COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

Douglas W. Domenech
Secretary of Natural Resources

Steven G. Bowman
Commissioner

January 6, 2012

MEMORANDUM

TO: The Honorable Robert F. McDonnell
Members of the Virginia General Assembly

FROM: Steven G. Bowman
John T. Wells

RE: SJ330 Report of the Virginia Marine Resources Commission and the Virginia Institute of Marine Science.

We are pleased to provide you this report of the Virginia Marine Resources Commission and the Virginia Institute of Marine Science. This report was prepared in response to SJ330 of the 2011 General Assembly Session. Our two agencies prepared this report after extensive meetings with stakeholders throughout 2011 and a series of well-attended public hearings on the Eastern Shore.

We wish to extend our sincere appreciation to Dr. Mark Luckenbach of VIMS for his hard work on this report, as well as for the extensive participation of the Nature Conservancy, Virginia Seafood Council, commercial watermen and representatives of the aquaculture industry. We hope you find this report to be helpful as we continue deliberations on how to best utilize state-owned bottomlands to support the management and fishery of wild shellfish populations, while promoting sustainable aquaculture, enhancing habitat restoration and protecting our natural resources.

Please don't hesitate to contact us if we may be of further assistance.

Cc: The Honorable Doug W. Domenech, Secretary of Natural Resources

PREFACE

Senate Joint Resolution 330 (2011) directed the Virginia Institute of Marine Science (VIMS) and the Virginia Marine Resources Commission (VMRC) to identify preferred options for improving the designation of public shellfish grounds and make recommendations for legislative and regulatory actions needed for a more effective management approach for state-owned bottomlands on the seaside of the Eastern Shore. The resolution further directed VIMS and VMRC to include stakeholders from various segments of the seafood industry and the Nature Conservancy on the study panel.

Mr. Jack Travelstead, Deputy Commissioner and Chief of Fisheries Management at the Virginia Marine Resources Commission, and Dr. Mark Luckenbach, Director of the Virginia Institute of Marine Science's Eastern Shore Laboratory, served as co-chairs of the study panel. Other members of the study panel and resource staff from VIMS and VMRC are listed below.

Study Panel Members
Mr. H.M. Arnold, working waterman
Mr. Chad Ballard, III, Cherrystone AquaFarms, Inc., shellfish aquaculturist
Mr. A. J. Erskine, Virginia Seafood Council
Ms. Nikki Rovner, The Nature Conservancy
Mr. Pete Terry, H. M. Terry Co., Inc., shellfish aquaculturist

Resource Staff
Hank Badger, Virginia Marine Resources Commission
Marcia Berman, Virginia Institute of Marine Science
Karen Hudson, Virginia Institute of Marine Science
Roger Mann, Virginia Institute of Marine Science
Robert Neikirk, Virginia Marine Resources Commission
Lyle Varnell, Virginia Institute of Marine Science
Tony Watkinson, Virginia Marine Resources Commission
James Wesson, Virginia Marine Resources Commission

The key findings of the study are: (i) that the current boundaries of the public shellfish beds, defined largely by a survey in 1894, no longer accurately reflect the extent of the oyster beds on the seaside; (ii) that the majority of current natural oyster beds on the seaside lie outside of the public shellfish bed boundaries, largely on unassigned state-owned bottomlands; and (iii) that maximizing the benefits to public fisheries and private aquaculture, while enhancing habitat restoration and protecting natural resources will require some modifications to the current *de facto* zoning of state-owned bottomlands on the seaside of the Eastern Shore. This report makes a series of recommendations for achieving these goals.

TABLE OF CONTENTS

Page

I. Preface.....ii

II. Executive Summary.....iv

III. Body Chapters.....1

a. Introduction.....1

b. Findings and Rationale 2

c. Alternative options for making adjustments to public shellfish beds.....5

d. Public Input.....6

e. Recommendations 7

IV. Appendices.....9

EXECUTIVE SUMMARY

SJR 330 charged VIMS and VMRC with examining how the state-owned bottomlands could be more effectively utilized to (i) support the management and fishery of wild shellfish populations, (ii) promote sustainable aquaculture, (iii) enhance habitat restoration, and (iv) protect natural resources. A study panel comprised of stakeholders representing public watermen, shellfish aquaculturists and environmental interests reviewed existing data on the distribution of current oyster beds on the seaside in relation to the Baylor Grounds (i.e., designated public shellfish bed boundaries). The panel also reviewed data on the extent of private bottom leases, fisheries landings from wild shellfish harvest and aquaculture, and habitat suitability for state-owned bottomlands from recent studies on the seaside.

The principal finding of the study is that the current designations of public shellfish beds, which are based largely upon a survey conducted by Baylor in 1894, do not adequately reflect the current distribution of natural oyster beds on the seaside. The majority of natural oyster beds in this region lie outside of the Baylor Grounds, mostly on unassigned state-owned bottomlands. Further, much of the area within the Baylor Grounds on the seaside is not suitable for restoring natural oyster beds. This situation is detrimental to the public fishery for oysters because it makes it possible for individuals to lease natural oyster beds, thereby removing them from the public fishery. It is also detrimental to the private shellfish aquaculture industry because it excludes some areas, which have no value to the public fishery from being leased for aquaculture. Other findings of the study point to the need for a management approach to state-owned bottomlands on the seaside, which more effectively supports ongoing successful efforts to restore seagrass beds and scallop populations, enhance recreational activities, and protect natural resources.

Independent of the study panel, a series of public workshops were sponsored by the VA Coastal Zone Management Program and the Accomack-Northampton Planning District Commission on the Eastern Shore to gather input from stakeholders, elected officials, and the general public about potential modifications to the management of state-owned bottomlands on the seaside. Attendees at these meetings expressed strong concern that the current leasing system not be negatively impacted by any changes and that natural shellfish beds remain a public resource.

To address these issues, we make four specific recommendations. First, we recommend that VMRC be authorized to refine the boundaries of the natural oyster beds on the seaside of the Eastern Shore to reflect their actual distribution, while preserving the integrity of all current leases. Second, we recommend several specific guidelines related to commercial value, habitat restoration, other uses, and natural resource protection that VMRC should consider in any changes to public shellfish bed designations. Third, we recommend that VMRC initially make refinements to public shellfish ground boundaries that will bring natural oyster beds in unassigned areas into the public shellfish grounds. Finally, we recommend that when considering designated uses of unassigned state-owned bottomlands on the seaside that VMRC be charged with considering the full range of ecological and economic values associated with the state-owned bottomlands and seek to optimize both types of value.

REPORT

Introduction

Senate Joint Resolution 330 (2011) (Appendix I) notes the constitutional obligation to preserve the natural oyster beds of Virginia for the benefit of the citizens of the Commonwealth, while recognizing that in the coastal bays along the seaside of Virginia's Eastern Shore the Baylor Survey may no longer adequately define the extent of these beds. SJR330 directed the Virginia Institute of Marine Science (VIMS) and the Virginia Marine Resources Commission (VMRC) to identify preferred options for improving the designation of public shellfish grounds and make recommendations for legislative and regulatory actions needed for a more effective management approach for state-owned bottomlands on the seaside of the Eastern Shore. VIMS and VMRC were charged with considering available data on habitat suitability and user conflicts associated with the current use designations. They were specifically charged with examining how the state-owned bottomlands could be more effectively utilized to *(i) support the management and fishery of wild shellfish populations, (ii) promote sustainable aquaculture, (iii) enhance habitat restoration, and (iv) protect natural resources.* In conducting the study and making recommendations, these agencies were directed to include participation by a commercial waterman, aquaculturists, the Virginia Seafood Council, and the largest private landowner on the barrier islands, the Nature Conservancy.

The seaside of the Eastern Shore was singled out for consideration because of several unique characteristics. First, the natural oyster beds in this region are almost entirely intertidal (that is, located between the high and low tide levels). There they exist as fringing reefs along the edge of marshes or as patch reefs on intertidal mud and sand flats. Individual reefs are often quite small, usually less than 100 square feet in area, and oyster grounds are made up of numerous small oyster reefs, which individually are quite ephemeral. One hundred and thirty-two separate Baylor Grounds demarcate over 50,000 acres of public shellfish grounds, much of which currently do not include, and possibly never included, oysters.

Second, the natural environments along the seaside are especially dynamic, with the islands, marshes, mudflats, and oyster beds changing in response to storms and sea level changes. These habitats have changed significantly over the past century.

Third, recent findings have demonstrated that, in contrast to Chesapeake Bay, it is possible to restore extensive areas of seagrass beds that once supported finfish and scallop populations on the seaside.

Finally, as in other areas within Chesapeake Bay, an economically valuable shellfish aquaculture industry exists on the seaside that is important to the region's economy and offers the promise of sustainable shellfish production.

In combination, these factors suggest that the seaside may require an approach towards managing state-owned bottomlands that differs from other Virginia waters. This report summarizes the findings of the study and makes recommendations in accordance with the charge set forth in SJR

330 (2011). Our recommendations apply only to state-owned bottomlands along the seaside of the Eastern Shore of Virginia.

Committee Findings

Finding 1: The current boundaries of the public shellfish beds, defined largely by the Baylor's survey from 1894, no longer accurately reflect the extent of the oyster beds on the seaside.

Rationale: A detailed survey of existing natural and constructed oyster beds on the seaside was completed by VIMS in 2009 (Appendix II). This survey served as the basis for an assessment of the proportion of current natural oyster beds located within the designated public shellfish grounds (henceforth termed *Baylor Grounds*) that was completed by VIMS in 2011 (Appendix III). This analysis revealed that only 43% of the natural oyster beds on the seaside are located within the Baylor Grounds. This distribution can largely be explained by the dynamic nature of the environment on the seaside. In the intervening 117 years, since Baylor's survey was completed, the barrier islands along the seaside have moved—in some cases as much as a quarter mile—often burying oyster beds in the process. Over that same time period, sea level has risen nearly 1.5 feet in the region, dramatically changing the location of the intertidal zone, where oysters in the region are located. The survey reveals extensive, apparently natural, oyster resources that lie outside of the Baylor Grounds.

Finding 2: A significant portion of the Baylor Grounds on the seaside is not suitable for oyster restoration, even with a reduction in the prevalence and intensity of oyster diseases.

Rationale: As part of its 2011 report, VIMS, with the assistance of VMRC, estimated that 44% of the Baylor Grounds on the seaside is not suitable for oyster restoration based upon current water depth and substrate type. This assessment revealed that in some locations barrier islands now cover portions of the Baylor Ground, while in other areas water depth is now too deep to support intertidal oyster beds typical of the seaside. This assessment was not based upon limitations to restoration posed by oyster diseases, in part because the disease situation appears to be abating somewhat within the region.

Finding 3: Landings of wild clams and oysters by the public fishery on the seaside have decreased dramatically compared to historical values, but in recent years a modest increase in wild oyster landings has occurred.

Rationale: VMRC data reveal that wild clam landings on the seaside have declined dramatically in the past 20 years, primarily as a result of the near cessation of the controversial clam dredge fishery. Data also reveal that reported landings of wild hard clams on the seaside are now less than one percent of the reported harvest of aquaculture clams (Appendix IV A). Though far below historic levels, reported landing of wild oysters on the seaside have increased slightly over the past five years, with daily

catch rates currently at 3 to 5 bushels per man per day. This small increase is thought to be the result of VMRC restoration efforts.

Finding 4: Portions of the Baylor Grounds that currently do not support oysters and are inappropriate for enhancing wild oyster populations are suitable for wild clam harvests, clam aquaculture and/or oyster aquaculture (including caged culture and spat-on-shell production).

Rationale: VIMS collected data on habitat suitability for wild hard clam harvest and input from aquaculturists on habitat suitability for aquaculture of hatchery-produced oysters and clams within the currently designated Baylor Grounds. The findings suggest that between 8-14% of the Baylor Grounds may be suitable for commercial harvest of wild clams and a comparable amount (average of 10%) may be appropriate for oyster and clam aquaculture (see Appendix III).

Finding 5: Shellfish aquaculture on the seaside has expanded dramatically in the past 20-30 years and is now a thriving industry on the Eastern Shore, adding significantly to the local economy. During this expansion the number and extent of private leases have decreased relative to historic levels.

