the Corps to resume using its 1987 manual to make permitting decisions in wetlands.

Source: Adapted from The Federal Wetlands Manual: Swamped by Controversy, prepared by the Virginia Water Resources Research Center, VPI & SU.

Section 404 of the Clean Water Act

The intent of Section 404 is to control pollution from point source discharges of dredged or fill material into the "waters of the United States". This is done through a permitting process involving the Corps and the EPA.

Activities Regulated. Basically, Section 404 requires a Corps issued permit for the discharge of dredged or fill material into the "waters of the United States".[33] The type of permit required is related to the type of activity contemplated and the area of wetlands to be disturbed.

Certain discharge activities are considered to have only minimal individual and cumulative environmental impacts. These activities are covered under what are called general permits. In addition, some activities are exempt from the permitting requirements. General permits and exemptions are discussed later. Unless a discharge is covered by a general permit or is exempted, an individual permit is required. Requests for individual permits are reviewed on a case-by-case basis.

The term "waters of the United States" is defined quite broadly in the regulations which implement Section 404. For instance, the term includes waters that have been, are currently, or may be used for interstate or foreign commerce, including all tidal waters and all interstate waters including interstate wetlands. The term also includes intrastate lakes, rivers, and streams which could affect interstate or foreign commerce. This can mean waters which are or could be used by travelers for recreational purposes, from which fish or shellfish could be taken or sold for interstate commerce or which are used or could be used for industrial purposes in interstate commerce. Also included are wetlands adjacent to these previously described waters.[34]

Activities Not Regulated. As broad as the coverage of Section 404 may appear to some, there are activities which are not covered. The Corps has ruled that the dredging of wetlands and the discharge of the material into wetlands is not covered by Section 404 since there is no discharge into the wetlands. Court cases on this issue have been decided for and against the Corps.[35]

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[33]William Want, Law of Wetlands Regulations, (New York: Clark Boardman Company, Ltd., 1991), p. 4-2.

[34]33 CFR Section 328. A detailed explanation of the evolution of the definition of the term "waters of the United States" can be found in Law of Wetlands Regulations by William Want.

[35]Want, p. 4-18.

The draining of wetlands has generally been excluded from the 404 process. However, on April 10, 1990, the Corps issued guidance that if pumps were used to drain water in an attempt to circumvent the Section 404 permitting process, that activity would be subject to permitting requirements.[36]

Critics of Section 404 point out that many wetland altering and destroying activities are not covered under the permit process. In addition, many wetlands may not be covered under the program despite the broad interpretation of the language defining wetlands.

Principal Administrative Agency. The U.S. Army Corps of Engineers is the principal administrative agency for Section 404. All dredge or fill activity requires a permit issued by the Corps. Prior to the CWA, the Corps issued permits for dredge and fill activities under the Rivers and Harbors Act of 1899 (RHA). The intent of the RHA was the protection of navigation in "navigable waters". The affect of the CWA was to expand that role to include water quality concerns in the "waters of the United States". The delegation of Section 404 responsibility to the Corps fits in well with their role under RHA.

Review Authority. The Environmental Protection Agency (EPA) may review individual permit requests under provisions of Section 404. In addition, EPA may veto or restrict a permit issued by the Corps when "the discharge of dredged or fill material into an aquatic area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas."[37] Section 404 also provides for U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (MFS) input on fish and wildlife impacts.

The EPA has rarely used its veto authority, although some individuals believe the agency is becoming more willing to veto projects. To date, the courts have only reversed an EPA veto in one case. That was in *James City County, Va. v. U.S. Environmental Protection Agency C.A. No. 89-156-NN (E.D. Va. 1990).*[38]

On November 15, 1989, a Memorandum of Agreement (MOA) was signed between the Corps and EPA which clarified to both agencies what type and level of mitigation would be necessary to comply with Section 404 guidelines. The Agreement set forth that individuals seeking to fill wetlands would follow the sequential mitigation process of avoiding the wetlands entirely, minimizing adverse

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[36]Ibid., p. 4-19.

[37]Liebesman, p. 4-1.

[38]Want, p. 7-5.

environmental impacts, and lastly, compensating for unavoidable wetlands loss. Through the Agreement, the Corps and EPA hope to achieve a goal of no net loss of wetlands within the 404 program.[39]

Under Section 404(c) the EPA may designate high-value wetland areas as off-limits to all or certain discharges of dredged and fill material prior to any proposed project or permit application. In recent years, the EPA has started to use its advance identification (ADID) program to protect wetlands areas that are experiencing development and conversion pressures.[40]

State agencies such as the Department of Game and Inland Fisheries and the Marine Resources Commission are invited to comment on proposed 404 permitting activities. Local authorities that are directly impacted by a permitted activity are allowed to submit comments to the Corps.

Relationship to National Environmental Policy Act. As a prerequisite to approval of a permit under Section 404, the Corps must comply with requirements of the National Environmental Policy Act (NEPA). The purpose of NEPA is to insure the consideration of the environmental consequences of proposed federal actions.

Not all permitted activities require consideration under NEPA. The Corps has promulgated regulations designed to determine what actions require consideration. In addition, the Corps is governed by regulations pertaining to NEPA promulgated by the Council on Environmental Quality (CEQ).

The first step in the NEPA process requires the Corps to prepare an Environmental Assessment (EA). The EA will determine if a proposed action would significantly affect the quality of the human environment. The EA evaluates the environmental effects of, the need for, and alternatives to, the proposed action.

If the proposed action shows no significant effect, the Corps' District Engineer will prepare a Finding of No Significant Impact (FONSI). The FONSI contains the reasons for this conclusion. If the proposed action shows a significant effect, an Environmental Impact Statement (EIS) is required.

Public Interest Review. The Corps has developed guidelines that it applies in the review of individual permit applications. The most important of these is the public interest review. This review involves a weighing of the expected benefits versus the foreseeable detriments of a project.

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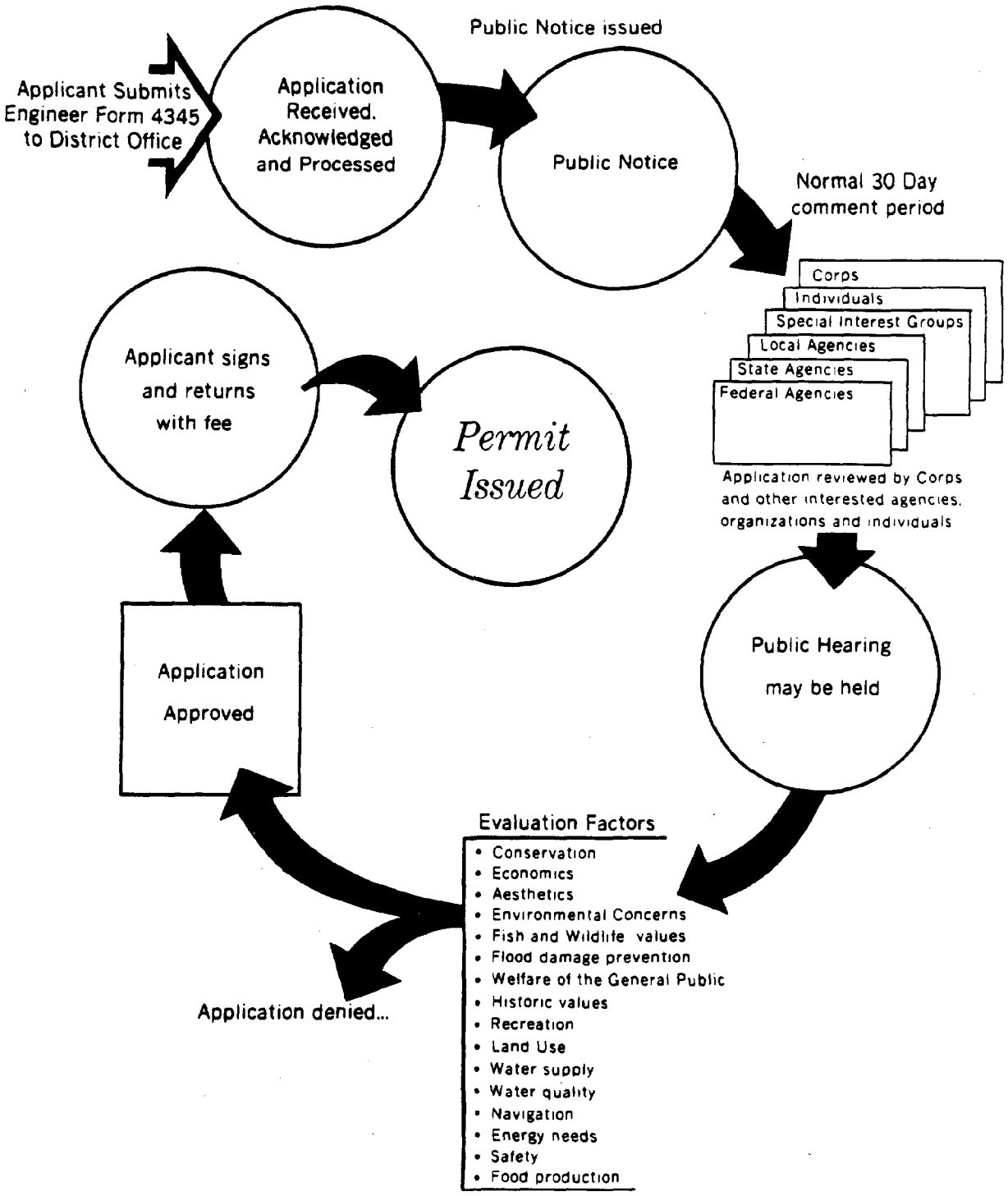
[39]Ibid., pp. 6-28 - 6-31.

[40]Liebesman, p. 7-1.

Figure 8

Typical Corps Permit Review Process



Source: Copyright 1983, Environmental Law Institute. Reprinted with permission from Our National Wetland Heritage: A Protection Guidebook by Dr. Jon A. Kusler.

The following criteria are used in this review process:

1. the relative extent of the public and private need for the proposed project,

2. where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed project, and

3. the extent and permanence of the beneficial and/or detrimental effects which the proposed project may have on the public and private uses to which the area is suited.[41]

In addition, all relevant factors related to the proposed project must be considered. These factors include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people.[42] Figure 8 illustrates the Corps' permit review process.

