ABSTRACT

Reanimating the Graveyard:

Heritage Tourism Development of North Carolina Shipwrecks

By

Valerie J. Grussing

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Chair: Joseph Fridgen, Ph.D.

Major Department: Coastal Resources Management

The shipwrecks of the Graveyard of the Atlantic are a prime subject for heritage tourism development in North Carolina. Education about these irreplaceable cultural resources, and effective interpretation of them, is critical for their protection and preservation. Development of interpretive means for shipwrecks would foster heritage tourism, which would serve to educate the public about archaeological resources, and promote local economies. However, these benefits must be balanced with sustainable use and protection of the resources.

This study of heritage tourism development for North Carolina shipwrecks consists of a comparative evaluation of existing programs for shipwreck interpretation and protection. Evaluation is based on quantitative data, the qualitative measures of community involvement, effective interpretation, and active management, as well as each program's tradeoffs and accomplishment of its stated goals. The outcomes are also assessed for their feasibility in North Carolina, based on its shipwrecks, physical environmental conditions, political climate

and initiative, and other relevant factors. The ultimate product is a series of recommendations for North Carolina of alternatives that may be most effective and feasible.

The selected programs represent a wide range of interpretive methods, and target diverse audiences. Four North Carolina programs are evaluated, all of which are recommended for continuation and expansion. Six programs from outside North Carolina are also evaluated, four of which are recommended for creation in North Carolina. Analysis of the policy implications of each program provides insight into how the recommendations may be approached to maximize their chances of successful implementation.

The further development of heritage tourism programs along the North Carolina coast will have a significant positive impact on local communities and on the maritime heritage of the Graveyard of the Atlantic. The growth and expansion of programs designed to protect, preserve, and interpret shipwrecks would increase public stewardship of these irreplaceable cultural resources, and stimulate local economies via job creation and tourism.

Reanimating the Graveyard:

Heritage Tourism Development of North Carolina Shipwrecks

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By Valerie J. Grussing

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APPROVED BY:

DIRECTOR OF DISSERTATION: _____

Joseph Fridgen, Ph.D.

COMMITTEE MEMBER: _____

Timothy J. Runyan, Ph.D.

COMMITTEE MEMBER: _____

Derek Alderman, Ph.D.

COMMITTEE MEMBER: _____

Lisa Clough, Ph.D.

COMMITTEE MEMBER: _____

Brian A. Jordan, Ph.D.

DIRECTOR OF THE PROGRAM IN COASTAL RESOURCES MANAGEMENT:

_____

Lauriston R. King, Ph.D.

DEAN OF THE GRADUATE SCHOOL:

_____

Paul J. Gemperline, Ph.D.

DEDICATION

To the saints in my life:

Matt, Mom and Dad, Lisa, Carolyn and Paul

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Full fathom five thy father lies;

Of his bones are coral made;

Those are pearls that were his eyes;

Nothing of his that doth fade

But doth suffer a sea-change

Into something rich and strange.

(Shakespeare, *The Tempest*)

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ACHP	Advisory Council on Historic Preservation
ARPA	Archaeological Resources Protection Act
ASA	Abandoned Shipwreck Act
CETA	Comprehensive Employment Training Act
CRM	Cultural Resource Management
DEIS/DMP	Draft Environmental Impact Statement/Draft Management Plan
DHR	Division of Historical Resources
DSR	Deep Sea Research, Inc.
ECU	East Carolina University
ECU-WRC	East Carolina University's West Research Campus
EIR	Economic Impact Report
FBAR	Florida Bureau of Archaeological Research
GLMHC	Great Lakes Maritime Heritage Center
GSTC Partnership	Global Partnership for Sustainable Tourism Criteria
HVCA	Hatteras Village Civic Association
ICOMOS	International Council On Monuments and Sites
IMS	Univ. of North Carolina at Chapel Hill Institute of Marine Sciences
IUCN	World Conservation Union
M.A.R.C.	Marine Archaeological Research & Conservation Reporting
MAC	Marine Archaeological Council
MAHS	Maritime Archaeological and Historical Society
MBUAR	Massachusetts Board of Underwater Archaeological Resources

MDG	Millennium Development Goal
MNMS	*Monitor* National Marine Sanctuary
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MRD	Marine Research Division
NAACP	National Association for the Advancement of Colored People
NCAC	North Carolina Administrative Code
NCCAT	North Carolina Center for the Advancement of Teaching
NCDAH	North Carolina Department of Archives and History
NCDCR	North Carolina Department of Cultural Resources
NCDOT	North Carolina Department of Transportation
NCGS	North Carolina General Statutes
NCMM	North Carolina Maritime Museum
NGO	Non-governmental organization
NHHC	Naval History and Heritage Command
NHPA	National Historic Preservation Act
NMS	Newburyport Maritime Society
NMSA	National Marine Sanctuaries Act
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRC	National Research Council
OLF	Outlying Landing Field
ONMS	Office of National Marine Sanctuaries

OSA	Office of State Archaeology
QAR	*Queen Anne's Revenge*
SAA	Society for American Archaeology
SAC	Sanctuary Advisory Council
SAW	Student Archaeology Workshop
SCIAA	South Carolina Institute of Archaeology and Anthropology
SCPRT	South Carolina Department of Parks, Recreation and Tourism
SDAMP	Sport Diver Archaeology Management Program
SEL	Site Evaluation List
SHIPS	Shoreline Heritage Identification Partnerships Strategy
SHPO	State Historic Preservation Office
SIDCO	Surface Interval Dive Company
SMCA	Sunken Military Craft Act
TBNMS	Thunder Bay National Marine Sanctuary
TEI	Travel Economic Impact Model
TIA	Travel Industry Association
UAA	Underwater Archaeological Associates, Inc.
UAB	Underwater Archaeology Branch
UAD	Underwater Archaeology Division (now MRD)
UAU	Underwater Archaeology Unit (now UAB)
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNC-CSI	University of North Carolina's Coastal Studies Institute

UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USACE	U.S. Army Corps of Engineers
USDOT	United States Department of Transportation
WCED	World Commission on Environment and Development
WHS	Wisconsin Historical Society
WTO	World Tourism Organization
WWF	World Wildlife Fund

> Shipwrecks arouse some of our most noble and basic instincts. In our pursuit of new knowledge and possessions, ships are great enablers, emblematic of the quest for power and fortune that builds empires. Ships represent our ingenuity – the ability to master the environment. But when ships sink, like other technological inventions that fail, our faith in science and in our own infallibility is dashed. (Ziedner, 1996, para. 1)[1]

Chapter 1: Introduction

The Outer Banks of North Carolina are known as "The Graveyard of the Atlantic" because of the dramatic number of ships that have met their demise in the area since the first European contact in the 16th century. The shipwreck files of the Underwater Archaeology Branch (UAB) of the Office of State Archaeology (OSA) contain over 5,000 wrecks that are known from documentary sources (Lawrence, in press). However, according to sport diving resources, there are only around 55 submerged wrecks whose location is currently known (Hudy, 2007). Most of these shipwrecks are accessible for unsupervised exploration by divers, but are largely inaccessible to the non-diving community. Duffus states in *Shipwrecks of the Outer Banks* that the locations are known for 18 beach wrecks (2007). Though he emphasizes the importance of non-destructive enjoyment of these accessible sites, and many are located within the boundaries of a National Seashore, protective regulations are difficult to enforce, and educational programs teaching public stewardship are insufficient, as this study will show. A handful of programs along the North Carolina coast have attempted to present shipwrecks and maritime heritage to the public, though this study finds that these attempts either target a narrow segment of the public, or they have been isolated and deficient in

[1] Page or paragraph numbers for quotes from Internet sources have been inserted as frequently as possible. However, in some instances this information is not available.

political and economic support. Figure 1 shows the locations of the North Carolina towns and shipwrecks that will be referenced in the evaluations and the recommendations.

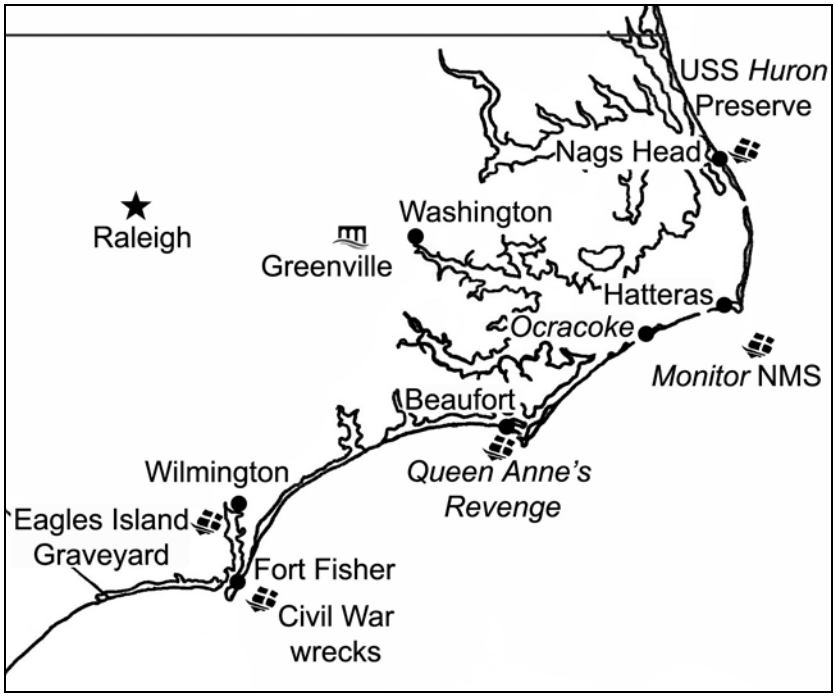

Figure 1. Locations of North Carolina towns and shipwrecks referenced in evaluations and recommendations. Illustration by Valerie J. Grussing.

Many alternative avenues of interpretation for shipwrecks exist, and a number of them have been explored creatively and utilized successfully. Such programs frequently combine interpretation with education, attempting to impart the fundamentals of archaeological ethics and the need for stewardship of these irreplaceable resources. Residents and tourists show great interest in the history of the North Carolina coast. Heritage tourism is a rapidly growing sector in which North Carolina would be well-served to make a greater investment. Driven by tourism considerations, and controlled by the principles of cultural resource management, heritage tourism development "can capture the economic characteristics of heritage and harness these for conservation by generating funding, educating the community and influencing policy" (International Council On Monuments and Sites [ICOMOS], 1999, para.

5). Development of interpretive and protective means for shipwrecks, both known and unknown, would be mutually beneficial to local communities and to the preservation of these cultural resources. To address the problem of North Carolina's need for protective and interpretive programs for shipwrecks, this study consists of a comparative evaluation of alternatives that have already been implemented, concluding with recommendations about programs that may be most feasible and successful in North Carolina.

Shipwrecks are of great interest to a broad spectrum of the population. Just as ships, in their day, embodied the quest for knowledge, power, and fortune, extant shipwrecks today arouse similar sentiment. Divers, tourists, schoolchildren, museum visitors, archaeologists, and treasure hunters, to name a few, are all drawn to these symbols of hope, wealth, and tragedy. These diverse groups all strive to connect with shipwrecks on a personal level. Resource managers are responsible for not only preserving these resources for the future, but also for facilitating access to those who would learn from them while restricting access to those who would destroy them. Cultural resource management programs for shipwrecks may be both interpretive and protective, though careful and thoughtful planning is required to meet both goals.

As part of a shared global cultural heritage, shipwrecks merit preservation and protection. They are invaluable repositories for information about the societies and time periods in which they originated. Their preservation and proper study are crucial to acquire this information, which is under constant threat. Every day shipwrecks are impacted by such natural forces as storms, and are damaged inadvertently by such maritime activities as trawl fishing. Similar to other precious resources of the sea, shipwrecks have historically been

regarded as a bounty ripe for the harvest, a paradigm which has shaped modern attitudes and legislation concerning the treatment and value of these finite and fragile historic artifacts.

Material culture and the archaeological record are a public trust, though public outreach has been a frequently overlooked and underrated aspect of archaeology (Jameson, 1997; Little, 2002; McManamon & Hatton, 2000; Nutley, 1987). In fact, archaeological findings are most valuable when shared with an interested public. In the process of preservation and protection of cultural resources, shipwrecks may also be actively interpreted, enabling people to experience a connection with local and world history, and come to understand that responsibility for the stewardship of cultural heritage belongs to everyone (Jameson, 1997; Little, 2002; McManamon & Hatton, 2000; Nutley, 1987).

North Carolina stands to benefit significantly from development of some of its maritime heritage resources as tourism attractions. This study devoted to heritage tourism development of North Carolina's shipwrecks utilizes a framework based on the following three general research questions:

1. What interpretive and protective programs have already been implemented? How successful are their outcomes? Are they sustainable? Would they be feasible in North Carolina or elsewhere?
2. Which alternatives would be recommendable for North Carolina? How can these actions be approached to maximize success?
3. How can North Carolina benefit from this development?

Chapter 2: Conceptual Framework – Heritage Tourism

Tourism and Sustainable Tourism

Tourism has "become one of the largest and fastest growing economic sectors in the world," and indeed has become "a key driver for socioeconomic progress," as well as "one of the major international trade categories" (World Tourism Organization [WTO], 2008, p. 1). Because tourism is composed of multidimensional aspects, as well as interactions with other activities, Goeldner and Ritchie describe the inherent difficulty of arriving at a meaningful and universally accepted definition. They state that most definitions are derived for studies that focus on an immediate problem, and are therefore narrow operational definitions, which ultimately hinder the study of tourism as a discipline (Goeldner & Ritchie, 2006). They propose an inclusive definition of tourism as "the processes, activities, and outcomes arising from the relationships and the interactions among tourists, tourism suppliers, host governments, host communities, and surrounding environments that are involved in the attracting and hosting of visitors" (Goeldner & Ritchie, 2006, p. 5). They identify four perspectives of tourism that are affected by, and participate in, the industry as tourists themselves, businesses that provide goods and services, the government of the host community, and the host community itself.

Tribe, on the other hand, argues convincingly that tourism is neither a discipline nor a subdiscipline, since it fails to meet the majority of widely-accepted epistemological tests and criteria to be defined as such (1997). Tourism studies can better be described as a field, since tourism is the object of study rather than a way of studying, as in a discipline such as physics. The field of tourism, does not possess a "cohesive theoretical framework," but instead relies

on such contributory disciplines as economics, geography, political science, law, and sociology (Tribe, 1997, p. 643). In fact, Tribe defines tourism as two distinct fields: the first being tourism business studies, and the second a conglomeration which includes tourism's environmental and social impacts. He also describes the four main methods of inquiry in tourism studies as multidisciplinarity, interdisciplinarity, business interdisciplinarity, and "extradisciplinarity," some of which reside more in the realm of thought, and some more in the realm of practice. While this diversified structure can be a source of weakness, causing conflict between such sectors as industry and academia, or business and environmental tourism, it can also be a source of strength if researchers and practitioners accept and utilize all these qualities of a field in a perpetual "pre-paradigmatic phase" (Tribe, 1997, p. 656).

According to the World Tourism Organization (WTO), international tourism generated $856 billion (US) in 2007, representing 30% of the world's exports of services, and international tourist arrivals from 2007 to 2008 grew 2% to reach 924 million. By 2020, there are 1.6 billion forecast international tourist arrivals (WTO, 2008). WTO offers the following key facts and figures:

- From 1950 to 2007, international tourist arrivals grew from 25 million to 903 million.
- The overall export income generated by these arrivals (international tourism receipts and passengers transport) grew at a similar pace, outgrowing the world economy, exceeding US$ 1 trillion in 2007, or almost US$ 3 billion a day.
- While, in 1950, the top 15 destinations absorbed 98% of all international tourist arrivals, in 1970 the proportion was 75%, and this fell to 57% in 2007,

> reflecting the emergence of new destinations, many of them in developing countries. (WTO, 2008, p. 1)

Because of these trends, tourism in many developing countries has become "one of the main income sources and the number one export category, creating much needed employment and opportunities for development" (WTO, 2008, p. 1). However, in addition to these benefits, tourism can also include significant costs which must be studied and considered in order for development to be responsible and sustainable.

Jafari categorizes tourism literature into four main phases, or "platforms," which have emerged chronologically, though each platform has not necessarily been replaced by the next, and all four coexist today (Jafari, 2001). Jafari categorizes the advocacy phase, which emerged during the 1950's and 1960's, as focusing on "the good" aspects of tourism, chief among them its economic prospects. Advocates recognized the capacity of tourism to be "a viable economic alternative for many communities or countries," as well as to preserve "the natural and built environments," to "revive traditions of the past," to actively "promote cultural performances," and to facilitate "cross-cultural communication and the prospects for global peace" (Jafari, 2001, p. 29). The cautionary platform emerged during the 1970's as a reaction to advocates' categorization of tourism as an economic panacea. Subscribers to this platform caution against "the bad" aspects of tourism, namely that "the industry generates mostly seasonal and unskilled jobs; that it benefits only firms and big corporations; that it destroys nature and scenic resources; that it commoditizes people and their cultures; [and] that it disrupts the structure of the host society" (Jafari, 2001, pp. 29-30).

To counter these seemingly intractable differences of opinion, the adaptancy platform emerged in the 1980's, to address "the how" of striking a balance, with the rise of alternative

forms of tourism such as agritourism, cultural tourism, ecotourism, and even sustainable tourism. Subscribers to this platform argue that such strategies "are community centered, employ local resources, are relatively easier to manage, are not destructive, benefit host and guest groups alike, and even improve communication between them" (Jafari, 2001, p. 31). By the late 1980's, tourism researchers had begun to adopt a more knowledge-based platform, which attempts to examine tourism's "functions at personal, group, business, government, and systems levels," as well as to identify "factors that influence and are influenced by it" (Jafari, 2001, p. 32). The objective, therefore, is "a *holistic* treatment of tourism – not just its *impacts* or *forms.* The main goal is the *formation of a scientific body of knowledge on tourism*" (Jafari, 2001, p. 32). This phase was also characterized by the development of indicators to monitor progress towards sustainability (Miller & Twining-Ward, 2005).

It is now widely accepted that while tourism development can provide new economic opportunities, it can also contribute significantly to "undesirable and irreversible environmental, economic and social changes" (Gossling, Hall, Lane, & Weaver, 2008, p. 122). It has become "clear that tourism-specific adaptation and mitigation measures are required to sustain both the tourism industry and the resources on which it depends" (Gossling et al., 2008, p. 122).

The rise of the environmental movement in the 1960's and 1970's brought conservation issues to the forefront of the political agenda, initiating a shift in the focus of development policies from primarily economic interests to include ecological and social aspects. During the 1970's and 1980's, numerous international organizations and commissions held conferences and issued resolutions devoted to promoting a conservation ethic in development (Miller & Twining-Ward, 2005), as represented by the definition of

development offered by the World Conservation Union (IUCN), the United Nations Environment Programme (UNEP), and the World Wildlife Fund (WWF): “the real aim of development is to improve the quality of human life. It is a process that enables human beings to realize their potential, build self-confidence and lead lives of dignity and fulfillment” (International Union for Conservation of Nature, United Nations Environment Programme, and World Wildlife Fund, 1991, p.9).