Rationale: Virginia leads the nation in the production of cultured clams and the Eastern Shore is currently responsible for virtually all of this production. The dockside sale value of market clam was estimated at $25 million in 2010 (Appendix V). Over 60 million cultured clams were harvested from the seaside in 2010. Oyster culture represents the fastest growing segment of Virginia's aquaculture industry, with a nearly three-fold expansion reported from 2009 to 2010. Statewide, 77 million cultured oysters were planted in Virginia in 2010 and the sale of market oysters was estimated at $5 million in that same year. Separate data are not available for the seaside, but growth in oyster aquaculture there reflects the state-wide trend. Despite this growth in shellfish aquaculture, VMRC data indicate that the number and area of leases on the seaside decreased by 12% and 15%, respectively, between 1991 and 2011. Modern, hatchery-based shellfish aquaculture may be making more efficient use of leased grounds than the historical private oyster fishery.

Finding 6: Restoration of seagrass beds on the seaside is currently revitalizing valuable ecological habitat and has the potential to support the restoration of a scallop fishery and enhancement of finfish populations.

Rationale: Submerged aquatic vegetation (SAV), primarily eelgrass, was once a prominent habitat in the bays along the seaside. These seagrass beds supported a valuable fishery for bay scallops and many were included within Baylor's survey. A combination of disease and storms in 1933 resulted in the complete loss of SAV south of Chincoteague Bay and the collapse of the scallop fishery. Restoration efforts over the past 12 years have resulted in over 5,000 acres of eelgrass beds on the seaside. Results from initial efforts to restore bay scallops to these seagrass beds have been promising. Over 100,000 bay scallops have been planted as spawning

stock and surveys conducted during the Fall 2011 reveal the presence of newly-recruited scallops to the grass bed. It is well established that seagrass beds stabilize sediments, improve water quality, and provide important nursery habitat for recreationally and commercially important finfish.

Finding 7: The most promising areas for additional SAV restoration lie within the Baylor survey boundaries and on unassigned state-owned bottomlands.

Rationale: A 2011 VIMS study (Appendix III) estimated, based upon water depth and sediment type, that 82% of current and 81% of potential SAV habitat on the Seaside is located within the Baylor Grounds or on unassigned state-owned bottomlands.

Finding 8: The state-owned bottomlands of the seaside of the Eastern Shore have significant ecological value that supports waterfowl, shorebirds, turtles, finfish, and crabs.

Rationale: A multi-agency study funded by NOAA's Coastal Zone Management Program in Virginia reveals that 95.3% of Baylor Grounds, 99.3% of privately leased bottom, and 81.3% of unassigned subaqueous bottom have very high to outstanding ecological value based on a model that considers a cumulative assessment of natural resources. The study considered finfish, birds, shellfish, and turtle habitat. These data suggest that current conditions support a highly varied and critical ecosystem, which should be preserved.

Finding 9: The seaside has historically supported recreational fishing, hunting, and bird watching, as well as commercial fishing and aquaculture.

Rationale: Recreational uses of the seaside are an important economic driver to the adjacent communities of Northampton and Accomack Counties. They support businesses that range from bait and tackle shops, restaurants, fuel facilities, and hotel accommodations. Intense commercial utilization of open water and flats is perceived as hampering access to recreational areas, particularly those used for fishing.

Finding 10: Sea level rise will increase the dynamic nature of this region in the near future.

Rationale: Since Baylor's survey in the 1890's, sea level in the region has risen 1.5 feet. The Scientific and Technical Advisory Committee to the Chesapeake Bay Program reported in 2010 that sea level could be 0.6 meters (2.0 feet) higher than its present position by the year 2050 and 1.6 meters (5.2 feet) higher by the year 2100. This will result in constant and significant changes in the character of the seaside system. Areas suitable for wild shellfish harvest, aquaculture and SAV, based on water depth, sediment type, and exposure, can be expected to change. Given the forecast pace of sea level rise, the extent of marshes in the system can be expected to decrease significantly. The morphology and position of the barrier islands is difficult to predict, but they will be responding to increased wave energy. Given the

high probability that the system will undergo significant change in the near term, the need for a flexible management approach that can adapt to these changes is particularly important.

Alternative Options for making adjustments to the designation of public shellfish beds

A central component of the panel's charge was to consider alternatives to the current approach for defining public shellfish beds on the seaside. The panel reviewed a wide range of options that are summarized in three categories below. These options are not mutually exclusive.

Option 1: Commission another survey of the natural shellfish beds on the seaside and establish by statute that these survey boundaries represent the public shellfish beds. Repeat this process every 10 – 20 years, as necessary, based on changing environmental conditions.

Strengths: Requires minimal changes to the current management structure. The General Assembly establishes the boundaries of natural shellfish beds via statute as has occurred in the past.

Weaknesses: Requires significant upfront investment to complete a full re-survey of the natural shellfish beds that needs to be repeated periodically. VMRC estimates the cost of a full re-survey of the natural oyster beds on the seaside to range from $220,000 to $520,000 over a two-year period. This approach does not provide the flexible management approach sought in the resolution. It fails to recognize that some of the oyster beds have been stable, with regard to their location, for over 100 years, while others have disappeared over periods as short as weeks or days. It fails to address the full suite of other issues related to natural resource management associated with state-owned bottomlands.

Option 2: Authorize VMRC to make adjustments to the boundaries of public shellfish beds, based upon the presence or absence of viable shellfish populations, but require that the current proportions of public shellfish beds versus leased bottom on the seaside remain the same. That is, each acre that is removed from the public shellfish beds would need to be replaced by an acre of existing lease bottom that was returned to the public domain.

Strengths: Such an approach would provide for more flexible management of state-owned bottomlands than the current approach and it has the potential to expand aquaculture production. Further, it might help to alleviate the fears of some public watermen that the changes amount to a "land grab" by the aquaculture industry.

Weaknesses: This approach would arbitrarily set the proportions of public and leased grounds based upon a ratio of the amount of natural oyster beds identified in the 1890's and the amount of leased bottom in the early 21st Century. It is does not address the Virginia constitutional requirement that all the natural oyster beds be managed for the public benefit, including the reported 57% of natural oyster beds on the seaside that currently lie outside of the Baylor Grounds. This approach is not responsive to future changes in the extent of natural oyster reefs or changes in the aquaculture industry.

Option 3: Authorize VMRC to refine the boundaries of natural shellfish beds on a case by case basis on the seaside via a process that requires shellfish surveys, natural resource value assessments, local input, and a public hearing process.

Strengths: Preserves the constitutional requirement that all natural shellfish beds be managed for the public benefit, while allowing for the possibility that areas formerly designated as public shellfish beds, but that no longer support natural shellfish beds and are not suitable for restoration of shellfish beds, be reclassified for other uses, including leases for aquaculture. Expressly directs VMRC to consider other natural resource benefits in reclassifying areas formerly designated as public shellfish beds. Makes use of the well established public hearing process at VMRC, before making any changes to the designation of state-owned bottomlands. This option provides the least expensive and most flexible of the individual options considered by the panel.

Weaknesses: This option fails to achieve an immediate expansion of the public shellfish beds to include natural oyster beds currently located in undesignated state-owned bottomlands.

Public Input

The study panel was not charged with holding public meetings to seek broader input. However, a concurrent effort supported by the Virginia Coastal Zone Management Program sponsored two public meetings on the Eastern Shore in early December 2011 to gain public input on the topic of making changes to the current management approach for state-owned bottom on the seaside of the Eastern Shore. The Accomack-Northampton Planning District Commission (A-NPDC) ran the meetings and prepared a report summarizing their findings (Appendix VI). In these meetings the A-NPDC presented three suggestions that were similar to, but not exactly the same as, the three broad options outlined above and solicited public comment. Many of the comments received were wary of or openly opposed to the specific suggested management approaches proposed in these meetings. Upon receiving this report in late December 2011, the panel co-chairs carefully reviewed its findings and are confident that the panel recommendations below address the majority, if not all, of the concerns raised during these public meetings. Many of the objections raised during the public meetings were related to components in the options that the study panel had considered, but rejected, and do not appear in our recommendations below. These meetings were well attended by members of the shellfish aquaculture industry and there was strong sentiment expressed that current shellfish leases not be impacted by any management change and that the leasing process not be changed in a manner that would negatively impact this valuable industry. There was also concern expressed that extent of public shellfish beds might be reduced or lost to private leases under some management options.

The panel recommendations presented below are very explicit in suggesting that the status of all current leases be protected. Additionally, the actions recommended by the panel are likely to lead to an increase, rather than a decrease, in the area of designated public oyster beds on the seaside. The panel recommendations do not throw out the old system of managing the state-owned bottomlands, but rather make suggestions for modest changes, which we believe will benefit all of the stakeholders who utilize these resources.

Recommendations

The panel is cognizant of its charge to recommend "a more flexible and effective management approach" for the state-owned bottomlands on the seaside of the Eastern Shore, and of its charge to consider habitat restoration and natural resource protection in addition to wild fisheries and aquaculture development.

Based upon its review of the available research and input from various stakeholder groups, the panel offers the following recommendation to the Governor and General Assembly. The panel maintained a desire not to propose new, cumbersome management approaches or to make changes to existing lease designations. Our recommendations build on well-established procedures by the VMRC, which incorporate scientific data and stakeholder input in a public hearing process to make decisions relating to marine resource management. Our recommendations apply only to state-owned bottomlands along the seaside of the Eastern Shore of Virginia.

Recommendation 1: The General Assembly should authorize VMRC to refine the boundaries of the public oyster beds on the seaside on an as needed basis via a public process that is similar to the process for adopting and modifying fishery regulations. This authorization should acknowledge the constitutional obligation to preserve the natural oyster beds of Virginia for the benefit of the citizens of the Commonwealth and should protect the status of current leases. The Baylor survey should remain the "default" boundary for the public oyster beds until refined by VMRC over time as resources allow. In refining boundaries, VMRC should use the best information available regarding the location and extent of natural shellfish beds and potential oyster habitats on the seaside. The information on which any proposed boundary changes are based should be made publicly available. Natural oyster beds on currently unassigned state-owned bottomlands should be included in the refined boundaries. The exclusion of currently leased bottomlands from this requirement stems from the difficulty of determining a natural oyster bed from one constructed by a lease owner. Areas that do not currently support oysters and are judged to be inappropriate for enhancing wild oyster populations should be excluded from the refined boundaries, so that those areas are available for other uses.

Recommendation 2: When VMRC considers removing portions of the old Baylor survey from the public shellfish beds, the Commission should consider Article XI, Section 3 of the Virginia Constitution. The Commission should also consider the public and private benefits of any modifications to the state-owned subaqueous bottomlands and exercise its authority consistent with the public trust doctrine as defined by the common law of the Commonwealth. The Commission, whenever it proposes to remove a portion of the Baylor survey from public oyster beds, should state the effect of the proposed removal on:

1. Marine and fishery resources, including the abundance of commercially important shellfish;

2. The potential for restoring wild oysters to the area;

3. Effects on SAV and the potential of the area to support SAV;

4. Other natural resource values;

5. The area's potential for shellfish aquaculture;

6. Other reasonable and permissible uses of state waters and state-owned bottomlands;

7. Adjacent and nearby properties; and

8. Water quality.

Recommendation 3: The VMRC should begin its efforts to refine the boundaries of public oyster beds by including seaside oyster beds currently located on unassigned state-owned bottomlands within the boundaries of public oyster beds.

Recommendation 4: In making lease decisions and other determinations about the use of remaining unassigned state-owned bottomlands, VMRC should recognize those lands as a public resource, identify their ecological and economic values, and seek to optimize both types of value.

APPENDICES

Appendix	Title	Page
I.	Senate Joint Resolution 330 (2011) ...…….	10
II.	Summary of *Population Assessment of Eastern Oysters* (Crassostrea virginica) *in the Seaside Coastal Bays, VIMS report 2009*	11
III.	Summary of *Seaside Special Area Management Plan: Spatial Information Analysis and Interpretation for Shellfish Grounds and SAV Beds, VIMS Report 2011*	12
IV.	Reported landings on the Seaside of the Eastern Shore from public and private grounds (1993-2010) for (A) clams and (B) oysters	13
V.	Summary of *Results of 2010 Virginia Shellfish Aquaculture Crop Reporting Survey, VIMS Report 2011*	14
VI.	Summary of *Public Input Summary: Special Area Management Plan - Seaside of Virginia's Eastern Shore*	15

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SENATE JOINT RESOLUTION NO. 330

AMENDMENT IN THE NATURE OF A SUBSTITUTE

(Proposed by the Senate Committee on Rules on January 28, 2011)

(Patron Prior to Substitute—Senator Northam)

Requesting the Virginia Institute of Marine Science and the Virginia Marine Resources Commission to jointly study ways the subaqueous bottomland on the seaside of Virginia's Eastern Shore might be better utilized. Report.