General Permits. In 1977, the Clean Water Act was amended to allow the Corps to issue general permits on a state, regional, and nationwide basis. These permits cover activities which are believed to have only a minimal impact on the environment. The purpose of these general permits is to reduce delay and paperwork. In fact, it is not necessary that an individual inform the Corps about some activities covered by these general permits.[43]

Effective January 21, 1992, the regulations governing nationwide permits are amended. These regulations list 36 nationwide permits, an increase from 26 in the previous regulations. Types of activities which fall under these nationwide permits include aids to navigation, outfall structures, bank stabilization, installation of fish and wildlife harvesting devices, hydropower projects, and the construction of boat ramps.[44]

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[41]Ibid., p. 3-2.

[42]Ibid.

[43]Want, pp. 5-6 - 5-7.

[44]Liebesman, p. 5-1.

Some suggest that Nationwide Permit 26 (NWP 26) is the most controversial of all the permits. NWP 26 authorizes the discharge of dredged or fill material into headwaters and isolated waters. The January 21, 1992, regulations that govern NWP 26 require that:

1. discharges not cause the loss of more than 10 acres of waters of the United States,

2. prior notification of the Corps District Engineer if the loss of waters is greater than 1 acre, and

3. the discharge is part of a single and complete project.[45]

Two other nationwide permits which are important to the development community are NWP 12 and NWP 14. NWP 12 permits the discharge of material for backfill or bedding for utility lines, provided there is no change in preconstruction contours. NWP 14 permits fills for roads crossing water of the United States (including wetlands and other special aquatic sites) under certain provisions.[46]

In addition to some specific requirements, nationwide permits must meet several general conditions. These conditions deal with such issues as erosion and siltation controls, the disruption of aquatic life movements, and threats to endangered species and historic sites. The general provisions also permit individual states to require state water quality certification to be obtained or waived on certain nationwide permits.[47]

Exemptions under Section 404. "Normal farming, silviculture (timber or forestry), and ranching activities" are exempt from Section 404 regulations provided that these activities are a part of an established and ongoing agricultural operation. An exemption would not be allowed if activities were aimed at converting wetland areas which have not been used previously for agriculture or forestry and where the reach of navigable waters is impaired.[48]

Section 401 State Water Quality Certification

Section 401 of the Clean Water Act grants states the authority to certify that activities requiring a federal 404 permit meet applicable state water quality standards. If the state denies the water quality certification, the federal permit can not be issued.

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[45]56 FR 59143.

[46]56 FR 59141 - 59142.

[47]56 FR 59145 - 59147.

[48]Want, pp. 5-2 - 5-4.

Many states are using the Section 401 authority to ensure a certain level of water quality and to protect other environmental resources as well. In 1989, the General Assembly enacted House Bill 1839 which established a new state permit, the Virginia Water Protection Permit, which "shall constitute the certification required under Section 401 of the Clean Water Act." The legislation requires that all activities needing a Section 401 certification "be consistent with the provisions of the Clean Water Act and protect instream beneficial uses."

The State Water Control Board (SWCB) issued proposed regulations to implement this new permit process in late 1990 only to withdraw them when legal questions arose over the inclusion of language calling for no net loss of wetlands. There was also significant public comment on the proposed regulations. Proponents of the regulations advocate that the SWCB has the same jurisdiction to regulate activities within wetlands as the Corps of Engineers. Opponents argue that the General Assembly did not give the SWCB specific authority to regulate wetlands beyond the Virginia Wetlands Act. In the meantime, the SWCB is continuing to issue Section 401 certifications under existing regulations.

As stated before, states have the right to waive Section 401 certification for nationwide permits. Several states have chosen not to waive, that is to deny, certification on specific permits.[49] To date, Virginia has chosen not to waive state certification on NWP 26, as have other states. In these states, the Corps informs an individual that he or she must obtain a state water quality certification before proceeding under NWP 26. Virginia is currently considering changing this requirement based on the regulations that are effective on January 21, 1992.

VIRGINIA WETLANDS LAW

As in the case of the federal government, the Commonwealth of Virginia has several programs which regulate or impact development in and adjacent to wetlands. This section will discuss the Chesapeake Bay Agreement, the Chesapeake Bay Preservation Act, the Virginia Wetlands Act, and efforts to adopt nontidal wetlands regulations.

Chesapeake Bay Agreement

In 1987, the Governor of Virginia, along with governors from Maryland and Pennsylvania, the Mayor of the District of Columbia, the Administrator of the Environmental Protection Agency (EPA), and the Chairman of the Chesapeake Bay Commission signed an agreement to restore and protect the Chesapeake Bay--the Chesapeake Bay

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[49]Ibid., p. 6-37.

Agreement. This document outlines goals, objectives, and commitments to specific action to improve the Bay. Areas covered include living resources, water quality, population growth and development, public information, education and participation, public access, and governance.[50]

One of the commitments of the Chesapeake Bay Agreement was to "by December 1988, to develop a Bay-wide policy for the protection of tidal and non-tidal wetlands."[51] On January 5, 1989, the signatories of the Chesapeake Bay Agreement, including then Governor Gerald Baliles, adopted a policy document which addresses wetlands protection.

As stated in the policy document, "The goal of the wetland protection and management strategy is to achieve a net resource gain in wetland acreage and function over present conditions by:

1. protecting existing wetlands; and

2. rehabilitating degraded wetlands, restoring former wetlands, and creating artificial wetlands."[52]

The document contains a series of policy statements which are organized into four focus areas: inventorying and monitoring wetlands; protecting existing wetlands; rehabilitating, restoring and creating wetlands, and public education and research.[53] These policy statements are significant because the adoption statement says that the signatories agree "to commit the necessary funding and resources to carry out the implementation of the Policy."[54]

Virginia Wetlands Act

The Virginia Wetlands Act was passed in 1972. Section 62.1-13.1 states that wetlands are an "irreplaceable natural resource" and that the declared policy of the Commonwealth is "to preserve the wetlands and to prevent their despoliation and destruction and to accommodate necessary economic development in a manner consistent with wetlands preservation." The purpose of this policy is "to protect the public interest, promote the public health, safety and the economic and general welfare of the Commonwealth,

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[50]1987 Chesapeake Bay Agreement, (1987), pp. 1 - 12.

[51]Ibid., p. 2.

[52]Chesapeake Bay Wetlands Policy, (Annapolis, Md.: Chesapeake Executive Council, 1988), p. 2.

[53]Ibid., pp. 3 - 14.

[54]Ibid., Adoption Statement, p. [i].

and to protect public and private property, wildlife, marine fisheries, and the natural environment."

Activities Regulated. Any proposed activity that affects vegetated or nonvegetated tidal wetlands requires a permit. Some activities are exempt from regulation. These include construction of non-commercial piers and catwalks, routine maintenance of existing roadways, observation decks, cultivation and harvesting of shellfish, cultivation and harvesting of agricultural, forestry or horticultural products, non-commercial outdoor recreational activities, Virginia Institute of Marine Science research activities, duckblinds, governmental activities on state-owned or leased wetlands, and routine maintenance of drainage ditches. These exemptions closely reflect those found under the Section 404 program.

Principal Administrative Agency. All activities that require a wetlands permit are handled by the Virginia Marine Resources Commission (VMRC). VMRC is charged with the promulgation of guidelines "which scientifically evaluate vegetated and nonvegetated wetlands by type and which set forth the consequences of use of these wetland types."[55] VMRC may also develop administrative procedures designed to expedite the processing of applications among VMRC, local wetlands boards, and other state and federal agencies.

By adopting the model wetlands zoning ordinance found in the Act, a local wetlands board may become the principal administrative body for the jurisdiction. Any wetlands applications received by VMRC will be forwarded to the wetlands board in the appropriate jurisdiction. In the Richmond region, Charles City County and New Kent County have established wetlands boards.

Review Authority. The Commissioner of VMRC reviews all decisions of local wetland boards. The Commissioner may direct the Commission to review any decisions in question. In addition, the VMRC will review appeals made by an applicant, the county, city, or town in which the wetland is located, or when petitioned by twenty-five or more freeholders of property. VMRC has the authority to modify, remand, or reverse the decision of a local wetlands board. Appeal of the Commission's decision may be made to Virginia courts by an applicant, county, city, town, or freeholders. Wetlands applications received by VMRC are sent to the U.S. Army Corps of Engineers (Corps) under a joint federal/state permitting and public notice agreement. This process is designed to reduce review time.

Policy and Standards. The policy to preserve wetlands, prevent their despoliation and destruction, and accommodate

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[55]Va. Code, Section 62.1-13.3, (1991).

economic development in a manner consistent with wetlands protection serves as a guideline to VMRC and local wetlands boards. Decisions made during the permitting process are based on this policy statement. Also, standards have been developed that are to be followed in the decision-making process. These standards are:

1. Wetlands of primary ecological significance shall not be altered so that the ecological systems in the wetlands are unreasonably disturbed.

2. Development in Tidewater Virginia, to the maximum extent practical, shall be concentrated in wetlands of lesser ecological significance, in vegetated wetlands which have been irreversibly disturbed before July 1, 1972, in nonvegetated wetlands as described herein which have been irreversibly disturbed prior to January 1, 1983, and in areas of Tidewater Virginia apart from the wetlands.

3. The provisions of the guidelines promulgated by the VMRC pursuant to the Virginia Wetlands Act shall be considered in applying the foregoing standards.[56]

The Virginia Institute of Marine Science (VIMS) and VMRC have developed a document entitled Wetlands Guidelines. This document, developed to address standard 3 above, is designed to assist VMRC and local wetlands boards in the review of activities proposed to take place in tidal wetlands. Such activities require a permit from VMRC or a local wetlands board. The guidelines list Virginia's common tidal wetland types and their relative values in relation to their functions. The guidelines address marshes, beaches, tidal flats, and subaqueous lands.

Marshes are found at "mean sea level" and contain various vegetated communities. Beaches and tidal flats are found between the high water line and low water line and contain no vegetation. They are alternately exposed and covered by the tide. Subaqueous lands are located below the limits of low tide and are always underwater. These lands may or may not contain aquatic vegetation.

Twelve types of vegetated wetlands (marshes) and five types of nonvegetated wetlands (tidal flats and beaches) are described in the guidelines. These are then grouped based on their relative values. The criteria used to determine value are production and detritus availability, waterfowl and wildlife utilization, erosion buffer, water quality control, and flood protection. These criteria are averaged to produce a value for each wetland type. Group 1 contains the types that are considered most valuable, group 2 the next most valuable, and so forth. These groups are shown in Table 2.

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[56]Va. Code, Section 62.1-13.3, (1991).

