

# TABLE OF CONTENTS

<b>Part I. Introduction.....</b>	<b>2</b>
<b>Part II. Summary of Past Section 309 Efforts (1997-2000).....</b>	<b>3</b>
<b>Part III. Priority Enhancement Areas Assessment</b>	
Wetlands Assessment.....	7
Coastal Hazards.....	13
Public Access.....	17
Marine Debris.....	21
Cumulative and Secondary Impacts.....	23
Special Area Management Planning (SAMP).....	31
Ocean Resources.....	37
Energy and Government Facility Siting.....	41
Aquaculture.....	43
<b>Part IV. Public Comment.....</b>	<b>47</b>

## **Part I. Introduction**

### **Virginia Coastal Resources Management Program**

The Virginia Coastal Program was established in 1986. The Department of Environmental Quality (DEQ) serves as the lead agency of a network of state agencies that administer state regulations and policies to protect and enhance coastal resources. Other agencies in the network include the Virginia Marine Resources Commission (VMRC), the Department of Conservation and Recreation (DCR), the Department of Game and Inland Fisheries (DGIF), the Department of Health (VDH), the Department of Forestry (DOF), the Chesapeake Bay Local Assistance Department (CBLAD), the Department of Agriculture and Consumer Services (VDACS), and the Department of Historic Resources (DHR).

Section 309 of the Coastal Zone Management Act (CZMA) is known as the Coastal Zone Enhancement Program. It was created in 1990 and was last amended and reauthorized in June 1996. Section 309 is a voluntary grant program in which federal funds are available to coastal states with federally approved coastal management programs. To receive funds, the programs must assess nine specified areas of coastal zone management as they relate to the state and identify which are priorities. The nine areas are: public access, coastal hazards, ocean resources, wetlands, marine debris, cumulative and secondary impacts, special area management planning, energy and government facility siting, and aquaculture.

In 1997, Virginia developed a three-year Assessment and Strategy that addressed each enhancement area of Section 309 and identified five high priority areas (public access, hazards, cumulative and secondary impacts, SAMPs, and aquaculture). These areas were selected based on the recognized need for regulatory or program changes. Based on the highest priority of need and high likelihood for success, three strategies were developed for the FY'97-FY'99 period: SAMPs for Northampton and Southern Watershed Areas, and Aquaculture.

This report presents Virginia's 2000 Assessment of the nine enhancement areas. The analysis and strategy preparation was completed using the National Oceanic and Atmospheric Administration's (NOAA) final Section 309 Guidance (July 25, 2000). Assessment questions prepared by NOAA helped to update and determine the current status of each enhancement area. The Virginia priority for each area is ranked as high, medium or low. The Virginia Coastal Resource Management Program plans to focus its attention and efforts during the next five years on five high priority areas with seven proposed strategies:

1. Wetlands: Wetlands Regulatory Programs Strategy;
2. Coastal Hazards: Dune Management Strategy;
3. Cumulative and Secondary Impacts: Shorelands Management Strategy and Clean Marina Program Strategy;
4. SAMP: Southern Watershed Area Strategy, and Dragon Run Area Strategy; and
5. Aquaculture: Aquaculture Management Strategy

## **Part II. Summary of Past Section 309 Efforts (1997-2000)**

### **Aquaculture**

#### **Virginia Marine Resources Commission (VMRC): “Enhancement of siting policies and development policies for aquaculture” (FY ’97 – ’00)**

Project Summary: In order to assist the development and growth of the marine aquaculture industry, this project and strategy pursued a two-pronged approach: the first addressed the need for a more appropriate permitting and leasing system, and the second addressed the need for resolution of land use/water quality issues that affect marine aquaculture.

#### Summary Results:

1. General Permit #3 (Regulation 4 VAC 20-336-10 et seq.) allows for noncommercial riparian shellfish growing activities that conform to certain criteria and are undertaken over or on the State-owned subaqueous lands in tidal waters of the Commonwealth became effective in 1998. Several of the criteria included in the permit addressed the conflict between land use and water quality issues. These criteria are (1) the minimization, to the greatest extent possible, of adverse impacts to adjacent properties and wetlands and upon the natural resources of the Commonwealth and (2) the compliance to water quality standards as established by the DEQ.
2. Regulation 4 VAC 20-335-10 et seq. “Pertaining to on-bottom shellfish aquaculture activities” became effective in 1998. This regulation authorizes the placement of shellfish aquaculture structures on and immediately above privately leased shellfish grounds without an individual permit from the VMRC.
3. The VMRC published the “Guide to Virginia’s Laws, Regulations and Requirements for Marine Shellfish Aquaculture Activities”. This guidebook contains information on shellfish “gardening activities”, licensing and harvest requirements and health and sanitation provisions. Also included are all of the laws and regulations pertaining to aquaculture activities.
4. 3-D Aquaculture Leasing Program: Prior aquaculture regulations pertained to encroachment on subaqueous bottomlands. This new program seeks to pass legislation that would allow the leasing of the water column for aquaculture activities. The Chesapeake Bay Commission has received draft legislation from the MRC concerning leasing of the water column for aquaculture. To date, the Commission is considering the proposal in a larger context of a management plan for shallow water areas.

#### **Virginia Institute of Marine Science (VIMS): “Aquaculture use-conflict analysis” (FY ‘97-’99)**

#### Project Summary:

The potential conflict between clam aquaculture and submerged aquatic vegetation on Virginia’s Eastern Shore was analyzed using Geographic Information System (GIS) based use-suitability models. The analysis indicated the actual conflict is still relatively small, but the potential conflict is significant. Review of the parameters critical to determination of area suitability for each use found that proactive management of riparian land use will be important to preservation of use opportunities.

#### Summary Results:

The project findings resulted in legislative interest in development of policies and management strategies for shallow water uses in marine and estuarine waters of the Commonwealth. Work over the next year will develop plans and identify regulatory tools necessary to implement such

programs. This may result in significant changes to the Commonwealth's goals and methods for management of its coastal waters.

## **Special Area Management Planning (SAMP)**

### **Hampton Roads Planning District Commission (HRPDC): "Southern Watershed of Virginia Beach and Chesapeake SAMP (SWAMP)" (FY '96 – '00)**

#### Project Summary:

This project intended to address coastal management problems in three specific areas: existing threats to water quality, habitat loss and water quality degradation due to development, and use/management conflicts.

#### Summary Results:

1. The SWAMP project results include the development of a Rural Area Management Program, a Multiple Benefits Conservation Program and the development of several Memorandums of Agreement (MOA).
2. The Waterway Use Conflict MOA for the North Landing River and associated map are complete. The HRPDC approved the MOA on July 19, 2000. Both the City of Chesapeake and the City of Virginia Beach have approved the MOA.
3. The Agriculture Plan draft was delivered to the PDC in January 2001.

### **Virginia Coastal Program: "Northampton County SAMP" (FY '92 – '96, '99, '00)**

#### Project Summary:

The Northampton SAMP was a County-wide project that proposed to address protection of coastal resources and economic development through five key steps:

1. Re-establishment of villages/towns settlement pattern
2. Water quality protection
3. Habitat protection
4. Appropriate public access
5. Cape Charles Sustainable Technologies Industrial Park (STIP)

#### Summary Results:

1. Declaration of Covenants and Restrictions for the Port of Cape Charles Sustainable Technologies Industrial Park (STIP).
2. Memorandum of Understanding (MOU) regarding management of vegetation in power line rights-of-way.
3. MOU regarding management of vegetation for bird habitat on surplus properties and rights-of-way of the VA Department of Transportation.
4. Work that has not been completed up to this point is (1) an MOU regarding public access, (2) a zoning and subdivision ordinance, (3) a town/village revitalization strategy and (4) a MOU for Excellent Water Quality

## **Cumulative and Secondary Impacts**

### **Virginia Department of Conservation & Recreation Coastal Nonpoint Pollution Control Program (DCR-CNPCP): Identification & Analysis of Habitat Impairment Associated with Hydromodification and Nonpoint Source Pollution: Phase II (FY '99 – '00)**

#### Project Summary:

The project identifies impacts associated with channel maintenance on instream and riparian habitats. This is accomplished through a stratified random sample approach and quantitative habitat analysis. Channels are quantitatively evaluated for instream and riparian habitat impairment. These data will be analyzed for patterns of impairment. Through this process, efforts to prepare a systematic approach to identifying opportunities for habitat improvements will be made.

Changes in conditions that may be associated with channel modification activities will be evaluated through qualitative and quantitative assessment and statistical analysis of the fisheries and wildlife habitats. Assessment protocols including the habitat component of EPA's Rapid Bioassessment Protocol (RBP, Barbour, et al. 1997) will be evaluated along with quantitative habitat evaluation procedures. Habitat attributes will include instream components such as substrate type, type and extent of substrate cover, woody debris, submersed aquatic vegetation, degree of siltation and various water quality parameters (e.g. temperature, pH, conductivity, dissolved oxygen, and turbidity). Stream hydrodynamics and morphology (e.g. tidal or nontidal conditions, stream width and depth, sinuosity, etc.) and other physical characteristics will also be included as habitat components. Riparian habitats will also be assessed using attributes such as extent or width of riparian zone, land use pattern beyond the riparian zone, completeness of zone and type of vegetation in the zone.

**Virginia Department of Conservation & Recreation Coastal Nonpoint Pollution Control Program (DCR-CNPCP): Virginia Clean Marina Program (FY 2000)**

Project Summary: · The Clean Marina Program addressed Coastal nonpoint source conditions regarding fish waste, hull maintenance and technical assistance. This project began in FY 99 under 6217 funding but continues development and implementation activities with FY2000 Section 309 funds.

Summary Results: This program has accomplished the following: conducted technical workshops, developed a BMP guidebook, developed a webpage, established a stakeholder advisory committee, coordinated multiple state program activities, and established a regional approach to addressing marina issues.

**Virginia Department of Conservation & Recreation Coastal Nonpoint Pollution Control Program (DCR-CNPCP): Marina Siting Suitability Index and Map Portfolio (FY '99 – '00)**

Project Summary:

The suitability analysis will be performed within the framework of a Geographic Information System (GIS) where each applicable criterion will be mapped as an individual GIS coverage. Based upon the number of resources present an area will be evaluated as to its suitability as a site for a marina. This evaluation will be conducted using the criteria for marina siting and the analytical capabilities of the GIS. To the extent possible, the map portfolio will illustrate the environmentally sensitive areas and highlight those areas where site selection for the development of a marina facility would not pose any significant adverse impact on the marine environment. The final product will be a set of marina siting protocols, the GIS rules to implement the protocols, and a marina siting suitability map portfolio. These maps can be used by local government and regional planners for incorporation into Comprehensive Plans or as regulatory policy for state and local resource managers. Additional products will include two workshops for county officials, a presentation of the final product to the Virginia Marine

Resources Commission, and a VIMS Technical Report, which will be sent to the VIMS Center for Coastal Resources Management 1,500-member mailing list. Maps for each coastal local government will be distributed to their planning offices and local wetlands board staff.

**Virginia Department of Conservation & Recreation Coastal Nonpoint Pollution Control Program (DCR-CNPCP): Development of a BMP Handbook for Plasticulture in Virginia (FY '99)**

Project Summary:

Currently, the Virginia Coastal Program is addressing the agricultural management measures listed in the (g) guidance. However, there are no management measures specific to plasticulture. Through the implementation of the Coastal Nonpoint Source Pollution Control Program, the Department of Conservation and Recreation is required to address the (g) guidance management measures in cooperation with other appropriate state agencies. An element of the project is enhancement of the program through the identification and implementation of additional management measures. This project facilitates the approach of using additional management measures by addressing an identified need regarding plasticulture impacts. Additionally, this project will promote future program changes in critical coastal areas.

This project will result in the development of a handbook and guidelines for minimizing water quality problems associated with plasticulture in Virginia. This will benefit the Commonwealth and public by providing knowledge and techniques that can be used to protect water quality. It will also benefit the agricultural community by providing guidance that will help producers meet water quality goals and maintain profits. No such handbook or guidelines currently exist. The handbook will allow agricultural producers and environmental planners to identify the production practices and systems of BMPs that are most suitable for particular fields.

