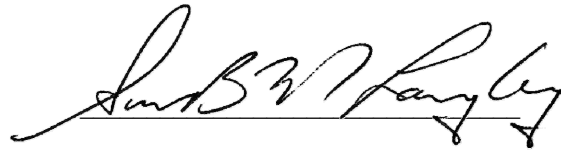


**ARCHEOLOGICAL OVERVIEW  
& REMOTE SENSING SURVEY  
FOR MARITIME RESOURCES IN MARYLAND STATE WATERS  
FROM THE OCEAN CITY INLET TO THE VIRGINIA LINE  
WORCESTER COUNTY, MARYLAND  
PART 1**



Susan B.M. Langley, Ph.D.  
State Underwater Archeologist  
Principal Investigator

Brian A. Jordan, Ph.D.  
Assistant State Underwater Archeologist  
Co-Principal Investigator



Department of Planning  
Maryland Historical Trust, Office of Preservation Services  
Maryland State Historic Preservation Office  
100 Community Place  
Crownsville, MD 21032-2023

December 20, 2008

For



Maryland Department of Natural Resources  
Coastal Zone Management Program  
580 Taylor Avenue  
Annapolis, MD 21401



Financial assistance provided by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA). A publication (or report) of the Maryland Coastal Zone Management Program, Department of Natural Resources pursuant to NOAA Award No. NA05NOS4190237

## ABSTRACT

An archeological overview and assessment of maritime resources in Maryland State waters from Ocean City to the Virginia State Line, Worcester County, is being undertaken in two parts by the Maryland Historical Trust, for the Department of Natural Resources's Coastal Zone Management (CZM) Program, pursuant to DNR Contract 14-08-12241 CZM 161. This study is intended to support planning and management purposes and to comply with CZM program mandates. In addition an electronic remote sensing survey was undertaken over 20 of the approximately 40 square miles included in the study area. The overview indicated that as many as 107 historically documented shipwrecks might be located in the State's ocean waters between Ocean City and the Virginia Line.

The archeological overview and assessment of maritime resources was designed both to evaluate known cultural resources and to determine the potential for other shipwreck and maritime resources within the State's submerged lands. The study is based on an inventory of previously documented resources and information derived from diverse archival repositories and individuals.

This study indicates that as many as 83 shipwrecks occurred potentially within the boundaries of the study area and a further 24 occurred in the vicinity and may be present due to drifting and includes those documented in terms too vague to determine where they might be in relation to the shore or drift patterns area ("lost off the coast of Maryland"). Unless additional information clarified precisely where a wreck occurred with respect to Virginia and the Assateague Life Saving Station near Chincoteague, references to "on Assateague," "Assateague Beach" or "Assateague Island" have been included as potentially in the area. This does not differentiate between the two survey areas into which the study area was arbitrarily divided. Vessels recorded as wrecked at, near, or north of Ocean City have not been included, although some of these might have drifted into the study area. The 107 vessels referenced above are listed in Chapter 4. Current charts do not indicate that any shipwrecks are known within the area surveyed during this portion of the project. Of the remains located during the survey, when plotted, two clusters fell within the perimeters of a fish habitat and are deliberately placed structures related to reef creation activities, one was the anchor clump for the Little Gull Shoal Buoy, and two are definitely cultural but do not appear to be significant archaeologically.

## TABLE OF CONTENTS

Abstract .....	i
Table of Contents .....	ii
List of Figures .....	iii
Chapter 1 – Introduction .....	1
Project Background .....	1
Project Description .....	1
Organization of the Report .....	1
Chapter 2 – Environmental & Cultural Setting .....	4
Introduction .....	4
Environmental Setting .....	4
Flora and Fauna .....	4
Soils .....	5
Climate and Hydrology .....	8
Cultural Setting .....	13
Prehistoric Period .....	13
Historic Period .....	16
Contact .....	16
Early Settlement and Land Use (17 <sup>th</sup> Century) .....	17
The 18 <sup>th</sup> Century and War for Independence .....	23
The 19 <sup>th</sup> Century and A More Maritime Focus .....	25
The 20 <sup>th</sup> Century: Industry, Recreation and Conservation .....	27
Inlets .....	30
Hurricanes .....	35
Previous Archeological Research .....	38
Chapter 3 – Research Design .....	41
Synopsis .....	41
Purpose .....	41
Management and Research Questions .....	41
Methodology .....	42
Chapter 4 – Maritime Resources .....	44
Introduction .....	44
Extant Cultural Resources .....	44
Shipwrecks .....	45
Chapter 5 – Remote Sensing Survey Results and Project Summary .....	60
Introduction .....	60
Side Scan Sonar .....	60
Magnetometer .....	60
Summary and Recommendations .....	66
References Cited .....	67
Acknowledgements .....	73
Appendix A – Curriculum Vitae of Principal Investigators .....	74

## LIST OF FIGURES

Figure 1	Location of survey region.....	2
Figure 2	Location of survey area. ....	3
Figure 3	Maryland Archeological Research Units.....	6
Figure 4	Map of Eastern Shore including region of survey from 1794.....	9
Figure 5	Survey area in 1865, showing both Sinepuxent Inlet to the South and Fenwick Inlet in the North; note also the absence of Tom’s Cove Hook at the southern end of Assateague Island ..	10
Figure 6	Aerial photograph of Ocean City Inlet, 1958.....	14
Figure 7	Oblique aerial photograph looking North up Assateague Island toward Ocean City .....	15
Figure 8	Portion of Wood’s 1820 map of Accomack County.....	21
Figure 9	Portion of Boyd’s 1862 map of the 18 <sup>th</sup> /19 <sup>th</sup> century shorelines of Assateague Island.....	22
Figure 10	Map of inlets; not all extant simultaneously.....	31
Figure 11	Inlets adjacent to survey area.....	32
Figure 12	Previous archeological surveys juxtaposed with present survey .....	40
Figure 13	This is an image of an auction taking place on a wrecked vessel. It is not from the survey area .....	48
Figure 14	This is an image of the extent of a shipwreck debris field. It is not from the survey area...48	
Figure 15	Map of survey area showing transect lines.....	61
Figure 16	Acoustic image mosaic of the survey area.....	62
Figure 17	Survey Area A showing composite acoustic image with the magnetometer data.....	63
Figure 18	Survey Area C showing acoustic image of intentionally-placed artificial reef material.....	64
Figure 19	Survey Area B showing composite acoustic image with the magnetometer data.....	65



# CHAPTER 1

## INTRODUCTION

### **Project Background**

As stewards of the lands and waters within the State of Maryland, the Departments of Natural Resources (DNR) and Planning (MDP) have partnered through their Coastal Zone Management (CZM) and Maryland Maritime Archeology Programs (MMAAP), respectively, to identify and evaluate the State's submerged cultural resources in the Atlantic waters from Ocean City to the Virginia State Line in order to plan for their appropriate management and interpretation. The Maryland Maritime Archeology Program is housed within the MDP's Office of Preservation Services at the Maryland Historical Trust (MHT). The archeological overview electronic remote sensing survey was undertaken by the MMAAP pursuant to DNR Contract 14-08-12241 CZM 161. This project is a continuation of ocean survey promulgated by DNR and funded through CZM monies under contract 14-07-1141 CZM 237 (Langley and Jordan 2007).

### **Project Description**

This overview and survey compiles the historically documented archeological maritime resources for a study area of approximately 40 square miles, from the Ocean City Inlet south to the Virginia State Line and from one mile offshore to the three miles seaward; encompassing Maryland's State waters. This project is being undertaken in two parts and the study area has been divided into two areas of about 20 square miles each. The first area to be surveyed is the northern section; from Ocean City midway to the Virginia Line (Figures 1-2). The portion of State waters from the shore to one mile seaward was surveyed previously by the Maryland Maritime Archeology Program at the request of, and with funding from, the National Park Service (Langley 2002; Langley, Thompson and Bilicki 2004; Langley 2005). Because of the vagaries of some historic documentation and the effects of longshore currents in transporting and re-depositing cultural remains, some shipwrecks that occurred north and east of the study area may have been deposited in the area, however, these have been addressed in the previous report generated for DNR (Langley and Jordan 2007) and so are not duplicated in this volume.

No archeological sites had been recorded for the survey area. The historically recorded positions of shipwrecks within the area were plotted to identify areas where of the highest potential for preservation of a shipwreck or for a concentration of remains (thereby increasing the likelihood of their discovery), or both. None were identified during the survey.

This project was carried out by MDP staff with funding from the DNR's CZM Program. Drs. Susan B.M. Langley, Maryland State Underwater Archaeologist, and Brian Jordan, Maryland Assistant State Underwater Archeologist acted as co-Principal Investigators. Mr. Paul Van Driessche, Sr., Ms. Joan Charles, and Mr. Michael Pohuski served as volunteer researchers and provided much of the raw data. Portions of the hydrological information were contributed by Dr. Stephen Gittings, NOAA, and some of the geophysical data were provided by R. Christopher Goodwin and Associates, Inc. of Frederick, Maryland since this firm had undertaken such studies previously for this area, on behalf of the U.S. Fish and Wildlife Service. Graphics were produced by Dr. Jordan and Ms. Jennifer Chadwick-Moore. The many other individuals who assisted in the research and preparation of this report are included in the Acknowledgements (P. 73).

### **Organization of the Report**

Chapter 1 contains an explanation of the background to the study and a description of the project. The environmental and cultural settings are outlined in Chapter 2. Chapter 3 sets out the research design, including the sources of the data and the repositories searched. Chapter 4 presents the overview data chronologically and annotated as to location, value, extent of salvage and any other information known. Chapter 5 includes the survey data and examines these data with regard to the potential for preservation or likelihood of concentrations of remains. It also identifies areas of highest potential for inclusion in subsequent survey work, and makes recommendations for future study and/or for consideration in planning and management endeavors. References Cited and Acknowledgements follow. Appendix A is the Principal Investigators' curricula vitae.



Figure 1. Location of survey region (Chadwick-Moore, 2007).

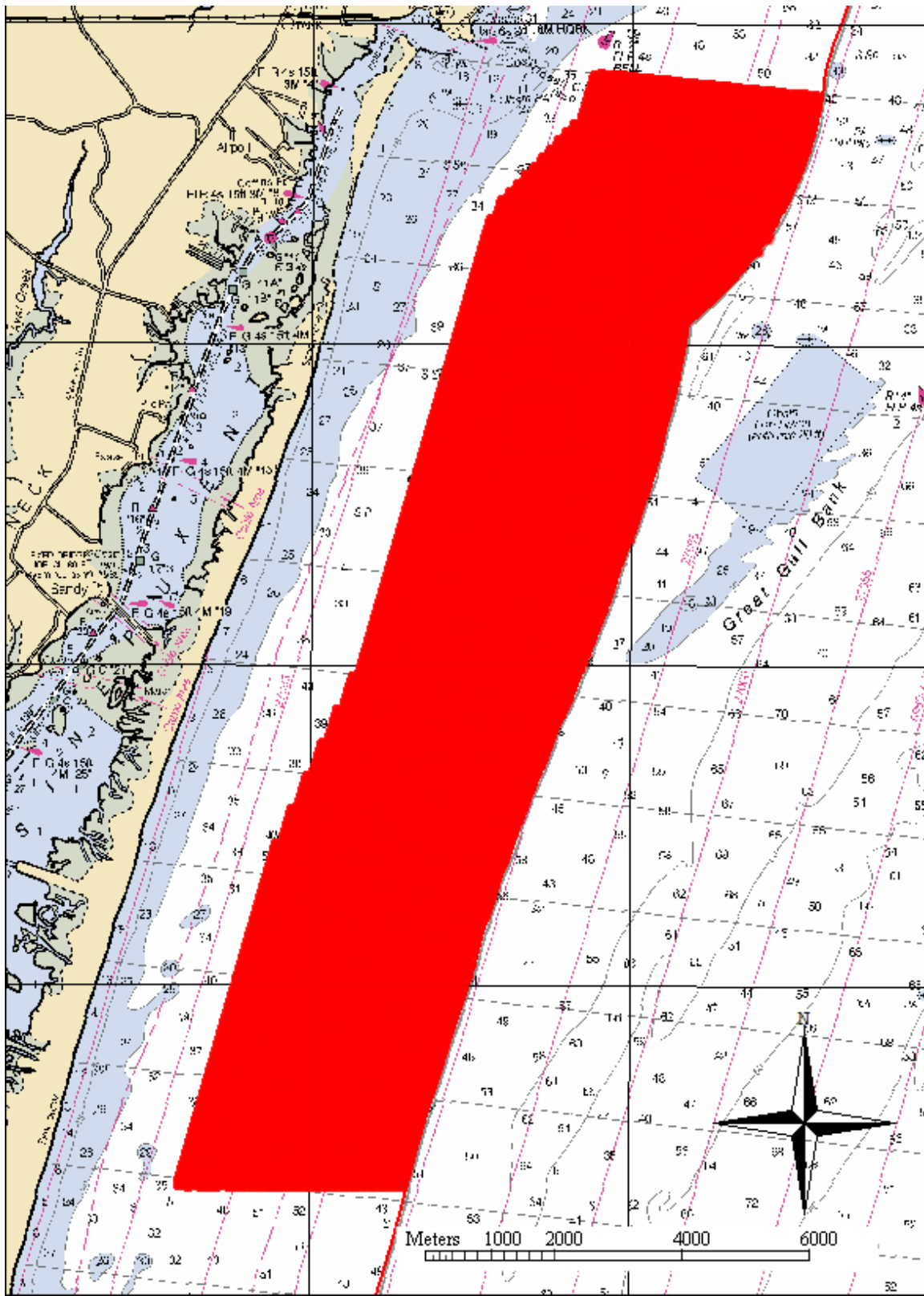


Figure 2. Location of survey area. Base Map is NOAA Nautical Chart 12211\_1, 2008.

## CHAPTER 2

### ENVIRONMENTAL AND CULTURAL SETTING

#### Introduction

The 20 square mile survey area (Figure 2) contains 12,800 acres of State waters and bottom lands. While the adjacent lands are not included in the survey area per se, they are influenced by the environment and contain resources washed up by storms, currents, and tides. They also influence the deposition of potentially artifact bearing sediments and sometimes contain artifacts dredged from offshore environs through beach nourishment activities; therefore, discussion of the terrestrial environment has been included in this overview. Also, since Fenwick Island and Assateague Island only became permanently separate entities in 1933 when it was determined to artificially maintain the storm-created inlet at Ocean City, place names and locations are sometimes difficult to differentiate as they were used interchangeably or changed through time; therefore, both islands at times must be considered as a whole.

Although the study area is well below the southern extremes of glacial advances, it was affected indirectly. For example, terrestrial flora, fauna and aquatic regimes all were influenced by the lowering and rising of sea level as well as by related climatic changes (Dent, 1995:73).

In addition to the usual subjects covered in this chapter, such as flora, fauna, climate, and geology, must be added aquatic life, waves, tides, currents, and other hydrological and geological processes (Leatherman, 1988:41). The inherent nature of barrier islands, coupled with a storm prone coast, engenders a dynamic environment in which either or both the resources and the matrix in which they are situated may be moving at any given time; sometimes in concert and sometimes in opposition. This can lead to the unusual situation in which the peripatetic resources are sufficiently mobile as to change jurisdictions moving from State to federal lands and possibly back again in relatively short periods: a strong argument for cooperative planning among the relevant agencies charged with the management of these resources. This has been documented in the nearest lands of Assateague Island National Seashore and Assateague Island State Park.

#### Environmental Setting

##### Flora and Fauna

The vegetation, for the most part, represents beach, dunegrass, wetland, and shrub communities, apparent in undeveloped areas such as Assateague Island National Seashore and Assateague Island State Park. The beach community is found from within the intertidal zone to the high tide mark and includes sea lavender (*Limonium vulgare*) and American sea rocket (*Cakile edulenta*). More extensive is the dunegrass community, which exists above the high tide mark, and includes seaside goldenrod (*Solidago sempervirens Asteraceae*), saltmeadow cordgrass (*Spartina alterniflora*), American beachgrass (*Ammophila breviligulata*), carpetweed (*Mollugo verticillata*) and dune sandburs (*Cenchrus tribuloides*). The shrub community stretches between the dunegrass community westward to the marshes of Sinepuxent Bay in Maryland and to the wetlands and more forested, upland areas in Virginia. In this area grow northern bayberry (*Myrica pensylvanica*), wax myrtle (*Myrica cerifera*), American holly (*Ilex opaca*), Canadian serviceberry (*Amelanchier canadensis*), and common persimmon (*Diospyros virginiana*). The dominant representative of the upland forest is the loblolly pine (*Pinus taeda*). Both freshwater and saltwater marshes are present. Although there are no natural lakes or streams on the island, freshwater ponds result from groundwater and rainwater (Shepard, 1973:134) but are usually brackish due to the introduction of seawater from overwash during storms. Hardy freshwater plants growing here include common reed (*Phragmites australis communis*), cattails (*Typha latifolia*), and wax myrtle (*Myrica cerifera*). The latter is also a shrub community plant. Salt tolerant plants found in the saline marshes are saltmeadow cordgrass (*Spartina alterniflora*), which is also a dunegrass community plant, spike grass (*Distichlis spicata*) and saltwort (*Batis maritima*). Seabeach amaranth (*Amaranthus pumilus*), not seen in New Jersey for a century and believed extirpated in the study area up to ten years ago, is making a comeback. It shares the same environment as the endangered piping plover (*Charadrius melodus*). In Appendix C of Rountree and Davidson (1999), Helen Rountree provides an extensive list of flora, and their historically known uses, among the indigenous peoples of Maryland.

The greatest diversity of terrestrial fauna is represented by the more than 300 avian species found on Assateague Island. Many of these are migratory species passing through seasonally as the area is located on one of the great North American flyways. Examples include Canada geese (*Branta canadensis*) and Snow geese (*Chen caerulescens*), wood ducks (*Aix sponsa*), mallards (*Anas platyrhynchos*), black ducks (*Anas rubripes*), and brown pelicans (*Pelecanus occidentalis*). In addition to waterfowl there are wading birds such as the great blue heron (*Ardea herodias*), the great egret (*Ardea alba*) and snowy egret (*Egretta thula*). Shorebirds include approximately 10 species of gull (*Larus* sp.) that reside or pass through the area. The most common are: Bonaparte's Gull (*Larus philadelphia*), Ring-billed Gull (*Larus delawarensis*), Herring Gull (*Larus argentatus*), Great Black-backed Gull (*Larus marinus*), and Laughing Gull (*Larus atricilla*), and the endangered piping plover (*Charadrius melodus*) mentioned previously. Raptors like hawks and eagles (*Accipitridae* sp.) also nest and hunt in the area.

Mammals, again extirpated in developed areas, are represented by 31 species including white-tailed deer (*Odocoileus virginianus*), eastern cottontail rabbits (*Sylvilagus floridanus*), opossums (*Didelphis virginiana*), raccoons (*Procyon lotor*), red foxes (*Vulpes vulpes*), river otters (*Lutra canadensis*), coyotes (*Canis latrans*), mice (*Peromyscus* sp.), voles (*Microtus* sp.), and squirrels (*Sciurus* sp.), including the rare and endangered Delmarva fox squirrel (*Sciurus niger cinereus*). The latter was introduced to the area by the U.S. Fish and Wildlife Service in the 1980s as a preservation measure for the squirrels' population. Two other introduced species are Sitka black-tailed deer (*Odocoileus hemionus sikesis*) released by the Boy Scouts in the 1920s, and ponies (*Equus caballus*) pastured in the 17th century, which became feral. Marine mammals include whales, such as the humpback (*Megaptera novaeangliae*), and dolphins (*Tursiops truncatus*). Reptiles and amphibians are present in the form of turtles (eastern mud (*Kinosternon subrubrum*), snapping (*Chelydra serpentina*), painted (*Chrysemys picta*), and diamondback terrapin (*Malaclemys terrapin*)), frogs (*Rana* sp.), toads (*Bufo* sp.), and snakes (fam. Colubrid).

Finfish are plentiful and diverse. These include Atlantic menhaden (*Brevoortia tyrannus*), striped bass (*Morone saxatilis*), black sea bass (*Centropristis striata*), bluefish (*Pomatomus saltatrix*), Atlantic croaker (*Micropogonias undulatus*), striped mullet (*Mugil cephalus*), Atlantic bonito (*Sarda sarda*), red drum or channel bass (*Sciaenops ocellatus*), crevalle jack (*Catanx hippos*), sheepshead (*Archosargus probatocephalus*), and cobia (*Rachycentron canadum*). Other fish include members of the mackerel family like Atlantic mackerel (*Scomber scombrus*), Spanish mackerel (*Scomberomorus maculatus*), little tunny or false albacore (*Euthynnus alletteratus*) and bluefin tuna (*Thunnus thynnus*), and anadromous fish like the alewife (*Alosa pseudoharengus*) and American shad (*Alosa sapidissima*). These last three are generally found much farther off shore in open sea. Skates and rays also are caught in the shallows and include the clearnose skate (*Raja eglanteria*), cownose ray (*Rhinoptera bonasus*) and southern stingray (*Dasyatis americana*). Crustaceans and mollusks include blue crabs (*Callinectes sapidus*), mussels ("ribbed" (*Geukensia (Ischadium) demissa*), and "blue" or "edible" (*Mytilus edulis*)), clams (*Mya arenaria*), and oysters (*Crassostrea virginica*) among others. Clams and oysters are also being cultivated on a limited scale in an effort to sustain the shellfish industry. Helen Rountree provides an excellent reference to the types of fish and shellfish extant and their availability to the indigenous peoples of the area during the contact period in Appendix D of Rountree and Davidson (1999).

Hard shell clamming activities have affected the configuration of the State's bottomlands severely in the survey area and may have negatively impacted any historic cultural properties submerged once present in the area. Illustrations of this damage are included in the survey section of the report.

### Soils

The study area is situated entirely within the Coastal Plain Physiographic Province. This places it within Worcester County and the Atlantic Drainage (Maryland's Research Unit 1), (Shaffer and Cole, 1994) (Figure 3). It is a barrier island environment; basically unconsolidated sand dunes, situated in a very dynamic environment at the eastern extreme of the Coastal Plain. It is Holocene in age and composed geologically of Beach and Lagoon deposits (Schmidt, 1993:146). This breaks down into three soil associations with the Assawoman Bay, or West, side of the island being Newhorn Sand (sloping sand dunes) and Sulfaquents (tidal marsh) Associations and the East side of the island being the Beach Association (coastal beach sands) (USDA, 1975). The latter continues out into the Atlantic Ocean onto the Continental Shelf and so applies for the extent of the study area well beyond Maryland's territorial waters limit of three miles.

The following soil series is a description of those which comprise the barrier island: Camocca Fine Sand (0-2% slope), Fisherman Fine Sand (0-6% slope), Assateague Fine Sand (2-35% slope), and Beaches (0-10% slope)

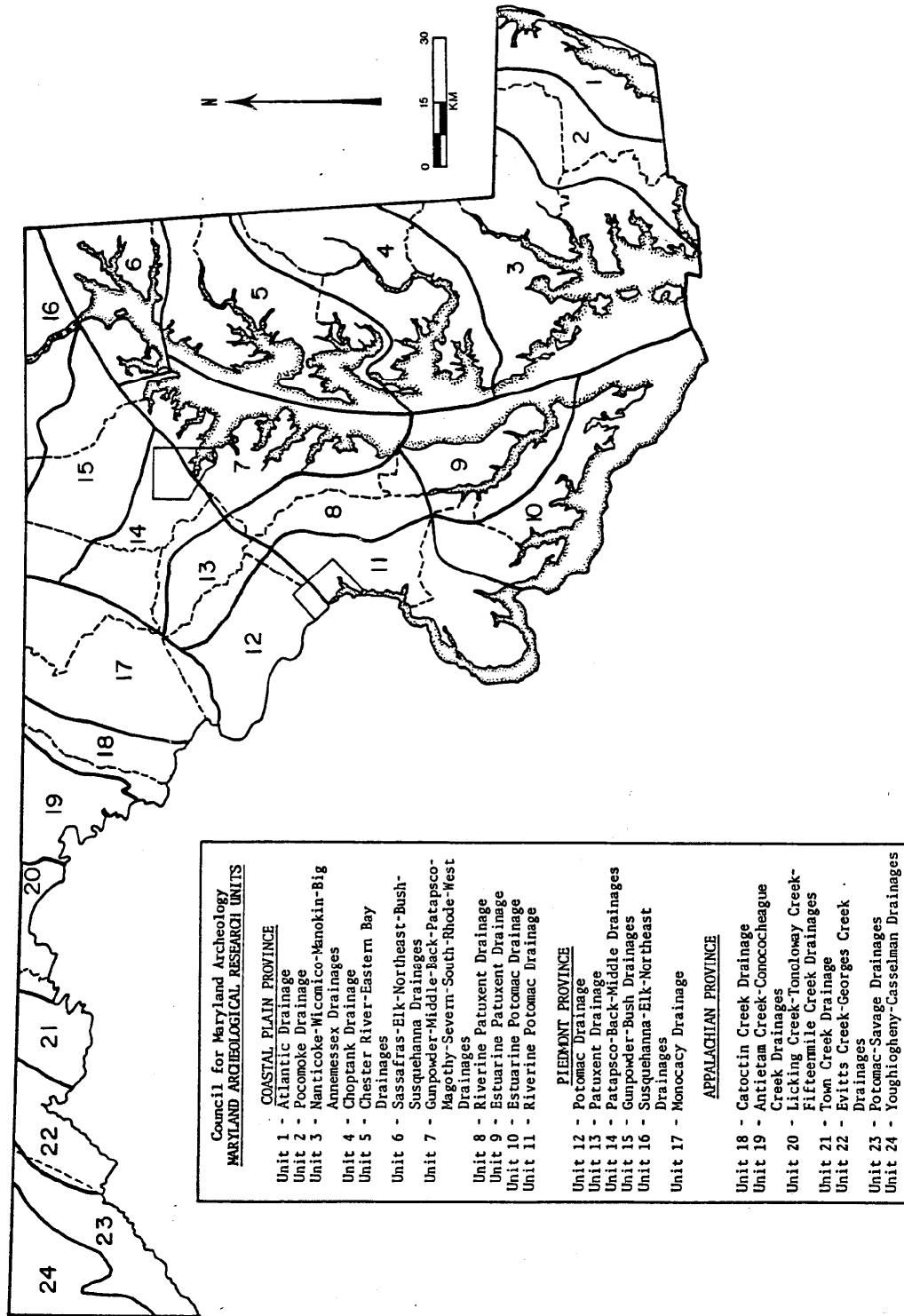


Figure 3. Maryland Archeological Research Units

(USDA 1994:60-63). Because of this composition, the barrier islands are inherently unstable and extremely susceptible to both wind and wave action. Normally this would constitute sufficient discussion of soils; however, the origin, nature and characteristics of sediment particles take on added significance in light of how they interact with the tides, currents and waves in this environment. Together, these factors all can have considerable bearing on the disposition and preservation or destruction of archeological resources in a region.

Density, particle size and size distribution are the parameters which control the physical properties of sediments. Packing, porosity and dilatation become important when considering sediments which are picked up by waves and currents. The slopes of beach faces are also controlled by the permeability of beach sand. Permeability, in turn, is determined by the packing, size, and size distribution of the sediment grains (Shepard, 1973:69). Size is measured in gross terms by reference to sand, silt and clay: coarse, medium and fine respectively. There are charts and formulae which refine these measures in great detail. There are three main sources of sediment particles: terrigenous, biogenous and authigenic (Op. Cit., 75). Terrigenous sediments are the result of weathering and erosion of rock. These are made up mostly of quartz but can also include large percentages of feldspar and ferromagnesian minerals (which include hornblende, pyroxene, mica, tourmaline, zircon and garnet). Biogenous sediments are the result of the build-up of skeletal materials from calcareous secreting marine organisms: principally molluscan shells and including foraminifera tests, ostracods and bryozoans. Biogenous sediments can also result from a build-up of woody or other biological matter like peat or even coal. Authigenic sediments are deposited on the sea floor as a result of chemical reactions not directly attributable to organisms. Examples include glauconite, pyrite and various manganese and phosphatic nodules. The majority of sediments in this study are terrigenous in origin.

Particle shape is important since round grains are more easily set in motion while angular or planar ones are more difficult to dislodge. However, round particles have less resistance and therefore do not travel far, while platy grains provide more surface area and can be swept farther. Shape also relates to packing, porosity and dilatation. Packing is the spatial arrangement of the granules that produces various levels of density. Porosity is the ratio of pore space between grains to the space occupied by the sediment as a whole. Dilatation is best described by example since it is a property not possessed by known fluids or solids:

When a dense grain aggregate is at rest, the packing arrangement cannot be changed without moving and rearranging the grains. Because grains at rest are in contact with their neighbors on all sides, rearranging them requires that there be at least a temporary expansion or dilatation in the volume of the aggregate...a change in bulk occurs when the shape of a granular aggregate is changed. In other words, whenever a granular mass is sheared, a change in volume is produced, and hence a change in porosity.

The instantaneous 'drying' of the surface of a wet beach when stepped upon is a good example of the dilatation of a densely packed sand due to shear. The dilatation produces a sudden increase in pore space and a local deficiency in pore water. Capillary action causes water to flow toward the area of deficiency, and an excess of water is observed when the weight causing the shear is removed.

(Shepard, 1973:82)

Final considerations are permeability and slope. The former relates to a beach environment in that the resistance of the sediment to the discharge of water through it partially determines the dissipation of wave energy moving over the land. The slope exhibited by a beach face is the result of a dynamic equilibrium between the run-up, or swash, of water up the face and the return flow (or backwash) down the beach. There is a strong correlation between the slope and grain size since the latter determines permeability. For example, the loss of run-up because of discharge into the beach is ten times greater for beach grains 4 mm in diameter than for beaches where the grains are only 1 mm in diameter, and the discharge through the smaller grains is almost negligible (i.e. there is as much water in the backwash of a fine-sand beach as in the run-up) and the resultant beach face cannot stand at a steep angle. Fine sand beaches, like those at Assateague Island National Seashore and Assateague State Park are characterized by very gentle foreshore slopes with sand that is generally hard packed near the water; sufficient to support walking and traffic, and the offshore commonly has bars and troughs (Op. Cit., 127).

It was once believed that Assateague Island was actively migrating westward as sand erodes from the seaward side of the island and is re-deposited on the west side in the lee of the dunes which are generally unconsolidated (Schmidt, 1993:43, 127; Leatherman, 1988; Kraft, 1977; Shepard, 1973:134): basically, rolling over itself, burying and exposing both archeological and natural resources as it does (Leatherman, 1988:46; Wroten, 1972:2-3). More recent research indicates that there is a stable spine down the island with the heaviest movement seen at the north end, caused by the Ocean City Inlet jetties, that keep the north end of the island, adjacent to the study area, stable and actually accreting while causing the sediments below the inlet to migrate southward, forming an complex spit at Tom's Cove Hook while diminishing the north end of the island (Zimmerman, 2003: Pers. Comm.). This is discussed in more detail later in this chapter.

Other considerations include, not only possible mixing of smaller artifacts through deflation and potential loss of features, but creation of a continually changing provenience for larger artifacts, such as shipwrecks and historic structures as they are left behind by their land base. An additional resource management consideration raised by this mobility, and mentioned above, is that archeological remains can actually change management jurisdictions. A shipwreck, or portion thereof, on shore on Assateague Island could potentially shift along the shoreline within moving sands or due to storm action and move back and forth between State and federally owned/managed areas or, if left behind by migrating sands, could move below mean high tide and off federal lands onto State property. If movement of either the island or the resource, or both, is sustained, the resource could potentially re-enter the federal domain by passing the three-mile limit on State waters and back into federal territorial seas. While this is an exaggerated example, such movement must be considered when attempting to locate or re-locate sites or wrecks documented in the not-so-distant past. It also underscores the importance of historical maps of the area, and emphasizes the need for a coordinated approach to managing these resources (Figures 4-5). The constantly changing appearance of the shoreline and its significance for this study is addressed in more detail later in this chapter.

### Climate and Hydrology

The study area is situated in a temperate region which experiences hot, humid summers (average 72°F) and generally mild winters (average 45°F). The average annual temperature is 58°F (Chesapeake Properties, 2002; UMDa, 2002; UMDb, 2002). According to the USFWS (1987) the average annual precipitation is 38 inches (96.5cm) with a range of 30 to 60 inches (76 – 152cm). The National Oceanographic and Atmospheric Administration (NOAA) claims an average precipitation of 40.4 inches (103cm) and average snowfall of 16.5 inches (42cm) (1999:T3; T11).

Other factors that play a role in the formation processes, or taphonomy, of the region include wind, waves, currents and tides. These influence the topography of the land and also act on cultural maritime resources, generally shipwrecks, to determine how these enter the archeological record. Study of these natural phenomena is not new; Leonardo da Vinci documented wave motion in 1480, while the major ocean current, the Gulf Stream, was discovered by Ponce de Leon in 1513 and subsequently mapped for the first time by Benjamin Franklin (Shepard, 1973:44). The Allied landings of World War II relied on intensive study of wave propagation and much research in this area is still being undertaken by the U.S. Army Corps of Engineers to understand better and resolve problems with beach maintenance and the effect of engineering structures on beaches and harbors. The barrier islands are considered to be wave-dominated, or tide-dominated in nature, as opposed to those islands sheltered behind Assateague and Fenwick Islands that are no longer subject to wave and littoral taphonomic processes (Oertel and Kraft, 1994).

Wind-generated waves have a variety of names based on their shape, which is determined by the turbulent nature of the flow of wind over the water surface. This flow transfers energy to the water through tangential stress but it does so irregularly in gusts. Ripples are set up first and grow into waves with a sheltered, or lee, side and this effect causes waves to propagate in the direction in which the wind blows. Waves occurring in the center of a storm are called "sea waves" and appear to be irregular in shape and moving in various directions, although generally parallel to the wind direction and outward from the storm center. When they are not under the direct influence of wind, sea waves are smoother in shape and profile. Once beyond the storm center, smooth waves are called "swell." Sea waves can be as high as 100 feet (30.5m) while swell rarely exceeds 40 feet (12m) (Shepard, 1973:44). Waves from a storm center can travel thousands of miles over deep water with only minimal loss of energy. Waves from



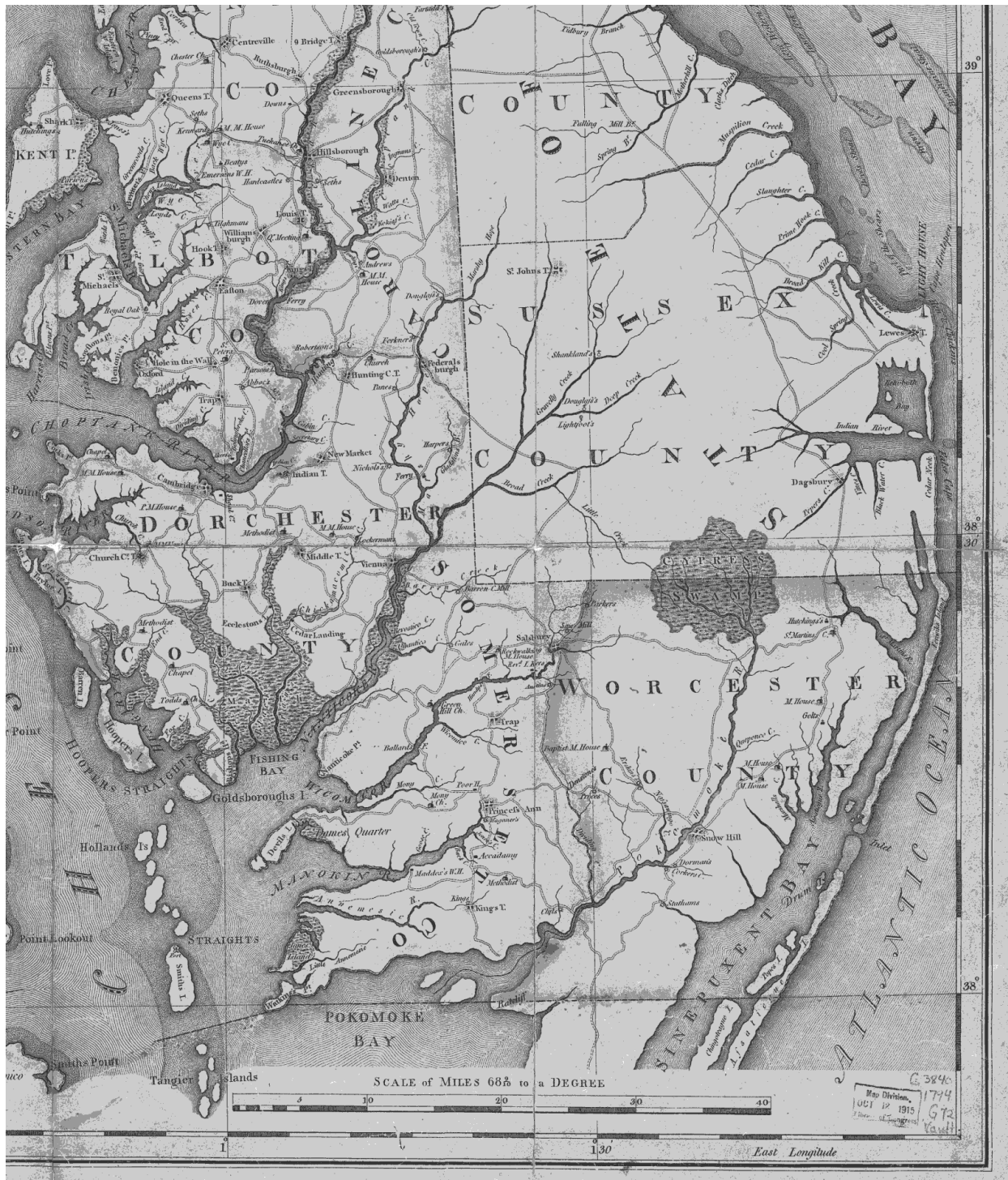


Figure 4. Map of Eastern Shore including region of survey from 1794 (Handley, 2007).

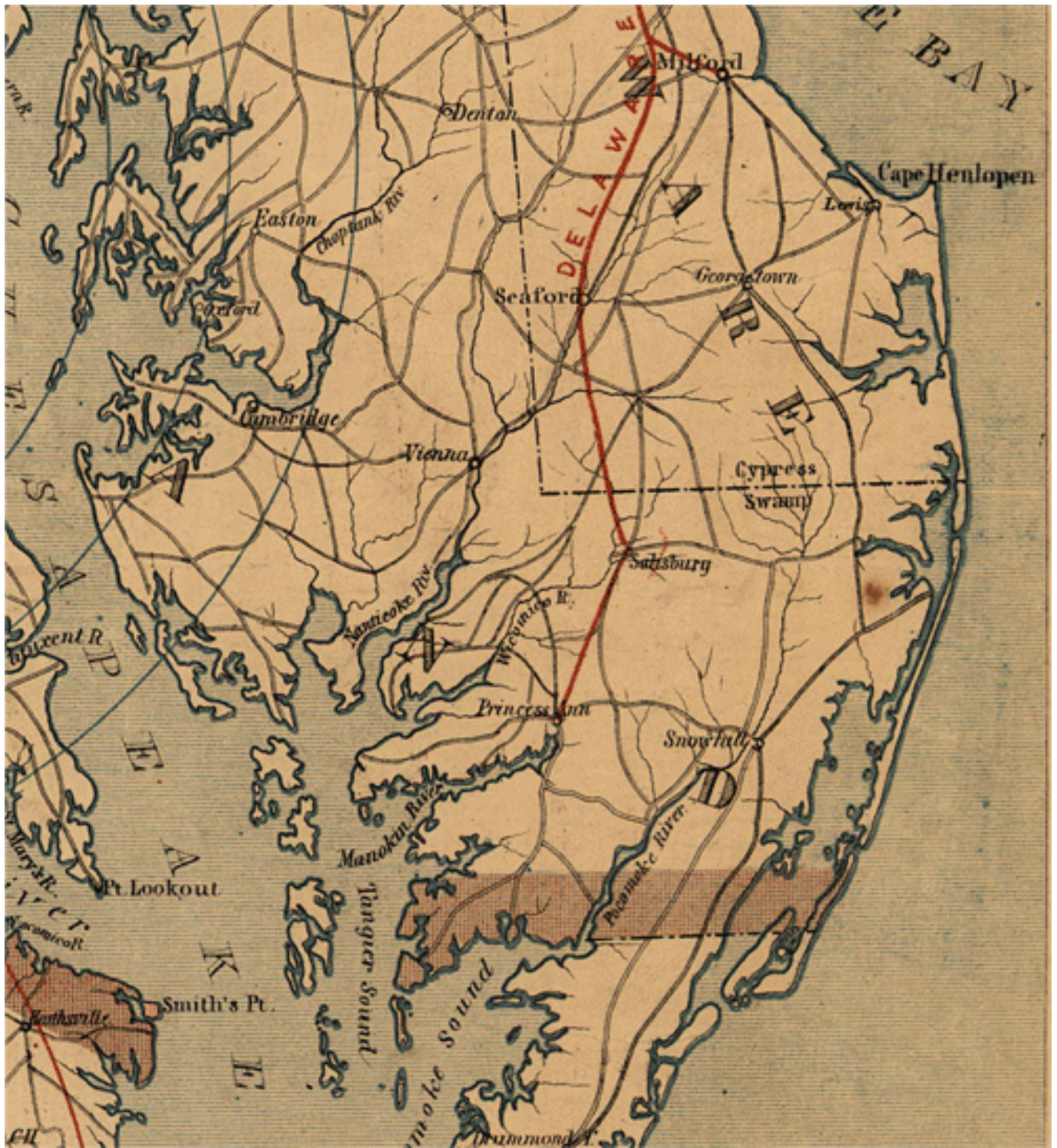


Figure 5. Survey area in 1865, showing both Sinepuxent Inlet to the South and Fenwick Inlet in the North; note also the absence of Tom's Cove Hook at the southern end of Assateague Island (Bache, 1865).