Table 2

Tidal Wetlands Communities by Group		
	Vegetated Communities	Nonvegetated Communities
Group One	saltmarsh cordgrass arrow arum-pickerel weed freshwater mixed brackish water mixed	intertidal beaches intertidal oyster reef
Group Two	big cordgrass saltmeadow cattail	sand flats sand/mud flats
Group Three	yellow pond lily black needlerush	
Group Four	saltbush	
Group Five	saltwort reedgrass	

Source: Wetlands Guidelines. Department of Wetlands Ecology, Virginia Institute of Marine Science, College of William and Mary, and Environmental Affairs Division, Virginia Marine Resources Commission.

The Wetlands Guidelines note that the destruction or disturbance of any wetlands should be avoided, but if necessary, the tidal wetland types contained in the higher numbered groups could be developed with less of a loss of value than those in the lower numbered groups. The permitting of wetland activities ultimately should be determined on a case-by-case basis.

Chesapeake Bay Preservation Act

In 1988, the General Assembly enacted the Chesapeake Bay Preservation Act to protect the water quality of the Bay. The Preservation Act calls for the "counties, cities, and towns of Tidewater Virginia [to] establish programs, in accordance with criteria established by the Commonwealth, that define and protect certain lands, hereinafter called Chesapeake Bay Preservation Areas, which if improperly developed may result in substantial damage to the water quality of the Chesapeake Bay and its tributaries."[57] All counties, cities, and towns in Tidewater Virginia must comply with the Act and its regulations. Those localities not specifically covered by the Act have the option to develop requirements based on the Act.

Activities Regulated. The Preservation Act regulations establish criteria for local governments to use in the designation of Chesapeake Bay Preservation Areas (CBPAs). Chesapeake Bay Preservation Areas are divided into two categories: (1) Resource Protection Areas (RPAs) and (2) Resource Management Areas (RMAs). Resource Protection Areas consist of tidal shores, tidal wetlands, nontidal wetlands hydrologically connected by surface flow and contiguous to tidal wetlands and tributary streams, and a 100 foot buffer. RPAs can also include other environmentally sensitive lands, as designated by localities. Resource Management Areas surround the RPAs and protect the values and integrity of the RPAs. Nontidal wetlands, flood plains, highly erodible and highly permeable soils, and steep slopes shall be considered in designation of Resource Management Areas.

Development within CBPAs is controlled through a series of land use and performance criteria. Any land disturbing activity exceeding 2,500 square feet is subject to a plan of development review process. Development within RPAs is limited to water dependent uses or redevelopment. Land uses are not regulated within the RMAs, but there are performance criteria regarding the preservation of vegetation and other water quality measures to protect the integrity of the RPA.

Principal Administrative Agency. The Chesapeake Bay Local Assistance Board is charged with developing regulations to implement the Preservation Act and ensuring compliance by those localities covered by the Act. The Board is assisted in its efforts by the Chesapeake Bay Local Assistance Department. In addition to its responsibilities to the Board, the Department provides technical assistance to local governments seeking to comply with the Act.

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[57]Va. Code, Section 10.1-2100, (1988).

Review Authority. Local Chesapeake Bay Preservation programs are reviewed by the Local Assistance Board for consistency with the Act and its implementing regulations. The Local Assistance Department assists the Board with this review.

In September 1989, the Local Assistance Board adopted regulations which set forth specific requirements of the Act and established a timetable for complying with the Act. Localities in the Tidewater region are required to have adopted a full Chesapeake Bay Preservation Areas program by November 15, 1991.

Not every locality was able to take all actions prescribed in the regulations by the November 15, 1991, deadline. This was due to a variety of factors. The Local Assistance Board and Department are working with local governments to implement the provisions of the Act as soon as possible.

Virginia Nontidal Wetlands Roundtable

For several years, the General Assembly has considered nontidal wetland regulations. To date, no legislation has been passed. The General Assembly did, however, appoint the Virginia Nontidal Wetlands Roundtable to investigate the issue of regulating nontidal wetlands. The Roundtable consisted of members of the General Assembly, state and local officials, environmental groups, and private citizens.

In January, 1990, the Roundtable published a report to the Governor and General Assembly. As stated in the report, the Roundtable was created because the "General Assembly believed that in order to craft a specific state program for nontidal wetlands, a better understanding of the resource and alternative management programs was necessary and the subject required additional study."

In its final report, the Roundtable members concluded that "while effective management of nontidal wetlands should be of immediate and continuing concern to the Commonwealth, creation of a new regulatory program for the resource may be premature at this time." The report went on to say "that the state should immediately take steps to: enhance, coordinate and assess existing programs; institute continuing educational, research and incentive based preservation programs; and develop a current inventory of the resource."[58] The findings and recommendations of the Roundtable are reproduced in the appendix.

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[58]Report of the Virginia Nontidal Wetlands Roundtable To the Governor and The General Assembly of Virginia, House Document No. 54, (Richmond, Va.: Commonwealth of Virginia, 1990), pp. 2 - 4.

LOCAL MEANS OF WETLANDS PROTECTION

Local governments can play an important role in wetlands protection. In fact, recent actions by the General Assembly, such as the passage of the Chesapeake Bay Preservation Act and changes in local planning and zoning authority, suggest an even greater environmental protection role for local governments.

The purpose of this section is to discuss planning and regulatory authority available to local governments to protect environmentally sensitive areas such as wetlands. Also examined are the use of property acquisition and assessment programs to preserve wetlands.

A word of caution is necessary. Some individuals believe that Virginia's status as a Dillon rule state limits the ability of local governments to plan for and, especially, to regulate development in wetlands, particularly nontidal wetlands. Others, including the authors of this report, believe that changes made to the local planning legislation in the last few years, coupled with the Virginia Wetlands Act and the Chesapeake Bay Preservation Act, give local governments an array of wetland protection tools.

This report cannot resolve this debate. It does examine the planning and implementation tools available to local governments and how they can be used to address wetlands protection. Any local government should work closely with its legal counsel when developing land use regulations.

COMPREHENSIVE PLANNING

The Code of Virginia mandates that all local governments adopt a comprehensive plan. Section 15.1-446.1 states that a comprehensive plan "shall show the...long-range recommendations for the general development of the territory covered by the plan." The Code then enumerates the types of land uses that may be included within the long range development recommendations of a comprehensive plan. In addition to areas for residential, commercial, and industrial development, the Code permits the inclusion of recommendations for conservation areas, flood plains and drainage, and for the implementation of reasonable groundwater protection areas. While wetlands are not specifically mentioned, the role that wetlands play in protecting water quality and assisting in flood protection appears to justify their inclusion in the comprehensive planning process.

Additionally, Section 15.1-447 states that in the preparation of a comprehensive plan, localities "shall survey and study such matters as" natural resources, groundwater, surface water, flood

control, and flood damage prevention. In 1991, the General Assembly amended the Code by adding the term "environmental factors" to the areas to study. Again, while wetlands are not specifically cited, this wording appears to give validity to including wetlands in the areas to be surveyed and studied.

While a comprehensive plan has no regulatory authority, it does provide a framework upon which specific land development ordinances can be based. Section 15.1-456 states that once a comprehensive plan is adopted "it shall control the general or approximate location, character and extent of each feature shown on the plan."

There are several advantages to incorporating the location, character and extent of environmentally sensitive areas into the local comprehensive planning process. First, this information alerts the local government and private property owners to areas that may be inappropriate for certain types of development or areas that may be difficult or costly to develop. It assists local, state, and federal agencies in the planning of public improvements which may need to avoid certain environmentally sensitive areas. This in itself may save time and money on construction projects. Finally, it allows the local government to plan for its future with a better understanding of its resources, both those that may need to be protected and those that are available for development.

The techniques used to incorporate wetlands protection into the local comprehensive plan are identical to those used to address other land use issues. However, there are special aspects which need to be noted. The following examines how wetlands protection can be integrated into a comprehensive planning process and some of the issues related to wetlands planning.

Wetland Inventories and Mapping

An important step in the planning process is to determine the extent, location, and significance of local land uses and resources. Many localities inventory and map environmentally sensitive areas as part of this process.

Wetlands are environmentally sensitive areas that should be considered during the preparation of a comprehensive plan. Mapping wetlands can present a problem, however. To address this problem, local governments can either inventory and map the information themselves or they can rely on existing mapping information. Each option has advantages and disadvantages.

The most accurate means of locating, mapping, and evaluating wetlands is to perform an actual wetlands inventory. For most localities, this approach involves hiring a wetlands expert. This individual utilizes specialized training and on-site inspection methods to locate, measure, and map wetland areas. While this

approach may provide the most accurate information, few localities can afford the cost and time required by this technique.

An alternative to performing an actual inventory is to use existing information to locate wetlands. The most extensive mapping of wetland areas, both tidal and nontidal, is the National Wetlands Inventory (NWI), a program of the U.S. Fish and Wildlife Service. Wetland inventory maps which overlay the U.S. Geological Survey (USGS) 7.5 minute quadrangle maps are available for the entire state. The most up-to-date and accurate NWI maps cover the western portion of the state; work is underway to update the NWI maps for the eastern portion. Caution must be exercised when using these maps, especially those that are available for eastern Virginia. Some of the older NWI maps have been found to significantly understate the presence of wetlands.

The Virginia Institute of Marine Science (VIMS) is another source of information on the location of wetlands. VIMS has delineated tidal wetlands for many of the localities in Tidewater Virginia. Other agencies that may be helpful are the Virginia Marine Resources Commission, the Virginia Council on the Environment, and the Chesapeake Bay Local Assistance Department.

Soil surveys, which can be used to locate hydric soils, can be used to estimate the locations of wetlands. Using existing soil surveys, the Information Systems Support Laboratory, Agricultural Engineering Department, Virginia Polytechnic Institute and State University prepared a series of maps which locate hydric soils in localities covered by the Chesapeake Bay Preservation Act. These maps overlay the USGS 7.5 minute quadrangle maps. This same organization can assist other localities in the preparation of this type of information, provided a soil survey has been completed.

It must be remembered that information sources such as the NWI maps should only be used for general planning purposes. These maps rarely have the level of detail or accuracy needed to make site specific determinations of wetland locations.

It must also be remembered that on-site wetlands delineation is not any easy task. Wetland specialists can disagree over the presence and extent of wetland areas.

Goals and Objectives

A comprehensive plan should contain the goals (or visions) which a locality wants to achieve and the objectives (or benchmarks) that allow the locality to judge movement toward its stated goals. These goals and objectives establish the overall framework for guiding future development. They also serve as the basis for the ordinances that are adopted to implement the plan. In order for a plan to be defensible in court, there must be a clear relationship between the goals and objectives set forth in

the plan and the ordinances used to implement the plan. The plan must also be in compliance with State enabling legislation.