## Part III. Priority Enhancement Areas Assessment

### Wetlands

#### Section 309 Programmatic Objective

- I. *Protect and preserve existing levels of wetlands, as measured by acreage and functions, from direct, indirect and cumulative adverse impacts, by developing or improving regulatory programs.*
- II. *Increase acres and associated functions (e.g. fish and wildlife habitat, water quality protection, flood protection) of restored wetlands, including restoration and monitoring of habitat for threatened and endangered species.*
- III. *Utilize non-regulatory and innovative techniques to provide for the protection and acquisition of coastal wetlands.*
- IV. *Develop and improve wetland creation programs as the lowest priority.*

#### Resource Characterization

1. *Extent of coastal wetlands*

Wetlands Type	Extent (acres & year of data) NWI/VIMS**	Trends ( $\pm$ acres/year) (Permitting losses, VIMS)		
		1997	1998	1999
	<b>2000</b>			
Tidal Vegetated	194,603	-24.560	-55.362	-22.100
Non-vegetated	116,210			
Non-tidal	909,097	-233.96	-258.15	-267.10*
Freshwater	No available data			
Publicly Acquired Wetlands (development of database on publicly owned lands at DCR)	No available data			
Restored Wetlands (executive order on restored wetlands)	No available data			
Other:	None			

\*requirements for compensation are not tracked

\*\*VIMS has acquired new data from the National Wetlands Inventory (NWI)

1. *Direct and indirect threats to coastal wetlands, both natural and man-made.*

Threat	2000 Significance H/M/L	1997
Development/fill impacts	H	High
Erosion/subsidence	M	Medium

Pollution	L	Low
Channelization	L	Low
Nuisance or exotic species	M	Low
Freshwater Input	L	Low
<u>Other:</u>		
Dam construction and Surface water allocation	M	Low-Medium
Failed compensation	H	H

2. For threats that are identified as high or medium, provide the following information:

- Characterize the scope of the threat
- Describe recent trends
- Identify impediments to addressing the threat

**Development/fill impacts:**

As population growth continues to spur development, impacts from development continue to increase. Impacts due to “Tulloch ditching” and threats to isolated wetlands remain significant, since they are not currently protected by federal permitting requirements. It is estimated that approximately 2,100 acres of nontidal wetlands have been ditched, with plans for an additional 5,700 acres under the federal Tulloch loophole. These statewide losses are predominately located in Southeastern Virginia. Recent state legislation, however, addresses the Tulloch ditching loophole. As of July 1, 2000 changes to the Virginia Water Protection Permit regulations include control over excavation in wetlands; the threat to isolated wetland impacts will be addressed when the remainder of the changes become effective in October 2001. To adequately and address fully the threat of ditching and draining wetlands, it is necessary to successfully implement and enforce this new regulatory program.

**Erosion/subsidence:**

Whether caused by erosion or subsidence, sea level continues to rise along Virginia’s coast, especially along the Chesapeake Bay shoreline. Scientists agree that the rate of sea level rise in the Bay is approximately 3.5mm per year. As sea level continues to rise and as structures are built to protect uplands from erosion, wetlands and other areas of ecological importance cannot continue to retreat upslope. At present, there is no strategy to address this concern and sea level rise impacts to wetlands continue unabated.

**Nuisance or exotic species:**

*Phragmites* appears to be an increasing invader in wetlands. It limits native populations and does not appear to replace the habitat functions of the displaced, native vegetation. The Department of Conservation and Recreation, along with the Chesapeake Bay Commission, recently held a symposium on the management of *Phragmites*. Although it is believed that restoring the hydrology to an area invaded by *Phragmites* can help restore native species, no comprehensive plan has yet to be developed either on a state or local level. Purple loosestrife, as well as the mute swan, may also become a significant threat.

**Other:**

**a. Dam construction and surface water allocation:**

In 1997, the King William Reservoir project received a state permit for construction. The District Engineer has issued a preliminary decision to deny the permit based on cultural impacts. The final decision has been elevated to Division level. Whether the reservoir is ultimately constructed or not, it represents the type of project frequently proposed for the coastal plain. The abundant freshwater flowing into the estuary is very enticing if it can just be stored somewhere to provide reliable water supplies. In the low relief coastal plain, reservoir construction inevitably impacts wetlands.

**b. Failed compensation:**

Virginia has not had an effective monitoring program for wetlands compensation efforts. As a result accurate assessments of success or failure are not currently possible. Information frequently cited for federal wetlands programs represents compensation that is required as a condition of the permit issuance. As a result, it is more accurately viewed as “planned” compensation, than actual completed and successful compensation. The resources necessary to monitor compensation efforts have not been available to federal agencies, and will present a similar challenge to the new state management program.

**Management Characterization**

*1. Within each of the management categories below, identify changes since the last assessment. This applies to both positive and negative changes.*

<b>Management Category</b>	<b>Changes since last assessment</b>
Regulatory Programs (jurisdiction)	Significant
Wetlands Protection Standards	Significant
Assessment Methodologies	None
Impact Analysis	Moderate
Restoration/Enhancement Programs	Moderate
SAMPs	Moderate
Education/Outreach	Significant
Wetlands Creation Programs	Moderate
Acquisition Programs (CBP commitment to preservation)	None
<u>Other:</u> Marshes & meadowlands management plan EPA/general assembly	Significant

*2. For categories with changes that are identified as significant or moderate provide the following information for each change:*

### **Regulatory programs and wetland protection standards**

Actions of Virginia's 2000 General Assembly have given the Virginia Department of Environmental Quality (DEQ) a clear mandate to revise the existing Virginia Water Protection Permit (VWPP) regulations. By their actions, the General Assembly removed the dependence of the VWPP program on the issuance of a Corps permit, thus enabling DEQ to regulate activities, such as excavation in wetlands and fill in isolated wetlands, which are not currently under federal jurisdiction. The General Assembly directed DEQ to develop General Permits for similar classes of activities with minimal impacts to expedite the permitting process in Virginia while maintaining the same high environmental standards as the individual permitting process. The final regulations, including General Permits for utilities, transportation, development projects, and impacts less than one-half acre, will be approved and implemented in October 2001. These regulations, when implemented, will result in increased protection for non tidal wetlands in Virginia by regulating impacts to additional categories of wetlands and requiring compensatory mitigation for all wetland impacts sufficient to achieve no net loss of wetland acreage and function. The legislation and development of revisions to the VWPP regulations were not a result of 309 funding efforts.

### **Impact Analysis:**

VIMS has modified the impact assessment reports it prepares for local wetlands boards on every proposed wetlands/shoreline project. The new report format, developed with partial funding from the VCRMP (306 funding), provides information on resources and cumulative impacts at a watershed and locality scale. The purpose is to facilitate regulatory decisions that consider cumulative and secondary impacts.

### **Restoration/Enhancement Programs and Wetlands Creation Programs:**

#### *Conservation Reserve Enhancement Program (CREP):*

The objective of USDA's CREP is to improve water quality and wildlife habitat by offering financial incentives to agricultural landowners to support the voluntary restoration of riparian buffers, native warm season grass filter strips and wetlands on 35,000 acres of environmentally sensitive lands. The program began taking applications on June 5<sup>th</sup>, 2000. Cost share assistance from both state and federal sources are available to reimburse landowners for the installation of agricultural BMPs, which will reduce NPS pollution to local streams. DCR is also offering a \$500/acre incentive for CREP enrolled acres placed under a permanent conservation or open space easements. At the time of this report over 535 acres within the Chesapeake Bay watershed and over 275 acres from the Southern Rivers watershed have been accepted into the CREP program. This program is expected to substantially reduce Nitrogen, Phosphorous and sediment input to the Chesapeake Bay and Southern Rivers. Since the program has just begun, it is too early to see the influence this program will have on conservation practices and water quality issues within the Commonwealth. Based on the Chesapeake 2000 Agreement, the goal is to achieve by 2010 a net resource gain by restoring 25,000 acres of tidal and nontidal wetlands.

### **Special Area Management Programs:**

*Northampton SAMP:* Wetlands in the Sustainable Technologies Industrial Park were protected through the acquisition of a natural area within the Park. In addition, wetlands were created as a tertiary treatment system for runoff from STIP lands.

*Southern Watershed Area SAMP*: Started in 1996 and funded through Section 309, the SWAMP project has identified several areas to adopt program changes, including a waterway use-conflict MOA and a conservation plan. The use-conflict MOA is an attempt to promote boater safety, while at the same time protecting the environment, including wetlands, from damage by on-water uses. The conservation plan will provide a coherent approach to wetlands mitigation for each city's capital projects while addressing issues such as passive recreation, education and research, habitat protection, natural resource restoration and enhancement, improved water quality, and community quality enhancement. Significant progress has been made on the development of the Multiple Benefits Conservation Plan. A set of maps has been developed depicting areas that meet the multiple goals of the Plan. A report explaining the Plan is under development.

**Education/Outreach:**

*VIMS Educational Programs*: The Virginia Wetlands Management Handbook, with VCRMP funds (306), was revised, adapted, and made available through the VIMS Wetlands Program web page. This web page has also been expanded to include educational materials and other publications produced by the wetlands programs. VIMS also constructed a teaching marsh (through private funding), specifically to support training of local wetlands board members and staffs.

**Conclusion**

*1. Identify major gaps in addressing the programmatic objectives for this enhancement area.*

The major gaps in Virginia's programs to manage wetland resources center on the needs of the new nontidal wetlands management program. DEQ has worked to craft new regulations, but full and successful implementation will require several significant program enhancements from current conditions. Enhancements should include development of a methodology and protocol for assessment of cumulative impact and evaluation of compensation requirements/success. In addition there is a pressing need for the development of a monitoring program to track status and trends in the resource, guidance for mitigation/compensation programs, and guidance for creation/preservation programs. These are all crucial elements in supporting the achievement of the programs no net loss/net resource gain goal. Carefully crafted guidance can enhance the efficiency of regulatory and non-regulatory programs in this effort, particularly in the preservation and enhancement of wetland functions.

*2. What priority was this area and what priority is it now, in the view of the coastal program?*

<u>Last Assessment (1997)</u>	<u>This Assessment (2000)</u>
High	<b>High v</b>
<b>Medium v</b>	Medium
Low	Low

*3. Briefly justify the proposed priority.*

The priority of wetlands within the Virginia program has been elevated from medium to high due to the mandate from the General Assembly, as well as support from the Governor through his initiatives, to protect and enhance wetland resources within Virginia and especially within the

Chesapeake Bay drainage. The revised regulations being proposed are only the first step in this effort. Effective implementation of these regulations will require new guidance and research into appropriate assessment tools to ensure that no net loss of wetland acreage and functions occurs as a result of regulatory programs. In addition, since DEQ has also been given the authority to consider cumulative impacts not only to water quality, but also to fish and wildlife resources, an effective tool to measure cumulative impacts across watersheds is imperative. The final regulations effecting initial implementation of this program will be enacted on October 1, 2001.

## Coastal Hazards

### **Section 309 Programmatic Objectives**

- I. *Direct future public and private development and redevelopment away from hazardous areas, including the high hazard areas delineated as FEMA V-zones and areas vulnerable to inundation from sea and Great Lakes level rise.*
- II. *Preserve and restore the protective functions of natural shoreline features such as beaches, dunes, and wetlands.*
- III. *Prevent or minimize threats to existing populations and property from both episodic and chronic coastal hazards.*

### **Coastal Hazards Characterization**

1. *Characterize the general level of risk in your state from the following coastal hazards:*

Hazard (Assessment year)	High Risk		Medium Risk		Low Risk	
	1997	2000	1997	2000	1997	2000
Hurricane/Typhoons	X	X				
Flooding	X	X				
Storm Surge	X	X				
Episodic Erosion			X	X		
Chronic Erosion			X	X		
Sea/Lake Level Rise			X	X		
Subsidence				X	X	
Earthquakes					X	X
Tsunamis					X	X
Other (specify)	None		None		None	

2. *If the level of risk or state of knowledge about any of these hazards has changed since the last assessment, please explain.*

Subsidence: Evaluation of sea level changes in the Virginia coastal plain has indicated that subsidence associated with isostatic changes in the earth's crust as well as deep groundwater withdraws have made subsidence a locally important element in relative sea level change. This parameter is the subject of ongoing studies.