WHEREAS, the coastal bays and marshes on the seaside of Virginia's Eastern Shore provide economically and ecologically valuable resources to the citizens of the Commonwealth; and

WHEREAS, this area supports valuable public commercial and recreational harvests of natural shellfish stocks alongside a valuable private shellfish aquaculture industry; and

WHEREAS, the marine habitats in this region are extremely dynamic, often changing dramatically over a short period of time; and

WHEREAS, the general demarcation of areas available for public shellfish harvesting and private aquaculture, as well as sea grass, oyster, and scallop restoration, is based upon a survey completed in 1894; and

WHEREAS, this survey, referred to as the Baylor Survey, is the basis for the establishment of the natural oyster beds, rocks, and shoals of the Commonwealth; and

WHEREAS, Article XI, Section 3 of the Constitution of Virginia recognizes the importance of preserving these natural oyster beds in its statement that "(t)he natural oyster beds, rocks, and shoals in the waters of the Commonwealth shall not be leased, rented, or sold but shall be held in trust for the benefit of the people of the Commonwealth, subject to such regulations and restriction as the General Assembly may prescribe, but the General Assembly may, from time to time, define and determine such natural beds, rocks, or shoals by surveys or otherwise"; and

WHEREAS, the original survey encompassed 204,453 acres of public oyster grounds, and an additional 46,596 acres have been created through legislative actions; and

WHEREAS, there has been a significant decline in the number of oysters in Virginia waters; at the same time encouraging prospects exist for the development of a vibrant commercial aquaculture industry; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Virginia Institute of Marine Science and the Virginia Marine Resources Commission be requested to jointly study ways the subaqueous bottomland on the seaside of Virginia's Eastern Shore might be better utilized. The joint study shall examine how these bottomlands can be utilized to (i) support the management and fishery of wild shellfish populations, (ii) promote sustainable shellfish aquaculture, (iii) enhance habitat restoration, and (iv) protect natural resources.

In conducting the study, the Virginia Institute of Marine Science and the Virginia Marine Resources Commission shall:

1. Consider data provided by the Virginia Institute of Marine Science and others on use suitability and user conflicts associated with the current designations;

2. Identify preferred options for making adjustments to the designation of public shellfish grounds; and

3. Make recommendations for legislative and regulatory actions required to implement a more flexible and effective management approach toward managing subaqueous bottomland on the seaside of the Eastern Shore.

The joint study shall include the participation of a commercial waterman, a commercial shellfish aquaculturist, a representative of the Virginia Seafood Council, and any private person or entity that owns more than 50 percent of the privately owned land area of the Eastern Shore barrier islands.

All agencies of the Commonwealth shall provide assistance to the Virginia Institute of Marine Science and the Virginia Marine Resources Commission for this joint study, upon request.

The Virginia Institute of Marine Science and the Virginia Marine Resources Commission shall complete their meetings by November 30, 2011, and the director of each agency shall jointly submit to the Governor and the General Assembly an executive summary and a report of the findings and recommendations for publication as a House or Senate document. The executive summary and report shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports no later than the first day of the 2012 Regular Session of the General Assembly and shall be posted on the General Assembly's website.

APPENDIX II

Ross, P.G. and M. W. Luckenbach (2009) Population Assessment of Eastern Oysters (*Crassostrea virginica*) in the Seaside Coastal Bays, Final Report to Coastal Zone Management Program, Virginia Department of Environmental Quality, Richmond, VA, 111 pp.[1]

SUMMARY - Declines of oyster populations and commercial harvest from the Virginia seaside coastal bays have followed similar patterns, though not as severe, as those in Chesapeake Bay. High prevalence of Dermo disease (*Perkinsus marinus*) and MSX disease (*Haplosporidium nelsoni*) coupled with over-harvest and habitat destruction have dramatically reduced populations. Nevertheless, there are several promising signs that significant enhancement of the population could be achieved with well-conceived restoration efforts.

Oyster habitat and population distribution were examined in the coastal bay system on the seaside of the Eastern Shore of Virginia. This system is composed of barrier islands, salt marshes, broad and shallow coastal bays, intertidal mud flats, and deeper water channels. Manmade shorelines such as bulkhead and rip rap are prevalent in limited areas.

This study provides the first quantitative assessment of oyster population abundance on a region-wide scale in the coastal bays on the seaside of Virginia's Eastern Shore. Our estimate of 3.2 billion oysters in this region exceeds the most recent population estimate of 1.8 billion oysters for the entire Virginia portion of Chesapeake Bay produced by the VIMS CBOPE (http://web.vims.edu/mollusc/cbope/VAPDFfiles/VABasin2006.pdf). At the time of our sampling, Dec. 2007 – June 2008, the oyster population was comprised of a wide range of sizes representing several year classes that suggest a self-sustaining population with the potential for significant expansion.

The spatially-explicit oyster population GIS product developed through this work provides a valuable tool for guiding fisheries resource management and restoration activities for oysters in this region. The ultimate usefulness of this product lies in its integrative aspect as a GIS tool.

[1] The full report is available from Dr. Mark W Luckenbach at the Virginia Institute of Marine Science, P.O. Box 350, Wachapreague, VA 23480, 757-787-5816, luck@vims.edu

APPENDIX III

Luckenbach, M. W. and P. G. Ross (2011) Seaside Special Area Management Plan: Spatial Information Analysis and Interpretation for Shellfish Grounds and SAV Beds. Final Report to the Coastal Zone Management Program, Virginia Department of Environmental Quality, Richmond, VA, 28 pp.[2]

SUMMARY - The coastal bays along the seaside of Virginia's Eastern Shore support valuable natural resources and economic activities which are vital to the region's economy and culture. These include essential fish habitat, foraging areas for shorebirds, commercial and recreational wild shellfish harvest, and commercial shellfish aquaculture. Balancing these multiple uses by promoting the economic and cultural uses of these habitats, while protecting the resource base on which they depend is the challenge facing resource managers.

Currently, the primary determinant of use allocation for state-owned bottomlands is based largely upon a survey of the natural shellfish beds conducted nearly 120 years ago. The Baylor survey, which was conducted in the early 1890's, defined the boundaries of the public shellfish beds at the time. Those areas, not included with survey boundaries, were available for lease from the state for Virginia citizens to plant and grow shellfish. These leases now serve as the grow-out sites for the valuable clam and oyster aquaculture industry. As aquaculture has grown in recent years, availability of new leases has become one of the factors limiting the growth of the industry. At the same time, a recent survey of wild oysters reveals that the majority of the population is no longer found within the boundaries of the old Baylor survey. Both of these situations point to the need to re-examine the approach towards managing use of the state-owned bottomlands in the coastal bays.

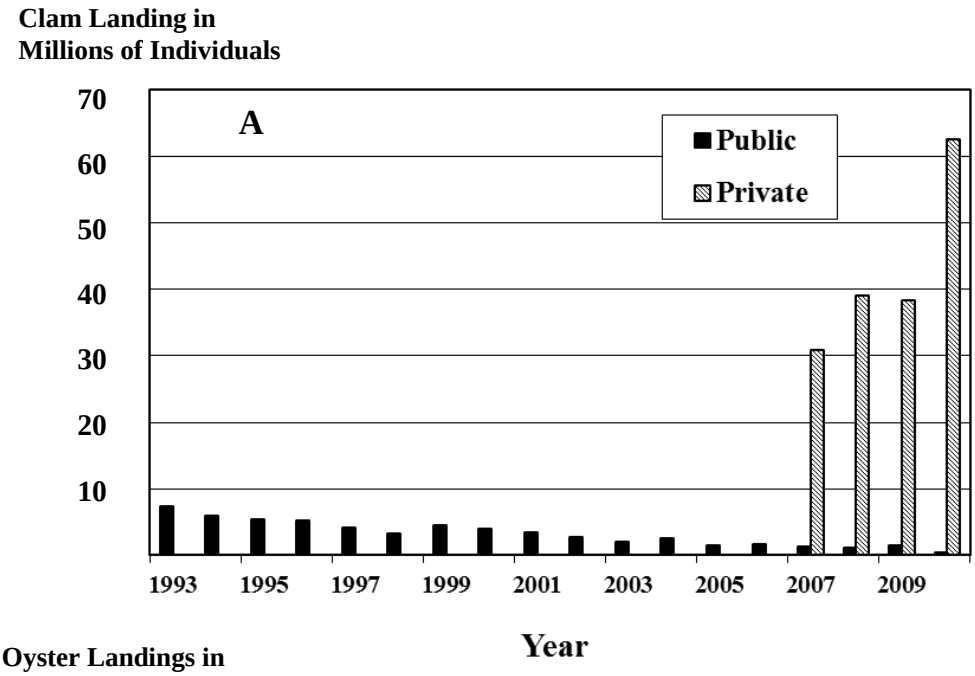
In this study, we compared habitat suitability assessments to current use designations to provide a quantitative evaluation of the efficacy of the current management approach. Our findings reveal some significant mismatches between current designations for state-owned bottomlands in the coastal bays and habitat suitability. Fifty-seven percent of the natural oyster reefs that we mapped are located outside of the Baylor survey. Approximately 34% of the area within the Baylor survey was found to be unsuitable for wild oyster or clam populations or fisheries, while roughly 10% of the area within the Baylor survey appears to be suitable for commercial shellfish aquaculture. We estimate that 57% of the potential area for seagrass restoration lies within the Baylor survey boundaries. Meanwhile, we know, but did not quantify as part of this study, that large areas of current shellfish leases are not suitable for shellfish aquaculture, using current cultivation techniques.

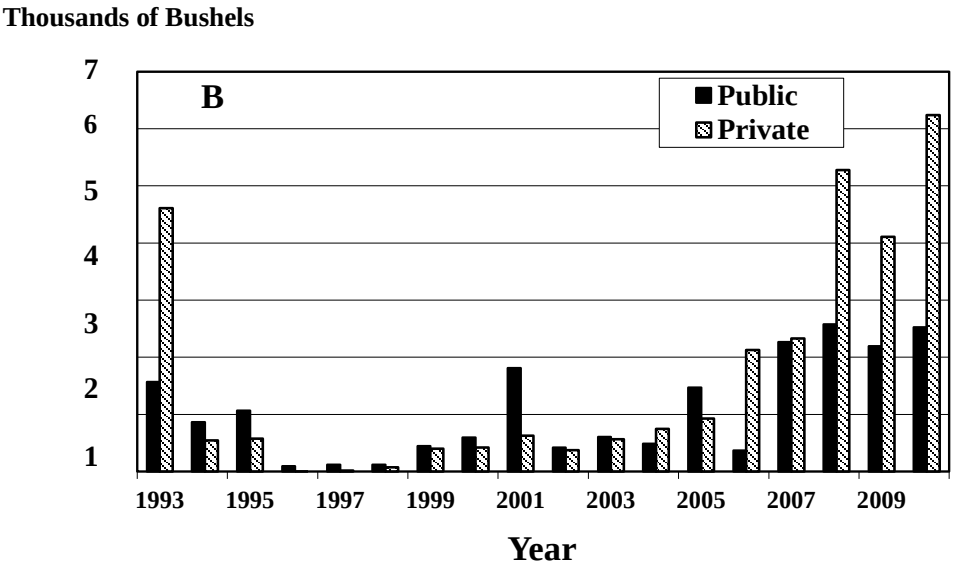
This study points to the need to re-evaluate current use designations for state-owned bottomlands in the coastal bays of Virginia's Eastern Shore. We advocate for the development of a more flexible management system for allocating use of state-owned bottomlands in the coastal bays. Such a system should be based upon current habitat suitability, a balanced allocation of among various stakeholders, and science-based management of critical natural resources.