Some localities establish broad environmental goals such as the following from Charles City County:

> "To preserve and protect the natural environment while permitting development to occur in a manner consistent with the capacity of the land to handle development."[59]

Other possible goals are the protection of water quality, preservation of recreational opportunities, and the maintenance of viable fisheries. All of these contain aspects which relate to the protection of wetlands. Whatever goals are developed, they should relate to the unique character and resources of the locality.

Once broad goals are established, it is then necessary to establish measurable objectives based on the goals. One possible objective related to the above Charles City County goal is:

> No net loss of wetlands in the County.

This objective is consistent with a goal of protecting the natural environment. In addition, the locality can evaluate its success in meeting this objective on an annual basis or during the periodic update of the plan which is required at least every five years.

Development Strategies

Goals and objectives establish the overall type and intensity of development a locality desires. Development strategies are used to define the best approach to be used to reach the locality's goals and objectives.

Wetlands protection strategies can also be referred to as mitigation strategies. The VMRC Wetlands Mitigation-Compensation Policy defines mitigation as:

> "all actions, both taken and not taken, which eliminate or materially reduce the adverse effects of a proposed activity on the living and nonliving components of a wetland system or their ability to interact."[60]

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[59]Charles City County Comprehensive Future Land Use Plan, (1991), p. 66.

[60]"Wetlands Mitigation-Compensation Policy," VR 450-01-0051, (Virginia Marine Resources Commission, 1989), p. 1.

The following suggests one possible set of wetlands protection strategies. These strategies establish a hierarchy for dealing with development in or adjacent to wetlands.

1. Avoid impacts by prohibiting the development of wetland areas where possible.

2. Where avoidance is not possible, minimize impacts on wetlands by limiting the degree or magnitude of development activity on or adjacent to wetlands.

3. Require compensation for the loss of all or part of a wetland through restoration, enhancement or creation.[61]

Avoidance of wetland development is the preferred management strategy in many cases. This strategy is especially important when dealing with the most productive types of wetland communities.

Total avoidance of wetland development is not always possible. In these cases, the strategy of minimizing the impacts of development on wetlands becomes appropriate. This strategy can take two forms. One form is to limit development in or adjacent to wetlands. The Virginia Wetlands Act lists specific types of activities that are permitted in wetland areas. These activities can generally be categorized as water related uses and the construction and maintenance of public and private infrastructure.

The regulations that implement the Chesapeake Bay Preservation Act limit development in Resource Protection Areas (which include tidal and some nontidal wetlands) to water dependent uses and redevelopment. The regulations require that development impacts be minimized and suggest the use of various best management practices as appropriate protection techniques.

Taken together, the Wetlands Act and the Preservation Act appear to establish a state strategy of avoiding development where possible in tidal and certain nontidal wetlands. Where avoidance is not possible, the strategy is to minimize the impact of development on wetlands areas. Local governments that adopt local ordinances to implement either or both of these Acts are therefore assisting with the implementation of these strategies.

A third wetland protection strategy is to require compensation for wetlands that must be damaged or destroyed to make way for development. Three techniques are used to compensate for wetlands losses: restoration, enhancement, or creation. There are varying points of view about the success of these compensation measures.

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[61]David Salvesen, Wetlands: Mitigating and Regulating Development Impacts, (Washington, D.C.: Urban Land Institute, 1990), pp. 69 - 107.

1. Wetland restoration seeks to return the ecological productivity of a wetlands area that has been disturbed by development activity. Measures are taken to restore the wetlands site by cutting off all pollution discharges, removing any fill, regrading the site, and transplanting appropriate wetlands vegetation on the site. The goal in restoration is to ensure a no net loss of wetlands and successful completion of the restoration on the site. This technique is not always successful, leading to the loss of wetland areas.[62]

2. Wetlands enhancement is most likely to occur in situations where efforts to recreate the original wetlands type are difficult or are deemed to take longer than developing another type of wetland on the same site. The conditions of the site, such as soils, climate, and presence of water, will greatly influence what type of wetlands is developed. The "replacement" wetland type should be of equal or greater value than the original wetland. Some argue that wetlands enhancement does not result in an equitable exchange of wetlands types, that wetlands of a lesser value to the environment are often chosen. For example, an individual might replace a wetland with a pond that would be aesthetically pleasing to a particular development rather than choose a wetland type that would benefit the ecological productivity of the site.[63]

3. Wetlands creation is by far the most debated approach to mitigation. This strategy involves developing wetlands from dry land. For wetlands creation to be successful, a host of conditions need to be met. Wetlands require proper topography, soil types, hydrology, and climate. Acquiring plants distinctive to a wetlands natural state is difficult. Also, created wetland should provide the same functions as the destroyed wetland. Many wetlands scientists do not believe that artificial wetlands can replace natural wetlands. A study conducted in coastal Virginia in 1985 indicated that out of 32 wetlands that were created only 9 sites were completely successful. Most wetland scientists agree that creating wetlands where none exist is far more difficult than restoring wetlands on their original sites.[64]

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[62]Salvesen, pp. 77 - 82.

[63]Ibid.

[64]Ibid., pp. 95 - 99.

Development Policies

Once development strategies have been determined, policies can be adopted to give guidance to decision makers and property owners on the standards that will be used to evaluate development proposals. Possible wetland development policies include:

1. Cluster development on upland sites to minimize the impacts on environmentally sensitive areas such as wetlands.

2. Restrict development within wetlands to uses that are compatible with and/or have minimum impacts on wetlands.

3. Restrict development within wetlands to water dependent uses where possible. Limit actual development in wetlands areas to those uses which must locate in wetlands; require that uses that do not need to be located in wetland areas be located in upland areas. (For example, a boat ramp may need to be located in a wetland; the parking lot for the ramp should be located in an upland area.)

4. Require the use of Best Management Practices in all developments that impact wetlands, either off or on site.

One can begin to see the correlation between development goals and objectives and development policies. There must also be a correlation between development policies and ordinances and other actions taken to implement the plan. This type of internal consistency is essential in a comprehensive plan.

Future Land Use Map

A local comprehensive plan typically includes a future land use map. Such a map shows the desired future development pattern for the locality.

Many localities in the Richmond region have included wetland areas on their future land use maps. Wetlands are included in such land use categories as conservation areas, flood plain and drainage, open space, or environmentally sensitive lands. All of these areas call for limited development. While a future land use map can only be used for general planning, the inclusion of these areas on the map graphically illustrates those areas that have special environmental limitations.

Education Value

An important aspect of the development of a comprehensive plan is its educational value. The public nature of the process allows government officials, land owners, and others in the community to

discuss and learn from each other about existing conditions and future aspirations.

The planning process can serve as an excellent opportunity to discuss and learn about the locality's environment. Background reports can be prepared which examine the extent and importance of wetlands and other environmentally sensitive areas. With this information, a locality can develop a comprehensive plan that meets its overall development needs while protecting its environmental resources.

LAND DEVELOPMENT ORDINANCES

The Code of Virginia grants local governments the power to enact ordinances to zone land, regulate the subdivision of land, and take other actions aimed at achieving the goals and objectives of the comprehensive plan. These same techniques can be used to protect wetlands from inappropriate development. In addition, some specific authorities have been granted to local governments to protect environmentally sensitive areas. The following examines these techniques.

Zoning Ordinance

The Code permits cities, counties, and towns to adopt zoning ordinances. The purpose of a zoning ordinance, as set forth in Section 15.1-489, is to protect the "health, safety or general welfare of the public... ." Local governments can accomplish this purpose through activities such as the regulation of the use of land, through restrictions on the location and size of buildings, and through requirements related to the retention of open space.[65]

In 1990, the General Assembly amended the list of specific purposes for zoning to include "the preservation...(of) other lands of significance for the protection of the natural environment."[66] While the Code previously included purposes such as the protection of flood plains and water quality, this new language is the first to specifically establish the protection of the natural environment as a purpose of zoning. Some believe this language gives localities the ability to use zoning authority to protect environmental features such as tidal and nontidal wetlands, exclusive of the provisions of the Virginia Wetlands Act and the Chesapeake Bay Preservation Act.

Furthermore, the Code states that when zoning ordinances and districts are developed, a local government shall consider, among

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[65]Va. Code, Section 15.1-486, (1991).

[66]Va. Code, Section 15.1-489, (1991).

other things, "the existing use and character of the property, the comprehensive plan, the suitability of property for various uses, the current and future requirements of the community as to land for various purposes..., the conservation of natural resources, the preservation of flood plains,...and the encouragement of the most appropriate use of land throughout the county or municipality."[67]

There are several techniques that can be used to protect wetlands through zoning. Following is a discussion of some of the techniques.

Special zoning districts. One technique used is to establish special zoning districts for environmentally sensitive areas such as wetlands. This permits local governments to limit development in these areas to uses that are compatible with environmentally sensitive areas such as wetlands. To be effective, accurate information about the location of these areas is necessary. This information can be costly to obtain. In addition, attention must be taken to ensure that the uses permitted in the district and the development standards for those uses adequately address the special needs of environmentally sensitive areas such as wetlands.

The New Kent County zoning ordinance contains a conservation district established to protect environmentally fragile or significant areas. A stated purpose of the district is the protection of wetlands. Uses permitted within the district are restricted to forestry, agriculture, open space, and recreation. In addition, there are development standards which require the use of best management practices and grass buffers along streams.[68]

Overlay Districts. Overlay districts are used to add or delete specific uses or development requirements in certain zoning districts without rezoning the property or affecting the use or development requirements of similarly zoned property in other parts of the community. Overlay districts may add requirements for special water quality measures or reduce the types of uses permitted in the underlying zoning district.

Some localities are using overlay districts to implement local Chesapeake Bay preservation ordinances. For example, a Resource Management Overlay District could be established to require certain water quality protection measures without affecting the uses permitted in the underlying zoning district. A Resource Protection Overlay District could limit future development to water dependent uses while requiring stringent water quality protection standards.

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[67]Va. Code, Section 15.1-490, (1991).

[68]Zoning Ordinance, County of New Kent, Virginia, (1987), p. 42.

Performance Standards. The purpose of performance standards is to reduce or eliminate the negative impacts of certain types of land uses on existing and potential uses. A zoning ordinance may contain performance standards for noise, dust, toxic discharges, heat, odor, and water quality.

Performance standards may be used to ensure that activities occurring outside of or adjacent to wetlands do not adversely impact them. These standards could include:

1. requirements for vegetated buffer strips adjacent to wetlands,

2. requirements for the preservation of vegetation, both during and after site development,

3. setbacks for buildings and other site improvements with regard to wetlands,

4. the type and content of fill material to be used on the site, and

5. other best management practices to insure that wetland areas are not damaged during or after development.[69]

The model ordinance developed to assist localities with the implementation of local Chesapeake Bay preservation programs contains examples of performance standards that may be used to protect wetlands and other environmentally sensitive areas.