Antarctic storms can cause serious beach erosion in California (Op. Cit., 45); therefore, large coastal breakers are not necessarily reflective of local weather.

Breakers, or shoaling transformations, occur when swell enters shallow water. Drag along the sea bottom decreases the water's speed, causing the upper portion of the water column to pile up to a steep crest which cascades over and breaks. These sharp peaks are unusually separated by flat troughs. Although the folklore that every seventh wave will be a large one is not demonstrable, waves do run in series of larger and smaller waves. These are called "surf beat" and are used when piloting small boats through surf; the skipper watches for a smaller wave following a series of larger ones and uses this as a sign that a series of smaller waves is beginning.

Although beaches tend to form at right angles to the prevailing wave direction, there are two other wave processes which occur in the study area and which influence coastal form and, potentially, the nature, distribution and disposition of maritime cultural resources. These are refraction and diffraction. The former relates to the effect of relatively even ocean waves coming diagonally into shallow water with the concomitant bending of the wave crests due to drag as discussed previously. When the waves train over a smoothly sloping bottom, they curve to become more parallel to the coast. Diffraction occurs when a wave crest passes a breakwater at the mouth of a harbor, as at Ocean City. The train is interrupted but some energy is transmitted at right angles to the direction of the wave advance. This permits small waves to extend into the shadow of the barrier (Shepard, 1973:49-50).

A final class of waves, and one which has particular significance for the study area, is catastrophic waves. These include tsunami (seismic waves), landslide surges and storm surges (storm tides). The latter has the most relevance for and impact on the barrier islands. Storm surges are the broad coastal inundations occurring as a result of hurricanes, typhoons and other great storms. In and near low pressure areas, the sea level is raised considerably by the winds blowing onshore and piling the sea up into one or more violent surges that usually develop around high tides. Geologically, hurricanes cause even greater coastal changes than tsunamis. This is especially true for the barrier islands and beach ridges that buffer 47% of U.S. coasts, where overwash and the cutting, closing and re-opening of inlets occurs frequently (Op. Cit., 57). As dramatic as the erosion damage appears, these beaches and barriers rebuild quickly once the storm surge ceases. This has been noted for Assateague Island when wreck remains uncovered by storm waves and recorded in place are buried by six to eight feet of sand within three months (e.g. Van Driessche Wreck 18WO225; Shepard, 1973:134, 147). The appearance and disappearance of inlets played an important role historically for the establishment of settlements and U.S. Life Saving Service Stations, as well as influencing where areas of higher potential for the occurrence of shipwrecks are located. These will be discussed in detail later in this chapter.

Final considerations about the hydrology of the study area include tides, currents and beach cycles, and the interaction of these phenomena. Tides are actually long-period waves, which result from the gravitational pull of the moon and, to a lesser degree, the sun. Wind as well as the presence of islands and other landmasses influence how tides act in given areas, both above and below the water surface. The tide range in the study area is 2.7 feet to 4.4 feet, but with strong winds of long duration, depths can vary as much as three feet above or below the norm (NOAA, 1999:167).

There are several types of currents, which are characterized by their origin and location in the water column. These include ocean currents, wind drift currents, permanent currents, bottom currents and tidal currents. Ocean currents include those resulting from surf swash and backwash, but largely result from three sources: wind stress on the water surface, tidal forces, and differences in water density. The latter can be due to evaporation, differential heating or freezing, ice melt, the introduction of fresh water, and sediments in suspension.

Wind-drift currents occur in the open sea and mostly at the surface where the Coriolis force causes them to flow approximately 45° to the right of the wind direction in the Northern Hemisphere and to the left in the Southern Hemisphere. While the angle of flow can increase to 90° below the surface, these currents tend to be negligible by 150 feet; depth varies with the speed and constancy of the wind. Large permanent currents are actually rivers within the ocean, like the Gulf Stream, and are related to the density distributions of the ocean but are primarily maintained by prevailing winds. An example is the frequency of such currents on the East side of continents due to the piling up of water by the Trade Winds (Op. Cit., 61). As the Gulf Stream flows North, its volume and speed result in south-flowing counter currents, which influence the coast. For example, the wreck of the British mail steamship Oregon off Long Island, New York on March 14, 1886, resulted in mail bags washing up in Chincoteague as long as

six weeks after the event (USLSS, 1886:266; 272). Bottom currents related to permanent ocean currents were long believed to play little role in the erosion of submerged lands since these were thought to have little or very slow circulation. This is no longer held to be true (Op. Cit., 62-63). These types of currents have relatively little effect in the study area, which is dominated by tidal currents.

Currents produced by tides have a greater effect on shallow sea floor and coastal configurations because the velocity of tidal currents is essentially the same from top to bottom within the water column, except at the very contact point with the seabed where drag will reduce the speed. This varies significantly from wind-generated and permanent ocean currents. Beach cycles are largely seasonal, with large fluctuations in size and shape resulting from storm action, although shorter cycles also occur. Beaches can exhibit a reduction in slope, foreshore and berm width during storm seasons, but generally return to a pre-storm condition fairly rapidly. Periods of large wave action usually occur during winter months, but catastrophic waves tend to occur during hurricane season, which is summer and fall in the study area. Seasonal changes also result in the shifting of sand along the beaches of Fenwick and Assateague as the angle of wave approach changes. The area is also characterized by longshore currents and offshore bars. Sandbars contribute to the rip currents, which influence the westward migration of the barrier islands and perpetuate their own cycle of creation through ongoing creep of sand offshore. This movement can result in permanent or temporary loss of beach sand in a given area, which can be exacerbated by human intervention. For example, Leatherman describes these as microtidal transgressive barrier islands with the southern terminus of Assateague Island at Tom's Cove accreting to become a complex spit (1988:10; 13).

Shepard provides an example from the West Coast, which translates exactly to the study area (1973:152-153). The situation he describes involves the building of jetties along a straight coast to protect a harbor, in an area with a prevailing long shore current from the north. The effect is that a broad beach builds up above the jetty and immediately below it, but starves the beach farther south. These beaches cut back during storms and are permanently depleted as they are cut off from the normal source of replenishment. Leatherman addresses the study area specifically with much the same criticism (Op. Cit., 86-87). The general response in the study area, has been an ongoing program of beach nourishment whereby the U.S. Army Corps of Engineers physically brings sand from offshore areas and deposits it on the shore, from which the next cycle depletes it again. Efforts to rebuild the beaches have been undertaken since severe damage was inflicted by a major storm in February, 1920 (Truitt, 1968:13), but the Corps's current approach is of more recent origin.

Debate over the relative success of beach nourishment, or lack thereof continues (U.S. Army Corps of Engineers, 2002a). This activity poses an additional threat to submerged archeological and historical resources. Dredging outside State waters and pumping activities periodically impact drowned terrestrial sites on the Continental Shelf and deposit prehistoric artifacts on the public beaches of Ocean City. Therefore, it is usual that the occasional artifacts found on the beaches within the study area are extremely out of context.

Other solutions to this costly and ineffective activity include offshore breakwaters and submerged groins. The former would not work in the study area as breakwaters lead to sand building up inside of them and threaten to clog the harbors they protect. Groins, with their much lower profile, work like jetties; they stabilize sand rather than causing build out. While they can prevent loss of downshore beach areas, these work only where groins are present and so do not really resolve the problem; it is actually perpetuated and just moved farther down the beach. Additionally, in the study area, they would prove hazardous to jet ski and boat traffic: both of which are critical to the tourism economy of the area. Hence for the foreseeable future, the beach nourishment program will continue.

Hurricanes tend to occur between June and November in the study area and are a particular threat to the island as its low relief and loose sands make it vulnerable to overwash with concomitant severe erosion and the rolling over movement described previously. NOAA provides the following seasonal descriptions of the region (1999:167). Winter gales, defined as having winds of >34 knots occur only 5% of the time, with storm winds of >28 knots occurring twice as frequently. The strongest and most prevalent winds come from the northwest through north and average 18-20 knots. Wave heights of 10 feet or greater occur only 8-12% of the time from December through March, with precipitation only 8% of the time. Visibility in the winter is affected by fog and precipitation and is reduced below 2 miles 3% of the time and below .5 miles only 1-2% of the time. Ice is infrequent, rarely closing the principal inlets. During the spring, gales of 28 knots or greater occur 5% of the time and generally out of the south and southwest. Waves of greater than ten feet are infrequent and by May occur <3% of the time. There is more fog with visibility of <.5 miles 3% of the time and <2 miles 6% of the time. Precipitation occurs 6% of the time.

Summer brings a threat of thunderstorms and the rare tropical storm and generally provides for good sailing weather. Winds are out of the south and southwest about half the time, with Westerlies and Northeasters also commonly occurring. Thunderstorms, tropical cyclones and the movement of weather fronts account for most of the winds. Waves rarely reach heights of more than ten feet (1-2% of the time) and visibility is usually good. Precipitation occurs only 4% of the time and half of that is associated with thunderstorms, which usually occur May to September. These usually occur late at night or early in the morning. In a squall, winds can reach hurricane force but only in gusts. Both tropical and extratropical storms increase in the fall with variable strong winds and rough seas. Although tropical cyclones can occur throughout the fall, recurving storms brushing up the coast concentrate them in September and October, with extratropical storms picking up in October. The latter are particularly responsible for the increase in Northerlies and Northwesterlies. Winds from the east and southwest are also common, reaching gale forces 2% of the time with winds of >28 knots 6% of the time. Waves of >10 feet occur 7-8% of the time. Visibility is still good with occurrences of <.5 miles only 1% of the time, and <2 miles 2% of the time; frequency of precipitation is 5%.

Hurricanes and other tropical storms are factors which play important roles in sculpting the barrier islands off the Maryland/Virginia coast, since they are frequently associated with the opening and closing of breeches or inlets between and through the barrier islands. Although historically some closed as quickly as they opened, others remained viable shipping channels for decades. Inherited topography relates to the location of these inlets; the latter occur along palimpsests of Pleistocene riverine drainages. These provide subsurface paths of least resistance which control and fix tidal inlet positions (Truitt, 1968; Leatherman, 1988). The only one in use today is the Ocean City Inlet, which was created by an August storm in 1933 and artificially maintained since. Leatherman observes that, "Artificially stabilized microtidal inlets can also acquire some mesotidal characteristics after a long period of time" (Op. Cit., 14-15) and cites Ocean City as a specific example. Air photos of Assateague Island show how far the island has migrated westward since 1933, when compared with the position of the mouth of the Inlet (Figures 6-7) and illustrate Leatherman's comment that, "inlets are important for barrier island migration" (Op. Cit., 55).

Hurricanes and inlets will be revisited in the context of the cultural history of the study area. They will be examined with reference to creating, influencing or exposing maritime archaeological resources and shipwrecks.

## **Cultural Setting**

### Prehistoric Period

Following the retreat of the last major North American Glacial advance, both the continental shelf and the ancestral Susquehanna River were transgressed as sea levels began to rise. These transgressions began at 14,000 to 15,000 years ago and at 10,000 years ago, respectively...It was not until approximately 3000 years ago that the Chesapeake Bay, as it exists today, was essentially complete.

(Dent, 1995:69)

The last transgression, from around 10,000 years ago, coinciding with the end of the Wisconsin glacial advance, to 3000 years ago, the end of the Archaic period, has particular relevance for the prehistory of the study area. The general temporal divisions for prehistoric cultures in this region are: Paleoindian (11,000-10,000 years ago), Archaic (10,000-3,000 years ago), and Woodland (3,000 years ago to European contact) (Op. Cit., 9). The Archaic and Woodland periods are often further divided into Early, Middle and Later sub-periods; Early Archaic (10,000-8,000), Middle Archaic (8,000-5,000), Late Archaic (5,000-3,000), Early Woodland (3,000-2,300), Middle Woodland (2,300-1,050 years ago, or 2300 BP – AD 900), and Late Woodland (1,050 years ago, or AD 900 – 1607) (Ibid.). Based on these dates and the rise of sea level, vast areas of the Continental Shelf (up to 200 miles in some places), which would have been exposed and peopled, are now underwater. This is confirmed by the presence of Archaic tools, which are periodically deposited at Ocean City, in sands dredged from off shore for beach nourishment projects. It also explains the virtual absence of all but Woodland archeological remains in the study area, and even most of these date to the latter portion of that period. This is understandable in light of the barrier island dynamism; the islands themselves in moving westward deeply bury, mix or leave behind earlier cultural remains. Goodwin et al. note that "In general, the prehistoric archeological potential of the barrier islands is considered poor,"

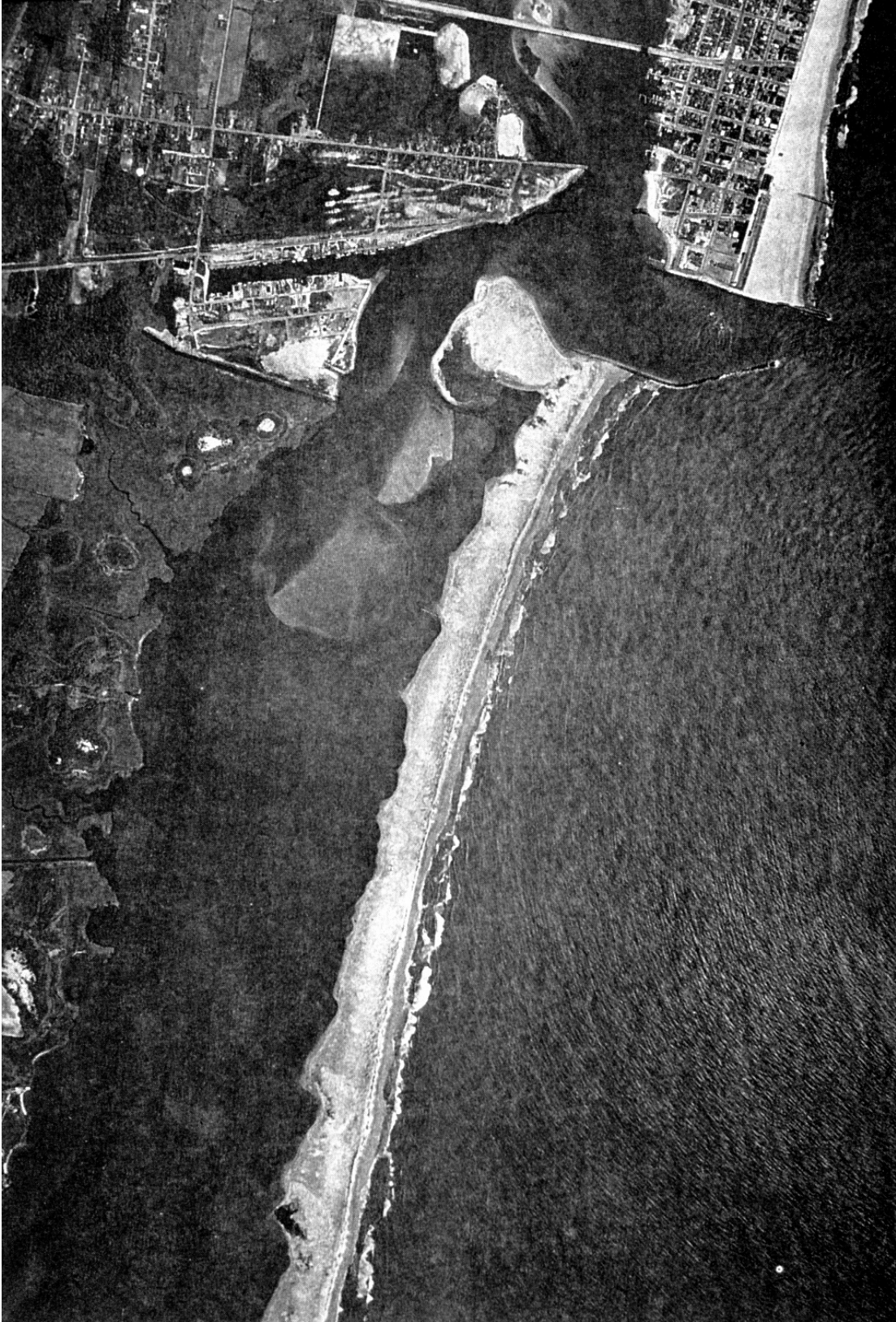


Figure 6. Aerial photograph of Ocean City Inlet, 1958 (Wroten, 1972:50)





Figure 7. Oblique aerial photograph looking North up Assateague Island toward Ocean City (Zimmerman, 2000)

since much of the current land “appears to have been formed after 1700” (1989: 17). Although isolated prehistoric tools have been found within study area, the only sites known in the vicinity of the survey area are from the bay side of the island and were collected in 1955 (18WO1) and 1957 (18WO) by an amateur archaeologist (D. Hutchinson) who retained the artifacts. The sites are believed to represent Woodland Period shell middens (Irion et al., 1993:8). Also, farther south, two Late Woodland sites have been documented on the western shore of Sinepuxent Bay. The Sandy Point site (18WO12) consisted of archaeologically excavated refuse pits and earlier amateur reports note the erosion of graves. There is some evidence that this may have been the village of Queen Weocomoconus of the Assateague tribe (Curry, 1999:60). The other site is the Gray’s Cove Ossuary (18WO158), also Late Woodland, which was documented in 1991 when human remains were exposed during utility trenching (Ibid.).

## Historic Period

### Contact

Discussion here, therefore, will focus on the latter period for which there exist historic descriptions of early contact and the peoples of the region. The earliest description of an encounter with indigenous people is provided by Giovanni di Pier Andrea di Bernardo da Verrazzano, an Italian sailing in the service of the King of France from Dieppe aboard La Dauphine in 1524. He landed in April and spent three days in an area he named Arcadia for the beautiful trees there. While exact locations vary by scholar, most agree that it was in the Chincoteague/Assateague area. Some researchers claim he entered Chincoteague Bay, others that he sailed through an inlet long closed and some that he entered Sinepuxent Inlet or Chincoteague Bay and exited through a northern inlet no longer extant (Mariner, 1996:1, 188; Wroten, 1972:11). Verrazzano notes first that they met a native man who was nude, had olive skin and had his hair tied back in a knot; he was unafraid and offered them a burning stick (possibly a pipe) (Op. Cit., 2). The Europeans fired their guns terrifying the man and proceeded inland. Descriptions vary somewhat with different translations; in one he encounters two women with six children (Ibid.), in another, only two women and two children (Wroten, 1972:11). The gist of the story is consistent; they try to take the younger of the women and a boy of about eight years. The woman resists loudly and they leave her and take the boy. Nothing more of his fate is known. This was not an uncommon practice; the children were expected to learn the language of their captors, convert to Christianity and act as interpreters and mediators in converting their people (Rountree and Davidson, 1999:48). The English colonists also did the reverse: leaving English youths with Indian tribes for the same purpose. In 1588, a Spanish vessel kidnapped a boy from the Potomac River area and another from the Eastern Shore. The former died shortly and the latter was sent to Santo Domingo where he converted but subsequently died of smallpox (Ibid.).

Verrazzano’s report may offer the earliest description of the Chincoteague people as well as a window into their environment and subsistence strategy.

We found them fairer than the others, and wearing a covering made of certain plants, which hung down from the branches of the trees, tying them together with threads of wild hemp; their heads are without covering and of the same shape as the others. Their food is a kind of pulse which there abounds, different in color and size from ours, and of a very delicious flavour. Besides they take birds and fish for food, using snares and bows made of hardwood, with reeds for arrows, in the ends of which they put the bones of fish and other animals. The animals in these regions are wilder than in Europe from being continually molested by the hunters. We saw many of their boats made of one tree twenty feet long and four feet broad, without the aid of stone or iron or any other kind of metal. In the whole country for the space of two hundred leagues, which we visited, we saw no stone of any sort. To hollow out their boats they burn as much of a log as is requisite, and also from the prow and stern to make them float well on the sea... We saw in this country many vines growing naturally, which entwine about the trees, and run up upon them as they do in the plains of Lombardy. These vines would doubtless produce excellent wine if



they were properly cultivated... They must be held in estimation by them as they carefully remove the shrubbery from around them... to allow the fruit to ripen better.

(Wroten, 1972:11-12)

This lengthy excerpt bears closer scrutiny. Verrazzano's observation that people were nude or wore plant and fiber garments, as well as the reference to the continual efforts to hunt animals, and that they ate mostly plant food supplemented by birds and fish, supports Rountree and Davidson's comments that the deer population of the Eastern Shore was much lower, leading to less emphasis on male hunting rituals and endurance tests (*huskanaw*, on the Western Shore) and more emphasis on obtaining smaller game on a regular basis (1999:41). The tree plants used for clothing may be Spanish moss (*Tillandsia usneoides*) which implies that they may have reached the cypress swamps of the Pocomoke River; Indian hemp (*Apocynum cannabinum*) is also indigenous. This also points to a rudimentary weaving or at least cordage technology. The absence of stone for weapons and tools is consistent with the geology/geography of the area but seems to preclude trade across the Bay or from the North. This may be accurate as Powhatan did not begin to consolidate and expand his empire until the late 1590s and trade, or more properly a tribute system, was developed with the Eastern Shore from between 1597 and 1607 lasting until 1621 (Rountree and Davidson, 1999:48-49). The comment that the boats were hollowed to make them float well on the "sea" may be a generalization for "salt water" in that all European contact with these craft seems to have taken place in bays and not the open ocean. The final reference to grapes is clearly to wild grapes, muscadines or frost grape (*Vitis rotundifolia vulpina*) (scarce but still growing in the area) and summer or fox grapes (*Vitis aestivalis labrusca*). He further speculated that they built no shelters, because he saw none, but Col. Henry Norwood visited native dwellings in 1650 during his encounter with the Chincoteague people (Norwood, 1997; Mariner, 1996:7-8; Rountree and Davidson, 1999:56; Wroten 1972:12-14). Wroten also comments that Verrazzano made specific reference to swans (*Cygnus* sp.) (Op. Cit., 5) as did Norwood (1997, 26). Norwood also referred to a seaweed, ducks, geese, "curlieus" [curlews], and wolves (Op. Cit., 19, 21, 25). Of these, none but the curlews can be identified as to species. Wolves no longer exist on the islands but coyotes are making a vigorous comeback, sufficient to be of concern to natural resource managers. In addition, Norwood stated that the Indians provided the women with shellfish to eat, "the like whereof I ne'er had seen" (1997, 25) and since he clearly recognized oysters, these must represent clams, mussels, scallops, whelks or some other of the species in the area. He further credited the Indians with providing "ears of Indian corn" and "bread" (Op. Cit., 26, 27) and did provide some description of village life. With respect to the watercraft he noted that they propelled their canoes by poling, standing astride the craft with a foot on each gunwale (Rountree and Davidson, 1999:38).

#### Early Settlement and Land Use (17<sup>th</sup> Century)

Since most European settlement was initiated in Jamestown and moved northward up the Delmarva Peninsula and concomitantly up Assateague/Fenwick Island(s), as well as across the Chesapeake from Maryland, albeit considerably later, it is difficult to separate the colonial history of the area by State. In the north the Dutch East India Company settlement of Zwaanendael (present-day Lewes, Delaware), founded in 1631, was cut short when it was destroyed by the native people in 1632. Therefore, the following sections include information relating to Virginia's role in the settlement of the region. European contact in the Chesapeake in general increased in the early seventeenth century and especially after the founding of Jamestown in 1607 and John Smith's voyages of 1608. The latter initiated trading relations with the Accomacs and Occohannocks who live at the southern end of the Delmarva Peninsula and outside the study area. This was followed by increased fishing by Europeans in the area in 1612-1613, and the establishment of a salt works on Smith Island, Virginia in 1616, although it failed within three years (Rountree and Davidson, 1999:50). The Indians living within the vicinity of Fenwick/Assateague and Chincoteague included a number of groups, generally associated with the Nanticokes and speaking the Algonkian based languages of the Lenapes or Delaware (Wroten, 1972:7). These included the Pocomoke, Annamessex, Manokin, Nassawattex, Acquintica, Assateague, Chincoteague and Kickotanks (Ibid.). Scholars generally concur that none of these groups lived on the barrier islands. The latter could not support agriculture or sufficient game, and were too exposed and storm prone for full time habitation. The islands were sources of shell to make "roanoke" (mussel shell) and "wampumpeak" (hard shell clam: also called just "peak"), which were forms of bead currency and status items, and places to harvest some plants, fish and shellfish seasonally. Villages were situated inland generally along the upper reaches of rivers.

Therefore, it was a particularly bleak situation when Col. Henry Norwood found himself, and a handful of ailing English settlers, abandoned on the beach in January of 1650. After a particularly long (3 months) and miserable voyage aboard the Virginia Merchant, Norwood and a dozen of the most ill passengers went ashore. Norwood to seek fresh food and water, the passengers hoping for a respite from the tossing ship. The Captain and mate asked Norwood to come back to the ship briefly, but he declined and too late discovered the subterfuge; the vessel abandoned them all. They built rude shelters as well as possible, and subsisted on oysters and a few game birds, but ammunition was low. They determined early that they were on an island, when Norwood sent his cousin to look for friendly Indians. As members of the company died over the next week, of cold, exposure, and hunger, the group resorted to cannibalism to survive (Norwood, 1997:22). Although they did not know precisely where they were, Norwood knew they were north of Virginia and was planning on trying to swim an estimated hundred yards to the mainland and seek the assistance of Indians. On the ninth or tenth day, Indians did come to their rescue; members of the Kickotanks or Kegotanks. Norwood understood a reference to the settlement of Accomack and was able to convey this to the Indians. They sent a messenger who returned with an English fur trader, Jenkin Price. Price acted as guide and took them to a Chincoteague Indian village. They spent the night there as guests of the king and were eventually conveyed to Jamestown. There is disagreement as to where the Europeans had been stranded and the route they took south. Historians have frequently assumed that Norwood was marooned on Fenwick Island around the Maryland/Delaware border but Mariner forwards several arguments for a more southerly location.

First, the Kickotanks were neighbors of the Chincoteagues; at least some of them lived in the region of today's Kegotank Creek near Modest Town, and there is no evidence that they lived as far north as Delaware. Secondly, 'Virginia' lay, according to Jenkin Price, 'about fifty English miles' from the Kickotank village where Norwood had found refuge; Fenwick Island is well over 70 miles distant from Nandua Creek, then the northernmost reach of English settlement in Virginia [and Price's home]. Third, Norwood records that his party took only one day to travel on foot from the Kickotanks to 'Chincoteague,' though their route was 'at least double to what it would have amounted to in a strait line;' the distance from Fenwick Island to the banks of 'Chincoteague Creek' is 40 miles as the crow flies, not counting the creeks, bays, and wetlands that intervene, well beyond what could be covered afoot in one day even today. In addition, the island on which Norwood was abandoned, just off the coast from the Kickotank village, was small enough that one of his band ascertained that it was an island in a reconnaissance that took little more than an hour. No island on the coast fits that particular description, but it may have been Assawoman Island or possibly Assateague was then divided by inlets that no longer exist, and that Norwood and his company were originally cast ashore on a small portion of it.

(1996:7-8)

Further, he credits the following theory to B. Miles Barnes:

To the obvious objection that the only known villages of the Kickotanks were located south of the Chincoteagues, so that to reach Chincoteague village Norwood would first have to travel north, and then southward to 'Virginia,' he observes that Jenkin Price was a trader with the Indians, and may have had his own itinerary mapped out before agreeing to pick up Norwood while passing through from Kickotank to Chincoteague. While Barnes agrees that some portion of Assateague Island could have been the site of Norwood's landing, he contends that even more likely are Assawoman Island or Wallops Island, both in Virginia, each of which, given the distance factor, seems a more logical choice than Fenwick Island.

(Op. Cit., 188)

Mariner states that Barnes forwards this discussion in the volume, *Seashore Chronicles*, which he co-edited with B. Truitt (1997). However, that book was only in preparation when Mariner published in 1996 and this material does

not appear in the final Barnes and Truitt publication. The more general supposition of Norwood being near the Delaware line is discussed below in the section about Inlets.

Most of the early interaction with the Indians took the form of trading: for corn in Virginia and for furs in Maryland. Two of these early traders were Samuel Argall, who was trading with the Accomac in 1613, and John Westlock, who bargained for furs with the Manokin in 1620 (Rountree and Davidson 1999:84-85). English settlement on Virginia's Eastern Shore began in earnest around 1620, and moved from the southern tip northward. In Maryland, settlement was discouraged for decades, with the influx of settlers not occurring until the 1660s (Op. Cit., 99), when the fur trade was waning.

None of the Eastern Shore tribes participated in the massacre of March, 1622 around Jamestown so relations in the East remained cautious, but generally friendly. Trade was continued by men like William Claiborne from Virginia, who actually had a settlement on Kent Island and an outpost on Palmer Island (also known as Garrett) at the mouth of the Susquehanna River, both in Maryland, in the late 1620s. There was also Henry Fleet, who traded in both Virginia and Maryland around 1637, and later John Nuttall (or Nutwell) and Jenkin Price, both of Virginia, who traded on the Eastern Shore in the late 1640s and 1650s. It was Price who was called by the Kegotanks to retrieve Norwood's marooned party and convey them to Jamestown in 1650.

Settlers acquired Indian lands through purchase, trade, or patenting abandoned lands. However, this began to happen so rapidly by the 1650s that the natives were losing not just residential lands, but also hunting and agricultural lands. Laws passed in 1652, 1654 and 1658 to regulate and limit sales of land to the English were generally ignored on the Eastern Shore (Rountree and Davidson 1999:65). This attitude can also be seen in the actions and influence of people like Edmund Scarborough. The latter is notorious for his obsessive hatred of the Indians, without regard for their tribal affiliations or any particular offense they may or may not have committed. He repeatedly tried to incite wars against them, to the extent that some of his actions led to his legal prosecution in Jamestown. In spite of these censures, he persisted and once even tried to garner support from Maryland's Governor for one of his "campaigns" against the Indians. Maryland refused and he marched on the peaceful Assateagues, who probably numbered around 200, with 300 footmen and 60 horses, but found they "were harder to find than to conquer" (Wroten, 1972:8; Rountree and Davidson, 1999:65). This became known as the Seaside War of 1659. That year marked the first reference to the Assateagues in Maryland's official records. Bearss takes a more Eurocentric view describing Scarborough's expedition as a success, breaking the power of the Assateagues to harass the settlers of Accomack (1968:8-9), since the Jamestown Assembly voted 70,500 pounds of tobacco, less expenses of 22,681 pounds, to be paid to the inhabitants of Accomack for their efforts during the recent war (Whitelaw, 1951 I:31-32, 631; Wise, 1911:159-161).

Native-European disputes increased throughout the 1660s and involved law suits about trespass, theft (including from graves and mortuary houses), assault, and patenting occupied lands (Rountree and Davidson, 1999:49-100, 120). The Indians appear to have recognized and made use of the English legal system from the very outset. Perhaps related to this are the facts that, in the 1640s, the Indians became a more discerning trade market and in 1659, in Virginia, it became legal for Indians to own guns. There had been no prohibition against it in Maryland. Maryland had made treaties with the Eastern Shore Indians from the beginning of settlement in the 1660s and more were developed in 1678, 1705 and 1742, two were renewed in 1687 and 1693 and the Pocomoke signed another in 1692 (Op. Cit., 106). These created reservations and contained clauses assuring rights to hunting, crabbing, fowling and fishing, although they did not provide rights to the lands on which these activities took place (Ibid.). By the late 1600s, the tribes throughout the entire Eastern Shore had been decimated by smallpox in 1667 (the year of a severe hurricane also), and to a lesser extent by alcohol (Op. Cit., 67, 77). This created a certain amount of vacant land as many remnants of tribes moved and consolidated. Others, feeling pressure either through loss of environment, from the growing English population surrounding them, or feeling physically threatened, opted to leave. Lists of tribes and bands at the Maryland village of Askiminikanses from 1678 and 1686 are significantly different and indicate that not only had Assateague and Pocomoke tribes joined together there but that they continued to absorb refugee groups from other areas including Virginia (Op. Cit., 119). From 1686 to the end of the century was a relatively stable time for the Assateagues and Pocomokes. A small amount of fur trading continued but mostly for mink and raccoon, as beaver fur had dwindled; eighty percent of the furs still coming from Maryland were from the Eastern Shore (specifically from the Nanticoke, Pocomoke-Assateague, and Choptank Reservations) (Op. Cit., 121).

Until the 1660s, settlers allowed their herds of livestock to forage freely. When the Virginia General Assembly began to pass laws to control this, those of means began to patent lands and use the barrier islands as natural corrals. The border between Maryland and Virginia was established in 1668. Capt. Daniel Jenifer held the first patents on both Chincoteague Island and the portion of Assateague Island below the Virginia line. The Chincoteague portion was patented in 1671 (Mariner, 1996:12; Whitelaw, 1951 I:199, II:1350ff) and he was “granted a patent for 3,500 acres, being all of Assateague Island up to the Maryland line,” in 1687 (Bearss, 1968:9; Whitelaw, 1951 II:1384).

With respect to the Virginia portion of Assateague Island, Jenifer subsequently sold this to Maximilian Gore in 1689. William Gore, grandson to Maximilian, deeded some of his land to his son Daniel in 1750 and the latter acquired the balance later. In turn he bequeathed most of his land, including a water mill on Peach Creek, to his son Thomas Teakle Gore in 1770. Thomas sold 163 acres to Daniel Mifflin in 1794, who subdivided and sold it to four men the next year. One of these men was John Lewis. Lewis eventually bought out the other three and at his death in 1818 owned the entire acreage. It was Lewis who built and operated the saltworks at the south end of Assateague Island and his will bequeaths two salt pans and two salt kettles to his son, Isaac. It appears that Isaac continued operation of the saltworks as it appears on subsequent maps including those drawn in 1820 and 1855, by Wood and Crozet, respectively (Figures 8 -9) (Goodwin et al., 1989:9-11).

During the Revolution, the Government of Maryland directed that nine Hessian prisoners, or more if they would go, be taken to the saltworks at Sinepuxent (Wroten, 1972:25). This Inlet was in the North Beach area and so would not refer to Lewis’s company but might indicate the Baltimore Salt Company of Alexander and Lemmon, which was operating in the region and which operated well into the 19<sup>th</sup> century (Marye, 1945:111). Other saltworks in that area were Jones’s and Birch’s. The former functioned between 1875 and 1905 and so is not a contender as a destination for the Hessians. Jones’s saltworks are situated within Assateague State Park. According to the map in Bearss (1968), Birch’s saltworks were south of the site of the North Beach Life-Saving Station and opposite Lumber Marsh. Truitt noted that James Birch operated his saltworks “shortly after the Civil War” (1971:34) so it too may be eliminated as a possible destination. An additional saltworks existed on Fenwick Island and operated as late as 1885 (Irion et al., 1993:18).

The Maryland portion of Assateague was not patented until the early eighteenth century but interest was stirring as early as March, 1686 when Captain William Whittington made a presentation to the Council of Maryland in reaction to the patent for which Jenifer had applied and which he received in 1687. Whittington remarked:

A certain Isthmus of Peninsula of Marish & Piney Hummocks called and known by the name of Assateague Island lying and being on the Seaboard side within this Province containing at least 15000 Acres the southward end of which is reputed to be within the bounds of Virg’a by which pretence some persons are about to take up or Patent a considerable quantity thereof in the right of Virg’a.

(Browne, 1887:480)

Whittington was told to research whether any surveys had previously been done of the area and to undertake one himself and report back. There are no records to demonstrate this was done. However, in September, 1702, he patented a 1,000-acre tract for himself (Baltimore’s Gift) and two years later acquired more property from the widow of William Diggs, which he had been granted by Lord Baltimore (Marye, 1945:95-96).

It seems likely that the persons whose lands on the beach were surveyed by Whittington between 1704 and 1714 were not slow ‘in setting up quarters’ on those properties. We can be certain that whites were living on northern Assateague Island in 1711. Whittington’s survey of Assateague Beach called for a boundary beginning near a cove or gut called the Three Run Cove, which issued out of the sound ‘to the eastward of the new dwelling house, being also a boundary of another tract of land surveyed for the said Whittington called ‘Baltimore’s Gift.’ This ‘dwelling house’ undoubtedly stood on ‘Baltimore’s Gift.’