### **Management Characterization**

1. *In the table below, indicate changes to the State's hazards protection programs since the last assessment.*

Mechanism	Changes since Last Assessment
Building restriction	None
Repair/rebuilding restrictions	None

Restrict “hard” shoreline protection structures	Moderate
Restrict renovation of shoreline protection structure	None
Beach/dune protection	Moderate
Permit compliance program	None
Inlet management plans	None
SAMPs	None
Local hazards mitigation planning	None
Innovative procedures for dealing with taking	None
Methodologies for determining setbacks	None
Disclosure requirements	None
Publicly funded infrastructure restrictions	None
Public Education and Outreach	Moderate
<u>Other:</u> Restoring protective functions (VA Beach nourishment, riparian buffers, CBP); general permit for emergency shoreline protection	Moderate

2. For categories with changes that are identified as significant or moderate provide the following information for each change:
- identify the change & whether it was a 309 change (if not specify funding source)
  - briefly summarize the change
  - characterize the effect of the change

**Restrict “hard” shoreline protection structures:**

The VMRC implemented new regulations to permit emergency replacement of storm damaged shoreline protection structures, in order to streamline the permitting process when emergencies exist. There are several criteria for emergency wetlands general permit established under this regulation. First, evidence must be observed of ongoing erosion which failure to act in an expeditious manner will threaten property or has the potential to adversely impact the public health, safety or welfare. Second, no vegetated wetlands may be impacted by the project. Thirdly, impacts associated with issuance of the general wetland permit are minimal and do not exceed an average of one square foot per running foot of shoreline. Lastly, the proposed stabilization, materials and the encroachment sought, is the minimum necessary to address the situation. Given these guidelines for the regulation, the impact of this new regulation on the further hardening of shorelines appears to be minimal.

**Beach/dune protection:**

The Coastal Primary Sand Dune Protection Act was enacted in 1980. While natural Bay dune systems are rare in comparison to other critical estuarine habitats, management of these critical and rare areas is inconsistent. The law is, at present, limited to only eight localities with open-ocean and/or Chesapeake Bay shoreline, so not all dune resources are regulated. This leaves dune resources open to pressure from expanding development in the coastal region. A study

began at VIMS in 1999 (funded under Section 306) is working towards creating an inventory of dune resources in all coastal localities, which may lead to the understanding that dune resources can best be protected through the creation of a comprehensive regulatory program. The first year of the study focused on jurisdictional localities in Virginia, including Middlesex, Westmoreland, Isle of Wight, Surry and York Counties, and the Cities of Newport News, Suffolk and Poquoson. The second year is focusing on non-jurisdictional areas. Concurrently in the second year, monitoring work on selected dune sites is being conducted to characterize the seasonality of dune resources, biological assessments, groundwater dynamics, and analyses of historical shoreline change.

**Public Education and Outreach:**

Community education for coastal hazards in floodplain management encompasses many efforts. To minimize the potential for flood damage in coastal areas, DCR responds to individuals requesting assistance and understanding of floodplain regulations. During the course of a year, DCR's Floodplain Management Program staff typically: responds to over 600 technical assistance requests; conducts and participates in at least 6 training sessions, workshops, and conferences on floodplain management; and conducts 80 or more community assistance visits. Requests for community education have increase slightly during the past several years due to Hurricane Fran in 1996. In addition, Floodplain Management instituted a new program in 1999. They now conduct reviews of applications under the 401/404 joint permit application process, VDOT and community block grant programs. Reviews are conducted to ensure compliance with existing regulations and to ensure that modifications to structures and/or stream channels do not reduce the flow capacity of channels and lead to increased flooding. Since the program has begun, about 350 reviews have been conducted. In addition, as the result of flooding from Hurricane Floyd (Sept. 1999), DCR's floodplain staff worked extensively with FEMA and other federal and state agencies; supporting the response and recovery efforts. This work included an extensive community education effort in several of Virginia's Tidewater communities that received Presidential disaster declarations.

**Other:**

The restoration of protective functions was the focus of actions that resulted in replenishment of beach buffers along the Virginia Beach Atlantic Ocean shoreline. In addition, the Commonwealth initiated actions, pursuant to a Chesapeake Bay Program commitments, to restore forested riparian buffers, increase wetlands, and improve riparian buffer management practices.

*3. Discuss significant impediments to meeting the 309 programmatic objectives; e.g., lack of data, lack of technology, lack of funding, legal defensibility, inadequate policies, etc.*

There are significant impediments to preserving and restoring Virginia's natural shoreline features such as beaches and dunes. One impediment to creating a more comprehensive regulatory program is the lack of baseline data on dune systems in the Commonwealth (VIMS, under 306 is working on gathering data). Without this baseline data, regulatory confusion, delays and the alienation of the resource from the management arena can result. Furthermore, since only eight tidewater localities have protections for dune systems, much of the resource is unregulated and thus under great pressure from expanding development in the coastal region.

## **Conclusion**

### *1. Identify major gaps in addressing the programmatic objectives for this enhancement area.*

One major gap in this area is lack of accurate, current information on shoreline erosion. There is a need to better understand the degree that this condition (i.e. shoreline erosion) persists and is problematic within the coastal zone. There are no regional studies that report shoreline erosion or accretion trends in Virginia after 1983. Another gap is that there is still a general lack of understanding of dune systems, their extent and their importance. This is evidenced by the fact that only eight tidewater localities have protections for dune systems, which leaves much of the resource unregulated and thus, under great pressure from expanding development in the coastal region. In addition, dune management is further hampered because coastal plain geology and the limited reach of the Coastal Primary Sand Dune Protection Act does not support the legal definition of a coastal primary sand dune. Thus, in order to protect these precious resources, it is necessary to create a more comprehensive regulatory program and to educate the public and decision-makers so that the likelihood of protecting these resources is increased.

### *2. What priority was this area and what priority is it now, in the view of the coastal program?*

#### Last Assessment (1997)

**High** %  
Medium  
Low

#### This Assessment (2000)

**High** %  
Medium  
Low

### *3. Briefly justify the proposed priority ranking.*

Virginia's dune resources have been identified as areas of concern according to resources managers and the triennial Program evaluation. But, due to the highly dynamic nature of dunes and the inherent difficulties arising from the legal dune definition, jurisdictional determinations and delineations of dunes are difficult and generally not attempted by resource managers. Thus dunes are often alienated from the management arena. In addition, the analysis of data collected through the VIMS project (funded under 306) shows that the vast majority of dune shoreline is privately owned (greater than 96 percent). In order to protect these precious resources, it is necessary to create a more comprehensive regulatory program and to educate the public and decision-makers so that the likelihood of protecting these resources is increased. Since Virginia's dune resources have been identified as areas of concern, a concern supported by the data, the proposed strategy seeks to preserve and restore the protective functions of natural beach and dune features.

## Public Access

### **Section 309 Programmatic Objectives**

- I. *Improve public access through regulatory, statutory, and legal systems.*
- II. *Acquire, improve, and maintain public access sites to meet current and future demand through the use of innovative funding and acquisition techniques.*
- III. *Develop or enhance a Coastal Public Access Management Plan that takes into account the provision of public access to all users of coastal areas of recreational, historical, aesthetic, ecological, and cultural value.*
- IV. *Minimize potential adverse impacts of public access on coastal resources and private property rights through appropriate protection measures.*

### **Resource Characterization**

#### *1. Extent of public access*

Access Type	Extent (# of sites and/or # of miles or acres)	
	1997	2000 (see references*)
State/County/Local parks	9 state parks (15,998) 6 state natural area preserves (4,809)	10 = 18,715 acres 16 = 10,049 acres
Public Beaches/total beaches Tidal shoreline (total/public)	33 miles 5,300 miles/ < 1% public	33 miles 5,300 miles / < 1% public
Public Boat Ramps	99	109 public (Marinas N/A)
Scenic Vistas	Info sought but not available	Thousands (not quantified)
State or Local Designated Rights-of-Way	Info sought but not available	Summarized data not available
Fishing Piers/ <i>bank fishing</i>	151 sites	155 sites
Coastal/Nature Trails/ <i>each</i>	73	79
Disabled Access	Info sought but not available	Info sought but not available
Boardwalks/Walkways	Info sought but not available	Info sought but not available
Refuges	6 federal wildlife r. (128,931) 8 state WMA (26,145)	7 = >150, 500 acres 5 = +/- 26,145 acres
Other: Swimming/sunbathing at beach	50	33 miles

#### *2. Briefly characterize the demand for public access.*

A survey done in 1992 by the DCR and Virginia Commonwealth University (VCU) in preparation for the Virginia Outdoors Plan showed that, overall, the most popular recreational activities in Virginia are water oriented. Virginia has 2,400 square miles of tidal bays and rivers

and 5,300 miles of tidal shoreline. The Virginia Outdoors Survey, recently updated in September 2000, indicates that the most needed opportunities are public access to water for boating, fishing, swimming and beach uses. Boat-related activities alone, including fishing, water-skiing, power boating, and sailing, generated more than 15 million activity days of demand within the 39 coastal localities. Shortage of public access sites creates conflicts among various types of users. In addition, serious conflicts exist between private property owners and the boating public and fishers that often do not know whose land they are on or ignore the posted signs. In response to the growing demand, the Chesapeake 2000 Agreement calls for a 30% increase in public access opportunities in the Bay region by 2010 and 500 new miles of water trails by 2005.

*3. Identify any significant impediments to providing adequate access, including conflicts with other resource management objectives.*

- Shortage of public access sites creates conflicts among users. One of the primary conflicts exists between boaters and fishermen when they are both trying to use the same access area. This is particularly true at piers that serve launch sites and along riverbanks near the boat travel ways, which are also used by bank fishermen. Other conflicts exist between different types of boats using the same facility such as personal watercraft, powerboats and sailboats. All have different use patterns and expectations.
- Volume of users has increased. The number of people boating and fishing has greatly increased over the past eight years and new access has not kept pace. The annual activity days of boating alone has grown from 15 million to 21 million, an increase of 40%. Another indication of growth is the increase in number of registered boats in Virginia, which has grown from 206,000 in 1992 to more than 240,000 in the 2000 count. They are all competing for limited access opportunities.
- Insufficient funding to acquire or enhance access sites, and due to NMBY, private owners are not willing to sell when there is available funding.
- Insufficient planning that focuses only on coastal access sites. Outdoor surveys focus on the state as a whole and not specifically on the coastal zone.

**Management Characterization**

*1. Within each of the management categories below, identify changes since the last assessment. This applies to both positive and negative changes.*

Management Category	Changes since last assessment		
	Significant (+/-) 1997 to 2000	Moderate (+/-) 1997 to 2000	None 1997 to 2000
Statutory, Regulatory, Legal Systems			X
Acquisition Programs		+	
Comprehensive Access Planning (including GIS and Databases)		+	
Operation & Maintenance Programs			X

Innovative Funding Techniques			X
Public Education and Outreach		+	

2. For categories with changes that are identified as significant or moderate provide the following information for each change:

- Identify the change & whether it was a 309 change  
(If not a 309 change, please specify funding source)
- Briefly summarize the change
- Characterize the effect of the change

The management characterization did not change significantly since the last assessment in 1997, but there are some access activities underway:

- 1) *Acquisition Program*: The Virginia Department of Game and Inland Fisheries (DGIF) launched the statewide Virginia Birding and Wildlife Trail in 1999. DGIF has received \$100,000 from the state DEQ's Coastal Resources Management Program to support development of the coastal phase of the Trail.
- 2) *Access Planning*: There is also a major statewide planning effort underway. The 2001 Virginia Outdoors Plan, the State's Comprehensive Outdoor Recreation and Open Space Plan will examine the provision of recreational opportunities and open space protection in Virginia. The Plan is currently under development and next round of public meetings is scheduled for the spring of 2001. One of the significant issues addressed in the VOP is how to meet the increased demand for public water access sites in Virginia.
- 3) *Public Education and Outreach*: The Chesapeake Bay, Susquehanna River & Tidal Tributaries Public Access Guide, updated in 1999 and published in June of 2000, contains a comprehensive inventory of 619 publicly owned access sites in the Bay region only.