Planned Unit Development. This technique allows property to be developed in accordance with an overall plan that may deviate from certain specific development standards such as lot size and building setback requirements. Localities can use planned unit development ordinances to provide incentives for the protection of wetlands. For example, a local government may offer incentives such as density bonuses for proposals that concentrate construction in upland areas and leave wetlands undisturbed. The result is the protection of resources such as wetlands while permitting development to occur.

Conditional Zoning. This technique allows property owners to voluntarily attach certain conditions (referred to as proffers) to rezoning requests. These proffers could include guarantees to protect wetland areas and/or to implement mitigation measures. These conditions must comply with the comprehensive plan which is another reason to address environmental protection in the plan. These conditions should clearly promote the general welfare of the community over the good obtained by the property owner. All

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[69]Burke, Meyers, Tiner, and Groman, p. 43.

Virginia localities have the authority to use conditional zoning, but in varying degrees.

Transfer of Development Rights. One technique that has been used in other states is transfer of development rights (TDRs). This technique allows the development rights attached to one property to be transferred, by sale or lease, to another property. The purchaser of the development rights may then develop other property more intensely then originally permitted by the zoning ordinance. The seller of the development rights may only develop as intensely as permitted by the remaining development rights. It is argued that the transfer of development rights can aid in the protection of environmentally sensitive lands by removing development pressures while allowing the owner of such properties to receive income from the sale of the development rights. The Virginia General Assembly has considered TDRs many times, but has yet to pass enabling legislation.

Subdivision Ordinance

While not all localities in the Commonwealth have adopted zoning ordinances, all localities are required to adopt a subdivision ordinance.[70] Subdivision ordinances regulate the division of land into smaller tracts or lots, usually for the purpose of development. Local governments can use subdivision ordinances both as a means to expand the local data base on wetlands and as a means to protect wetlands.

Subdivision ordinances typically require that information such as soil characteristics, stream locations, and other pertinent land features be included on a map or plat of the property being divided. Adding requirements for the delineation of wetlands on a subdivision plat can be beneficial to the local government and to the property owner or developer. This information can also be used to expand the locality's wetlands data base.

During the subdivision review process, the property owner and local government officials work together to determine the most appropriate locations for building lots, roads, and other proposed infrastructure. By requiring the delineation of wetlands during the initial design review process, a locality can ensure that lots, roads, and infrastructure are designed to avoid unnecessary damage or loss of wetlands. This not only protects wetlands, but can also save the land developer by reducing construction costs and can save the locality on future maintenance costs. This review can also highlight activities that will require a Section 404 permit.

The delineation of wetlands early in the process also allows the local government and the property owner to determine the proper

[70]Va. Code, Section 15.1-465, (1991).

locations for best management practices (BMPs). The design and installation of BMPs for an entire subdivision is often more cost efficient and has a greater impact on maintaining water quality than the installation of such devices on individual lots.

Some localities require that individuals subdividing land dedicate a portion of the property for recreational or open space purposes. By negotiating with the property owner, localities may be able to have wetland areas preserved. In addition, localities may also be able to negotiate the granting of conservation easements or the establishment of private development restrictions to protect wetlands.

Unfortunately, local governments do not always have personnel with the proper training and experience to evaluate the accuracy of wetlands mapping or proposed BMPs. Assistance is available from several sources including the Chesapeake Bay Local Assistance Department and the Council on the Environment. In addition, many planning districts commissions have staff available to assist with this review. Private consultants are another source of assistance.

Site Planning Ordinance

A site plan is a drawing which shows the location of proposed development or redevelopment on a site. Some localities have adopted site planning ordinances for all or certain types of development. These ordinances require that development and redevelopment proposals be accompanied by a drawing which shows information such as existing and proposed buildings, driveways, vegetation, and other features on the site.

All localities in Tidewater Virginia are required to incorporate a plan of development review process into their local Chesapeake Bay preservation ordinances. This review process, sometimes referred to as a site plan review, is required for any activity that will disturb more than 2,500 square feet of land within locally designated Chesapeake Bay Preservation Areas.[71]

Adding requirements to map wetlands on a site plan can offer some of the advantages discussed regarding subdivision requirements. It provides the locality with detailed mapping of wetlands at no cost to the locality. In addition, it provides an opportunity for the discussion of actions the property owner can take to protect wetlands. As with the review of subdivisions, training is necessary to evaluate wetlands mapping and proposed protection measures. Local governments needing assistance can call on the agencies discussed above under subdivision ordinance.

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[71]Chesapeake Bay Preservation Area Designation and Management Regulations, Final Regulation: VR 173-02-01, (Chesapeake Bay Local Assistance Board, 1990), pp. 7, 17.

Flood Plain Ordinance

Most localities have adopted ordinances which govern development within the 100 year flood plain of rivers and streams. These ordinances include standards for where and how development may take place in designated flood plains.

Most tidal and some nontidal wetlands are located in flood plains. For this reason, some localities in other states have adopted ordinances that attempt to protect wetlands during and after development in a flood plain. These restrictions include prohibitions against filling and excavating wetlands, construction of structures which impede the flow of water, and the disturbance of natural vegetation.[72] This option is not available in Virginia since localities are only authorized to adopt the minimum language of the federal model flood plain ordinance.

Wetlands remain, however, an integral part of many flood plains. As stated previously, some wetlands play an important role in flood control by storing and slowing flood waters, reducing flood peaks, and increasing flow duration. Localities need to keep these functions in mind when considering requests to build in or modify flood plains.

Stormwater Management Ordinance

Contaminants from diffuse activities or sources, such as automotive oil and fertilizer, are collectively called nonpoint source pollution. Left untreated, these pollutants can be washed off parking lots or agricultural fields by rainfall (stormwater) and allowed to flow into low-lying areas, such as wetlands, without treatment. The accumulated impact of such pollution can result in the degradation of water quality and endanger wetland vegetation and wildlife.

Stormwater management ordinances seek to reduce or eliminate this flow of pollutants by requiring the treatment of stormwater, either on individual properties or at a collective or regional stormwater treatment facility. There are a variety of best management practices (BMPs) that can be used to reduce the amount of pollutants which eventually enter wetlands and water bodies.

Section 10.1-603.1, et seq., permits localities to establish a stormwater management program by ordinance. These provisions and the stormwater management regulations, issued by the Division of Soil and Water Conservation of the Department of Conservation and Recreation, set forth the procedures for implementing a stormwater management program. A model stormwater management ordinance will also be prepared by the Division of Soil and Water Conservation.

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[72]Burke, Meyers, Tiner, and Groman, pp. 51 - 52.

In 1991, the General Assembly passed House Bill 1770. This bill allows localities to develop stormwater utility districts as a means of funding the costs associated with the development, operation, and management of stormwater management facilities.[73]

Erosion and Sediment Control Ordinance

A well-enforced erosion and sediment (E&S) control ordinance can be a key element in a locality's efforts to protect wetlands. Without strict enforcement of erosion and sediment control requirements, runoff from land disturbing activities can smother wetland vegetation and eventually destroy a wetland. Sediment can also clog waterways, leading to flooding problems.

In Virginia, local E&S control requirements can be administered and enforced by either the local government or the local soil and water conservation district. Typically the local government administers and enforces the ordinance and the soil and water conservation district assists with plan review. Section 10.1-560, et seq., and its implementing regulations specifies the requirements for local erosion and sediment control ordinances.

A 1988 report to the Governor and the General Assembly entitled Implementation Effectiveness of the Virginia Erosion and Sediment Control Program recommended several actions regarding the state E&S control program. Since the publication of the report, Virginia has amended the E&S law and issued implementing regulations. In addition, the Division of Soil and Water Conservation has opened field offices and increased training available to local enforcement agencies.

The primary responsibility for enforcing E&S requirements still remains with the local government or the soil and water conservation district. The 1988 report stated that the "effectiveness of the local program is directly related to the municipal attitude toward development and urbanization."[74] Localities that wanted development tended to be less vigorous in the enforcement of E&S requirements. Localities less interested in development tended to be more vigorous in enforcement. Hopefully, as more is learned about the harmful impact of sediment on wetlands, there will be an increased desire to enforce E&S requirements.

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[73]Va. Code, Section 15.1-292.3, (1991).

[74]Report of the Virginia Department of Conservation and Historic Resources, Division of Soil and Water Conservation: Implementation Effectiveness of the Virginia Erosion and Sediment Control Program, House Document No. 15, (Richmond, Va.: Commonwealth of Virginia, 1988), p. 54.

Landscaping Ordinance

Some governments have adopted landscaping ordinances. These ordinances establish standards for the preservation of existing landscaping and the installation of new landscaping on development sites. These ordinances can also be used to address the preservation of wetlands.

Landscaping ordinances can require that certain existing vegetation, especially wetlands vegetation, be preserved on a site. Additional vegetation can be required to further protect wetlands from potential sources of nonpoint source pollution and sediment due to erosion. In addition, there can be requirements that measures be taken to protect existing vegetation during construction. Henrico County has adopted landscaping regulations as an integral part of its Chesapeake Bay protection activities.

Wetlands Ordinance

The Virginia Wetlands Act gives Tidewater localities the authority to create local wetlands boards and adopt an ordinance regulating development in tidal wetland areas. Local wetlands boards consist of 5 to 7 local residents appointed to 5 year terms by the local governing body. The ordinance, which may either be free-standing or incorporated into the zoning ordinance, must conform to the model ordinance set forth in the Wetlands Act. If a locality chooses not to adopt local wetland regulations, the Virginia Marine Resources Commission (VMRC) remains the permitting authority. Following is a discussion of the model ordinance, the permitting process, and the criteria used to evaluate permit applications.

The Model Ordinance. All local programs must conform to the model ordinance in the Wetlands Act. The model ordinance:

1. defines vegetated and nonvegetated wetlands,

2. describes activities that do not require a wetlands permit,

3. outlines information that must be contained in the application, deadlines for submitting the application, and procedures for pubic hearings, and

4. sets forth the factors the wetlands board must use in making its decision.[75]

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[75]Va. Code, Section 62.1-13.5, (1991).

If the local board finds that the public and private benefits of a project exceed any anticipated public and private detriment and that a project does not violate the purposes and intent of the Wetlands Act, it must issue a permit. The board may, however, place reasonable conditions or modifications on a permit to minimize the impacts on local government services and the rights of other individuals. If the board finds that the public and private detriments exceed the public and private benefits, the board must deny the request.