(Bearss, 1968:17)

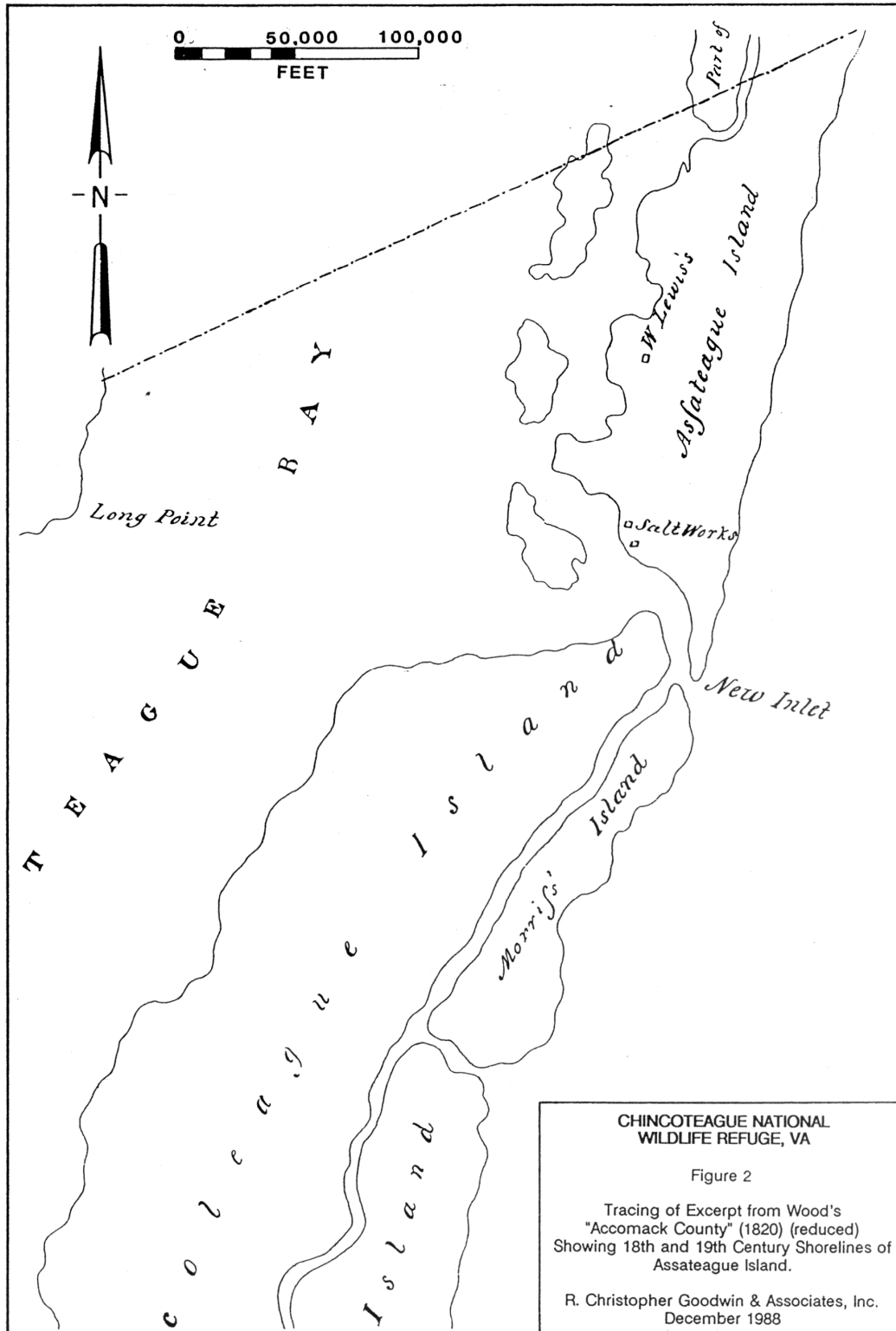


Figure 8. Portion of Wood's 1820 map of Accomack County. Lewis's saltworks are shown above the inlet. (After Goodwin et. al., 1989)

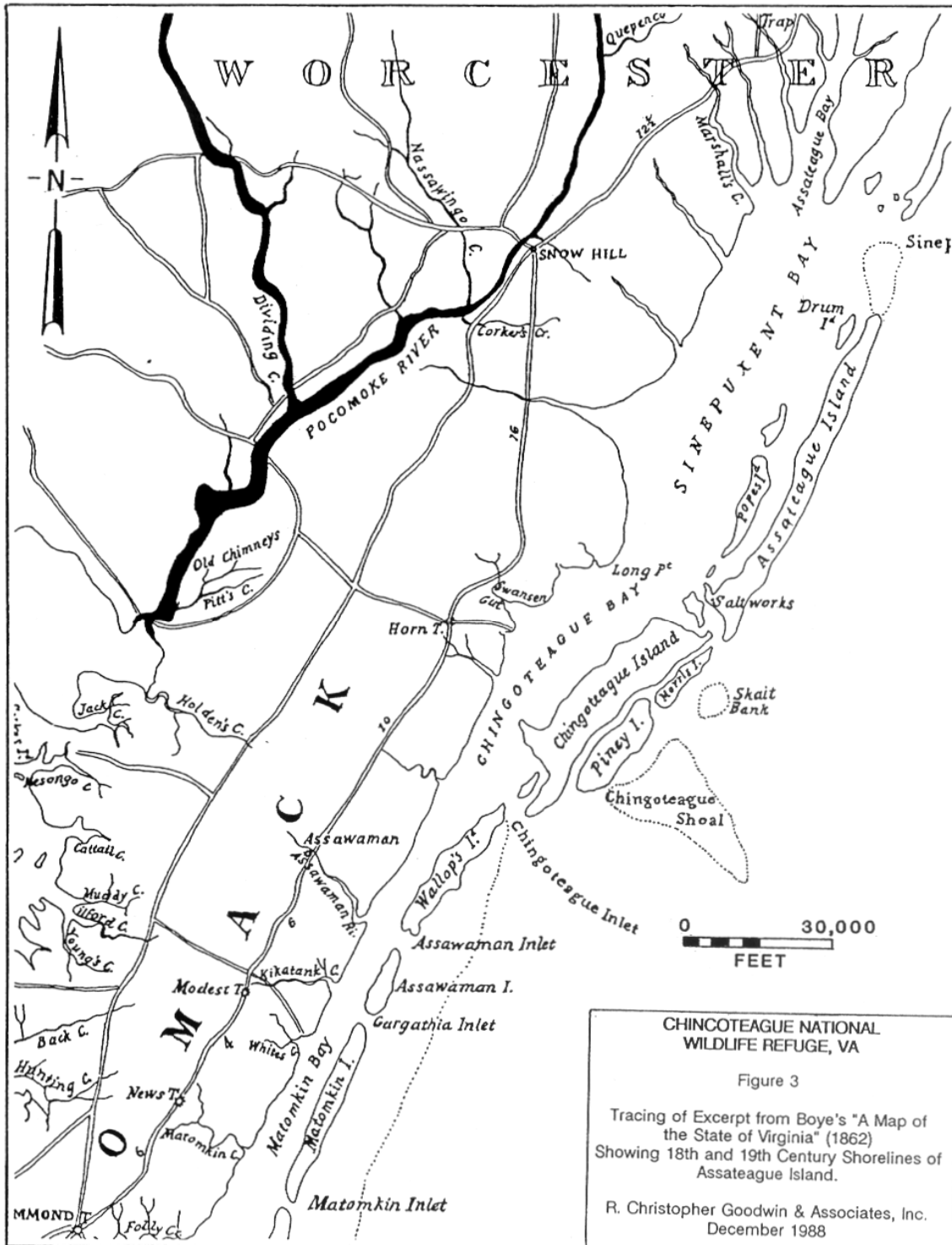


Figure 9. Portion of Boyd's 1862 map of the 18<sup>th</sup>/19<sup>th</sup> century shorelines of Assateague Island (After Goodwin et al., 1989)

Within a decade, he had acquired most of the land in either his own name or the names of other individuals. There had been two previous surveys one for Baltimore's Gift and one undertaken in May, 1686 for Col. William Stevens called "Winter Pasture" (Bearss, 1968:15). The latter became Winter Quarter on Whittington's survey; a name still associated with the area.

Whittington also laid out a "continuous chain of surveys" from Fenwick Island to the inlet four miles below the present Ocean City Inlet, varying in area from 100 to 200 acres, and detailed by Bearss (1968:15-16). The latest of these appears to date to 1736 when "The Upper Pines," surveyed for William Whittington in 1714, was patented to his daughter Hannah Hough (Ibid.). As in Virginia, these properties were slowly dispersed through sale or inheritance until "little by little" the titles were abandoned (Marye, 1945:96-97). Not a great deal is known about the northern portion of the island except that it was patented by an English immigrant, Thomas Fenwick, in 1686 (Hurley and Hurley, 1995:114). Although Worcester County was established by 1742, the Delaware boundary was not settled until 1767 despite being first surveyed in 1751 to define the boundary between the lands of the Lords Penn and Baltimore. The first stone laid to demarcate this line still stands near the present Fenwick Island Lighthouse and bears the arms of Penn on the north face and Baltimore on the south side.

### The 18<sup>th</sup> Century and War for Independence

After an initial rush to patent coastal lands when these were opened for settlement, property owners became increasingly absent and by the mid-18<sup>th</sup> century tax payments largely had ceased and many properties were abandoned on the islands. These became used mostly as pasture for grazing cattle and horses (Truitt and Las Callette, 1977:63).

The eighteenth century is known as the Reservation Period with respect to the Indians of the Eastern Shore. In Virginia, most of the Occohannocks moved north into Maryland in the late seventeenth century, where Indians related both linguistically and by blood were stronger in numbers and held large tracts of lands well removed from English settlement until into the eighteenth century (Rountree and Davidson, 1999:83). Some Indians remained as they had married into the European community; "some Anglo-Virginian families on Chincoteague Island still preserve a tradition of being descended from unions with local Indians that began in the seventeenth century and...continued into the mid-nineteenth century" (Ibid.). Frequent intermarriage with blacks did not occur until the eighteenth century and largely between free blacks and the Gingaskins (Op. Cit., 166-189). The latter were the only remaining Indians in Virginia, who held onto their 690-acre reservation near present-day Indiantown, on Cobb Bay, from 1640 until 1813, although the legal process to terminate them, socially as a recognized entity, took from 1784 until 1813 (Op. Cit., 83). As the breaking up of the reservation involved allotting parcels of that land to "qualified Indians," many Indians remained in the area, until 1831.

That was the year of the Nat Turner slave insurrection; the ensuing paranoia and relations between Indians and blacks led to pressure to force the Indian landowners to leave or at least disperse (Op. Cit., 195). One of the last sales of land from the old reservation took place in the 1860s (Op. Cit., 197). With this, Indians, as a recognizable group, largely disappeared until several organizations of people claiming Indian descent were formed in the 1980s, in both Virginia and Maryland, and are endeavoring to obtain formal recognition.

At the outset of the eighteenth century the four major tribes in Maryland inhabited three main reservations. The most relevant for this report is that of the Pocomokes and Assateagues at Askiminikansen on the Pocomoke River, north of Snow Hill. As they were not obliged to pay taxes and could not vote, the county governments had no official reason to keep records on the Indians and hence information is spotty, usually involving land sales or court appearances (Rountree and Davidson, 1999:127). In the seventeenth century, Indians were known to become indentured servants of the Europeans, and to indenture their children as well. This continued into the eighteenth century and these people faced the same risk of being sold into slavery as did indentured black servants. However, in Maryland, Indians who lived off the reservations had the same tax status as white persons and could marry into that community, this status was not extended to free blacks (Op. Cit., 144). There are frequent complaints to the government, from 1705 throughout the 1720s, about encroachments of adjacent white colonists onto Indian reservation lands. In 1722 and again in 1726, the Assateague and Pocomoke chiefs petitioned the government about whites actually moving and establishing plantations on their lands and threatened to move off the reservations if these were not removed (Op. Cit., 151-152). Most appear to have left the reservation by the 1730s. In response to a conspiracy to rebel, a final treaty was drafted in 1742 and placed all the tribes under the direct control of the Lord

Proprietor. Although they continued to select their emperors, these were at best puppet roles and really more for social status within the Indian groups; the last known ruler was the queen of the Choptanks of Locust Neck in 1792 (Op. Cit., 135) and that reservation was abolished in 1799.

For the Europeans colonizing this area, the eighteenth century is the time when they gave up trying to grow tobacco as a cash crop and turned to cereal grains. Much of the early settlement of the Maryland portion of the region was discussed above as it straddled the late seventeenth and early eighteenth centuries. With respect to Chincoteague, Mariner observes that while it is relatively easy to learn who owned the land, it is more difficult to determine who actually lived there (1996:19). For a century it was owned by absentee landlords and populated by tenants, their slaves and later freed men, and squatters.

There is also lore of pirates frequenting the southern portions of the barrier island, including the tale that Blackbeard (Edward Teach) kept one of his wives near Chincoteague. Certainly, Blackbeard sailed this coast and may well have watered, hid or laid in wait in the many coves and inlets, but there is no definitive proof. Another popular story, possibly with some truth to it, involves Charles Wilson the South Carolina sea captain who turned pirate in the 1730s. He was captured and eventually hanged in London, England in 1750. Of course there is an associated tale of buried treasure. Needless to add this has engendered many a treasure expedition and the absence of recovery is generally attributed to the changing contours of the island. However, it is a fact that pirates rarely buried their loot. It was apportioned out and usually spent as quickly as possible. In 1961, Kenneth Carter of Worcester County planning and zoning wrote to the British Naval Records Office and asked for a copy of a "letter" allegedly confirming the tale (Carter, 1961a). He received a response the same month asking for more information and another acknowledgement stating that Naval records from that period were held at the Public Record Office. Carter sent a second letter to the Public Record Office (Carter, 1961b) and received a brief reply stating that they receive many inquiries for this document but that no such item was ever among their files (Public Record Office, 1961). This is a myth that continues to grow with time.

While on the subject of myths, another one that requires debunking is that the feral ponies on the island are descendants of ponies, which swam ashore from a Spanish shipwreck. This is discussed at length in an overview and assessment prepared for the National Park Service for Assateague Island National Seashore (Langley, 2002:27). The ponies are now accepted to be the feral descendants of horses that were pastured on the islands as a form of natural corral.

During the American Revolution, the Virginia Convention issued two orders with bearing on the southern portion of the barrier island; the northern end was still virtually empty and so unaffected. The first order was to build two "galleys" on the Eastern Shore to patrol the coast and the second was that all livestock had to be removed from all the islands of the Eastern Shore so that the British could not come raiding for provisions (Mariner, 1996:22-23). Chincoteague Island alone had over 400 sheep and unknown numbers of horses and cattle, and this was after a winter that had been particularly hard on the livestock. The Islanders stated that they had "the most fervent desire to do everything in their power to defeat the ... enemies of American liberty" and reported that they already had a militia and had a guard of 30 or 40 men stationed in the area. They asked the Convention to rescind the order to remove the livestock and conceded that they would bear the loss themselves if they could not protect their livestock from "small cruising vessels of the enemy" (Ibid.). Mariner questions the existence of the militia, as to whether it existed in more than name and whether there were truly no loyalists among the islanders (Ibid.). The Convention relented and allowed the livestock to remain on all but Watts Island. When the British blockaded the mouth of the Chesapeake by mid-1776, Metompkin Creek and Chincoteague Inlet became critical means of sending medicine, munitions and other supplies into the Chesapeake. In this case it was the mainland at Chincoteague, not the island that was important as the goods were unloaded and sent to Snow Hill to be floated down the Pocomoke to the Chesapeake. Around this time the authorities determined that the harbor at Chincoteague should be fortified. One fort already existed on the mainland opposite Mosquito Point and was regularly manned by the 2<sup>nd</sup> Regiment of Virginia Militia. The second fort was built, between September and December, 1776, on the northern end of Wallops Island despite the recommendation that it be constructed on the island by Captain James Campbell, a privateer from Baltimore. Campbell entered Chincoteague in his vessel Enterprise followed by the British brigantine Betsy, which he had captured. He wrote to the Continental Congress in Philadelphia as to his whereabouts and commented that, "Chincoteague Inlet 'is of great importance and ought to be fortified, for which four guns would be sufficient'" (Mariner, 1996:24). Campbell was not the only privateer to shelter at the island; they generally unloaded on the mainland in the bayside channels. By 1778 Chincoteague in the south had become an



“important emergency international port of entry” for transshipping goods into the interiors of Maryland and Virginia (Op. Cit., 25). The same year the two patrol boats were completed.

In the North, in what is now Delaware, two shipwrecks occurred with considerable loss of life. Although these took place outside of the research area, longshore currents can deposit structural remains and artifacts a significant distance from their point of origin and so they and others like them cannot be dismissed out of hand. In 1785 the vessel Faithful Steward ran aground at night about a mile off the coast carrying 249 Irish immigrants to Philadelphia. The waves pounded the vessel such that only 68 passengers survived. It had struck in the same area where the Three Brothers had been lost earlier in 1775.

### The 19<sup>th</sup> Century and A More Maritime Focus

By the turn of the nineteenth century, there were more than 30 families residing on the Virginia portions of the islands, by 1835 this had more than doubled to 70 families, and by 1860 there were 150. A great deal happened in this century. At the outset cattle was still the major source of income, and seafood was still generally thought of as basic sustenance. The growth in population may have been one cause of the decline of livestock herding; there simply was no longer sufficient land. Also, large markets for seafood were developing in Philadelphia, and New York as the resources nearest those cities were depleted. Harvesting of seafood became the main livelihood for the islanders by the 1830s and accelerated until the early twentieth century.

The War of 1812 had minimal impacts on the region as a whole and none in the study area. John Cropper, elected Chairman at a meeting of freeholders and citizens of Accomack County in August, 1812, drafted a document, “Resolutions of Protest Against Declaration of War Against Great Britain in 1812,” which was sent to the editors of three papers, including the *Federal Republican* in Baltimore (Whitelaw, 1951, II:1408-1413). The inlets provided avenues for the Americans to evade the British blockade of the Chesapeake and coast patrols. The British did enter the Sinepuxent and raided some of the plantations for provisions and fired on parts of the coast, as at Lewes, Delaware. The Maryland portion of Assateague was sparsely populated and there are no references to any incidents in the Virginia portions of either Assateague or Chincoteague.

The most dramatic event of the first half of the nineteenth century on the barrier islands, and for the eastern seaboard in general was the storm of 1821, known as the “Great September Gust.” The hurricane is believed to have originated in the Bahamas around September 1st and it ripped up the coast with such speed that it hit Chincoteague on September 3<sup>rd</sup>. The island was even more exposed than at present as the prominent “hook” on its southern tip had not yet developed. Author and illustrator, Howard Pyle, visited Chincoteague in 1877 and interviewed witnesses. He subsequently published their experiences of the great storm and accompanying tidal wave, which make clear why there are few houses or trees remaining that predate this event (1877:744-745). There are no references to vessels lost at sea or wrecked upon the shore in this storm although certainly this had to have occurred.

On the 1864 tax records the name John A. Jones appears. He married Arah Lewis who may have been the daughter of Isaac Lewis (of the saltworks) and in the 1870s he laid out 12 lots for his six children at the south end of the island. This became known as Assateague Village and by the turn of the century there were at least eight houses there in addition to the Jones’s residence; the population, mostly fishermen and oystermen, peaked at 225 (Bearss, 1968:86-90). The village declined in the 20<sup>th</sup> century and was abandoned by 1922. Other, extremely small, communities sprang up in the vicinity of specific inlets and generally in association with life-saving stations. Villages such as Green Run and North Beach were named for both the inlets and the stations with which they were associated, but boasted some amenities like a school, church or cemetery. Others, like Pope Island, were just residential enclaves for the staff of the station. These were all of relatively short duration; fading with the shoaling and closure of the inlets or with the closure of the stations. These will be discussed in more detail below in relation to the U.S. Life-Saving Service stations.

The Fenwick Island Lighthouse (38° 27' 05" N, 75° 03' 20" W) was built in 1859 and functioned until deactivated in 1978. This was the earliest aid to navigation in the area since the Life Saving Service was not established until 1871. It stands 87 feet tall and was first equipped with a 3<sup>rd</sup>-order Fresnel lens which was replaced with a 4<sup>th</sup>-order lens in 1899. It was listed on the National Register of Historic Places October, 1973. The area was known in colonial times as “False Cape” because the tall pine trees on the island appeared as a headland to sailors not familiar with the region. Subsequently, three Life Saving Stations were established on the northern portion of the island.

These Stations were constructed either in areas known for shipwrecks or where a county or town would provide the funds for its construction, as at Ocean City. The Ocean City Station was built in 1878, the Isle of Wight Station was built in 1898 and the Fenwick Island Station was established in 1891. The Ocean City structure was moved to its present site from Caroline Street after 1980 and houses a museum today, the Isle of Wight Station was destroyed in 1962 (it burned after the Great March Storm), and the Fenwick Island station seems to have been converted into an electronic testing station in 1946; the buildings sold off piecemeal in 1950, and then the site abandoned (USCG, 1950). Since Ocean City was only incorporated in 1875, that in three years it was in a position to sponsor a Life-Saving Station is impressive.

As an adjunct to lighthouses and lightships, the U.S. Life-Saving Service was created by the federal government in 1871. Beach patrols by “surfmen” served both to warn vessels away from the beach and shoals, to come physically to the rescue of imperiled crews and passengers of stranded or sinking ships, and to succor the people rescued. Of the original eight stations authorized for Delaware, Maryland and the Eastern Shore of Virginia to Cape Charles, six were completed in time for occupancy by the winter of 1875. In 1876, formal districts were delineated and this area formed District #5 of the U.S. Life-Saving Service. However, in 1900 the districts were re-configured and this area became District #6. The other two were completed in 1876 and the stations were numbered. U.S. Life-Saving Station records use these numbers to report rescues, although some renumbering seems to have taken place and some later stations were not numbered at all: as in 1884, when District #5 was authorized to establish five more stations, which were not numbered. After this time stations were mentioned by name. The stations in the vicinity were as follows. The Ocean City station was responsible for patrolling the beach three miles to its south. Since the present inlet separating Ocean City from the northern end of Assateague Island National Seashore did not form until 1933, this station actually patrolled part of the study area and reported wrecks that occurred there. The Ocean City, MD station (#4, built 1878) is located at the village of Ocean City at 38° 20' 00" N, 75° 05' 00" W (Noble and Raynes, 1979: 103). The Fenwick Island Life-Saving Station (#144) was situated 1.5 miles north of the Fenwick Island Light at 38° 28' 20" N, 75° 03' 00" W; the Isle of Wight Life-Saving Station (#145) was on the beach abreast the south end of Assawoman Bay, 2.25 miles south of Fenwick Island Light at 38° 24' 10" N, 75° 03' 30" W.

The other stations in the vicinity were: Green Run Inlet, MD (#5, built 1874) was located 13.5 miles NE of Assateague Light at 38° 03' 15" N, 75° 13' 15" W in 1880: but at 38° 04' 30" N, 75° 12' 50" W in 1915 (Noble and Raynes, 1976: 104). The change in latitude and longitude information, over only 35 years, emphasizes how geomorphologically dynamic these locations were. It was located just north of the inlet of the same name. Pope Island, MD (#6, built 1878) was located 10 miles NE of Assateague Light at 38° 00' 20" N, 75° 15' 40" W (Op. Cit., 105) and about three miles south of Green Run Inlet. Assateague Beach, VA (#7, built 1875) was located 1 1/8 miles S of Assateague Light at 37° 54' 10" N, 75° 19' 35" W in 1880: but at 37° 53' 40" N, 75° 21' 40" W in 1915 (Op. Cit., 106). In 1914, the U.S. Life-Saving Service amalgamated with the U.S. Revenue Service and jointly became the U.S. Coast Guard. This probably engendered the resurveying of the stations' locations. North Beach, MD (not numbered, built 1883) was located 10 miles S of Ocean City at 38° 11' 30" N, 75° 09' 20" W (Op. Cit., 103).

In 1888, lightship LV 37 was stationed at Fenwick shoals, at 38° 26.3 N / 74° 53.4' W until 1891. It was replaced by LV 52 from 1891 until 1930 at 38° 26.8' N / 74° 50.8' W in 60 feet of water. The last vessel on this station was LV116 / WAL 538, which was renamed Chesapeake for a post it subsequently held, and it is now a tourist attraction in Baltimore Harbor. It was stationed at 38° 26.8 N / 74° 46.4' W from 1930 until 1933 when it was replaced by an automated whistle buoy. The latter is officially Fenwick Island Shoal Lighted Whistle Buoy 2 and is 2.4 miles at 171° from the final lightship position. The second light vessel was able to render assistance, June 2, 1918, to a disabled seaplane that landed nearby and rode out a hurricane for two days (September 18-19, 1928) without incident. The final vessel also survived a hurricane (September 17-18, 1946) when its anchor chain parted and after deploying its spare anchor had to steam full ahead for 10 hours to hold position, losing all its boats and davits (Flint, 1989).

In addition to the lightships, the Little Gull Bank Gas and Whistling Buoy 4 was deployed prior to 1930 (USDOC, 1930) between Little and Great Gull Banks in 39 feet of water at 38.28° N/ 75.03° W. This buoy was updated to a modern “can”-type buoy and is located on the Southwest edge of Little Goal Bank at 38° 16' 51" N/75° 04' 07" W.

Most of the information about shipwrecks in the area has been garnered from the logs and records of the U.S. Life-Saving Service. Temporally, it appears that there were a great many more wrecks in the late nineteenth century and since there were a great many more ships sailing there is a modicum of truth to this; however, some of this is bias introduced since there were now people present to record wrecks. When these occurred prior to the existence of the stations, their discovery was less likely. Even after the creation of the stations there were some gaps. Stations were generally no more than six miles apart, and two surfmen from each station would patrol at a time. One would head north of the station and one would head south. Each would cover three miles and when he encountered a surfman from the next station they would exchange a token to demonstrate that they had each covered their three miles and that the entire distance had been patrolled. As is obvious from the descriptions above, this was not always the case. For example, the Ocean City station was ten miles above North Beach; if each patrolman covered his three miles there would still be a four-mile gap. Wrecks in this no man's land were often not discovered until daylight or unless they sent up signals. Details of wrecks in the area follow in Chapter 4.

The late nineteenth century saw the area visited by the same prosperity the rest of the Chesapeake region was enjoying. The development and improvements in the canning industry increased the distance seafood could travel and added new markets to the current ones, and the demand in the extant markets continued to escalate. The construction of both a railroad and a number of canneries on the Eastern Shore shortened the distance the Islanders had to send their shellfish, and concomitantly increased profitability. In 1864, aquaculture was introduced to Chincoteague by John A.M. Whealton and it is still practiced today (Mariner, 1996:43; Thomas E. Reed, 2001:Pers. Comm.). Chincoteague oysters became famous for their taste and quality. Clams were harvested year around and often supplemented other income. Crabs were also shipped north, although in smaller numbers, and finfish too provided a good income. Juvenile jumping mullets, called "fatbacks" (*Mugil cephalus*), channel bass (*Sciaenops ocellatus*) or drum, and trout (probably *Salvelinus fontinalis*) were the preferred catches.

While Chincoteague in the south was developing into a real town, little was occurring south of the village of Ocean City in Maryland. The area was visited mostly by hunters, who stayed mostly on shantyboats or in other small communities on the mainland. The northern portion of what would become Assateague Island after the hurricane of 1933, was subdivided in 1890 by the Synepuxent Beach Company and a second subdivision was planned for farther south around 1920, but these existed only on paper and never reached fruition (Mackintosh, 1982:2).

Ocean City, founded in 1875, essentially was created as a resort destination by the Atlantic Hotel Company Corporation. There were three tourist facilities: the Atlantic Hotel, Congress Hall, and The Ladies Resort to the Ocean (Marye, 1940:115). The latter being a female-only hotel. Access to the area initially was by train to the shore and then a ferry to the island but the next year the Wicomico and Pocomoke Rail Road built a bridge and extended its line. By 1884 there was a small cluster of buildings near the terminus of the railway, but the Life Saving Stations still stood in relative isolation. By 1910 the village surrounded the Station. As the bridge was the only access, planks would be laid across for pedestrians, wheeled vehicles including eventually cars, all of which paid a toll and necessitated orchestrating traffic for alternate one-way crossings of the bridge. In 1908 the County negotiated annual cost-sharing to replace tolls with the successor to the Wicomico and Pocomoke, the Baltimore, Chesapeake and Atlantic Railroad. The latter, the BC&A, became known locally as "Black Cinders & Ashes" and ran weekend trips from the Claiborne on the Chesapeake, where it met the steamboat from Baltimore, to Ocean City and ran as an express straight to the coast in about 2 hours (DeVincent-Hayes and Jacob, 1999:11).

### The 20<sup>th</sup> Century: Industry, Recreation and Conservation

The region witnessed enormous changes in the twentieth century. The first State road bridge was built in 1916 and a second in the 1940s. Even today there are only three bridges to the island so traffic congestion has always been endemic to the area in the summer. With only a handful of permanent residents, although the numbers have leapt in recent years, especially on the mainland to the north, Ocean City becomes Maryland's second largest city on a seasonal basis.

Toward the close of the war, in 1918, three vessels were captured off Assateague by the German submarine U-151. Although its primary missions were to lay mines and to cut the transoceanic cables, it seized the crews of the Hattie Dunn, Hauppauge, and Edna, all in one day, and scuttled their vessels but not near the present survey area. On June 2<sup>nd</sup>, the crews were released after the submarine had completed its other tasks. In August of the same year, the U-117 sank the Madrugada southwest of Winter Quarter Shoal (Bears, 1968:73-74). The hulk protruded from the

water and was destroyed by the Coast Guard cutter Gresham about a week later. A third U-boat, U-140, is known to have been in the area but there are no losses attributed to it in the vicinity of the survey area, although twenty-seven vessels did fall victim to these submarines overall. Seven vessels were destroyed by mines laid by the U-151, but not in the survey area, although two of them were near Fenwick Shoals.

Assateague was used extensively during Prohibition for rum running despite Coast Guard efforts to bring it under control (Mills, 2000: 135-137; 157). Ironically, although Chincoteague had three liquor licenses in 1882, it voted overwhelmingly pro-temperance in 1886 and was “dry” long before Prohibition. Many of the Ocean City locals were involved in the trade as neither Prohibition nor the Depression stemmed the flow of tourists to the area. In fact Maryland Senator, William Cabell Bruce, delivered a speech entitled “Federal Invasions of States Rights” at the Atlantic Hotel in Ocean City on August 29, 1925 and stated:

National prohibition is based upon a false philosophy of human conduct, has proved an utter failure as an ally of human morality, and has had no practical effect except that of adding many new forms of lawlessness, social scandal and official corruption.  
(Op. Cit., 99)

Other events with significant impacts on Ocean City were the 1925 fire that burned much of the town’s core caused by shorting and sparks at the municipal power plant, second and third fires in 1927 and the mid-1930s although these two were not as extensive, and the arrival of gambling starting with penny slots and expanding until most forms were offered by just about all facilities. The latter was terminated before the Depression.

In the realm of legitimate businesses, more fish factories opened, although mostly around Chincoteague until the 20<sup>th</sup> century when, after 1915, commercial fisheries increased with thirteen fish companies setting out 37 pound nets in the Atlantic. The quarry included flounder (*Pleuronectes americanus*, *Trinectes maculatus*, and *Paralichthys dentatus*), perch (*Morone americana*), roach (*Rutilus rutilus*), halibut (*Hippoglossus stenilepis*) and trout probably referring to either weakfish (*Cynoscion regalis*) or speckled seatrout (*Cynoscion nebulosus*), but sturgeon (*Acipenser oxyrinchus*) was especially valuable for its roe. In the area of the present Ocean City Inlet, there were 7 fish camps along the shore, serviced by a railroad running parallel to the beach (Smith, 1999:10). The crews lived in cottages through the week and generally returned home for weekends. The hurricane of 1933, which cut the present inlet, also washed away the only camp remaining at that time as well as the railroad tracks and bridge (DeVincent-Hayes and Jacob, 1999: 11; Wroten, 1972: 21-23). It also dumped almost 10 inches of rain for four days and all tributaries were overflowing and the altered salinity killed the season’s famed Chincoteague oyster crop. There was some recreational fishing, in Sinepuxent and Chincoteague Bays as well as in the surf of the Atlantic. Undertaken only after the existence of the inlet, the initial lobster catches included huge specimens, some with claws weighing 3 lbs. each (DeVincent-Hayes and Jacobs, 1999: 123). Sportsmen came as well for hunting, mostly the migratory waterfowl, and many local residents acted as guides, decoy carvers and market gunners.

Two less formal activities were egging and collecting timber and driftwood. The collection of sea bird eggs was never a commercial endeavor. There are references as early as 1772 to “the Egg Beach” (Bearss, 1968:91) and nineteenth-century authors Pyle (1878) and Warren (1913) refer to egging as a means of supplementing the local diet but also as a social activity. Bearss adds that picnics were planned by communities for just this purpose and notes that two sandy rookery islands off Sinepuxent Neck were called “Great Egging Beach” and “Little Egging Beach” (Ibid.). The second activity was the collection of wood. Some of this was true driftwood; branches and trunks of trees which had broken off or eroded into the water, or had broken away from booms of logs from limited timbering in the area (Wroten, 1972:26), and been washed up. One small island on the inside of the inlet, near the old entrance to Sinepuxent Inlet is named Lumber Marsh because floating wood often collected there (Ibid.; Marye, 1945:107; Bearss, 1968:92). Other wood was the salvaged timbers of ships. More active scavenging of shipwreck timbers, sometimes during the wrecking process, will be addressed in Chapter 4. These activities took place to the south of the survey area.

Although maps indicate inlets at Green Run were cut and filled and re-cut, there does not appear to have been a significant inlet there since 1870. In 1877 the village at Green Run held 10 families and this never rose above 30 families at its peak in the 1880s, although Scott’s Ocean House, a hotel built in the 1860s (Wroten, 1972:19) or

1870s (Bearss, 1968:81) became very popular and drew some of the early tourists to the area (Op. Cit., 81-83). Wroten claims that the hotel closed around 1900 and subsequently was sold and the timber shipped to the mainland (1972:19). He speculates that it could not compete with the growing resort attractions at Ocean City. This appears to be incorrect since Bearss interviewed a Mrs. Indiana Henry, who had married a surfman posted to Green Run, and she stated that they lived in a cottage near the hotel in 1912 and that it was still booking guests at that time (1968:83). The hotel may have closed in 1913, perhaps as a result of reduced revenue due to WWI. In addition to the hotel and the adjacent cottages, there was also a cemetery. Many of the cottages were removed to the mainland, and when the station closed none were visible. Green Run Inlet Life-Saving Station closed on June 10, 1937 at the end of that season. The hurricane of 1933 effectively stopped the southward expansion of Ocean City when it cut the inlet that exists today. The few small settlements on the island had virtually disappeared by this time. The North Beach and Pope Island Life-Saving Stations were decommissioned within a year of each other; the former in 1952 and the latter in 1953. Assateague Beach was the last to close. It was turned over to the National Park Service in 1967. North Beach, like the Isle of Wight Station, burned soon after the March hurricane of 1962 and Pope Island was burned by vandals in 1970.

World War II had a more profound impact on the region than previous conflicts. The Coast Guard established a beach patrol system akin to their earlier days but augmented by dogs and former cavalry horses to watch for enemy saboteurs (Johnson, 1987: 204). None was found but they rescued a number of survivors and recovered the victims of torpedoed vessels (Frances E. Powell; David H. Atwater), and aided some that were attacked but did not sink. "In another incident a surfacing submarine overtook the boat of a Chincoteague fisherman, seized his fish, and let him go unharmed..." (Mariner, 1996:129). The Coast Guard assigned their four vessels, originally used in the interdiction of rum-runners, to patrol 30-50 miles offshore, and added small guns and depth charges to them. These craft, with only 10 crew, were very slow and it was soon realized they were not up to engaging submarines. The anti-submarine squadron was discontinued within a year (Ibid.). Other relics of the Second World War include the periodic exposure of ordnance related to the Naval Air Station at Chincoteague. The following information was obtained from a U.S. Army Corps of Engineers (2002b) web site (<http://pirs.mvr.usace.mil/fuds/a-d/assateag/preasses/inpr/inpr1.htm>):

From approximately 1944 to 1946 or early 1947, the Navy reportedly established two rocket ranges on portions of the island along the Maryland coast...The Navy ranges reportedly were used for target practice by land based aircraft and possibly by naval aircraft. No records related to the method of acquisition of these portions of the island by the Navy were found... Investigations by the Department of the Navy, Mobile Unit 2, Explosive Ordnance Disposal (EOD) team based in Fort Story, Virginia revealed potential areas of concentrated ordnance buried just off shore near the North Ocean Beach protected swimming area. Burial of ordnance is consistent with the method of disposal practiced by DOD during the World War II era. No specific documents associated with DOD acquisition or disposal of property could be located.

It is also alleged by previous island residents that Navy ships fired on the Island from the ocean; that aircraft were launched from naval vessels at sea to also fire on the island; and that the island was used for militia training...

According to this web site, ordnance first washed ashore in July, 1988. Of the two potential sites, the Navy EOD team confirmed only the northern one via an underwater survey. The southern one has two possible loci, which are known only from interviews, but appear to be near Green Run Inlet and in the Winter Quarter/Fox Hill Levels area. A site visit was made in July, 1991 and determined that while the southern end of the island is relatively stable, the erosion of the northern section is moving the ordnance, which was buried at the high water mark in the 1940s, off shore and under the swimming area. Because of the hazard to public safety the Corps recommended a large-scale sweep of the area using ground penetrating radar and electric pulse induction search equipment to locate and remove the 5-inch shells with lead/alloy ballistic tips. This was done in 1992 (Blades, 1993), but ordnance continues to appear sporadically. Notes in NPS files at Assateague Island National Seashore Headquarters comment that the rockets only carried sufficient "explosive" to detonate a smoke bomb to show the results of the tests, but the NPS prefers visitors not to find these. Also, 20mm casings from machine gun ammunition have been found in the park (Larry Points, 1993). The Army Corps of Engineers again undertook to try to verify the presence of a second

ordnance dump in the Fall of 2006, but at present only an inconclusive draft report has been filed with the National Park Service and research continues.

After the Second World War the ensuing boom in the area saw Ocean City push its corporate limits to the Delaware State Line. In the 1950s developers acquired 15 miles of the oceanfront on Assateague Island north of the Virginia line and constructed a paved road along it (Mackintosh, 1982:7). With the construction of the Bay Bridge in 1955, tourism began in earnest and the property was divided into 5,850 lots although fewer than 30 homes had been erected. Another survey by the National Park Service in 1955 considered the Maryland portion too developed and started looking at the contiguous land in Virginia. Another developer, North Ocean Beach, donated 540 acres to the State of Maryland in 1956, to encourage the construction of a bridge to Assateague Island. This was begun in 1961. In 1957, Atlantic Ocean Estates, Inc. acquired much of the north end of Assateague Island from the Delaware Mortgage Company and subdivided it, despite not having any legal access to the land. It was blocked from the only access by private property. The land was never developed, partly because of the frequent washovers in this area and partly because the developer was jailed in 1962 in an unrelated savings and loan scandal (Op. Cit., 8). The same year the Great March Storm hit and destroyed all but 16 cottages and 17 gun clubs and most of these were on the Sinepuxent side of the island (Op. Cit., 9). It also washed out the road and bridge. The storm terminated development south of the inlet and enabled the creation of the National Seashore.

## Inlets

An excellent discussion of inlets is included in Truitt's volume about hurricanes in Maryland (1968). He synthesizes much information about storms and about the formation of inlets from numerous historical maps. While he focuses on 11 inlets, he remarks that these were officially documented and that others were opened and closed before they could be recorded. Others, he notes, have left physiographic evidence but were never mapped, especially between Ocean City and the Delaware State Line (Truitt, 1968:29). It is possible that these were so shallow as to be useless for vessels and so were not mapped to prevent boats trying to use them. Most have been obliterated by the almost continuous development in this area. Even some of the recorded inlets may have shifted their position, since there is evidence for another opening parallel to, but one-quarter mile north of, the North Beach Inlet, and at Sinepuxent Inlet there was an inlet 250 yards south of that site (Ibid.). He also mentions that "an inlet once existed some 500 yards below the southern boundary of the State Park on Assateague Island" (Ibid.). The 11 inlets cited by Truitt are, from North to South: Fenwick Inlet, Beach Inlet, Ocean City, Inlet Shallows, Sandy Point, North Beach, Sinepuxent, Fox Hill and Winter Quarter (not to be confused with Winter Quarter Shoals, VA), Slough, Green Run and Pope Island (Op. Cit., 23) (Figures 10-11). McBride (1999) also addresses inlets in the study area but some of the dates he provides are at odds with other documents and cannot be checked as he does not cite his sources. For this study, the inlets of particular interest are Fenwick and Beach Inlets.

That inlets played a significant role in the culture history of the area is apparent from the discussion above. This section traces the documentary evidence for historical usage of these openings. There is historical evidence for three inlets (Fenwick Inlet, Beach Inlet and Ocean City Inlet, from North to South) within the study area but because of its longevity and historical significance, Sinepuxent Inlet is also included although it crossed Assateague Island farther south; pre-1933, the island was still connected to what is now Fenwick Island.