The concept of sustainable development was formalized and popularized by the Brundtland Commission’s report, entitled “Our Common Future” (World Commission on Environment and Development [WCED], 1987). Through such issues as energy, industry, urban growth, and international conflict, the report emphasized the necessity and urgency of management policy reoriented to environmental conservation, rather than economic development. The report defined sustainable development as a “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, Ch. 2, para. 1). Unfortunately, the seminal report included “minimal guidance for making its ideas operational” (Miller & Twining-Ward, 2005, p. 7). In 1992, the United Nations Conference on Environment and Development, popularly known as the Rio Earth Summit, produced Agenda 21, which outlined “a basis for implementing sustainable development at the local, national, and international level” (Miller & Twining-Ward, 2005, p. 7). When a follow-up meeting in 1997 concluded that responsive action remained limited, and that “improved international cooperation and stronger political will” were necessary, the Millennium Development Goals (MDGs) were developed and signed by 191 UN nations in 2000 (Miller & Twining-Ward, 2005, p. 7). These 8 goals and 18 targets, with an intended achievement date of 2015, illustrated the shift in focus of the sustainable development debate

from purely environmental concerns to poverty alleviation and human development. In 1999, the National Research Council's *Our Common Journey: A Transition to Sustainability* summarized the ongoing problem as follows: "the political impetus that carried the idea of sustainable development so far and so quickly in public forums has also increasingly distanced it from its scientific and technological base," which had made notable discoveries and advances in recent years that had failed to be incorporated into the sustainable development agenda (National Research Council [NRC], 1999, p. 2).

Sustainability science is described by Miller and Twining-Ward as a new field worthy of study by sustainable tourism researchers, since it provides new interdisciplinary approaches to "understanding the character of interactions between nature, and society and the behavior of complex systems" (2005, p. 17). Key research priorities include biological, geophysical, social, and technological systems research, which translate directly to the burgeoning field of sustainable tourism, whose primary dimensions of study are environmental, social, and economic. Miller and Twining-Ward describe the current conceptualization of sustainable tourism as concerned with the sectoral scale (whether tourism can sustain *its* viability), the spatial scale ("think globally, act locally"), and the temporal scale (sustainability is not a static state, but rather dynamic and unpredictable). They then attempt to re-conceptualize the field as a comprehensive system whose complexity can best be understood using a three-pronged approach. They emphasize the importance of adaptive management ("process of building resilience and coping with the uncertainty inherent in complex systems through a continual process of experimenting, monitoring, and social learning"), stakeholder participation ("as integral rather than extra components in resource management"), and monitoring (which "enables system managers to learn more

about the behavior of the system they are managing by measuring progress, defining challenges and sounding alarm bells") (Miller & Twining-Ward, 2005, p. 23).

In 2008, the Global Partnership for Sustainable Tourism Criteria (GSTC Partnership) launched the criteria, intended to set "the minimum standard that any tourism business should aspire to reach in order to protect and sustain the world's natural and cultural resources while ensuring tourism meets its potential as a tool for poverty alleviation" (GSTC Partnership, 2008, Preamble, para. 2). The criteria are "organized around four main themes: effective sustainability planning; maximizing social and economic benefits for the local community; enhancing cultural heritage; and reducing negative impacts to the environment" (GSTC Partnership, 2008, Preamble, para. 2).

Culture and Heritage

MacDonald frames a definition of culture as both process and product. From an anthropological perspective, the process approach defines culture as "a symbolic system or codes of conduct by which and through which people create and recreate shared values, beliefs and attitudes allowing people to make sense of their beliefs and experiences" (MacDonald, 2004, p. 20). The product approach, on the other hand, defines culture as "the product of individual or group activities to which certain meanings are attached" (MacDonald, 2004, p. 20). One line of research categorizes this culture as either "high" or "low" culture. Products of high culture are associated with elitism and "superior aesthetic appreciation," which enables individuals "to make value judgments on the basis of their superior knowledge of the accepted canons of good taste" (Meethan, 2001, p. 115). The opposite of high culture, low culture is characterized by products of mass or popular culture.

This approach is not only descriptive, but prescriptive, "using value judgments as a means to tell us what is allowed and what is not," (MacDonald, 2004, p. 20), and is valuable as an analytical concept in discussions of tourism development.

The field of archaeology has thoroughly debated its own version of a process versus product definition of culture. In this case, the primary focus of the argument has been whether artifacts are objectifications of culture, or whether they *are* culture (Watson, 1995). Two researchers who revolutionized archaeological thinking regarding culture and the role of artifacts are Binford, who argued the former position (1962), and Hodder, who argued the latter (1982). To Binford, "culture is man's extrasomatic means of adaptation," while to Hodder, "culture is mental (symbolic), material, social behavioral, and the recursive relations among all three" (Watson, 1995, p. 686). Binford's view indirectly parallels the culture as product approach, in that he studies artifacts as indicators of man's interaction with his environment, rather than for their intrinsic meaning, which in his opinion is archaeologically unworkable. Hodder's view parallels the culture as process approach, in which artifacts "are full participants in the creation, deployment, alteration, and fading away of symbol complexes" (Watson, 1995, p. 687). While Binford's ground-breaking experimental methodology into site formation processes revolutionized prehistoric archaeology, Hodder's semiotic approach reinvigorated applied historic archaeology with its emphasis on critical theory. In the intervening years, numerous scholars and archaeologists have attempted to synthesize these processual and postprocessual approaches, with varying degrees of success. Ultimately, the debate revolves around the fundamental anthropological dilemma of how "human individuals and human societies—past and present—intricately blend and intertwine nature and culture" (Watson, 1995, p. 689).

Regardless of where one stands on this particular debate, archaeologists agree on the importance of artifact context. An artifact removed from its surrounding environment without proper archaeological investigation and documentation loses most, if not all, of its informative potential. The need to protect sites from those who would retrieve artifacts for monetary gain gives rise to the layers of state, federal, and international policy that will be discussed later.

Differential definitions of the "past," "history," and "heritage" have been operationalized in *A Geography of Heritage* (2000). According to Graham, Ashworth, and Tunbridge, the past encompasses all events that occurred before the present, while history is confined to those events that were recorded. Heritage is not completely synonymous with history, but is defined as "the contemporary use of the past," and carries many complex and controversial connotations (Graham et al., 2000, p. 2). Graham et al. draw a comparison between heritage and language, both "mechanisms by which meaning is produced and reproduced" (Graham et al., 2000, p. 2). To elucidate, Willmott states that "while we may create a reality, which we call the past, it is only our reality, it is the story we tell" (1985, p. 42). As such, heritage is inherently dissonant and open to political struggle. The identification and uses of heritage, therefore, can both create and reinforce issues of social conflict.

While a community's heritage and culture may be diverse and multi-faceted, there may be certain events and trends that are defined as more important than others, and therefore dictate the way the past is communicated, and what gets emphasized. Such forces as a society's dominant ethnic or social group, political hegemony, and idealized conception of historic events can strongly influence which aspects of that society's history either receive

a spotlight or become cast in shadow. These considerations must be taken into account when creating tourist attractions based on historic resources. The heritage movement in recent years has taken on a life of its own, and has become particularly important to the tourism economy. In fact, the basis of heritage tourism is the use of landscape and historic resources for economic development. Since heritage can be commodified "as both a cultural and an economic good," it must receive serious consideration in plans for regional development and tourism planning, and accompanying policy implementation (Graham et al., 2000, p. 5).

The role of geography in the production and consumption of heritage is complex. Because heritage is ultimately place-based, geography and landscape both play critical roles in the production and consumption of heritage. A fundamental concept in geography is the cultural landscape, which signifies not just the physical place where history occurred, but can also be an active agent in constituting that history. The National Park Service (NPS) defines a cultural landscape as "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values" (NPS, 1992). Many scholars have investigated the ways in which landscape both represents history, and acts as an agent in constituting history (Mitchell, 2000; Whelan, 2005; Hay, Hughes, & Tutton, 2004; Azaryahu, 1999). In this sense, landscape is instrumental in social and cultural reproduction (Schein, 1997), and can be described as a "natural scene mediated by culture" (Mitchell, 1994, p. 1).

Westerdahl introduced the concept of the maritime cultural landscape, meaning "the whole network of sailing routes, old as well as new, with ports and harbours along the coast, and its related constructions and remains of human activity, underwater as well as terrestrial" (1992, p. 6). His intent was to look beyond the scope of underwater archaeology and material

remains to a holistic approach which includes “the cognitive perspective of local traditions” (1992, p. 5). Among the sources that compose the landscape are shipwrecks, terrestrial remains, local maritime traditions, natural topography, and place names. Westerdahl proposes research of maritime culture as “one of the ways to develop maritime archaeology from largely technological and naval aspects to a contribution to cultural history in general” (1994, p. 269).

Vrana and Vander Stoep explore the notion of a maritime cultural landscape as a conceptual framework for research and resource management (2003). Building on the foundation of the cultural landscape, they use the term maritime to refer to “relationships among humans and their water-based environments,” which can include activities ranging from shipping and fishing to coastal recreation and tourism, and whose associated cultural resources can include ships and other vessels, shipwrecks, lighthouses, and coastal historic sites (Vrana & Vander Stoep, 2003, p. 19). In reference to Thunder Bay, Michigan, they state that the challenge involves simultaneously managing the northwoods wilderness landscape and the maritime cultural landscape. This situation is analogous to the North Carolina coast, which is renowned for both its unique physical environment as well as its extensive human history. For this reason the concept of the maritime cultural landscape may also be productively employed in the management of North Carolina’s coastal heritage resources.

Cultural and Heritage Tourism

While cultural tourism is not a new phenomenon, having traceable roots in antiquity, and having been studied formally since the 1970's, researchers remain unable to agree upon a single definition. The American chapter of ICOMOS notes that "cultural tourism as a name means many things to many people and herein lies its strength and its weakness" (US/ICOMOS, 1996). Bonink (1992, Cultural Tourism Development and Government Policy, MA Dissertation, Rijksuniversiteit, Utretch; as cited in MacDonald, 2004) identifies two approaches to cultural tourism, which mirror the product versus process definitions of culture. The descriptive approach focuses on sites and monuments, and their specific site attributes, which reflects a product-based approach that may facilitate quantitative research conducted on visitors at cultural attractions. It is here that the categories of "high" and "low" culture resurface, since cultural tourism planners and marketers have traditionally targeted forms of "high" culture. The experiential or conceptual approach focuses on tourists' motivations and perceptions, reflecting a flexible process-based approach that is "not restricted by a checklist of cultural activities," and "incorporates motivation as a central element" (MacDonald, 2004, pp. 22-23).

McKercher and du Cros describe four categories of cultural tourism: tourism derived, motivational, experiential, and operational. In the first category, cultural tourism is a form of special interest tourism, which is but one component within the broader framework of tourism management theory. An important motivational definition is used by the WTO, which considers cultural tourism as "movements of persons essentially for cultural motivations such as study tours, performing arts and cultural tours, travel to festivals and other events, visit to

sites and monuments, travel to study nature, folklore or art, and pilgrimages" (as cited in McKercher & du Cros, 2002, p. 4). Experiential definitions generally describe tourists who hope to be educated as well as entertained by having contact with other cultures, which can include experiencing their local communities, heritage, and cultural or natural landscape. Operational definitions are the most common, since the previous three definitions also include an operational component by default. Operational definitions do not necessarily define cultural tourism per se, but rather classify members of this sector by their participation in a wide variety of activities and experiences. In this way, "motivation, purpose, or depth of experience count less than participation," a point which "highlights the potential scope of this activity, while at the same time illustrating the very real problems that exist in setting meaningful parameters about what is and what is not cultural tourism" (McKercher & du Cros, 2002, p. 4).

Heritage tourism is one component of cultural tourism. While the subjects of cultural tourism generally may range from a culture's "visual and performing arts, heritage buildings, areas, landscapes, and special lifestyles, values, traditions and events," heritage tourism specifically focuses on a culture's history, which typically exists in the form of material artifacts and sites (Jamieson, 1998, p. 65).

Some scholars have attempted to draw a distinction between heritage and historic tourism, stating that the former is "based on tourists' motivations and perceptions rather than on specific site attributes" (Poria, Butler, & Airey, 2001, p. 1047). That is, heritage tourists visit a site because of "its heritage characteristics according to the tourists' perception of their own heritage," while historic tourists visit a site because of its inherent historic attributes (Poria et al., 2001, p. 1048). Others have more convincingly argued that the difference is

tautological, and serves no practical purpose (Garrod & Fyall, 2001). Among their contentions are the facts that managers of heritage tourism attractions are not generally in the habit of tailoring experiences to specific visitor groups, that heritage tourists would not visit a site if it did not possess historic attributes, and that tourists visiting a site associated with someone else's heritage are nonetheless heritage tourists. Garrod and Fyall ultimately conclude that agreement upon a precise theoretical definition is not nearly as important as engaging more challenging practical issues (2001). Recalling Graham et al.'s fundamental definition of heritage as inherently dissonant and subjective, it would be practically impossible to draw such a distinction in the first place (2000).

Though heritage tourism may be a subset of cultural tourism, much of the literature either uses the terms synonymously, or discusses issues that are relevant and applicable to both. McKercher and du Cros, for example, discuss "cultural heritage assets" using language and principles which are applicable to both present and past cultures and resources. They also explain that cultural heritage tourism is fundamentally based on opposing forces: while it is ultimately a form of tourism, and is driven by tourism considerations, the assets that constitute its substance must be "managed by the principles of cultural heritage management" (McKercher & du Cros, 2002, p. 7). A balance must be struck between these opposing forces, with the principles of both being carefully weighed during planning and decision-making, for cultural tourism to fully achieve both its tourism and its cultural heritage management potential.

Cultural tourism is, admittedly, a double-edged sword. Increased visitation to a site may promote interest and awareness, and in turn stimulate "political and economic justification to expand conservation activities" (McKercher & du Cros, 2002, p. 2). This same

tourist demand may also lead to overuse or inappropriate use, and ultimately threaten the integrity and survival of the cultural resource. The principles of cultural resource management, as outlined below, must guide the development of cultural and heritage tourism. When this delicate balance is successfully achieved, tourism can indeed utilize the economic characteristics of heritage for conservation, as stated in the 1999 ICOMOS Cultural Tourism Charter.

McKercher and du Cros have identified 15 fundamental principles of tourism, with special attention to cultural tourism in particular (2002). According to these principles, tourism by nature is a commercial activity that involves the consumption of experiences primarily for entertainment purposes, and is driven by demand that can be difficult to control. Attractions are the driving force of tourism, though they are not all equal. Cultural heritage attractions form a part of tourism, though not all cultural resources should be cultural tourist attractions. Factors including access and proximity influence visitation levels, and time availability influences the quality and depth of experience sought. Controlled tourist experiences are both necessary to control tourist actions, and are desired by tourists themselves. Not all cultural tourists are alike, ranging from the purposeful tourist to the incidental tourist. Cultural tourism products may be challenging and confronting but not intimidating or accusatory, and tourists want authenticity but not reality. These last two principles are significant issues in cultural geography, whose practitioners have found that a majority of people who visit cultural heritage attractions are actually seeking to reinforce stereotypical or preconceived notions about the past (Sizer, 1999; Travlou, 2002). In fact, Nutley states that we tend “to look for what we know because we are therefore likely to see what we are looking for” (1987, p. 32).

To complement these principles of tourism, McKercher and du Cros also outline the core concepts of cultural resource management (CRM) (2002). The ultimate goal of CRM is to preserve a representative sample of cultural heritage, one that hopefully includes the best or most representative sites and artifacts. It therefore involves a decision-making process which is based on available resources as well as the way a culture defines its heritage. In contrast to the tourism perspective that defines assets by their commercial value or revenue-generating potential, heritage assets derive value from their meaning to a community. While tourism may become an important use of a heritage site, the site's intrinsic value must be preserved above all. If a representative sample of heritage assets is to be preserved for the future, it is important that they be made accessible to the public through presentation and interpretation. Because of the nature of heritage attractions, the tourism goal of entertainment must also be balanced with the CRM goal of education. Though tangible heritage assets may be more commonly considered in CRM, intangible heritage such as cultural landscapes, traditions, and customs are equally important. The management process must also consider the scale and complexity of heritage assets, which can represent different management challenges and opportunities. The framework of CRM is still evolving, and currently involves the phases of inventory, initial legislation, increased professionalism, stakeholder consultation, and review. These principles of CRM present distinct contrasts to those of tourism. As mentioned earlier, when heritage assets are developed into a tourism product, "clear-sighted long-term planning and management [will] anticipate adverse impacts and develop programs to minimize or mitigate them" (McKercher & du Cros, 2002, p. 60).

Garrod and Fyall reiterate the contrast between heritage management and sustainable tourism development (2000). While the goals of both would seem inherently similar, striving

to effectively yet efficiently employ finite and fragile resources, they contend that a direct comparison is not so easy, since “the heritage establishment tends to place more emphasis on conservation and education, and less on contemporary use and local community, than is evident in most other interpretations of the sustainability imperative” (Garrod & Fyall, 2000, p. 702).

The potentially dissonant heritage of a cultural landscape is of particular significance in the development of a heritage tourism asset. An issue that has arisen frequently in worldwide contexts is whether a landscape can be both a source of economic development and an accurate representation of history. The crux of the problem is two-fold. First, dominant groups (in terms of class, race, political power) set the agenda for which aspects of history will be celebrated, which usually results in historically repressed groups continuing to be symbolically subjugated. Second, tourists have not typically wanted to experience the history of conflict. That is, a sanitized version of history has been more marketable (Mitchell, 2000). Many scholars have concluded that tourists frequently have preconceived notions about a place, which they are unwittingly seeking to reinforce by traveling to those places (Sizer, 1999; Travlou, 2002). Tourism marketers are aware of this phenomenon, and usually oblige, since problems tend to arise when local heritage fails to fit demand of modern place-marketing. The danger here is that “the social construction of tourism products may involve the reinterpretation of the role spaces play in memory,…and the need for the heritage industry to create brief, easily accessible and acceptable versions of history may well conflict with the memories of those involved in the past activities at a particular location” (Church, 1996, p. 184).

As an example of a historically repressed group of people continuing to be symbolically repressed via landscape and monuments, Hay et al. examined a public park in Australia which had been designed to celebrate the glorious history and culture of the local population (2004). It turns out that colonizing Europeans were apparently best represented by statues and monuments celebrating their achievements in the central portion of the park, while the Aboriginal population was relegated to place names for the natural areas around the perimeter of the park.

Even though tourists may expect to experience what they already think they know about a place, there may be instances when these preconceived notions include elements of conflict. Though the history of conflict may not be marketable, careful attention should be paid to representing multiple dimensions of heritage in such cases in order to avoid presenting a deliberate and conspicuously sanitized version of history. This issue can be illustrated colorfully by examples from maritime heritage tourism. There have been numerous incidents where a significant portion of a modern community has been repressed or overlooked in order to celebrate an idealized heritage. In one instance, an entire vagrant community was relocated in preparation for the 1996 International Festival of the Sea in Bristol, England. City officials justified the act because the community was along the route of the flotilla, and did not represent the image of the city that tourists should see (Atkinson & Laurier, 1998).

Another example is the case of *Whydah Galley* and the city of Tampa's attempt at a pirate museum (Yelvington, Goslin, & Arriaga, 2002). This famous flagship of Black Sam Bellamy sank in a storm off the northeastern US coast in 1717, losing all hands. Though it was discovered and salvaged by treasure hunters, they nonetheless had the desire to create a museum based on the ship and its associated pirate artifacts. The problem arose when it

became publicized that prior to being commandeered as a pirate ship, the vessel had served as an active slave trader. Because plans for the museum and exhibits did not include this aspect at all, the National Association for the Advancement of Colored People (NAACP) mobilized its forces and successfully sank efforts at a pirate museum on two separate occasions. This is an issue which could potentially surface in the design and implementation of a final repository for artifacts from *Queen Anne's Revenge (QAR)* as well, since prior to its commandeering as a pirate ship, it also served in the slave trade. In fact, it was transporting a full human cargo at the time that Blackbeard gained control of it. The North Carolina Department of Cultural Resources (NCDCR), who administers the *QAR* Project, has so far attempted to ensure that multiple aspects of the ship's history are presented, having organized and hosted a "Pirate Ships and Slave Ships" Symposium. It is anticipated that administrators will continue to be aware of, and attempt to represent fairly, the multiple components of this singular historical site.