The model ordinance also states that no permit granted by the wetlands board shall affect the local zoning or other land use ordinances. This emphasizes that the authority granted to wetlands boards does not supersede local land use planning and ordinance requirements.

The Permitting Process. The local wetlands board is one part of the review process required to develop in tidal wetlands areas. A project must also be reviewed by federal and state agencies. In order to make the issuance of permits more efficient, federal and state agencies and local governments in Virginia have established a joint permitting process. The review process is described below and illustrated in Figure 9.

1. An application is completed by the landowner and submitted to the Virginia Marine Resources Commission (VMRC). VMRC will assign a processing number to the application to be used by all the regulatory agencies.

2. Copies of the application are sent to the Corps of Engineers (Corps) and the local wetlands board for review.

3. The Corps arranges a joint public notice for each project. The notice is sent to adjacent property owners, governmental agencies, and others who have requested the opportunity to review the proposal.

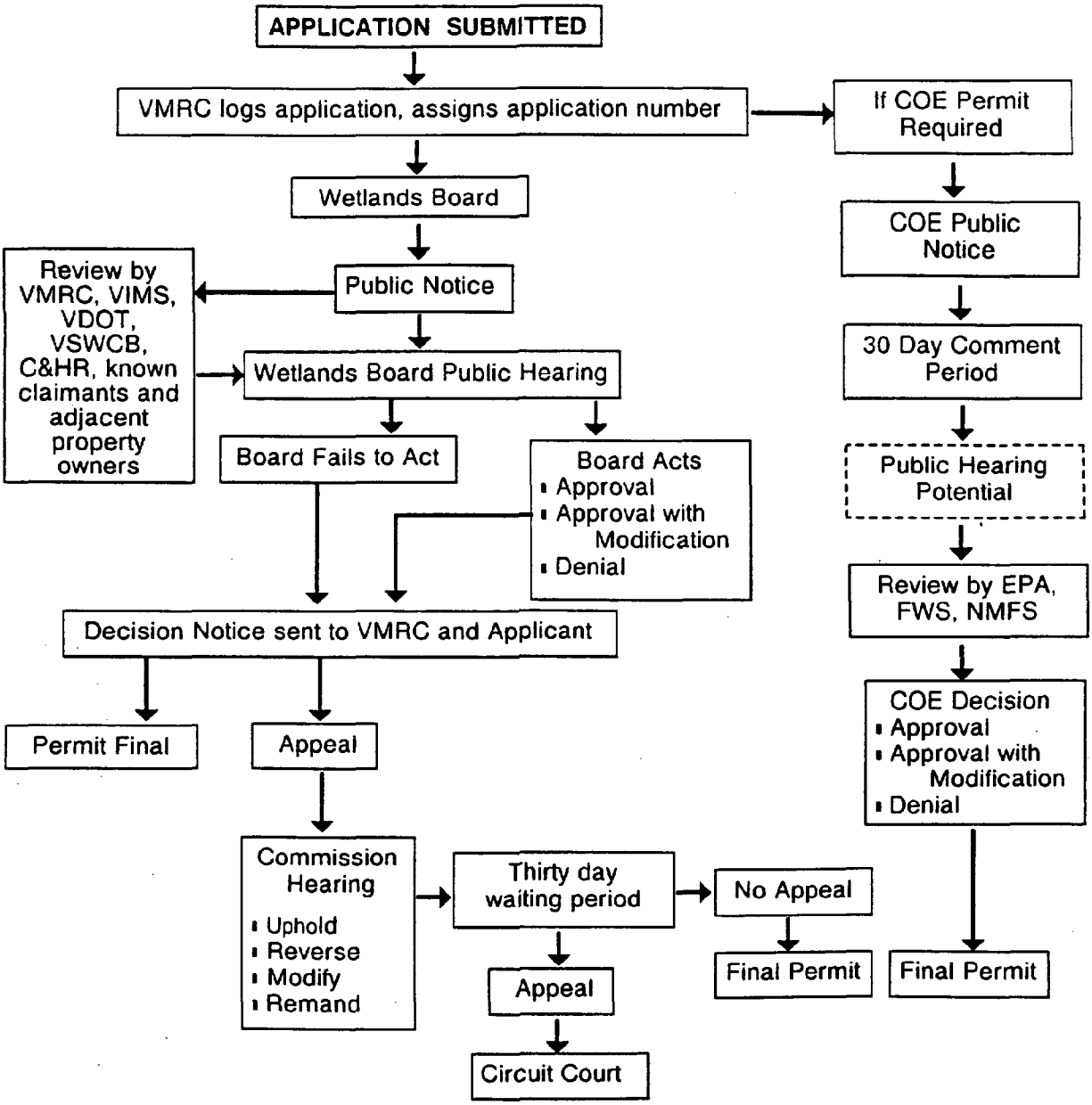
4. A joint site inspection is conducted by the Corps, VMRC, and the local wetlands board. The agencies may request technical assistance from the Virginia Institute of Marine Science (VIMS) or other sources during the site inspection.

5. Federal and state agencies meet monthly to consider all pending applications. Each project's impact, development alternatives, and mitigation opportunities are discussed.

6. If needed, any of the regulatory agencies may hold a public hearing to formally review the application.

Figure 9

WETLANDS PERMIT REVIEW PROCESS



Acronyms

VMRC - Virginia Marine Resources Commission
VDOT - Virginia Department of Transportation
C&HR - Virginia Department of Conservation and Historic Resources
VIMS - Virginia Institute of Marine Science
VSWCB - Virginia State Water Control Board
COE - Corps of Engineers
EPA - Environmental Protection Agency
FWS - Fish and Wildlife Service
NMFS - National Marine Fisheries Services

Adapted from: Chesapeake Bay Foundation Conserving Our Wetland Resources: Avenues for Citizen Participation, 1987.

Source: The Value of Wetlands: A Guide for Citizens, SEVPDC, 1988.

After completion of step 5, or step 6 if needed, a decision is made by the agencies to approve, approve with modifications, or deny the proposal. Overall, the permitting process takes approximately 2 to 3 months to complete.

As stated before, decisions made by the local wetlands board are reviewed by the Commissioner of VMRC to ensure consistency with the Wetlands Act. The applicant can appeal the Commission's decision within ten days.

The Review Criteria. VMRC and VIMS have developed criteria for evaluating alterations to wetlands. These criteria assist VMRC and local wetlands boards in regulating development activities within wetlands. Briefly, the general review criteria are:

1. Alteration of the shoreline or construction of shoreline facilities may be justified in order to gain access to navigable water or to protect property from significant damage or loss due to erosion or other natural causes. This action must not result in an unreasonably detrimental affect on wetlands or marine fisheries and wildlife resources.

2. Shoreline alteration is not justified for activities that do not require water access and can be conducted on uplands; for purposes of creating waterfront property out of land not fronting navigable water; when alteration will result in the damage of property owned by others; when alteration results in the discharge of effluents detrimental to wetlands; or when there are other alternatives that can satisfy the needs of a certain activity without damaging or destroying wetlands.

3. Open-pile type structures are preferred to solid structures, dredging or filling, when used to gain access to waters of sufficient depth.

4. Structures and other types of construction that are built in wetlands should be designed to withstand the forces of the marine environment.

5. High-density development in and immediately around wetlands should be discouraged.[76]

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[76]Wetlands Guidelines, Department of Wetlands Ecology, Virginia Institute of Marine Science, College of William and Mary and the Environmental Affairs Division, Virginia Marine Resources Commission, (n.d.), pp. 41 - 42.

Specific information is included in the Wetlands Guidelines to address shoreline protection, filling, dredging, and disposal of dredged material. Criteria have been developed for specialized structures and activities, such as channeling into fastland or marshes, dams and impoundments, marinas, drainage and mosquito ditches, and submarine pipeline crossings.

To receive a permit, individuals must show the necessity of a wetlands location and the unavailability of alternative sites. Steps must also be taken by the individual to protect the natural functions of the wetland and minimize development impacts. Violators of wetlands regulations usually receive civil penalties; however, many localities are strengthening their penalties to increase compliance with the regulations.

Chesapeake Bay Preservation Area Ordinance

The Chesapeake Bay Preservation Act and its implementing regulations establish an entire system for regulating development in and adjacent to tidal and nontidal wetlands in Tidewater Virginia. The regulations require or suggest many of the wetlands protection techniques discussed previously. These include special zoning categories or overlays and performance standards. The specifics of how these techniques are implemented can be determined by a local government working in concert with the Chesapeake Bay Local Assistance Department.

The Local Assistance Department has also developed a model ordinance for use in developing local ordinances to implement the Preservation Act. This model ordinance, as well as other procedures and guides developed by the Department, can be used by localities outside the Tidewater region that desire to implement the Preservation Act. Among other things, the model ordinance:

1. defines the purpose of the ordinance as it relates to the protection of water quality,

2. defines the areas covered by the ordinance,

3. establishes performance standards as they relate to development in resource protection and resource management areas, and

4. outlines a process for establishing a water quality impact assessment.

Some localities in the Tidewater region have adopted the model ordinance with little or no modification. Others have used the model as a guide for amending existing ordinances or creating new ordinances. Localities outside the Tidewater region may find the ordinance a helpful resource in establishing water quality and wetlands protection measures.

As stated previously, local ordinances to implement the Preservation Act are just now being implemented in the Tidewater region. In addition, Albemarle County has implemented some of the Preservation Act measures. Time will determine the effectiveness of this program in addressing water quality issues.

WETLANDS ACQUISITION

Development ordinances are sometimes considered to be the first, and last, tool available to local governments to protect valuable resources. While development ordinances are important, localities need to consider other tools in planning for the protection of wetlands and other environmentally sensitive areas.

The acquisition of wetlands, either by a public or private body, is perhaps the most effective long-term wetlands protection tool available. This section examines the various factors that local governments need to consider regarding the acquisition of wetlands.

Acquisition Methods

In discussing wetlands acquisition, it is important to keep in mind two types of "ownership": fee simple and easement. Each type of ownership has advantages and disadvantages.

Fee Simple Acquisition. This type of acquisition gives the purchaser absolute ownership of the property. Fee simple acquisition can also include the purchase of a property with retention of a life estate by the seller; that is, the purchaser has title to the property, but the seller retains the right to remain on and/or use the property for his or her life.

Fee simple acquisition is often used by localities to obtain property for public purposes. This is especially true in situations where public improvements will be made or the public will have access to the property, such as park land.