The earliest documentation pertaining to inlets is a reference by Col. Henry Norwood from 1649, to two inlets near the present Delaware State Line, described by him as lying some "fifty English miles" from a friend's home in Accomack (Truitt 1968:20, 24). It appears that the vessel Virginia Merchant had sailed into one of these. Although generally ephemeral, some inlets lasted longer than others and some have been documented as recurring. Norwood's inlet does not appear again on maps until 1777 and again in 1820 (Truitt Op. Cit., 24). Norwood described the area where they landed as a small island,

...and that the mainland was upward of 100 yards distant across a narrows, a body that could well have been the present Ditch connecting Assawoman Bay and Little Assawoman Bay. It is assumable that, in addition to Fenwick, as second inlet was cut through to the sea from nearby Lighthouse Cove, Delaware, since geomorphic evidence exists to that end. The island so circumscribed is somewhat

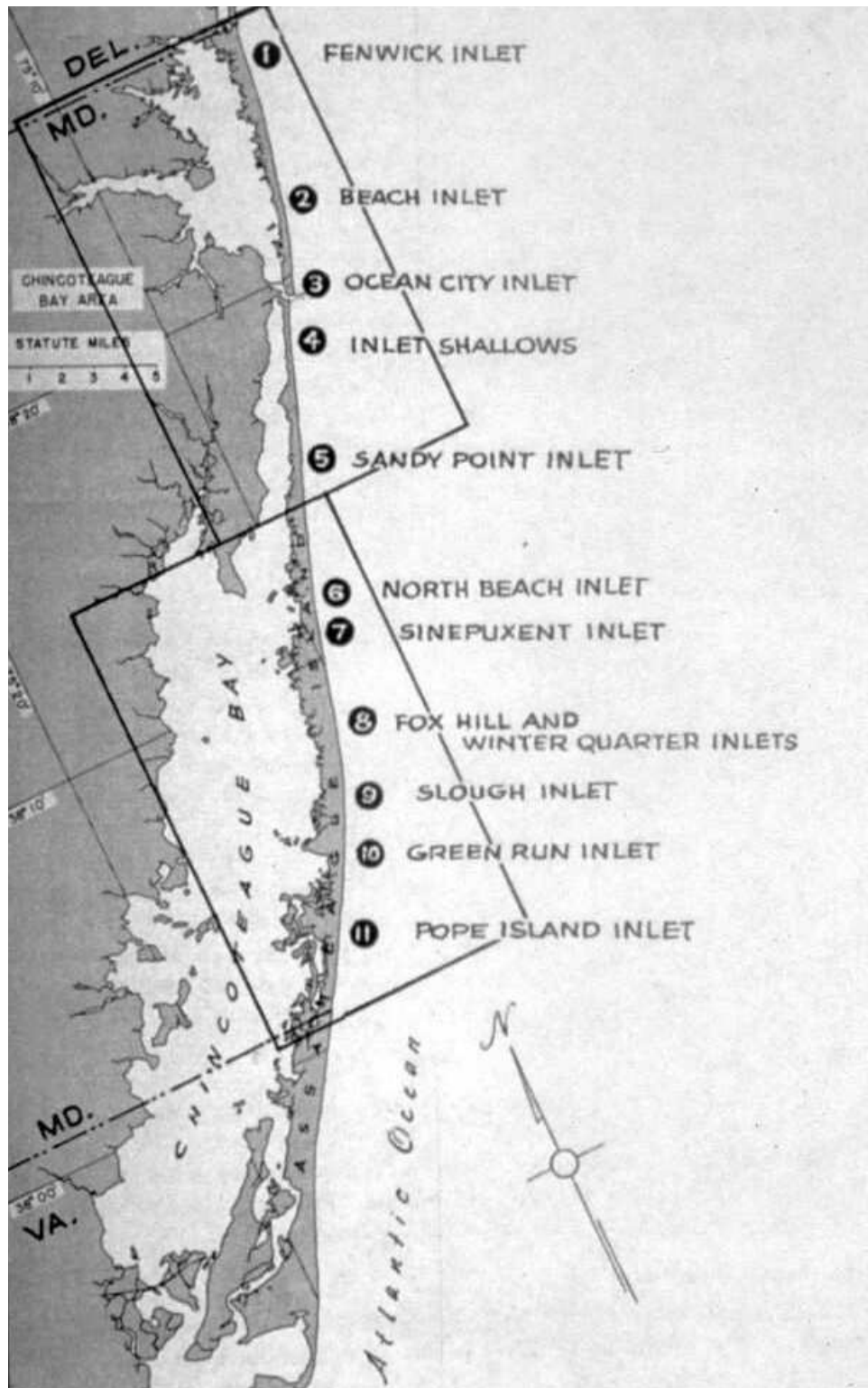


Figure 10. Map of inlets; not all extant simultaneously (Truitt, 1968:23).

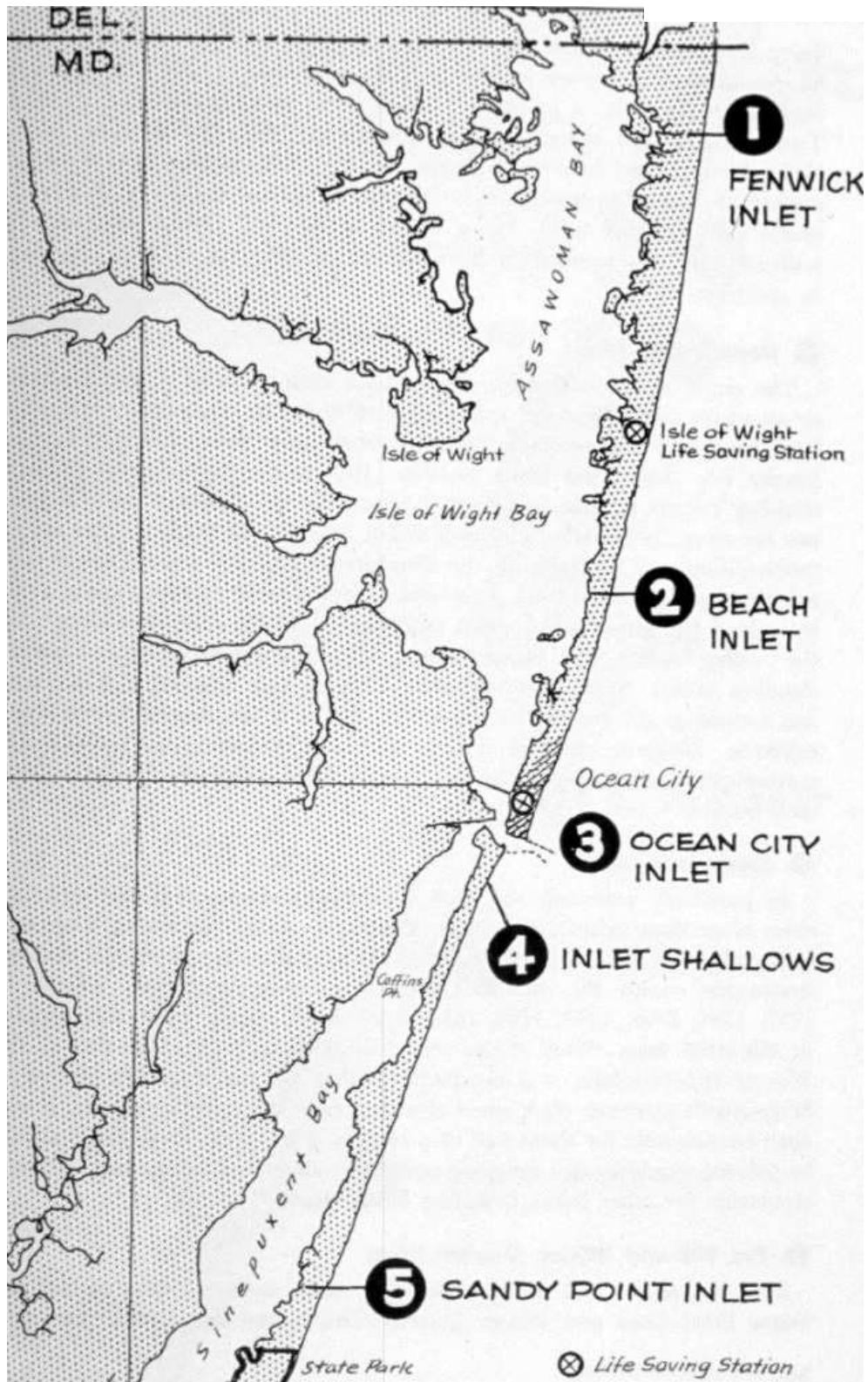


Figure 11. Inlets adjacent to survey area (Truitt, 1968:25)



larger than that pictured by Norwood. If he landed here, his 1649 estimated width of the narrows, 100 yards, is at odds with a later claim that this thoroughfare, The Ditch, was dug by hand in mid-Colonial times, and at great expense, to restrain grazing livestock.

(Ibid.)

A second inlet within the study area is Beach Inlet, which formed a little more than three miles above Ocean City Inlet. It appears on the 1790 map identified as drafted by Matthew Clark and titled *Map, Coast of America – From Cape May to Machapungo*. The site illustrated is between Isle of Wight Bay and the Atlantic and between Reedy Island and east of Colliers Islands. These are now well within the corporate limits of Ocean City and heavily developed. It was also originally called Sinepuxent Inlet and care must be taken not to confuse this with the later, better known and longer lived Sinepuxent Inlet to the south and which is described below.

The Ocean City Inlet was cut through in the hurricane of 1933 and has been made permanent and maintained since. Whether there was ever a previous inlet at this locus has not been addressed and years of maintenance dredging would have likely obliterated any traces; however, none appears on any of the historic maps so it is improbable.

The more southerly Sinepuxent Inlet is one of the most frequently mentioned inlets, and one which appears to have been open and navigable over a long period of time. Its northern edge was approximately east of Lumber Marsh and the southern main channel almost due east of Tingle's Island (called Drum Island on early maps). Griffith's 1794 Map of Maryland indicates a break in the coastline almost four miles wide, with a main channel nearly .75 miles across and the rest shoal with quicksand, or "quaking sands" (Marye, 1945:106-107). Marye feels this may be exaggerated, but its size would indicate why it was so significant on an otherwise relatively barren coast.

The earliest reference to Sinepuxent Inlet appears in a letter from the Justices of the Peace of Lewes, Delaware to the Governor of Pennsylvania, September 3, 1698, in which they report among other things of the boarding and theft of a sloop belonging to John Redwood of Philadelphia which had been "taken coming out of Cinnepuxon Inlett" (Op. Cit., 107-108). This indicates that there was travel and commerce taking place via this route even at this relatively early date. Marye feels it may indicate trade between the young city of Philadelphia and Maryland seaboard plantations and this is possible, but it is also equally likely that this "intercoastal waterway" provided calmer sailing than the open sea. In 1744, citizens of the area petitioned to have towns established at both "Synapuxon Inlett" and at Indian River "to repel any enemy's Landing on the sea-side of the county," but this was not acted upon (Browne, 1908 XL:457, 625).

Wroten cites, at length, an account published by Edward Kimber in 1745-1746 describing a journey from New York to Georgia (1972:52-54). Kimber commented that a harsh winter made land travel difficult and so took passage on a sloop bound for "Sene-puxon in Maryland, which is generally a Run of 3 or 4 days," but they encountered severe weather and after several days made it into "Ascateague Inlet to Senepuxon!" (Ibid.). He does make reference to a wreck in area stating, "on the Larboard Shore lay the melancholy Wreck of a large Bristol Man, which stranded in this Place some Years before" (Ibid.).

The importance of Chincoteague and Sinepuxent Inlets to the Revolutionary War effort was mentioned previously, the former with respect to Captain Campbell's description to the Continental Congress and recommendation that it be fortified, in 1776. To avoid the British blockade and coastal patrols, it is likely he used Chincoteague Inlet and its northern connection, via Assateague, to Sinepuxent Inlet to reach Philadelphia to deliver this communication to the Congress. Other references from this period include a request by Baltimore merchant Cumberland Dugan to the Council of Maryland, for permission to ship to Maryland a load of corn on a brig he owned, which was then at Boston. He suggested that the master of the vessel would be able to sail via "Chincoteague, Sinnepuxent, or some other inlet" if the British were blocking the Chesapeake (Op. Cit., IX:204). In 1777, the Council advised a privateer that Sinepuxent was the best inlet through which to convey a prize vessel (Op. Cit., XVI:328). The inlet was fortified and a company of militia posted there in 1778. Two other references to use of these inlets during the Revolutionary War include an order from the Council to the Justices of Worcester County to ship corn to the Quartermaster at Trenton, NJ via Sinepuxent Inlet in 1780 (Op. Cit., XLIII:151), and Col. John Cropper's letter to the Governor of Virginia in 1782 (Mariner, 1996:28). This letter, previously cited, noted that there were two enemy schooners "at Chincoteague (the next inlet above the one I live on) on their way from New York."

Truitt notes that there is frequently confusion between Sinepuxent and North Beach Inlets, although during the Revolution both were open simultaneously with North Beach above Sinepuxent (1968:21). A reference to a British warship in the inlet, visible from Genezer Plantation (also spelled Genesor) on Sinepuxent Neck, indicates the existence and navigability of the North Beach Inlet at the time (Ibid.).

In 1834 a Commission was created to survey the coast and generated, *Report of a Commission for the Survey on the Eastern Shore of Virginia, Maryland and Delaware* (Marye, 1945:103, 109). It noted that storms,

occasionally pass the ocean waters and sand across the line of beach and open for a short period Old Sinepuxent Inlet, which has not been, since 1819, of any continued importance. And its present openings, so far from affording any advantages seem only to precede, as they afford a better opportunity for, new and harrassing changes in the channel of the sound.

It also noted that there had been attempts to open an artificial inlet farther up the shore rather than to rely on the “Old Inlet.” One of the Commissioners was John Alexander, who by 1837 was State Topographical Engineer for Maryland and later the first State Geologist. He reported to Governor Thomas Veazey of Maryland, in 1837, that there was no inlet between Indian River Inlet and Chincoteague Inlet, a distance of about 50 miles, noting that there used to be one opposite South Point, but that it had been closed up entirely since 1819 (Marye, 1945:100). Clearly he is referring to Sinepuxent Inlet. Truitt notes that other charts still show it extant in 1831 and 1832, but comments that Alexander actually visited the sites and is likely correct (1968:21). Both Truitt (Op. Cit., 21, 26) and Wroten (1972:54) concur that it was cut through by storms more often than any other inlet and saw more commercial activity than other inlets (except for Chincoteague Inlet which has never closed), and was frequently confused with North Beach Inlet. Truitt notes that Sinepuxent “existed in 1757, 1794, 1795, 1797, 1799, 1813, 1819, 1830 and 1832, and perhaps in still other years” (Op. Cit., 26), but he questions whether it was open constantly throughout all these years, or if the confusion with North Beach Inlet plays a role. Based on the other references, cited previously, it appears that Sinepuxent Inlet was open in 1698, and 1744-46 as well, and regardless of confusion, it was a major inlet for a long period of time. Swepson Earle commented in 1916 that:

This inlet was the entrance from the ocean into the bay. The remains of a wreck may still be seen in the sand. A boat is said to have grounded while passing through the inlet, which, when the channel was thus choked, rapidly closed. Of the three inlets known to have been used by some of the foreign and by some of the coastwise shipping in days gone by, only the most southerly, Chincoteague, is now open and in use.

(Earle, 1916:154)

While many wrecks have been known in the area, this is only reference that postulates a shipwreck was the cause of the inlet’s closing. Donald Stewart did use this argument with reference to the Ocean Bird (1977; 1978a & b), but since it sank in 1799 and this inlet was open well into the nineteenth century, it clearly did not happen here.

The confusion between Sinepuxent Inlet and North Beach Inlet is likely due to their proximity, the fact that both were used for commercial navigation, and the “indefiniteness of early charting” (Truitt, 1968:26). In addition, there is the fact that the lands divided by the former were called North Beach and South Beach (Marye, 1945:101). Truitt also notes that prior to 1841, the name North Beach Inlet does not appear on charts and that water in either this channel or the lower one was referred to as Sinepuxent Inlet (Ibid.). Truitt was told by a former surfman of a story that the North Beach Inlet had cut through again in the 1870s, which would have made it contemporaneous with Green Run Inlet, but it does not appear on any charts from that period (Ibid.).

Three other inlets should be addressed briefly. Sandy Point Inlet, also called Sandy Hill (Wroten, 1972:54), was described by Marye in 1945 as an unnamed inlet about three and a half miles below the “new” Ocean City Inlet (1945:101). Since Ocean City Inlet was cut by a hurricane in 1933, it was still relatively new when Marye was writing. Sandy Point Inlet was cut by a storm in 1920 and closed the same way in May, 1928. While it may occupy the bed of an earlier inlet, none was documented previously for this site. It has cut through twice since 1962 during

extratropical storms. To confuse matters further, it was also called Sinepuxent Inlet when it first appeared in 1920, and it remained navigable for several years though only by shallow draught vessels (Truitt, 1968:26). A private effort was made to construct an artificial inlet here in 1907, but failed.

## Hurricanes

The relationship between the cutting and closing of inlets, and storms and hurricanes is abundantly clear from the preceding section. Obviously these affected both vessels and communities in several ways. They had direct effects in the form of destruction and damage to these entities, and they had an indirect influence in determining where communities developed and where life-saving stations were established. The converse is also true, that they dictated when stations were no longer effective, as at Assateague Beach, and played a role in the demise of communities.

Meteorologically there are differences between severe storms, extratropical storms, and hurricanes, but considering the net results in terms of destruction, these are essentially moot. Historically, it (often) is not possible to determine which of these phenomena occurred.

The first violent storm documented for the area appears in Norwood's account of his marooning on the coast in 1650 (Norwood, 1997). As discussed previously, there are a number of theories as to where he was landed and his route south; the changing configurations of islands and inlets have hampered reconstruction of his movements. Truitt considers this to have been an extratropical storm (Truitt, 1968:10).

The first formal record of a hurricane was published by the Hakluyt Society in London, in 1667. The article read:

The Dreadful Hurry Cane of 1667. Strange news from Virginia being a true relation of a great tempest in Virginia by which many people lost their lives, great numbers of cattle destroyed, houses and in many places whole plantations overturned, and whole woods torn up by the roots. A further addition to this calamity, the sea exceeded its normal height above twelve feet overflowing all the plain country, carrying away much corn and tobacco.

(Truitt, 1968:11)

The plain country is a reference to what is now called the Coastal Plain and includes all of Accomack, Northampton and Worcester Counties, as well as the rest of the Delmarva Peninsula and the Western shores to the fall line. Undoubtedly vessels were destroyed whether at sea or docked, but there are no specific references to this.

For the eighteenth century, Truitt lists four hurricanes; 1743, 1785, 1787, and 1788 (Op. Cit., 10). To this may be added Kimber's account of the severe weather that forced his vessel into Sinepuxent Inlet in 1745, cited previously. Truitt's list is based on projections he has made from reference materials for the Eastern Seaboard, which were likely to include Maryland and Virginia. He admits there may be errors, but has tried to err conservatively, so there may have been more storms than he estimates. For example, research in the Public Record Office in Preston, England lists two Italian ships, the Larino and the Harletta, which were lost in 1704. The Larino capsized in a hurricane about two miles off Ocean City, and the Harletta in going to its aid ended up on the beach in Ocean City. The former was lost and the latter was damaged beyond repair although the cargo was salvaged. Complete information on all the wrecks discussed here appears in Chapter 4. Although several vessels lost in 1743 are described in Preston Public Record Office files as capsized or wrecked in storms, four others provide more description that identifies a hurricane, although none provide exact dates to tie the incidents to the same event; there may have been several major storms or hurricanes. These ships were the Derby ("Wrecked in a hurricane off Ocean City"); the Joseph ("Destroyed by a tornado while sheltering in a bay near to town of Berlin; sheltering from hurricane"); the Assumptions ("Great storm demasted, crew saved, ship drifted for 2000 miles; wrecked in heavy surf off Ocean City"), and the Tortola Planter ("Lost in Great Gale (in company of 144 sail) between Ocean City and Georgetown; exact location unknown"). The last two may not have a direct relation to a storm in the area. No ships have been documented as lost during the three other hurricanes noted by Truitt, but it is commonly accepted that the Galga (1750) was destroyed in a hurricane. A lone survivor reported it was caught "in a violent Gale of Wind at the North East, she lost her Main, Foretop and Mizen-masts, and several of her guns were hove overboard." This vessel

became the subject of much court action, both at the time and as recently as 2001: discussed in more detail in Chapter 4. Around March 19, 1777, the American privateer, General Mifflin “ran ashore off Sinepuxent, where the vessel is lost, but the guns and materials are saved. Seventeen of the crew perished by the severity of the weather.” Another account says it “was overtaken by a violent snow storm,” hence the pilot could not find the channel and they grounded. This appears more winter-related than storm-related.

Truitt lists 23 hurricanes for the 19<sup>th</sup> century: 1804, 1806, 1812, 1813, 1815, 1821, 1828, 1830, 1834, 1839, 1841, 1850, 1854, 1861, 1874, 1876, 1879, 1881, 1882, 1886, 1894, 1897, 1899 (Op. Cit., 10).

Vessels lost in storms not considered hurricanes include the Juno (1802), a Spanish vessel, which like the Galga has seen recent court action. It was reported lost “in a very heavy gale.” Another, an unknown schooner, was cited as another “disaster of the late gale” in 1825. The Champion “went ashore on Chincoteague Shoals in the storm of Saturday night, and all hands were drowned” (February 19, 1853). No vessels were recorded lost in this area during the “Horrible Gale of Fifty-Four,” although it opened an inlet at Green Run, which appears to have been temporary. On September 18, 1857, the *New York Daily Times* reported that the steamer Norfolk went down 10 miles south of Chincoteague, the previous Saturday night during “a fearful gale in the Atlantic and lower part of the Chesapeake Bay.” In 1872, four vessels were wrecked off Coffin Beach, near Scott’s Ocean house. One was the Huffman and the other three were not named, but the event took place “during the storms of last Saturday.”

With the advent of the life-saving stations, wreck reports become somewhat standardized and only unusual or spectacular causes of wrecking are detailed. Newspaper accounts of January 5 and 12, 1882 (see Chapter 4), record a vessel loaded with lumber wrecked off Chincoteague Island in the “late storm.” This may be the hurricane noted, by Truitt (1968). On March 9, 1883, the schooner F.D. Hodgkins “capsized in a squall” above Ocean City; on April 3, 1884, the Benj. S. Wright, sprang a leak in a “heavy gale” and was lost off Chincoteague. The Emily A. Bartle went ashore at Wallops Island in a storm on December 5, 1886, while the Ruth T. Carlisle went ashore in a storm a week later (Dec. 12) above the Ocean City Life-Saving Station. The Ada P. Gould sank off Winter Quarter Light Vessel on March 20, 1891 having suffered “a gale from the northeast,” then “took another violent gale from the northwest, with a tremendously high sea,” and finally “came a blow from the northeast around to the north... the gale and sea increasing.” Ten days later the Hattie was wrecked at Ocean City when “there was a terrific sea running... The storm was the most terrific ever known on the Worcester coast of Maryland... She parted her anchor and came ashore during the fury of the gale and lies directly opposite Ocean City.” On October 10, 1891, the presidential steamer USS Despatch ran aground and broke up on Assateague Shoals in bad weather that was the residue of a hurricane near Bermuda. Overall there is relatively little correlation between documented losses due to storms and the hurricanes cited by Truitt (Op. Cit.) in the nineteenth century.

On shore, a great deal of damage was documented for Chincoteague for the storm of 1821 (Pyle, 1877). The U.S. Life-Saving Service recorded that both Assateague Beach and Green Run Inlet Life-Saving Stations sustained damage during the hurricane of 1878 and required repairs (USLLS, 1878). Otherwise, they were noted but generally seem to have been taken in stride. Truitt (Op. Cit.) does not consider this to have been a hurricane.

Truitt lists 17 hurricanes for the twentieth century and two extratropical storms: 1902, 1903, 1904, 1912, 1923, 1925, 1928, 1933, 1936, 1943, 2 in 1944, 1954, 1955, 1958, 1960, and 1967, and extratropical storms in 1920 and 1962 (Op. Cit., 10). Since he published there have been many more, but few caused major damage to the area. Two northeasters in January and February, 1998, caused more damage than the high winds and waves related to Hurricane Dennis the following year. He then states that there were two tropical storms in 1902, but that neither was severe; one passed inland and the other produced “only gale force winds and high tides which were not greatly destructive. A big sloop was reported pitchpoled, turned end over end, in Chincoteague Bay off Green Run” (Op. Cit., 12). The sloop in question was undoubtedly the Elsie M. Harris (June 3, 1902); the only vessel reported lost off this station within this period. The storm of 1904 caused a great deal of damage by silting over oyster beds, and Truitt notes that the “tides ‘were the highest ever known.’ Many boats and four oyster houses were demolished” (Ibid.). He adds the quotation marks around the comment about the tides as he previously joked that this is said about every storm. There are no documented losses of vessels and his statement may indicate boats that sank at their moorings or which washed away, but which did not engender a response from a life-saving station and did not make the local newspaper for any other reason and hence are not recorded.

In February, 1920 the coast was hit by a terrific storm, which caused 6-6.5 foot tides (compared to the normal 3.4 feet) and did a great deal of damage at Ocean City where it washed away cottages, boats, boardwalks and hotels. After this storm, beach replenishment efforts were initiated. This storm did not reach hurricane proportions, but did cut through Assateague Island at Sandy Point and the inlet remained open and navigable for three to four years; however, it could only be negotiated by small fishing craft (Op. Cit., 13, 24, 26). To this point, the only vessel recorded as “foundered in hurricane/dark” is the Lancaster (Dec. 9, 1917) ten miles east of Chincoteague, although the Ruhama Shaw (Dec. 8, 1917) and the barge Ruth (Dec. 9, 1917) were both listed as foundering “in an easterly gale:” certainly the same severe storm, but not officially listed as either a hurricane or an extratropical storm. The Frank M. Deering (Feb. 6, 1923), the Marion O’Boyle (Nov. 12, 1923), and the City of Orleans (Nov. 13, 1923) wrecked in “thick and heavy seas,” “heavy seas and high winds,” and “heavy NE gales causing the vessel to stove,” respectively, but the November sinkings are more likely associated with the hurricane of that year. The Susan B (Oct. 17, 1924) foundered in a heavy gale, as did the Lincoln (Apr. 22, 1925) the following year, but the only wreck associated with the hurricane of 1925 was the Marion Chappell (Oct. 10) and that was above Fenwick Island Lighthouse. The 1928 storm was actually a cyclone, which caused less damage in this area than elsewhere, with only one wreck, the Early Bird (Mar. 7, 1928) sinking in a “gale of wind” at Assateague. There is no documentation that this was during the same storm. Of the vessels noted here, three: Marion O’Boyle, City of Orleans, and Marion Chappell may have relevance for the current study.

The Hurricane of 1933 holds much significance for the study area since it was this storm that cut the current Ocean City Inlet, which was subsequently reinforced to keep it open. It caused the greatest amount of damage to the coast recorded to that time with state losses estimated as high as \$30-40 million (Truitt, 1968:14). Damage in Worcester County was about \$800,000 and of 41 oyster houses on the shore only eight remained functional. Waves, tides and winds devastated Ocean City and other coastal communities, although there was no loss of life. Two vessels were lost, the Brunswick (July 3) and the Whitehaven (July 4); these were both barges, which foundered 3-4 miles NW of Winter Quarter Shoals Lightship. This storm washed away the single remaining commercial fishing camp on Assateague as well as the railroad tracks along the shore.

The 1936 hurricane (also called “The Moro Castle Storm,” because it hampered rescue efforts to the stricken liner by that name) did a great deal of damage in the town of Chincoteague and to the causeway and bridges, which were in the process of being replaced (Mariner, 1996, 127). It also did damage elsewhere along the coast but no vessels were recorded as lost during this period.

Despite the gale-strength storm in 1943 and two hurricanes in 1944 (“The Great Atlantic Hurricane” in September, and another in October), damage in the study area was relatively light. No vessels are recorded lost because of the storm. All three vessels recorded lost in 1942 were torpedoed by German submarines and were south of the study area. No vessel losses are documented in the area in either 1954 or 1955, despite Hurricanes Hazel (1954), and Connie and Diane (both in August, 1955).

“The Great March Storm” of 1962, also known as “The Ash Wednesday Storm,” lasted from March 6-8 in the study area. Although it was technically an extratropical storm, it did enormous damage to the cost of \$250 million from Florida to New England. Tides were more than 6 feet above normal at Ocean City and the Sandy Point Inlet was cut through again, as was a second inlet nearby, and the wave action undermined and/or pounded flat most structures near the shore. The scouring away of the sand exposed “parts of eleven old hulks...between Sinepuxent Bridge and Pope Island, the location of most of which theretofore had been unknown to the present generation” (Truitt, 1968:17). No other information about these wrecks has been found. Fox Hill Levels was inundated between North Beach and Green Run. There were five deaths in Maryland. In Chincoteague, 95% of the island was flooded (Mariner, 1996:141). One positive outgrowth of this storm is that it ended any thoughts of commercial and residential development on Assateague Island. The Assateague Island National Seashore was established in 1965.

Two years later hurricane Doria also threatened, but disintegrated before reaching this region. A request to the U.S. Geological Survey (USGS) for information on hurricanes, tropical storms and extratropical storms impacting the Assateague area did not produce any results. However the USGS web site notes that two northeasters hit the area in January and February, 1998 and caused dune erosion, washovers and damage to structures (<http://coastal.er.usgs.gov/hurricanes/assateague/>; The Assateague Naturalist, 2002). The USGS site is also linked to a NASA web site, which has animation showing coastal change to the island. On August 27, 1999, large surf

caused overwash at Chincoteague and high winds blew for several days. This was related to Hurricane Dennis, which did not directly impact the island (The Assateague Naturalist, 2002).

Aside from storms, there are numerous references to strandings and vessels coming ashore or beaching. Sometimes these incidents may be attributed to heavy weather, fog, or snow, but the records of the U.S. Life-Saving Service document many instances of vessels missing an inlet or mistaking one light for another or just coming too close to the beach or shoals at night. Although shifting shoals could be a problem, most inlets did not close up so quickly as to be immediately a serious navigational hazard. Some reasons for wrecking are fairly obvious: collisions; dragging anchor (often weather-related); old vessels becoming waterlogged; overloading; or being attacked in wartime. Other more unusual reasons for wrecking include: a buoy in the wrong location (D. Ellis, Jan. 28, 1881; Wm. H. Meekins, Dec. 22, 1917); compasses being in error (Unknown vessel, Nov. 25, 1868; Geo. L. Treadwell, Jan. 27, 1877; Delivery, Aug. 10, 1924); being struck by lightning (N. H. Burrows, July 21, 1880); running into the spars of a submerged wreck and springing a leak (William B. Woods, Mar. 3, 1889), although these are not within the survey area. When the U.S. Revenue Cutter Service was initiated in 1790, its primary duties involved controlling smuggling, but the Service's 10 cutters also offered aid to ships, and rescued personnel and cargoes. By the nineteenth and early twentieth centuries, another duty was to retrieve or destroy the floating derelicts and pieces of wreckage that littered the seas (Quinn, 1988:17). The latter was a serious problem, especially in the shipping lanes, as noted above. The Revenue Cutter Service amalgamated with the U.S. Life-Saving Service in 1915 to become the U.S. Coast Guard, which still undertakes most of the duties of both of these organizations.

### **Previous Archeological Research**

The earliest endeavors relating to locating submerged cultural remains on the barrier island(s) were non-professional and some even rather notorious. Non-professional projects, some under the guise of research, others clearly for-profit, have taken place from time to time. Project "SEA" (Shipwreck Exploration & Archaeology) was initiated October 23, 1977 under Federal Permit No. 1977MD/VA-001. The permit was held by Donald F. Stewart of the Baltimore Maritime Museum of the Atlantic Ship Historical Society, Inc. No professional archaeologist, either terrestrial or maritime, appears to have been associated with the project. It is unclear from the documentation if the goal of the project was to locate the wreck of the Ocean Bird, or if the initial purpose was more general and became focused on this wreck when they believed it could be identified. An informal report entitled "Ship Ocean Bird" (Stewart, 1977) was submitted which references other research and analyses but does not provide any of these data. No final report appears to have been generated. A second brief of fewer than two full pages was submitted December 28, 1978 (Stewart, 1978a). It comments that most of that year had been spent in research resulting in the approximate locations of 632 shipwrecks in the area, but none of this information was submitted, nor does it provide the disposition of associated artifacts and samples they took for study. It notes that the "museum" would be relocating from Baltimore to Ocean City in 1979 and proposed use of commercial divers and a "research" vessel to search for offshore wrecks in a 12-mile area. It states that "The off-shore wrecks are not likely to be discovered by sport divers as scuba equipment is unsuitable for the conditions that exist off shore – strong currents, rip tides, minimum visibility of 3 to 5 feet and a large shark population of at least seven species." Despite this melodrama, many sites were known and suffering serious depredations by scuba divers. They also proposed a popular volume in lieu of a report. This project, which had suffered ongoing credibility problems, did not continue after this year. The file on this project at Assateague Island National Seashore Headquarters contains a memo of displeasure regarding the project, a number of documents indicating the invalidity of all but one initial permit and general dissatisfaction with other activities and reports, as well as a ranger's "incident report." Hence, although there is much information in SEA reports these are considered dubious and are not cited here. Of concern, however, is a reference to having used metal detectors and "dug up" "brass and pewter buttons, lead weights (for a frock coat or weather coat), a 4 bits silver piece, a two pound cannon ball and a large copper ke" [sic, key?]; "All of the pieces found dated from the colonial period and they matched the ship which was built from 1789-90. All of the buttons were of the type and style used about 1799." None of these artifacts are currently in the collection at the Seashore's Headquarters. Another report claims that in addition to the records on the Ocean Bird, seven ships were discovered along the shores in depths of three feet of water or less and studied at low tides (a bark, 4 schooners and 2 barges, all dating between 1875 and 1915) and that drawings were being prepared. No drawings were submitted and other allegedly supporting attachments were not appended to the reports as claimed. One barge is tentatively identified as the Carpenter. Other evidence indicates this is not possible as the Carpenter is recorded as sinking nine miles East of ocean City (Langley 2002:100). Some of the information is probably true, but there has been so much embellishment that it casts doubt on the whole. There is a ballast pile off South Point, although archeological survey

has not located any diagnostic artifacts. There is an eighteenth-century site adjacent on South Point and this could have been its landing. Locals have reported collecting timbers and coins from the park side of Sinapuxent in this area (until ordered to cease these activities) and so Stewart's assertion that a clammer raked up a flintlock pistol and pewter fork in 1960 is likely true. But when these ships are described as a privateer and a captured British merchant ship that were deliberately scuttled to avoid capture by the HMS Mermaid in 1778, and yet are unidentifiable, the story becomes suspect. This was the vicinity of Sinepuxent Inlet, which was open for a very long time, and many wrecks occurred there.

The vessel, HMS Mermaid, has been the subject of recent research by a volunteer at Assateague Island National Seashore. Roger Novak is a physiologist and biochemist who became intrigued with the fate of the vessel. His research (2007) indicates that it was sold at auction after surrendering to the Americans, but its ultimate fate is unknown.

In 1981 proposals were submitted to the State Historic Preservation Office by Stewart's organization then incorporated as Subaqueous Exploration and Archeology, Ltd. (S.E.A. Ltd.). This firm alleged it had located the remains of four vessels off Ocean City: the Santa Rosalea, the Royal George, the Santa Clara and the San Lorenzo de Escorial (sic Escorial?). Only the coordinates bounding blocks of ocean area were provided, not precise locations, and there appears to be no evidence that they had in fact actually located the wrecks, if indeed these ever existed. The only vessel which appears in any other records, which are all secondary sources, is the San Lorenzo de Escorial and a popular author has asserted recently that all the vessels including this last were all creations of the late Donald Stewart referenced in the previous paragraph (Amrhein, Jr., email:2007; 2007). Since Amrhein is a former employee/associate of Stewart's, his statements carry weight. Efforts by S.E.A. to obtain a permit resulted in S.E.A. filing a claim in federal court and the Department of Natural Resources (DNR) intervened for the State of Maryland in the case (Subaqueous Exploration & Archaeology, Ltd. V. Unidentified, Wrecked and Abandoned Vessel, Etc., 577 F. Supp. 597 (MD 1983)). While it would seem to argue in favor of the existence of the vessels that S.E.A. would be willing to expend the time and funds necessary to pursue the matter in court, Stewart was known to have put comparable efforts into other tenuous propositions.

DNR claimed that under the statute that is now SF §5A-339(a) that the State owned the vessels and everything that was on them when they went down. The court agreed with the State, finding that the bottom lands out three miles from Ocean City belong to the State, including any objects embedded in the bottoms. The court also found that:

...the State of Maryland's public policy of protecting and preserving historical and archaeological objects found on its lands...falls within the range of public welfare interests protectable under its police powers. Cultural or aesthetic interest are proper objects of public welfare which the state may protect pursuant to its police power.

(Subaqueous Exploration & Archaeology, Ltd. V. Unidentified, Wrecked and Abandoned Vessel, Etc., 577 F. Supp. 597 (MD 1983))

Since this statute and the State claim only incidentally affected maritime affairs, admiralty law and claims did not override the State law. This may reasonably be seen as the beginning of formal protection for submerged archaeological remains in the State of Maryland.

There have been three archaeological remote sensing surveys undertaken off the Ocean City Inlet in compliance with section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) relating to dredging permits for U.S. Army Corps of Engineers channel maintenance and beach nourishment programs (Watts, 1986a; Undersea Systems, Inc., 1989; Irion et al., 1993) (Figure 12). Watts (1986) looked at four areas and found remains of two vessels, both modern, in one area and debris scatters in others; none was deemed to meet any criteria for inclusion in the National Register of Historic Places. One of these two vessels appears to be the Gulf Rambler which sank in 1979 and is just below the survey area encompassed in the current project and the second was a welded steel, partially decked, barge believed to have been used in the construction of the Ocean City jetties since mooring cables were present that seemed indicate this purpose (1986a:23). The debris scatters may have been the remains of other vessels including a stern-rig, steel hull clammer named the Patty-B that sank in the area circa 1978 or 1979 (Ibid. 27). When the hull and dredge were salvaged the rest was left; steel containers and booms. In

addition, the report notes a wooden hulled trawler had been lost in the vicinity in the 1960s but was dynamited when it could not be salvaged (Ibid.).

The survey undertaken by Undersea Systems, Inc. (1989) covered one area and recorded no significant cultural resources. The survey area examined by Irion et al. (1993) also looked at a single area, which straddled State and federal waters and, likewise, recorded no significant cultural resources. In addition the State of Maryland surveyed the State's waters north of the Ocean City inlet in 2007 as part of the current project (Langley and Jordan, 2007) and located no significant cultural resources.