[2] The full report is available from Dr. Mark W. Luckenbach at the Virginia Institute of Marine Sciences, P.O. Box 350, Wachapreague, VA 23480, 757-787-5816, luck@vims.edu

APPENDIX IV

Reported landings on the Seaside of the Eastern Shore from public and private grounds (1993-2010) for (A) clams and (B) oysters





APPENDIX V

Murray, T. J. and K. Hudson (2011) Virginia Shellfish Aquaculture Situation and Outlook Report: Results of 2010 Virginia Shellfish Aquaculture Crop Reporting Survey, VIMS Marine Resource Report No. 2011-11, Gloucester Point, VA, 16 pp.[3]

SUMMARY – Recent growth of the shellfish aquaculture industry in Virginia has added significant value to the State's seafood marketplace. Today, watermen continue to harvest both hard clams and oysters from the State's public resources, albeit at diminished rates. At the same time, Virginia's watermen-farmers are providing additional quantities of quality shellfish to consumers. In recent years, following the lead of the hard clam industry, a significant transition to intensive aquaculture of native oysters is underway. The once-extensive oyster planting has disappeared primarily as a result of endemic oyster diseases and increasing wildlife predation of seed oysters. In its place is an emerging aquaculture sector based on improved culture techniques and disease-resistant oyster seed. While these trends are widely acknowledged, there has been no consistent reporting of production and economic trends in Virginia's shellfish aquaculture industry. Periodic assessments are necessary to inform growers and related interests about the actual status and trends in the industry. The intent of this survey is to continue annual assessments with which to gauge growth and inputs in Virginia's shellfish aquaculture industry. This report is based upon an industry survey completed during the first quarter of 2011.

[3] Full report available at www.vims.edu/adv.

APPENDIX VI

Accomack-Northampton Planning District Commission (2011) Public Input Summary: Special Area Management Plan - Seaside of Virginia's Eastern Shore[4]

SUMMARY – As part of a Special Area Management Plan (SAMP) supported by the Virginia Coastal Zone Management Program (VCZM) at the Department of Environmental Quality, two public workshops were held on the Eastern Shore in December 2011. The purpose of these workshops was to solicit input from stakeholders, elected officials, and the general public on options for alternative management approaches for the state-owned bottomlands on the seaside of the Eastern Shore, and to present these inputs to the SJR330 study panel. The workshops were advertised in local newspapers, on local radio stations, on the A-NPDC website, and in social media outlets to reach a broad cross-section of the general public. Additionally, personal invitations were sent to known members of major stakeholder groups. One workshop was held in Northampton County on Dec. 8, 2011 from 6:30 – 8:30 p.m. at the Barrier Island Center in Machipongo, VA, and another was held in Accomack County on Dec. 13, 2011 from 6:30 – 8:30 p.m. at the Eastern Shore of Virginia Chamber of Commerce in Melfa, VA.

At the workshops, A-NPDC staff gave a PowerPoint presentation summarizing many of the background issues and some of the data that are outlined in Appendices II-V in this report. They then solicited input on three specific suggestions:

Suggestion 1: Re-survey & redefine appropriate boundaries of all commercial, recreational, & natural resources at 5 or 10 year intervals.

Suggestion 2: Recommend & designate spatial allocations for different uses based on suitability & percentages of bottomlands.

Suggestion 3: Authorize VMRC, with the assistance of a local advisory committee, to refine the boundaries of all commercial, recreational, & natural resources. Evaluate applications based on suitability analysis and requiring public notices & public hearings on a site-specific basis.

The table provides a summary of the comments scored as pro or con for each suggestion.

	Suggestion 1	**Suggestion 2**	**Suggestion 3**
Pro	5	2	4
Con	12	11	13

Most of the comments scored as "Con" relate either to elements that are not included in the study panel recommendations or, especially in case of Suggestion #3, were specific recommendations for how to improve the suggestion as presented at the meeting. With the exception of the comments that suggested making no changes to the current system, the study panel recommendations address most of the concerns expressed at these meetings.

[4] Copies of the full report provided to DLAS and available from the Accomack-Northampton Planning District Commission, 23372 Front Street, Accomac, VA 23301

Accomack-Northampton Planning District Commission

23372 Front Street, Accomac, Virginia 23301

Public Input Summary Report

Special Area Management Plan – Seaside of Virginia's Eastern Shore

Presented to the Study Panel Created by Senate Joint Resolution #330 (2011)

December 2011

Accomack-Northampton Planning District Commission Staff:
Curtis Smith, Director of Planning
Barbara Schwenk, Economic Development Coordinator

Resource Staff:
Virginia Coastal Zone Management Program – Laura McKay, Nick Meade
Virginia Institute of Marine Science – Marcia Berman, Mark Luckenbach
Virginia Marine Resources Commission – Hank Badger, Jack Travelstead, Tony Watkinson
The Nature Conservancy – Bo Lusk, Steve Parker, Barry Truitt, Alex Wilke
Virginia Eastern Shorekeeper – David Burden

This project was funded by the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA10NOS4190205 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Table of Contents

Introduction **1**

Public Meetings..... **4**

Public Comments **6**

Public Input Summary and Conclusions **15**

Appendices

Appendix A - Public Workshop Presentation "Seaside Special Area Management Plan Public Input Workshop", December 8 & 13, 2011

Appendix B – Public Advertisements and Invitations

Appendix C – Public Workshop Agendas, December 8 & 13, 2011

Introduction

The seaside of Virginia's Eastern Shore is a unique and special place. Surrounded by the densely developed megalopolis that sprawls along the Atlantic Coast from Boston to Richmond, it boasts exceptionally clean marine waters, thousands of acres of highly productive salt marshes, mudflats, coastal bays and other habitats. This remarkable and unspoiled natural system is bracketed by undeveloped barrier islands to the east and valuable forests, farms and small villages and towns on the mainland to the west. This ecological system also helps support a clam aquaculture industry with over $50-million in annual sales, a tourism industry with a value to the local economy of $208-million, and thousands of visitors and residents who love to fish, bike, hike, bird, clam and relax here.

Virginia's Coastal Zone Management Program (VCZM) at the Department of Environmental Quality (DEQ), with the support of the National Oceanic and Atmospheric Administration (NOAA), has long supported the Eastern Shore community's efforts to protect and enhance the seaside. In recognition of its important natural and human values, VCZM has made funding available for a series of Special Area Management Planning (SAMP) efforts. In 2002, working with local and state partners, it established the Seaside Heritage Program which invested $2.6-million over 6 years to protect, enhance and restore the resources of the Shore's seaside and to support the local eco-tourism and aquaculture industries. This included: restoration of eelgrass, oyster reef, marsh and shorebird habitats; a survey of the wild oyster population (estimated at 3.2-billion- almost double the number found in the rest of Virginia's waters); improvement of public access sites, a canoe/kayak water trail and map; eco-tourism training and certification; aquaculture Codes of Practice and Best Management Practices; and resource management and education tools. In addition, VCZM's web site has Coastal GEMS, an interactive, user friendly gateway to geospatial inventories and maps of seaside resources and other important information.

Recently, VCZM has supported a SAMP Project Team consisting of the Virginia Institute of Marine Science (VIMS), the Accomack-Northampton Planning District Commission (A-NPDC), the Virginia Marine Resources Commission (VMRC), The Nature Conservancy, the Virginia Eastern Shorekeeper, and private aquaculture businesses. The purpose of the SAMP Team is to map and analyze past, present and future uses and allocations of space on the seaside, to better

understand natural productivity and habitats, to re-evaluate these uses in light of current and projected conditions, and to recommend guidelines for the allocation of space and resources that optimize the environmental and socio-economic benefits derived from this unique ecological system.

The SAMP Project Team used coastal marine spatial planning (CMSP) tools to develop a presentation that was given at a series of public input workshops in Accomack and Northampton Counties in December 2011. CMSP can be defined as "a comprehensive, flexible, integrated, ecosystem-based, and transparent spatial planning process, based on sound science, for analyzing current and anticipated uses of ocean and coastal areas. CMSP identifies areas most suitable for various types or classes of activities in order to reduce conflicts among uses, reduce environmental impacts, facilitate compatible uses, and preserve critical ecosystem services to meet economic, environmental, security, and social/community/cultural objectives."

CMSP tools are seen as a way to help analyze the most productive use of space and minimize/avoid use conflicts on the seaside. For example, the SAMP Project Team was able to look at Baylor Grounds on the seaside and learned that only 43% of natural oyster reefs actually lie within Baylor, 34% of Baylor could be available for other, more productive uses and just 10% might be suitable for clam or oyster cultivation. This analysis also revealed very little, if any, spatial conflict between natural habitats such as mud flats and shell piles for birds, eelgrass and oyster restoration sites, recreational fishing activities and clam and oyster aquaculture sites. In general, suitability analysis for these various habitats and uses indicates that they need to all be taken into account, and can be compatible, given the amount of overall area available on the seaside.

The purpose of the SAMP public workshops was to present the information gathered by the SAMP Project Team to seaside stakeholders, elected officials, and the general public and to solicit insights and input to help guide VMRC's and the legislature's future actions. State Senator Ralph Northam sponsored a resolution, passed by both houses, establishing a Study Panel to examine seaside habitats, uses and suitabilities and report back to the legislature with more flexible and efficient management approaches in January, 2012. Public input was recorded and compiled in the current report to aid the Study Panel with their deliberations.

Public Meetings

A series of public workshops were held in December 2011 to both present information on the past, present, and future environmental and socio-economic conditions on the seaside and to solicit insights and input from the general public, stakeholders, and elected officials. The presentation given at the workshops is included in **Appendix A**.

The public workshops were strategically scheduled and advertised to optimize the public input solicitation process across the entire Eastern Shore. Workshops were held in Accomack and Northampton Counties in order to reach seaside stakeholders across the entire Eastern Shore. The workshops were advertised in local newspapers, on local radio stations, on the A-NPDC website, and in social media outlets to reach the general public. Additionally, the SAMP Project Team compiled a list of known seaside stakeholders from each primary stakeholder group and personally extended invitations via letters and electronic mail. Advertisements and invitations are included in **Appendix B**.

The public workshops were held on the following dates and at the following locations:

> *Thursday, December 8, 2011 from 6:30 – 8:30 p.m. at the Barrier Islands Center in Machipongo, Virginia*
>
> *&*
>
> *Tuesday, December 13, 2011 from 6:30 – 8:30 p.m. at the Eastern Shore of Virginia Chamber of Commerce in Melfa, Virginia.*

The workshop agendas are included in **Appendix C**. The workshops were facilitated by A-NPDC staff and SAMP Project Team members were present to field questions regarding the SAMP process.

A-NPDC staff gave the presentation and then offered three suggestions for potential management scenarios that each differed from the current system on the seaside. The three suggestions presented were intended to generate discussion and comments amongst workshop participants and were as follows:

1) **Suggestion 1**: *Re-survey & redefine appropriate boundaries of all commercial, recreational, & natural resources at 5 or 10 year intervals.*

2) **Suggestion 2**: *Recommend & designate spatial allocations for different uses based on suitability & percentages of bottom lands.*

3) ***Suggestion 3***: *Authorize VMRC, with a local advisory committee to assist VMRC to refine the boundaries of all commercial, recreational, & natural resources. Evaluate applications based on suitability analysis and requiring public notices & public hearings on a site-specific basis.*

A-NPDC staff then fielded questions related to the presentation and redirected questions to SAMP Project Team members as needed. The public comment period was organized to allow each workshop participant the opportunity to submit comments in an interactive manner. Participants were provided comment cards and instructed to submit both pro and con comments for each of the three suggestions presented. A final space was allotted for participants to provide additional insight and input that was not captured by the three suggestions. Comment cards were color coded to allow for simple analysis and provide immediate feedback. Participants were given 30 minutes to develop and submit comments. A-NPDC staff analyzed comments as they were submitted and wrapped up the workshops by giving an overview of comments received. Participants were also offered the opportunity to submit additional comments via email to A-NPDC staff after the workshops.

The public workshops were attended by over 50 people and 36 signed up to be included on a distribution list that will disseminate information regarding the seaside SAMP process going forward. **Figure 1** shows A-NPDC staff presenting at the December 13 workshop.

Figure 1 – A-NPDC staff presenting and facilitating the Seaside SAMP Public Workshop on December 13, 2011 in Melfa.