With ownership comes the right to use the entire property as the purchaser sees fit. Ownership also brings responsibility for maintaining the property and potential liability problems. In addition, when property is acquired by a public body for public purposes, the property is no longer on the real estate tax rolls.

Easement Acquisition. Another approach to land acquisition is the purchase of an easement. An easement can be described as the privilege to make some special use of the property. An easement can cover an entire piece of property or a certain specified portion. Easements can be tailored so that the property owner can continue to use and enjoy the property in a manner that is not detrimental to the purpose of the easement.

Generally, easements can be purchased at a cost that is less then the price of fee simple ownership. In addition, the purchase of an easement does not take the property off the local tax rolls, although it may affect the taxes paid as explained later. There are times when the purchase of an easement does not meet a local government's needs. This is especially true where public access is important.

Acquisition by Local Governments

The Virginia Open-Space Land Act permits localities to acquire land for open space. According to the Act, "open space" means land in an urban area which is provided or preserved for:

1. park or recreational purposes,

2. conservation of land or other natural resources,

3. historic or scenic purposes,

4. assisting in the shaping of the character, direction, and timing of community development, or

5. wetlands as defined in the Virginia Wetlands Act.

The Act defines urban areas to include areas which are urban or urbanizing, including semiurban areas and surrounding areas, taking into consideration population trends, growth patterns, transportation systems, and land uses.[77]

A locality may acquire property through purchase, gift, devise, bequest, or grant. It may also appropriate funds, issue and sell general obligation bonds, and levy taxes and assessments to accomplish the purposes of the Act. Property that is acquired may be obtained through the purchase of an unrestricted fee simple title, fee simple with reservation for right to farm or reservation of timber rights, or through easements or other interests in real estate of not less than 5 years duration.

An important element of this legislation is the requirement that land acquired must be used in accordance with the local comprehensive plan. This requirement highlights the importance of considering the preservation of environmentally sensitive areas such as wetlands during the preparation of the local plan. While the Act specifically mentions the acquisition of tidal wetlands, localities should investigate the acquisition of nontidal wetlands as a means to preserve "natural resources" or to shape the "character (and) direction" of local growth.

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[77]Va. Code, Section 10.1-1700, et seq., (1988).

Acquisition by other Agencies

Local governments are not always able to take the lead in acquiring land for the protection of areas such as wetlands. This may be due to budget limitations or to local concerns over public ownership of property.

Fortunately, there are public and private organizations that are involved in the acquisition of property for conservation purposes. State agencies involved in the acquisition of land include the Department of Conservation and Recreation and the Department of Historic Resources. Another state related organization involved in land acquisition is the Virginia Outdoors Foundation. Private conservation organizations involved in land acquisition include Ducks Unlimited, the Chesapeake Bay Foundation, the Nature Conservancy, and the National Audubon Society.

The following describes the work of the Virginia Outdoors Foundation. Also described are the provisions of the Virginia Conservation Easement Act, legislation which impacts the ability of private conservation groups to acquire easements.

Virginia Outdoors Foundation. Created by the General Assembly in 1966, the Foundation was established to promote the preservation of open space lands and to encourage private gifts of money, securities, land, or other property to preserve the natural, scenic, historic, scientific, open-space, and recreation areas of the Commonwealth.[78] To this end, it assists landowners in their efforts to protect private property and encourages the public policy of preserving open space.

The Foundation is authorized to accepts gifts and bequests of money and other property. It can hold real property or any other interest in real property (such as easements) for the preservation of open space lands. According to the Foundation, the open space easement is one of the strongest land preservation tools available short of outright fee ownership of land.

The Foundation recognizes that the Commonwealth has many special areas which should be protected in a comprehensive manner. Like other organizations, it does not have unlimited resources. Therefore, as a state body, the Foundation focuses its efforts and resources on areas of state-wide significance. To this end, it has developed a series of easement donation guidelines for identifying open spaces for protection efforts and for evaluating specific parcels of land.

The Foundation uses three documents to identify potential easement projects. These are the Critical Environmental Areas

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[78]Va. Code, Section 10.1-1800, et seq., (1988).

Survey prepared in 1972 by the then Division of State Planning and Community Affairs, the Virginia Outdoors Plan, and local comprehensive land use plans. In addition, the Foundation has developed a series of points to consider when evaluating specific sites for easement acquisition. These points are:

1. geographic location, intensity of development, type of resource, and property characteristics;

2. specific conservation values on the site such as wetlands, wildlife habitat, biological diversity, historic resources, prime agricultural land, and scenic values;

3. parcel size and the number of retained subdivision rights; and

4. other features which could alter the use of the guidelines such as topography that permits greater density without threatening the conservation value.[79]

As stated previously, the Foundation must focus on areas that have a state-wide significance. Therefore, it encourages local governments to start their own programs using the authority granted by the Open-Space Land Act. To this end the Foundation, in cooperation with the Chesapeake Bay Foundation and the Attorney General's office, is developing an implementation manual for the Open-Space Land Act, which should be available in late 1992. In the interim, local governments may want to consider using the Foundation's guidelines for evaluating potential acquisitions.

It is important to note that the Foundation uses local comprehensive plans in its evaluation review. This emphasizes again the importance of identifying areas such as wetlands on the local comprehensive plan.

Virginia Conservation Easement Act. Passed in 1988, this legislation permits charitable corporations, associations, and trusts to acquire conservation easements.[80] Prior to the passage of the Act, there was some uncertainty over the ability of non-profit organizations to purchase easements in Virginia. Therefore, organizations chose to either purchase the fee and retain ownership or sell the property and keep an easement. Easements were rarely, if ever, purchased. The Act clarified the rights of these organizations to purchase easements.

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[79]A full discussion of these guidelines can be found in Virginia Outdoors Foundation: Encouraging the Preservation of Open Space, (1991?).

[80]Va. Code, Section 10.1-1009, (1988).

The Act requires that organizations involved in the purchase of easements be tax exempt and formed primarily for the purpose of retaining or protecting natural or open space values of real property, assuring the availability of real property for agricultural, forestal, recreational, or open space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving historic, architectural, or archaeological aspects of property. As with other conservation legislation, easements have to be in conformance with the local comprehensive plan at the time the easement is granted.

Tax Considerations

There can be federal, state, and local tax advantages for individuals that sell, give, or otherwise transfer all or a portion of their ownership rights in land that contains wetlands. A complete discussion of these tax laws is beyond the scope of this report. However, localities interested in preserving wetlands through acquisition need to be aware of the types of tax advantages currently available.

Federal and state laws permit tax deductions for the donation of gifts of property. Deductions are also allowed for the donation of easements that are given in perpetuity. The granting of an easement may also reduce any gift taxes due on property given to another individual.

The donation of an open space easement results in a potential lowering of federal estate taxes and Virginia inheritance taxes. This is due to the reduction in the value of the property caused by the loss of development value foregone by the donation of a conservation easement.

The donation of an easement can also impact the real estate taxes due on property. A land owner's assessment for real estate taxes is based on the fair market value of the land, measured by the potential highest sale price. The granting of an easement can eliminate some of the development potential of a piece of property, thereby lowering or stabilizing the real estate taxes due.

These tax advantages can prove to be a major incentive to individuals who desire to preserve areas such as wetlands, but wish to retain ownership. On the negative side, these programs can cause local governments to forgo some tax revenues.[81]

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[81] Virginia's Heritage: A Property Owner's Guide to Resource Protection. Department of Conservation and Historic Resources, (1988), pp. 24 - 25. This booklet covers a wide range of issues that individuals interested in preserving resources may find helpful.

LAND VALUE ASSESSMENT

In addition to the tax advantages discussed above, localities are authorized to offer individuals real estate tax incentives for taking action to preserve land for open space, forestal, and agricultural purposes. These incentives can have positive impacts on efforts to preserve and protect areas such as wetlands. The laws which authorize these incentives are the Virginia Land Use Assessment Law and the Agricultural and/or Forestal Act.

Special Land Use Assessment

Section 58.1-3229, et seq., of the Code establishes the Virginia Land Use Assessment Law. The legislation states that the preservation of real estate for agricultural, horticultural, forest, and open space use is a matter vital to the Commonwealth. Furthermore, it is in the public interest to:

1. encourage the preservation and proper use of real estate to assure a readily available source of agricultural, horticultural and forest products, and open spaces within reach of population concentrations,

2. conserve natural resources in forms that will prevent erosion,

3. protect adequate and safe water supplies,

4. preserve scenic natural beauties and open spaces,

5. promote proper land use planning and the orderly development of real estate for the accommodation of an expanding population, and

6. promote a balanced economy and ease pressures which force the conversion of real estate to more intensive uses.

To accomplish the above, the legislation provides for the classification, special assessment, and taxation of such property in a manner that promotes its preservation. Localities that have adopted a land use plan may adopt an ordinance to provide for the use value assessment and taxation of land covered by this legislation. This, in effect, allows land to be assessed and taxed at its use value, as opposed to the development value of the property. This can have a significant impact on the taxes paid on some property.

The legislation contains minimum acreage requirements for property to qualify for land use assessment. Real estate devoted to forest uses must be a minimum of 20 acres. Agricultural, horticultural, and open space lands must be a minimum of 5 acres. Localities may, by ordinance, reduce the minimum acreage

requirement for open space land to two acres under certain conditions. These conditions include land that is adjacent to a scenic river, a scenic highway, a Virginia Byway, or public property in the Virginia Outdoors Plan.

The legislation also contains use requirements for property to qualify. For example, to qualify for open space assessment, land must be provided or preserved for:

1. park or recreational purposes,

2. conservation of land or other natural resources,

3. floodways,

4. historic or scenic purposes, or

5. assisting in the shaping of the character, direction, and timing of community development.

The land must be used in a manner consistent with the local land use plan. In addition, the land must be in an agricultural or forestal district, subject to a perpetual easement held by a public body, or subject to a recorded commitment (such as an easement) entered into by the landowner with the local government. This commitment must state that the landowner will not change the use of the property to a nonqualifying use for at least four years but not more than ten years.

The Commissioner of Agriculture and Consumer Services, the State Forester, and the Director of the Department of Conservation and Recreation are charged with developing standards which amplify the general standards set out in the legislation. These standards are set forth in the Supplement to the Manual of the State Land Evaluation Advisory Council: Standards for Classification.