Examples such as this one illustrate Flatman's contention that maritime archaeology is overdue for an injection of "new theoretical approaches" (2003). Traditionally, archaeologists have studied ships as technological marvels, overlooking the fact that "they are primarily cultural and political entities and ought to be thought of and investigated as such" (Flatman, 2003, p. 150). Issues such as colonialism and domination have long been highlighted in archaeological study as well as resource interpretation, while issues such as gender and class have long been neglected, though they are equally integral components of maritime culture.

Heritage Tourism Based on Archaeological Resources

Heritage tourism based on archaeological resources invokes two additional subfields, combining the philosophies of archaeology with those of historic preservation. While

practitioners of both disciplines engage in cultural resource management, the end products differ dramatically. Archaeologists “seek to retrieve information from cultural resources,” with public access usually limited (Hannahs, 2003, p. 8). Historic preservationists “seek to ensure that the public can personally experience history,” by maximizing the potential for public interaction with historic material culture (Hannahs, 2003, p. 8). A balance between these two conflicting goals is necessary when archaeological resources form the basis of a tourist attraction. Managers must weigh the potential benefits of heritage tourism development with sustainable use and protection of the resources.

The benefits of heritage tourism development using archaeological resources are multifaceted. Facilitating public access to historic resources fosters “appreciation of, respect for, and increased activism on behalf of our irreplaceable heritage” (Hoffman, 1997, p. 73). In this way, “public participation is a valuable component in protecting, promoting and interpreting cultural resources” (Hoffman, 1997, p. 73). By helping people feel invested in and responsible for historic artifacts and sites, “interpretation and development of archaeological sites can capitalize on people’s interest in cultural heritage and in so doing not only boost tourism but at the same time preserve resource integrity and promote an ethic of stewardship” (Hoffman, 1997, p. 78). When a broader segment of the public learns to appreciate these resources for their intrinsic cultural, rather than monetary, value, this stewardship ethic can also help to secure the future of unprotected resources (Hoffman, 1997).

An important issue is whether a particular heritage resource is a viable candidate for tourism development. Who decides which resources are culturally significant, to whom, and how the resource can best be protected and interpreted? Evaluation of cultural significance

has been addressed by numerous national and international organizations. The United Nations Educational, Scientific and Cultural Organization (UNESCO), and its advisory body, ICOMOS, utilize ten selection criteria, encompassing both cultural and natural aspects, for inclusion in the World Heritage List (UNESCO, 2004; US/ICOMOS, 2008). The Australian chapter of ICOMOS goes a step further, defining cultural significance specifically as an asset's "aesthetic, historic, scientific, or social value for past, present and future generations" (as cited in McKercher and du Cros, 2002, p. 71). In the U.S., the National Park Service again provides the operational definition, listing assets on the National Register of Historic Places if "the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association" (NPS, 2004, Sec. 60.4). Naturally, these criteria are not intended to define significance universally, but are meant as guidelines for determination of significance on a case-by-case basis.

Though heritage assets may be culturally significant, their appropriateness for tourism development remains another question entirely. In the realm of submerged cultural resources, and shipwrecks in particular, the first consideration is whether the location of a site is known. Thunder Bay National Marine Sanctuary's Final Environmental Impact Statement/Management Plan describes three categories of historic shipwreck losses:

> *Known* total losses are defined as vessels for which archaeological evidence and/or strong historical documentation (three primary sources or more) confirm the existence and location where they were stranded, foundered, burned/exploded, or abandoned. *Probable* total losses include those vessels

> for which oral tradition, one or more historical primary sources, or three or more reliable secondary sources indicate their location. *Suspected* total losses encompass those shipwrecks listed in secondary sources, but not confirmed by primary documents, oral tradition, or archaeological fieldwork. (U.S. Department of Commerce, National Oceanic and Atmospheric Administration [NOAA], 1999, p. 100)

Interpretive materials that are place-based, such as trails linking shipwreck sites and shoreline signage, are naturally best-suited to known sites. Interpretive materials that are not place-based, such as museum exhibits and online databases, can incorporate probable and suspected shipwrecks into a broader message about maritime heritage.

Regarding development of place-based interpretation around known underwater sites, Hannahs has developed a comprehensive decision-making process, involving an evaluation form and flow charts (2003). He states that managers must first decide between excavation and subsequent conservation of artifacts from a shipwreck site, and *in situ* preservation. "Bringing up a shipwreck from an underwater environment is financially exorbitant and a logistical nightmare in terms of display and continued maintenance. Another alternative is *in situ* display as part of a trail or preserve" (Harris, 2002, p. 67).

According to Hannahs (2003), if a resource is determined to be a viable candidate for interpretation, the desired amount of visitor interaction must be pre-determined, in order to balance the goals of minimizing damage to the resource and interpreting it in an effective and entertaining manner. Shipwreck-based tourism attractions may be developed as parks, preserves, or trails. The difference between these terms is more than semantic, with the potential to impact management, sustainability, and marketing. A park, by definition, protects

natural and cultural resources, while facilitating and encouraging public access. Sites that are chosen for this type of program therefore should contain only shipwrecks which are not particularly fragile or hazardous, and are not especially archaeologically significant (or wrecks which have already been archaeologically investigated). If a site does not meet these qualifications, then it should instead be incorporated into a preserve, which would limit or prohibit public access to the resource. These classifications may be dynamic, with preserves able to be converted to parks when appropriate, or parks converted to preserves if resource endangerment necessitates. Though these terms may carry different connotations for the degree of allowed public interaction, in practice, they may be used with more flexibility by different agencies and organizations. Trails link several sites together for visitation and marketing purposes. Trails may be as short as a span of river with multiple dive sites close together, or as long as a section of coastline with maritime sites that are driving distance apart.

Heritage Tourism as an Industry

Despite the abundance of available literature concerning sustainable tourism as a commercial industry, and cultural and heritage tourism management, there is still a disjuncture in the appropriate implementation of sustainable heritage tourism as a commercial industry. Hall and McArthur address this topic with a guide for strategic planning in heritage management based on a business model (1998). Many heritage managers fall short of achieving the full potential of a heritage asset because "few people involved with heritage resources consider themselves part of an *industry* in which the management practices developed in business and commerce can be readily applied" (Hall & McArthur, 1998, p. 7). The fundamental missing ingredient is evaluation, which would help to realize the full

potential of heritage tourism programs. “Any individual or organization that does not evaluate is not committed to understanding its performance, not committed to learning from its mistakes and not committed to self-improvement” (Hall & McArthur, 1998, p. 191).

Heritage management has evolved over the years, shifting the focus from mere conservation of the resource to include the experience of the visitor. Hall and McArthur use the term “quality” to refer to both the accepted level of visitor impact on a site, as well as the level of visitor satisfaction, both of which must have established standards for evaluation. Ultimately, there are three aspects of management strategy for heritage resources: managing the resource, managing access, and managing organizations. As with sustainable tourism, stakeholders should be a primary concern in the heritage management system.

Similar to a successful business, a well-managed heritage resource should have a strategic plan, whose formulation should be an inclusive process “by which those responsible for implementing the plan are also those who have helped formulate it, [which] will dramatically increase the likelihood of ‘ownership’ of the plan and, hence, its effective implementation” (Hall & McArthur, 1998, p. 19). The starting point of the plan should be an organization’s core values and vision, as well as its mission, goals, and objectives. Vision will be primarily internal, while the mission is a statement geared to all stakeholders. Goals emphasize long-range intentions and are not usually quantified, while objectives are measurable goals. Objectives enable the evaluation of a program’s success, and have a time frame and an action plan: “unless they are specific and their attainment measurable, it will be impossible to determine how well the asset is performing” (McKercher & du Cros, 2002, p. 199). Evaluation is an assessment of performance, and is accomplished through the use of indicators and monitoring. There are two classes of indicators: measures of effectiveness and

measures of efficiency. In the end, “success or otherwise of heritage management is only conjecture unless a formal evaluation occurs” (Hall & McArthur, 1998, p. 36).

While evaluation by site managers and external observers, using concepts defined by the researcher, is useful and necessary, the practice of gauging visitor satisfaction at heritage tourism attractions is distinctly underutilized, though the industry is dependent upon the satisfaction of visitors. Masberg and Silverman argue that “very little research into visitor experience at heritage sites has been adequately designed to explore the visitors’ perspective rather than that of the professional or researcher” (1996, p. 20). They therefore advocate for a phenomenological approach, which investigates the “discovery of the structure of the phenomenon under study from the perspective of the individual experiencing that phenomenon,” thereby “elicit[ing] and present[ing] visitors’ own terms, discussions, and meanings related to heritage site visiting” (Masberg & Silverman, 1996, p. 20). The benefits of such an approach, compared to visitor satisfaction surveys constructed using terms and concepts of managers and researchers, are the insights it provides into visitors’ interests, as well as unanticipated aspects of the visitor experience. For example, visitor interest may be lost by the method of interpretation, they may express interest in components of the site that are not interpreted, or they may be more interested in the environmental or socialization aspects of the visit (Masberg & Silverman, 1996). This approach can therefore provide feedback that may be invaluable for the long-term continuation of a heritage tourism attraction.

In conducting the present study, consisting of external evaluation, this researcher found that visitor satisfaction surveys of any sort are very rarely conducted at maritime heritage tourism attractions. Consideration of the visitor experience, and incorporation of

visitor feedback into site development and interpretation, will become increasingly important if the current trend of declining museum and heritage site visitation continues (Friedman, 2007).

Chapter 3: North Carolina

Coastal Geomorphology and Storms

Barrier islands, by definition, “are elongate bodies of sand bounded on either end by inlets that allow salt and fresh water to flow into and out of the estuary behind the island,” whose seaward shoreface “dips steeply out to a depth of 30 or 40 feet, at which point the slope of the continental shelf becomes more gentle” (Pilkey, Neal, Riggs, Webb, Bush, Pilkey, Bullock, & Cowan, 1998, p. 39). The eastern and southern coasts of North America are composed of the grandest barrier island chain in the world, which extends nearly uninterrupted from New York to South Florida, and from western Florida to northern Mexico (Pilkey et al., 1998). The North Carolina Outer Banks represent a unique segment in this chain, where shifting shoals, the irregular procession of storms, and the convergence of the warm Gulf Stream and the cold Labrador Current combine to create notoriously treacherous and unpredictable navigation conditions. The Outer Banks exist most strikingly along the northern and central portion of the coast, where they are bordered on the west by the Albemarle and Pamlico Sounds, which may be reached from the Atlantic Ocean via a number of inlets (Figure 2). Like the barrier islands, these inlets are in a constant state of flux, changing shape, depth, and even location with the workings of geological processes as well as hurricanes and northeasters that frequently assault the region.

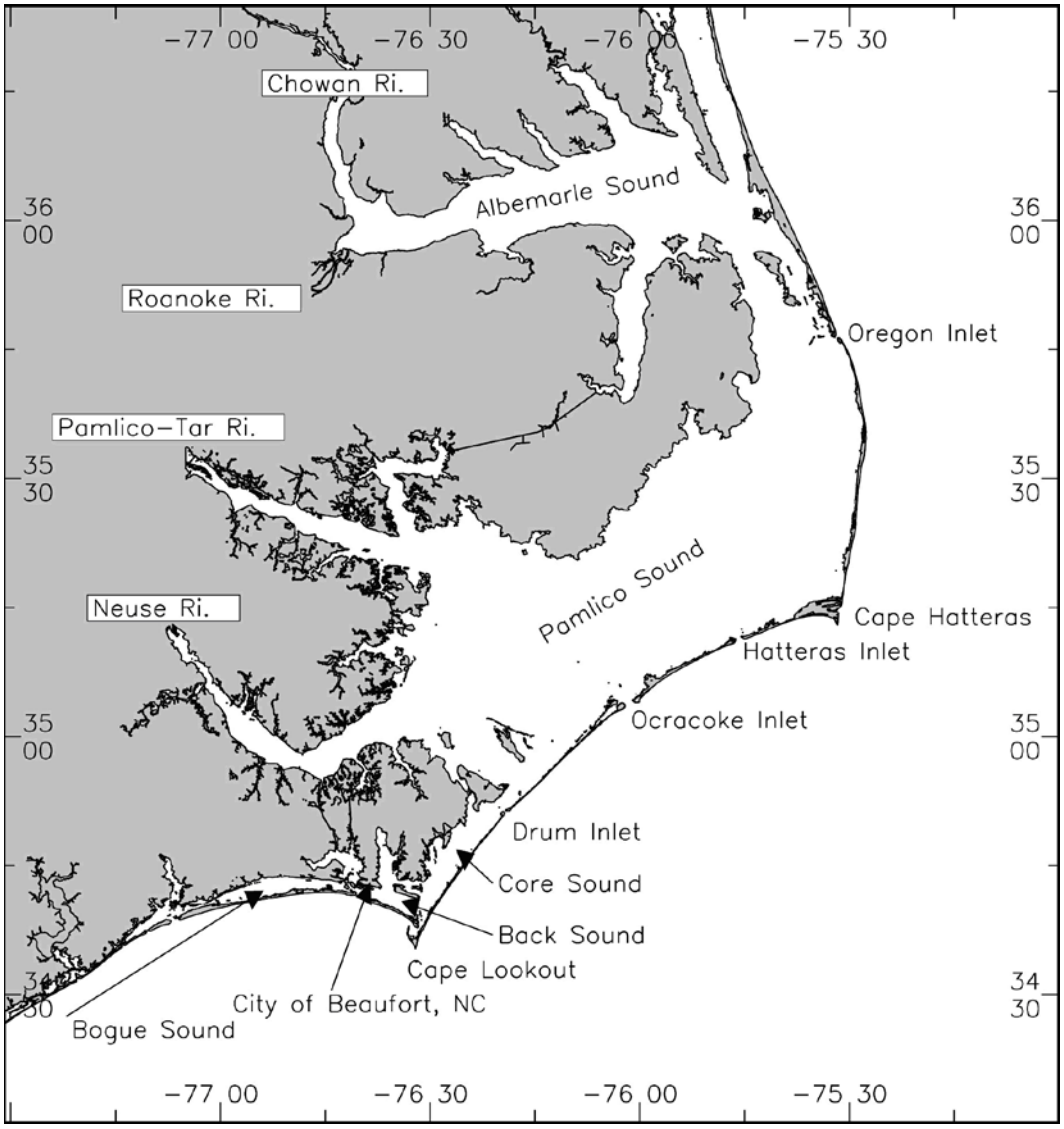

Figure 2. North Carolina Outer Banks. Retrieved January 4, 2009, from: http://www.cop.noaa.gov/stressors/climatechange/

Pilkey et al. provide a clear explanation of barrier island formation and migration that accounts for the geological component of these conditions. The four factors that cause barrier islands to form are “a rising sea level, a large sand supply, a gently sloping coastal plain, and sufficient wave energy to move sand” (Pilkey et al., 1998, p. 39). The most recent episode of sea level rise has been occurring since the end of the last ice age, about 10,000 years ago,

when melting glacial ice caps gradually began to increase the sea level three to four hundred feet to its present level. Pilkey et al. explain that:

> …when the sea first began to rise, seawater flooded the river valleys, and a formerly straight shoreline became a very sinuous one. The indentations thus formed are today's estuaries, and their formation is the *raison d'être* for barrier islands. Nature abhors a crooked ocean shoreline, and barrier islands are the ocean's way of straightening out the shore. (1998, p. 41)

After a barrier island system is formed, a different set of processes takes over which causes the islands to migrate landward in response to the rising sea level. During this process, "the islands avoid being drowned by the encroaching sea" via oceanside shoreline retreat and soundside shoreline accretion, as well as continual buildup to maintain elevation, and the mainland shoreline recedes through flooding and erosion (Pilkey et al., 1998, pp. 41-45). Each barrier island is unique, responding differently to the forces of its surrounding environment due to such factors as "differences in the amount of type of sand on the island's surface, the island's orientation, the type of and size of the waves that strike the beach, and the nature of the rocks underlying the barrier island" (Pilkey et al., 1998, p. 43). The latter factor is represented by the underlying geologic framework of the shoreface, which in North Carolina ranges from relatively young to geologically ancient. The sand supply along the North Carolina coast is actually considered low, "in part because most of the sand coming down the rivers at the present time is trapped in the upper estuaries and does not make it to the beaches," a process which results in "thin barrier islands that are 'perched' on top of older geologic units" (Pilkey et al., 1998, p. 50). These units range in composition from "erosion-resistant, protruding submarine headlands" to softer, easily eroded sand or mud,

creating irregularly eroding topography. This process can result in shallow areas (shoals) along the inner continental shelf which mirror visible rock outcroppings along the shoreface (capes), and which "greatly modify incoming wave energy, and affect the patterns of erosion and deposition on adjacent beaches" (Pilkey et al., 1998, p. 51). These headland-dominated shorefaces are interspersed with nonheadland-dominated shorefaces, which are characterized by softer, more erodible underlying fill sediments, and which exhibit more migratory inlets. The entire North Carolina barrier island chain therefore consists of "restless ribbons of sand" that form shifting shoals, capes, and inlets, which have vexed mariners for centuries (Figure 3).

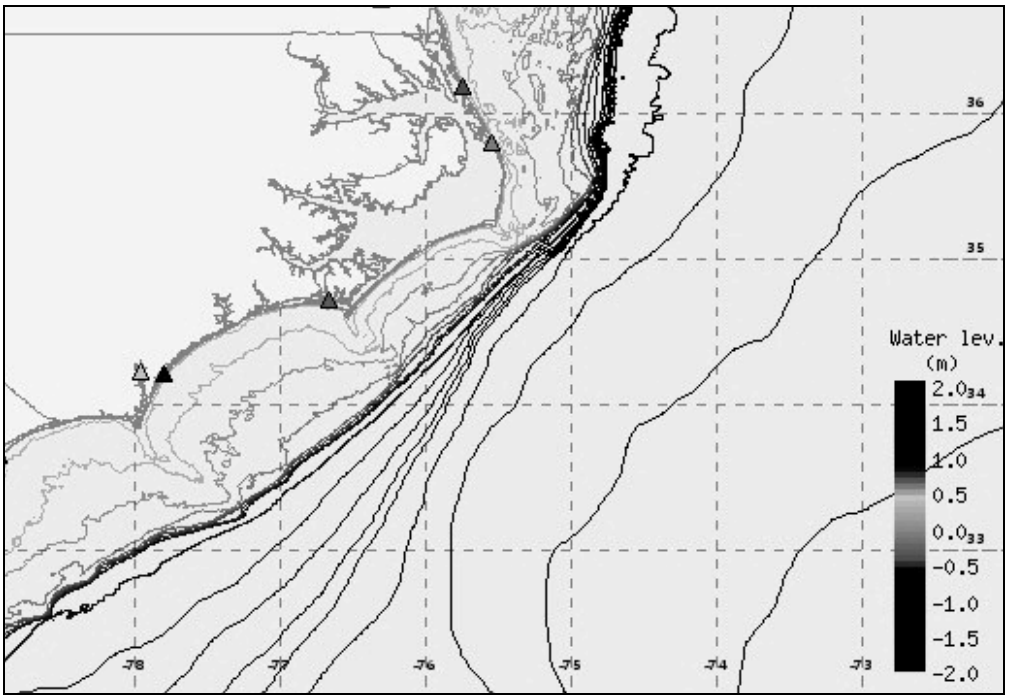

Figure 3. Map of North Carolina coast, showing bathymetry of continental shelf, (from left to right) Cape Fear, Cape Lookout, and Cape Hatteras, and their associated shoals. Retrieved August 19, 2009, from University of North Carolina at Chapel Hill Marine Sciences Program Web site: http://maury.marine.unc.edu/cgi-bin/mapserv?map=/opt/nccoos_map/maps/static_metric.map&version=1.1&service=WMS&request=getmap&bbox=-80,32,-72,38&layers=grid,NC_100k,VA_100K,SCLAND,Shoreline,Bathymetry,Bathymetry%20Deep,msl_obs,water_level_legend_reg&width=600&height=450

The physical form of the North Carolina Outer Banks as they exist today has been strongly shaped by the erroneous assumption of early twentieth century scientists that the barrier islands were fundamentally stable, a misconception which influenced the practices of contemporaneous conservation managers. These scientists and managers believed that the landscape they saw, consisting of vast and barren stretches of sand, with occasional patches of trees, had previously been forested areas, which were decimated by local communities. They derived their models from mainland coastal environments, which do not apply to barrier islands (Lee, 2008). In 1907, managers proposed a large-scale project to reforest the barrier coast and build dunes along the shore to generate new forests, with the hope of preventing beach erosion. The project began in the 1930's as part of the New Deal, and

through massive reengineering of the outer banks landscape, the social, economic, and political relationships on the banks were also reshaped (Lee, 2008).