Public Comments

Tables 1-4 summarize all public comments received during the workshops and in emails following the workshops.

Table 1 **Public Comments on Suggestion 1:** **Re-survey & redefine appropriate boundaries of all commercial, recreational, & natural resources at 5 or 10 year intervals.**
Pro Comments (5 received)
Re-survey should be done since so much has changed over 120 years.
Re-survey Baylor (20 years?).
Resurvey Baylor ground that has shifted either upland or into ocean and add additional acres from 83,000 acres of unassigned.
Benefit would be that areas of Baylor grounds that are now subtidal (and largely without reefs and unclammable as well) or in the ocean or on a barrier through barrier island retreat could be removed from consideration. - Ed Hopkins
This would provide periodic updates and inventory of resources without which you cannot properly adapt and manage sensibly.
Con Comments (12 received)
Re-survey should not be any less than 10 years.
Would a resurvey be a new survey of (just) the existing Baylor grounds or of the entire seaside? If the latter, would current leased ground be at risk of "rezoning" for public use?
You cannot zone a dynamic system and expect folks to invest labor, BMPs, and capital in a 5-10 year plan.
The survey must involve the user if grounds are swapped; also, make sense the user if taken and have user's concurrence.
At 200,000 to 555,000 it is too expensive to fund every 5 to 10 years.
Environmental conservationists, boat recreation, homeowner, recreational fishermen, and clammers could lose out through non-representation on committees. All stakeholders need to share aquaculture. Clam beds can interfere with boating, recreational shell. and fin fishing (and environment?) - Ed Hopkins
Do not break the Baylor!
Folks, this Baylor ground has been there for <u>all Virginians</u>. Please don't take it away. The loss of and migration of barrier islands is a fact of nature, live with it.
Do nothing.
Baylor Ground should be for public use.
Leave Baylor alone.
Will a current lease holder lose his lease to make up the shortfall in the Baylor survey if there is no net loss to Baylor ground and some of the Baylor ground is used for aquaculture? - Wanda Thornton

Table 2 **Public Comments on Suggestion 2:** **Recommend & designate spatial allocations for different uses based on suitability & percentages of bottom lands.**
Pro Comments (2 received)
Redesignate Baylor lands – keep acreage same – but eliminate >2010 subtidal, barrier, mudflat, or barrier island from Baylor ground. Pick up new public Baylor ground. - Ed Hopkins
Compared to aquaculture, the public wild harvest contributes to less than one percent of the state harvest. The Baylor system is a waste.
Con Comments (11 received)
Who would determine use and suitability? Would it change over time? With administrations? With local VMRC staff? Not a good plan.
Don't have the appropriate data (bathymetry, bottom type, etc.) to determine suitability.
Percentages don't capture Constitutional mandate – must protect all natural oyster beds. Also, doesn't allow for growth if all percentages stay the same.
For commercial activities, things can change quickly (new species, new techniques) and a reasonable allocation one year could be completely inappropriate a short time later.
Mapping of the spatial allocations must make sense to both large and small resource managers or users.
Baylor ground is the only ground guaranteed to the public for any local activity. So, there is no need to allocate it to different user groups.
Baylor lands could be redesignated as to 2000's viability keeping acreage same (by trade off/substitution). Otherwise, could allocate incorrect proportions of citizen vs. commercial usage. - Ed Hopkins
Do not break the Baylor!
If there are people who want more ground, take it from the grounds currently available for lease. Then show everybody that this is sustainable aquaculture. Question: Who is going to replenish the turned out, exhausted ground?
Leave Baylor alone.
Do nothing. VMRC is doing a good job.

Table 3 **Public Comments on Suggestion 3:** **Authorize VMRC, with a local advisory committee to assist VMRC to refine the boundaries of all commercial, recreational, & natural resources. Evaluate applications based on suitability analysis and requiring public notices & public hearings on a site-specific basis.**
Pro Comments (4 received)
If this applies only to bottom currently in Baylor, but requested for private lease, could be reasonable approach. No reason to change how current practice of applying and obtaining ground already designated as available for private lease.
Reduces political influence on resource allocation by taking General Assembly out of the mix.
Make sure the unrepresented recreational interests are protected.
VMRC will probably be better suited to determine uses of natural resources.
Con Comments (13 received)
If commercial means leased areas, we already have public notice and a hearing if there are objections. If every lease had to go to public hearings, it would be an unwieldy system.
Don't have the appropriate data for suitability analysis. Need to collect it.
Don't want to give one organization the decision making ability.
This zoning will cause the loss of the current $50M industry and prevent future growth.
Don NOT change process for leasing ground. It works efficiently and well.
If new ground becomes available, there can not be a gold rush. Ground should be allocated in some other way than first come first serve.
Do not break the Baylor!
VMRC is doing a great job under current laws. Do nothing.
Local government and private stakeholders should have a role in deciding the allocation of resources through the Committee including the regulated industries.
Limited number of acres per company and/or individual people in that company. If more acres are released from Baylor. A certain few companies can monopolize the newly released ground.
Leave the Baylor alone.
Committee should include recreation, natural fisheries, aquaculture, research. Not the Nature Conservancy. They not receive special consideration.
Not knowing the make-up of the advising panel, it could be bias in any direction.

Table 4 **Public Comments Including Insight and Input Not Included within Suggestions 1-3.**
Must maintain current leases and lease system. If Baylor comes available, potential users for aquaculture should demonstrate past participation in industry.
Start enforcing existing lease use requirements by retrieving unused resources.
Gather data appropriate to making decisions and defining suitability before making decisions and defining suitability!
Need new survey to determine where natural oyster (shellfish) restoration can occur. These grounds need to be reserved for restoration.
Current aquaculture leasing process is efficient. DO NOT change leasing process.
Re-do Baylor survey but include clam aquaculture along with potential for oysters.
CURRENT LEASE GROUNDS SHOULD NOT BE CHANGED.
When considering the criteria for the "appropriate" use of new grounds, take into account both potential productivity levels* from growers as well as the potential for employment opportunities. * In terms of clam/oyster seed planted and/or sales revenue
No. Do nothing.
As a recreational angler, I am concerned about fishing places being taken over and fishing excluded from large areas. Also, it may be unconstitutional for the state to set aside publically owned grounds for the exclusive commercial use of private individuals.
Do nothing.
Extend comment period 30 days and notify all lease holders for comment.
No new regulations.
Let's face it, this has already been decided. The greed and wants of a few have been satisfied at the expense of the needs of the many. Shame on all parties involved.
Recreational representatives need to be part of any advisory committee, equal to aquaculture and commercial watermen, and proportional to the value of recreational fishing to the economy of the Eastern Shore.
Hold new public hearings including the draft findings by the Committee and have the Committee members here to answer questions.
Do nothing.
Do nothing. Leave as is.
Need to look at Marine Sanctuary or Marine Research Reserve and their takeover of ground.
It's too big of an issue that effects too many people on the Shore to be decided in two days.

Table 4 (continued)
Look at concurrent jurisdiction such as the federal agencies' policies or solicitor opinions such as Fish and Wildlife and the National Park service; including the National Sea Shore agreement.
In defense of the positive impact which shellfish aquaculture production can offer to the seaside, I would like to say that hard shell clams and oyster populations: 1) Filter algae and nitrogen levels of which high levels can be detrimental to submerged vegetation. This natural process allows more sunlight to reach plants on the bottom which they can feed on. 2) The increase in SAV not only serves as a source of food for aquatic life, but also serves as a cover crop which can help to stabilize the bottom from dynamic erosion. 3) Finally, shellfish fields themselves help to stabilize the bottom floor from erosion.
Leave Baylor as is and add additional bottom that currently have natural oyster reefs on it.
Reclassify. Keep a decided upon percent of resource producing environments dedicated to public and rest to commerce. Give up "Baylor Grounds" but avoid "land grab" by commerce to protect ecotourism and citizens. - Ed Hopkins

During the public workshops, participants indicated that additional time was necessary to develop written ideas and insight. The following comments were submitted to A-NPDC staff.

Comment A – Anonymously Submitted

Recommendations for the Seaside SAMP

1. Tweak or update the existing Baylor Survey lines to eliminate all obvious mistakes. Keep it as a survey of existing or potential shellfish ground, i.e. for the natural propagation and/or restoration of oysters, wild clams, and seagrass/bay scallops.
2. Take back all leased ground from individual lessees that are presently not being used in any manner for shellfish propagation. Use harvest records and licenses to determine the proper use for shellfish propagation.
3. Eliminate the practice of individuals leasing private ground for clam dredging. In fact eliminate all clam dredging on the seaside. It's not propagation of shellfish nor is it sustainable. It is highly destructive.

4. Remind lessees that their grounds are owned by the citizens of the Commonwealth and it is a privilege, not a right, for them to utilize these grounds for their profit
5. Do not allow clam aquaculture companies and individuals to flip-flop their worn old clam beds for new virgin Baylor ground. If clam aquaculture is going to be sustainable going forward, it must occur within the present system of leased grounds or available for lease grounds and also involve crop rotation and other sustainable practices. Eliminate the harvest practice of washing clams with large HP outboard motors. It destroys the bottom and is not sustainable. Small mechanical hand dredgers and rakes should be allowed.
6. Set up and fund a process over 3-5 years to gather and synthesize the data needed to conduct suitability analysis of the coastal bays for different values including clam aquaculture, oyster and seagrass restoration, ecotourism, and other natural values. First data to be collected would include bathymetry and bottom types.
7. Once all the above is accomplished, then and only then consider revamping Baylor ground in light of oysters and oyster restoration, wild clams and aquaculture, seagrass restoration and bay scallops, ecotourism, and other natural values such as the global value of the coastal bays to migratory birds.

Comment B – Town of Chincoteague

Virginia Seaside SAMP

Concerns/Solutions
Public Workshop - December 13, 2011

1. Local government and regulated industries are excluded from the 'partners' list	Local government and private industry should have a role in deciding "*the allocation of resources in a manner that optimizes the environmental and socio-economic benefits derived from these unique systems*" whether on land or within the coastal bays area. Support for multiple uses, marine spatial planning, and a local advisory committee to assist VMRC to refine boundaries.
2. Mapping must make sense to both large and small resource managers/users	Broad management strategies must make sense to the individual VMRC leaseholder who has made investment, income and lifestyle decisions on natural resource uses. Prepare and evaluate alternate solutions that make sense in one location under control by a conservation owner and other solutions if necessary for areas surrounding traditional fishing communities (one size does not necessarily fit all)
3. What happens to private lease areas of State bottom land?	The case has been made to re-map the Baylor Grounds. Any other areas subject to change such as private lease areas should be the subject of additional public workshops
4. No new regulations	Several SAMP partners typically only use one tool to measure ecosystem function and habitats – the impact of human activities. This tool often produces the result of more regulation that limits human impacts. Identify a SAMP partner that will use a tool to measure the socio-economic benefit to the Commonwealth of Virginia and the local communities of the Eastern Shore. Revise mapping without new rules.
5. Applied research	All research activities identified under this SAMP should require applications that provide positive commercial use of natural resources and economic benefit
6. Concurrent jurisdiction	Virginia must review the Federal Agency policies and Solicitor opinions that being built on the back of 'concurrent jurisdiction'. Concurrent jurisdiction on the above

	mentioned lands and waters pursuant to the Deed of Cession, as further discussed below, became effective upon acceptance by the National Park Service and the United States Fish and Wildlife Service, and the subsequent recording of the Deed in Accomack County, Virginia on December 17, 1993, at 1:20 p.m. *SUPPLEMENTARY INFORMATION: On December 17, 1993, a Deed of Cession of jurisdiction changes in Accomack County, Virginia was recorded in the Clerk's Office of the Circuit Court of Accomack County, Virginia at 1:20 p.m. The Deed of Cession cedes to the United States concurrent jurisdiction over those portions of Assateague Island National Seashore, managed by the National Park Service, and Chincoteague National Wildlife Refuge and Wallops Island National Wildlife Refuge, managed by the United States Fish and Wildlife Service. Acting upon a request of the National Park Service and the United States Fish and Wildlife Service to convey concurrent jurisdiction over lands and waters situated within the administrative boundaries of the above mentioned Federal reserves, the Deed of Cession was signed on February 24, 1993, by then Governor of Virginia, the Honorable L. Douglas Wilder, and by then attorney General of Virginia, Stephen D. Rosenthal, pursuant to the authority conferred upon them by section 7.1-21 of the Code of Virginia. The jurisdiction cession was accepted on September 15, 1993 by Roger G. Kennedy, Director of the National Park Service, and Richard N. Smith, Deputy Director of the United States Fish and Wildlife Service, Department of the Interior, pursuant to the authority conferred by section 255 of title 40 of the United States Code.*
7. SAV restrictions/TES waters/Anadromous Fish Use Areas	Page 31 of the powerpoint presentation shows the scientific data collection and mapping that is available for public information on the Coastal GEMS website. There needs to be a very firm line

	created between map information and a map that is adopted for regulatory or management purposes. This public workshop has directed attention toward the shellfish industry and the Baylor Grounds mapping. The public needs to understand to what extent subaquatic vegetation(SAV), threatened and endangered species(TES) and anadromous fish use areas will restrict all other shared use of the Coastal Bays. Support of one element of the SAMP, the Baylor Grounds, should not be taken as a blanket support for mapping and control of all the resources equally.
8. Marine Sanctuary/Marine Research Reserve	Both NPS and FWS have proposed a Marine Reserve in Central Chincoteague Bay that has the potential to dramatically change the permitted use of a shared set natural resources. The Virginia SAMP needs to deal with this issue head on and inform the public about what is really intended.