### Conclusion

1. Identify major gaps in addressing the programmatic objectives for this enhancement area.

One significant impediment to furthering a strong acquisition program is the demonstrated ability to maintain sites already in state ownership. The Commonwealth would benefit by developing a comprehensive maintenance plan for these lands.

Additionally, the Commonwealth would benefit from developing an updated public access plan that prioritizes the most important sites for acquisition, development or redevelopment to allow for public access in the coastal zone.

2. What priority was this area and what priority is it now, in the view of the coastal program?

Last Assessment (1997)

**High** v  
Medium  
Low

This Assessment (2000)

**High** v  
Medium  
Low

3. Briefly justify the proposed priority.

Although a strategy is not being proposed for Section 309 funding, there is still a need to enhance public access opportunities to Virginia's tidal waters. In order to meet the Chesapeake Bay Program 2000 Agreement to increase public access areas by 30% by the year 2010, Virginia will need to develop over 60 new or expanded sites. Through the Bay Program, Virginia agencies are currently working on developing task by task implementation strategies to meet these public access goals. There may be an opportunity in the out years of this current 309 strategy cycle to pursue appropriate public access management tools.

## Marine Debris

### Section 309 Programmatic Objective

1. *Develop or revise programs that reduce the amount of marine and lake debris in the coastal zone.*

### Marine/Lake Debris Characterization

1. *In the table below, characterize the extent of marine/lake debris and its impact on the coastal zone.*

Source	Impact (Significant/Moderate/ Insignificant)		Type of Impact (aesthetic, resource damage, etc.)
	1997	2000	2000
Cruise ships	Insignificant	Insignificant	N/A
Land based	Moderate	Moderate	<ul style="list-style-type: none"> <li>• Aesthetic impacts affecting tourism.</li> <li>• Economic impacts related to beach management practices by the municipalities and costs to tourism.</li> <li>• Human health and safety issues related to water quality.</li> </ul>
Ocean based	Moderate	Moderate	<ul style="list-style-type: none"> <li>• Impacts on wildlife from entanglement and ingestion.</li> </ul>

### Management Characterization

1. *In the table below, identify state Ocean/Great Lake management programs and initiatives developed since the last assessment.*

Program	Status	Funding Source (309 or Other)
State/local program requiring recycling	No	
State/local program to reduce littering and wasteful packaging	No	
State/local regulations consistent with Marine Plastic Pollution Research and Control Act	No	
Marine debris concerns incorporated into harbor, port, marina and coastal solid waste management plans	No	
Education and outreach programs	Developing	CMC and VIMS (*)

CMC = Center for Marine Conservation

\* In addition, there are education programs run by the state and localities with non-CRMP funding including the COE Port Management Plan, sponsored by the Port Authority, which addresses marine debris. Through the VMRC and the Hampton Roads localities, the state is funding a vessel and structure removal program in the Elizabeth and James Rivers and Hampton Roads.

2. *For the changes identified above provide a brief description of the change and its effects.*

There are a variety of ongoing national programs in which Virginia participates, including the National Marine Debris Monitoring Program and the International Coastal Cleanup. The most recent program in the Commonwealth to address marine debris began in 1999. The “Good Mate Marina and Recreational Boater Program,” sponsored by the CMC and in collaboration with VIMS Sea Grant, the Virginia Clean Marina Program and the Marina Technical & Environmental Advisory Committee, was originally field-tested in Florida, but has since been expanded to other states including Virginia. The effort focuses on the environmental education of boaters and marine operators. An educational manual and video is due to be released in spring 2001. The Center is also joining with the US Coast Guard and the Auxiliary for help with boater education. It is hoped that through awareness of the problem, less debris will be input into the system and thus less shoreline debris will be noted. The effects of this newly developed program are yet to be seen.

### **Conclusion**

1. *Identify major gaps in addressing the programmatic objectives for this enhancement area.*

The two major gaps in addressing this problem are a lack of state and regional coordination and lack of awareness of the problem of marine debris. Development of a marine debris program at the state or regional level, coupled with education, may help to promote best management practices that would reduce the overall amount of marine debris. Regardless of the predominant source of debris in the state, the presence of debris along the shoreline affects wildlife, human health and safety and tourism, which in turn affects Virginia’s economy.

2. *What priority was this area and what priority is it now, in the view of the coastal program?*

<u>Last Assessment (1997)</u>	<u>This Assessment (2000)</u>
High	High
<b>Medium</b> $\bar{O}$	<b>Medium</b> $\bar{O}$
Low	Low

3. *Briefly justify the proposed priority ranking.*

The ranking for this enhancement area has not changed from the 1997 document, since the threat of marine debris on our shorelines still exists and has not appeared to increase. The new program in Virginia devised by the CMC and VIMS to educate the public on marine debris issues is just beginning and results as to its effectiveness are not yet available.

## Cumulative and Secondary Impacts

### **Section 309 Programmatic Objectives**

*1. Develop, revise or enhance procedures or policies to provide cumulative and secondary impact (CSI) controls.*

### **Resource Characterization**

*1. Identify areas in the coastal zone where rapid growth or changes in land use require improved management of CSI. Provide the following information for each area:*

- type of growth or change in land use (i.e., residential, industrial, education, growth patterns/population changes, etc.)*
- rate of growth or change in land use*
- types of CSIs*

Virginia experienced a 14.4 % (~ 1 million) increase in population growth in the last decade (source: U.S. Census Bureau 2000). Virginia's coastal zone, an area of 29 counties and 15 cities, is generally one of the fastest growing areas in the state. The coastal zone population, estimated at 4,186,900 in 1996, is increasing at an average rate of 1% per year.

The greatest population growth in the coastal zone occurred in 7 counties and 1 city. These areas include: the City of Chesapeake, Stafford County, Spotsylvania County, Richmond County, York County, Hanover County, James City County, and King George County. All experienced very rapid double-digit population growth. Of the remaining localities, only Hopewell, Norfolk, Petersburg, Portsmouth, Richmond, Suffolk and the County of Northampton experienced less than 1% population growth. The cumulative and secondary impacts of this population growth put a large burden on local governments, utilities and natural resources.

The land use patterns associated with this population growth are almost entirely conversion of open space (forest and agricultural lands) to residential and commercial uses. This type of moderate to low density land use places a significant burden on local governments to provide and maintain the necessary infrastructure to minimize undesirable environmental consequences. Sewer and potable water supply systems are increasingly modifying the Commonwealth's surface and groundwater quantity and quality. It is noteworthy that rapid growth is not the only stressor on localities. Most of the seven localities with the lowest growth are already intensely developed, older urban areas. In these localities, lack of growth makes it increasingly difficult to provide the financing necessary to maintain aging and deteriorating infrastructure. Again the impacts are most often found in natural resources, particularly in habitat and water quality conditions.

Virginia has worked through a number of its regulatory programs to develop the controls necessary to ensure maintenance of water quality. Most of these programs are primarily focused on performance standards – trying to ensure that development, wherever it occurs, does not degrade existing water quality conditions. One limitation of this approach is that it cannot effectively deal with cumulative and secondary impacts (CSIs) that result from the “pattern” of development. Riparian habitat degradation and water quality changes associated with diffuse

nonpoint source impacts are of growing concern throughout Virginia’s coastal zone – particularly in rural localities.

One of the consequences of increased development in coastal areas is the growth and expansion of marina facilities. Many of these businesses are started and operated by individuals with little or no understanding of the potential CSIs that attend marina operation. The results include unintended impacts on the very resources that bring people to Virginia coastal waters. Effluents from boat maintenance and sanitary systems, as well as the impacts of improper trash disposal, fuel operations, and vessel operations are all contributing factors. In addition, improper siting of marina facilities, e.g. in protected areas with little tidal flushing and where the buildup of pollutants may readily occur, adds to the impact of these facilities. This is an area in which voluntary action has great potential and practicality. What is needed is effective guidance and outreach to teach marina operators how to construct and operate facilities that minimize environmental impacts.

*2. Identify areas in the coastal zone (by type or location), that possess sensitive coastal resources (e.g., wetlands, waterbodies, fish and wildlife habitats, threatened and endangered species and their critical habitats) and require a greater degree of protection from the cumulative or secondary impacts of growth and development.*

Area	CSI Threats/Sensitive Coastal Resources
Northampton county	Shellfish habitat loss; marsh and estuary degradation; bird migration corridor loss; stopover area habitat loss; dune systems at risk
Southern Watershed of Virginia Beach/Chesapeake	Stormwater runoff effects from urbanization; loss of farmland; urban sprawl; non tidal wetlands; threatened & endangered species; waterway access
Potomac River basin	Increased nonpoint runoff into sensitive coastal resources; Stormwater runoff effects from urbanization
Rappahannock, York, James River Basins	Stormwater runoff effects from urbanization; Nonpoint pollution from agriculture & forestry
Dragon Run Watershed	Non tidal and tidal cypress swamp Land use changes/preservation of undeveloped areas; Wetlands

**Management Characterization**

1. *Identify significant changes in the state’s ability to address CSI since the last assessment (i.e., new regulations, guidance, manuals, etc.). Provide the following information for each change:*
  - *Identify the change & whether it was a 309 change*  
*(If not a 309 change, please specify funding source)*
  - *Briefly summarize the change*
  - *Characterize the effect of the change*

**Pollution Prevention to Control CSIs:** In July 1998, Governor Gilmore directed significant state resources and new staff to the creation of the Division of Pollution Prevention and Compliance Assistance within the Department of Environmental Quality (DEQ). The objective was to tangibly improve environmental quality in the Commonwealth through non-traditional approaches that reward innovation and leadership. The Commonwealth recognized that great progress had been made through traditional regulatory environmental programs, but the target for the next century must be to go “beyond compliance” and move toward a sustainable economy of cleaner, more efficient technologies and operations. During 2000, DEQ’s Office of Pollution Prevention (OPP) visited 102 facilities to provide on-site pollution prevention and environmental management systems technical assistance. Forty site visits were made in cooperation with DEQ’s compliance inspectors. The purpose of these joint visits was to train the inspectors on methods of finding pollution prevention opportunities at a facility. Highlights of documented pollution prevention successes in Virginia during 1998 through 2000 include the following:

- ◆ Over 320 million pounds of solid waste avoided;
- ◆ Over 200 million gallons of wastewater avoided;
- ◆ Over 1.5 million pounds volatile organic compounds (VOCs) avoided; and,
- ◆ Over 2.25 million pounds of hazardous wastes avoided.
- ◆ Over \$11,000,000 saved by businesses through pollution prevention activities;

**Chesapeake Bay Preservation Act – Comprehensive Plan Review:** In order to ensure that local governments adequately consider the long-term effects of individual land use decisions, the Regulations developed pursuant to the Act contain a requirement that coastal localities examine their comprehensive plans and address several key policy areas. These areas include physical constraints to development, shoreline erosion control, and public/private access to waterfront areas. Comprehensive plans are to include: appropriate background information on issues; relevant data; analyses of data, goals and objectives; and implementation measures. The Act and corresponding regulations were incorporated into the state’s Coastal Program in May 2000 and play a critical role in addressing Coastal Nonpoint Pollution Control Program conditions imposed upon Virginia by NOAA and EPA.