In 1953, the first National Seashore Park at Cape Hatteras was established, and for two subsequent decades, “the idea of stability and dune maintenance continued to frame all landscape management and development policies” (Lee, 2008, Abstract). Also during this time, investors and marketers began to target the Outer Banks, and commercialization and development exploded after World War II. Ironically, by beginning the policy of dune maintenance in the 1950’s, the federal government contradicted what locals had long known about the sensibility of construction along non-forested portions of the Banks, but in so doing, the practice also created a sense of entitlement, and the expectation that this new settlement pattern would be perpetuated and protected. It also enabled tourism to fill the economic gap left by the concurrent decline of commercial fishing and the closing of most U.S. Coast Guard stations along the Banks. The construction of Highway 12, the only road spanning the length of the Banks, and the Bonner Bridge over Oregon Inlet in 1963, enabled vast numbers of people to begin visiting, establishing an entirely different physical and cultural landscape than had existed before (Lee, 2008).

In the early 1970’s, scientists realized that previous land pattern assumptions were incorrect, “that barrier islands were inherently migratory and dynamic, and that shoreline dunes actually accelerated the loss of beaches” (Lee, 2008, Abstract). When NPS realized the need to change its dune maintenance policy, it found an unexpected amount of opposition and outrage from locals, expressed in letters and public hearings. Despite public outcry, NPS adopted a new policy of “develop[ing] an ongoing resource management program, revegetat[ing] major overwash areas following destructive storms, and investigat[ing]

alternative transportation" (NPS as cited in Lee, 2008, p. 211). However, since strict interpretation of this policy would prohibit dune maintenance in the traditional sense, and have destructive consequences for the tourism industry and local communities as they had developed under the previous policy, NPS took a circuitous route of implementing the new policy, essentially transferring responsibility to another government agency. A firm policy statement was never issued to that effect, but beginning in 1973, NPS stopped spending money on dune maintenance, and in 1977 the North Carolina Department of Transportation (NCDOT) agreed to take over sole responsibility for dune stabilization, which was necessary to maintain Highway 12.

Though it has become increasingly common knowledge that attempts at permanent structures on a dynamic substrate are hubris, these attempts continue nonetheless (Pilkey et al., 1998). Lee eloquently summarizes the dilemma as follows:

> The relationships that had been constructed on the landscape prevented a fundamental shift in land management policy. The inability of new science to lead to new ways of living with the Outer Banks reflected the deep investments, both economic and cultural, that many thousands of people had in keeping the place as it was in 1970. The relationships that resulted from that marketing of the place and its past in many ways served to create the cultural landscape that existed in the 1970s. (Lee, 2008, Abstract)

In fact, he argues convincingly that the modern Outer Banks are actually defined by "the entanglement of desires" that has constructed these seemingly intractable relationships (Lee, 2008, Abstract).

In addition to complex geological processes, as well as cultural and political forces, the shape of the North Carolina coast is strongly influenced by storms. Hurricane season officially runs from June 1 through November 30, which means that during this time, "conditions favorable to hurricane formation can develop over the tropical and subtropical waters of the Western Hemisphere" (Pilkey et al., 1998, p. 20). Peak season occurs from August through October, with eighty-seven percent of tropical storm days and hurricane days taking place during these months (Landsea, 1993). Hurricanes that strike the southeastern U.S. coast usually originate off the west coast of Africa, growing in size and strength as they cross the Atlantic and eventually enter the warm waters of the Gulf Stream. An average hurricane measures "300 to 400 miles in diameter, with the greatest winds concentrated around an eye wall 50 to 60 miles in diameter," and may directly affect an area of the coast for a number of hours (Pilkey et al., 1998, p. 30). Though a hurricane's most "destructive forces are at their maximum in the area to the right of the forward motion of the eye,… the entire landfall area will experience the high winds and storm surge generated by the storm," and "even storms that pass by offshore can cause significant damage" (Pilkey et al., 1998, p. 21). The National Oceanic and Atmospheric Administration (NOAA) began naming hurricanes in 1953 (National Hurricane Center, 2008), and since that time, 20 named hurricanes have made landfall along the North Carolina coast. Prior to that time, particularly destructive storms were referred to by year, the closest holiday, or a vessel that was lost or miraculously saved during the storm. Hurricane frequency is irregular, sometimes with multiple strong storms making landfall in one season, and sometimes with several years passing without incident. Hurricanes are categorized using the Saffir-Simpson scale, which

rates them on a scale of 1 to 5 (5 being the worst), based on their barometric pressure, wind speed, and storm surge.

Northeasters occur far more frequently, with an average of 30 each year, though typically only a few affect North Carolina (Pilkey et al., 1998). Though their power is far less concentrated than that of hurricanes, they may encompass over 1,000 miles and linger over the coast for days. They occur in the winter months, and "typically form as low-pressure cells over coastal areas where there is a large difference between air temperatures – cold over the land and relatively warm over the water," such as the waters off North Carolina, which lie "close to the winter track of the polar jet stream" (Pilkey et al., 1998, pp. 30-31). Northeasters rotate counterclockwise, blowing cold air from the northeast onto the east coast, and are held in place by a "stable high-pressure system over eastern Canada," often wreaking havoc for days with destructive storm surge and waves (Pilkey et al., 1998, p. 31).

These powerful weather phenomena have not only influenced the physical characteristics of the coastline, but have also contributed directly to the loss of countless ships at sea and a fair number of coastal communities. Before the advent of modern weather prediction technology, these storms appeared to represent the wrath of God wrought upon unsuspecting vessels and settlements. In 1638, John Taylor recorded his experience of the "newes and strange newes … of a tempestuous spirit, which is called by the Indians a *Hurry-cano* or whirlewind," which embodied the "juste judgement" of God upon the "obstinate and rebellious sinners" native to the New World, by "blowing downe houses, tearing up trees by the rootes, and it did puffe men up from the earth, as they had been Feathers, killing divers men" (Taylor, 1638, p. 1). It could be argued, however, that at least as much damage has

been inflicted in recent decades, with the explosion of coastal development against the best advice of scientists and managers.

In October 1954, the most destructive storm yet recorded made landfall at Cape Fear. At Calabash, Category 4 Hurricane Hazel delivered a storm surge of 18 feet, which happened also to coincide with the highest lunar tide of the year, boosting the surge another several feet. Hazel's other untimely coincidence was its occurrence within six weeks after two other hurricanes affected the North Carolina coast. With reported winds of up to 150 mph, Hazel's intensity remained strong for an abnormal distance over land, causing damage in its wake through Virginia, West Virginia, Maryland, Pennsylvania, and western New York. In the end, in North Carolina alone, 19 people were killed and over 200 injured, and an estimated $136 million was incurred in property losses (Barnes, 2001).

In 1996, a weaker hurricane also made landfall at Cape Fear. Though Category 3 Hurricane Fran was less intense by all measures, it also followed three weeks behind another hurricane, and became the new benchmark for hurricanes in North Carolina. Fran wrought the most havoc in the Triangle area, which does not typically see much action from hurricanes. In the end, 37 people were killed, and over $5 billion in damages occurred to property, timber, and agriculture in North Carolina (Barnes, 2001).

The culmination of the 1999 hurricane season, which produced 12 named storms and 8 hurricanes, was Category 4 Floyd, which became the greatest disaster in North Carolina history. Though it had weakened to a Category 2 by the time it made landfall, again at Cape Fear, and its storm surge, winds and accompanying tornadoes were destructive, it was the storm's monstrous span and slow forward speed that caused the greatest destruction, in the form of flooding. Following two weeks after a tropical storm, and drenching rains in the

interim, Floyd brought monthly rainfall totals in parts of eastern North Carolina to above 20 and 30 inches (compared to the normal average of 5 inches), and set all-time flood records along the Cape Fear, Neuse, and Tar Rivers (sometimes at 17 feet above flood stage). In the end, 66 counties were declared disaster areas, with damages totaling almost $6 billion, and 52 lives were lost, the greatest in North Carolina hurricane history since 1883 (Barnes, 2001).

The devastating effect of coastal storms on local communities will continue as long as there are coastal communities, and will undoubtedly increase as coastal development does. With modern weather prediction technology, hurricanes no longer create shipwrecks as they did in the past, though they now instead wreak havoc on coastal tourism, which has become as integral to local economies as maritime commerce once was.

Maritime Cultural Landscape

> These are the reasons so many vessels have been lost on the North Carolina coast; yet every bit as important as the reasons are the changes which have come about as the result of the shipwrecks. For, the past history and the present day life of the entire coast of North Carolina are closely integrated with shipwrecks; so closely integrated, in fact, that much of the outer banks might yet be a barren, uninhabited sand reef but for the ships that have been lost there. (Stick, 1958, p. 3)

This quote from lifelong Outer Banks resident and preeminent Outer Banks historian David Stick so perfectly captures the essence of the maritime cultural landscape that a technical definition seems redundant. However, as previously discussed, the notion of the maritime cultural landscape is a conceptual framework for research and resource management, which refers to "relationships among humans and their water-based environments" (Vrana & Vander Stoep, 2003, p. 19). Though shipwrecks have been the primary focus of maritime archaeologists, and play a great role in capturing public interest and imagination, an important purpose of the maritime cultural landscape is to create contexts that "paint a greater and more complete picture of our collective maritime past" (Thunder Bay National Marine Sanctuary Advisory Council, n.d.). Studying such features as historic sites, lighthouses, lifesaving stations, and even monuments helps interpret shipwrecks within the broader network of the natural and cultural scene.

This framework has been effectively employed in Thunder Bay, Michigan, where the resources of that region's maritime cultural landscape have been incorporated into the

Thunder Bay National Marine Sanctuary, based on the density of both known and undiscovered cultural resources, as well as their historical, archaeological, and recreational significance on the regional and national scale. This situation is analogous to the North Carolina coast, which is renowned for both its unique physical environment as well as its extensive human history, though the environment and history of these two regions are vastly different from each other. For this reason the concept of the maritime cultural landscape may also be productively employed in the study and management of North Carolina's coastal heritage resources.

The earliest human occupation of the North Carolina coast is currently a hot topic among archaeologists, as many increasingly agree that the long-held paradigm of "Clovis-first" culture has been successfully overturned by discoveries of more ancient sites (Haynes, 2002; Dillehay, 2000). The earliest material evidence of "relationships among humans and their water-based environments" (Vrana & Vander Stoep, 2003, p. 19) consists of dugout canoes found in lakes and inland waterways of eastern North Carolina. Many of these have been discovered in Lake Phelps, and date between 2400 B.C. and A.D. 1400, and were probably only suited to travel along such calm and shallow inland waterways (Phelps, 2002). However, the Native American culture that the earliest Europeans encountered is commonly believed to have begun around A.D. 800, known to historians and archaeologists as the Colington phase of Carolina Algonkian culture (Phelps, 1984). This culture was characterized by a class-stratified society led by a king, and an agricultural settlement pattern not unlike eastern North Carolina today. Because of the necessity for suitable farmland, their communities were located primarily along the sounds, with most of the narrow Outer Banks remaining largely unoccupied, except for seasonal hunting and fishing encampments, and

small permanent villages on the broader expanses of Hatteras Island which were covered by maritime forest (Phelps, 1984; Stick, 1958).

Historic accounts of the North Carolina coast begin in the 16th century with Spanish and French exploration. Spaniard Lucas Vázquez de Ayllón landed around Cape Fear in 1522, and in 1526 founded a short-lived settlement at Winyah Bay in South Carolina ("Lucas Vázquez de Ayllón," 2009). Also in 1526, a ship of his fleet wrecked near Cape Fear or Winyah Bay, though accounts of the exact location are conflicting (R. Lawrence, personal communication, March 18, 2009). In 1524, Italian Giovanni de Verrazzano, representing France, landed north of Cape Fear and headed north, exploring the Outer Banks, and mistaking them for an isthmus separating the Atlantic and Pacific Oceans (Stick, 1958). Stick reports Native American accounts of an unknown shipwreck in 1564, which represents the first written account of salvage practices on the Outer Banks. Since the wreck washed ashore with no survivors, the natives dismantled the ship for useable materials (Stick, 1958).

English settlement of the North Carolina coast began in 1584, when an expedition sent by Sir Walter Raleigh landed near present-day Kitty Hawk. Arthur Barlowe, one of the ships' captains, reported that they were "entertained with all love, and kindnes," by the natives, and that he "found the people most gentle, loving, and faithful, void of all guile, and treason, and such as lived after the manner of the golden age" (Barlowe, as cited in Stick, 1958, p. 15). In 1585, a second expedition was sent with the purpose of establishing a permanent English base, and a fort and settlement were constructed on the north end of Roanoke Island. Hostilities with some of the natives began almost immediately, which combined with scarcity of provisions and constant fear of attack by the Spanish, led to the fort being deserted or nearly deserted several times before John White's legendary expedition

of 1587 (Stick, 1958). This expedition included women and children, among them White's own very pregnant daughter, who gave birth within a month of arrival to Virginia Dare, the first English baby born in the New World. The following week, however, White was convinced to return to England for necessary supplies, and to recruit additional colonists, leaving his own family among the 110 colonists on Roanoke Island. Because of concurrent hostilities with Spain, which had assembled a great Armada, he was unable to return to the colony until August of 1590, three years later. His party found the colony deserted and destroyed. Only the word "CROATOAN," the name of the friendly Native Americans of Hatteras, was found carved into a tree at the fort as evidence of their fate, and to this day the mystery of the "Lost Colony" remains unsolved (Stick, 1958). The next English attempt at colonization occurred at Jamestown, Virginia in 1607, which was successful, and from whence settlers finally ventured south to permanently colonize the North Carolina coast, which became a royal colony in 1663 (Stick, 1958).

During the colonial period, much of the land of the Outer Banks was granted to a small number of Lords Proprietors, who typically did not even live on their own plantations, but hired caretakers to oversee such activities as agriculture and raising livestock, which could often be accomplished with only the natural aquatic barriers as fencing. Most of the residents became squatters on these large holdings, farming as best they could, fishing, and raising livestock for their own subsistence, and even earning a significant portion of their living by processing whales that washed ashore, and reaping the spoils of beached ships. These latter two activities proved so profitable that the colonial government began to issue regulatory permits for them. Also during this time, windmills became a common source of income, harnessing the prevalent winds on the Outer Banks. These winds were partly

responsible for rendering large-scale agriculture impossible there, but did supply power to grind the corn that was grown on the mainland (Stick, 1958). Residents learned early, and sometimes the hard way, that what little forested areas existed were critical to protect both habitations as well as the islands themselves from storms and erosion. In fact, “the availability of adequately forested areas determined where people could settle, and settlement location reveals a great deal about forest distribution on the banks” (Lee, 2008, p. 43). One such settlement, Ocracoke Village, also happened to neighbor the most stable inlet along the Outer Banks, Ocracoke Inlet. By the 1730’s, Currituck Inlet had closed, and Roanoke Inlet had become too treacherous for navigation, forcing the bulk of commercial ships to enter through Ocracoke Inlet, which was still shallow and treacherous to captains unfamiliar with such unpredictable channels. It became necessary to station pilots permanently at Ocracoke to guide ships safely through the inlet, an occupation which remained lucrative until the expansion of railroads made the use of larger ports along the eastern seaboard more profitable (Dunbar, 1958).

The early 18th century witnessed two important historic landmarks along the Outer Banks. First, Native Americans ceased to represent a significant presence. This occurred largely through warfare, with the two southern banks tribes, the Corees and the Mattamuskeets, ceasing hostilities with each other and joining the Tuscarora confederacy in 1711 to attack white settlements. Through retaliatory attacks, they were largely wiped out, though enough survived to attack and decimate the Croatoans of Hatteras, who did not join the confederacy. The isolated survivors were also prevented from hunting freely on the now white-owned land, and thus reduced to poverty, the remaining original inhabitants “became an impotent factor on the Banks” (Stick, 1958, p. 28).

The second notable event was the "golden age of piracy," which in fact only lasted from 1713 to 1718, and seriously affected the Outer Banks for about a year, though the romanticized legacy continues to flourish throughout the North Carolina coast. After the Treaty of Utrecht in 1713 eliminated letters of marque legitimizing the actions of privateers (for the time being), they were then rightly recognized as pirates. A number of notorious pirates operated off the Carolina coast, among them Blackbeard, who made a temporary attempt at becoming an upstanding landowner before returning to piracy and meeting his demise in battle at Ocracoke in 1718 (Stick, 1958; Lawrence, in press). Numerous sites along the North Carolina coast memorialize his presence, including the site of the wreck purported to be *Queen Anne's Revenge*, the house in which he headquartered along the Beaufort waterfront, and an historic marker commemorating his final battle in Ocracoke Village.

During the Revolutionary War, the Outer Banks fulfilled their patriotic duty, serving as both an effective line of defense against the British, and containing one of the few ports through which supplies could be routed. The British navy, consisting mostly of large and powerful vessels, was able to blockade or occupy nearly every deep-water port along the eastern seaboard, including Cape Fear. Despite continued attempts, however, their ships ultimately proved unable to ford the narrow inlets and shallow sounds of the Outer Banks, which remained open for trade throughout the war (Stick, 1958). For purposes of defense,

> …independent companies of troops were stationed at strategic points along the Banks; a fort was constructed at Cape Lookout with the help of a boatload of Frenchmen; armed galleys were built in Virginia to guard Ocracoke Inlet; and Carolina-owned privateers and Carolina-built warships gave the enemy as good as they received on the open sea. (Stick, 1958, p. 45)

By 1783, approximately 1,000 people lived on the Outer Banks, establishing the settlement pattern of communities in the sound-side wooded hammocks, where most of the present-day villages are located. Also by this time, the practice of salvaging goods from shipwrecks, or "wrecking," had become so common that it became necessary to divide the coast into wreck districts. Each district had its own "Vendue Master," whose "job it was to take possession of any vessels, cargo, or wreckage which came ashore and, after proper advertisement, to conduct an auction or vendue of the materials" (Stick, 1958, p. 76). As commerce and trade in the region flourished, the business of piloting ships through the inlets became increasingly profitable, as did that of "lightering," the practice of temporarily transferring some of a ship's cargo to smaller boats to ford the shallow inlets. Buoys and channel markers also began to be placed as aids to navigation, and the first attempts at state-sponsored channel maintenance were made. In 1789, "the federal government passed legislation encouraging states to cede land to it for purposes of building lighthouses," and the North Carolina legislature authorized construction of the Ocracoke lighthouse (Torres, 1985, p. 73). Due to political jockeying, the lighthouse was instead constructed just west of Ocracoke Island, on Shell Castle Island, which had become an important commercial center, but which also became obsolete by 1818 due to shoaling of the channel. Ocracoke lighthouse was constructed in its present location in 1823. Construction of Cape Hatteras lighthouse began in 1799, the light was first lit in 1803 (Torres, 1985, p. 73), and this ubiquitous North Carolina landmark stood in its original location until 1999, when the retreating shoreline finally required that it be moved half a mile inland.