Public Input Summary and Conclusions

Several recurring themes were recognizable in public comments from both workshops for each of the three suggestions made. These themes are summarized in the following sections.

<u>Suggestion 1</u>: *Re-survey & redefine appropriate boundaries of all commercial, recreational, & natural resources at 5 or 10 year intervals.*

Comment Total (17) – Pro (5), Con (12)

Recurring Themes –

Pro:

- Resurveying is needed and would allow for adaptation and sensible management
- Baylor grounds should reflect current environmental conditions

Con:

- Leave current system as is/Do nothing (5 comments)
- Resurveying of Baylor Grounds cannot include taking of current leased lands
- All stakeholders must be properly represented in development of any new management system
- If new surveys done, they should be done at least 10 years apart

Suggestion 2: *Recommend & designate spatial allocations for different uses based on suitability & percentages of bottom lands.*

Comment Total (13) – Pro (2), Con (11)

Recurring Themes –

Pro:

- Baylor grounds determined not suitable for shellfish growth could be better utilized for other uses

Con:

- Leave current system as is/Do nothing (4 comments)
- All stakeholders must be properly represented in development of any new management system
- System would require improved data on seaside uses and suitability
- System would not allow for economic growth
- Suitability determination would have to be immune and protected from politics
- Suitability changes more frequently than system could manage

Suggestion 3: *Authorize VMRC, with a local advisory committee to assist VMRC to refine the boundaries of all commercial, recreational, & natural resources. Evaluate applications based on suitability analysis and requiring public notices & public hearings on a site-specific basis.*

Comment Total (17) – Pro (4), Con (13)

Recurring Themes –

Pro:

- VMRC probably best suited to determine uses of natural resources
- System is protected from political influence

Con:

- Leave current system as is/Do nothing (4 comments)
- All stakeholders must be properly represented in development of any new management system (3 comments)
- System could result in a few companies monopolizing resources (2 comments)
- System would require improved data on seaside uses and suitability
- System would not allow for economic growth

- System should not change the current application and lease system

In conclusion, the A-NPDC facilitated two public workshops to engage seaside stakeholders on the Eastern Shore in an effort to solicit their input for consideration by the study panel created by Senator Northam's joint resolution, SJR-330. The A-NPDC presented three theoretical management scenarios to generate discussion and guide the public input process. Participants were also encouraged to develop and submit concepts that were not included within the realm of the suggestions. These comments were taken both during and after the workshops and compiled by A-NPDC staff for submission to the SJR-330 Study Panel.

Workshop participants were directed to submit comments for and against the three proposed theoretical suggestions. The vast majority of comments were against the proposed theoretical management scenarios with most comments suggesting that no changes be made to the current system and if changes are to be made, they should be done so only if adequate suitability and use data is first attained and if any advisory panels formed consist of local stakeholder representatives from all different seaside stakeholder groups. A fewer number of comments received acknowledged potential positive impacts of any changes made to the current management system. The greatest number of comments not related to the three suggestions were related to the public input process and many stakeholders requested more opportunities to provide input to be considered by the SJR-330 Study Panel.

The A-NPDC respectfully requests that each comment received during the public workshops is reviewed and thoroughly considered by members of the SJR-330 Study Panel.

<u>Appendix A</u>
Public Workshop Presentation
"*Seaside Special Area Management Plan Public Input Workshop*"
December 8 & 13, 2011

Seaside
Special Area Management Plan
Public Input Workshop

Partners:
Accomack-Northampton Planning District Commission
Virginia Institute of Marine Science
Virginia Marine Resources Commission
The Nature Conservancy
Virginia Eastern Shorekeeper
Virginia Coastal Zone Management Program

Funded by Virginia Coastal Zone Management Program

Virginia Coastal Zone
MANAGEMENT PROGRAM

SAMP Mission

- to map, analyze, and interpret the current uses, economic values, and ecosystem functions associated with habitats in the seaside bays;
- to re-evaluate these uses in light of current and projected conditions;
- to recommend guidelines for the allocation of resources in a manner that optimizes the environmental and socio-economic benefits derived from these unique systems

Meeting Purpose:

To solicit public input

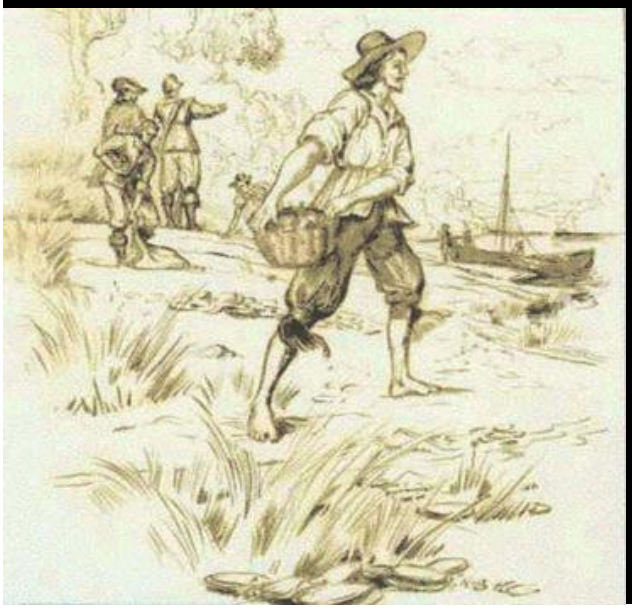
- What's important to you?
- What are your concerns?
- Suggested solutions?

Principal Issues

- We have an obligation to protect and enhance the natural resources and habitats on the seaside;
- We have a desire to promote sustainable shellfish aquaculture;
- We have a responsibility to support the management and fishery of wild shellfish populations

The Early Years

1600s



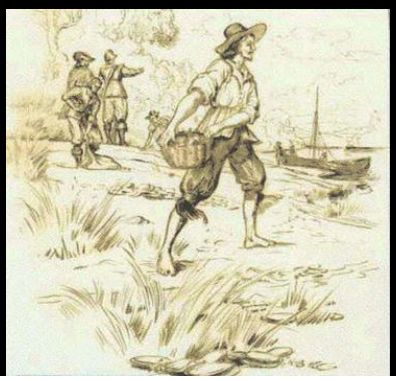
"mussels and oysters . . . lay on the ground as thick as stones."

Captain John Percy (one of John Smith's shipmates), 1607

1700s

"…There are whole banks of them so that the ships must avoid them. . . . They surpass those in England by far in size, indeed they are four times as large." -

Francis Louis Michel, 1701



Early 1800s

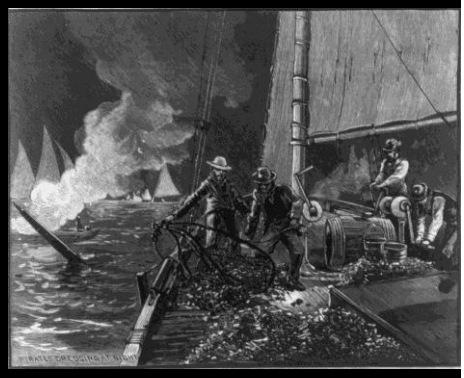
- Populations increased as more European settlers arrived
- Oysters were abundant and provided cheap food
- The oyster industry exploded

Mid-1800s

- Commercial fisheries were on the rise
- Recreational uses flourished

Late 1800s

- Oyster populations were being decimated by dredging;
- The first legislation to protect oysters via license fees and seasonal limits were put in place (1870s);
- Clashes between authorities, legal watermen, and oyster pirates became known as the Oyster Wars (1865-1959)



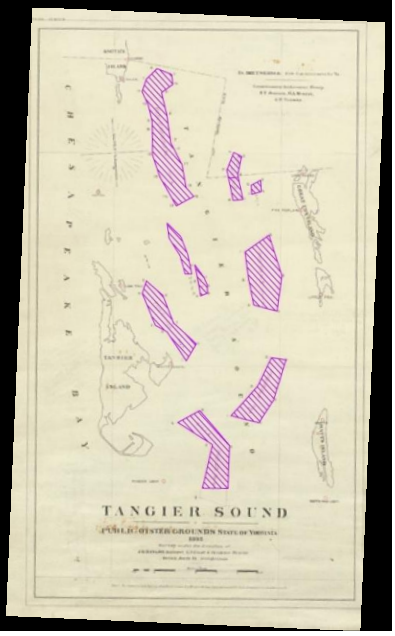
Protection of Public Shellfish Beds in Virginia

Virginia Constitution Article XI, Section 3

Requires that the state maintain the natural shellfish beds in state-owned submerged bottoms for the benefit of the citizens of the Commonwealth.

Baylor Ground Surveys

- 1890: General Assembly commissions Lt. Baylor of the US Navy to survey the productive shellfish beds
- 1895: Surveys are completed
- 1924: Request to re-survey shellfish beds was never done



Baylor Grounds Today

Baylor has defined public shellfish grounds for 120 years.

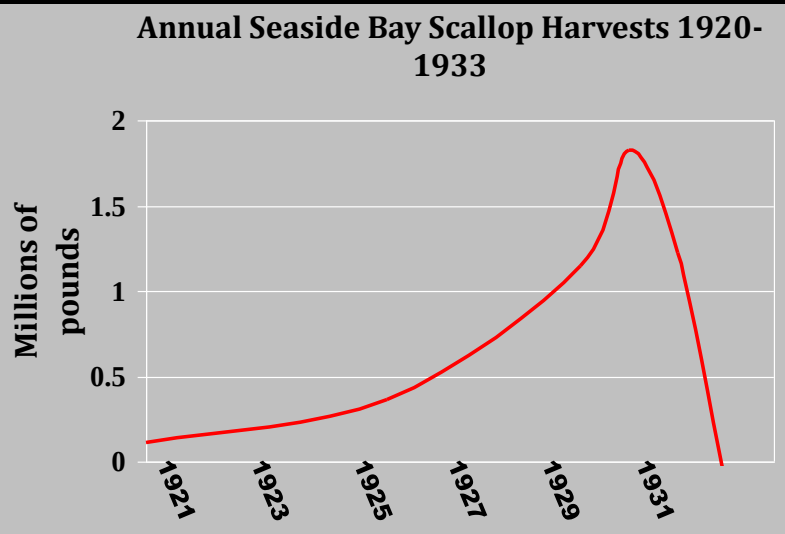
VA Code 28.2-603
Areas of state-owned submerged bottom not included in Baylor, or otherwise protected, are available for leasing by the Commonwealth for the "purpose of planting and propagating shellfish"

1930s

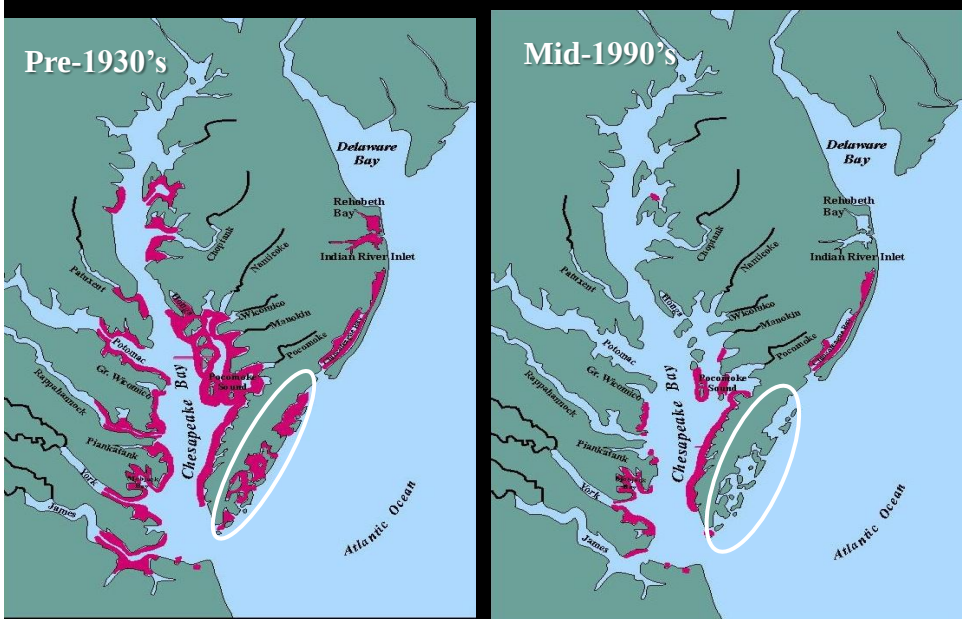
Baltimore Sun File Photo

Hurricanes, eelgrass, disease, and over-harvesting wiped out the seaside's natural resources and ecotourism.