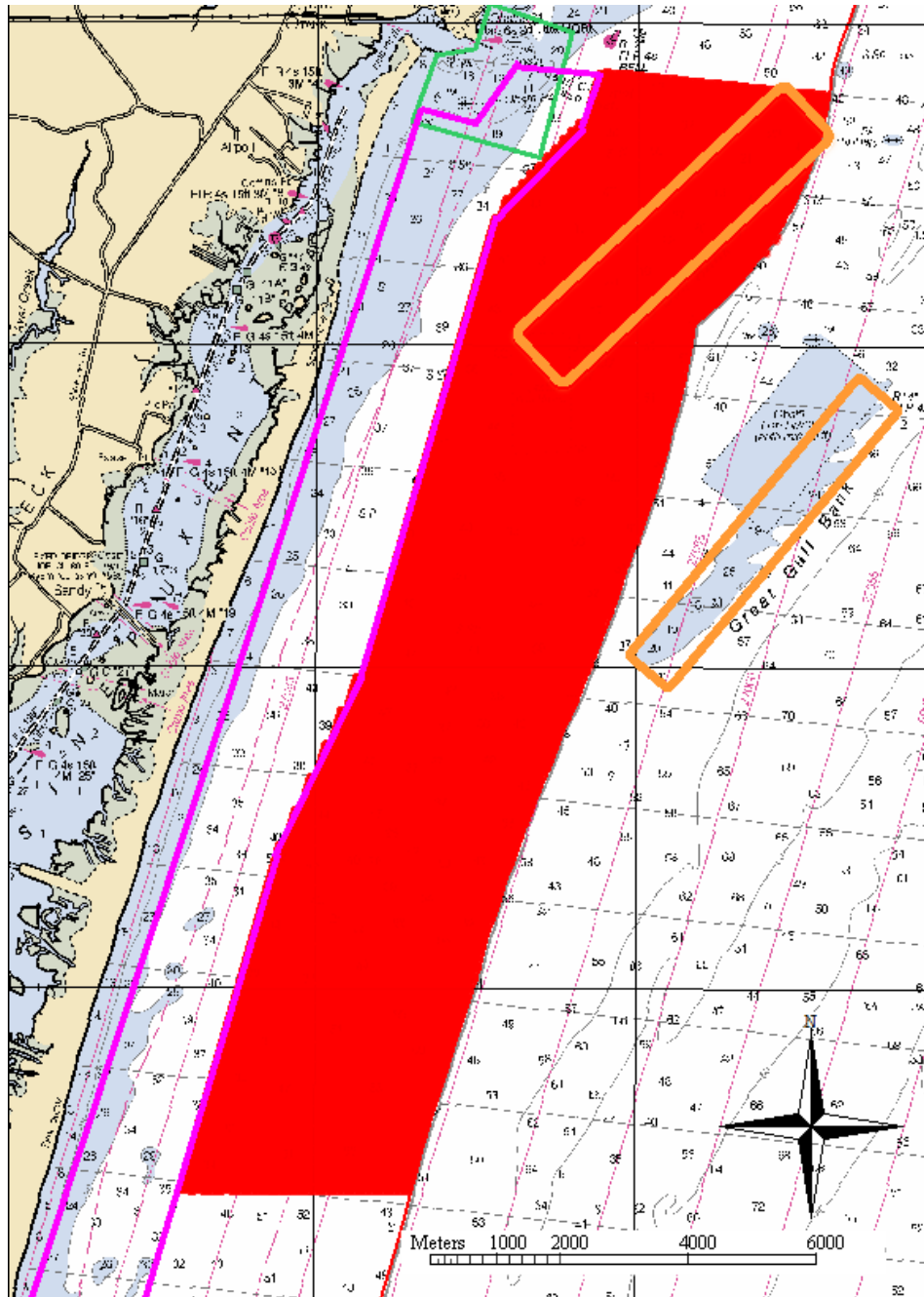


Figure 12. Previous archeological surveys juxtaposed with present survey (red): Watts, 1986 (green); Watts & Morris, 1996 (orange); Langley, Thompson, & Bilicki, 2004 and Langley, 2005 (purple). Base Map is NOAA Nautical Chart 12211\_1, 2008.



## CHAPTER 3

### RESEARCH DESIGN

#### Synopsis

As part of the Maryland Department of Natural Resources Coastal Program's current initiative, *Toward a Vision for Maryland's Ocean*, this project describes and assesses the known and potential maritime archeological resources for a block of the State's bottomlands and waters from the Ocean City Inlet half-way to the Virginia State Line and from one mile from shore seaward to the three-mile limit of State waters. This area encompasses approximately 20 square miles (12,800 acres). The potential for cultural resources was determined through an overview and assessment of diverse archival resources and include those resources reported as potentially on the submerged lands. Subsequently, an electronic remote sensing survey was undertaken over the area. While the previous chapter examined the relevant cultural history including previous research in the area, geological factors and other environmental data affecting site creation and preservation, the next chapter discusses archeological maritime resources potentially in the area. The subsequent chapter provides the data resulting from the electronic remote sensing survey and the final chapter assesses and evaluates, where possible, the significance of, and degree of preservation or threat to, known sites. Recommendations are made regarding further study or future endeavors.

#### Purpose

As stewards of the lands and waters within the State of Maryland, the Departments of Natural Resources (DNR) and Planning (MDP) have partnered through their Coastal Zone Management (CZM) and Maryland Maritime Archeology Programs (MMAP), respectively, to identify and evaluate the State's submerged cultural resources in the Atlantic waters from Ocean City to the Virginia State Line in order to plan for their appropriate management and interpretation. This year's survey encompasses half of this area (approximately 20 square miles). The Maryland Maritime Archeology Program is housed within the MDP's Office of Preservation Services at the Maryland Historical Trust (MHT). The archeological overview and electronic remote sensing survey was undertaken by the MMAP pursuant to DNR contract 14-07-1141 CZM 237.

The overview initiates the process of recognizing and evaluating the potential for marine casualty sites within and in the project area. The need for this study was agreed on by the Department of Natural Resources' Coastal Zone Management Program as falling within the mandates of its current initiative, *Toward a Vision for Maryland's Ocean*, and by the Department of Planning's Maryland Maritime Archeology Program as falling within its mandate to inventory submerged archeological historic property with the State. The project compiles existing data, and analyzes the results of the remote sensing survey to provide recommendations for future survey and field study of any identified sites, and areas of potential for the occurrence of as yet undiscovered sites. In addition, it will aid in evaluating and managing the region's archeological resources and in developing appropriate strategies for preserving, protecting, and interpreting the resources.

#### Management and Research Questions

Like any barrier island formation on the eastern seaboard of the United States, the environment is extremely dynamic. This has the effect of shifting resources once on land into the water and moving those on the foreshore seaward. Prior to the intentional stabilization of the storm-cut inlet and its active maintenance as well as that of the adjacent beach areas north and south of the inlet, the nature of the dune formation of the shore had a degree of fluidity; opening and filling coves, embayments, cuts and channels. A thorough study of extant resources and knowledge of the potential for other resources facilitates the location and management of resources in the study area.

The basic research question is that of identification of site loci and areas with potential for site occurrence; however this is predicated on several assumptions. These include a higher probability of sites near areas known historically to be inhabited, near inlets and channels through the island, which may no longer exist, and near areas of potential hazard, such as offshore sand bars. A corollary to this is that there is an inherent bias toward the reporting of shipwrecks near populated areas where they would be observed or later discovered, as opposed to vessels that were lost in areas without witness (the tree falling in the forest scenario). Another consideration is that of the many hundreds of ships recorded as foundering, wrecking and grounding in the area, not all entered the archaeological

record. Many were repaired and re-floated, towed off or salvaged at the time or subsequently. Wroten provides several dramatic descriptions of vessels saved after much effort and letters of gratitude from the crews and owners to the men of the U.S. Life-Saving Service (1972:44-46). Even if the ships were destroyed, the wreckage was often collected from the shores by local people or by salvors and sold at auction. Salvage and collection/destruction of vessel remains was a significant issue historically and, from the historical and archeological perspective, continues to be a consideration and concern.

## **Methodology**

As per the contract between the DNR and the MHT (14-07-1141 CZM 237), this overview describes the area's geology, environment, oceanography and natural resources and identifies and discusses factors affecting maritime casualties and the preservation of submerged and/or buried cultural resources. It examines the area's prehistoric and historic cultural history focusing on its relationship to maritime resources. Previous research is examined for its applicability to the locations and identification of known maritime related resources, and also in so far as this research relates to resources potentially within the study area. It includes the electronic remote sensing survey of approximately 20 square miles of Maryland's State waters. Had there been known resources, these would have been evaluated for their eligibility for inclusion in the National Register of Historic Places using the standard National Register criteria (36CFR60.4 [a-d]). Summary information is provided regarding probable locations and possible integrity of potential resources, as well as recommendations for future archeological projects to locate and evaluate such resources.

Information for this report was drawn from diverse primary and secondary sources. These include the National Park Service's and U.S. Fish and Wildlife Service's records, archives and museum collections; the records, archives and museum collections of the Maryland Historical Trust and Maryland Historical Society, and the Virginia Department of Historic Resources and Virginia Historical Society; the National Archives and Records Administration as well as the Maryland and Virginia State Archives. Additional research was undertaken at the Mariner's Museum, VA; the Edward H. Nabb Center for Delmarva History and Culture, Salisbury University; the Library of Congress; the Office of the Historian of the United States Coast Guard (this includes the U.S. Life Saving-Service records as well as Lighthouse Service, Treasury and Navy records as these relate to shipwrecks); the Naval Historical Center at the Washington Navy Yard; and the archives and morgues of numerous newspapers large and small in Delaware, Maryland, New York, and other states. Various Lloyd's Registers were scoured as well as British archives, libraries and record offices. Also, the Ocean City Reef Foundation provided information about deliberately placed cultural resources for fish habitat purposes. The National Oceanographic and Atmospheric Administration (NOAA) and the National Atmospheric and Space Administration (NASA) were consulted for information on oceanography and hydrology, and aerial imaging and surveying, respectively. Other consulting firms and state agencies, such as the Maryland Geological Survey and the Delaware, Virginia and Maryland Departments of Natural Resources, provided reports and information contributing to the geological and geographical background for the area. Finally, the records and collections of small regional repositories and museums were checked, and individuals were consulted either as representatives of their agencies, or as informants where relevant.

The electronic remote sensing survey was undertaken in the same manner as that employed for the comparable survey for the National Park Service from the shorelines of Assateague Island National Seashore to one-mile seaward and for DNR last year for the State's waters north of the Ocean City inlet. The survey equipment array included a customized 27-foot Maycraft vessel with a single Mercury 250 hp outboard engine. The vessel is equipped with a Northstar 941XD differential global positioning system (DGPS) linked to a Toshiba Tecra 8200 laptop computer running Hypack Hydrographic Survey Software (v. 8.0.0.10). Although Hypack is capable of running more than one survey device at a time, this survey found it most effective to use it for maintaining course and for collecting the magnetometer data. A Geometrics 881 cesium gas magnetometer, which is one of the industry standards, was used to record magnetic signals for parts of the survey. An EG&G 272-TD sonar sensor (the towfish) and an Edgetech topside computer system running Triton Isis software was used to record acoustic imagery of the bottom surface. The vessel is also equipped with several power alternatives and back-ups to prevent data loss and engine interference. The laptop stores all the magnetometer and locational data on its hard drive until downloaded onto CDs. The side-scan system is capable of burning CDs and this permits the downloading of data at the end of the day as the vessel returns to port. Post-processing of all electronic remote sensing data was conducted using the Hypack software.

To maximize field time, survey lines were pre-plotted onto the appropriate NOAA electronic navigational charts (ENCs), at the desired lane spacing. For this survey the side scan lanes were spaced at 275' (84m) and the side scan sonar was set to scan 275' (84m) on each side of the vessel, thereby providing for 100% overlap; in places this was reduced when the shoal nature of the area prevented the sonar reaching far laterally.

The side scan towfish was deployed by a small crane from the starboard stern quarter and maintained at depths of 12 feet (3.66 m) below the hull, depending on depth and wave conditions. This ensures the tightest relationship between the location of the survey vessel and any target it is recording. It also reduces the chances of snagging and losing a very expensive piece of equipment.

The magnetometer towfish is much lighter than the side scan one and is deployed by hand from the port stern quarter of the vessel. Because of the possibility of interference between the cables for these two pieces of equipment, the cables are run along opposite sides of the vessel. Because of interference from the boat's motor, the magnetometer sensor cannot be held near the vessel and is towed at a distance of 50 feet (17m) from the stern. The Hypack software permits the pre-programming of speed and layback -- the distance the sensor is towed behind the vessel -- to ensure it accurately reflects the location of the site producing the signal. To reduce the chances of loss or damage, the towfish is maintained near the surface with small flotation devices and the tow cable is enfolded in brightly colored foam "noodle" water toys which have been split to go around the cable and which are held in place with plastic tie wraps.

The data from the survey portion of the project are included in Chapter 5. However, no targets were encountered that are deemed significant or worth additional investigation.

## CHAPTER 4

### MARITIME RESOURCES

#### Introduction

All of the cultural resources within and adjacent to the survey area, whether prehistoric, historic or modern, relate to the maritime environment. This relationship is more direct for some resources, such as remains of shipwrecks or the U.S. Life-Saving Service Stations. However, the small communities along this seashore existed also because of their reliance on the sea for fishing and shell-fishing, for rendering salt, fish oil, and guano, and for recreation and tourism. These have been addressed previously and discussion ranged generously beyond the circumscribed survey area as there was so little development in that area until late in the 19<sup>th</sup> century. Here these are revisited from a mostly archaeological perspective. Then the chapter concentrates on the remains of shipwrecks within, or potentially within, the study area. The historical background of wrecks, wrecking and salvage is examined prior to listing the wrecks documented as occurring in the area.

#### Extant Cultural Resources

As was noted previously, there are no prehistoric sites recorded for the study area. All non-European artifacts have been recovered in isolation and have dubious or no provenience. Prehistoric artifacts have been collected from Ocean City beaches after beach nourishment activities deposited sand from offshore and outside State waters in which these were included in the dredged materials. The collections of the National Park Service at nearby Assateague Island National Seashore Headquarters include stone axe heads, a single grinding stone, and spear and projectile points. The catalog does not provide dates and types, but it is clear these are largely of Woodland period origin. There are a few Archaic period pieces and none date as early as the Paleoindian period.

Excluding shipwrecks, the post-contact period cultural remains adjacent to the study area date almost exclusively from the second half of the nineteenth century through the twentieth. Ocean City exists because of the presence of the ocean and maritime activities predominate.

Vestiges of Life-Saving Service Stations are sparse despite being situated in the undeveloped lands of Assateague Island National Seashore; most were destroyed or dispersed from the 1930s through the 1950s well before the National Park Service acquiring the land in 1965. Remains of the North Beach Life-Saving Service Station were documented in 1985 (Knecht and Lazenby, 1985). The last of the stations to be built at the shore in 1884, it was decommissioned in 1952. In the same interview in which he mentions the salt works, Winbrow, who served at the North Beach station from 1906-1934, commented that the 1933 hurricane had caused serious damage and led to the raising of the structure onto pilings about three feet above the ground (Op. Cit., 9). The community had a one-room school and a hotel (Knecht and Lazenby, 1985:7, mention a hotel, no other references appear) as well as the residential cottages. While many cottages were dismantled, sold and removed from the island, after the closure of the station, a 1962 aerial photograph showed 14 structures still standing in the vicinity in addition to the station buildings (Op. Cit., 7). However, the March (1962) hurricane did substantial damage and lifted the station off its pilings and subsequently it was burned by vandals. Other structures also were damaged or destroyed.

The Fishing Pier, now just The Pier as fishermen line the stone jetties by the Inlet. Constructed originally in 1907, it has been reconstructed and repaired continually after severe storms and harsh winters and has been one source of cultural debris washing up on Assateague Island to the south and potentially within the survey area. Remnants of the railway bridge lost in the hurricane of 1933 also appear periodically to the south but with decreasing frequency through time. Prior to the construction of the present stone jetties after the 1933 storm, which caused the beach to accrete extensively and brought the elevated boardwalk to ground level, many of the Ocean City structures literally overhung the water and were lost or damaged through storm action. Roofing and other portions of building up to the present find their way as scattered debris on the beaches and into the survey area.

Other sources of cultural remains mentioned previously are the vestiges of the pound nets that used to line the shore. These were built anywhere from half-mile to a mile and a half offshore, were about 40 feet square (3.7m sq) in area and involved an elaborate design of posts and nets. About 24 posts were necessary to construct a pound net and they were set at depths of 30-40 feet (9-12m). Fish would be funneled into them using a weir stretched across the current

and as wide as 700 feet (213m) (Corrdry, 1991:83-84). Pound nets are still set in many of the rivers around Maryland. Fishermen would launch 40 foot (12m) wooden dory boats from the beach. One of the hazards of the area was that,

In those days there was a long, shallow bar about 250 or 300 feet off the beach where the waves crashed and broke with their greatest burst of strength before rolling onto shore. The crew in the boat had to catch the right slack in the third, fifth or seventh wave, to get through. The space between the shore and the bar they called 'the gully.'

In the gully the crew used oars, and later a small engine, to get the boat turned into the waves crashing onto the bar and keep it from broaching and swamping. The boats were very strong and heavy. They had to be. They often climbed the waves high into the air before crashing down into the slough between.

(Op. Cit. 84)

Pound fishing was dwindling already at the time of the 1933 storm; "fished out" according to the locals. Only one fish camp survived the storm. The remaining companies had disappeared by the mid-1930s. It was replaced by recreational and competitive fin fishing and since the 1950s with deep sea hard shell commercial clamming that had to be strickly regulated in the 1970s to control over harvesting.

The pound fishing industry was one rationale for the presence of Life-Saving Service Stations in the area, but in the forty years (1875-1915; Op. Cit. 87) of their existence the stations on Fenwick and Assateague Islands (both when they were one and as separate islands) responded to 260 distress calls from ships and helped control looting of wrecked vessels as well.

### Shipwrecks

Like all coastal dwellers through history and throughout the world, the inhabitants of Maryland's barrier islands regarded shipwrecks, their wreckage, and cargoes as gifts from the sea or from God. It is likely that the Indians of the area also kept and used items found on the beaches, although there is no documentary or archeological evidence to support this for the study area. Although all sources are careful to point out that there is no evidence that residents in either Maryland or Virginia deliberately caused wrecks, through use of false lights or by other means known to have been employed in other areas, they did cast aspersions on each others' integrity in dealing with wrecks and wreckage after the event. One of the best documented examples of this situation pertains to the Spanish ship, La Galga ("Greyhound"), which was part of a fleet en route from Cuba to Spain, and which wrecked on Assateague Island in 1750.

Shortly after the Galga wrecked on August 26<sup>th</sup>, a letter was sent to Maryland Governor Samuel Ogle, describing the vessel, its armament and cargo and reporting that the commander and crew had taken some valuables to Snow Hill where they had hired vessels to take them to Norfolk to join three of the other vessels from the fleet. The letter further stated that,

...as soon as they got from her the Country People got on board and has & Still Continues to Plunder, I went over last Saturday and told them to be easey untill we had your Opponion but they told me the Vessel was in Virginia as there was Several Gentlemen with their Slaves all at work from Virginia they did not Regard any thing said to them but the People living on the Beach tell me that she lies two miles within Maryland lines.

(Browne, 1908:482)

The wreck did occur just above the Maryland line, but subsequent boundary delineations have placed it below the boundary. This became significant when the vessel allegedly was relocated by commercial treasure salvors in 1997. The subject of extensive litigation, the U.S. Supreme Court ultimately determined that the shipwreck remains the property of the Kingdom of Spain (Sea Hunt, Inc. 2001). This vessel is not included in this chapter.

Although not an immediate outgrowth of this particular incident, Virginia did establish an official Commissioner of Wrecks in *An Act Concerning Wrecks* in May, 1782 (Hening, 1809, 11:51-54). This did not immediately resolve all difficulties, especially as Maryland did not yet have comparable laws regulating the treatment of wreck. On April 8, 1784, the Virginia Commissioner of Wreck, John Teackle, wrote to the Governor complaining that Accomack County was wrongly held in “great odium” on account of the “robberies made on Wrecked Vessels” by Marylanders. He commented,

The Maryland people seem to think themselves ‘priviledged to embezzle from wrecked vessels.’ They have a good opportunity for doing this as the island of Assitiaque (famous for its shoals & on which three valuable Vessels have been lately stranded) lies near that state. They are furnished with information by the Island people, ‘who are concerned in such villany.’ An outrage of this kind had lately been committed by one Wm. Holland of Worcester Co. He therefore calls upon the Executive for redress against this man – ‘as well in behalf of the public, as the unfortunate Gentlemen who Have been such losers,’

(Palmer et al., 1968:572)

There appears to be substance to some of these criticisms. In May, 1764, the schooner Kitty, sailing from the Bahamas with a cargo of weapons, cotton and indigo, ran aground at Assateague and then caught fire burning to the water line. Despite this, the locals plundered the wreck of all that remained. Like the Galga, much information about the families and items involved (there were also participants from Chincoteague) are known due to prolonged litigation. During depositions taken in Annapolis in 1767, most of the residents of Assateague were interviewed as well as a few from Chincoteague. The islanders do not appear altogether honest and it also came to light that the captain and mate of the vessel had conspired to wreck it and destroy the cargo in a dispute with the owners, which explained the mysterious fire (Mariner, 1996:21). Maryland finally passed an act to appoint a wreck-master in Worcester County in November, 1799 (Marye, 1945:113). Even this did not entirely control wreck plundering on the shores, although it never reached the proportions described by Hurley and Hurley for New Jersey and New York:

We do our share of stealing, I’ll confess; but from Sandy Hook to Cape May, its innocent to what is done on Long Island. No man Or woman was ever robbed on this beach till they was dead. Of course, I don’t mean their trunks and such, but not the body. The Long Islanders cut off fingers of living people for rings, but the Barnegat Men never touch the body till it’s dead, no sir...

(Hurley and Hurley, 1995:16)

The foregoing also implies that little was done to prevent the victims from dying. This callousness is not recorded for the barrier islands of this area. Salvage was another matter and some islanders were known for the amount of salvage they had claimed, such as on Cobb and Hog Islands in Virginia. Wroten cites the attitude of an old timer from Green Run,

Residents at Green Run considered salvage an important part of their livelihood; from the wrecks they would gather such cargo as sugar, molasses, tropical fruits, meat, lumber, notions, and furniture and would barter many of these with the folk on the mainland.

(1972:38)

Salvage was a legitimate business if the goods were legally available for salvage and if tariffs on the goods were paid. The Commissioner of Wreck was bound to auction publicly wreck that was not claimed by the rightful owner (Figure 13). The efforts Wroten describes sound more opportunistic; the debris from a shipwreck could scatter over an extensive area (Figure 14). Wreck-wardens and the creation of the Life-Saving Service in 1871, did much to curtail these activities as they provided an official presence on site for the most storm-prone times of the year. Other activities to be considered include controlling smuggling. This continues to form part of the Coast Guard’s duties although the commodities change through time. During the Revolutionary, 1812 and Civil Wars, smuggling could

take the form of blockade running or privateering. In these cases the commodities in question involved arms and foodstuffs. Later during Prohibition, the cargo of choice was liquor, and more recently it has become drugs. Weapons continued to be shipped, in American peace times, to insurgent Caribbean and Central/South American regimes. Vessels lost during any of these activities are not likely to appear in any legitimate report of loss, unless claiming a bogus cargo for insurance purposes. The only records of these “unofficial” vessels are generally fortuitous and some of these do appear sporadically: such as the Rysback and the privateer with which it fought in 1744; the privateer, Kings Fisher (1751), the large armed brig from Haiti, wrecked on Jan. 23, 1828, with no officers and a crew that could not offer a satisfactory explanation and so were arrested: and the Nancy Jane, which carried false papers and illegal liquor in 1846.

Other vessels may not appear in formal records, but are noted anecdotally in accounts of other events. For example, in 1704, two ‘strange’ Indians were seized on Assateague Island, Virginia on the assumption they were runaway slaves, but they maintained they were “Spanish” Indians from Florida and were released (Marye, 1945:98). They were evidently castaways from a shipwreck. Other peripheral evidence for wrecks is artifacts, which turn up consistently in specific loci. On the northern end of Assateague Island, yellow Dutch bricks are frequently recorded by National Park Service staff. Some beaches have reputations as sources of coins of specific vintages. In some cases the source wreck is known or suspected, as in the case of the Faithful Steward in Delaware. A popular volume comments,

The old coins began appearing on the local beaches in the late 1880s and, by 1936, enough had been found to warrant mention in the New York Times. . . While coins have been recovered, along much of the northern end of Assateague, the greatest success has come on the beaches from the inlet to a point about two miles north. Copper, silver, and gold coins from many nations have been found, But most ‘North Beach’ recoveries are Spanish silver pieces dating from the mid-1700s to the early 1800s.

(Voynick, 1984:135-6)

Voynick attributes the coins to the 1750 Spanish fleet, which is a possibility. It also points out that control of plundering still goes on, enforced now by the staff of the National Seashore.

Some references to wrecks are more direct, but still almost impossible to use for identification or relocation of the remains. During the American Revolution, Americans bringing the captured British vessel, Thomas, to Baltimore were caught in a storm and driven aground. After spending the night in the rigging they saw another vessel making for Chincoteague Inlet and watched as it hit a shoal and broke up. The Thomas actually made it through, under the command of Joshua Barney, but was captured subsequently by the British on Jan. 2, 1777. (Barney was exchanged and later returned to glory as Commodore of the Chesapeake Flotilla during the War of 1812.) The British captured the fortification at Wallops Island, August 15, 1779, and an armed sloop and an unarmed schooner loaded with flour, which had just arrived. American forces managed to retake the fort as the British escaped with the two vessels and their main ship. One of the ships ran aground and the Americans tried to unspike their cannon while the ships were still in range. However, the British transferred the flour to the main ship, burned the schooner and towed the sloop away with them (Mariner, 1996:27). None of these vessels are likely to ever be identified, even if their remains are located.

The following is a list of wrecks by year and source. The list includes only those which were total losses, or which suffered significant damage. For clarity, all vessel names are underscored, documentary sources, such as newspapers, are italicized, and the sources of the data are in boldface. Information is included as provided in the sources consulted, although efforts have been made to be consistent in the presentation of the information. Some sources may be less reliable than others. For example, Brown’s (2001) list of wrecks is compiled from a variety of other sources and is rife with errors and so it should be regarded with skepticism, except where the information can be corroborated. Because of the active nature of the shoreline as well as the effects of waves, tides and currents, numerous vessels are cited which might have drifted intact or in pieces into the study area. The parameters of the study area includes an irregular polygon delineated by the 3-mile boundary line and a parallel line 2 miles to the East, bounded to the North by the Ocean City Inlet channel and a parallel line 10 miles to the South (see Figs 2 & 12). The area is delimited roughly by a box with the following longitude and latitude coordinates: 38° 09’ 49.65” N



75° 08' 37.92" W, 38° 19' 18.38" N 75° 04' 39.69" W, 38° 18' 56.70" N 75° 01' 8.22" W, 38° 09' 46.45" N 75° 05' 21.71" W.



Figure 13. This is an image of an auction taking place on a wrecked vessel. It is not from the survey area (Mariners Museum collection)



Figure 14. This is an image of the extent of a shipwreck debris field. It is not from the survey area (Mariners Museum collection).

Santo Cristo, Assateague Island; no year or date given. **(Moale, 1990)**

1698

Feb. 2 Ship, Princess Ann, British, completely broke up on Assateague Beach. **(Moale, 1990)**

1709

Apr. Ship, Garland, 110 tons; on Assateague Beach 38° 20'; 12 survivors. **(Moale, 1990)**

1717

??/? Ship, David and Anne. Out bound for Southampton. Cargo: tobacco, brass pans, iron wares.  
Wrecked off Maryland coast, unspecified where; all lost.  
-from British Library, Euston London, Manuscript Section **(Akers, 2002)**

1734

Sept. 13 Snow, Guernsey; grounded at Assateague Beach. **(Moale, 1990)**

1739

Sept. 17, Snow, Mary & Louise; ran aground on Assateague Beach **(Moale, 1990)**

1757

??/? Ship, Tibury; 3-masted warship; 30 guns, 2-decks; Wrecked off Maryland.  
- from British Library Euston London, Manuscript Section **(Akers, 2002)**

1759

July Brig, Scorpion; armed privateer; ashore near Gull Shoals, Assateague Island **(Moale, 1990)**

1762

Nov. 29 HMS Marlborough; 1579 tons; sank 10 leagues off the Maryland coast; 96 guns. **(Moale, 1990)**

1764

May 22 Schooner, Kitty; Assateague Island

-reported "'The Wreck of the Schooner Kitty,' Article in *The Virginia Magazine of History*, edited by P. Wilson Coldham (Abstract of testimony) – The schooner Kitty went ashore on Assateague Island on May 22, 1764. Most of her cargo was lost and she was burned to the waterline. This account is composed of depositions which are in the Public Record Office of London. Within the depositions, two other wrecks are mentioned by a Thamer Brumbly. One was a schooner, Roger Burns, master nine years previous [1755] and a small sloop, Southy East, master six years previous [1758]." **(Charles, 1997)**  
Schooner, Snow, Kitty, British, ashore on Assateague Island and burned to the water line; Master: Layton Albro; crew 7; Port: Perthshire, England; From: New Providence, Bahama Island to Philadelphia; Cargo: weapons, cotton, indigo, all lost. **(Moale, 1990)**

Unknown schooner, [1755], May 22, 1764; Assateague Island

-see Kitty above

Unknown sloop [1758], May 22, 1764; Assateague Island

-see Kitty above

Nov. 29 Brig, Fortune; sunk Assateague Beach. **(Moale, 1990)**

1766

Nov. 13 Sloop, Unknown; Assateague Island

-reported *Virginia Gazette (PD)*

"Philadelphia, October 23 – By Capt. Hampton, from Virginia, we learn that Captain Parker, in a sloop from Metamkin, in Virginia, for this port, ran ashore between Sinepuxent and Chincoteague, about 14 days ago, where the vessel is lost and three passengers drowned." **(Charles, 1997)**

??/? Schooner, Helena; Stranded at North Beach **(Brown)**

1767

Feb. 12 (print date) Sloop, Unknown; VA/MD at sea

-reported *Virginia Gazette (PD)* (advertisement)

“Nansemond, Milner’s Creek, Jan. 26, 1767. The subscriber, on his passage from the West Indies to Philadelphia, between Cape Henry and Cape Henlopen, in a sloop, was foundered at sea, therefore is going out of the country with Capt. Joseph Stow. If any persons have demands against him, he is on board the said Stow, at Milner’s landing. George Bryant.” (Charles, 1997)

1768

May 19 (print date) five (5) Unknown vessels; Sinepuxent/Assateague

-reported *Virginia Gazette (PD)*

“In the last snow storm 5 vessels were lost on the shoals of Sinepuxent and Assateague, one of which belonged to New York, homeward bound from Carolina, with stores; two to Accomack, one to Carolina, Capt. Godwin, bound to this place; the 5<sup>th</sup> unknown. Most of the people on board these vessels were either drowned or perished in the cold.” (Charles, 1997)

1769

Mar. 5 Schooner, Deerhound, 230 tons; on beach at Assateague (Moale, 1990)

1770

Jan. 19 Earl of Chatham;

-reported in *Lloyd’s List*, London, “The Earl of Chatham, Wolsey, from Dublin to Philadelphia is lost near Maryland, some part of the cargo will be saved.” (Charles, 1997)

Aug. 7 Boyne;

-reported in *Lloyd’s List*, London, “The Boyne, Howard, from St. Kitts to Maryland is lost on the coast of Maryland.” (Charles, 1997)

1772

??/? Canceaux; reported burned off Assateague Beach. (Moale, 1990)

1776-1777

??/? Galliot, Dutch, 3-masted with leeboards and 5 crew; Lost between Cape Charles and Ocean City; exact location not known

-Port: New Amsterdam (New York); From Virginia to ?; Cargo: hay and fodder.

-State Public Record Office, Bremen (Akers, 2002)

??/? Transport Ship, Ruilenburg; Dutch; Lost between Cape Charles and Ocean City;

exact location not known

-Capt. Herve; Port: Edam; From Amsterdam to New Haven; Cargo: 65 passengers.

-State Public Record Office, Bremen (Akers, 2002)

??/? Ship, Apeldoorn; Dutch, 3-masted, 2 decks and 43 crew; 677 tons; Lost between Cape Charles and Ocean City; exact location not known

-Capt. Boon Lierrel; Port: Delfzigt; From Delfzigt to Amsterdam then onto New York; Cargo: textiles, machinery.

-State Public Record Office, Bremen (Akers, 2002)

??/? Brig, Kitzingen; German; Lost between Cape Charles and Ocean City; exact location not known

-Capt. Karl Olpe; Port: Wismar; Cargo: Carts ?

-State Public Record Office, Bremen (Akers, 2002)

??/? Ship, Dominic; German; 406 tons; Lost between Cape Charles and Ocean City; exact location not known

-Capt. Wilhelm Rosenhagen; Port: Bremen; From Bremen to Portland; Cargo: French Bay salt, French brandy, French wine, vinegar

-State Public Record Office, Bremen (Akers, 2002)

??/? Snow, Hansen John; German; 2-masted; Lost between Cape Charles and Ocean City; exact location not known

-Capt. Franz Bechelt; Port: Dahme; From Dahme to Alexandria; Cargo: iron tools.

-State Public Record Office, Bremen (**Akers, 2002**)

1777

Mar. 19/27 (print dates) Brig, General Mifflin; Sinepuxent

-reported in *Pennsylvania Journal* (Mar. 19)

“Philadelphia, Mar. 19 – The privateer brig General Mifflin, Capt. Hamilton, returning from a cruize, was unfortunately, by the ignorance of the pilot, ran ashore off Sinepuxent, where the vessel is lost, but the guns and materials are saved. Seventeen of the crew perished by the severity of the weather. [Note: General Mifflin was a 12-gun Pennsylvania privateer]”

-reported in *Pennsylvania Gazette* (Mar. 27)

“Philadelphia, Mar. 26 – On the sixth instant the privateer brig General Mifflin, Captain Hamilton, of this port, returning from a cruize, was overtaken by a violent snow storm, which determined the Captain to carry her into Sinepuxent, but the pilot, being ignorant of the channel, unfortunately ran her ashore when the vessel bilged, and was soon filled with water. The hands (ninety odd) were on the quarter deck the whole night, and suffered exceedingly and in the morning got on shore on a desolate beach, covered with snow where seventeen perished, but by timely assistance the remainder of the crew were saved. Near three thousand pounds worth of prize effects were on board, which were lost with the vessel.” (**Charles, 1997**)

-Mar., Brig, General Mifflin; Sinepuxent Inlet on shore; Owner: John Cox and John Chaloner; Master: Capt. John Hamilton; crew 90; Port: Philadelphia; From: Barbados to Philadelphia; Cargo: prizes from the English merchant ship Elizabeth; 17 men perished trying to find shelter from the storm and snow on the beach; a 12-gun privateer. (**Moale, 1990**)

June 4 (print date) Schooner, Hawke; Sinepuxent

-reported June 17 1777, *Virginia Gazette*

“Philadelphia, June 12 – Extracts of a letter from Sinepuxent, dated June 4. ‘On Sunday the 1<sup>st</sup> instant, the schooner Hawke, Zephaniah Eldridge, bound from Boston to Alexandria, ran ashore near this place. The cargo will be saved.’” (**Charles, 1997**)

1783

Nov. 26 (print date) Brig, Philadelphia Packet and Unknown schooner; Sinepuxent Bar

-reported *Philadelphia Journal & Weekly Advertiser*

“Philadelphia, November 26 – About a fortnight ago the brig Philadelphia Packet, Captain Torrans, from Belfast for this port, ran ashore on Sinepuxent Bar, when the passengers, being in a hurry to get on shore, hired a Providence schooner, that came to their assistance, and after throwing her cargo over board, she took about 70 of them on board, when having got a small distance from the ship the schooner overset, being top heavy, and every person perished: about 50 of the passengers and servants saved themselves in the Brig’s boat and a raft they made.” (**Charles, 1997**)

Dec. 30 St. Eustatia, Dutch; 410 tons; sank off Gull Shoals, near Assateague; 26 guns. (**Moale, 1990**)

1784

Apr. 8 (print date) three (3) Unknown vessels; Assateague Island

-reported *Virginia Calendar of State Papers*

“John Teackle, Comm’r of Wrecks to the Governor

Accomac County – That County was held in great odium on account of the ‘robberies made on Wrecked Vessels.’ The Maryland peoples seem to think themselves ‘privileged to embezzle from wrecked vessels.’ They have a good opportunity of doing this as the island of Assitiaque (famous for its shoals & on which three valuable Vessels have been lately stranded) lies near that state. They are furnished with information by the island people, ‘who are concerned in such villainy.’ An outrage of this kind had lately been committed by one Wm. Holland of Worcester Co. He therefore calls upon the Executive for redress against this man.” (**Charles, 1997**)

- May 28 (print date) Cox; Assateague Island  
 -reported *New Lloyd's List*, London  
 "The Cox, Mason, from Barbadoes to Philadelphia, is stranded on the Island of Assistagne [Assateague], Coast of Virginia." (**Charles, 1997**) [Doesn't say it was a total loss.]  
 -Cox; Lost: ???/1784; Ship; Wrecked on Assateague Island; C/O Mason; Bound Barbados to Philadelphia. (**Brown**)
- 1788  
 Aug. 22 Marquis de Seignelay, 232 tons; off the Maryland coast. (**Moale, 1990**)
- 1795  
 Oct. 3 Brig, Marathon, American; sank on Gull Shoals off Assateague. (**Moale, 1990**)
- Oct. 3 San Miguel; sank on Gull Shoals off Assateague. (**Moale, 1990**)
- 1796  
 Jan. Brig, Lively, vessel went to pieces in the surf at Assateague Island. Cargo: Pipes of gin (Pipe = 250 gals.); Subject of salvage court case in Worcester County over 29 pipes of gin, which was finally resolved in 1802 by the descendants of the original litigants. (**Hurley, 1995:17**)
- 1799  
 Jan. 2 Ocean Bird, British; foundered on Assateague Beach wrecked at Sinepuxent Inlet; reportedly this vessel has been uncovered recently (questionable); Cargo: Immigrants. (**Moale, 1990**)
- Jan. 21 (print date) Schooner, Hawk; Sinepuxent Inlet  
 -reported *Gazette of the United States & Philadelphia*  
 "On Saturday night, the fifth inst. a copper bottomed schooner of 107 tons and 75-95, called the Hawk, commanded by Captain William Carhart, from the Havanna, and belonging to Philadelphia, with a cargo chiefly of sugar, was stranded a little above Sinepuxent Inlet. The captain and crew perished, her papers, tho' wet, since saved, the vessel; the vessel entirely lost, and part of the cargo saved, and that in a wet damaged condition." (**Charles, 1997**)
- 1802  
 Jan. 7 (print date) Schooner, Rising Polly, schooner; Assateague Island  
 -reported *Norfolk Herald*, Norfolk, VA [advertisement]  
 "Came on Assateague Island, Lying on the sea coast of Accomack county, Virginia. The schooner Rising Polly, of Currituck, about 25 to 30 tons burthen, laden with shingles, without any living creature on board; her boat and cabin furniture not appearing, justifies a belief that this unfortunate vessel was run down by another and that the people have left her; her bends and some top timber on one side are entirely stove in. She has a red bottom, yellow waste, and pale green quarter and stern. The name Samuel Waterfield was discovered in a book found in her cabin. Her deck load was mostly gone, the other part of the cargo, with the apparatus of the schooner, are on shore, and will be sold as the law directs by JOHN TEACKLE, Sen. Com'r of Wrecks for Accomack County." (**Charles, 1997**)
- 1803  
 Feb. 2 Schooner, Postillon, 110 tons; sank in blizzard off Great Gull Shoals; entire crew lost. (**Moale, 1990**)
- 1810  
 Dec. 3 Pylades, sank off Assateague Beach with cargo of china and pottery. (**Moale, 1990**)
- 1817  
 Dec. 5 General Jackson;  
 -reported in *Lloyd's List*, London, "The General Jackson, Tift, of Providence, R.I., from the W.I., is totally lost on the Coast of Maryland." (**Charles, 1997**)

1821

Oct. 12 Schooner, Reserve; Sinepuxent Beach  
-reported Nov. 13, *Turner's New York Shipping and Commercial List*  
"The schr. Reserve, from Boston for North Carolina, was lost on the 12<sup>th</sup> Oct. on Sinepuxent Beach – part of cargo saved." **(Charles, 1997)**

1823

Oct. 6 (print date) Schooner, Globe; Assateague Point  
-reported *American Beacon/Norfolk & Portsmouth Advertiser*  
"The Schr. Dispatch, Bedell, hence at New York, on Wednesday last – Reports the total loss of the Schr. Globe, Hickman, hence for New York, on Assateague point – part of her cargo saved." **(Charles, 1999)**

Nov. 17 Schooner, Lawrence; Sinepuxent Beach, MD  
-reported *American Beacon/Norfolk & Portsmouth Advertiser*  
"Shipwreck – We learn from Mr. Ethridge, who came passenger in the Schr. Lawrence, Wing, from Boston, laden with Cordage and Stores for the Frigate United States, and Books, Rum, Pepper, Shoes, ... was cast away on the night of the 27<sup>th</sup> inst. on Sinepuxent Beach: the crew and cargo saved – vessel bilged next day. The L. sailed from Boston, 3d inst. and encountered continued gales and bad weather from the first day out, until the disaster occurred. The vessel and cargo is advertised to be sold on Wednesday next." **(Charles, 1999)**

1826

??/? Schooner, Samarang; sank off Gull Shoals. **(Moale, 1990)**

1828

Jan. 4 Brig, Unknown brig; Assateague Point, MD  
-reported in *American Beacon*, Norfolk: schooner Specie reported seeing a full rigged brig last Fri. ashore on Ass. Pt. with the sea making a complete breach over her and people removing cargo. **(Charles, 1997)**  
[I've paraphrased and it does not indicated vessel was a loss]

Jan. 4 Brig, Unknown; Assateague Point  
-reported in *American Beacon*, Norfolk  
"The Schooner Specie, Bush, hence, at New York on Sunday last, reports seeing on Friday last a full rigged Brig painted black, with a white streak ashore on Assateague Point, the sea making a complete breach over her. People removing cargo. Next day saw a brigantine on shore, stern on, about three miles north of Cranberry Inlet – appeared to be discharging lumber." **(Charles, 1997)** [appears to be same reference as above, but can note the additional sentence.][Not known of it was a total wreck]

1839

??/? Ship, Retribution, 1200 tons, foundered off Assateague Beach; all hands lost. **(Moale, 1990)**

1841

June 28 Brig, Castel; on beach south of Ocean City midway on Assateague **(Moale, 1975)**  
-June 23 or 28 Brig, Castel; just south of Ocean City, MD, on beach; crew saved; From: Bristol, ME to Turks and Caicos. **(Moale, 1990)**

Dec. 16 Brig, R.F. Loper; sank off Sinepuxon [sic] Shoals **(Moale, 1990)**  
-"R.F. Loper (brig) Daley, from Charlestown for Philadelphia, in a heavy gale, evening of 16<sup>th</sup> inst. Struck on the Phoenix Island Shoals, and is now lying on the Sinepuxent Shoals. About two thirds of her cargo is discharged on the beach. She has bilged, with 6 feet water in her hold – it is thought she will be a total loss." Reported Dec. 25, 1843. **(Lochhead)**

1846

Jan. 6 Brig, Nancy Jane; 133 – 71/95 tons; on beach at Berlin, MD; also reported wrecked on North Beach, Assateague Island; visible at low tide just north of the fence at State Park property;

-Capt.: Godfrey; From: NY, NY to Richmond; Cargo: General plus 50 half pipes of brandy which washed ashore. Built in Newcastle, Lincoln Co., ME in 1835 and was 79.2' long, 23'3" breadth, 8'4.5" depth, single deck; square stern; billethead. Identification not completely verified; this ship had false registration records as she was a gun and liquor runner. **(Moale, 1990)**

-note the date difference, "Nancy Jane (brig) Berlin, MD, January 16. Brig Nancy Jane, Godfrey, from New York for Richmond, with an assorted cargo, and 50hf. Pipes of brandy, was driven ashore on the beach, below this place, last night, and will prove a total loss. A great portion of the cargo will, I think, be save in a damaged condition" reported Jan. 21, 1946. **(Lochhead)**

Nov. 9 Brig, Solon; wrecked near Green Run Inlet. **(Moale, 1990)**

-"Solon (brig) Berlin, MD, Nov. 9. Brig Solon, Anderson, of Hancock, ME, from Turks Island for New York went ashore at the South of Green Run Inlet about 12 miles South of this place 6<sup>th</sup> inst. During a gale from N.E. and went to pieces almost immediately; steward and boy lost" reported Nov. 18, 1946. **(Lochhead)** Looks like it actually hit on the 6<sup>th</sup>?