Throughout the War of 1812, the Outer Banks "again provided protection against British raids on the mainland, as well as a base of operations for American privateers," and as

an important avenue for supplies (Stick, 1958, p. 83). During the 1830's, tourists from the mainland began spending their summers along the Banks, and the sea lanes became heavily trafficked with cargo and passenger vessels of all shapes and sizes. For this reason, a significant proportion of North Carolina shipwrecks occurred during this period. For example, in September 1837, during a legendary hurricane known as "Racer's Storm," three vessels were lost along the Outer Banks, and one other nearly lost, with at least ninety deaths tolled (Stick, 1958). One of these ships, the passenger steamer *Home*, created a benchmark in national maritime history. It was launched with great fanfare as the fastest and most elegant steam packet running, but was equipped with only two life preservers. After it wrecked during the storm, and only 40 of its 130 passengers were saved, "Congress passed legislation requiring all seagoing vessels to carry a life preserver for each person on board" (Stick, 1952, p. 26).

Until this period, Ocracoke Inlet had remained the most navigable and heavily trafficked inlet along the Outer Banks, though it had also begun to shoal up. It therefore became considerably less important in 1846 when a storm resulted in both the creation of Oregon Inlet and the reopening of Hatteras Inlet, some eight miles east of its location a century earlier (Runyan, Cantelas, Madrigal, Grussing, Gleason, Lewis, Overfield, Hartford & Hermley, 2005). By the beginning of the Civil War, Hatteras Inlet had become the only inlet capable of passage by large ocean-going vessels, and the fort that was constructed there became vitally important for defense. Because the U.S. Navy was better able to adapt to conditions of the North Carolina Outer Banks than the British had been during the Revolution, numerous forts were constructed and reinforced along the coast, including Fort Hatteras and Fort Clark at Hatteras Inlet, Fort Oregon at Oregon Inlet, Fort Ocracoke at

Ocracoke Inlet, Fort Macon at Beaufort Inlet, and Fort Fisher at Cape Fear. Federal forces seemed to make relatively quick work of capturing most of these forts, however, and with the fall of Fort Macon in May 1862, the Union had a firm command of the inlets and sounds, effectively blocking the primary trade route to northeastern Carolina as well as Norfolk and the Chesapeake Bay (Stick, 1958). Fort Fisher remained in Confederate control until nearly the end of the war, keeping trade open through the port of Wilmington until January 1865. As a crucial target point of the Union blockade, the waters off Cape Fear became the site of a great many sunken ships, both Federal and Confederate.

In the post-war period, the federal government undertook with renewed vigor a program of modernization along the Outer Banks. The first phase was lighthouse construction and maintenance. If the lighthouses of the Outer Banks had been in miserable condition before the war, with those at Cape Hatteras and Cape Lookout reportedly causing more harm than good, and those at Bodie Island and Ocracoke being too small, their destruction or damage by Confederates at the end of the war certainly did not help. In 1867, reconstruction and repairs were undertaken, and by 1875, four new or newly refurbished lighthouses stood at Cape Lookout, Cape Hatteras, Bodie Island, and Currituck (Stick, 1958).

Also during this time, the U.S. Life-Saving Service expanded to include North Carolina, and by 1874, seven stations had been constructed along the Outer Banks. In the beginning, there were two fatal flaws with the service, namely that the stations were only manned during the winter months, and that they were too far apart. In November 1877, the wreck of USS *Huron* dramatically highlighted the former problem, and in January 1878, the wreck of *Metropolis* called Congressional attention to the latter. By 1879, eleven new stations were in operation. In 1883, an additional surfman was added to each crew, bringing

each station's total to seven, and eventually the total number of stations grew to 29 along the North Carolina coast (Stick, 1958).

The next phase of modernization was the addition of U.S. Weather Stations and post offices along the Banks. Between these operations, the lighthouses, and Life-Saving Service, the federal government created a windfall of new jobs in the area, injecting new life into a formerly poor and isolated region (Stick, 1958).

During the late 19th and early 20th centuries, the importance of maritime transportation was eclipsed by the growth of alternate modes of transportation and commerce. The North Carolina coast was particularly affected by this shift, which included the spread of railroads, canals, and roads, and the advent of automobiles and airplanes. Though inlet maintenance had been attempted since the 18th century, Army Engineers at last realized the futility of the endeavor and focused instead on constructing a system of canals which would become the Intracoastal Waterway, extending from Beaufort Inlet to the Chesapeake Bay. With government efforts thus redirected, the old inlets were relegated to passage by small fishing boats, and "the days of extensive maritime activity along the Banks were ended" (Stick, 1958, p. 183). Also during this time, the geographic and weather conditions of the Outer Banks were utilized in landmark technological innovations. In 1901, Reginald Fessenden successfully experimented with wireless telegraphy between Hatteras and Roanoke, and in 1903 Wilbur and Orville Wright pioneered the first successful flight of a heavier-than-air flying machine in Kitty Hawk, where today a museum and monument commemorate the occurrence (Stick, 1958).

During both World Wars, the coast of North Carolina again became the locus of pivotal events, as it was a prime target of German U-boats. For the first time since the War of

1812, enemy vessels patrolled the waters, sinking twelve merchant ships during the first World War, and becoming familiar with navigation along the Outer Banks. During the second World War, “87 vessels were lost off the North Carolina coast, not including German submarines,” and more than two-thirds of these were sunk by U-boats, making the period between 1942 and 1945 the worst on record “in terms of size and numbers of vessels sunk, lives lost, and cargo destroyed” (Torres, 1985, p.150).

In the years between the wars, the Outer Banks served as the location for another aviation landmark, when General William “Billy” Mitchell conducted demonstrations to prove the superiority of air power to warships. Two obsolete battleships, USS *Virginia* and USS *New Jersey,* were decommissioned and used as targets for bombers, which successfully sank them in approximately half an hour (Torres, 1985). The operations involved a temporary air base on the beach at Cape Hatteras, the radio shack of which has been discovered and reconstructed in an exhibit featuring these events at the Graveyard of the Atlantic Museum.

During the first half of the 20th century, events transpired and patterns were established that shaped the Outer Banks as they exist today. With the advent of the automobile, paved roads and bridges became necessary to connect the barrier islands. Though these structures are impermanent by nature, they are at least intended to be long-lasting, a characteristic not well-suited to the transient sands of the Banks. Their very presence there is oxymoronic: while they form the arteries that support the lifeblood of commerce and tourism, they simultaneously signify a stability that does not exist, compelling officials and stakeholders to fight for their endurance, rather than that of the Banks themselves.

The process began in 1935 when, as previously mentioned, the Civilian Conservation Corps undertook a massive effort of dune construction, complete with stabilizing vegetation and sand fences, with the intent of halting erosion along 115 miles of Outer Banks beaches (Torres, 1985). When the Cape Hatteras National Seashore was established in 1953, the Park Service continued the policy of dune maintenance, behind which roads, houses, and even hotels could be built. Though vacationers had been visiting the Outer Banks since the 19th century, this new system enabled the advent of mass tourism to the fragile and finite islands, which in turn reshaped the cultural geography of the region. “Increasingly the constructed meaning of the Outer Banks became what the hundreds of thousands and then millions of annual visitors following that road wanted the place to be” (Lee, 2008, p. 4). This is not to imply that tourism is a blight, since it has indeed become the backbone of the Outer Banks economy, but merely to emphasize the impact that tourism has upon a place, and its forces must be harnessed in a sustainable manner.

These components and countless others comprise the threads, past and present, that weave the complex tapestry of the North Carolina maritime cultural landscape. Some are already commemorated as heritage tourism attractions. Some may not be viable candidates, and some have been overlooked in the heritage narrative, and during tourism development. Others still are ripe for harvest, and as new and innovative methods of interpretation are continually developed, are ready to come to fruition in the form of heritage tourism attractions and programs.

Underwater Archaeology and the Diving Community

According to the records of the North Carolina Underwater Archaeology Branch (UAB), over 5,000 ships have wrecked in the Graveyard of the Atlantic since the Age of Exploration (Lawrence, in press). Between Cape Hatteras and Cape Lookout alone, around 2,000 ships have met their demise (Runyan et al., 2005). Only a small proportion of these recorded wrecks are of known location. Resources dedicated to North Carolina wreck diving and exploration describe approximately 55 underwater sites (Association of Underwater Explorers, n.d.; Hudy, 2007), and Kevin Duffus' 2007 book *Shipwrecks of the Outer Banks* describes 18 beach wrecks whose location is currently known. A recent survey conducted by researchers from East Carolina University (ECU), under the auspices of a NOAA Ocean Exploration grant, demonstrates the difficulty of finding shipwrecks in this fickle environment. Though numerous wrecks have reportedly occurred in and around Ocracoke Inlet, the most stable inlet along the Outer Banks, meticulous survey conducted with remote sensing equipment was unable to locate a single wreck (Runyan et al., 2005). It seems that the same forces which create so many shipwrecks in the area also frequently conspire to dispose of their remains in short order. Underwater archaeologists in North Carolina are therefore perpetually presented with the challenge of discovery, as wrecks that may have been expediently hidden in shifting sands may just as unexpectedly be revealed again.

The popularization of SCUBA diving in the 1950's and 1960's was followed almost immediately by the advent of underwater archaeology, with pioneer George Bass conducting the first professional underwater excavation in the Mediterranean Sea in 1960 (Broadwater,

2002). Though it is probable that recreational divers began exploring North Carolina shipwrecks around this time, the first official exploration by divers occurred in 1962, when "members of the Naval Ordnance School in Indian Head, Maryland made a holiday trip to Carolina Beach, North Carolina," where they "chartered a local boat to take them to a Civil War shipwreck site" which local lore identified as the blockade-runner *Modern Greece*, wrecked there in 1862 (Lawrence, in press, p. 4). The divers discovered the wreck largely uncovered by a recent storm, and upon hearing tales of a full cargo of weapons and other artifacts, the North Carolina Department of Archives and History (NCDAH) responded positively by requesting that the Navy divers and U.S. Coast Guard assist with further salvage operations. Because underwater archaeology had not yet fully developed as a discipline, with methods paralleling those of terrestrial archaeology, divers proceeded to recover over 10,000 artifacts from the wreck over the course of the next year, with no records kept of artifact provenience or site mapping. The frenzied pace of recovery can also be attributed to the ongoing centennial celebration of the Civil War, and the understandable excitement over such a discovery at that time (Lawrence, in press).

This fortuitous event led directly to the beginnings of the Underwater Archaeology Branch, which remains headquartered at Fort Fisher in Kure Beach, in close proximity to the wreck of *Modern Greece.* Recognizing the immediate need for a facility in which to conserve the tons of recovered artifacts, the NCDAH "obtained funding from the state legislature as well as the Confederate Centennial Commission and local municipalities to construct an artifact preservation laboratory on the grounds of the Fort Fisher State Historic Site near Kure Beach" (Lawrence, in press, p. 6). Using a conservation manual for antiquities and works of art, and practical advice from Fort Fisher Site Manager and archaeologist Stanley

South, lab staff began experimenting with conservation techniques on the artifacts, hundreds of which were then available for display when the visitors' center opened at Fort Fisher in 1967. At this time, lab assistant Leslie Bright took charge of the lab, and served as the only staff member until 1972 (Lawrence, in press).

Salvage operations on *Modern Greece* garnered significant public interest, and in 1965, a private company began independently recovering artifacts from the site, causing the NCDAH to file charges against it, resulting in a restraining order prohibiting further salvage activities. The case was appealed to the North Carolina Supreme Court, which ultimately ruled in favor of the state and required the company to remand all recovered artifacts and pay court costs (Lawrence, in press). Realizing that regulatory legislation would henceforth be necessary,

> …in 1967, New Hanover County representatives successfully introduced a bill in the state legislature that claimed title to "all shipwrecks, vessels, cargoes, tackle, and underwater archaeological artifacts which have remained unclaimed for more than 10 years lying on the said bottoms, or on the bottoms of any other navigable waters of the State" (NCGS 121 Article 3). (Lawrence, in press, p. 9)

The law states that any violation is a misdemeanor, and empowers state and local law enforcement officials to implement its provisions. The statute reflects the importance of commercial and private interests in its title, "Salvage of Abandoned Shipwrecks and Other Underwater Archaeological Sites," as well as its language, which does not mention "archaeologists" or "academic institutions" in its provisions for issuing search permits, but is instead directed toward "any qualified person, firm or corporation desiring to conduct any

type of exploration, recovery or salvage operations" (Salvage of Abandoned Shipwrecks and Other Underwater Archaeological Sites, 1967). This is because the state did not have its own resources to conduct investigation and recovery efforts, and academic institutions did not yet have an interest in underwater archaeology. State officials therefore sought to cooperate with, rather than alienate, private and commercial parties who did have such resources and interests.

The first permits were issued to the North Carolina Skin Diving Council, and to individual divers, who further explored and mapped *Modern Greece,* and who were allowed to keep artifacts not considered unique by Fort Fisher lab staff. Underwater Archaeological Associates, Inc. (UAA), a non-profit organization "dedicated to the recovery and preservation of marine history through the careful excavation and . . . documentation of underwater historic sites," received the first salvage contract, which allowed them to explore several sunken Civil War blockade-runners, and to keep a percentage of the artifacts they recovered (Peery as cited in Lawrence, in press, p. 11). In the process, their work produced the first site map of a North Carolina shipwreck (Lawrence, in press). Though private retention of artifacts is a significant concession, officials considered it "a positive alternative to the uncontrolled commercial salvage of historic shipwrecks" (Lawrence, in press, p. 12). Also during this time, annual underwater archaeology seminars were conducted at the Fort Fisher visitor's center, which were co-sponsored by the NCDAH, the NC Skin Diving Council, and UAA, and which featured presentations and discussions on "the proper approaches to historical shipwreck archaeology" (Watts & Bright, 1973, p. 134).

The 1967 law also authorized the NCDAH, "(later changed to Department of Cultural Resources) to create a professional staff to manage the state's submerged cultural resources,

and adopt rules to administer the program" (Lawrence, in press, p. 10). In 1971, "the state legislature appropriated funds to establish the underwater archaeology program," which enabled staff member Gordon Watts to be hired, but which were not sufficient for equipment and other expenses associated with department-sponsored projects (Lawrence, in press, p. 12). For this reason, Watts sought out affiliations with universities, which led to the collaboration that discovered USS *Monitor* 16 miles off Cape Hatteras in 1973. In addition to NCDAH staff, the search team included researchers and a research vessel from Duke University, and researchers and remote sensing equipment from the Massachusetts Institute of Technology.

The discovery of *Monitor* opened a new chapter in both state and federal shipwreck management, as North Carolina's emerging underwater archaeology program drew international attention, and the site became the first National Marine Sanctuary in 1975. For the next nine years, "NOAA contracted with the department to assist in managing the *Monitor* National Marine Sanctuary and conducting research at the site," providing financial support for staff positions and operating funds for the UAB (Lawrence, in press, p. 14). In 1975, the federal Comprehensive Employment Training Act (CETA) was passed, to help fund state jobs for the long-term unemployed, from which the UAB received over a dozen positions.

In 1973, the NCDAH became the Department of Cultural Resources (NCDCR), and by 1974, the original permit holders under the 1967 law were no longer active. "Wanting to elevate the program to a more academic level," NCDCR began a cooperative agreement with the University of North Carolina at Wilmington (UNCW) to conduct a field school in underwater archaeology (Lawrence, in press, p. 15), which was hosted from 1974 to 1977.

During each six-week session, students learned "the basics of underwater archaeology, including historical research, remote sensing, site mapping, underwater photography, and artifact conservation" (Lawrence, in press, p. 16). In 1979, the UAB began conducting the field school in collaboration with East Carolina University (ECU), mainly at the urging of Professor William Still. In 1981, Still established the Program in Maritime History and Underwater Research (now the Program in Maritime Studies) as a graduate level tract within the History Department, and "Gordon Watts resigned as the state underwater archaeologist to take a position as co-director of the new program" (Lawrence, in press, p. 18). ECU took over operation of the summer field schools, enabling the UAB to shift its focus from projects to programs, and become "more fully involved with the department's growing resource management responsibilities that were a consequence of federal environmental and historic preservation legislation" (Lawrence, in press, p. 18).

In accordance with the provisions of the National Historic Preservation Act (NHPA; discussed in the next chapter), NCDCR combined two of its agencies to establish the State Historic Preservation Office (SHPO), which encompassed the UAB, endowing it with new funds as well as responsibilities. The UAB's Section 106 duties (also discussed in the next chapter) included working with the U.S. Army Corps of Engineers (USACE), whose work surveying and dredging inlets frequently brought them in close proximity to historic shipwrecks. Following mediation by the Advisory Council on Historic Preservation (ACHP), the two units learned to cooperate, establishing a precedent of UAB consultation that has also been critical in the North Carolina Department of Natural Resources' implementation of Coastal Area Management Act permits.

Throughout the 1980's, the UAB maximized its limited resources by undertaking small-scale projects throughout eastern North Carolina, creating a network of contacts, and focusing on expanding its database of historic shipwreck records. Two notable projects during this time are the Wilmington Waterfront Survey, which identified 37 vessels in the existing Wilmington Historic District, and a survey of the Cape Fear Civil War Shipwreck District, which identified 21 vessels in the waters of southeastern North Carolina. The vessels recorded in these surveys were added to the National Register of Historic Places, which recognizes that they are historically significant, and grants them added protection under the Section 106 review process (Lawrence, in press).

In 1984, uncomfortable with the provision of the 1967 statute that allowed artifacts to be retained by private individuals, the UAB revised the guidelines of the North Carolina Administrative Code (NCAC). The new guidelines authorized the Secretary of NCDCR to designate "certain abandoned shipwrecks or underwater archaeological artifacts as areas of primary scientific, archaeological or historical value" (Cultural Resources: Archives and History, NCAC T07:04R.1009). The changes "did not exclude commercial recovery from historic shipwrecks, but attempted to ensure that all projects adhere to accepted standards of underwater archaeological investigation and reporting," and also "stipulated that all artifacts recovered from one of these 'Protected Areas' must remain as an intact collection in an appropriate curation facility" (Lawrence, in press, p. 27).

During the first half of the 1990's, the UAB continued its program of research and management activities. With the assistance of Branch staff, ECU students completed 12 projects on shipwrecks in eastern North Carolina, whose research, combined with the Branch's own investigations, led to further National Register nominations. In 1993, with the

impetus of a pending USACE project, the UAB conducted the Cape Fear River Comprehensive Survey, its largest project yet, hiring supplemental employees and locating 33 new shipwreck sites (Lawrence, in press).

Also during this time, UAB staff expanded the public education and outreach agenda, which is not specifically mandated by its enabling policy, but which is interpreted as an important component of its mission. In 1991, the UAB opened a small museum at Fort Fisher, and since then has received over a half million visitors. “In addition, staff members give an average of 50 presentations a year to various school, civic, and professional groups,” and actively work with “local museums and historical societies so that artifacts conserved in the preservation lab can be displayed as near as possible to the site where they were recovered” (Lawrence, in press, p. 29). Staff archaeologist Mark Wilde-Ramsing undertook an initiative with the Cape Fear Museum to develop an underwater archaeology educational kit, which was used by 600 students per year in the decade since its debut in 1993. “Entitled *Hidden Beneath the Waves*, the self-contained outreach kit was designed for the eighth grade classroom and provided video presentations, historical research exercises, quiz games, and a mystery wreck to be identified by students” (Lawrence, in press, p. 30). An additional outreach project, the USS *Huron* Shipwreck Preserve, was created in 1991, and is described and evaluated in a later chapter as one of the selected alternatives.