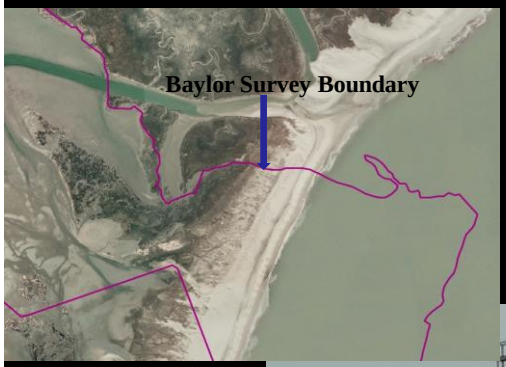
Decline in Seaside Bay Scallops



Loss of Submerged Grass Beds



Changing Landscape



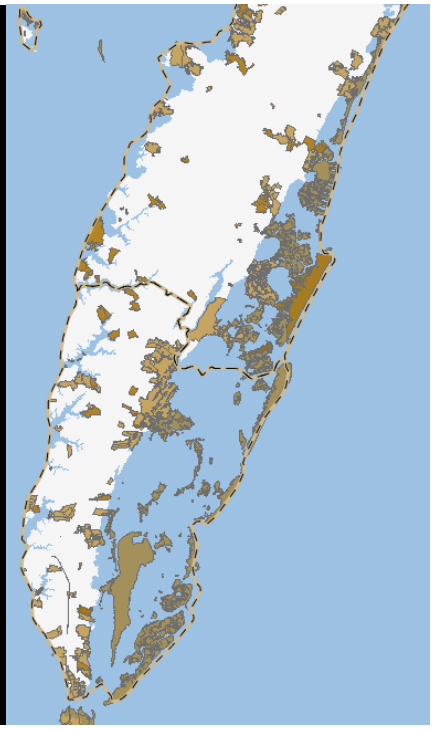
Summarizing Decades of Declining Resources

- Decline in shellfish → decline in prosperity
- Loss of SAV → decline in finfish and crab habitat
- Movement of seaside barrier islands →
  - shifting bird habitat
  - reduced recreational opportunities

The Rebirth (1960s-present)

Land Conservation and Protection

- Since 1960s: $100 million public & private funds invested → 112,000 acres protected
- 1972: Virginia adopts the Tidal Wetlands Act → 82,962 acres of vegetated wetlands protected on the seaside



Aquaculture is Launched

1980s: clam aquaculture launched

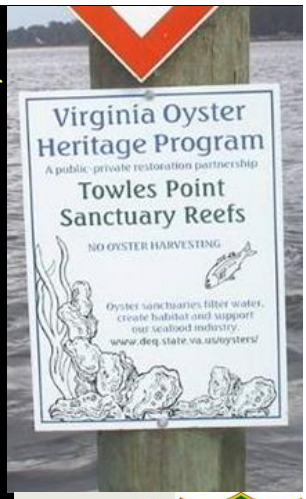
2005: hatchery-based oyster aquaculture begins

→ $220K for research and development
water quality, best management practices, growth impacts

→ $50 million industry

Oyster Reef Restoration

- ~ $1,545,000 to create ~50 acres of reefs
- $140,000 for oyster inventory
  - 3.2 billion oysters on the seaside (2006)



Sea Grass Restoration

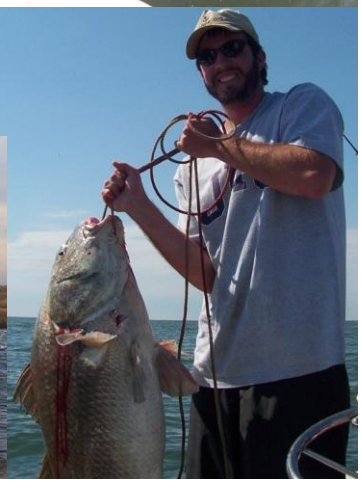
300 acres of seagrass planted
spread to ~ 5,000 acres

Bay Scallop Restoration

Three years after re-introduction of the Bay Scallop
…. there are promising signs

Recreational Fishing

- Increase in public access
- New businesses
  - Bait shops, marinas, lodging, restaurants and fuels facilities



Ecotourism

- Increased public access and nature trails
- National Wildlife Refuge
  - $61million/yr economic impact
  - > 2 million visitors annually
- Kiptopeke State park
  - ~500,000 people annually
- Bird Habitat Restoration & birdwatching

Multi-Use Environment

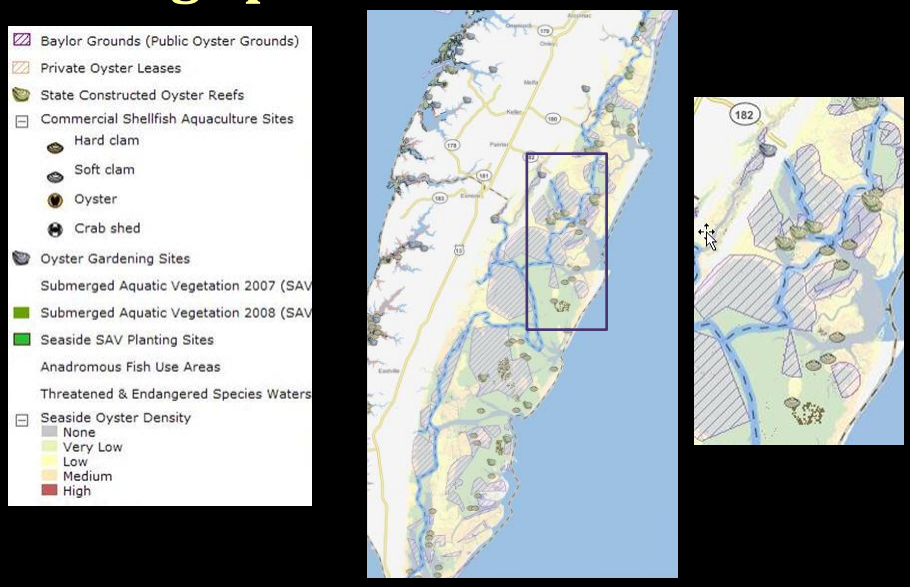
Multiple Uses → Competition for Space

Marine Spatial Planning

Designation of state-owned bottom

Component	Acreage	%
State-owned bottom	153,176	
Unassigned	83,861	55
Baylor grounds	50,256	33
Leased bottom	19,059	12
		100
Eelgrass coverage (2011)	5,000	4
Restored oyster areas	2,000	2

Existing Spatial Allocations



Principal Issues

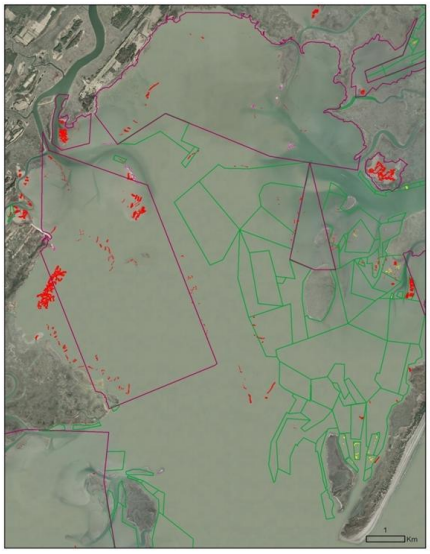
- We have an obligation to protect and enhance the natural resources and habitats on the seaside;
- We have a desire to promote sustainable shellfish aquaculture;
- We have a responsibility to support the management and fishery of wild shellfish populations

Need flexible policy to manage a diverse and dynamic system; without compromising our need to protect public resources

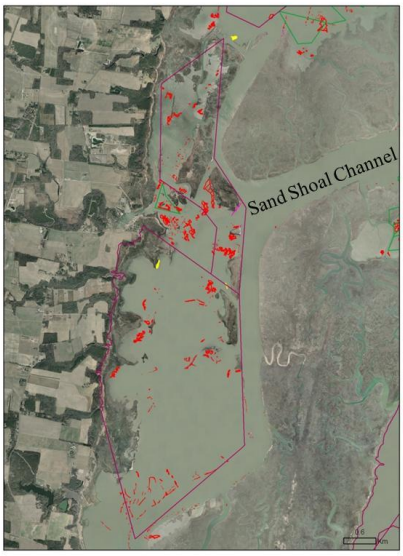
Baylor boundaries do not reflect current conditions

Natural beds outside of Baylor

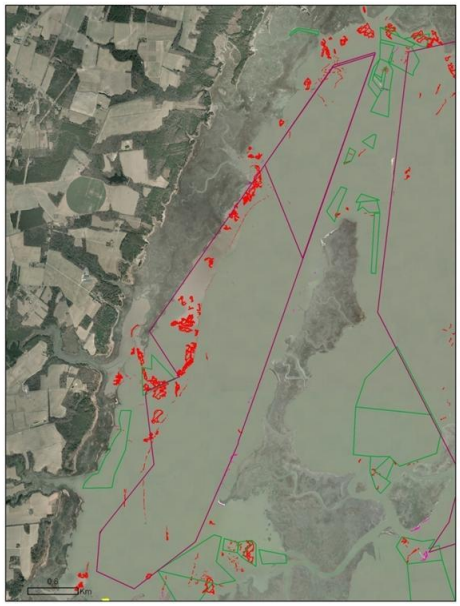
Hog Island Bay

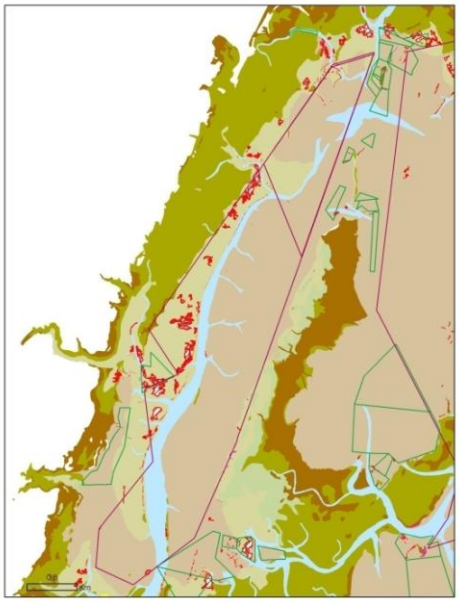


Sand Shoal Channel



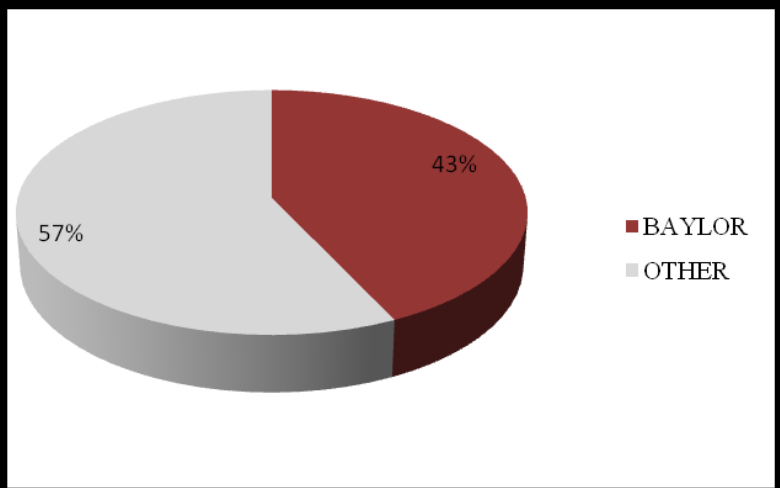
Ramshorn Bay





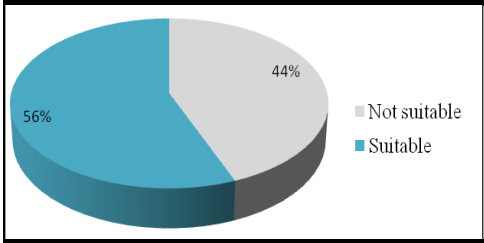
Current Distribution of Natural Reefs

- 43% of "natural" reefs lie within Baylor Ground
- 57% of "natural" reefs lie outside outside of Baylor.