1855

Sept. 22 Brigantine, Porpois [sic]; wrecked ashore on North Beach, Assateague Island **(Moale, 1990)**

1856

Jan. 9 Schooner, Unknown; Maryland Beach

-reported in *New York Daily Times*; "Philadelphia, Tuesday Jan. 8. A letter from Dover, dated the 5<sup>th</sup> inst., reports a schooner laden with naval stores going ashore on the Maryland Beach. The pilot boat Cropper, on going to her assistance, also got on shore." **(Charles, 1997)** [no report as to whether or not total loss.]

1858

Sept. 4 (print date) Brig, Eureka brig; Sinepuxent

-reported *New York Times*

"Baltimore, Friday, Sept. 3. The schooner Virginia, arrived from New York, reports that on Sunday night, off Pinepuxent [Sinepuxent], she fell in with the brig Eureka, of Philadelphia, water-logged. She remained by her during the night, and took off all hands, after which the brig sunk. The Virginia took them as far as Hampton Roads, when they proceeded to Norfolk in a small boat."

"Baltimore, Sept. 3 – The brig Eureka from Philadelphia for Charleston, with a cargo of coal, water-logged and sunk off Sinepuxent. Crew saved by schr. Virginia – arrived here from New York. The E. was built at Machias in 1853, was 180 tons register, rated A-2, and valued at \$4,500. (By telegraph to Elwood Walter, Esq., Secretary Board of Underwriters)" **(Charles, 1997)**

1872

Mar. 16 Unknown; Green Run

-reported in *Salisbury Advertiser*, Salisbury, "Worcester County – On the second instant, the schooner Rose, owned by parties in New York, was wrecked on the beach near Chincoteague Island. A vessel loaded with tropical fruit was also ashore near Green Run. **(Charles, 1997)**

1875

Aug. 23 Schooner, Chas. P. Stickney; American; 188.28 tons, Owned: Phil.; From Georgetown DC bound to Charleston SC; Cargo: Coal; Value vessel \$4k; Value Cargo: \$1.5k; Damage \$1k; 10 mi. W by N of Chincoteague; Sprung leak and split sails in heavy sea and gale from NE. Report No. 140. **(LSS/Treasury)**

Dec. 1 Schooner, Ocean Bell; 142 tons; Green Run Beach, MD; Station #3

-Owned: Rockland, ME; Master: Mills; From: Georgetown DC for Bridgeport, CT; Cargo: Coal; Vessel Value: \$8k; Cargo Value: \$1k. Total Loss. **(USLSS)**

-Dec. 1, 1976; Ocean Bell; Am. Schr.; 143.21 tons; Rockland, Me; From Georgetown, DC to Bridgeport, CT.; Cargo: coal; Value Vessel \$8k; Cargo Value: \$1000; Damage: \$8k; 2 mi above Green Run, MD, sprung a leak. (Report # 485) **(LSS/Treasury)**



1878

Jan. 4 Schooner, Montevue; 185 tons; S. end Wreck Is.; Station #7

-Owned: NY, NY; Master: Leek; From: VA to NY, NY; Cargo: Pine wood; Vessel Value: \$3k; Cargo Value: \$600; Total Loss. **(USLSS)**

Jan. 3 Schooner, Francis French; 119 tons; 3.75 mi N. of Station #3 (this is usually Indian River Stn.? Re-numbering possible?)

-Owned: NY, NY; Master: Gandy; From: Fredericksburg, VA to NY, NY; Cargo: Tan-bark and Oak Lumber; Vessel Value: \$5k; Cargo Value: \$2,800. Total Loss. **(USLSS)**

-Frances French schooner; Jan. 3, 1878; 3.75 mi. N of Green Run Stn. **(Charles, 1999)**

Jan. 4 Schooner, Rebecca Knight; 180 tons; .25 mi. N of Station #3 (as above?)

-Owned: NY, NY; Master: Leek; From: James R., VA to NY, NY; Cargo: Pine wood; Vessel Value: \$5k; Cargo Value: \$700. Total Loss. **(USLSS)**

-Rebecca Knight schooner; Jan. 4, 1878; .25 mi. N of Green Run Stn. **(Charles, 1999)**

Jan. 6 Schooner, J. J. Spencer; 210 tons; 1.25 mi. ESE of Station #5 (Green Run Inlet Stn.)

-Owned: Boston; Master: Haskell; From: Boston to Washington, DC; Cargo: Pitch and Lumber; Vessel Value: \$6k; Cargo Value: \$3k; Total Loss. **(USLSS)**

1879

Feb. 19 Brig, Moses Day; 314 tons; Green Run Beach, 2.75 mi. N Station #5

-Owned: Phil.; Master: Crosby; From: Sagua, West Indies to Phil.; Cargo: Sugar and Molasses; Vessel Value: \$12k; Cargo Value: \$31,542. Total Loss. **(USLSS)**

-Moses Day brig; Feb. 19, 1879; Green Run Inlet; **(Charles, 1999)**

Mar. 27 Bark, Champion; British; 799 tons; Yarmouth, NS; From Dunkirk, Fr. To Del Breakwater; Value

vessel \$10k; Damage \$5k; Stranded Sinepuxent, Md in a heavy gale. (Report #1321). **(LSS/Treasury)**

July 16 Schooner, John Rose (---tons); 2 mi. N of Station #5 (closed for season)

-Owned: NY, NY; Total Loss. **(USLSS) [This volume did not contain the usual table of tonnage, values, ports etc.]**

-John Rose schooner; July 16, 1879; 2 mi. N. Green Run Inlet **(Charles, 1999)**

1881

Mar. 3 Bark, Syringa; 379 tons; 3.5 mi. N of Station #5

-Owned: Scarborough, England; Master: Nicholson; From: Pernambuco, Brazil to Phil.; Cargo: Sugar; Vessel Value: \$10k; cargo value: \$35k; Total Loss. **(USLSS)**

-Syringa bark (British); Mar. 3, 1881; 3.5 mi. N Green Run Inlet **(Charles, 1999)**

-March 3, 1881; Syringa; Br. Bark; 379 tons (13 years) Scarborough Eng.; From Pernambuco, Brazil to Phil.; crew 13; Cargo: sugar; Vessel Value: \$10k; Cargo Value \$35k; Stranded and then beached on WQS to save crew; total loss. (Report #1155) **(LSS/Treasury)**

1882

Jan. 24 Schooner, Chancellor; 93 tons; 1.5 mi. N of Station #5

-Owned: New Haven, CT; Master: Manken; From: VA to Fair Haven, CT; Cargo: Oysters Vessel Value: \$3k; Cargo Value: \$1.5k. Total Loss.

-Chancellor schooner Jan. 24, 1882; Green Run Inlet; 1.5 mi. N of Station **(Charles, 1999; from USLSS)**

-Jan. 24, 1882; Chancellor; Am. Schr.; 93.47 tons (14 yrs.); North Haven, CT; From VA to Fair Haven; crew 5; Cargo: oysters; Vessel Value \$4.5k; Cargo value \$1,400; Stranded at Fenwick Island, MD; Total loss (Report #1288) **(LSS/Treasury)**

Jan. 31 Schooner, Dolly Varden; 11 tons; Sheep Pen Hills, 3.5 mi. ENE of Station #7

-Owned: Somer's Point, NJ; Master: Hackney; From: New Inlet, VA to Great Egg Harbor, NJ; Cargo: Oysters; Vessel Value: \$1k; Cargo Value: \$250. Total Loss. **(USLSS)**

-Dolly Varden schooner; Jan. 31, 1882; Assateague, Sheep Pen Hills. **(Charles, 1999)**

-Jan. 31, 1882; Dolly Varden; Am. Schr.; 11.21 tons (9 yrs.); Somer's Point, NJ; From New Inlet, VA to Great Egg Harbor, NJ; 3 crew; Cargo: oysters; Vessel Value \$650; Cargo value \$400; Stranded in a gale at Assateague Island, VA. (Report # 929). **(LSS/Treasury)**

1883

Jan. 2 Schooner, Samuel Ober; American; 67.66 tons (26 yrs.); Provincetown, MA; From Balt. To Providence; crew 5; Vessel Value \$2k; cargo: pig iron; cargo value \$2.5k; damage to vessel \$1k; damage to cargo \$1,200; stranded when it "Misstrayed" [sic] at Assateague Island, VA. **(LSS/Treasury)** [possibly not a total loss]

Jan. 8 Schooner, Wyoming; 197 tons; 5.25 mi. N of Green Run Inlet Station

-Owned: Boston; Master: Bellatty; From: Azna, Santo Domingo to NY; Cargo: Lignumvitae and sugar; Vessel Value: \$7k; Cargo Value: \$9k. Total Loss. **(USLSS)**

-Wyoming schooner; Jan. 8, 1883; Green Run Inlet **(Charles, 1999)**

-Jan. 8 1883; Wyoming; Am. Schr.; 197.46 tons (9 yrs.); Boston. From St. Domingo WI to NY; Cargo: lignum vitae; crew 7; Vessel value \$10k; Cargo value \$8,012; Damages total to vessel and \$6k to cargo; Stranded in a fog at Fenwick's Is, MD. (Report #1001) **(LSS/Treasury)**

1886

Sept. 2 Schooner, Meyer and Muller; 421 tons; 4 mi. NE of Station; North Beach Station

-Owned: Belfast, ME; Master: Perkins; From: Union Island, GA to NY; Cargo: Lumber; Vessel Value: \$20k; Cargo Value: \$8k. Total Loss. **(USLSS)**

1887

Jan. 4 Schooner, Helena; 96 tons; 3.75 mi. SSW of Station; North Beach Station

-Owned: New London, CT; master: Brown; From: NY to Norfolk; Cargo: Coal; Vessel Value: \$5k; Cargo Value: \$500. Total Loss. **(USLSS)**

-Helena schooner; Jan. 4, 1887; North Beach **(Charles, 1999)**

1889

Sept. 10 Schooner, Anna and Ella Benton; 122 tons; .5 mi. NE of North Beach Station

-Owned: Somer's Point, NJ; Master: Sharp; From: NY to Norfolk; Cargo: None; Vessel Value: \$2.5k; Total Loss. **(USLSS)**

-Anna and Ella Benton; Lost: 09/10/1889; Schooner; last known location, MD. **(Brown)**

-Anna & Ella Benton schooner; Sept. 10, 1887 [sic]; .5 mi. NE of North Beach Stn. **(Charles, 1999)**

1890

Apr. 11 Bark, Unknown, Norwegian; North Beach

-reported in *Peninsula Enterprise*, Accomac Court House, VA;

"A Norwegian bark came ashore 8 miles south of North Beach Live [sic] Saving Station, on 1<sup>st</sup> inst. She was bound from Rio Janeiro to Halifax, under ballast. She is a total wreck and was sold on 3<sup>rd</sup> inst., for \$15. Two of her crew of ten died during the voyage and were buried at sea. She was 43 years old."

**(Charles, 1997)**

1891

Jan. 28 Schooner, P. E. Warton; 2.75 mi. S by W of North Beach Stn. **(Charles, 1999)** [In error: cf. 1909]

Apr. 1 Bark, Admiral; 744 tons; 3.75 mi. SSW of North Beach Station

-Owned: Christiana, Norway; Master: Gyertsen; From: Rio de Janeiro, Brazil to Halifax, NS; Cargo: None; Vessel Value: 8k. Total Loss. **(USLSS)**

-Admiral bark (Norwegian); Apr. 1, 1891; 3.25 mi. SSW of North Beach Stn. **(Charles, 1999)**

-Admiral bark (Norwegian); Apr. 1, 1891; Ocean City

-*Lloyd's Register* – Wreck Returns, London

"Admiral; 732 tons; Norwegian; wood bark; in ballast, wrecked below Ocean City. **(Charles, 1997)**

-Admiral; Lost: 04/01/1891; Barkentine; Stranded at North Beach, MD **(Brown)**

Aug. 12 Schooner, Seth and Ishmael: 61 tons; 1.25 mi. S by W of North Beach Station  
-Owned: Richmond, VA; Master: Marshall; From: Phil. to Wash DC; Cargo: Coal; Vessel Value: \$8.5k; Cargo Value: \$500; Total Loss. Sunk in breakers. **(USLSS)**  
-Seth & Ishmael schooner; Aug. 29, 1891(date article was published); 1 mi. N of North Beach  
-reported in *Peninsula Enterprise*, Accomac Court House, VA;  
“The three-masted schooner Seth & Ishmael, sunk last week in seven feet of water [with]in about one mile of North Beach station, was bound from Philadelphia to Richmond with 100 tons of coal. She was rebuilt near Eastville a few months ago at a cost of \$7000 by her present owners, Capt. Wm. Marshall & Brothers. She was not insured, and it is feared will be a total loss. Capt. Marshall is here at this writing to secure help for the purpose of attempting to save the schooner.” **(Charles, 1997)**

1893

Mar. 25 (print date) Schooner, Robert Morgan; Winter Quarter-Fenwick  
-reported *Lloyd's Register – Wreck Returns*, London  
“Robert Morgan; 553 tons; American; wood, 3-masted schooner; carrying coal; lost by collision between Winter Quarter and Fenwick’s Island.” **(Charles, 1997)**

1897

Mar. 4 Brig, Emma L. Shaw; 567 tons; 2.25 mi. NNE of Green Run Inlet Station  
-Owned: Windsor, NS; Master: Horton; From: Turks Island, West Indies to Phil.; Cargo: Salt; Vessel Value \$5k; Cargo Value: \$6.5k; Total Loss. **(USLSS)**  
-Emma L. Shaw brig; Mar. 4, 1897; 2.25 mi. NNE of Green Run Inlet Stn. **(Charles, 1999)**

1898

May 21 Schooner, T. Harris Kirk; 264 tons; 1 1/8 mi. S of North Beach Station  
-Owned: NYC; Master: Curtis; From: Chickahominy, Va to Phil.; Cargo: Railroad ties; Vessel Value: \$6k; Cargo Value: \$2100; Total Loss. **(USLSS)**  
- T. Harris Kirk schooner; May 21, 1898; 1 1/8 mi. S of North Beach Stn. **(Charles, 1999)**

1899

Aug. 22 Schooner, Lem Meta; 38 tons; 4.5 mi. NNE of North Beach Station  
-Owned: Wilmington, DL; Master: Williams; From: Lewes to Assateague Beach; Cargo: Lumber; Vessel Value: \$1k; Cargo Value: \$300; total Loss. **(USLSS)**  
-Lem Meta schooner; Aug. 22, 1899; 4.5 mi. NNE of North Beach Stn. **(Charles, 1999)**  
-\* (likely same vessel considering builders name Lemuel) Lameta schooner; Aug. 26, 1899; 5 mi. S Ocean City  
-reported in *Democratic Messenger*, Snow Hill, Maryland  
“A SCHOONER LOST. The Schooner “Lameta” sprung a leak Monday while on her way from Lewis [sic] to Chincoteague loaded with post and oak lumber for repairs at Assateague Life Saving Station, and her captain beached her about five miles south of Ocean City. She was unloaded and now lies a wreck on the shore, with the waves breaking over her at every high tide. It is thought she will be a complete loss.]  
The schooner ran aground about half-way the space unpatrolled by the life-saving crews of Ocean City and North Beach. There is a space of four miles or more between the southern limit of the beat of the Ocean City crew and the northern limit of that of the North Beach crew. The vessel was a little nearer North Beach Station and Captain Hudson, with crew and boat, went to the stranded vessel as soon as it was light enough for her to be sighted. As the crew of the schooner were good swimmers and the surf not so high as it had been lately, they easily made their way to shore. Under other conditions there might have been loss of life.

The vessel was owned by Mr. C.C. Maul, of Lewes. The Lameta was the last of the vessels built by Col. Lemuel Showell, of the Seaside Hotel, Ocean City, and she was used in coast service for about 12 years.” **(Charles, 1997)**

1900

May 8 Schooner, M. Luella Wood; 556 tons; 3 mi. NNE of Green Run Inlet Station

-Owned: Rockland, ME; Master: Crockett; From: Boston to Fernandina, FL; Cargo: None; Vessel Value: \$ 15k; Total Loss. **(USLSS)**  
-M. Luella Wood schooner; May 8, 1900; 3 mi. NNE of Green Run Inlet Stn. **(Charles, 1999)**

1902

June 3 Schooner, Elsie M. Harris; 50 tons; 1 mi. NNE of Green Run Inlet  
-Owned: NYC; Master: Ericsson; From: NYC to VA; Cargo: Fish; Vessel Value: \$4k; Cargo Value: \$ 200; Total Loss. **(USLSS)**  
-Elsie M. Harris schooner; June 3, 1902 1 mi. NNE of Green Run Inlet **(Charles, 1999)**

1903

Jan. 10 Schooner, Celeste; 341 tons; 1.75 mi. NNE of Green Run Inlet Station  
-Owned: Tampa, FL; Master: Payne; From: NYC to Balt.; Cargo: Guano; Vessel Value: \$30k; Cargo Value: \$12k; Total Loss. **(USLSS)**  
-Celeste schooner; Jan. 19, 1903; 1.75 mi. NNE of Green Run Inlet Stn. **(Charles, 1999)**  
-Schooner, Celeste; 41 gross tons; 24 net tons; 1.75 mi NNE of Green Run Inlet Stn.; Registered No. 126881; Owned: Tampa, FL (Norfolk, Va in 1901); Master: Payne; crew 6; all saved; From: NY, NY to Baltimore; Cargo: Guano; Built 1892, Prince George Co, VA; length 74.3'; breadth 18.6'; depth 5.7'. **(Moale, 1990)**

1906

Feb. 22 Schooner, Ida B. Gibson; 235 tons; 3 mi. SSW of North Beach Station (Green Run Inlet Station also responded)  
-Owned: Seaford, DL; Master: Bradley; From: City Point, VA to NYC; Cargo: Lumber; Vessel Value: \$ 6k; Cargo Value: \$5k; Total Loss **(USLSS)**  
-Ida B. Gibson schooner; Feb. 22, 1906; 3 mi. SSW of North Beach Stn. **(Charles, 1999)**

1909

Jan. 28 Schooner, P. E. Wharton; 76 tons; 2.75 mi. S. by W. of North Beach Station  
-Owned: Chincoteague; Master: Not given; Cargo: Lumber; Vessel value: \$2.5k; Cargo value: \$8k; Only saved \$400. **(USLSS)**  
- P. E. Wharton; Lost: 01/28/1909; Schooner; 76 tons; stranded off North Beach. **(Brown)**

Nov. 29 Schooner-Barge, Gatherer; American Square-rigged; 1469 tons; foundered near Assateague; Cargo: coal; had been converted to a barge. **(Brown)**

1915

May 27 Schooner-Barge, Winthrop, wooden; 742 tons; From Norfolk to Falls River, Mass.; carrying coal; wrecked 15 miles from Assateague. **(Lloyds Register)**  
-Winthrop; Lost: 05/27/1915; American Schooner; 841 tons; foundered 15 miles from Assateague Light **(Brown)** [doesn't say in which direction; check other sources].

1917

Sept. 23 Schooner, Western Belle; 1097 tons; Owned: NY; foundered in heavy seas off MD coast; Crew 4; lost 3; Cargo: coal; Vessel value \$10k; Cargo value \$5k; Total Loss. (File # 191). **(U.S. Navy Dept.)**

1922

May 27 Schooner-Barge, Beechwood, wooden; American; 841 tons; From Norfolk to New York; carrying coal; wrecked 12 miles south of Fenwick Island. **(Lloyds Register)**  
-Beechwood, schooner-barge; 841 tons; Owned: NY; Foundered in heavy weather 12 mi. SSW of Fenwick Lightship; May 27, 1922; Crew 3; Cargo: coal; Vessel value: \$20k; Cargo value: \$ 7,845; Total loss. (File # 874). **(U.S. Navy Dept.)**

May 27 Schooner-Barge, Passiac [Passaic?], wooden 3-masted; American; 876 tons; From Norfolk to New York; wrecked 12 miles south of Fenwick Island. [with Beechwood?] **(Lloyds Register)**

-Passaic, schooner-barge; 875 tons; Owned: NY; foundered in heavy weather 12 mi SSW of Fenwick Island Lightvessel; May 27, 1922; Crew 3; Cargo: coal; Vessel value: \$30k; Cargo value: \$853.65 Total loss. (File # 875). **(U.S. Navy Dept.)**

-Schooner-Barge, Passiac [sic?], 3-masted; 876 gross tons; 791 net tons; Register No 150721; Call letters KMSC; 12 mi S. of Fenwick Island; Port: NY; From: Norfolk to NY; Cargo: Coal. Built 1896, Noank, MA; length 192'; breadth 34.7'; depth 16.4' **(Moale, 1990)**

1924

Aug. 10 Gas Engine, Delivery; 11 tons; Owned: NY; stranded 3 1/4 mi. S. of North Beach Coast Guard Station, MD; "unknown local attraction and deviation of compass"; Crew 3; Cargo: none; Vessel value: \$6k; Total Loss (File #77). **(U.S. Navy Dept.)**

1925

Dec. 22 Gas Yacht, Ocoee, 29 tons; Owned: Brunswick, GA; stranded in thick foggy weather with snow as no navigation lights or marks were visible; about 5.5 mi. S. of Ocean City, MD; Crew: 3; Cargo: none; Vessel value: \$20k; Total loss (File #370). **(U.S. Navy Dept.)**

1931

Mar. 15 Un-named boat; wrecked when drifted on rocks in rough seas; Assateague Beach. [rocks?] **(U.S. Treasury)**

1933

Nov. 23 o.l.s. (oil screw?), Powhatan; 4865 tons; stranding in fog at Assateague Island; Vessel value: \$30k. (File # 205). **(U.S. Navy Dept.)** [not apparent if a total loss]

1941

Mar. 18 Steamer, T. J. Hooper; American; 456 tons; Stranded off Assateague **(Brown, 2001)** [not known if lost]

1942

Jan. 28 Tanker, Frances E. Powell; American; 410' long; Torpedoed off Assateague by German submarine. 11 survivors rescued by USCG; From Philadelphia. **(Mariner)**  
-location given as 37° 27' 48"N 75° 16' 42"W **(USHO)**

1945

Nov. 15 Schooner, Joseph E. Hooper, wooden 3-masted; blt. 1921; 2233 tons; carrying coal; sank in heavy weather 1.5 mi. SE of Fenwick Island while in tow. **(Lloyds Register)**  
-Schooner-Barge (unrigged), Joseph E. Hooper (Ex. Northern 41), 3-masted, single deck; 2233 tons; Register No. 221160 (Hull No. 388); Call Letters KNSY; foundered while in tow; 1.5 mi. S by E of Fenwick Island; 74°58'42"N 38°27'50"W verified by Loran 'C' on onsite bearings to shore; June, 1974, site was completely broken up and spread out with only about 6' proud of the bottom; Owned: Eastern Transportation Co., Baltimore; Master: Hooper; Port: Wilmington, DE; From: Norfolk to NY; Cargo: Coal. Built May 1921, Cumberland Shipbuilders, South Portland, ME; length 267.3'; breadth 46'; depth 23.6'; type 1944 ferris hull; 6 hatches (22' x 14'); 4 watertight holds; yellow pine, fir and galvanized iron fasteners. **(Moale, 1990)**

**[The following is from Brown (2001) and his source for the information is not given]**

Not Known #948; Schooner; Stranded near North Beach

## CHAPTER 5

### Remote Sensing Survey Results and Project Summary

#### Introduction

During the month of May, 2008, an electronic remote sensing survey was undertaken in Maryland state waters from the Ocean City Inlet halfway to the Virginia State Line. Figure 15 shows the survey block, transect lines, and locations of acoustic anomalies for the project area. Sixty survey lines were pre-plotted over the approximately 2 by 10 mile block, and survey was initiated on the lines closest to shore and progressed seaward. No historical or archeological remains were identified. Over all, the only cultural remains detected can all be accounted for as modern debris, and as components of a constructed fish haven (Figure 15), designated as Kelly's Reef by the Ocean City Reef Foundation (Beman, 2007: Pers. Comm.).

#### Side Scan Sonar

An EG&G 272-TD sonar sensor (the towfish) and an Edgetech topside computer system running Triton Isis software was used to record acoustic imagery of the bottom surface. The side-scan data was processed and geo-referenced mosaics were compiled of the survey area (see Figure 16) using Hypack Hydrographic Survey software (v. 8.0.0.10). Area A (Figure 17) encompasses a linear object roughly ~36 m long, ~1.2 m wide, and has a relief of ~.5 meters. The other acoustic anomalies are modern materials (Figures 18-19) deliberately placed as part of the fish haven. Some of these objects (Area C) were readily identifiable from the side-scan sonar data as concrete debris, tires, and pyramid reef units (Figure 18). The pyramid reef units are similar to those observed in acoustic images of other fish havens (Langley & Jordan, 2007). There was an unknown anomaly adjacent to and south of the fish haven (Area B), which was identified as a shipwreck during the resurvey of Area B (Figure 19). Measurements taken from the acoustic image using the Sidescan Survey and Targeting program within Hypack, show that the vessel was ~15 m long, ~6 m wide, and had a relief of ~1.5 m. The only information we have about the sunken vessel is that it is a modern vessel named Chantel's Folly that was used as an apple barge until it was intentionally sunk by the Ocean City Reef Foundation (Beman, 2007: Pers. Comm.).

#### Magnetometer

A Geometrics 881 cesium gas magnetometer, which is one of the industry standards, linked to a Toshiba Tecra 8200 laptop computer running Hypack was used to record magnetic signals for parts of the survey. Although Hypack is capable of running more than one survey device at a time, this survey found it most effective to use it for maintaining course and for collecting the magnetometer data. The electronic remote sensing data (both acoustic and magnetic) was geo-referenced using the positioning data from the Northstar 941XD DGPS.

All of the magnetic signatures obtained were associated with the acoustic images observed in Areas A and B. Area C was not re-surveyed because the anomalies were readily discernible as materials intentionally placed within the fish haven. The magnetic signature of the linear object in Area A is represented by a magnetic dipole of moderate duration with a range of ~330 gammas, and probably is the remains of section of modern dredge pipe. The small multi-component magnetic signature of the shipwreck in Survey Area B (Figure 19) has a range of ~132 gammas.

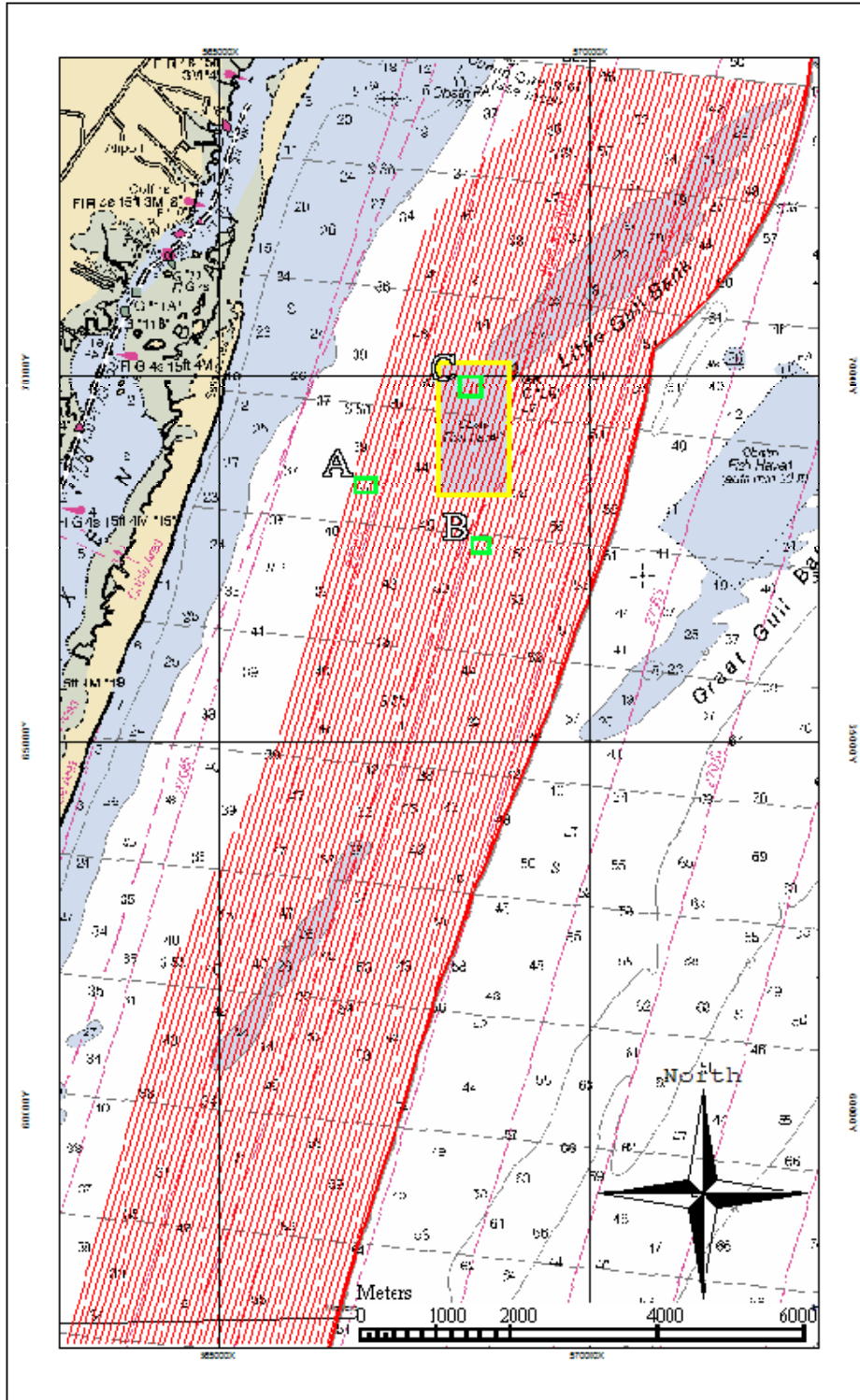


Figure 15. Survey area with transect lines (red) representing over 410 linear nautical miles at a spacing of 84 meters, with the location of Kelly's Reef (yellow) and areas with acoustic anomalies (green). Based on anomalies observed in the side-scan sonar data, Areas A and B were resurveyed with closer track line spacing (17 meters) utilizing the side-scan sonar and magnetometer. Area C contained material purposely deposited to assist with reef formation, and was readily discernible as such in the acoustic images. Base map is NOAA Nautical Chart 12211\_1, 2008.



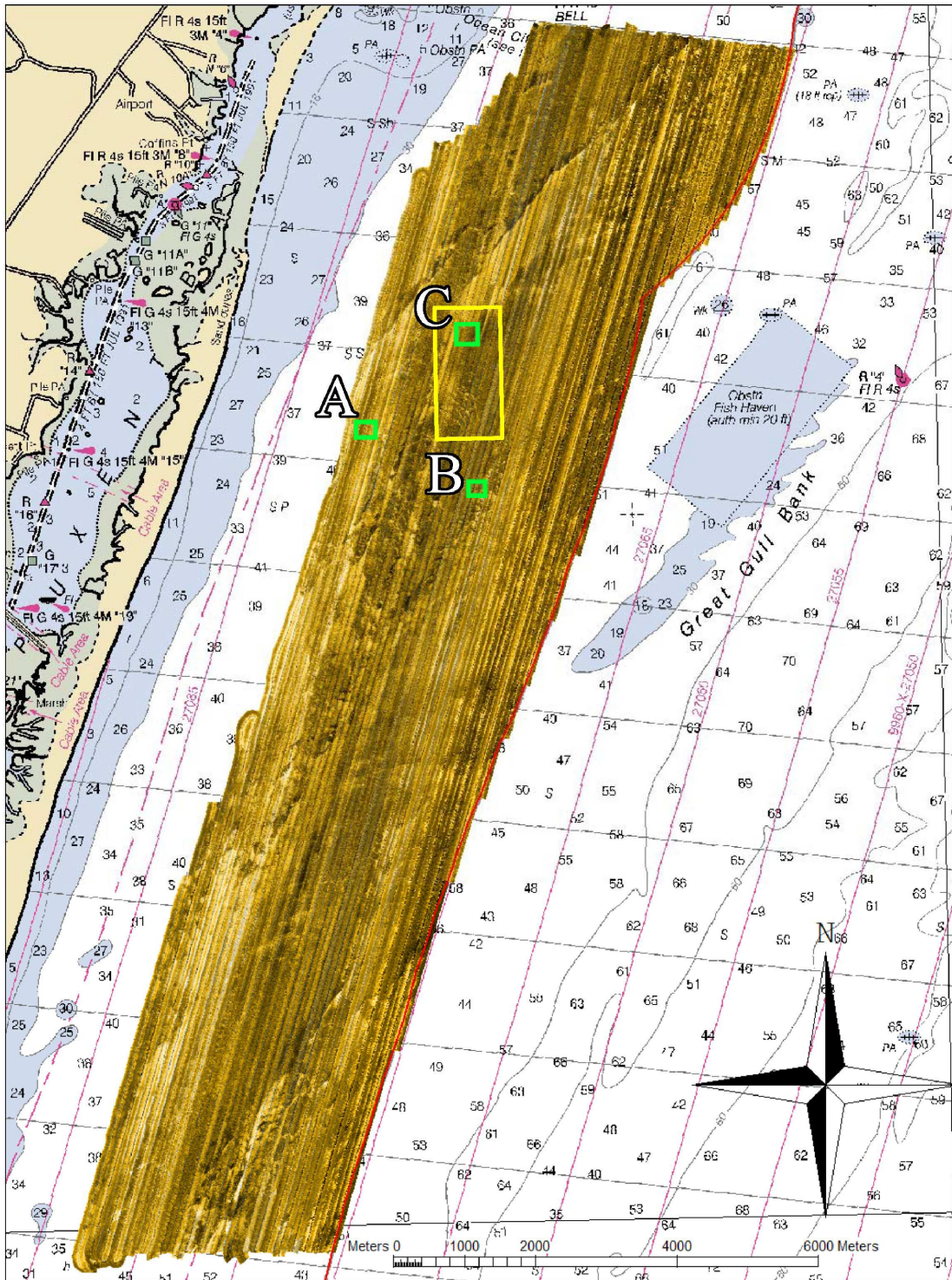


Figure 16. The location of Kelly’s Reef (yellow) and areas with acoustic anomalies (green) superimposed over an acoustic image mosaic of the survey area. Based on anomalies observed in the side-scan sonar data, Areas A and B were resurveyed with closer track line spacing (17 meters) utilizing the side-scan sonar and magnetometer. Area C contained material purposely deposited to assist with reef formation, and was readily discernible as such in the acoustic images. Base map is NOAA Nautical Chart 12211\_1, 2008.



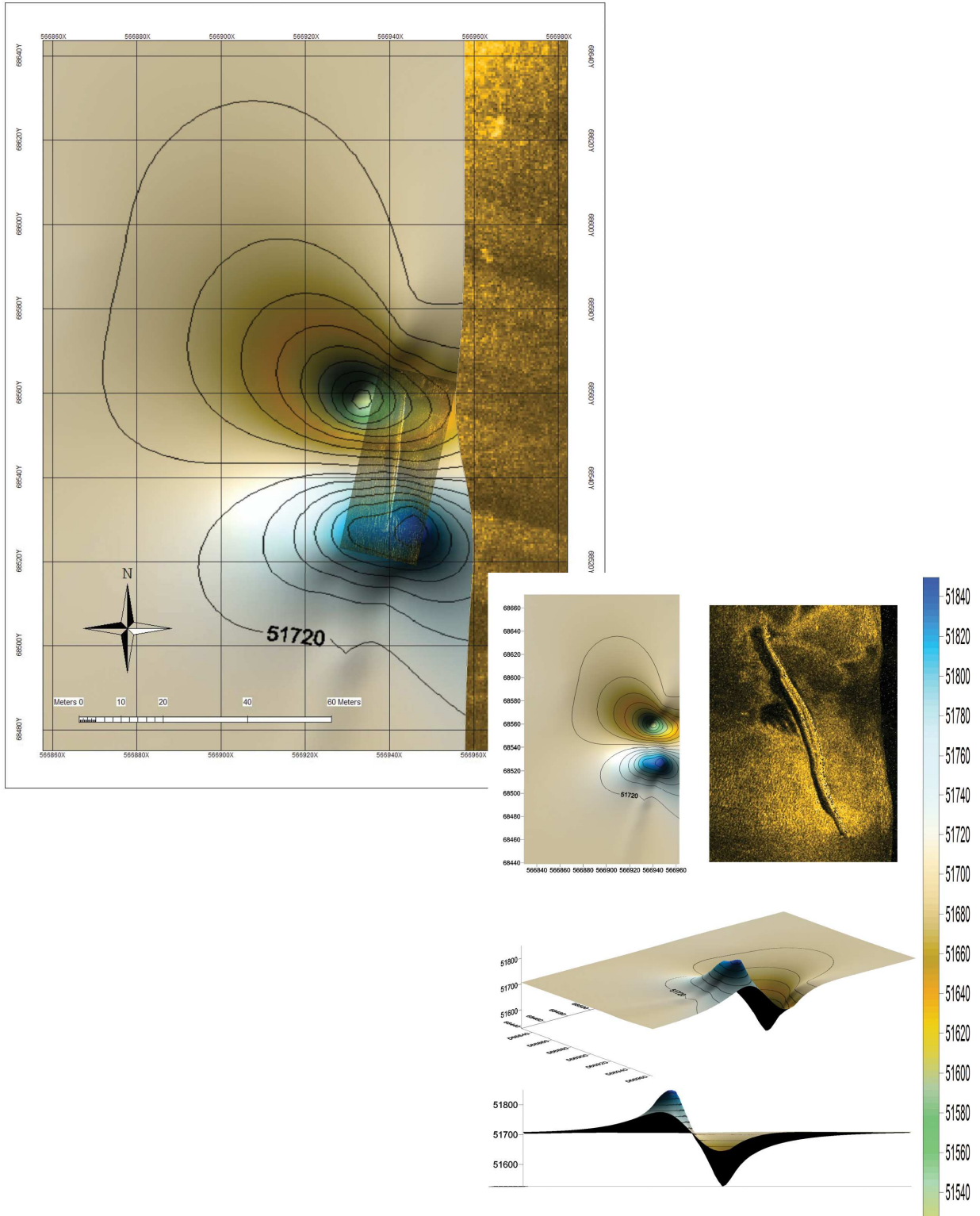


Figure 17. Survey Area A showing the composite side-scan sonar image with the magnetometer data (upper left). A close-up image of the linear object can be seen in the lower-right image, along with more detailed views of the magnetic signature. Color scale is in gammas.