The next phase of UAB history began in 1996 with the discovery of the shipwreck believed to be *Queen Anne’s Revenge*, the flagship of Blackbeard the pirate. A description of this project also occurs in chapter 7, since an interpretive program based on the wreck is also one of the selected alternatives. Though the UAB still conducts research and investigations on other North Carolina shipwrecks, as well as collaborative projects with ECU students and

faculty, the *Queen Anne's Revenge* Shipwreck Project has arguably become its primary concern, garnering great fanfare and public interest, as well as new facilities and staff. "By 2006, the state's Underwater Archaeology Branch (UAB) boasted a 10-person permanent staff located at three separate facilities in eastern North Carolina" (Lawrence, in press, p. 3).

In addition to the significant contributions made by ECU faculty and students, who have completed 37 theses related to North Carolina maritime history and underwater archaeology, "contract archaeology firms, especially Tidewater Atlantic Research and Mid-Atlantic Technology and Environmental Research, have conducted major remote sensing surveys in North Carolina, as well as site documentation and mitigation projects" (Lawrence, in press, p. 33). Other groups with NCDCR permits, such as Surface Interval Dive Company (SIDCO), rely on a volunteer membership working under the guidance of the UAB "to undertake a variety of survey, mapping, and recovery projects," during which artifact retrieval is minimized (Lawrence, in press, p. 34). As long as such groups and individuals remain interested in North Carolina history, as well as learning about proper archaeological investigation, "the UAB will continue to support and encourage avocational interest and participation in examining shipwrecks and other underwater archaeological sites" (Lawrence, in press, p. 34).

Out of the 55 known wrecks, only approximately 40 are visited consistently by recreational divers, according to local dive guides (L. Hermley, personal communication, February 18, 2009). This only includes wrecks in the Atlantic Ocean, since wrecks in North Carolina's sounds, rivers, and lakes present blackwater conditions, which are not favorable to recreational diving. Undoubtedly such wrecks have been visited by divers at some point, and a significant number of them recently by ECU researchers, but they are such infrequent

targets of recreational divers that the management task is not the same as for “blue water” wrecks.

Because most North Carolina wrecks are of a significant distance from shore, and on the edge of recreational diving depth limits, the most common means of visitation is through local dive shops. Though dive clubs do exist, they seem to be more devoted to networking and information sharing than making frequent and independent dives on North Carolina wrecks. As is the case for all open-water wrecks, except for those that are protected by law (like *Queen Anne’s Revenge)* or by physical conditions (like USS *Monitor,* at a depth of 235 feet), the behavior of individual divers is not easily supervised. As dive charter operators have become more cognizant of the need for responsible wreck diving, removal of artifacts is generally discouraged, even if an archaeological ethic is not actively encouraged (L. Hermley, personal communication, February 18, 2009). Though overall, “divers are a fairly well-behaved bunch” (L. Hermley, personal communication, February 18, 2009), incidences of artifact removal do still occur, as happened recently when someone (anonymously, but rather proudly) presented a waterlogged enigma machine from a German U-boat to the Graveyard of the Atlantic Museum (J. Schwarzer, personal communication, November 23, 2004). While isolated incidents by determined individuals are never going to be preventable in the open ocean, a more broadly-based and proactive message of stewardship is unquestionably overdue.

Coastal Tourism

Though tourists began visiting the North Carolina shore in the 19th century, mass tourism on a large scale began in the 1950’s, with the creation of Cape Hatteras National

Seashore and its accompanying policy of dune maintenance, the completion of Highway 12, and the construction of tourist facilities and tourism marketing. These events proved so seminal in the development of the Outer Banks that today tourism forms the foundation of the region's economy, in the absence of nearly all of the industries and sources of income that have existed there historically.

The Travel Industry Association's (TIA) Economic Impact Report (EIR) uses the Travel Economic Impact Model (TEIM) to calculate "the expenditures, employment, payroll, and tax revenue generated by travel away from home in the United States" (Travel Industry Association [TIA], 2008, p. 1). In this model, tourists to North Carolina include "both state residents and out-of-state visitors traveling away from home overnight in paid accommodations, or on day or overnight trips to places 50 miles or more away from home" (TIA, 2008, p. 1).

According to the EIR for 2007, North Carolina is one of the most frequently visited states in the U.S., ranking seventh after California, Florida, Texas, New York, Pennsylvania, and Ohio. In 2007, domestic travelers spent $16.5 billion across the state, representing a 7.2% increase over 2006. These expenditures directly supported 190,900 jobs for North Carolina residents, comprising 4.8 percent of total state non-agricultural employment. On average, every $86,049 spent by tourists during 2007 generated one job. Tourist spending contributed $4.02 billion to the state's payroll, and generated over $2.5 billion in tax receipts ($1.2 billion of which were federal taxes, $815 million were state, and $529 million were local) (TIA, 2008).

The top five North Carolina counties visited in 2007 were Mecklenburg (containing Charlotte), Wake (containing Raleigh), Guilford (containing Greensboro), Dare along the

northern Outer Banks, and Buncombe (containing Asheville). Tourist expenditures in Dare County totaled $763 million, creating $166 million in payroll income and 11,200 jobs (TIA, 2008). Table 1 lists expenditure figures for the eight counties of the Outer Banks, which are Currituck, Dare, Hyde, Carteret, Onslow, Pender, New Hanover, and Brunswick (shown in Figure 4).

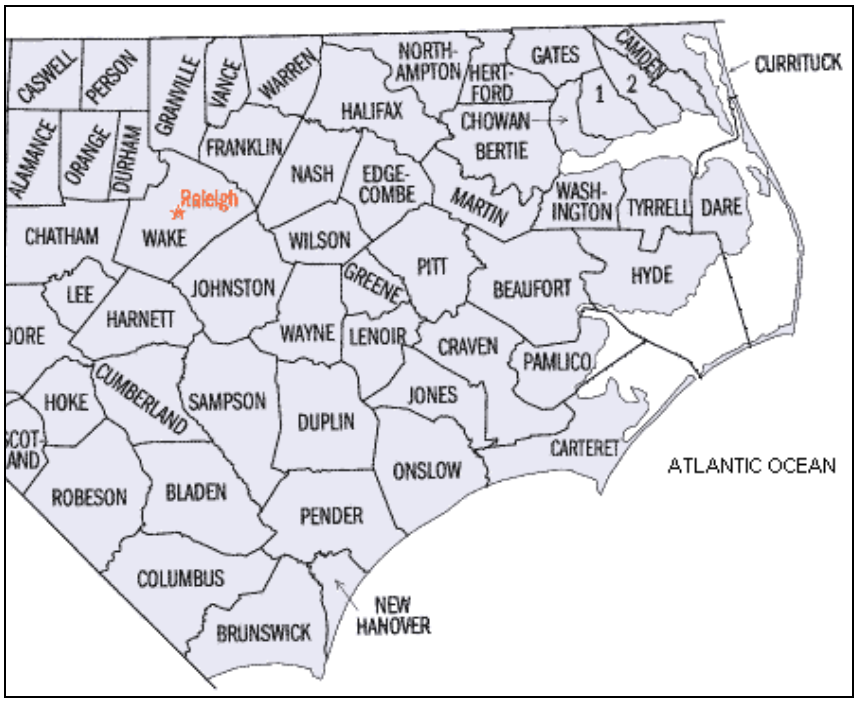

Figure 4. Coastal North Carolina counties are Currituck, Dare, Hyde, Carteret, Onslow, Pender, New Hanover, and Brunswick. Retrieved February 16, 2009, from: Census Finder Web site: http://www.censusfinder.com/mapnc.htm

Table 1. Ranking of coastal counties by expenditure levels, 2007. The data are from *The Economic Impact of Travel on North Carolina Counties, 2008*, by Travel Industry Association, July 2008, Washington, D.C.: Travel Industry Association.

County	Expenditures ($ Millions)	Payroll ($Millions)	Employment (Thousands)	State Tax Receipts ($ Millions)	Local Tax Receipts ($ Millions)
Dare	762.65	165.60	11.25	36.13	36.33
N. Hanover	426.08	99.17	5.67	20.36	16.69
Brunswick	392.19	77.69	4.97	17.99	25.48
Carteret	269.56	50.96	3.17	11.99	17.39
Onslow	159.51	31.43	1.56	8.01	5.81
Currituck	120.01	23.53	1.52	5.09	5.91
Pender	66.29	11.78	0.69	2.97	4.73
Hyde	27.29	5.50	0.37	1.27	1.53
Coastal Counties	2,223.58	465.66	29.20	103.81	113.87
State Totals	$16,510.74	$4,023.59	190.89	$814.98	$529.03

Tourists to the Outer Banks can experience a wide range of natural and cultural features and attractions, among them sandy beaches, dunes, and forests, an unusual array of flora and fauna, lighthouses and other historic features, theater, museums, and monuments. However, with precious few notable exceptions, only those intrepid visitors willing and able to explore beneath the waves are able to experience North Carolina shipwrecks, which are such a fundamental component of the maritime cultural landscape that is the Graveyard of the Atlantic. Augmenting this aspect of the tourist experience can be accomplished in a variety of interesting ways, for the mutual benefit of visitors, coastal communities, and the cultural resources themselves.

Chapter 4: Policy

Federal Regulations

Policy is a fundamental aspect of management of archaeological resources and heritage tourism development. Issues of resource protection and preservation, and of sustainable development based on these resources, are addressed at the state, federal, and international level. In the U.S., the primary pieces of legislation that address archaeological resources, including those that are submerged, are the National Historic Preservation Act of 1966 (NHPA), the National Marine Sanctuaries Act of 1972 (NMSA), the Archaeological Resources Protection Act of 1979 (ARPA), the Abandoned Shipwreck Act of 1987 (ASA), and the Sunken Military Craft Act of 2004 (SMCA).

The National Historic Preservation Act of 1966 is intended to preserve historical and archaeological sites, and forms the basis of America's historic preservation policy. The act created the National Register of Historic Places, the list of National Historic Landmarks, the State Historic Preservation Offices, and the Advisory Council on Historic Preservation (ACHP). Section 106 of the NHPA mandates a review process for all federally-funded projects that will impact sites listed on, or eligible for listing on, the National Register of Historic Places, to ensure that no historic or archaeological resources are damaged or destroyed during construction. The ACHP is mandated to “encourage federal agencies to factor historic preservation into federal project requirements,” to “serve as the primary federal policy advisor to the President and Congress,” recommending “administrative and legislative improvements for protecting our nation's heritage” (ACHP, 2008a, para. 3-4). On August 15, 2008, the ACHP adopted a policy statement on archaeology, heritage tourism,

and education, highlighting their common interests and goals, as well as the potential for mutual benefit. The policy offers principles and accompanying guidance in order to:

> …assist ACHP staff, federal agency decision-makers, and other parties when, in the effort to foster a greater appreciation and understanding of the American past, they are or will be making decisions about incorporating archaeology and archaeological resources into heritage tourism projects and programs as well as broader education initiatives. (ACHP, 2008b, p. 3).

The National Marine Sanctuaries Act of 1972 established the National Marine Sanctuaries Program (which became the Office of National Marine Sanctuaries [ONMS] in 2008), within NOAA, by authorizing "the Secretary of Commerce to designate and protect areas of the marine environment with special national significance due to their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or esthetic qualities as national marine sanctuaries" (NMS, 2008, About, Legislation). The NMSA provides the ONMS several tools for protecting these sanctuaries, including the authority to issue regulations that "specify the types of activities that can and cannot occur within the sanctuary," the mandate "to prepare and periodically update management plans that guide day-to-day activities at each sanctuary," the ability "to assess civil penalties for violations of the NMSA or its implementing regulations and damages against people that injure sanctuary resources," and the requirement that "federal agencies whose actions are likely to destroy, cause the loss of, or injure a sanctuary resource consult with the program before taking the action" (NMS, 2008, About Your Sanctuaries).

The Archaeological Resources Protection Act of 1979 mandates that three federal departments, including the Departments of the Interior, Agriculture, and Defense, as well as

the Tennessee Valley Authority, to “issue uniform regulations regarding treatment of archaeological resources on Federal and Indian lands, primarily in terms of permitting, ownership, and penalties” (Neumann & Sanford, 2001, p. 47). The regulations are intended chiefly to address terrestrial cultural resources, and require permitting of certain activities on protected lands, prohibit commerce of archaeological resources, and specify penalties for violations.

The Abandoned Shipwreck Act of 1987 is currently the most far-reaching legislation for the protection of submerged cultural resources, relatively speaking. This is not to say that in absolute terms, the ASA is a particularly effective tool for shipwreck protection. The ASA was enacted with the objective of empowering states to protect the shipwrecks in their waters from indiscriminate salvage and destruction. In this way, this singular piece of legislation was intended to contradict the application of centuries-old admiralty law to historic resources, a lofty goal indeed. The ASA grants title to all shipwrecks within three nautical miles of the coast to the federal government, which delegates title of the wrecks to the respective states. States may grant search permits to private individuals and public institutions, but if found, title to the wreck remains with the state. The ASA specifies three categories of cultural resources which fall under this jurisdiction: those embedded in state bottomlands, those embedded in coralline formations on state bottomlands, and those which could be listed on the National Register of Historic Places. The ASA left at least one major loophole, failing to adequately define “abandoned,” which has been challenged successfully in court.

The ASA does not contain explicit points for implementation, but rather directs the National Park Service “to prepare guidelines to assist states and federal agencies in

developing legislation and regulations … to effectively manage shipwrecks in waters under their ownership or control" (NPS, 1990, para. 3). The guidelines are intended to serve numerous purposes:

> …to maximize the enhancement of cultural resources; foster a partnership among sport divers, fishermen, archeologists, salvors, and other interests to manage shipwreck resources of the States and the United States; facilitate access and utilization by recreational interests; and recognize the interests of individuals and groups engaged in shipwreck discovery and salvage. (NPS, 1990, para. 3)

The guidelines incorporate, to the extent permissible by law, "many of the comments and suggestions provided by the public, States, Federal agencies, and various interest groups during the course of their development" (NPS, 1990, para. 5). The voices of this chorus of stakeholders can be heard in the following components that a shipwreck management program should include:

> (a) Locate and identify shipwrecks;
>
> (b) Determine which shipwrecks are abandoned and meet the criteria for assuming title under the Abandoned Shipwreck Act;
>
> (c) Determine which shipwrecks are historic;
>
> (d) Identify recreational and other values that a shipwreck may possess and the shipwreck's current and potential uses;
>
> (e) Provide for the long-term protection of historic shipwrecks;
>
> (f) Protect the rights of owners of non-abandoned shipwrecks;

(g) Consult and maintain a cooperative relationship with the various shipwreck interest groups;

(h) Cooperate with State and Federal agencies and sovereign nations having an interest in shipwreck management;

(i) Provide sport divers with reasonable access to explore shipwrecks;

(j) Provide for public appreciation, understanding, and enjoyment of shipwrecks and maritime history;

(k) Conduct archeological research on shipwrecks where research will yield information important to understanding the past;

(l) Provide for private sector participation in shipwreck research projects; and

(m) Provide for commercial salvage and other private sector recovery of shipwrecks when such activities are in the public interest. (NPS, 1990, para. 6)

Though these basic components provide a framework for shipwreck management, "the level of activity under each component (and the specific methods used to accomplish each component) will vary from State to State and from Federal agency to Federal agency," based on such factors as "the number and nature of shipwrecks under the State or Federal agency's ownership or control, the type and amount of current and potential future uses (like recreational, commercial, and scholarly uses), the type and amount of current and potential future impacts, the availability of monetary and staffing resources, and the applicability of other related statutes and regulations" (NPS, 1990, para. 7).

The Sunken Military Craft Act of 2004 exerts the "right, title, and interest of the United States in and to any United States sunken military craft," a right which "(1) shall not be extinguished except by an express divestiture of title by the United States; and (2) shall

not be extinguished by the passage of time, regardless of when the sunken military craft sank" (SMCA, 2004, Sec. 1401). Like ARPA, SMCA provides a permitting process for authorized activities, and imposes penalties for violation. The Act also encourages negotiation of "agreements with foreign countries with regard to sunken military craft consistent with this title" (SMCA, 2004, Sec. 1407).

North Carolina Regulations

The NHPA, ARPA, and ASA each have direct counterparts as North Carolina General Statutes (NCGS). These are the North Carolina Archaeological Resources Protection Act (1981), the North Carolina Archives and History Act (1973), whose general provisions regulate Protection of Properties in the National Register, and properties listed in the North Carolina Register of Historic Places, as well as the Salvage of Abandoned Shipwrecks and Other Underwater Archaeological Sites (1967). Cultural Resources are also addressed in Title 07 of the North Carolina Administrative Code (NCAC), in which Chapter 04 addresses Archives and History. The state agency charged with management of submerged cultural resources is the Underwater Archaeology Branch (UAB) of the Office of State Archaeology (OSA), in the Division of Archives and History (NCDAH), within the Department of Cultural Resources (NCDCR).

As an example, the *Queen Anne's Revenge* Management Plan illustrates the levels of legal protection accorded to North Carolina's historic shipwrecks. The plan states:

> The North Carolina state historic preservation officer has determined that site 31CR314, which represents the remains of *Queen Anne's Revenge*, is historically significant on a local, state, and national level and is therefore

eligible for listing in the National Register of Historic Places. On March 3, 1997, DCR Secretary Betty Ray McCain designated the *Queen Anne's Revenge* site a protected area. That designation applies to the shipwreck and the surrounding sea floor within 300 yards of the site. North Carolina General Statute 121-23 grants the department title to and management authority for lost and abandoned vessels in state waters. Furthermore, DCR has the authority to designate as protected areas certain abandoned shipwrecks and underwater artifacts of primary scientific, archaeological, or historical value as set forth in North Carolina Administrative Code T07 04R.1009. The designation also calls for the development of a management plan to guide all access, recovery, and conservation of *Queen Anne's Revenge* and dictates that all artifacts shall be kept as an intact collection in an appropriate repository. The protected area, marked by a white buoy, lies 1.2 nautical miles off Fort Macon and is to be avoided by all vessels. Surveillance equipment consisting of land-based radar, infrared video cameras, and human observers constantly monitors the site. Unauthorized diving or anchoring in that area is strictly prohibited by law, and violators are subject to arrest by the Carteret County Sheriff's Department. Vessels or dive gear may be confiscated upon arrest, and criminal and civil penalties may be assessed in accordance with the Archaeological Resources Protection Act (NCGS 70-15,16,17). (Wilde-Ramsing and Lusardi, 1999, Description of the Protected Area)

International Policy

Numerous international organizations and partnerships address the need for preservation of cultural heritage. The United Nations adopted its Convention on the Law of the Sea (UNCLOS) in 1982, which came into force in 1994 after the 60th nation had signed the treaty. As of 2009, 157 countries have ratified the Convention. Though the U.S. has not ratified the treaty, it does accept and follow most of its provisions. These provisions include regulations on sovereignty at sea, nations' exclusive economic zones, protection of the marine environment, and deep seabed mining. Two articles in particular provide for the protection of underwater cultural heritage. Article 149 states that regarding "archaeological and historical objects:"

> All objects of an archaeological and historical nature found in the Area shall be preserved or disposed of for the benefit of mankind as a whole, particular regard being paid to the preferential rights of the State or country of origin, or the State of cultural origin, or the State of historical and archaeological origin. (UNCLOS, 1982)

Article 303 states that regarding "archaeological and historical objects found at sea:"

> 1. States have the duty to protect objects of an archaeological and historical nature found at sea and shall cooperate for this purpose.
>
> 2. In order to control traffic in such objects, the coastal State may, in applying article 33, presume that their removal from the seabed in the zone referred to in that article without its approval would result in an infringement within its territory or territorial sea of the laws and regulations referred to in that article.