The supplement defines the term "land" as it relates to open space use to include water, submerged land, wetlands, marshes, and similar properties. Furthermore, the supplement states that the term "conservation of land or other natural resources" includes lands that are provided or preserved for forest preserves, bird or wildlife sanctuaries, watershed preserves, nature preserves, arboretums, marshes, swamps, and similar natural areas. Floodplains include lands that are provided or preserved for tidal and nontidal wetlands, such as swamps, bogs, and marshes. A model Open Space Use Agreement is also provided.[82]

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[82]Supplement to the Manual of the State Land Evaluation Advisory Council: Standards for Classification, (Richmond, Virginia: State Land Evaluation Council, 1989), pp. 3 - 5.

When property that has been subject to use assessment is rezoned to permit nonqualifying uses or the use is changed, additional taxes are due. This is called a roll-back tax which is equal to the sum of the deferred tax (the difference between the levied tax and the tax on fair market value) for the last five years plus simple interest.

Agricultural and/or Forestal Districts

Another program that can provide an incentive to preserve land in its existing state is the Agricultural and Forestal District Act. The stated purposes of the Act are to conserve and protect agricultural and forestal lands for the production of agricultural and forestal products and to conserve and preserve these lands "as valued natural and ecological resources which provide essential open space for clean air sheds, watershed protection, wildlife habitat, as well as aesthetic purposes."[83] This program is similar to the special assessment legislation, but is specifically aimed at the protection of agricultural and forestal lands.

The Act permits local governments to enact ordinances which allow the formation of agricultural and/or forestal districts. This is a voluntary program, that is, agricultural and forestal districts are formed by petition of one or more property owner(s). Upon receipt of the first application for a district, the local government must establish an advisory committee to advise the planning commission and the governing board and assist in creating, reviewing, modifying, continuing, and terminating districts. Each district must contain at least 200 acres in one or more contiguous parcels, although the district can be located in more than one locality.

When creating or adding to existing districts, localities are to consider the agricultural and forestal significance of the land within or adjacent to the proposed district. In addition, localities are to consider:

1. land development patterns,
2. the comprehensive plan, and if applicable, the zoning ordinance,
3. the environmental benefits of retaining the land in the district for agricultural and forestal uses, and
4. any other matter which may be relevant.[84]

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[83]Va. Code, Section 15.1-1507, (1990).

[84]Va. Code, Section 15.1-1511(C), (1990).

Any districts formed must be reviewed after no less than four but no more than ten years. In conducting this review, the governing board shall ask for a recommendation from the advisory committee and the planning commission. The district can then be continued, modified, or terminated.

Property that is in a district can be withdrawn by the property owner at any time. Property withdrawn from a district is subject to roll-back taxes as discussed under special use assessments.

The advantages of this Act to the property owner are similar to those of the Special Land Use Assessment Law. In addition, land in these districts is exempt from local ordinances that unreasonably restrict or regulate farm structures or farming or forestry practices. Furthermore, local ordinances, comprehensive plans, and land use decisions affecting adjacent property are required to consider the existence of these districts and the purpose of the Act.[85]

THE TAKINGS ISSUE

The most controversial legal question surrounding wetlands regulations is the question of whether the regulations constitute a taking. That is, do the regulations that limit land use activity within or near wetlands constitute a taking of the property owner's development rights and therefore require the property owner to be compensated? While a discussion of all legal points involved in this issue is beyond the scope of this report, there are several comments that can be made.

The takings issue involves the Fifth Amendment of the United States Constitution which prohibits the taking of private property for public use without just compensation.[86] The takings clause was first established to address the physical seizure of land by the government. Later, the takings clause was broadened to apply to the impact of regulations on land.

Court interpretations of the takings issue have varied, being heavily determined by the facts involved in each individual case. Recent federal cases that have addressed the issue of takings include:

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[85]There is also a Local Agricultural and Forestal Districts Act, Va. Code, Section 15.1-1513.1, (1991). This act applies to localities with the urban county form of government and certain adjacent counties.

[86]Liebesman, p. 10-1.

United States v. Riverside Bayview Homes, 106 S. Ct. 455, 16 ELR20086 (1985),

Keystone Bituminous Coal Association v. DeBenedictus, 107 S. Ct. 1232, 17 ELR20440 (1987),

First English Evangelical Lutheran Church of Glendale v. County of Los Angeles 107 S. Ct. 3141, 17 ELR20787 (1987), and

Nollan v. California Coastal Commission, 107 S. Ct. 3141, 17 ELR20918 (1987).

On March 18, 1988, President Reagan issued Executive Order 12630, entitled "Government Actions and Interference with Constitutionally Protected Property Rights". This action was taken in light of the Nollan and First English cases cited above. It was stated at the time that the purpose of this Executive Order was to ensure that the constitutionally guaranteed right to private property was protected and to protect the federal government from unnecessary takings liabilities.[87]

The U.S. Attorney General's Office has issued guidelines which require federal agencies such as the Corps and EPA to consider the implications of an action by that agency on the economic viability of a property where a permit has been requested. A Takings Implication Assessment (TIA) must be performed for any Section 404 permit that is denied. The full implication of this executive order on federal wetlands regulations is not clear at this time.[88]

Several bills have been submitted in Congress that deal with wetlands regulations and private property rights. Therefore, one must assume that this issue will continue to be debated on the federal level.

There are some guidelines that local governments should keep in mind when considering local wetland regulations and the takings issue. These guidelines are as follows:

1. "Regulations adopted for a valid public purpose and with an adequate basis in fact may substantially reduce land values without effecting a taking.

2. The impact of regulations must be evaluated for an entire piece of property (not just one portion) to determine whether a taking has occurred.

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[87]Want, p. 10-14.

[88]Ibid., p. 10-4.

3. Public safety and the prevention of nuisances are paramount concerns of government, and no landowner has an intrinsic right to threaten public safety or cause nuisances.

4. Regulations will result in a taking only if they deny "all use" or all "economic use" of an entire property, including reasonable "investment-backed expectations". Even then, regulations may be valid under certain circumstances."[89]

With this said, local governments are advised to seek legal counsel when considering any land use regulations. This is especially true in the volatile area of wetlands regulations.

[89]Burke, Meyers, Tiner, and Groman, p. 28.

CONCLUSION

The introduction stated that any report on wetlands will be out of date as soon as it is published. True to form, several changes have occurred regarding wetlands since this report was begun. Even now, the federal government is considering several pieces of legislation which may change wetlands policies. With this said, several conclusions can be drawn regarding wetlands.

1. Wetlands are not the waste lands they were once considered. While all wetlands are not created equally, wetlands do provide a variety of benefits.

2. Proposed legislation not withstanding, the federal government has and will continue to regulate certain aspects of development in wetlands. This role may change, as might the definition of a wetland, but it is doubtful that this role will disappear.

3. The Commonwealth will continue to be involved in wetlands regulations. Recent initiatives addressing the Chesapeake Bay and continuing discussions of nontidal wetlands legislation appear to bear out this thinking.

4. The role that local governments play in wetlands protection will continue to grow. This is evidenced by recent changes in local planning and zoning authority regarding environmentally sensitive areas.

5. Local governments have a variety of tools at their disposal to protect wetlands while still allowing necessary development to occur. These tools include the comprehensive plan and development ordinances.

6. Land acquisition and special land use assessment techniques can also be part of a local wetlands protection program. A variety of state and private agencies are available to assist local governments with land acquisition.

7. Governments which institute wetlands protection measures have to recognize the potential impacts these actions have on private property rights. The Constitutional issue of takings is and will continue to be an important issue at federal, state, and local levels.

One purpose of this report is to demonstrate that wetlands protection need not be thought of separately from other planning activities. A variety of tools have been discussed. Hopefully, the information presented herein will lead to more discussion and, more importantly, action regarding wetlands protection.

APPENDIX

FINDINGS AND RECOMMENDATIONS OF THE VIRGINIA NONTIDAL WETLANDS ROUNDTABLE

The Virginia Nontidal Wetlands Roundtable pursued its study of issues related to management of the Commonwealth's nontidal wetlands resources as directed by the 1989 Virginia General Assembly. The study was conducted within the framework established by the 1987 Chesapeake Bay Agreement, the Living Resources Commitments which followed from the Agreement, and the 1988 Chesapeake Bay Wetlands Policy. Roundtable members concluded the while effective management of nontidal wetlands should be of immediate and continuing concern to the Commonwealth, creation of a new regulatory program for the resource may be premature at this time. The Roundtable believes that the state should immediately take steps to: enhance, coordinate and assess existing programs; institute continuing educational, research and incentive based preservation programs; and develop a current inventory of the resource. Once these efforts have been undertaken, the Commonwealth will be better able to determine both the need and appropriate design for any new regulatory program. In developing this general conclusion, the Roundtable's deliberations led its members to make the following specific recommendations for action.

RECOMMENDATIONS

1. The Virginia General Assembly should enhance the funding and staffing provided to the State Water Control Broad for its Section 401 water quality certification responsibilities related to nontidal wetlands.

2. Virginia should decertify the U.S. Army Corps of Engineers Nationwide Permit No. 26 and any other nationwide permit which the State Water Control Board deems to impair protection of Virginia water quality.

3. The Department of Agriculture and the Division of Soil and Water Conservation of the Department of Conservation and Recreation should utilize, to the extent practical, the Department of Forestry model of nonregulatory interaction with its constituency, emphasizing education, voluntary compliance, peer review and monitoring to help minimize adverse effects on nontidal wetlands resulting from agricultural practices.

4. A comprehensive assessment of existing state programs should be undertaken with the goals of identifying how each program affects nontidal wetlands, how the programs overlap or interact with one another in nontidal wetlands, where opportunities for effective coordination among programs exist and where new or enhanced programs are needed.

5. All state programs affecting nontidal wetlands should incorporate recognition of Commonwealth policy for management of nontidal wetlands which seeks a short term goal of no net loss in acreage and function and a longer term goal of net resource gain in wetland acreage and function over present conditions.

6. State programs affecting nontidal wetlands should define wetlands as: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

7. The federal procedures for delineation of wetlands should be included by reference in any state regulatory program.

8. All state programs or activities affecting nontidal wetlands should incorporate goals to avoid impacts on nontidal wetlands whenever possible, to minimize impacts when they cannot be avoided, and to seek full compensation for any impacts which occur.

9. Virginia should encourage and support research on the structure and function of nontidal wetlands with the goal of full elucidation of their functions.

10. The Commonwealth should make an immediate and continuing commitment to education of legislators, local government officials, and citizens on the scientific, legal, and political aspects of nontidal wetland management.

11. Virginia should make a commitment to the establishment and maintenance of a current inventory of the Commonwealth's nontidal wetland resources.

12. The Commonwealth should pursue implementation of as many types of incentives to preserve nontidal wetlands as possible.

13. Virginia should not pursue assumption of the federal Section 404 regulatory program at the present time.

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