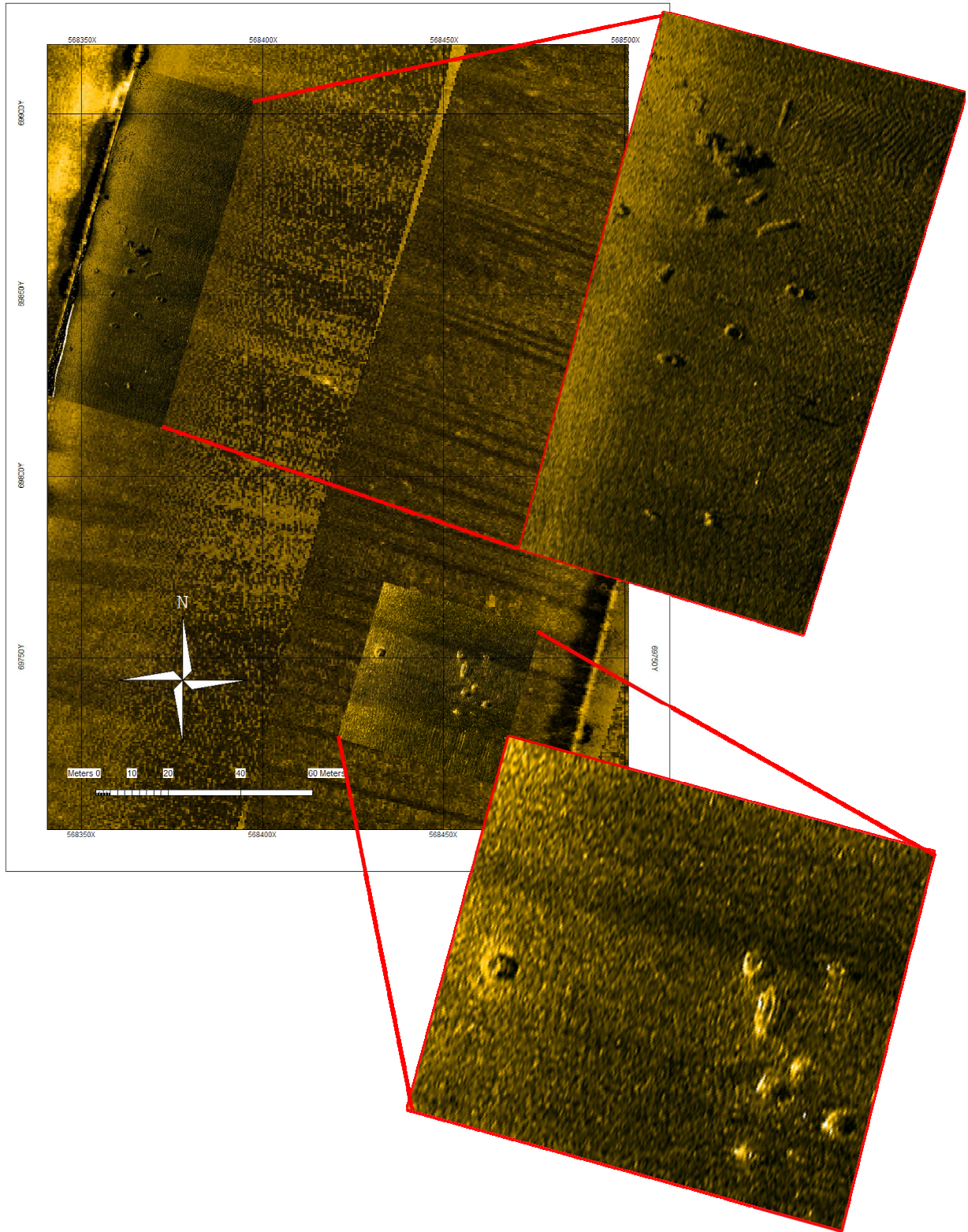


Figure 18. Survey Area C showing the acoustic mosaic image with close ups of the intentionally-placed artificial reef materials.



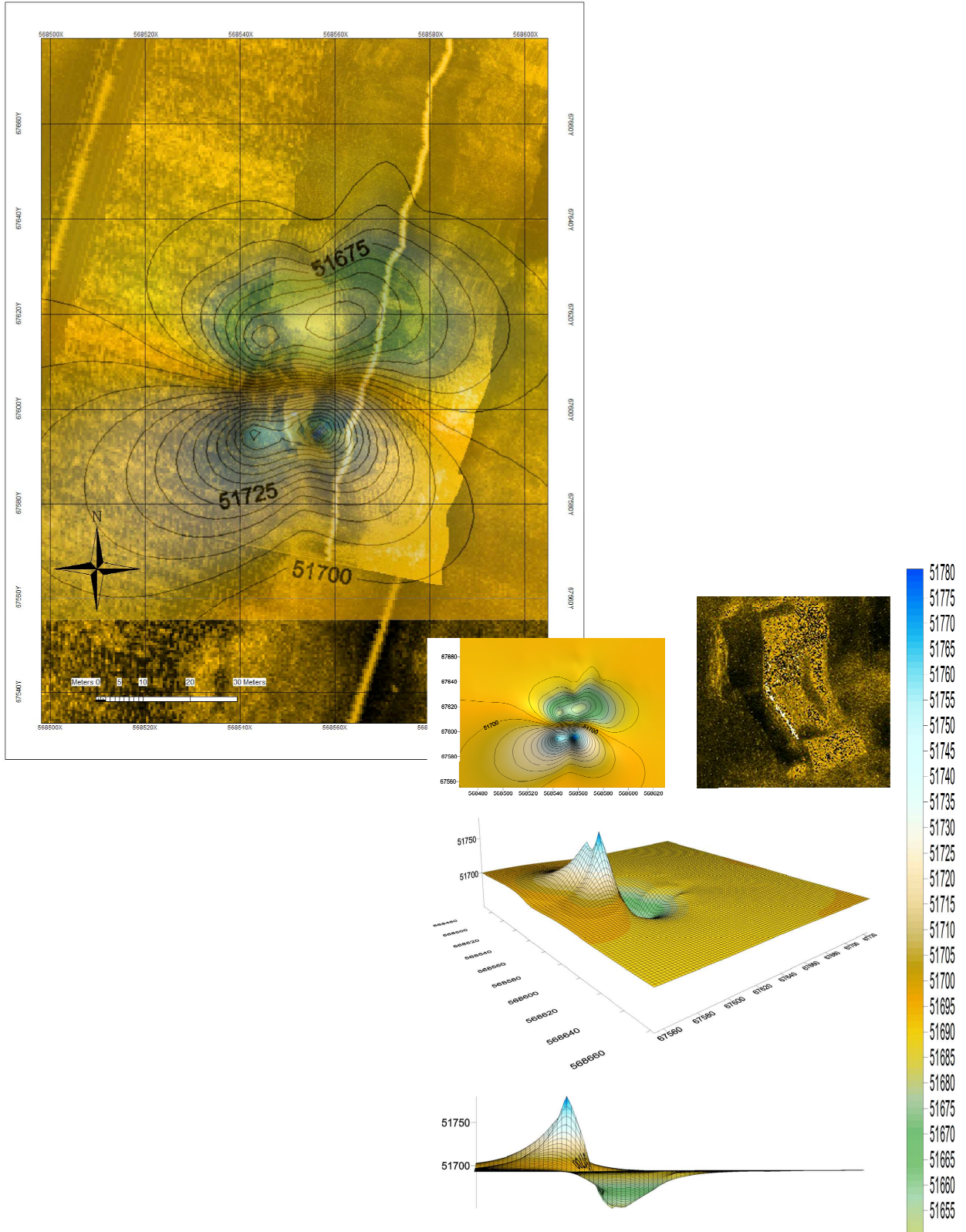


Figure 19. Survey Area B showing the composite side-scan sonar image with the magnetometer data (upper left). A close-up image of the sunken vessel can be seen in the lower-right image, along with more detailed views of the magnetic signature. Color scale is in gammas.

## **Summary and Recommendations**

The electronic remote sensing survey of Maryland State waters from the Ocean City Inlet halfway to the Virginia State Line covered approximately 20 square miles and ran more than 400 linear nautical miles. It identified one distinct shipwreck along with other remains of modern debris, but none of these objects was recognized to be of historical or archeological significance. The majority of acoustic and/or magnetic signatures recorded can all be attributed to cultural remains deliberately placed within the confines of a constructed fish habitat. The long linear object observed in Survey Area A with both acoustic and magnetic signatures is most likely related to discarded modern debris from dredging operations.

It is not unlikely that there are additional submerged cultural resources in the area; indeed, it is probable. However, they are very likely buried under the shifting sands within the area and not detectable within the parameters of this survey. The chief recommendation is that the State's waters should be surveyed on a periodic basis, even if only 10-year intervals, since the actions of storms, currents and tides will continue to move resources into and through the area and potentially expose submerged cultural resources that are buried and presently not detectable by side scan sonar or magnetometer. In addition, engaging local citizens to monitor the beaches after storms, as has been done in North Carolina (Bright, 1993) and as was recommended by MHT to the National Park Service in Assateague Island National Seashore, would serve both practical and educational outreach purposes and facilitate monitoring and planning for resource management in the area.

## REFERENCES CITED

36 Code of Federal Regulations (CFR) §60.4 (2001).

- Akers, Timothy. 2001. British Maritime Research Archeologist, consulting.  
-including records from R. Taylor collection of shipwrecks off East coast of America.  
Virginia, Maryland and Delaware, 1776-1778; unpublished papers 1980.  
-including records from the State Public Record Office, Bremen. Concerning the loss of German and Dutch ships lost on coast between Cape Charles and Ocean City during the American Privateer Campaign in 1776-1777.
- Amrhein, Jr., John. 2007. Email communication; also promoting volume, *Ponies' Secrets*. New Maritime Press, to be released August, 2007.
2007. *The Hidden Galleon*. New Maritime Press, Kitty Hawk, NC.
- Annotated Code of Maryland (COMAR). Article 83B, §§5-601, 5-611.1, 5-620, and 5-630. Submerged Archeological Historic Property Act.
- Annotated Code of Maryland (COMAR). Regulations: Title 05, Subtitle 08 – Historical and Cultural Program, Chapter 03 – Protections of Submerged Archeological Historic Property.
- Bache, A.D., Supt. 1865. *Map of the State of Virginia Compiled from the best authorities, and printed at the Coast Survey Office*. Washington, DC.
- Barnes, Brooks Miles and B. Truitt. 1997. Editors. *Seashore Chronicles*. Three Centuries of the Virginia Barrier Island. University Press of Virginia, Charlottesville, VA.
- Bearss, Edwin C. 1968. *General Background Study and Historical Base Map; Assateague Island National Seashore Maryland – Virginia*. Division of History. Office of Archeology and Historic Preservation. National Park Service. Department of the Interior. Washington, DC.
- Beman, Marta. 2007. Ocean Reef Foundation, Ocean City. Personal communication.
- Berman, Bruce D. 1973. *Encyclopedia of American Shipwrecks*. The Mariners Press, Inc., Boston, MA
- Blades, Brooke. 1993. *Shipwreck Remains, Assateague Island National Seashore, Maryland*. Typescript on file at Assateague Island National Seashore Headquarters. Berlin, MD.
- Bright, Leslie S. 1993. "Beached Shipwreck Dynamics." In *Underwater Archaeological Proceedings from the Society for Historical Archaeology Conference*. Sheli O. Smith, editor. Pp. 91-94.
- Brown, Hugh. *International Registry of Sunken Ships*. [www.accesscomm.ca/users/shipwreck](http://www.accesscomm.ca/users/shipwreck).  
Purchased and downloaded 02/05/01. E-mail: [shipwreck@accesscomm.ca](mailto:shipwreck@accesscomm.ca). Mail: Hugh Brown, 66 Mackenzie Crescent, Regina, SK, S4N 5G5 Canada.
- Browne, William Hand, Editor. 1908. *Archives of Maryland. Proceedings of the Council of Maryland. 1667-1687-8*. Baltimore, MD.
- Carter, C. Kenneth. 1961a. Copy of letter to British Naval Records Office. In vertical files, Maryland Room, Worcester County Library. Snow Hill, MD.
- 1961b. Copy of letter to Public Record Office, London. In vertical files, Maryland Room, Worcester County Library. Snow Hill, MD.
- Charles, Joan. 1997. *Mid-Atlantic Shipwreck Accounts, to 1899*. Self-Published, Hampton, VA.

1999. *Mid-Atlantic Shipwreck Accounts II, to 1914*. MS. from Author, Hampton, VA.
- Chesapeake Properties. 2002. [www.chesapeakeproperties.org/chesapeake\\_area.htm](http://www.chesapeakeproperties.org/chesapeake_area.htm). Downloaded February 12, 2002.
- Corddry, Mary. 1991. *City on the Sand, Ocean City, Maryland, and the People Who Built It*. Tidewater Publishers, Centreville, MD.
- Curry, Dennis C. 1999. *Feast of the Dead, Aboriginal Ossuaries in Maryland*. The Archeological Society of Maryland, Inc. and The Maryland Historical Trust Press, Crownsville, MD.
- Dent, Richard J. 1995. *Chesapeake Prehistory; Old Traditions, New Directions*. Plenum Press, NY, NY.
- DeVincent-Hayes, Nan and John Jacobs. 1999. *Images of America, Ocean City Volume I*. Arcadia Publishing, Charleston.
- Earle, Swepson. 1916. *Maryland's Colonial Eastern Shore, Historical Sketches of Counties and of Some Notable Structures*. Percy G. Skirven, asst. editor. Weathervane Books, NY, NY.
- Federal Register. 1983. *Part IV, Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines*. Department of the Interior. National Park Service. Thursday, September 29, 1983. Vol. 48. No. 190.
- Flint, Willard. 1989. *Lightships of the United States Government. Reference Notes*. Coast Guard Historian's Office. U.S. Coast Guard Headquarters. Washington, D.C.
- Goodwin, R. Christopher, Fehr, April, Leslie McFaden, and Eva Jeanne Harris. 1989. *Archeological Reconnaissance of the Chincoteague National Wildlife Refuge, Accomack County, Virginia and Worcester County, Maryland*. Final Report. R. Christopher Goodwin & Associates, Inc. for U.S. Fish and Wildlife Service. On file USFWS, Newton Corner, MA.
- Handley (Handley's Eastern Shore Maryland Genealogy). <http://www.tyaskin.com/handley/maps.htm>. Downloaded September 12, 2007.
- Hening, William W. 1809. *Laws of Virginia. Statutes at Large*. Samuel Pleasants, Junior, Richmond, VA.
- Hurley, George and Suzanne. 1995. *Shipwrecks and Rescues, Along the Barrier Islands of Delaware, Maryland and Virginia*. The Donning Company/Publishers, Virginia Beach, VA.
- Johnson, Robert. 1987. *Guardians of the Sea: History of the U.S. Coast Guard 1915 to the Present*. Naval Institute Press, Annapolis, MD.
- Knecht, Richard A. and M.E. Colleen Lazenby. 1985. *Assateague Island National Seashore Survey and Archaeological Mapping of Four Historic Sites: The North Beach Life Saving Station, The Seaboard Fish Oil and Guano Company, Scott's Ocean House Hotel, The Green Run Inlet Cemetery*. McCormick, Taylor & Associates, Inc. for the National Park Service. Contract Number CX 4000-4-0082. On file Assateague Island National Seashore Headquarters, Berlin, MD.
- Kraft, John C. 1977. "Late Quaternary Paleogeographic Changes in the Coastal Environments of Delaware, Middle Atlantic Bight, Related to Archaeologic Settings." In *Amerinds and Their Paleoenvironments in Northeastern North America*. W.S. Newman and B. Salwen, editors. Annals of the New York Academy of Sciences 288:35-69.
- Langley, Susan B.M.. 2002. *Archeological Overview and Assessment of Maritime Resources in Assateague Island National Seashore, Worcester County, Maryland and Accomack County, Virginia*. Prepared for the

- National Park Service. On file, MHT, Crownsville, MD and Assateague Island National Seashore, NPS, Berlin, MD.
2005. *Archeological Remote sensing Survey and Diver Investigation of Maritime Resources off Assateague Island National Seashore, Worcester County, Maryland & Accomack County, Virginia*. Prepared for the National Park Service. On file, MHT, Crownsville, MD and Assateague Island National Seashore, NPS, Berlin, MD.
- Langley, Susan B.M. and Brian A. Jordan. 2007. *Archeological Overview & Remote Sensing Survey for Maritime Resources in Maryland State Waters from the Ocean City Inlet to the Delaware Line, Worcester County, Maryland*. Prepared for the Maryland Department of Natural Resources, Coastal Zone Management Program. On file, MHT, Crownsville, MD and CZM, DNR, Annapolis, MD.
- Langley, Susan B.M., Bruce F. Thompson and Stephen R. Bilicki. 2004. *Archeological Remote Sensing Survey for Maritime Resources off Assateague Island National Seashore, Worcester County, Maryland & Accomack County, Virginia*. Prepared for the National Park Service. On file, MHT, Crownsville, MD and Assateague Island National Seashore, NPS, Berlin, MD.
- Leatherman, Stephen P. 1988. *Barrier Island Handbook*. Coastal Publications Series. The University of Maryland. College Park, MD.
- Lloyd's Register of Shipping. *Wreck Returns of Ships Totally Lost, Broken Up, Etc.* 476 vols. London, UK.
- Lochhead, John L. n.d. "Disasters to American Vessels, Sail and Steam, 1841-1846." Compiled from the New York Shipping and Commercial List. Manuscript on file at Mariners Museum Library, Norfolk, VA.
- Mackintosh, Barry. 1982. *Assateague Island National Seashore, An Administrative History*. Division of History. Office of Archeology and Historic Preservation. National Park Service. Department of the Interior. Washington, DC.
- Mariner, Kirk. 1996. *Once Upon an Island, The History of Chincoteague*. Miona Publications, New Church, Virginia.
- Marye, William B. 1945. "The sea coast of Maryland." *Maryland Historical Magazine*. 40(2):94-118.
- McBride, Randolph A. 1999. "Spatial and Temporal Distribution of Historical and Active Tidal Inlets: Delmarva Peninsula and New Jersey, USA." In Coastal Sediments. 1999. N. Kraus and W. McDougal, Editors. ASCE. Pp. 1505-1521.
- Mills, Eric. 2000. *Chesapeake Rumrunners of the Roaring Twenties*. Tidewater Publishers, Centreville.
- Moale, D.R. 1975. *Shipwrecks Maryland and Delaware Coast; Cape Henlopen to Ocean City Chart 1219 and 1220*. Handwritten manuscript. On file Mariners Museum Library, Newport News, VA.
- Moale, H. Richard. 1990. *Notebook on Shipwrecks Maryland Delaware Coast*. Family Line Publications, Westminster, MD.
- National Historic Preservation Act of 1966 (NHPA). P.L. 89-665, as amended.
- National Oceanic and Atmospheric Administration (NOAA). 1999. *United States Coast Pilot, Volume 3, Atlantic Coast: Sandy Hook to Cape Henry*. NOAA, U.S. Department of Commerce, Washington, DC
- Navy Department (ND). 1963. *Dictionary of American Naval Fighting Ships*. Vol. 2. Office of the Chief of Naval Operations, Naval History Division. Washington, DC.

- Noble, Denise L. and Michael S. Raynes. 1976. *Register of the Stations and Keepers of the U.S. Life-Saving Service, 1848-1976*. U.S. Coast Guard Historical Register Series. U.S. Coast Guard Headquarters. Washington, DC.
- Norwood, Henry. 1997. "A Voyage to Virginia." In *Seashore Chronicles, Three Centuries of the Virginia Barrier Islands*. Brooks Miles Barnes and Barry R. Truitt, editors. University Press of Virginia, Charlottesville, VA. Pp. 16-29.
- Novak, Roger. 2007. "The Mermaid of Assateague." In *Maryland Historical Magazine* 102(3):194-203.
- Oertel, G. F. and J. C. Kraft. 1994. "New Jersey and Delmarva Barrier Islands." In *Geology of Holocene Barrier Island Systems*. Richard A. Davis, editor. Springer-Verlag, Berlin, Germany.
- Palmer, William P. and others, editors. 1968. Virginia [colony and state] State Papers. 1875-1895. *Calendar of Virginia State Papers*. Richmond, VA. 11 Volumes.
- Points, Larry. 1993. Notes in cultural resource files. Assateague Island National Seashore Headquarters.
2001. Interpreter, retired. Assateague Island National Seashore. Telephone conversation. Personal communication.
- Public Record Office. 1961. Copy of letter to C. Kenneth Carter. In vertical files, Maryland Room, Worcester County Library. Snow Hill, MD.
- Pyle, Howard. 1877. "Chincoteague: The Island of Ponies." *Scribner's Monthly Magazine*. 13: 737-745.
1878. "A Peninsular Canaan." *Harper's New Monthly Magazine*. 148: 808-815.
- Quinn, William P. 1988. *Shipwrecks Along the Atlantic Coast, A chronology of maritime accidents and disasters from Maine to Florida*. Parnassus Imprints, Orleans, MA
- Reed, Thomas E. 2001. Owner, Thomas E. Reed Seafood, Chincoteague, VA. Personal communication.
- Rountree, Helen C. and T. E. Davidson. 1999. *Eastern Shore Indians of Virginia and Maryland*. University Press of Virginia, Charlottesville, VA.
- Schmidt, Jr., Martin F. 1993. *Maryland's Geology*. Tidewater Publishers, Centreville, MD.
- Sea Hunt, Inc. v. Unidentified Shipwrecked Vessel or Vessels* (1999) 47 FSupp 2d 678, 1999 AMC 1752 (ED Va); affirmed in part, reversed in part (2000) 221 F3d 634, 2000 AMC 2113 (4<sup>th</sup> Cir); cert denied *Sea Hunt, Inc. v. Kingdom of Spain* (2001) 531 US 1144, 121 SCt 1079, 148 Led2d 956.
- Shaffer, Gary and Elizabeth Cole. 1994. *Standards and Guidelines for Archeological Investigations in Maryland*. MHT Technical Report No. 2. Maryland Historical Trust, Crownsville, MD.
- Shepard, Francis P. 1973. *Submarine Geology*. Harper & Row, NY, NY.
- Smith, Bert. 1999. *Down the Ocean*. The Johns Hopkins University Press, Baltimore, MD.
- Stewart, Donald. 1977. *Ship Ocean Bird*. Report submitted under Federal Permit No. 1977MD/VA-001. On file Assateague Island National Seashore Headquarters.
- 1978a. *Project "SEA" (Shipwreck Exploration and Archaeology)*. Investigator's Annual Report. NPS form. On file Assateague Island National Seashore Headquarters.
- 1978b. Handwritten note. On file Assateague Island National Seashore Headquarters.



- The Assateague Naturalist. 2002. [www.assateague.com/1999-dennis.html](http://www.assateague.com/1999-dennis.html). Downloaded April 29, 2002.
- Truitt, Reginald V. 1968. *High Winds...High Tides; A Chronicle of Maryland's Coastal Hurricanes*. Natural Resources Institute, University of Maryland.
1971. *Assateague...the Place Across; A Saga of Assateague Island*. Natural Resources Institute, University of Maryland. Educational Series No. 90.
- Truitt, Reginald V. and Millard G. Las Callette. 1977. *Worcester County – Maryland's Arcadia*. Worcester County Historical Society, Maryland.
- U.S. Army Corps of Engineers. 2002a. "Beach Renourishment: The Lessons of One Long Island Community." *Coastal Services* 5(4): 4-6, 9).
- 2002b. <http://pirs.mvr.usace.army.mil/fuds/a-d/assateag/preasses/inpr/inpr1.htm>. Downloaded April 25, 2002.
- U.S. Coast Guard (USCG). 1950. Survey-0643 March 1950. Office of the Historian's files; accessed 2007. Washington, DC.
1983. *Complete List of Lights and Other Marine Aids, Atlantic Coast of the United States*. Treasury Department. Washington, DC.
- U.S. Department of Agriculture (USDA). 1994. *Soil Survey of Accomack County, Virginia*.  
Soil Conservation Service in cooperation with Virginia Polytechnic Institute and State University.
1975. *Eastern Shore of Virginia, Resource Conservation and Development Project*. Soil Conservation Service, Richmond, VA.
- U.S. Department of Commerce (USDOC). 1930. *Light List Including Fog Signals, Atlantic and Gulf Coast of the United States*. Lighthouse Service. Washington, DC.
- U.S. Geological Survey (USGS). 2002. <http://coastal.er.usgs.gov/hurricanes/assateague/>. Downloaded April 29, 2002.
- U.S. Hydrographic Office (USHO). 1945. *Wreck Information List*. Secretary of the Navy. Washington, DC.
- U.S. Life Saving Service, Treasury Dept. 1874-1884. *Abstracts of Wreck Reports*. 11 Volumes on file National Archives and Records Administration. Washington, DC.
- U.S. Life-Saving Service. 1876-1914. *Annual Report of the Operations of the United States Life-Saving Service for the Fiscal Year Ending 1876*. [through 1914; Fiscal Years run July 1 to the following June 30; therefore the first volume begins July 1, 1875 through June 30, 1876.] Government Printing Office, Washington, DC. On file U.S. Coast Guard Headquarters, Washington, DC. 29 Volumes.
- U.S. Navy Department. 1942. Coast Guard. Washington, DC. *Reports of Casualties*. Seven rolls of microfilm of index cards. On file National Archives and Records Administration. Washington, DC.
- U.S. Treasury. *Annual Reports of the Coast Guard 1915-1931*. Mariners Museum Library. These volumes are a continuation of the U.S. Life Saving Service Annual Reports after it was amalgamated with the U.S. Coast Guard.
- University of Maryland, Meteorology. (UMDa). 2002. [www.meto.umd.edu/~climate/asi/1999.html](http://www.meto.umd.edu/~climate/asi/1999.html). Downloaded February 12, 2002.

[www.meto.umd.edu/~climate/asi/2001.html](http://www.meto.umd.edu/~climate/asi/2001.html). Downloaded February 12, 2002.

University of Maryland, State Lab. (UMDb). 2002.

[www.statlab.iastate.edu/soils/osd/dat/A/ASSATEAGUE.html](http://www.statlab.iastate.edu/soils/osd/dat/A/ASSATEAGUE.html). Downloaded February 12, 2002.

[www.statlab.iastate.edu/soils/osd/dat/C/CHINCOTEAGUE.html](http://www.statlab.iastate.edu/soils/osd/dat/C/CHINCOTEAGUE.html). Downloaded February 12, 2002.

Voynick, S. 1984. *The Mid-Atlantic Treasure Coast*. The Middle Atlantic Press. Wallingford, PA.

Watts, Gordon P., Jr. 1986a. *An Archeological Reconnaissance of Proposed Offshore Borrow Sites Near Ocean City, MD*. Prepared for Maryland Department of Natural Resources. Tidewater Atlantic Research, Inc. Washington, NC.

Watts, Gordon P., Jr. and Jeffrey D. Morris. 1996. *Phase I Archaeological Study Ocean City Water Resources Study Ocean City, MD*. Prepared for Garrow & Associates, Inc. and U.S. Army Corps of Engineers, Baltimore District. Tidewater Atlantic Research, Inc. Washington, NC.

Whitelaw, Ralph T. 1951. *Virginia's Eastern Shore, A History of Northampton and Accomack Counties*. 2 Volumes. Virginia Historical Society, Richmond, VA.

Wise, Jennings Cooper. 1911. *Ye Kingdome of Accawmacke or the Eastern Shore of Virginia in the Seventeenth Century*. Regional Publishing Co, Baltimore.

Wroten, Jr., William H. 1972. (10<sup>th</sup> printing, 1995). *Assateague*. Tidewater Publishers, Centreville, MD.

Zimmerman, Carl. 2000. Resource Specialist, Assateague Island National Seashore. National Park Service, Department of the Interior. Personal communication.

2003. Resource Specialist, Assateague Island National Seashore. National Park Service, Department of the Interior. Personal communication.

## ACKNOWLEDGEMENTS

A great number of individuals and agencies provided assistance in the completion of this overview and remote sensing survey. First and foremost, the project would not have been possible without Gwynne Schultz, Director of the Coastal Zone Management Division (Maryland Department of Natural Resources) and J. Rodney Little, State Historic Preservation Officer (Maryland Department of Planning). We are also very grateful to the people with whom we worked closely and who made every effort to facilitate this project; Laura Younger, Chesapeake and Coastal programs (DNR), Catherine McCall, Natural Resource Planner (DNR), and Evie Cohen, Grants Manager (MHT). We are very thankful for our student volunteer Jennifer Gardiner (Salisbury University; Louisiana State University) for braving the rough weather with us. We wish to express our thanks also to Chief Greg Durstine, BM1 Karpf, and the staff of U.S. Coast Guard, Ocean City for the donation of the use of their mooring basin and floating pier and for the security and care they afforded our equipment while on the base. We are very appreciative of the services and assistance of Stephen Bilicki of BRS Cultural Resources Specialists especially in captaining our vessel to port during some very inclement weather, to Carl Zimmerman, Resource Specialist with the Assateague Island National Seashore for all his advice and information, for again permitting us to store our truck and boat trailer on site, and for finding us housing when the hotel overbooked.

In undertaking the actual search for shipwreck records, we cannot sufficiently thank Paul Van Driessche, Sr., and Joan Charles. Joan generously shared information from the then unpublished manuscript for her second volume, as well as working with use at The Mariners' Museum Library, and emailing other finds as she made them. Paul was a godsend on several projects checking sources, locating information (including finding the UK consultant who searched the overseas record offices for us), and spent innumerable hours researching and faxing data. They were both tremendously helpful. Captain Greg Hall of Tow Boat US, Ocean City, and Marta Beman of the Ocean City Reef Foundation provided generously provided useful information and background data about the cultural materials deposited in the fish habitat that provided our only targets during the survey.

Dr. Robert Browning, Jr., US Coast Guard Historian, and Scott Price of the Office of the Historian, USCG, allowed us liberal use of their library and copying facilities. They kindly tracked down missing details and volumes with amazing speed. Cathy Williamson, Public Services Librarian at The Mariners' Museum and her staff made research trips extremely productive and offered many useful suggestions. Thanks are due also to the many regional libraries, museums, historical societies and museums that contributed information. These include the Maryland Historical Society, the Maryland State Archives, Government Reference Services at the Enoch Pratt Free Library, the Nabb Center at Salisbury University, the US Library of Congress, the Maryland State Law Library, NOAA, the Ocean City Life-Saving Station Museum, and the Virginia Beach Maritime Museum, Inc./The Old Coast Guard Station. Special thanks are extended to Karen Neville, Technical Services Archivist at the Worcester County Public Library and to the staff at both the Virginia Historical Society and the Virginia State Library and Archives, who all excelled in being both pleasant and helpful.

## CURRICULUM VITA

Susan B.M. Langley

Address:

Maryland Historical Trust  
100 Community Place  
Crownsville, MD 21032-2023

Telephone:

1-800-756-0119 x7662  
410-514-7662 (dir.)  
410-987-4071 (fax)

E-mail:

slangley@mdp.state.md.us

State Web site: [www.MarylandHistoricalTrust.net](http://www.MarylandHistoricalTrust.net)

### EDUCATION

Dept. of Archaeology, University of Calgary Ph.D.  
Degree. Conferred 1994.

Depts. of Continuing Education and Environmental Design,  
University of Calgary Certificate in Heritage Resource Management.  
Conferred 1990.

Dept. of Archaeology, University of Calgary MA  
Degree. Conferred 1983.

Dept. of Anthropology, University of Toronto  
Trinity College. Honours BA with Distinction.  
Conferred 1980. Minor: East Asian Art and  
Architecture.

Dept. of Extension, Olds College Master Spinner  
Program. Conferred 1997.

MA Thesis Title: Legislation Pertaining to Submerged Heritage Resources in Canada.

PhD Dissertation Title: Inundation Taphonomy of Selected Submerged Heritage Resources in Alberta.

Master Spinner Thesis Title: Micron Analysis of Purebred Border Leicester Fleece.

Dive Safety Officer for the State of Maryland  
Master Scuba Diver Trainer (PADI) (#MSDT-151703)  
Medic First Aid Instructor (PADI) (#MSDT-151703)  
Emergency First Response Instructor (PADI) (#151703)  
Oxygen Provider Instructor (DAN) (#9467)  
Hardhat Surface Supplied Air Diver (TDI #87100)  
Hardhat Diving Line Tending (TDI #87101)

AWARDS (Information post-dates 2000. If earlier information is required, this is available upon request.)

- 2005... Certificate of Appreciation and U.S. flag flown over the Fort McHenry, December 7, 2004. Presented January 15, 2005 by the General Society for the War of 1812 at the Maryland Club, Baltimore.
- 2004... Inducted into Lambda Alpha Anthropology Honor Society, Washington College. October.
- 2003... Certificate of Appreciation and U.S. flag flown over the *USCGC Taney* (last ship afloat from Pearl Harbor). Presented by *USCGC Taney* Memorial Day aboard the *Taney*.
- Certificate of Appreciation from the Boston Sea Rovers for speaking at the National Meetings, Boston. March.
- 2002... Certificate of Appreciation from the Delaware Marine Archaeological Society for serving as Principle Investigator for the Beach Plum Island Shipwreck Project.
- 2000... Mounted award from the Maritime Archaeological and Historical Society in appreciation of assistance with *Field School in Underwater Archaeology* video

PUBLICATIONS

- In Preparation “ ‘Betwixt Wind and Water,’ Identifying and Protecting Submerged Prehistoric Cultural Resources,” co-authored with Victor Mastone, and also presented at the 69<sup>th</sup> SAA Annual Meetings. Montreal.
- In Preparation *Managing Canada’s Heritage Resources, A Legal Guide*, co-authored with Allan Ingelson, LLB, LLM, Associate Dean of Law at University of Calgary.
- 2008 “Sand, Surf, and Shipwrecks: A Survey of Maritime Resources in Assateague Island National Seashore.” In *Flowing Through Time Exploring Archaeology Through Humans and Their Aquatic Environment*. Proceedings of 36<sup>th</sup> Chacmool Conference 2003. Pp. 46-55. University of Calgary Archaeological Association. Calgary, AB.
- Co-Editor with Victor Mastone. *ACUA Proceedings, 2008*. ACUA Publication for 2008 SHA Conference, Albuquerque, NM.
- Petra to the Pyramids*. Text and some photographs for a photo-log. Zegrahm Expeditions. Seattle, WA.
- Book Review of, *Shipwrecks, Sea Raiders, and Maritime Disasters along the Delmarva Coast, 1632-2004*. 2007. Donald G. Shomette. In *Nautical Research Journal* 53(2):119.
- 2007 with Brian Jordan. *Archeological Overview & Remote Sensing Survey for Maritime Resources in Maryland State Waters from the Ocean City Inlet to the Delaware State Line, Worcester County, Maryland*. Prepared for the MD Department of Natural Resources. On file, Maryland Historical Trust, Crownsville.

- Book Review of, *X Marks the Spot, The Archaeology of Piracy*. 2006. Russell K. Skowronek and Charles R. Ewen, editors. In *Journal of Middle Atlantic Archaeology* 23:141-142.
- 2005 “Building Ships and Boats in Maryland, an Overview.” Entry for the online *Maryland Online Encyclopedia*, prepared by the Maryland Historical Society. Posted at: [www.mdoh.org](http://www.mdoh.org).
- Archeological Remote Sensing Survey and Diver Investigation of Maritime Resources Off Assateague Island National Seashore, Worcester County, Maryland & Accomack County, Virginia*. Report prepared for the National Park Service. On file, Maryland Historical Trust, Crownsville, Maryland.
- 2004 “Shifting Lands, Mobile Resources and Changing Jurisdictions.” In *Mediterraneum, Protection of the Cultural and Environmental Heritages Vol. 4: Protection of Underwater Cultural Heritages*. Fabio Maniscalco, Editor. Observatory for the Protection in Areas of Crisis of I.S.Fo.R.M. Naples, Italy. Pp. 309-318.
- 2003 *Archeological Remote Sensing Survey for Maritime Resources off Assateague Island National Seashore Worcester County, Maryland and Accomack County, Virginia*. Report prepared for the National Park Service. On file, Maryland Historical Trust, Crownsville, Maryland.
- “Weathering the Storm or, Every Cloud has a Silver Lining: volunteers and hobbyists in the Maryland Maritime Archaeology Program.” *Public or Perish*. Proceedings of Chacmool Conference 1995. University of Calgary Archaeological Association. November. Calgary, AB.
- “Historic Shipwreck Preserves in Maryland.” Chapter 4 in *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*. J. Spirek and D. Scott, Editors. Plenum Publishing. New York.
- 2002 *Magnetometer Survey off the Historic Seawall of Fort McHenry National Monument and Historic Shrine Baltimore, Maryland*. Report prepared for the National Park Service. On file, Maryland Historical Trust, Crownsville, Maryland.
- “Maryland and Chesapeake Region.” Chapter 8 in *International Handbook of Underwater Archaeology*. Carol V. Ruppé and Jan Barstad, Editors. Kluwer Press /Plenum Publishing, NY.
- Archeological Overview and Assessment of Assateague Island National Seashore*. Prepared for the National Park Service, Philadelphia, PA. On file, Maryland Historical Trust, Crownsville, MD.
- Maryland Revolutionary War and War of 1812 Associated Historic Properties and Battlefields Survey*. Ralph E. Eshelman, Susan B. Langley and Ben Ford. Prepared for the National Park Service American Battlefields Protection Program. National Park Service. Washington, DC.
- 2001 Book Review of *Lost Towns of Tidewater Maryland*. In *Maryland Historical Magazine*. 96(4):490-491.

“ ‘Chastising the Savages’ or, In Pursuit of Barney’s Flotilla.” In *Maryland Humanities: Maryland and the War of 1812*. Maryland Humanities Council. September. Pp.14-16.

Although listed as a Project Advisor, there are numerous, uncredited contributions in *Bay, Plain, and Piedmont, A Landscape History of the Chesapeake heartland from 1.3 Billion Years Ago to 2000*, Robert Grumet, National Park Service.