> 3. Nothing in this article affects the rights of identifiable owners, the law of salvage or other rules of admiralty, or laws and practices with respect to cultural exchanges.
>
> 4. This article is without prejudice to other international agreements and rules of international law regarding the protection of objects of an archaeological and historical nature. (UNCLOS, 1982)

Though the UN does not have a direct role in the implementation of the Convention, it does enable such organizations as the International Seabed Authority to enforce its provisions.

UNESCO, in addition to maintaining the World Heritage List, adopted the Convention on the Protection of the Underwater Cultural Heritage in 2001, which entered into force on January 2, 2009. In conjunction with UNCLOS, its intent is to protect underwater cultural heritage "through a specific protection and cooperation framework among its States Parties" (UNESCO, 2007, p. 10). The first meeting of these parties to the Convention occurred in March 2009. It included an exhibition and an information kit, which UNESCO hopes "will serve to raise public awareness of the existence of fragile underwater heritage and of the urgent need to ensure its protection" (UNESCO, 2007, p. 3). By joining the Convention, parties agree to:

- Prevent the commercial exploitation and dispersion of underwater cultural heritage;
- Guarantee that it will be preserved for the future and *in situ;*
- Help the tourism industry concerned;
- Enable capacity building and the exchange of knowledge; and,
- Enable effective international cooperation. (UNESCO, 2007, p. 11)

An advisory body for UNESCO, ICOMOS is dedicated solely to the conservation and protection of cultural heritage places. The Council consists of an interdisciplinary network of experts including architects, historians, archaeologists, art historians, geographers, anthropologists, engineers and town planners. ICOMOS has produced several charters pertinent to this discussion.

The ICOMOS Charter for the Protection and Management of the Archaeological Heritage (1990) contends that protection and proper management of archaeological heritage is “essential to enable archaeologists and other scholars to study and interpret it on behalf of and for the benefit of present and future generations,” and that this protection “must be based upon effective collaboration between professionals from many disciplines,” as well as “the co-operation of government authorities, academic researchers, private or public enterprise, and the general public” (ICOMOS, 1990, paras. 2, 4).

The ICOMOS Charter on the Protection and Management of Underwater Cultural Heritage (1996) is based on the premises that “underwater cultural heritage contributes to the formation of identity and can be important to people's sense of community,” and that “if managed sensitively, underwater cultural heritage can play a positive role in the promotion of recreation and tourism” (ICOMOS, 1996, para. 4). The Charter is intended to raise awareness that “many marine activities, which are themselves beneficial and desirable, can have unfortunate consequences for underwater cultural heritage if their effects are not foreseen,” and also that “commercial exploitation of underwater cultural heritage for trade or speculation is fundamentally incompatible with the protection and management of the heritage” (ICOMOS, 1996, para. 6, 9).

The International Cultural Tourism Charter (ICOMOS, 1999) is based on the premise that "tourism can capture the economic characteristics of the heritage and harness these for conservation by generating funding, educating the community and influencing policy. It is an essential part of many national and regional economies and can be an important factor in development, when managed successfully" (ICOMOS, 1999, para. 5).

The Charter for the Interpretation and Presentation of Cultural Heritage Sites (2008) contends that the interpretation and presentation of cultural heritage sites are "essential components of heritage conservation efforts and…a means of enhancing public appreciation and understanding" of those sites (ICOMOS, 2008, Preamble). This Charter also establishes seven principles upon which interpretation and presentation should be based: 1) Access and Understanding; 2) Information Sources; 3) Attention to Setting and Context; 4) Preservation of Authenticity; 5) Planning for Sustainability; 6) Concern for Inclusiveness; 7) Importance of Research, Training, and Evaluation (ICOMOS, 2008). Though naturally, the application of these principles should be considered on a case-by-case basis for individual cultural heritage sites, they are intended to provide "clear rationale, standardized terminology, and accepted professional principles" for managers worldwide (ICOMOS, 2008, Preamble).

As previously mentioned, the Global Partnership for Sustainable Tourism Criteria (GSTC Partnership), which is composed of the United Nations Foundation, WTO, UNEP and the Rainforest Alliance, published the criteria in 2008 with the purpose to "protect and sustain the world's natural and cultural resources while ensuring tourism meets its potential as a tool for poverty alleviation" (GSTC Partnership, 2008, Preamble, para. 2). Though the criteria are not regulatory, they serve to set "the minimum standard that any tourism business should aspire to reach," and represent a global commitment "to protect and sustain the

world's natural and cultural resources while ensuring tourism meets its potential as a tool for poverty alleviation" (GSTC Partnership, 2008, Preamble, para. 2).

The Policy Process

The importance of political theory is its potential to explain the influential factors and driving forces behind the direction and content of public policies. Political scientists have developed numerous models to explain the policy-making process, as well as the resulting policies. These theories include elitism, pluralism (or group theory), systems theory, and the policy life cycle theory. Each model provides a different perspective on the factors that influence governmental decision making, and there is merit in each theory, though some potentially have more explanatory power than others.

Elite theory is perhaps the most self-explanatory. This model emphasizes the importance of the values and preferences of a small, unrepresentative group of elites in shaping public policy development. The values and preferences of the general public are therefore less influential. Elite status may derive from economic, cultural, intellectual, or other factors, but the uniting characteristic is that policy development is driven by leaders. One often unfortunate consequence of this type of policy-making is symbolic politics. In this process, policies are formulated that "appear to meet public needs but actually serve the material needs of a narrow elite," making the public benefits largely symbolic (Kraft & Furlong 2004, p. 71).

Pluralism, or group theory, posits that many sources of power exist in society, offsetting the balance of power in any one particular group. Theoretically, no one group dominates the policy process. Organized interest groups comprise the dominant players in

this model though, which means that groups with greater resources, including financial assets, recognition, access, and prestige, probably exert greater influence than others. As is the case in elite theory, groups such as the poor and homeless lack influence and representation because they lack organizational and political resources.

In political systems theory, the "systems" are the institutions and activities of government. This model addresses the manner in which the political system responds to demands arising from its environment. Demands can come from such sources as public opinion or interest group pressures. This model can be conceptualized as a sausage machine, receiving the inputs of demands and support, and producing the outputs of decisions, laws, and policies. These outputs may create changes in the situations which prompted the initial demands, in the form of policy outcomes. Feedback to these outcomes can, in turn, create new demands or support. This theory is efficient and compact, but not usually so neat in real world application.

The policy life cycle model is championed by many political scientists as the most useful for several reasons. It is a rational decision-making model that emphasizes the cyclical nature of the policymaking process. The steps in the cycle are agenda setting, policy formulation, policy legitimation, implementation, program evaluation, and policy change. Naturally, the process is not always this orderly in its application, with steps sometimes overlapping or being skipped. In this way, the model tends to be more descriptive than predictive, though it nonetheless successfully "captures important aspects of policymaking that correspond to political reality" (Kraft & Furlong 2004, p. 78).

The life cycle model is the most useful and persuasive of the four outlined here. It has more explanatory power than the others, and takes into consideration a much wider variety of

factors that are influential in the policy-making process. In fact, the life cycle model incorporates the most valuable elements of the other models, and builds upon them. It reflects the cyclical nature of the policy process, and allows flexibility of explanation that corresponds to the irregularity of political reality.

The concept of agenda setting addresses "how problems are perceived and defined, command attention, and get onto the political agenda," and may be the most critical step in the process, as well as the most susceptible to personal and institutional bias (Kraft & Furlong, 2004, p. 78). Policy formulation encompasses "the design and drafting of policy goals and strategies for achieving them, [and] often involves the use of policy analysis" (Kraft & Furlong, 2004, p. 78). This step is dependent on adequate and accurate information about the issue at hand, as well as careful consideration of available alternatives. Policy legitimation entails "the mobilization of political support and formal enactment of policies, [and] includes justification or rationales for the policy action" (Kraft & Furlong, 2004, p. 78). Legitimation can and should occur at several levels, including whether "the action is consistent with the Constitution or existing law; it is compatible with U.S. political culture and values; and it has demonstrable popular support" (Kraft & Furlong, 2004, p. 87). Policy implementation involves the "provision of institutional resources for putting the programs into effect within a bureaucracy" (Kraft & Furlong, 2004, p. 78). This phase is a crucial step in the policy process, and is by no means guaranteed simply by legitimation. For example, a law may be passed by Congress, but if the issue is not important on the executive agenda, accompanying resources may be cut out of the budget, effectively preventing implementation.

Policy and program evaluation requires the "measurement and assessment of policy and program effects, including success or failure" (Kraft & Furlong, 2004, p. 78). This step is the subject of this dissertation, which attempts to evaluate the degree to which selected programs achieve their desired goals, and measure the success of their outcomes. Policy change is the "modification of policy goals and means in light of new information or shifting political environment," and is commonly based on the findings of a policy evaluation (Kraft & Furlong, 2004, p. 78). Since formal program evaluation has not previously been conducted for the selected programs, policy change is not a significant component in most of the current cases.

The political life cycle model is valuable in this analysis as a guide to managers and policy makers to improve the effectiveness and efficiency of program implementation. For example, some programs were such a high priority on the social agenda that their implementation spurred policy change, while others may have stumbled at the policy formulation or legitimation phases, causing them failure or setback at the implementation phase.

The policy life cycle model can be applied effectively to cultural resource issues. Take as an example a notable challenge to the Abandoned Shipwreck Act. In 1998, the 19th-century steamship *Brother Jonathan*, which was documented to have been carrying a sizable cargo of gold, was discovered by salvage company Deep Sea Research, Inc. (DSR) in California state waters. DSR sued the State of California for title to the wreck, and the State pled sovereign immunity from lawsuit under the 11th Amendment. The case ultimately went to the Supreme Court, which surprisingly ruled that the State could not use its 11th Amendment protection in such instances. The case was returned to District Court, where title

to the wreck and its historic artifacts (excluding gold) were confirmed to the State. DSR was granted ownership of part of the gold as a finder's fee, an antiquated practice held over from the tradition of admiralty law. The decision of the Supreme Court significantly weakened the ASA, and set a dangerous precedent for other salvors to sue states in the future, though the ultimate decision regarding title to discovered wrecks still remains at the discretion of individual states. Ultimately, the Supreme Court and the California Ninth Circuit Court ruled that the State of California failed to prove that the wreck was abandoned (California v. Deep Sea Research, 1998). Since then, no action has been taken to amend the Act to include a proper definition of "abandoned," and until this happens the ASA remains open for interpretation by state-level authorities, who will be forced to make decisions on a case-by-case basis.

Though the ASA reached the implementation phase, problems and inconsistencies remain in the phases of agenda setting, policy formulation, and policy legitimation. The Act is incomplete at the formulation level, in its failure to define its own primary term. This deficiency permits the preservation agenda to be challenged continually by the "finders keepers" agenda, an artifact from antiquated common and admiralty law, composed of the Law of Finds and the Law of Salvage, respectively. Though the ASA states that these laws are not applicable to abandoned shipwrecks, the connection is perpetuated by decisions such as these, which creates an additional weak point at the legitimation phase.

This finders keepers agenda is, in fact, a fundamental issue in submerged cultural resources management. Though it is based on an antiquated concept, and has become commonly accepted as such in the realm of terrestrial archaeology, the agenda continues to be perpetuated by the mass media (Vergano, 2009), "the primary medium through which

most Americans have learned and prefer to learn about archaeology", according to a study conducted for the Society for American Archaeology (SAA) (Ramos & Duganne, 2000, p. 31). In *The Environmental Case*, Layzer draws a distinction between environmentalists and "cornucopians" (2006). She describes environmentalists as concerned with the judicious use of natural resources, sustainable growth, and ensuring resource availability for future generations. Cornucopians, on the other hand, tend to view natural resources as abundant and limitless. They place a preeminent value on economic growth, and view natural resources as assets to be utilized. This categorization can be extended to include cultural resources, with the goals of archaeologists and "treasure hunters" frequently at odds, based on their opposing agendas. Unfortunately, "the average American learns more about archaeology from these 'treasure hunter' shows than they do from archaeologists. Why is that? And how can we change that?" (Lerner & Hoffman, 2000, p. 231).

Perhaps the most effective force for the protection of submerged maritime heritage is not legal at all, and represents a different approach than the command-and-control strategy of regulation. The effectiveness of legislation is limited by the difficulty of "detecting breaches, apprehending offenders and producing adequate evidence to secure a conviction," as well as the financial constraints of maintaining enforcement administration (Nutley, 1987, p. 29). Legislation, albeit necessary, does not address the root of the problem. The alternative strategy is public outreach and education, attempting to impart the need for preservation of our shared global maritime heritage, and shift the fundamental public and political agenda to one of stewardship. This strategy has become widely recognized in recent years as a way to attack the root of the problem, by teaching the general public why submerged cultural resources are important, and that the responsibility for their preservation, and the information

they contain, belongs to everyone. This movement has been growing at the grass-roots level and at the federal level, with the ONMS making it one of their main priorities, as well as numerous state agencies and non-profit organizations incorporating it into their missions. The ACHP policy statement on archaeology, heritage tourism, and education shows the broad understanding that a "major goal of visitation and education is to create informed advocates and stewards for such resources and their preservation" (ACHP, 2008b, p. 2), and the SAA survey found that most Americans "support the goals and practice of archaeology, endorse laws protecting archaeological sites and artifacts, and think archaeology is important to today's society" (Ramos & Duganne, 2000).

However, while this may be true for terrestrial archaeological resources, there continues to be a disjuncture where submerged resources are concerned, as illustrated by the fact that the same proportion of Americans think archaeologists study dinosaurs versus shipwrecks (Ramos & Duganne, 2000). While those who procure artifacts for monetary gain from terrestrial sites are commonly reviled as "looters," those who engage in the same activity underwater are glorified as "treasure hunters" (Vergano, 2009). In order to bridge this gap, a broadly based public outreach and education effort should be "aimed at all segments of society. It needs to be provocative and challenging in its aim. It needs to break down current negative attitudes or at least attitudes of indifference towards our underwater cultural heritage" (Nutley, 1987, p. 30).

Chapter 5: Methods

The problem can be defined as a dearth of interpretive and protective means for shipwrecks in North Carolina, a trend which belies the state's rich maritime history and cultural resources. This deficiency is highlighted by the abundance of interpretive and protective measures implemented in some other states. A selection of these programs, in addition to a number of programs that have been implemented in North Carolina, comprise the alternative courses of action that are evaluated in this study. Evidence is assembled from these existing programs and used to evaluate the outcomes. Tradeoffs are inherent in this evaluation, and are a prime consideration when making decisions about the ultimate recommendations of the project.

The framework of the study is based on the following three research questions:

1. What types of interpretive and protective programs have been implemented? How successful are their outcomes? Are they sustainable? Would they be feasible in North Carolina or elsewhere?
2. Which alternatives would be recommended for North Carolina? How can they be implemented to maximize success?
3. How can North Carolina benefit from this development?

The main criteria used for the selection of comparative programs are the target audience and method of interpretation, to ensure that the body of recommendations addresses as diverse an audience as possible, including divers and non-divers, adults and children, historians and non-specialists, and physical as well as virtual tourists. Preliminary research led to an initial list of programs, and further research led to the selection of a representative sample of these programs, based on their target audience and method of interpretation.

Additional factors that influenced final program selection were the amount of publicly available information for each program, as well as the responsiveness of program managers to requests for information. Programs from the West Coast and the western Gulf of Mexico were not included on the initial list, due partially due to the author's lack of contacts in those regions, and partially to the scarcity of programs there. The programs chosen for analysis are categorized as follows:

Chapter 6: Preserves and Trails:

1. USS *Huron* Historic Shipwreck Preserve (North Carolina)
2. Ashley River Paddling Trail and Cooper River Underwater Heritage Trail (South Carolina)
3. Underwater Archaeological Preserves (Florida)
4. Wisconsin's Maritime Trails (Wisconsin)

Chapter 7: Educational Programs:

5. Student Archaeology Workshop (North Carolina)
6. *Queen Anne's Revenge* Dive Down (North Carolina)
7. Shoreline Heritage Identification Partnerships Strategy (SHIPS) (Massachusetts)

Chapter 8: Unique Program:

8. Hobby Diver License Program (South Carolina)

Chapter 9: Institutionalized Programs:

9. Graveyard of the Atlantic Museum (North Carolina)
10. Thunder Bay National Marine Sanctuary (Michigan)

The evidence assembled consists of all available data for the selected alternatives. This data includes descriptive information (Table 2), as well as both quantitative and

qualitative indices. The quantitative measures involve the most straightforward data collection, and those listed in Table 3 in italics yielded the most productive information for derivation of general trends. Data collection involved gleaning information from published articles, chapters, reports, and websites on the selected programs. These sources contained most of the descriptive information, and in some cases, most of the quantitative data as well. The remaining quantitative data, as well as the bulk of qualitative information, were collected via interviews and email correspondences with program managers and creators. An abundance of quantitative data is not available for most programs, rendering statistical analysis futile, and necessitating reliance on qualitative measures for evaluation.

Table 2. Descriptive program information.

Location	Method of interpretation
Contact professionals	Stated goals
Date of creation	Cost of access
Resources interpreted	Implemented by whom
Accessible to whom	Enabling policy

Table 3. Quantitative measures for program evaluation.

Start-up costs	Length of existence
Maintenance costs	Number of exhibits
Development time	Investment
Number of staff	Growth and expansion
Visitor statistics	Revenue figures

Note: Measures in italics are most productive for derivation of general trends.

Because quantitative data is scarce, evaluation of a program's success relies heavily on qualitative factors. Scott-Ireton (2007) defines a successful program in terms of 1) community involvement, 2) effective interpretation, and 3) active management. Evaluation must also consider the impact on the cultural resources associated with each program's

implementation, as well as the tradeoffs and sustainability of each program. Information on these factors is derived from a standardized survey conducted via email. An initial questionnaire served to fill any gaps in the descriptive and quantitative data not found through research, and follow-up correspondence enabled program managers and initiators to relate the story of how their respective program began, and of how it continues to be implemented, focusing on the program's degree of community involvement, effective interpretation, and active management.

Ultimately, final analysis and recommendations are based on what Bardach classifies as best practices research, though he prefers the term "smart practices" (2000, p. 71). Because of the comparative nature of such a study, an additional step is necessary: for non-North Carolina programs, their outcomes are also assessed for their potential applicability to North Carolina, based on its shipwrecks, physical environmental conditions, political climate and initiative, and other relevant factors. The scope of this project does not include a formal feasibility study for each program's application in North Carolina, but instead whether each program merits consideration in North Carolina, based on their respective degrees of success, and a suite of conditions in North Carolina. Conversely, North Carolina programs are also assessed for their extendibility. If they have successful outcomes, do they merit consideration elsewhere as a means of shipwreck preservation and public education? Even when actions may not be directly applicable because of environmental or other factors, there may still be important lessons to be learned from the process of their development.

Results are structured in the form of a case narrative for each program, using the descriptive, quantitative, and qualitative data, as well as additional information obtained

through personal communication with program managers, to “tell their stories.” Each program narrative will follow this template:

1. Background and Implementation
2. Evaluation
    a. Community Involvement
    b. Effective Interpretation
    c. Active Management
    d. Impact on Resources
    e. Tradeoffs
    f. Sustainability
3. Feasibility in North Carolina (or Elsewhere).