Since 1997, the Chesapeake Bay Local Assistance Board has reviewed the majority of local comprehensive plans for consistency with the requirements of the Regulations and anticipates completing initial reviews by the first quarter of 2002. The process on review is an ongoing process, since local comprehensive plans are updated ever 5 years. Many of the plans reviewed, however, will require additional studies, data collection, policies and implementation measures in order to fully meet the intent of the Bay Act. For many localities, an important task will be to better evaluate land suitability for development based on a detailed analysis of shoreland characteristics and adjacent, near shore living resources. This analysis has, to date, been limited due to the lack of a protocol for determining land suitability. As a result, even though most of the plans have been reviewed, considerable work remains to completely implement the comprehensive plan requirements of the Bay Act. As the Board begins the next round of local plan reviews, it will be necessary to develop, and implement, a protocol for shoreland planning. In addition, the Chesapeake 2000 agreement commits Virginia to addressing a number of issues related to vital habitat and water quality protection and sound land use planning. Improved shoreland planning will help meet many of these commitments. Perhaps more significantly, the attention to enhancement of the local comprehensive plans creates an opportunity to address the

source of cumulative and secondary impacts of concern. If local planning can be directed and assisted in consideration of shoreland suitability for various types of development, and guided in recognition of impacts on other coastal resources, a major step in the evolution of coastal resource management will be achieved.

**Better Site Design:** In 1999-2000, CBLAD produced a handbook called “An Assessment of Better Site Design Principles” to teach real estate developers, land planners and the public how to reduce the impacts of growth by following simple and inexpensive design rules. The publication demonstrates the implementation of the Chesapeake Bay Preservation Act through case studies. CBLAD presented information on better site design principles in a series of educational workshops in 2000. The project was funded with 306 funds.

### **Nonpoint Source Pollution**

Virginia’s Nonpoint Source Pollution Management Program (NPS Program) consists of several individual programs that are implemented through a combination of voluntary efforts, educational activities and enforceable policies and mechanisms. As set forth in the Code of Virginia, the DCR coordinates the NPS Program. The Nonpoint Source Advisory Committee (NPSAC) is an interagency committee comprised of representatives of many federal and state agencies that share responsibilities for NPS Program implementation in Virginia. Some of the individual elements are implemented through grant funds that require on-the-ground implementation projects, while others are implemented as day-to-day staff activities.

Below is a brief description of the primary NPS pollution control efforts since the last Section 309 Assessment Report. Only the Coastal NPS Pollution Control Program has received Section 309 funding.

**Section 319 Nonpoint Source Pollution Management Program :** Since 1997, this program has contributed approximately 11 million dollars to NPS pollution reduction efforts. More than 100 projects have been funded through Section 319 since the last 309 Assessment for nutrient reduction, streambank stabilization, riparian restoration, and stormwater activities. For example, the Program contributed significantly to Virginia meeting the 40 percent nutrient reduction goal in the Shenandoah-Potomac watershed. During this time period, DCR updated the NPS Management Program Document. Workgroups identified more than 500 tasks to address NPS pollution. Available competitive requests for proposals (RFP) funds require projects to address the identified tasks and must show measurable environmental results. Cumulative reductions contribute to Virginia’s commitment to implement Tributary Strategies. Section 319 also funds the Total Maximum Daily Load (TMDL) process which requires states to identify impaired waters, calculate stream capacity for accepting pollutants and then implement BMPs to bring the stream into compliance with state water quality standards.

**Water Quality Improvement Fund:** This fund was established in 1997 by the VA legislature for the purpose of developing and implementing the Tributary Strategies for those basins within the Chesapeake Bay drainage. Since the last assessment, this program has provided \$8,412,433 million dollars for implementation projects. These projects have resulted in the cumulative reduction of 1,064,845 pounds of nutrients and 483 tons of sediment throughout the

Commonwealth. The fund has provided money for stormwater retrofits, riparian restoration, repair and replacement of failing septic systems and streambank stabilization projects.

**Chesapeake Bay Implementation Program:** Since 1997, the Chesapeake Bay Implementation Program has provided approximately 7.5 million dollars to Virginia to accomplish the goals of the interstate Chesapeake Bay agreement. On June 28, 2000, the governors of Maryland, Pennsylvania, and Virginia, along with the District of Columbia mayor and the EPA administrator signed the Chesapeake Bay Program's landmark Chesapeake 2000 agreement. This document sets forth new or renewed goals and commitments for maintenance of nutrient reductions achieved through later 1990's tributary strategies, along with ambitious habitat and living resources restoration goals. Future Chesapeake Bay NPS Implementation Program grant money will be directed toward accomplishment of priority *Chesapeake 2000* commitments. Through this renewed commitment and the combined effort of the Bay states, it is anticipated that the Chesapeake Bay will be removed from the 305(b) and 303(d) list as being impaired.

**Coastal Nonpoint Source Pollution Control Program:** Since 1997, this program has received approximately \$700,000 for the development and implementation of a Coastal NPS program. Virginia received partial approval of their program from NOAA and EPA in February 1998, subject to a requirement to complete the remaining elements within specified timeframes. Virginia focused all program efforts on meeting the conditions and anticipates full program approval in 2001. Significant activities include:

- The establishment of a Clean Marina Program that addresses conditions regarding fish waste, hull maintenance and technical assistance. This project began under 6217 funding but continues development and implementation activities with Section 309 funds beginning in FY 2000.
- The amendment of state law to allow "no wake" zone designation based on impacts to habitat. This addresses the recreational boating condition.
- The development and distribution of a manual for irrigation and chemigation activities. Three workshops were conducted as part of this effort to educate farmers on reducing impacts to surface and ground water. This addresses the irrigation condition and was funded under 6217.
- The development of a Marina Siting Suitability Analysis project. This project will provide a tool for local and state government to better evaluate the proper placement of marinas and reduce potential impacts from marina development. This project began in February 2001 and is funded with FY 2000 309 funds.
- The completion of an impact analysis on instream and riparian habitat from dams. Using random statistical sampling, the study provides information based on age, height, and storage capacity and any associated impacts. This study was distributed to the appropriate state agencies. A follow-up analysis on channelization is underway and these results will also be distributed to the appropriate state agencies. These projects were funded by 6217 and 309 and address specific hydromodification conditions.

The Clean Marina Program is a priority activity that requires support to ensure its success. The Program is being coordinated with hazardous waste, pollution prevention, small business loans, the Chesapeake Bay Program and other efforts to provide the greatest exposure possible. A

recent analysis identifies a need for approximately 2.6 million dollars to implement the Coastal Nonpoint Control Program over the next five years.

**Conservation Reserve Enhancement Program:** The Conservation Reserve Enhancement Program (CREP) is a new program designed to improve water quality and wildlife habitat by offering financial incentives to agricultural landowners. This effort is intended to support the voluntary restoration of riparian buffers, native warm season grass filter strips and wetlands on 35,000 acres of environmentally sensitive land within the Commonwealth. This program is expected to substantially reduce nitrogen, phosphorous and sediment input to the Chesapeake Bay and Southern Rivers. Currently, there are approximately 800 acres enrolled in the CREP program. Though money is available to farmers through Virginia's Agricultural BMP Cost-share program, it does not completely address impacts associated with activities within the riparian zone. CREP greatly enhances Virginia's ability to address cumulative impacts from agriculture that would otherwise continue to impact water quality.

**Tributary Strategies:** At the time of the last report only the Shenandoah-Potomac tributary Strategy was completed. Since then, strategies have been developed for the Rappahannock River, York River, and James River basins. A strategy has also been developed for the Eastern Shore and Coastal Basins area. Full implementation of the BMPs identified in these strategies is estimated at 195 million dollars. Implementation of the Shenandoah-Potomac Strategy is nearing completion and will achieve a cumulative reduction in nutrients of 40 percent. The remaining strategies are also targeted for a 40 percent reduction in nutrients as well as reducing sediment loads. For example, full implementation of the York River Tributary Strategy is anticipated to result in significant reductions of nitrogen (1,410,182 lbs.), phosphorus (131,419 lbs.), and sediment (96,123 tons) by the year 2010. Identification of these types of cumulative impacts allows funding mechanisms to target areas for project implementation that will contribute to achieving net reductions in pollutant loadings. The primary source of funding for implementing the Tributary strategies comes from the Water Quality Improvement Fund. Section 319 funds have also been used for on-the-ground BMP projects that contribute to meeting the goals of the strategies.

### **Conclusion**

*1. Identify significant gaps in addressing the programmatic objectives for this enhancement area (i.e., inadequate authority, data gaps, inadequate analytical methods, lack of public acceptance, etc.):*

Many of the land use decisions that allow development to occur along the Bay, as well as its tributary rivers and tidal creeks, are made without the benefit of complete information on the suitability of these "shorelands" for development or on the coastal resources that will be affected. As a result, the cumulative and secondary impacts of this development are not typically considered. At a minimum, local governments should have some means of providing readily accessible and comprehensive information on land suitability in order to react to development proposals on a site-by-site basis. This should ensure that the appropriate issues are raised and that there is an opportunity to address these issues and minimize impacts to coastal resources. The Chesapeake Bay Preservation Act is one mechanism to address these issues. In order to implement more fully the provisions of the Chesapeake Bay Preservation Act, however, a more

proactive planning approach should be employed. Local governments should comprehensively evaluate the suitability of shorelands for development and the potential impacts to coastal resources so that the degree of suitability can be reflected in local comprehensive plans. In this way, the areas that are most suitable for development can be so designated to accommodate the majority of shoreline development, and more sensitive areas can be protected or limited to more appropriate development levels.

In general, trends in land use patterns and shorelands condition are not documented. Available techniques to do trends analysis cannot be employed in Virginia because adequate data sets are not currently available. Therefore, a commitment to meet this need is necessary.

The Virginia Coastal Program has begun to address the growing prevalence and potential impact of marinas in Virginia's coastal zone through initial Section 6217 and 309 funding. The Clean Marina Program was created in 1999 to educate marina operators and the boating public on the best management practices to reduce the impacts of nonpoint source pollution. Outreach efforts are just beginning to reach the target audiences and complete development of a sustainable program remains a high priority need in Virginia. Gaps in implementing Virginia's Clean Marina Program include the identification and abatement of fish waste impacts and integration with other intra and inter-state efforts to address nonpoint pollution. Specifically, for the Clean Marina program to be successful it requires sufficient coordination through partnerships. Virginia is looking to coordinate with pollution prevention, hazardous waste, grant funding mechanisms, Businesses for the Bay, regional clean marina efforts (Maryland, North Carolina, Washington D.C., Delaware, and EPA), and Virginia's small business environmental compliance assistance loan fund. In addition, the Program is working with the US Coast Guard to provide pollution prevention information during boater education classes to help with pollution reduction efforts.

The ultimate success of many of Virginia's efforts to manage cumulative and secondary impacts will depend on the successful integration of its various regulatory and planning programs. Because the Virginia operates a "networked" program of many individual management programs housed in separate agencies, coordination and cooperation to achieve common goals is a continuing challenge. Managers at both state and local levels recognize the need for a concerted effort to ensure that program objectives are consistent, and that decision making is always cognizant of potential consequences to other programs' goals. Virginia is interested in enhancing the coordination between programs by developing protocols that will formalize important information transfers, and ensure coherent management efforts.

*2. What priority was this area and what priority is it now, in the view of the coastal program?*

Last Assessment (1997)

**High v**  
Medium  
Low

This Assessment (2000)

**High v**  
Medium  
Low

### *3. Briefly justify the proposed priority.*

The need for a shoreland planning protocol has become increasingly clear with the near completion of the initial round of local comprehensive plan reviews by the Chesapeake Bay Local Assistance Board. A large proportion of new development in rural localities along the Bay and its tributaries occurs along the shorelands that border some of the most important and threatened coastal resources. Without increased attention to better shoreland planning and the full implementation of the Chesapeake Bay Preservation Act, this development will continue to be a primary cause of the cumulative and secondary impacts to these resources.