- 2000 “Tongues in Trees: Archaeology, Dendrochronology, and the Mulberry Landing Wharf.” *Maryland Historical Magazine*. 95(3):338-348.
- “Having a Blast: Archaeology Field School at Principio Iron Furnace.” *In Context*. 8(4):5.
- 1999 “State /Federal Partnerships Further War of 1812 Initiative.” *In Context*. 7(4):1-2.
- 1998 “Diving Into History.” *In Context*. 6(2):2.
- Book Review of *Maritime Archaeology: A Reader of Substantive and theoretical Contributions*. In *Journal of Middle Atlantic Archaeology*. 14:185-186.
- 1997 Five entries in *Encyclopedia of Underwater and Maritime Archaeology*. James P. Delgado, Editor. British Museum, London. Pp. 105-106; 186; 224; 257-8; 428.
- 1995 Maryland Supports Unique Maritime Archaeology Program. *Public History News*. 15(2):6.
- 1994 The Origins of Sericulture in Early China. *Spin-Off*. 18(2):100-102.
- Oldman River Dam AUAS Monitoring Project (ASA 93-082) Second Year Monitoring*. On file Archaeological Survey of Alberta, Edmonton.

#### OTHER

(Selected presentations and other non-published endeavors; for the sake of brevity these are limited to post-2000. More information is available on request.)

- 2008 Presented “Famous Pirates You’ve Never Heard of” as the third of three lectures for OASIS, a senior center in Bethesda. November.

Presented “Beneath the Black Flag, Pirates of the Golden Age in the Caribbean” as the second of three lectures for OASIS, a senior center in Bethesda. October.

Presented “A Pirate by Any Other Name, The Barbary and Maltese Corsairs,” as the first of three lectures for OASIS, a senior center in Bethesda. October.

Presented “An Underwater Tour of the Potomac,” as the banquet lecture at the Archaeological Society of Virginia conference. Martinsville, VA. October.

Presented with a plaque and participated in the unveiling of a “Supergraphic” of Habbakuk on 1500 U-Haul trucks. Jasper, Alberta. July.

(website: [http://www.uhaul.com/supergraphics/landing.aspx?site\\_id=169&sort\\_order=0](http://www.uhaul.com/supergraphics/landing.aspx?site_id=169&sort_order=0))

- Presented “An Introduction to the Maritime Archaeology Program” for OASIS, a senior center in Bethesda. July.
- Instructed Emergency First Responder training for staff of Jefferson Patterson Park and Museum. July.
- Presented “Spinning Straw into Gold,” spinning lectures and demonstrations throughout one day of the Chestertown Tea Party events. Sponsored by the Maryland Humanities Council’s Speakers’ Bureau. May.
- Judge for the State Maryland History Day Competition. Montgomery College, MD. April.
- 2007 Presented “War on the Chesapeake: 1813-1815, Archaeological Discoveries and Citizen Soldiers of Maryland” for the Zanvyl Krieger School of Arts and Sciences Advanced Academic Programs, Johns Hopkins University. November.
- Guest panelist on the *Kojo Nnamdi Show*, WAMU 88.5 (NPR). July.
- Volunteer Production Assistant for *Antiques Roadshow*. Baltimore. June.
- Taught nine 3-hour classes in Cultural Resources Law in Maryland for DNR Police in-service training. February through June.
- Presented “Spinning Straw into Gold,” spinning lectures and demonstrations throughout one day of the Chestertown Tea Party events. Sponsored by the Maryland Humanities Council’s Speakers’ Bureau. May.
- Presented “Law & Ethics” to annual Maritime Archaeological and Historical Society Introduction to Archaeology class. April.
- Presented “Marking Time and History Through Art, the Lakota Winter Count.” A special activity for children at the 16<sup>th</sup> annual Public Workshop in Archeology at the Maryland Historical Trust. March.
- Instructed Emergency First responder training for staff of Jefferson Patterson Park and Museum. March.
- Presented “Overview of the Maryland Maritime Archaeology Program” at Brown Bag Luncheon Continuing Education Series, Maryland Historical Trust. March.
- 2006 Presented lecture on “Submarines, Rubber U-boats and Aircraft Carriers of Ice,” to OASIS, Senior Center. Gaithersburg. October.
- Presented public lecture “Clear as Mud, underwater archaeology in Maryland” at Harford Community College. September.
- Presentation to annual Chesapeake Bay Maritime Museums Forum. Solomons Island, MD. September.
- Presented lecture on “Vessel Evolution through the 17<sup>th</sup> century” as guest speaker for Dr. Julie King at St. Mary’s College of Maryland. September.



- Presented lecture on “Maritime Archaeology in Maryland” at the Maryland State Archives for the MD Humanities Council Speakers’ Bureau. July.
- Interviewed in “Marine Archaeology Has Students Hunting for Sunken Treasure” by Gregory Alexander. Education Section cover story, *Baltimore Sun*, Friday, July 9. Pp. 1,7.
- Presented lecture on “Maritime Archaeology in Maryland” to the Pickersgill Retirement Community for the MD Humanities Council Speakers’ Bureau. June.
- Subject of “Archaeology Under the Bay, History from the Deep” by Nancy Bresau Lewis in *Inside Annapolis Magazine*, June/July. Pp. 54-59.
- Taught one-day Workshop in Maritime Archaeology for the Historic Preservation Certificate Course for Goucher College at the Annapolis Maritime Museum. April.
- Presented lecture on “Law and Ethics in Underwater Archaeology.” Maritime Archaeological and Historical Society. McLean, VA. March.
- Presented lecture “Submerged Tour of the Potomac River” to Winchester and Frederick Counties Historical Society. Winchester, VA. January.
- 2005 Consultant to Darlow Smithson Productions Ltd. (UK) for episode, about Operation Habbakuk and other “Weird Secret Weapons of WWII.” Consulted Sept.-present, 2005; episode aired Dec. on The History Channel.
- Presented lecture on “Introduction to Underwater Archaeology” as guest speaker for Dr. Julie King at St. Mary’s College of Maryland. September.
- Presented lecture & demonstration “A Homespun Evening, Colonial Textiles in Maryland” for Historic Annapolis Foundation. Annapolis. Also radio interview on WNAV to promote this event. September.
- Presentation to annual Chesapeake Bay Maritime Museums Forum. St. Michaels, MD. August.
- Presented lecture, “Marine Protected Areas in Maryland” to NOAA MPA meetings. Chicago, IL. June.
- Consultant to television show *The Sea Hunters* for episode, about Operation Habbakuk. Consulted March-June, 2005; episode scheduled to air, 2006 on The National Geographic Channel.
- Presented lecture, “The Maryland Maritime Archeology Program,” to the State Comptroller (Gov. W.D. Schaefer) and his Executive Staff. Annapolis. May
- Presented lecture on “Failed to Surface, the Loss and Relocation of the USS O-9” at the North American Society for Oceanic History Annual Meeting. Savannah, GA. May.
- Presented lecture on “Underwater Archeology in Maryland, the Maryland Maritime Archeology Program,” to Public History class at University of Maryland, Baltimore County. May.

- Consultant to television show *Deep Sea Detectives* for episode, “USS O-9, Forgotten Submarine of WWII.” Consulted May-November, 2004; episode aired May, 2005 on The History Channel.
- Judge for the State Maryland History Day Competition. Montgomery College, MD. April.
- Presented lecture on “The Archaeology of Barrier Islands, Assateague.” Western Chapter, Archaeological Society of Maryland. LaVale. MD. April.
- Presented lecture on “Law and Ethics in Underwater Archaeology.” Maritime Archaeological and Historical Society. McLean, VA. April.
- Presented lecture on “An Overview of Underwater Archaeology in Maryland, with the War of 1812 as a case study,” to OASIS, Senior Center. Gaithersburg. April.
- Subject of “Workin’ for a Living” in the Dock Talk Column of *Trailer Boats*. February, 2005:22.
- Presented lecture on, “Textile Manufacture in Maryland, an historic perspective and demonstration,” to the Guild for Life, Anne Arundel Community College. February.
- Presented lecture on, “Joshua Barney and the War of 1812 in Maryland,” to the General Society for the War of 1812, Annual Meeting. Baltimore. January.
- Presented lecture on, “Seeking the First Presidential Yacht, *USS Despatch*,” to Annual Meeting of Society for Historical Archaeology. York, England. January.
- 2004 Presented lecture on, “The U-1105 Historic Shipwreck Preserve, 10 Years later,” at the North American Society for Oceanic History Annual Meeting. St. Michaels, MD. May.
- Presented lecture on, “The U-1105 Historic Shipwreck Preserve, 10 Years later,” as a brown bag luncheon feature at DHCD. Crownsville, MD. April
- Judge for the State Maryland History Day Competition. Montgomery College, MD. April.
- Presented lecture on, “ ‘Betwixt Wind and Water,’ Identifying and Protecting Submerged Prehistoric Cultural Resources,” co-authored by Victor Mastone, at the 69<sup>th</sup> SAA Annual Meetings. Montreal. April.
- Presented lecture on “The War of 1812 and Underwater Archaeology in Maryland” for the Friends of Montpelier, on behalf of the MD Humanities Council Speakers Bureau. Laurel. March.
- Presented lecture on “Spinning Straw into Gold: colonial spinning and textile manufacture” for the Archaeological Society of Maryland, Anne Arundel County Chapter. Annapolis. February.
- 2003 Chaired session “Early History—the Development of European Colonial Culture” at the symposium, *The Future of Maryland’s Past*. University of Maryland, College Park. November.
- Presented brief on Maryland’s planning for and participation in spill response, both training

and reality, to the Region II Area Committee of the Regional Response Teams for the USCG, Philadelphia, PA. October.

Provided Emergency First Responder training to the Maritime Archaeological and Historical Society. October.

Presented lecture on “The U-1105 (Black Panther) Historic Shipwreck Preserve” to the Diving Physiology Division of the Naval Medical Research Center, Bethesda. September.

Facilitated meeting for Maryland Historical Trust and presented brief on the underwater program for the Ambassador for the Bahamas, former Deputy Prime Minister and director of the National Museum for the Bahamas. Crownsville. August.

Presented lecture, “Beneath the Chesapeake,” at Buckingham’s Choice, Adamstown. August.

Led “A Paddling Tour of Maritime Eastport,” for the Annapolis Maritime Museum, Historic Annapolis and the Chesapeake Bay Foundation; a flotilla of canoes skirted the Eastport Peninsula and discussed how the skyline has changed through time as well as the vestiges of its maritime history. Annapolis. July.

Subject of article, “Diving into History” in *The Capital* (Annapolis), front page, Tuesday, July 15.

Subject of article, “First Person Singular” in *The Washington Post Magazine*, Sunday, June 1.

Chaired session, “Sixteenth- and Seventeenth-Century Exploration and Trade,” at the North American Society for Oceanic History Annual Meeting. Bath, ME. May.

Presented lecture “The Role of the State Historic Preservation Office During Emergency Response to Spills of Hazardous Materials.” Regional Response Team Meeting. Region III. (Includes U.S. Coast Guard, EPA, as well as agencies from all States in the region). Ocean City, MD. May.

Judge for the State Maryland History Day Competition. Montgomery College, MD. April.

Presented lecture on “Assateague Island; beyond Misty.” American Association of University Women. Severna Park, MD. April.

Presented lecture on “A Tour of Submerged History in Maryland.” Broadmead Retirement Community. Hunt Valley, MD. April.

Presented lecture on “Law and Underwater Archaeology.” Maritime Archaeological and Historical Society. McLean, VA. April.

Presented lecture on “Introduction to Submerged Cultural Resources Law in Maryland” for training in Law & Ethics for the Certified Archaeological Technician Program, Archaeological Society of Maryland. Crownsville, MD. March.

Presented lecture & demonstration “Spinning Straw into Gold: Homespun Textile Manufacture” at 12<sup>th</sup> Annual Workshop in Archaeology. Maryland Historical Trust. Crownsville, MD. March.

Presented lecture on “Sand, Surf & Shipwrecks; A Survey of Maritime Resources in Assateague Island National Seashore” at Mid-Atlantic Archaeology Conference. Virginia Beach, VA. March.

Presented lecture on “Sand, Surf & Shipwrecks; A Survey of Maritime Resources in Assateague Island National Seashore” at 49<sup>th</sup> Boston Sea Rovers Clinic. Boston, MA. March.

Hosted roundtable luncheon on “Fundraising in Underwater Archaeology” at the Society for Historical Archaeology Meetings. Providence, RI. January.

Presented lecture on “Sand, Surf & Shipwrecks; A Survey of Maritime Resources in Assateague Island National Seashore” at Society for Historical Archaeology Meetings. Providence, RI. January.

2002 Presented lecture on “Sand, Surf, Survey & Shipwrecks” at the Captain Salem Avery House Museum. Shady Side. November.

Presented lecture on “Sand, Surf and Survey: remote sensing off barrier islands” at Shipwrecks to Shellmounds: The Archaeology of Coastlines. Bowdoin College, Maine for Maine Archaeology Month. October.

Attended 4-day Meeting of State Underwater Archaeology Managers in Moncks Corner, SC. Sponsored by Georgia and the South Carolina Institute of Anthropology and Archaeology. September.

Presented lecture on “Sand, Surf and Survey at Assateague Island National Seashore” for The Friends of St. Clements Island-Potomac River Museum. Leonardtown. September.

Presented lecture on “Sand, Surf and Survey at Assateague Island National Seashore” for the Upper Patuxent Archaeology Group. Ellicott City. May.

Presented lecture on “Digging Through the Past” to 120 Girl Scouts at the Maryland Science Center. Baltimore. April.

Presented lecture on “Bringing Archaeology to the Public” for the 37<sup>th</sup> Annual Spring Symposium. Archaeological Society of Maryland. Crownsville, MD. April.

Presented lecture on “Engine Ingenuity, the Crosshead Engine of the Steamboat Columbus” for Authors & Artifacts evening at the Maryland Historical Society. Baltimore. April.

Guest appearance on *Comcast Connects*, a cable television show, in support of Archaeology Month. Dover, DE. March.

Presented lecture on “Drawing Lines on Water; Naval Battles of 1812” for the Woman’s Club of Roland Park. Baltimore. February.

Presented lecture on “Introduction to Submerged Cultural Resources Law in Maryland” for training in Law & Ethics for the Certified Archaeological Technician Program, Archaeological Society of Maryland. February.

- 2001 Completed half-day Hazmat training with US Coast Guard. Curtis Bay, Baltimore. December.
- Presented lecture on “Teaching and Educational Outreach with Underwater Archaeology” to the National Council for Social Studies, 81<sup>st</sup> National Conference. Washington, DC. November.
- Presented lecture on “Military Aspects of Underwater Archaeology in Maryland” at the Grand Muster of the St. Maries City Militia. St. Mary’s City. September.
- Presented lecture on “Introduction to Underwater Archaeology” at St. Mary’s College. St. Mary’s City. October.
- Organized field school for Maritime Archaeological and Historical Society at Cherryfield Point. September.
- Taught final, 3-hour class in Cultural Resources Law in Maryland for DNR Police in-service training. September.
- Organized and hosted the *Wooden Ships Conference*. Solomons, MD. September 13-16.
- Presented lecture on “Maryland in the War of 1812” at Darnell’s Chance, as MD Humanities Council Speakers Bureau lecture. Upper Marlboro. September.
- Presented two lectures aboard the skipjack *Minnie V* as part of the Maryland Historical Society’s summer lecture cruise series. Baltimore. August.
- Attended week-long training, *Archaeological Law Enforcement*, sponsored by the FBI and the Virginia Dept. of Historic Resources. Richmond, VA. August.
- Subject of “Outdoor Offices” in *Chesapeake Life*. “Dr. Susan Langley, State Underwater Archaeologist.” Kessler Burnett. 7(7):56.
- Taught fourth of 5, 3-hour classes in Cultural Resources Law in Maryland for DNR Police in-service training. Annapolis. July.
- Presented results of the Challenge Camp from 2000 at the Chautauqua at Principio Iron Works; set up a display and also did spinning demonstration. July.
- Taught second and third of 5, 3-hour classes in Cultural Resources Law in Maryland for DNR Police in-service training. Cumberland and Reisterstown. June.
- Presented lecture on “Underwater Archaeology on Maryland’s Eastern Shore” to Shore Seekers’ Metal Detecting Club. Salisbury. June.
- Presented lecture on “Underwater Archaeology in Maryland” to the Chesapeake Bay Environmental Enforcement Coalition. Annapolis. June.
- Taught first of 5, 3-hour classes in Cultural Resources Law in Maryland for DNR Police in-service training. Hughesville. May.

- Presented lecture on “The U-1105, Maryland’s First Historic Shipwreck Preserve” at Piney Point Lighthouse Day. Piney Point. May.
- Presented lecture on “Defining Naval Battlefields: Underwater Archaeological Evidence for the War of 1812” State of Delaware Archaeology Month Speakers Bureau. Bethany Beach, DE. May.
- Presented lecture on “Underwater Archaeology in Maryland” for the MD Humanities Council Speakers Bureau. Taneytown. April.
- Principal Investigator for wreck survey project, Beach Plum Island Project. Delaware Marine Archaeology Society (DMAS). Lewes, DE.
- Presented lecture on “Law and Underwater Archaeology.” Maritime Archaeological and Historical Society. McLean, VA. April.
- Invited by the His Excellency, Javier Ruperez, Ambassador for Spain and Capt. Manuel Otero Penelas aboard the Spanish Navy Ship *Castilla* to be thanked for reporting the initial looting of, and to attend a memorial service for the sailors of, the Spanish Navy vessel *Juno*, wrecked off Assateague Island 1802. Norfolk, VA. April.
- Presented lecture on “Drawing Lines on Water: Chesapeake Naval Battles of the War of 1812” for the Anne Arundel Genealogical Society. Linthicum. April.
- Completed certification training in helmet diving (“hard hat). Fort Carroll, Baltimore. March.
- Developed and provided training in cultural resources law for Dept. of Natural Resources staff and police. Senior State Park Staff. Reisterstown. March.
- Presented lecture “The Submerged Aspects of the War of 1812 in Maryland” for dive club Atlantis Rangers. February.
- Presented lecture on “The War of 1812 on the Chesapeake: An Underwater Archaeologist Assesses the Evidence” as part of the Maryland History Lecture Series. St. Johns College, Annapolis. January.
- 2000 Subject of “Vox Personae” page in *Chesapeake Travel & Leisure*. “Susan Langley, She likes to be under the sea.” Eugene L. Meyer. 1(4):88.
- Presented lecture on “Maryland’s War of 1812 Initiative” at NPS, American Battlefield Preservation Program Conference. Also organized and escorted tours. Baltimore. November.
- Principal Investigator for wreck survey project, Beach Plum Island Project. Delaware Marine Archaeology Society (DMAS). Lewes, DE.
- Presented lecture on “Introduction to Underwater Archaeology.” St Mary’s College. St. Mary’s City. October.
- Presentation to MD Dept. of Natural Resources senior staff, including the Secretary, about cooperative planning and opportunities. September.

Organized the recovery of traverse stones from Baltimore harbor for Fort McHenry National Shrine and Monument. Covered by the *Washington Post*, *Baltimore Sun*, local papers and several television stations. September.

Attended 4-day Meeting of State Underwater Archaeology Managers in Austin/Port O'Connor, Texas. Sponsored by NCSHPO and the Texas Historical Commission. September.

Presented lecture on "Underwater Archaeology in Maryland," for the Free State Treasure Hunters Club public lecture series. Towson. September.

Presented two lectures aboard the skipjack *Minnie V* as part of the Maryland Historical Society's summer lecture cruise series. Baltimore. August.

Presented lecture on "Underwater archaeology in Maryland," for the Second Saturday Program on the *USS Constellation*. Baltimore. August.

Organized and taught Archaeology Challenge Camp '00 at Principio Iron Works, Cecil County. A week-long introductory field school for Perryville and North East Middle. July.

Presented lecture on "Underwater Archaeology in Maryland," for the Oasis Senior Center, Chevy Chase. June.

Presented lecture on "Underwater Archaeology in Maryland," for the public lecture series for the Kiwanis Club of Calvert County, Prince Frederick. June.

Presented lecture on "The War of 1812 in Maryland," for the Pascal Seniors' Center, Glen Burnie. June.

Presented lecture on "Underwater Archaeology in Maryland," for Anne Arundel County Planning and Code enforcement docents, staff and students. June.

Presented update on Underwater portion of Maryland's War of 1812 Initiative for the National Park Service. Fort McHenry. June.

Presented update on "Maryland's Maritime Program" at the Chesapeake Bay Maritime Museums Annual Meeting. Reedville, VA. May.

Managed Cultural Resources Emergency Response for PEPCO oil spill. Patuxent River. April - July.

Presented lecture on "Maryland's War of 1812 Initiative: Seeking Naval Battlefields" at The Past Uncovered in Southern Maryland: an Evening of Archaeological Discovery. Symposium at St. Mary's College. April.

Presented lecture on "Underwater Archaeology in Maryland" for Gerber Adult Seminars. Jewish Community Center of Greater Washington. Rockville, MD. April.

Presented lecture on "Underwater Archaeology in Maryland" to International Students Association. Johns Hopkins Medical School. Baltimore, MD. April.

Presented lecture on “Underwater Archaeology in Maryland” to Kensington Historical Society. Kensington, MD. April.

Presented lecture on “The War of 1812 in Maryland” at Caroline County Public Library, North Branch. Greensboro, MD. April.

Presented lecture on “Law and Ethics in Underwater Archaeology” to MAHS underwater archaeology class. Mclean, VA. March.

Presented lecture on “Underwater Archaeology in Maryland” to Roland Park Men’s Club. Baltimore, MD. March.

Presented lecture on “Underwater Archaeology in Maryland” to DNR Southern Regional Team Meeting. Annapolis, MD. March.

Presented lecture on “The War of 1812 in Maryland.” Guild for Life, Anne Arundel Community College. Arnold. March.

Presented lecture on “Introduction to Maritime Archaeology.” Hylton High School. Woodbridge, VA. February.

Presented lecture on “Underwater Archaeology in Maryland.” Essex and Middle Patapsco Historical Society. Baltimore. February.

Presented lecture on “Underwater Archaeology in Maryland.” Fells Point Yacht Club. Baltimore. February.

Presented lecture on “Completion of the Underwater Survey and Excavations of St. Leonard's Creek.” American Battlefield Protection Program Meeting. Prince Frederick. January.

Presented paper on “Historic Shipwreck Preserves in Maryland.” SHA Meetings. Quebec City. January.

#### COMMITTEES (external to departmental committees)

- 2007 Elected to the national body, Advisory Council for Underwater Archaeology.
- 2006 Appointed to the Sanctuary Advisory Council for the USS Monitor Sanctuary.
- 2005 External reader for MA thesis for East Carolina University, Greenville, NC and for Doctoral oral exam/dissertation, Florida State University, Tallahassee, FL.
- 2004 Elected to the Nominations Committee for the Society for Historical Archaeology.
- 2003 External Reader for 2 MA theses for East Carolina University, Greenville, NC.  
  
Appointed to Executive Committee of the Maritime Committee for the Maryland Historical Society, Baltimore.



2001	External reader for MA thesis for College of William & Mary. Williamsburg, VA.
2000	Appointed to the Maritime Committee of the Maryland Historical Society, Baltimore.
1999-present	Regional Response Team for Hazmat Emergencies.
1999-2000	External Reader for 2 MA theses for East Carolina University. Greenville, NC.
1998-present	Advisor to the Schooner Sultana Project. Chestertown.
1997-present	Advisor to the Hazelwood Preservation Society. Queen Anne.
1997-1999	Appointed to the Charles County Heritage Steering Committee as part of the Southern Maryland Heritage Partnership to assist in the development of a certified Heritage Area.
1997-2007	Appointed to the Governmental Affairs Committee of the Society for Historical Archaeology.
1997-present	Appointed to the Advisory Committee for the Center for Chesapeake Studies for the Chesapeake Bay Maritime Museum.
1996-present	Appointed to the Advisory Committee/Board for the Constellation Foundation, Inc./USS Constellation Museum for the Sloop-of-War <i>Constellation</i> .

EXPERIENCE (Post-2000 only; earlier information on request)

<u>Period</u>	<u>Employer</u>	<u>Position</u>
08/94-pres.	Maryland Historical Trust, DHCD/MDP	State Underwater Archaeologist
08/08-12/08	Johns Hopkins University	Adjunct Professor – Down to the Sea in Ships, An Introduction to Maritime Archaeology. MLA Program
08/08-12/08	St. Mary’s College of Maryland	Adjunct Professor – <i>The History of Piracy</i> (ANTH 352.01)
07/08-pres.	Silversea Expeditions	Lecturer on Tours.
08/07-pres.	Zegrahm Expeditions	Lecturer on Tours.
04/07-06/07	Goucher College	Instructor for <i>Maritime Archaeology Online</i>
01/03-pres.	St. Mary’s College of Maryland	Adjunct Professor – <i>Underwater Archaeology</i> (ANTH 351)
08/06-12/06	Washington College	Instructor – <i>Marine Archaeology</i> (ANT 306-10)
09/05-12/05	Consulting Archaeologist	Darlow Smithson Productions Ltd., London, UK; <i>Weird Weapons of WWII: The Allies</i> (Habbakuk)
01/05-12/05	Consulting Archaeologist	<i>Clive Cussler’s The Sea Hunters</i> , episode about Habbakuk, National Geographic Channel.
08/04-09/04	NOAA	Chief Scientist on joint NOAA/University of Connecticut Expedition to film the lost American submarine: 0-9/ <i>Deep Sea Detectives</i> show, History Channel
08/04-12/04	Washington College (private)	Instructor- <i>Historic Preservation and Cultural Resource Management</i> (ANTH 498)
03/04-03/04	MAHS/CT SHPO/ Mystic Seaport	Instructor- MAHS Underwater Archaeology Introduction (5 classes over a weekend)

09/00-12/00	University of Maryland, Baltimore County	Instructor – <i>Maritime Archaeology</i> (ARCH 370)
01/00-05/00	Salisbury State University	Instructor- <i>Introduction to Underwater Archaeology</i> (Anth 300/Hist 490)

# Brian A. Jordan

1223 Stonewood Ct  
Annapolis, MD 21409

BJordan@mdp.state.md.us

Business: (410) 514-7668  
Personal: (571) 331-0048

---

## MARINE ARCHAEOLOGIST/MARITIME HISTORIAN

Emphasis in Archaeology / Policy & Planning / *In-situ* Preservation

---

- ☑ Three years managing the marine cultural and historic resources component of the National Marine Protected Areas Center within NOAA's Office of Ocean and Coastal Resource Management.
- ☑ 10+ years experience participating in and conducting marine archaeology surveys and excavations around the world.
- ☑ Worked with and advised institutes and government representatives of several countries on the survey, excavation, and management of submerged cultural resources.
- ☑ Obtained M.S. and Ph.D. degrees in the disciplines of wood science (forestry) and Natural Resources Science and Management, while still active in the field of archaeology. Dissertation research focused on the modification and deterioration of archaeological wood in marine environments, and the implications for in-situ preservation of wooden shipwrecks.
- ☑ Earned academic and research distinction in multiple disciplines through publication of peer-reviewed articles, submission of project reports, and presentations at international conferences, and through receipt of numerous assistantships, fellowships, and grants.
- ☑ Technical expertise in database development and programming, spatial analysis, and computer hardware and software troubleshooting.

---

## PROFESSIONAL EXPERIENCE

---

### CULTURAL RESOURCE PLANNING AND POLICY

#### Assistant State Underwater Archaeologist

Maryland Department of Planning

2007 - Present

SUMMARY: Assists the State Underwater Archeologist in implementing a statewide program to enhance Maryland's historic sites and traditions by identifying, evaluating, protecting and studying maritime and underwater archaeological resources located within Maryland State waters. Disseminates research and educational information about State submerged cultural resources to both profession and public communities. Executes authorized and mandated federal and State activities and programs as they relate to maritime and underwater archaeological resources. Supports the Agency mission to enhance Maryland's historic sites and traditions and preserve Maryland's heritage resources.

☐ Continued ☐

Maritime Archaeologist Coordinator

NOAA's National Marine Protected Center

2004 - 2007

SUMMARY: Supervise all aspects of the National Marine Protected Areas (MPA) Center's activities relating to maritime archaeology and history. Develop the maritime archaeology and historic component of the National System of MPAs, National MPA list, and the National Marine Managed Area (MMA) Inventory. Serve as the MPA Center's liaison to federal and state agencies, pertinent organizations, universities, and the public on all aspects of the Center's work relating to maritime archaeology. Coordinate with external marine archaeology program chief scientists to provide input to the development of the National System of MPAs, stewardship and monitoring of cultural resources, and outreach and education. Created and maintain a database of marine cultural resources off the west coast of the United States, including spatial data and related information on marine managed areas for California, Oregon, and Washington.

ARCHAEOLOGY

1995 - 2003

SUMMARY: Worked with, trained, and directed groups of archaeologists, students, and volunteers on underwater excavations and surveys in five countries on four continents. Experienced in multiple methods of survey, excavation, recording, and recovery of submerged cultural resources.

PROJECTS AND EXPERIENCE:

Assistant Director

Bozburun Shipwreck Excavation, Turkey

1998 (May - Aug)

Archaeologist and Wood Scientist

Kolding Cog Excavation and Timber Analysis, Denmark

2001 (Mar - Aug)

Recording and Sampling of Various Iberian Ship Timbers, Portugal

2000 (June - July)

Archaeologist

Morocco Maritime Survey, Tangier

2003 (October)

Angra Bay Project, Azores

2000 (July - Aug)

Angra Bay Geophysical and Underwater Survey, Azores

1996 (Sept - Oct)

Bozburun Shipwreck Excavation, Turkey

1995 - 1996 (May - Aug)

Caney Creek Steamboat Excavation, Texas

1995 - 1996 (Weekends)

Research Assistant

New World Seafaring Lab, Texas

1994 - 1996

Graduate Student

Deep Tow High-Res Survey, Gulf of Mexico

1996 (Spring)

Archival Researcher

Various Archives, Portugal

1996 (Aug - Sep)

Diver

Shipwreck Survey, Gulf of Mexico

1988 (June - July)

---

*IN-SITU* PRESERVATION OF SUBMERGED CULTURAL RESOURCES

EXTERNAL DOCTORAL DISSERTATION CANDIDATE (DENMARK)

2001

- Invited by the Danish government to conduct research at the Center for Maritime Archaeology. Focused on the effect of the marine environment on the preservation of shipwreck timbers. Assisted in the preparation of the environmental assessment section of the technical report to the Danish government.

□ Continued □

ARCHAEOLOGIST AND WOOD SCIENTIST	1996, 2000
<ul style="list-style-type: none"> <li>• Participated in a geophysical and archaeological assessment survey of Angra Bay, Terceira, Azores. Assisted in the preparation of the final report to the Portuguese government.</li> <li>• Collected shipwreck samples for analysis of deterioration and metal accumulation. This information provided insight into the current state of preservation of two submerged 17th-century shipwrecks.</li> </ul>	
WOOD SCIENCE	1998 – 2004
PRIVATE CONSULTANT – WOOD IDENTIFICATION	2003 – 2004
<ul style="list-style-type: none"> <li>• Identified species of wood samples recovered from ancient shipwrecks.</li> </ul>	
UNIVERSITY OF MINNESOTA, WOOD & PAPER SCIENCE	1998 – 2004
RESEARCH ASSOCIATE	2003 – 2004
<ul style="list-style-type: none"> <li>• Managed all phases of a \$100K+ project: literature review, experimental design, development of analytical protocols, data collection, supervising external scientists, and writing and submission of quarterly and final reports to funding agency.</li> <li>• Lead author on a peer-reviewed article presenting preliminary results, and co-author on an article published in a peer-reviewed conference proceeding.</li> </ul>	
GRADUATE RESEARCH ASSISTANT/TEACHING ASSISTANT	1998 – 2003
<ul style="list-style-type: none"> <li>• Assessed the degradation of wood components during accelerated decay tests for multiple projects. Managed and maintained field plots, collected and analyzed data, performed chemical tests on wood products, and prepared manuscripts for publication.</li> <li>• Graded homework and tests, and assisted students with material presented in Survey, Measurements, and Modeling in Natural Resources course.</li> </ul>	

---

EDUCATION

---

University of Minnesota

- Ph.D. - Natural Resources Science and Management (research on *in-situ* shipwreck preservation) 2003
- M.S. - Forestry 2000

Texas A&M University

- Completed M.A. Coursework - Anthropology (Nautical Archaeology Program) 1996
- B.A. - Anthropology (Classics Minor) 1992

---

ACADEMIC AWARDS / RESEARCH AWARDS / GRANTS (\$65,000+)

---

University of Minnesota

- Doctoral Dissertation Fellowship (2001 - 2002)
- Supplemental Research Fellowship (2002)
- Research Abroad Grant (2001)
- College of Natural Resources Travel Award (2001)
- Hugo J. & Helen K. Pawek Graduate Assistantship/Fellowship (2000 - 2002)
- University Graduate Fellowship (1998 - 1999)

Texas A&M University

- Mr. and Mrs. James Brown Cook Graduate Fellowship (1994 - 1996)

---

---

## TEACHING EXPERIENCE

---

---

### Courses

- Dept. of Anthropology and Sociology (ANT 306-10): Marine Archaeology (3 Sem Cr) – Washington College
- Natural Resources and Environmental Studies (NRES 1904): Wrecked Ships and Ravaged Forests – Wood Use and Seafaring in Antiquity (3 Sem Cr) – University of Minnesota (UMN)
- NRES 3003: Freshman Honors Colloquium: Wood Use and Seafaring in Antiquity (1 Sem Cr)

### Guest Lectures

- Wood & Paper Science (WPS) 4303: Wood Deterioration and Preservation - UMN
- Medieval Studies (MEST) 4610: Medieval Seafaring - UMN

---

---

## PROFESSIONAL MEMBERSHIPS / AFFILIATIONS / CERTIFICATIONS

---

---

- Society for Historical Archaeology
- Microsoft Access Certified Professional (Learning Tree Int'l)
- The Section 106 Essentials (ACHP)
- National Association of Underwater Instructors (NAUI) Diver Certification
- International Diving Educators Association (IDEA) Nitrox I and II Certification
- Scientific Diver Certification, Texas A&M University (1995-2001)

---

---

## PUBLICATIONS / PRESENTATIONS (SELECTED FROM 20+)

---

---

### Peer-Reviewed Publications

Jordan, B.A., Schmidt, E.L., Huelman, P.H., Krupa, S.V., and B. Mayer. 2004. Deuterium as a novel tracer for determining moisture sources in building systems. *Wood and Fiber Science*. Vol. 36, No. 3: 378-386.

Jordan, B.A. 2003. *Analysis of environmental conditions and types of biodeterioration affecting the preservation of archaeological wood at the Kolding shipwreck site*. Doctoral Dissertation: Univ. Minn., Dept. Wood & Paper Science.

Jordan, B.A. 2001. Site characteristics impacting the survival of historic waterlogged wood: a review. *International Biodeterioration and Biodegradation*. Vol. 47, No. 1: 47-54.

Crisman, K.J. and B.A. Jordan. 1999. Angra A: the copper-fastened wreck at Porto Novo (Angra do Heroísmo, Azores-Portugal). *Revista Portuguesa de Arqueologia*. Vol. 2, No. 1.

### Published Conference Proceedings

Schmidt, E.L. and B.A. Jordan. 2004. Field testing of millwork formulations: L-joint results after nine years of exposure in Minnesota. In *Proceedings of the American Wood Preservers' Assn.* 100:145-150.

Schmidt, E.L., B.A. Jordan, P.H. Huelman, and S.V. Krupa. 2004. A novel chemical tracer for determining moisture sources and movement in building systems. In *Proceedings of the Conference on Woodframe Housing and Durability and Disaster Issues*. Las Vegas, Nevada. Forest Products Soc. Madison, WI.

Jordan, B.A., D.J. Gregory, and E.L. Schmidt. 2002. Examining environmental conditions and the biodeterioration of historic waterlogged wood: the Kolding Cog. International Research Group on Wood Preservation. Doc No IRG/WP 02-10441.

Jordan, B.A. 2001. Wrecked ships and ruined empires: an interpretation of the Santo António de Tanna's hull remains using archaeological and historical data. In *International Symposium on Archaeology of Medieval and Modern Ships of Iberian-Atlantic Tradition. 1998 Lisbon, Portugal*. Instituto Português de Arqueologia, Portugal

☐ Continued ☐

## Presentations

Jordan, B.A. 2006, Chaired the Underwater General Session 1: On the Edge of Clarity: Understanding and Managing Submerged Cultural Resources. *The Society for Historical Archaeology: Conference on Historical and Underwater Archaeology*, Sacramento, California, January 11-15, 2006.

Jordan, B.A. and V.T. Mastone. 2006, Marine Protected Areas (MPAs): A tool for closing the gap between cultural and ocean resource management. *The Society for Historical Archaeology: Conference on Historical and Underwater Archaeology*, Sacramento, California, January 11-15, 2006.

Jordan, B.A. 2005, Submerged Cultural Resources and the National System of Marine Protected Areas. *The Society for Historical Archaeology: Conference on Historical and Underwater Archaeology*, York, England, January 5-10, 2005.

Jordan, B., D. Gregory, and E. Schmidt. 2002. The Kolding Cog: Analysis of environmental conditions and biodeterioration of timbers recovered from a 12<sup>th</sup>-century merchant vessel – The implication for conservation and *in-situ* preservation. Poster: *Art, Biology, and Conservation Conference*, New York, New York, June 13-15, 2002.

## Reports, Internet Publications, and Trade Journals

**Workshop Report:** Jordan, B.A. 2006. Summary Report from the *Federal Marine Protected Areas (MPA) Agency Workshop: Data Needs for Marine Cultural Resources Management*, Arlington, Virginia, November 29-30, 2005.

**Archaeological Reports:** Langley, Susan B.M. and Brian A. Jordan. 2007. *Archeological Overview & Remote Sensing Survey for Maritime Resources in Maryland State Waters from the Ocean City Inlet to the Delaware Line, Worcester County, Maryland*. Prepared for the Maryland Department of Natural Resources, Coastal Zone Management Program. On file, MHT, Crownsville, MD and CZM, DNR, Annapolis, MD.

**Final and Quarterly Reports:** Jordan, B.A., Schmidt, E.S., Huelman, P.H., and S.V. Krupa. 2003. Determining the source of water in a model window system using stable elemental isotopes. Report submitted to the Minnesota Dept. of Admin. Building Codes and Standards Div. Acct. No. 1742-404-6094.

**Technical Report:** Dokkedal, L., F. Hocker, and B. Jordan. 2001. Marine Archaeological Excavation Report of a Cog located in Kolding Fjord (Beretning for Marinarkæologisk Udgravning af Kogge i Kolding Fjord). Nationalmuseets Marinarkæologiske Forskningscenter: NMU j.nr: 82, Marin-nr: 321323.

**Internet:** Crisman, K.J. and B.A. Jordan. 1999. Angra B Wreck. World Wide Web, URL, <http://nautarch.tamu.edu/SHIPLAB/angra07-angrab.htm>, Centro Nacional de Arqueologia Náutica e Subaquática, Lisbon, Portugal. January 19, 1999.

---

### DIVING AND ARCHAEOLOGICAL SKILLS

---

- Extensive knowledge of underwater survey, excavation, and recording of shipwrecks.
- Completed over 320 scientific dives working in underwater environments ranging from black water to clear; temperatures from 33 to 75 degrees Fahrenheit; and depths up to 120 feet.
- Knowledgeable in the utilization of compressors, air pumps, and small motors and engines used during excavations.
- Conversant in the protocols for *in-situ* sampling and monitoring of archaeological sites

---

### ADDITIONAL PROFESSIONAL SKILLS

---

- Wood anatomy and species identification
- Chemical and spectroscopic analysis of wood and sediments
- Biodeterioration analysis of archaeological wood materials
- Extensive knowledge of computer hardware and software: troubleshooting, networking, database development and programming, Dreamweaver MX, Fireworks MX, Office XP Professional, Adobe Photoshop 7.0 and Illustrator 10.0, Corel Photo-Paint, Corel Draw, Statistix 7, Image-Pro Plus Image Analysis Software, and EndNote Plus Reference Software.
- Advanced microscopy (Light, SEM, and TEM)
- Advanced statistical analysis