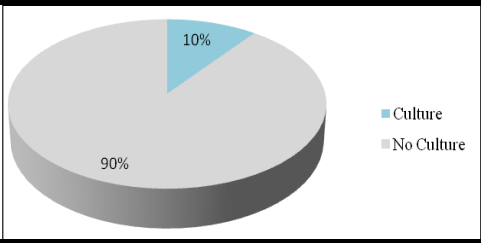


Conditions within Baylor

56% suitable for oyster restoration
or have wild oysters



10% suitable for hard clam and oyster cultivation



Summary of Baylor

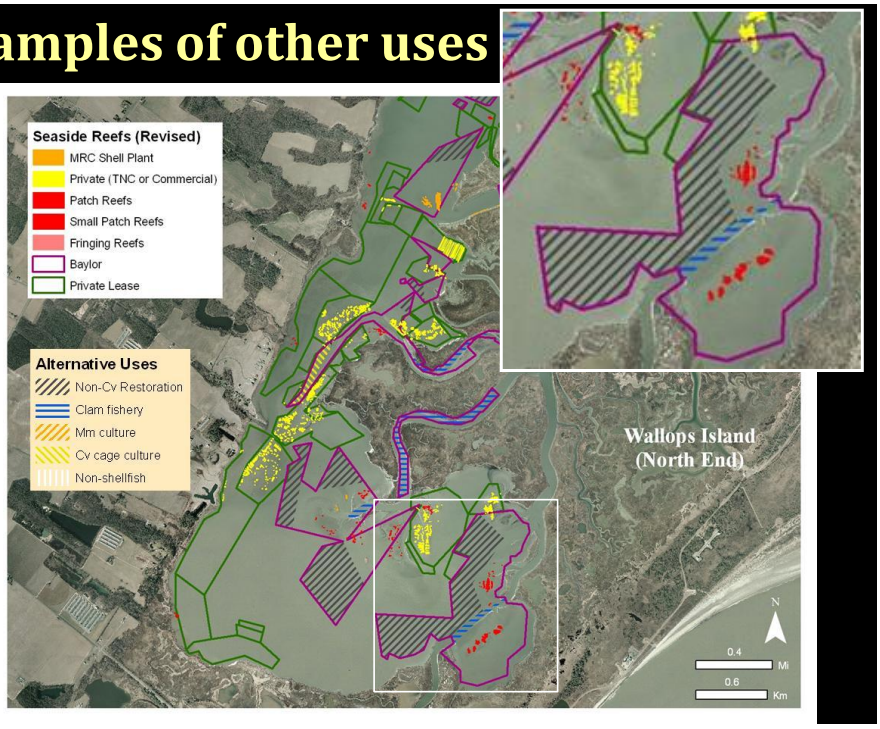
Only 56% have wild beds or are suitable for restoration

Only 10% suitable for clam or oyster cultivation

Only 43% of natural reefs actually lie within Baylor

34% of Baylor could be available for other uses

Examples of other uses



Policy Measures to Address these Issues

Senator Northam's Senate Joint Resolution #330

Senate Joint Resolution #330

RESOLVED by the Senate, the House of Delegates concurring,

That the Virginia Institute of Marine Science and the Virginia Marine Resources Commission be requested to jointly study ways the subaqueous bottomland on the seaside of Virginia's Eastern Shore might be better utilized.

Senate Joint Resolution #330

Study Panel shall examine how these bottomlands can be utilized to:

(i) support the management and fishery of wild shellfish populations,
(ii) promote sustainable shellfish aquaculture,
(iii) enhance habitat restoration, and
(iv) protect natural resources.

And recommend more flexible and effective allocation of space on the Seaside

Suggestions

Suggestion 1: Re-survey & redefine appropriate boundaries of all commercial, recreational, & natural resources at 5 or 10 year intervals.

Suggestion 2: Recommend & designate spatial allocations for different uses based on suitability & percentages of bottom lands.

- Example: The % public ground stays the same, but could be re-located by VMRC.

Suggestion 3: Authorize VMRC, with a local advisory committee to assist VMRC to refine the boundaries of all commercial, recreational, & natural resources. Evaluate applications based on suitability analysis and requiring public notices & public hearings on a site-specific basis.

We Need Your Input

Appendix B
Public Advertisements and Invitations

AQUACULTURE, FISHING, BIRDING, BOATING, WILD HARVEST, RESTORATION

Public Workshops on the Past, Present and Future Management of Marine Resources on the Seaside

Thursday, December 8, 2011, at the Barrier Islands Center, just off Rt. 13, Machipongo from 6:30 - 8:00 p.m.

and

Tuesday, December 13, 2011, at the Eastern Shore Chamber of Commerce, just off Rt. 13, Melfa from 6:30 - 8:00 p.m.

The purpose of the workshops is to gain your views of what policy and regulatory changes might be made to help the Virginia Marine Resources Commission more effectively manage and allocate state-owned subaqueous bottomland on the seaside of Virginia's Eastern Shore.

Hosted by The Accomack-Northampton Planning District Commision

Sponsored by The Virginia Coastal Zone Management Program

Contact Curt Smith (757) 787-2936
csmith@a-npdc.org

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A-NPDC
Virginia's Eastern Shore
ACCOMACK-NORTHAMPTON PLANNING DISTRICT COMMISSION
P.O. BOX 417 • 23372 FRONT STREET • ACCOMAC, VIRGINIA 23301
(757) 787-2936 • TOLL FREE (866) 787-3001 • FAX: (757) 787-4221
EMAIL: anpdc@a-npdc.org • WEBSITE: www.a-npdc.org

November 21, 2011

Dear Seaside Stakeholder:

The Accomack-Northampton Planning District Commission (A-NPDC) is pleased to invite you to a Public Workshop on past, present and future uses of the seaside bays of Virginia's Eastern Shore.

Two workshops will be held as follows:

Thursday, December 8, 2011 at the Barrier Islands Center, just off Rt. 13, Machipongo from 6:30 – 8:00 p.m.

&

Tuesday, December 13, 2011 at the Eastern Shore Chamber of Commerce, just off Rt. 13, Melfa from 6:30 – 8:00 p.m.

The purpose of the workshops is to gain your views of what policy and regulatory changes might be made to help the Virginia Marine Resources Commission (VMRC) more effectively manage and allocate state-owned subaqueous bottomland for aquaculture, wild harvest, restoration, fishing and other recreational uses in the face of dynamic changes to the seaside bays, marshes and other habitats.

Background:

The Virginia Constitution (Article XI, Section 3) requires that natural shellfish beds in state-owned submerged bottomlands be maintained for the benefit of the citizens of the Commonwealth. The state-owned bottom lands on the seaside are currently designated based on surveys completed in 1895 known as the Baylor Ground Surveys. These surveys are presently relied on despite a need for re-surveying that was identified in 1924 due to the drastically changing seaside environment. In order to develop a management protocol that could maximize the efficiency of state-owned bottomlands for the broad array of users that economically depend on the seaside's natural resources, the Commonwealth adopted Senator Northam's Senate Joint Resolution No. 330 in 2011, which tasked the Virginia Institute of Marine Science (VIMS) and VMRC to jointly study ways the subaqueous bottomland on the seaside of the Eastern Shore might be better utilized and make recommendations to the Governor and General Assembly by January 1, 2012. The A-NPDC has been tasked to solicit

public input that will be included in VIMS and VMRC's report and recommendations to the Governor and General Assembly.

Following a presentation on the historical and current state of the natural environment on the seaside, you will be invited to provide your input on how to protect, enhance, and restore the seaside's natural resources, promote sustainable shellfish aquaculture, and support the management and fishery of wild shellfish populations. Furthermore, the A-NPDC will request you to share what is important to you and what your concerns are, as well as suggesting solutions for how to best manage the multi-use seaside environment. Your input will be recorded by A-NPDC staff and summarized in a report that will be submitted to the joint state panel.

A-NPDC staff will be on hand to record all input and suggestions and representatives from VIMS, VMRC, the Nature Conservancy, and Virginia Eastern Shorekeeper will be in attendance to serve as an informational resource and assist in answering any questions you may have. Refreshments and light appetizers will be served.

If you have any questions, I may be reached by emailing to csmith@a-npdc.org or calling (757) 787-2936, ext. 114.

Sincerely,

Curt Smith
Regional Planner

Virginia Coastal Zone

The Seaside Special Area Management Plan and these workshops are funded by multiple grants from the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA10NOS4190205 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Appendix C
Public Workshop Agendas
December 8 & 13, 2011

Seaside Special Area Management Plan (SAMP) Public Input Workshop

December 8, 2011
6:30 – 8:00 p.m.
Barrier Islands Center, Machipongo, VA

AGENDA

6:30 - 6:35	Introduction
6:35 - 7:05	Presentation
7:05 – 7:15	Questions from Workshop Participants
7:15 – 7: 40	Public Comment Period **Participants will submit comments on comment cards provided to them during the meeting.*
7:40 – 7:55	Public Comment Review and Summary
7:55 – 8:00	Review of Next Steps
8:00	Adjourn

Guidelines for Seaside SAMP Public Input Workshop:

- If you would like to join a distribution list to receive updates and other relevant information regarding the Seaside SAMP process, then please provide your email address on the sign-in sheet near the entrance.
- Please mute or turn-off your cell phones to minimize interruptions.
- Listen with an open mind and heart – it allows deeper understanding and, therefore, progress.
- Please write comments and suggestions legibly on the comment cards so that your submission is accurately recorded.
- Signing your name to the comment card is optional. If you would like to have your name accounted for, then please sign the card at the bottom and consider including other information such as town or county of residence and connection to the seaside (*i.e.* wild harvester, recreational fisherman, interested resident, etc.)
- Please ask A-NPDC staff members, Curt Smith or Barbara Schwenk, if you need assistance with properly submitting your comments and they will gladly assist you.

Virginia's Eastern Shore
A-NPDC

Virginia Coastal Zone
MANAGEMENT PROGRAM

NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

Seaside Special Area Management Plan (SAMP) Public Input Workshop

December 13, 2011
6:30 – 8:00 p.m.
Eastern Shore of Virginia Chamber of Commerce, Melfa, VA

AGENDA

6:30 - 6:35	Introduction & Kickoff by Senator Ralph Northam
6:35 - 7:05	Presentation
7:05 – 7:15	Questions from Workshop Participants
7:15 – 7: 40	Public Comment Period **Participants will submit comments on comment cards provided to them during the meeting.*
7:40 – 7:55	Public Comment Review and Summary
7:55 – 8:00	Review of Next Steps
8:00	Adjourn

Guidelines for Seaside SAMP Public Input Workshop:

- If you would like to join a distribution list to receive updates and other relevant information regarding the Seaside SAMP process, then please provide your email address on the sign-in sheet near the entrance.
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