One of the shoreland planning information gaps, most frequently cited by local planners and state agency personnel, is current trend data. Knowledge of land use changes and erosion rates are crucial to targeting management efforts for riparian lands. The Chesapeake Bay Preservation Act requirements provide a mechanism for effective incorporation of this information if it can be developed and made accessible to local governments. Furthermore, preparation of shoreland management planning efforts will enhance Virginia's ability to address non-permit based shoreline erosion. This enhancement will directly support improved implementation of VA's coastal nonpoint program.

Virginia has many effective environmental regulations and permitting programs in place. However, CSI remain a significant threat to coastal water quality. The voluntary Virginia Clean Marina Program offers a practical approach to securing the support and earnest efforts of the marina industry to change substandard practices contributing to CSIs. The initial efforts have been well received in the industry and similar efforts in other states are finding success. This effort contributed significantly to meeting the 6217 program conditions and will assist in the implementation of all of the marina and recreational boating Guidance management measures.

Finally, without coordination of programs focused on land use management, pollution abatement, water resource management, and fisheries management, there is an increasing potential for disjunct or even conflicting actions. The sheer size and complexity of the relevant programs makes structural changes to management impractical. The optimal solution is development of formal protocols to ensure effective and efficient transfer of critical information. This can provide the framework for consistency in planning and management.

## Special Area Management Planning

### **Section 309 Programmatic Objectives**

- I. *Develop and implement special area management planning in coastal areas applying the following criteria:*
  - *areas including significant coastal resources (e.g., threatened and endangered species and their critical habitats, wetlands, waterbodies, fish and wildlife habitat) that are being severely affected by cumulative or secondary impacts;*
  - *areas where a multiplicity of local, state, and federal authorities prevents effective coordination and cooperation in addressing coastal development on an ecosystem basis;*
  - *areas with a history of long-standing disputes between various levels of government over coastal resources that has resulted in protracted negotiations over the acceptability of proposed uses;*
  - *there is a strong commitment at all levels of government to enter into a collaborative planning process to produce enforceable plans;*
  - *a strong state or regional entity exists which is willing and able to sponsor the planning program.*

### **Resource Characterization**

3. *Using the criteria listed above identify areas of the coast subject to use conflicts that can be addressed through special area management planning.*

<b>Area</b>	<b>Major conflicts</b>
Northampton County	The cumulative impacts of residential development continue to threaten the extremely significant coastal resources of this county. Despite past SAMP efforts, there is still little enforceable protection for native vegetation and wildlife habitat of the failure of the Board of Supervisors to adopt the proposed vegetation ordinance. The possible reduction of the Chesapeake Bay Bridge Tunnel toll, favored by the development community, could spur residential development in the most sensitive migratory bird stopover habitat at the southern tip of the Delmarva peninsula.
Southern Watersheds of Virginia Beach and Chesapeake	The cumulative impacts of development, agriculture and other land use activities are threatening the long-term viability of many rare, threatened and endangered species of pocosin and other wetland habitats. Other conflicts include the protection of drinking water supplies in the face of continued development and conflict among various waterway uses. Management must be coordinated between two local governments with differing priorities and among a variety of federal and state agencies.
Dragon Run*	The major conflicts are between traditional uses (timbering, farming, hunting and trapping), maintaining bio-diversity, public access, and threat of development. (See more below.) Four counties and numerous federal and state agencies are involved in management, which needs to be better coordinated.

**\* Dragon Run Resource Characterization:**

The Dragon Run Watershed is a 40-mile stream characterized by brackish water and extensive nontidal and tidal cypress swamp. Underground springs, surface waters and numerous swamps feed the Dragon. The watershed covers 140 square miles, of which 10% are wetlands. The watershed is largely undeveloped and is recognized by the Smithsonian Institute as Virginia’s most pristine water body. A 1996 study estimated that undeveloped land accounts for 99.3% of the system. Forested land comprises 71% and agricultural activities account for 28% of the acreage. A few landowners hold large tracts of land within the watershed. Currently there is little evidence of man’s presence, essentially maintaining a primitive character throughout the entire system. However, development pressures are increasing and will likely continue to increase as development spreads north from Richmond and south from the Northern Virginia area. The Dragon Run watershed is located in the counties of Essex, Gloucester, King and Queen and Middlesex. These local governments, as well as the regional planning district commission, several state agencies and many nonprofit groups have for years understood the unique and valuable nature of this region but have not had a mechanism for ensuring that it remain intact for future generations. In the face of development pressures, the overarching concern expressed by citizens and elected officials is to preserve the traditional uses of the Dragon (i.e. timbering, farming, hunting, trapping, and maintaining bio-diversity). The Dragon Run Steering Committee, formed in 1987, is comprised of citizen, elected and appointed officials. For many years, the Middle Peninsula Planning District Commission has staffed the committee, in part, through a Virginia Coastal Program technical assistance grant. The mission of this committee is to protect the traditional uses of the water body and land. This committee and other grass roots groups such as The Friends of Dragon Run, have raised several management concerns:

- Development Management- how can the system be preserved and protected from residential, commercial and industrial development or embrace sustainable eco-friendly development?
- Educational Management – how can active and passive educational programs be used to understand the dynamics and relationships required to preserve the system for traditional uses of watershed resources and future users of the watershed?
- Silvicultural and Agricultural Management- how can traditional silvicultural and agricultural activities be sustainably managed and protected from higher intensity land use?
- Wildlife Management- how can wildlife, animals and plants, be managed and protected from negative impacts?
- Public Access Management- how can public access be managed and balanced against the unique environmental characteristics of the system?

**Management Characterization**

*I. Identify areas of the coast that have or are being addressed by a special area plan since the last assessment.*

Area	Status of Activities	Funding Source (309 or Other)
Northampton County	The Northampton County SAMP was funded from FY’92 – ’96 and closed out in 1999. Several policies were adopted, but some key policies still have not been. There is renewed	Sec. 309

	interest to continue work on adopting these policies, for which funds are being held in FY'99-'00.	
Southern Watersheds of Virginia Beach and Chesapeake	The Southern Watershed Area Management Plan (SWAMP) has been funded as a Special Area Management Plan since October of 1996. SWAMP participants are currently working towards the achievement of several program changes. The program changes include the development of a Rural Area Management Program, a Multiple Benefits Conservation Program and the development of several MOAs. Emphasis should shift from research to support the program changes to efforts to achieve them.	Sec. 309

2. Identify any significant changes in the state's SAMP programs since the last assessment (i.e., new regulations, guidance, MOUs, completed SAMPs, implementation activities, etc.). Provide the following information for each change:

- Identify the change & whether it was a 309 change
- Briefly summarize the change
- Characterize the effect of the change

### **Northampton County SAMP Changes Since 1997**

#### *Completed 309 Changes*

1) *Declaration of Covenants and Restrictions for the Port of Cape Charles Sustainable Technologies Industrial Park:* The covenants and restrictions for the STIP are enforced through lease agreements with tenants. The tenants must comply with certain minimum standards and through a point system for environmental and social criteria; they may reduce the cost of their lease. The effect has been to ensure that tenants operate in a sustainable manner. The Park now has one tenant who has leased half of the available space.

2) *MOU regarding management of vegetation in power line rights-of-way:* This MOU, among Northampton County, VA Department of Conservation and Recreation, A&N Electric Cooperative and Delmarva Power, binds the parties to using selective vegetation and management techniques that develop and preserve low-growing plants beneficial to migratory birds and other small animals. The effect of this change is to increase the acreage of understory vegetation in the migration corridor and stopover habitat.

3) *MOU regarding management of vegetation for bird habitat on surplus properties and rights-of-way of the VA Department of Transportation:* This MOU between Northampton County, VDOT and KESTREL (now the Coastal Virginia Wildlife Observatory) binds the parties to identifying and assessing surplus properties and rights-of-way for migratory bird habitat restoration.

#### *Incomplete 309 Changes*

1) *MOU regarding public access:* The original SAMP called for an MOU that would identify what types of public access were appropriate where and at what times of year. Although this

was not accomplished, an MOU was signed by several of the parties that simply said they agreed to work collectively to resolve any and all issues related to the provision of appropriate public access to the resources.

- 2) *Zoning and Subdivision ordinance*: The ordinance was drafted and included provisions for maintaining at least 60% of existing vegetation on a lot and it prescribed protection of understory species as well as a replacement schedule using native vegetation, should some vegetation beyond the 60% have to be removed. There was a public meeting on the ordinance and the Board of Supervisors did not adopt the ordinance. Subsequently, another, less restrictive ordinance was drafted which provided for a progressive scale of vegetation preservation according to lot size (the larger the lot, the greater the percentage of vegetation to be protected). This has not yet been brought to the Board. The County has still not adopted its overall zoning ordinance, but after it does, there may be an opportunity to refine it using the revised vegetation protection measures as an overlay ordinance for the most critical bird habitat and water protection areas.
- 3) *Town/village revitalization strategy*: This strategy would have reestablished the village/town settlement pattern and avoided the strip/sprawl settlement pattern. The County never was able to undertake this work and funds were returned to the Coastal Program.
- 4) *MOU for Excellent Water Quality*: The original SAMP called for EPA Tier 3 Exceptional Waters designation on the lower seaside of the County. However, it was discovered that Tier 3 would exclude aquaculture activities that were a vital component of the sustainable industries aspect of the SAMP. There was some discussion of working with EPA to create a Tier 2.5 designation but this did not materialize. Finally, the approach of creating water conservation easements on private property was investigated but no property owners were willing to record easements.

## **Southern Watershed Area SAMP Changes Since 1997**

### *Completed 309 Changes*

1) *Development of a Waterway Use Conflict MOA for the North Landing River*: This MOA is intended to achieve two primary goals (1) to promote safe boating through an increase in public awareness of existing and potential waterway use conflicts; and (2) to protect rare and unique ecosystems from damage by on-water uses by raising public awareness of the importance of these native ecosystems to the health of the river and the continued viability of this important natural and recreational resource.

Parties to the MOA include the City of Chesapeake, the City of Virginia Beach, the Hampton Roads Planning District Commission, the Virginia Department of Conservation and Recreation, the Virginia Department of Environmental Quality, the Virginia Department of Game and Inland Fisheries, the United States Army Corps of Engineers, the United States Coast Guard and the United States Fish and Wildlife Service.

The MOA and associated map are complete. The Hampton Road Planning District Commission (HRPDC) approved the MOA on July 19, 2000. The Cities of Chesapeake and Virginia Beach have approved the MOA. The MOA has been forwarded to the other agencies that agreed to sign and the signing is tentatively scheduled for May 12<sup>th</sup>.

2) *Development of a Conservation Plan for the Southern Watershed Area:* The Virginia Department of Conservation and Recreation, Division of Natural Heritage has developed a Conservation Plan for the Southern Watershed Area. Subsequently, the Plan will be incorporated into the two cities' comprehensive plan updates.

#### *Incomplete 309 Changes*

1) *Establishment of a Multiple Benefits Conservation Plan:* Significant progress has been made on the development of the Multiple Benefits Conservation Plan. The Plan will provide a coherent approach to wetlands mitigation for each city's capital projects while addressing issues such as passive recreation, education and research, habitat protection, natural resource restoration and enhancement, improved water quality, and community quality enhancement. The final draft of the Conservation Plan is complete and has been approved by both Cities and the Hampton Roads Planning District Commission. It has been distributed to all appropriate state and federal agencies and all but one have approved it to date. A set of maps has been developed depicting areas that meet the multiple goals of the Plan and a report explaining the Plan is under development.

2) *Establishment of a Rural Area Preservation Program in the City of Chesapeake:* The Rural Area Preservation Program will develop a specific plan of action to preserve the rural areas of the Southern Watershed Area (SWA). Progress thus far includes extensive geographic information system analysis of the Southern Watershed Area and development of prototypical conservation subdivision for the SWA. The prototypical subdivision was used as a baseline by the Virginia Beach City Council in evaluating rezoning proposals in the SWA.

3) *Modify the Definition and Delineation of the P-1 Preservation District Section of the Virginia Beach Zoning Ordinance:* The proposed changes to the P-1 Preservation District includes the creation of 3 sub-districts that vary in the number of permitted uses. P-1 is the most restrictive of the sub-districts and applies to pristine areas. P-2 is intended for urban park uses and active recreational purposes and P-3 is for research or conservation areas. These proposed revisions will be integrated with the Rural Area Preservation Plan recommendations and will be submitted with that document to Virginia Beach for consideration and implementation.

4) *Modify the Definition and Delineation of the C-1 Conservation District in the Chesapeake Zoning Ordinance:* The proposed changes to the C-1 district language attempt to make permitted uses in this district more compatible with a true conservation district and would be primarily applied to wetlands and other environmentally sensitive areas. These proposed revisions to the C-1 Conservation District will be integrated with the Rural Area Preservation Plan and submitted to Chesapeake by mid-year 2001 for consideration and implementation.

5) *Development of a Strategic Plan for Agriculture in the Southern Watershed Area:* Virginia Tech is developing a Strategic Plan for Agriculture for Chesapeake and Virginia Beach. Extensive research was performed and the draft Plan was submitted in January '01. Elements of the Plan could be incorporated into the cities' comprehensive plans and economic development agencies and agriculture departments could adopt marketing strategies.

#### **Conclusion**

4. *Identify major gaps in meeting the programmatic objectives for this enhancement area.*

There are several areas within Virginia's coastal zone that might benefit from special area management efforts. Northampton County and the Southern Watersheds of Virginia Beach and

Chesapeake are already being worked on. The Dragon Run, while it has received some minimal resources, has never been given the advantage of a full SAMP effort and the resources that come with that, despite its wide recognition as a very special area in Virginia's coastal zone.

The Northampton SAMP still has gaps which can hopefully be filled using FY'99 and '00 funds still being held. SWAMP is nearly completed. Dragon Run is ripe for a full-scale effort. Other areas should be looked at in the future, such as the seaside of Virginia's Eastern Shore, which includes both Accomack and Northampton Counties. Ultimately, Virginia should undertake enough of these SAMP projects to complete a set of tools that can be used to address the mix of stakeholders, issues, and environmental challenges each new area presents.

*2. What priority was this area and what priority is it now, in the view of the coastal program?*

Last Assessment (1997)

**High v**  
Medium  
Low

This Assessment (2000)

**High v**  
Medium  
Low

*3. Briefly justify the proposed priority:*

**Southern Watershed Area:** The SWA should remain a high priority due to the continued development pressure in the region and the progress currently being made through the SAMP process, which is nearing completion. Both Chesapeake and Virginia Beach are entering their Comprehensive Plan update cycles. This is an opportune time to implement the recommended program changes. Continued effort at this point will improve the likelihood of achieving the Program Changes. It is also anticipated that several aspects of SWAMP will serve as a prototype for similar management efforts in other sections of the Hampton Roads Planning District.

**Dragon Run Area:** The Dragon Run area presents a unique opportunity to preserve an exceptionally valuable and pristine area. The pressures to alter the area are growing rapidly, and are readily apparent to state agencies, local governments, and citizen groups. There is a genuine interest among the relevant local governments to take steps to protect the traditional values provided by the undeveloped watershed. The fact that all the necessary players understand the threats and acknowledge the benefits of proactive management, creates an excellent opportunity to develop plans to protect the resource and provide for sustainable uses. Both the need and the probability of success are high for this project.

## Ocean Resources

### **Section 309 Programmatic Objectives**

- I. *Develop and enhance regulatory, planning, and inter-governmental coordination mechanisms to provide meaningful governmental coordination mechanisms to provide meaningful state participation in ocean resource management and decision-making processes.*
- II. *Where necessary and appropriate, develop a comprehensive ocean resource management plan that provides for the balanced use and development of ocean resources, coordination of existing authorities, and minimization of use conflicts*

### **Resource Characterization**

1. *In the table below, characterize ocean resources and uses of state concern and specify existing and future threats or use conflicts.*

<b>Resource or Use</b>	<b>Threat or Conflict</b>	<b>Degree of Threat (H/M/L)</b>	<b>Anticipated threat or conflict</b>
Fisheries	Loss of the state funding for trawl survey	H	Threat to regulated fishery resources
Oil & gas	Offshore drilling	M	Threat to natural resources after moratorium ends in 2002
Sand	Offshore borrowing/mining and loss of benthic habitats	M	Increasing demand for beach sand (nourishment)
Archeological Resources	Site specific threats form activities that disturb submerged bottom	L	Treasure Recovery Divers

2. *Describe any changes in the resources or relative threat to the resources since the last assessment.*

### **Fisheries**

*Trawl Survey:* VIMS has managed the Juvenile Trawl Survey for over 40 years. The primary objective of the trawl survey is to monitor trends in seasonal distribution and abundance of juvenile fish of about twenty recreationally, commercially, and ecologically important finfish and invertebrates, including spot, Atlantic croaker, weakfish, summer flounder, anadromous species (shad, river herring, striped bass, white perch), and blue crabs. The survey was supported by general funds from the state until 1988, but beginning in 1990, the survey has been funded by the U.S. Fish and Wildlife Service using Wallop-Breaux funds. Recently, VIMS was notified that the funds for the Trawl Survey have been cut. Survey data are utilized by several fishery management agencies, including: VMRC; the Atlantic States Marine Fisheries Commission; and the Mid-Atlantic Fishery Management Council. The loss of funding will

severely hamper both state and interstate fishery management efforts. Funding may be restored in the future.

*Oysters:* The population is at about 1 percent of historic levels. Threats to the resource include historic destruction of habitat, over fishing, and diseases. Virginia has initiated an Oyster Heritage Program designed to rebuild three dimensional oyster reefs, thus restoring an important habitat feature.

*Horseshoe crabs:* Since 1998, as a result of reduction of crab harvest from other states, Virginia's fishery for horseshoe crabs has grown from approximately 200,000 landings per year to over 1.2 million. In 2000, the VMRC enacted emergency regulations setting Virginia's landings quota for horseshoe crabs at 152,495.

*Blue crabs:* The population is being over fished. Biomass is just above the management target threshold for biomass, and fishing mortality ( $F= 0.9$ ) is above the management target ( $F= 0.7$ ). VMRC passed harvest restrictions on commercial and recreational crabbing by establishing a Blue Crab Spawning Sanctuary. The Sanctuary is located near the mouth of the Bay and the restrictions are in place from June 1 through September 15 each year.

*Sea Turtle:* Increased strandings and mortalities in 1999 have resulted in the development of a task force at VMRC to identify the responsible fisheries. Large mesh gill nets, tied down gill nets, and pound nets with large mesh leaders are implicated. Regulatory actions will likely be necessary in 2001 to reduce the interactions of turtles with fishing gear.

### **Oil and Gas**

In 1996, the Federal Minerals Management Service (MMS) issued a decision, placing a moratorium on lease sales for the Atlantic Outer Continental Shelf region between 1997-2002. In addition, a presidential directive issued in 1998 bans further lease sales in sensitive areas, which includes the Atlantic OCS. This ban, which extends until 2012, is subject to review and revocation by the new federal administration. Under the current political climate, its continuance seems tenuous.

### **Sand**

The MMS is in the process of developing a protocol for monitoring potential offshore "borrow" sites. Approximately 1,100,000 cubic yards of sand from Sandbridge Shoal was dredged in 1998 and used to construct a beach restoration and hurricane protection project along a 5-mile reach of Sandbridge Beach in Virginia. Sandbridge Shoal, located in Federal waters, contains sand reserves estimated to be as much as 40 million cubic yards of sand. To avoid environmental impacts possible from several extractions, VIMS and MMS are continuing to assess other sources of offshore sand, specifically in Federal and State waters offshore False Cape, Virginia. Such deposits, if proven suitable, would represent alternative sources of material to that of the Sandbridge Shoal.

### **Management Characterization**

1. *In the table below, identify state ocean management programs and initiatives developed since the last assessment.*

<b>Program</b>	<b>Status</b>	<b>Funding Source (309 or Other)</b>
Statewide comprehensive ocean management statute	No	
Statewide comprehensive ocean management plan	No	
Single purpose statutes related to ocean resources	Yes	Blue crab migratory sanctuary, horseshoe management plan, SAV sanctuary
Statewide ocean resources planning/working groups	No	
Regional ocean resources planning efforts	Yes	Continual updates to fishery management plans
Ocean resources mapping or information system	No	
Dredged material management planning	No	
Habitat research, assessment, monitoring	Yes	Oyster management
Public education and outreach efforts	Yes	VA Marine anglers guide (VMRC)
Other:	Yes	VMRC guidebooks

2. For the changes identified above, briefly summarize the exact change and its effects.

### **Single Purpose Statutes**

Some examples of Virginia’s single purpose statutes related to ocean resources include:

- Establishment of the 742 square mile blue crab migratory corridor sanctuary. No commercial or recreational fishing may occur in the area during the migration and spawning season, June 1 through September 15. It is estimated that this protects 40% of the female blue crab spawning stock.
- Horseshoe crab management plan. The plan establishes requirements for the use of bait bags in the conch pot fishery. Bait bags reduce usage of horseshoe crabs as bait by 50%. Industry utilization of horseshoe crabs has been decreased from 710,000 crabs to 350,000 crabs. The plan also specifies a 152,495 crab quota for Virginia fishermen.
- Establishment of the Chincoteague Bay Submerged Aquatic Vegetation Sanctuary. The sanctuary is off limits to clam dredges, which were documented as the gear responsible for SAV losses in the area.

### **Regional ocean resources planning:**

Updates to fishery management plans are made on a continuing basis.

### **Habitat research, assessment, monitoring**

*Oyster management* – Based on the Chesapeake 2000 Agreement, the goal is to achieve by 2010, at a minimum, a tenfold increase in native oysters using a baseline from 1994. By 2002 the goal is to develop and implement strategy to achieve this increase by using sanctuaries of sufficient size and distribution, aquaculture, continued disease research, and other management

approaches. In 1999, Virginia’s Coastal program initiated the Virginia Oyster Heritage Program, which will help to address this goal.

**Public education and outreach efforts**

*Virginia Marine Angler’s Guide* - The Virginia Marine Angler's Guide was prepared by the Virginia Marine Resources Commission with funding provided by saltwater recreational fishing license fees. This guide provides instruction on many topics for recreational fishermen.

**Other**

The VMRC published (funded under Section 309) in October of 1998 the “Guide to Virginia’s Laws, Regulations and Requirements for marine Shellfish Aquaculture Activities”. This 38-page guidebook contains detailed information on shellfish “gardening activities”, licensing and harvest requirements and health and sanitation provisions. Also included are all of the laws and regulations pertaining to aquaculture activities.

**Conclusion**

1. *Identify major gaps in meeting the programmatic objectives for this enhancement area*

Virginia’s management of ocean resources is primarily accomplished through participation in regional fishery management councils. This has been a long-standing and relatively effective process. It results in a continual review and update of management plans. The principal gap in achieving the Commonwealth’s objectives is assured access to comprehensive fishery-independent stock assessments. The current funding issue for the Virginia trawl survey raises the specter of major gaps in the database developing in the near term. Addressing the funding issue is the primary challenge at present.

2. *What priority was this area and what priority is it now, in the view of the coastal program?*

<u>Last Assessment (1997)</u>	<u>This Assessment (2000)</u>
High	High
Medium	<b>Medium v</b>
<b>Low v</b>	Low

3. *Briefly justify the proposed priority ranking.*

Due to the current loss of the state program funding for the trawl survey, the ranking was increased to medium. This reflects the importance of the stock assessment effort for fisheries resources management and regulation.

## Energy & Government Facility Siting

### Section 309 Programmatic Objectives

- I. *Enhance existing procedures and long range planning processes for considering the needs of energy-related and government facilities and activities of greater than local significance.*
- II. *Improve program policies and standards that affect the subjective uses and activities so as to facilitate siting while maintaining current levels of coastal resource protection.*

### Management Characterization

I. *Identify significant changes in the state's ability to address the siting of energy and government facilities since the last assessment (i.e., new regulations, guidance, manuals, etc.). Provide the following information for each change:*

- *Identify the change & whether it was a 309 change*
- *Briefly summarize the change*
- *Characterize the effect of the change*

Drilling for oil and gas is permitted in certain areas of Tidewater Virginia under Section 62.1-195.1 of the Virginia Code. However, the Federal Minerals Management Service (MMS) issued a Decision Document in August 1996 stating that it would be premature to propose a lease sale for the Atlantic Outer Continental Shelf (OCS) region in the 1997-2002 program. Therefore, MMS is not considering leasing sales off the Atlantic coast at this time.

On December 12, 2000, the MMS began preparing for a new 5-year OCS leasing program (personal communication: A.B. Wade). During the July 2002-July 2007 timeframe, the areas of the OCS off the Pacific and Atlantic coast have been withdrawn from oil and gas leasing and cannot be considered. This is the result of a 1998 presidential directive issued under the authority of Section 12 of the OCS Lands Act, which bans all leasing activities in sensitive areas through 2012. However, this ban seems tenuous under the current political climate.

### Conclusion

I. *Identify major gaps in meeting the programmatic objectives for this enhancement area.*

There are no major gaps in the Virginia Coastal Management Program in this area.

2. *What priority was this area and what priority is it now, in the view of the coastal program?*

Last Assessment (1997)

High

Medium

**Low v**

This Assessment (2000)

High

Medium

**Low v**

3. *Briefly justify the proposed priority.*

The Commonwealth of Virginia considers this issue adequately addressed through existing management programs until the year 2002, although the new 5-year OCS leasing study may suggest changes to the current plan. There are no known oil resources of consequence off Virginia's shore but there are gas reserves. Should these gas reserves be exploited in the future, adequate facilities on land would also have to be developed. If energy supplies continue to be a

problem, pressure to tap these gas reserves and the concurrent pressure to develop facilities to process the gas could intensify. If so, this enhancement area could become a higher priority.

## Aquaculture

### **Section 309 Programmatic Objectives**

- I. *Enhance existing procedures and long range planning processes for considering the siting of public and private marine aquaculture facilities in the coastal zone.*
- II. *Improve program policies and standards that affect aquaculture activities and uses so as to facilitate siting while ensuring the protection of coastal resources and waters.*

### **Resource Characterization**

- I. *Briefly describe the state's aquaculture activities.*

Virginia is committed to the expansion of aquaculture in coastal and estuarine waters as a mechanism for establishing sustainable fisheries. Recent analyses of the opportunities and challenges facing expansion of this industry indicate that the Commonwealth will need to develop a variety of new policies and management strategies in order to achieve this goal. The issue is a high priority because inaction will cause steady erosion of opportunities to establish and sustain aquaculture. Ongoing development practices, and expanding expectations for unrestricted use of the waterways result in degraded environmental conditions and declining support for restricted usage of currently pristine areas.

**Definition:** Virginia's 1992 Aquaculture Development Act defines aquaculture as the "propagation, rearing, enhancement, and harvest of aquatic organisms in controlled or selected environments, conducted in marine, estuarine, brackish or fresh water." Marine aquaculture represents Virginia's fastest growing industry and 85 percent of the total revenues of the aquaculture industry. The majority of marine aquaculture conducted in Virginia involves oysters and clams.

**State Regulations, Statutes, Guidelines:** Marine aquaculture activities are currently regulated by the VMRC, through existing fisheries and habitat laws and regulations, particularly submerged land leases and permits. VDACS is the lead agency in the state for aquaculture development and has responsibility for ensuring that facilities used to process and package food fish and shellfish are sanitary. VDACS does not issue any permits. The DEQ has responsibility for issuing Pollution Discharge Elimination System permits, which may be required for aquaculture facilities that discharge into state waters. The VDH issues permits that ensure the safety of seafood for human consumption. In addition, local governments may require business licenses and construction permits for the development of aquaculture facilities.

**Management:** Virginia has been responding to developing interests in aquaculture by addressing individual management issues as they are identified (see Management Characterization below). Cumulatively, these new regulations and projects have permitted the growth of aquaculture in the Commonwealth to its current levels, by specifying where and under what conditions it may occur. The challenge confronting Virginia is to ensure there will be suitable places for aquaculture in the future, and conflicts with other uses and resources are minimized.

**Economic Value:** Hard clams are still the largest and most profitable cultured species in Virginia. Most recent numbers (from 1998) are 70,536,000 hard clams at a value of \$11,049,000 and 188,000 oysters (mostly off-bottom sites) at a value of \$57,000. There is some continued interest in commercial oyster culture and a couple of firms raising soft clams. There has also been significant recent growth in noncommercial oyster gardening. There are now between 1,500 and 2,000 people in the state growing 4 million oysters in 10,000 floats for environmental purposes (water quality improvement)– a substantial economic impact. Oyster seed is purchased from commercial hatcheries and floats are either purchased as a unit or built from purchased materials.

**Waters and Lands:** Marine aquaculture typically involves the use of State-owned submerged lands or the waters overlying the public bottom. The use of public submerged lands and waters present potential use conflicts but also the potential for mutually beneficial public/private partnerships. Virginia has a long history of leasing previously “unproductive” submerged lands to individuals for the purpose of planting oysters. “Seed oysters” have been harvested from productive seed areas or “nurseries” such as the James River and transplanted to leased grounds to grow to market size. During the past few decades, some individuals and corporations have used their privately leased submerged land to grow out hatchery or nursery-reared oysters and hard clams. More recently, there has been increased interest in expanding shellfish aquaculture activities into the water column through the use of floats, racks and trays. The improper siting of such structures has the potential to interfere with more traditional uses of the water such as fishing, navigation and recreation. Currently marine aquaculture efforts have been focused on luxury food items with a high profit margin. However, as more and more of the world’s fisheries decline, aquaculture will be increasingly relied upon to provide protein sources for a growing global human population.

*2. Briefly describe environmental concerns, i.e., water quality, protected areas, impacts on native stock and shellfish resources. Also, describe any use conflicts, i.e., navigational, aesthetic, incompatible uses, public access, recreation; and, future threats, i.e., shoreline defense works, introduced species.*

**Use Conflicts:**

Impact on submerged aquatic vegetation (SAV): One possible environmental impact of aquaculture siting involves a spatial use conflict with SAV and the Chesapeake Bay Program goal to restore previous vast acres of SAV. Improper siting of an aquaculture operation can shade out or directly cover existing populations of SAV. Conversely, one study done in the Chesapeake Bay suggests that the filtering associated with the shellfish may be able to improve water clarity to the point that SAV may be able to colonize currently barren areas.

**Navigation, Recreation, Fishing:**

Off-bottom aquaculture structures have the potential to interfere with other public uses of the waterway. To ensure that these impacts are limited, VMRC currently subjects prospective aquaculture projects to its standard public interest review prior to issuing permits to encroach over state-owned submerged land. The general permit for noncommercial shellfish growing activities and the regulation concerning on-bottom shellfish activities, developed with 309 funding assistance, include conditions and provisions to minimize use conflicts.

## **Management Characterization**

1. *Identify significant changes in the state's ability to address the planning for and siting of aquaculture facilities since the last assessment.*

There have been four significant changes since the last assessment, which were funded by 309 grants under the Aquaculture Management Initiative.

1. General Permit #3 (Regulation 4 VAC 20-336-10 et seq.) for noncommercial riparian shellfish growing activities that conform to certain criteria and are undertaken over or on the State-owned subaqueous lands in tidal waters of the Commonwealth became effective in 1998. The general permit, applied for using an abbreviated two-page application to further simplify the process, provides a streamlined, no cost permit review process for noncommercial oyster gardening activities. The permit includes provisions to minimize impacts on wetlands, SAV navigation and other private and public uses of the waterways. This permit ensures that the structures are deployed in a manner that minimizes their adverse impact on the subaqueous bottom and does not impede other public and private uses of water resources. It should be noted that the general permit is not a new regulatory burden. Prior to the development of the general permit, the floats were subject to review under the regular permitting process.
2. Regulation 4 VAC 20-335-10 et seq. "Pertaining to on-bottom shellfish aquaculture activities" became effective in 1998. It was developed primarily to authorize the use of low-profile aquaculture structures such as nets and trays placed on and immediately above leased shellfish grounds. It includes a provision that prohibits the placement of structures on existing stands of submerged aquatic vegetation.
3. A booklet entitled "Guide to Virginia's Laws, Regulations and Requirements for Marine Shellfish Aquaculture Activities" was published in October 1998. It includes the aforementioned general permit and regulation and summarizes other applicable laws and regulations concerning shellfish aquaculture. It is provided free to those interested in aquaculture.
4. A research project evaluating the potential conflict between clam aquaculture and submerged aquatic vegetation was completed in 2000. The project documented the extent of potential conflict in the area of Virginia's eastern shore where clam aquaculture is currently pursued, and identified management and policy approaches possible to deal with the issue in the future. The report was part of the motivation for General Assembly action calling for development of shallow water use management strategies.
5. Adoption of a regulatory mechanism to allow the leasing of the water column for three-dimensional aquaculture activities is, at this time, under consideration by the Chesapeake Bay Commission. This draft legislation was provided to the Chesapeake Bay Commission for consideration as they respond to the House Joint Resolution concerning issues relevant to the uses of state-owned bottomlands and water column, including leases for aquaculture operations and SAV restoration. This work has been funded under 309.

## **Conclusion**

### *1. Identify major gaps in addressing the programmatic objectives for this enhancement area.*

Successful development of aquaculture management in Virginia will require several gaps to be addressed. First, a draft water column-leasing proposal has been developed under the Aquaculture Management Initiative with 309 funding. At this time, the Commission is considering the proposal in a larger context of a management plan for shallow water areas. Second, is development of a protocol and guidance for siting aquaculture facilities, so that conflicts between different water uses and land uses can be avoided. Lastly, even though there is a recognized link between land use and water quality, planning and regulatory decisions about land use, riparian development, water quality, and water resource uses are dispersed among many separate agencies and several levels of government. The key to long-term success in pursuit of aquaculture is connecting and informing each program, which can affect the ultimate suitability of an area.

### *2. What priority was this area and what priority is it now, in the view of the coastal program?*

#### Last Assessment (1997)

**High** v  
Medium  
Low

#### This Assessment (2000)

**High** v  
Medium  
Low

### *3. Briefly justify the proposed priority ranking.*

Wild harvests of finfish and shellfish stocks continue to decline and/or pose nearly intractable fishery management problems. Aquaculture is widely viewed as an acceptable and practical alternative. Virginia is actively committed to the growth and development of aquaculture in the Commonwealth. The long history of significant reliance on fisheries as an economic resource for the state makes continued development of management strategies among the highest priority for managers and policy makers. Virginia has been pursuing a purposeful, but constant evolution of strategies, some of which have existed for generations. Most recently, Joint Resolution HR765 was passed that charges VIMS, along with other agencies, with preparing a management plan for shallow water areas in the Chesapeake Bay and its tributaries. This resolution specifically addresses the need for a suitability model for shallow water areas to help reduce conflict among various user groups and the need for continued growth and development of aquaculture. Thus, the state is poised to take two additional steps in the management of aquaculture, both deemed essential to long-term success. First the state must identify where aquaculture can best be pursued in state waters, and then it must make certain it has all the appropriate management tools for those areas (Aquaculture Strategy for FY 01 and 02). Then Virginia must ensure all of its regulatory programs are working in concert to preserve and protect the opportunities to undertake aquaculture (Integration Strategy for FY 03 – 05).

## **Part V. Public Comment**

The public comment period for the Section 309 Assessment opened January 30, 2001 with a public meeting. The comment period closed on February 28, 2001. No public comments were received. The public meeting and comment period were advertised in the Coastal Program Newsletter and on the Coastal Program's website and submitted to the Virginia Register.