The three ingredients of community involvement, effective interpretation, and active management are critical elements that drive a program’s design and implementation, as well as constitute its ultimate success as an educational and protective tool. Scott-Ireton defines success using these measures to mean “that the resource is visited consistently by the public who are educated as well as entertained, and that the resource is maintained in a manner consistent with sustainable use (both public and scientific) and long-term preservation” (2007, p. 21). These “three ingredients are most successful when applied cooperatively so that each compliments the other to create a program that balances public use with resource protection” (Scott-Ireton, 2007, p. 21).

Scott-Ireton describes community support as a force which managers should actively promote, and which can serve to foster a sense of protective stewardship over the resources involved. On the other hand:

> Where planning and development do not take into account the needs and desires of the community, hostility and resistance are liable to occur. This kind of opposition can raise costs associated with development and can destroy the potential for cultivating the industry altogether. (Scott-Ireton, 2007, p. 22)

Interpretation can be directed at terrestrial and submerged audiences, and can consist of materials ranging from on-site signage to printed media to Web sites. Scott-Ireton states that "all interpretive media have the same goal: to impart accurate information about the resource in an entertaining manner" (2007, p. 23). Gauging the effectiveness of interpretation is not easily accomplished, primarily because most programs and sites do not have a method for tracking visitation or collecting visitor feedback. Martin-Ruiz et al. have successfully pioneered the application of a visitors' evaluation index (VEI) to a terrestrial archaeological site, which involved the use of personal interviews and questionnaires to evaluate visitor satisfaction (Martín-Ruiz, Castallanos-Verdugo, & de los Ángeles Oviedo-García, 2009). The logistics of applying this model to submerged sites, however, is complicated by the fact that visitation is exceedingly difficult to monitor.

Active management denotes protection of the resource or site. As previously discussed in the policy chapter, "legislation only goes so far to protect submerged cultural resources; communities need to be encouraged to take responsibility for their heritage resources" (Scott-Ireton, 2007, pp. 23-24). Active management of heritage attractions "is as much about managing the people who visit them as it is about the sites themselves" (Scott-Ireton, 2007, p. 24). In this way, effective interpretation "explaining the resource's economic,

historical, and social values" helps instill in visitors and the community the necessity of resource preservation (Scott-Ireton, 2007, p. 24).

Evaluating each selected program based on these measures is inherently qualitative. Assessment of the level of community involvement, the effectiveness of interpretation, and the activeness of management is based on the information derived from published sources as well as communication with managers. Evaluation is comparative, though all programs are not directly comparable. For example, it would be inappropriate to state that the shipwrecks of a trail are interpreted less effectively than those of an institutionalized governmental program, but it would be a valid observation that certain interpretive methods of the governmental program could be adapted to better interpret the shipwrecks of the trail. By extension, the conclusion would be that interpretation along the trail is not as effective as it could be, but this judgment would be based on the feasibility of adapting the recommended smart practice to the individual program.

Bardach also emphasizes the necessity of evaluating outcomes rather than alternatives, since there may not always be a one-to-one correlation, and alternatives may not always have the anticipated outcome (2000). The three qualitative measures can also be considered desired outcomes. In his guide to using qualitative methods for program evaluation, Patton emphasizes the importance of weighting a program's goals and objectives more heavily than an evaluator's external standards (1987). However, community involvement, effective interpretation, and active management are generally the ideal end goals for all programs designed to protect and interpret shipwrecks. In this way, program components can be evaluated using their intended outcomes.

As Patton states, evaluation of a program's success must also be based on accomplishment of its stated goals. For example, a place-based program intended primarily to protect shipwrecks must be evaluated more critically using the active management criterion than using the effective interpretation criterion. Conversely, a program designed to present information in the absence of tangible resources (non-place-based) must be judged more strongly on its effective interpretation rather than active management. Because the selected programs represent a wide range of geographic locations, environmental conditions, and institutional frameworks, their direct comparison is difficult. Evaluation of each program takes this suite of factors into consideration, as well as each program's goals and intent. For example, a program pioneered by two volunteers and implemented using donated resources cannot be judged using the same standards as an institutionalized government program with numerous full-time employees, but may nonetheless possess noteworthy and successful components.

Hall and McArthur state that "success or otherwise of heritage management is only conjecture unless a formal evaluation occurs" (1998, p. 36), and that general goals and specific objectives are not synonymous. The majority of programs evaluated here have not had formal evaluations conducted, nor do they have measurable objectives which can be evaluated easily. The reasons for this are numerous, and a blanket statement cannot be made that all shipwreck programs would be well-served by the creation of a strategic plan involving objectives and performance measures. In many cases, managers do not have the financial or staffing resources available which would be required in the time-consuming process of creating a management plan. In other cases, managers may not fully realize the potential benefits of a plan and accompanying evaluation. Among these benefits is the ability

to produce a document that could help justify a program's continued existence and need for funding. Conversely however, a negative evaluation, or a program's failure to meet its performance measures, could have the opposite effect. In this way, formal program evaluation is a double-edged sword that may not be recommendable to all 10 programs analyzed here.

Analysis consists of comparison of the results, confronting the tradeoffs of each program, and observation of general trends and policy implications when relevant. Each evaluation must be considered in the context of each program's unique set of circumstances and conditions. Though the numerous differences between programs render direct comparison difficult, the "smart practices" of each program can be distilled and incorporated into the final recommendations. These recommendations, therefore, present options that may be effective and feasible for interpreting and protecting North Carolina's shipwrecks.

Chapter 6: Preserves and Trails

USS Huron *Historic Shipwreck Preserve (NC)*

Background and Implementation

During its time of construction and use, USS *Huron* was unremarkable. The U.S. Navy had been the world's strongest naval power at the end of the Civil War, after which began a period of decline, culminating in 1873 when, with 48 obsolete vessels, the U.S. ranked twelfth as a world naval power. At this time, *Huron* and two sister ships were constructed as third-rate gunboats, representing "transitional vessels between the old navy of the Civil War and the modern steel navy that began with the construction of protected steel cruisers in 1882" (Lawrence, 2003, p. 61). Being transitional, these three vessels were "the last U.S. Navy ships to be built of iron rather than steel and the last to have masts and sails to supplement their steam engines," and were "outfitted with a combination of antiquated and modern equipment" (Lawrence, 2003, p. 61).

Huron's two-year stint was similarly unexceptional, serving in the Atlantic to protect American interests during the Mexican Revolution, and surveying the northern coast of South America. The vessel's demise in 1877, however, was so disastrous that it garnered national attention and drew comparisons to the loss of Custer's army, which had occurred one year earlier (Lawrence, 2003). On November 24 of that year, headed south from Hampton Roads, Virginia, *Huron* encountered heavy seas and gale force winds, and ran hard aground at Nags Head. At this time, U.S. Life-Saving Stations were only open four months a year, beginning December 1, and as a result, 97 of *Huron's* 134 officers and crew perished. When the steamship *Metropolis* wrecked two months later, 23 miles to the north, with 85

casualties, the combination of "those two disasters prompted Congress to appropriate funding to build additional lifesaving stations along the North Carolina coast and to increase their months of operation (Lawrence, 2003, p. 61).

The wreck of *Huron* is 230 meters from the beach at Nags Head, and over 26 kilometers (16 miles) away from the nearest inlet, resulting in better site visibility than if murky estuarine waters flowed nearby, and the bow of the vessel is less than three meters below the surface of the water (Figure 5). Because of these factors, the site is easily reached by swimming from shore, and has been commonly visited by divers and snorkelers since the 1970's.

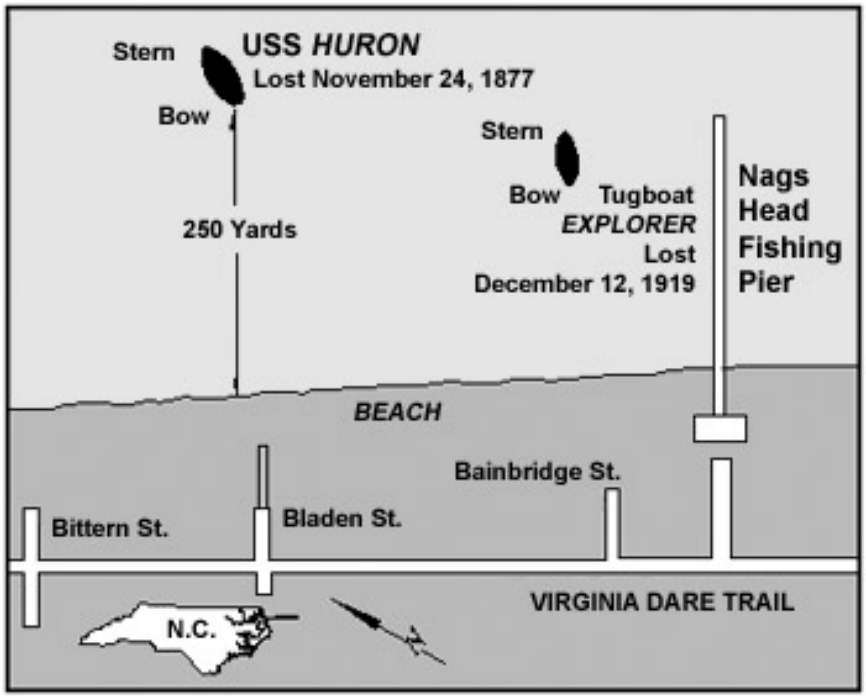

Figure 5. Location of USS *Huron* Historic Shipwreck Preserve. Retrieved April 14, 2009, from UAB Web site: http://www.archaeology.ncdcr.gov/ncarch/underwater/huron.htm

In 1987, Nags Head police officer and director of Nags Head Ocean Rescue Sandy Sanderson, and lifeguard and ECU Maritime Studies student Joe Friday, with a team of volunteer divers, conducted an archaeological survey of the wreck under NCDCR permit,

producing an accurate site plan and collecting a number of artifacts. Concurrently, Congress passed the Abandoned Shipwreck Act, which in part recognized that "shipwrecks offer recreational and educational opportunities to sport divers and other interested groups," and recommended that states "create underwater parks or areas to provide additional protection for such resources" (ASA, 1987, Section 4). In 1989, the UAB (then UAU) began exploring the possibility of creating the state's first historic shipwreck preserve based on *Huron,* and in 1991, Friday and State Underwater Archaeologist Richard Lawrence successfully nominated the wreck to the National Register of Historic Places.

The UAB determined that the wreck would be an excellent candidate for a preserve, based on the following criteria:

- The shipwreck was already a popular dive site
- The vessel had an interesting and significant history
- The town of Nags Head was interested in the project and willing to provide material assistance and site monitoring
- The site had undergone extensive historical and archaeological documentation. (Lawrence, 2003, p. 65)

However, three concerns immediately became apparent: North Carolina did not have an existing mechanism for designating shipwreck preserves, the state could assume liability by creating such a preserve, and the U.S. Navy would have to approve any proposed action on the wreck, since it was a former Navy vessel. To properly address these issues, the UAB consulted with archaeologists and managers in Vermont and Florida, which already had successful shipwreck parks by this time.

The subsequent proposal produced by the UAB followed Vermont's precedent of working within the existing legal and administrative framework "to avoid the time-consuming process of enacting new statutes and regulations" (Lawrence, 2003, p. 66). Preparers found "sufficient statutory authority to designate a shipwreck site as a preserve with the expressed purpose of: 1) making the site more accessible to the general public; 2) interpreting the historical significance of the site; and 3) promoting the preservation of the site" (Lawrence, 2003, p. 66). Following enthusiastic endorsement by the North Carolina Historical Commission, the NCDCR Secretary issued a proclamation declaring the site an "Area of Primary Scientific/Historical Value," and designating the site "as an historic shipwreck preserve with the stated goals of increasing public access, historical interpretation, and site preservation" (Lawrence, 2003, p. 66).

Regarding liability, the UAB also followed Vermont's example, and the North Carolina Attorney General's Office concurred with the opinion that "since divers were currently allowed to visit state-owned shipwrecks, the state had already assumed a degree of liability," and that "as long as conditions on the site were no more hazardous than what were normally encountered in scuba diving, or if divers were warned of hazardous conditions, the state's assumption of additional liability would be minimal" (Lawrence, 2003, p. 66). To address the issue of Navy ownership of the wreck, the UAB approached the Naval Historical Center (now Naval History and Heritage Command [NHHC]), whose director and senior historian "offered their wholehearted support," and NCDCR entered into a Memorandum of Agreement (MOA) with the Navy that allowed the designation of the preserve, and mandated annual submission of a report to the NHHC, "detailing the status of the preserve, visitation figures, and any observable impacts or changes to the site" (Lawrence, 2003, p. 67).

Though the process of designating the preserve was obviously of great significance, and also set the precedent for future preserves in North Carolina, Florida State Underwater Archaeologist Roger Smith advised Lawrence that the most critical aspect would be the support of the local community. Fortunately, Nags Head town officials were strongly in favor of the preserve from its inception, and in May of 1991, NCDCR "entered into a formal agreement with the town of Nags Head detailing the responsibilities of both parties," in which

> …the town agreed to maintain two buoys on the site during the diving season, make monthly inspections of the shipwreck to note any changes to the site or hazardous conditions, monitor divers swimming out to and returning from the site, keep track of visitation figures, and develop an interpretive exhibit at the Bladen Street Beach Access. (Lawrence, 2003, p. 67)

The wreck site is open for public access, and there is no cost of visitation beyond the cost of the trip. Interpretation consists of an exhibit gazebo at the beach access point near the wreck site, an informational brochure and traveling exhibit that were available in the early years of the preserve, an underwater commemorative marker, and two buoys marking the bow and stern of the ship in the summer months. Historical information and a wreck site map are also available online from http://www.archaeology.ncdcr.gov/ncarch/underwater/huron.htm.

In addition to agreeing to the stated responsibilities, the town also provided the monetary start-up costs, and a significant amount of man hours. The Outer Banks Community Foundation, a local nonprofit group, provided a $3,000 grant that was used for construction of the exhibit gazebo, initial printing of the interpretive brochure, creation of the

traveling exhibit, and the underwater commemorative marker. “The North Carolina Army National Guard provided a helicopter to transport the marker to the shipwreck site” (Lawrence, 2003, p. 68). To maximize this grant, UAB staff and town employees devoted significant time to implementing these components.

Evaluation

The stated goals of the *Huron* Preserve are “1) making the site more accessible to the general public; 2) interpreting the historical significance of the site; and 3) promoting the preservation of the site” (Lawrence, 2003, p. 66). Though it was not necessarily the UAB’s intent, these goals actually dovetail relatively well with the three qualitative measures of success.

As Roger Smith had indicated, community involvement would indeed prove to be the essential element that has continued to make the *Huron* Preserve a success. The fact that the initial interest was expressed by locals (Sanderson and Friday) undoubtedly fostered the degree of receptivity and sense of responsibility that has been present throughout the preserve’s implementation. According to Lawrence, the town of Nags Head has continued to be diligent in fulfilling their responsibilities. In June of 2000, the town paid for and installed new and professionally produced fiberglass exhibit signs in the gazebo to replace the original “homemade” signs, at a cost of $1,200. The Nags Head Department of Public Works routinely monitors and maintains the gazebo, and “Ocean Rescue personnel place the buoys on the site each season, inspect the wreck on a routine basis, and monitor divers going to and from the wreck site” (R. Lawrence, personal communication, January 29, 2009). Outside Nags Head, the preserve is promoted via the Web sites of local dive shops, chambers of commerce, hotels, and rental agencies. Conserved artifacts are also on loan to the Graveyard

of the Atlantic Museum in Hatteras and the Museum of the Albemarle in Elizabeth City where they will be displayed along with information about *Huron* (R. Lawrence, personal communication, January 29, 2009).

The interpretive materials are intended to reach the general public, rather than just a narrow segment of it, and to that end, they are successful. The exhibit gazebo is accessible to anyone who walks by, and the wreck site is easily reachable by divers and snorkelers, without site registration or the aid of a boat. Though no official log is kept of the number of divers, the town provided an annual estimate in the initial years of the preserve, which averaged 200-300 (R. Lawrence, personal communication, January 29, 2009). “In the decade between 1991 and 2001, an estimated three thousand divers visited the wreck of the *Huron*,” and “in addition to divers, an untold number of beachgoers have benefited from the exhibit signs in the beachside gazebo” (Lawrence, 2003, p. 69). This sustained level of visitation indicates that the preserve and gazebo are at least successful in attracting interest and raising awareness that a significant shipwreck is there.

However, if effectiveness of interpretation is defined as the interest in, comprehension, and retention of the intended message, there is currently no method for gauging it, as visitor feedback is not collected. Possible mechanisms to gather feedback would be a suggestion box at the exhibit gazebo, an online visitor satisfaction survey, and availability of feedback forms at local dive shops. However, since the annual maintenance costs are minimal, and the preserve status and method of interpretation are unlikely to change significantly, the sustained level of annual visitation seems adequate to justify the preserve’s continued existence.

For a program that facilitates open access to an historic shipwreck, the management of the *Huron* Preserve is notably active. In fact, Lawrence states that he has been "very impressed with how diligently the town has met their responsibilities" (R. Lawrence, personal communication, January 29, 2009). As required by the MOA, the town provides an annual report on the status of the preserve and associated exhibit, which is forwarded to the NHHC as part of the UAB's annual report. In recent years the report has included a site map showing how much of the shipwreck was visible during the preceding dive season, which has been a useful research tool as the amount of wreckage exposed above the bottom varies dramatically from year to year. In addition, Nags Head Ocean Rescue personnel (beach lifeguards) monitor diving at the site, talking to divers before and after they swim out to the shipwreck. In this way, visitor impact on the resources is most actively monitored, and between 1991 and 2001, "there was only one reported incident—the recovery of a porthole in 1992—of a diver removing an artifact from the site. When that diver returned to shore, the artifact was confiscated by a lifeguard and turned over the UAU for conservation" (Lawrence, 2003, p. 69).

The tradeoffs for this type of preserve are minimal, and the program is easily sustainable. Segments of the community have a vested interest, having been involved in the preserve's creation, and participating in its continued management. Interpretation has the potential to reach divers and snorkelers, passersby on the beach, visitors to local museums that house *Huron* artifacts, and online visitors. Thorough archaeological excavation and documentation was completed before preserve creation, maintenance costs are minimal, visitation to the wreck site is monitored, and site status reports are completed annually. The only potential criticism would be the shallowness of interpretation, which could also be

considered appropriately concise for an audience of passersby. Visitor feedback, as mentioned above, would provide a better gauge of the effectiveness of each type of interpretation.

Having visited the *Huron* Preserve in June 2009, this author did find that the site was not particularly easy to find once in Nags Head. Knowing which cross street to look for assisted the process, but the casual beach visitor would not necessarily notice the standard and inconspicuous historic marker sign, which is apparently the only evidence of the preserve's existence in the town. The preserve was not indicated on the ubiquitous map of attractions available at local stores and restaurants, and inquiries about the preserve's location with store managers and NPS personnel in Kitty Hawk were unproductive. Ultimately, an inquiry at the Nags Head Fire Department was the only reminder that the preserve was at the Bladen Street public access point, though none of the firefighters had personally visited the actual preserve. After this visit, the interpretation available at the site can be considered somewhat ineffective. The preserve's existence and significance need to be promoted a great deal more in local signage and informational literature.

Feasibility Elsewhere

Historic shipwreck preserves do exist elsewhere, including Florida, Vermont, Maryland, the Great Lakes, Canada, and Australia, to name a few. As mentioned above, creators of the USS *Huron* Preserve utilized the precedents set in Florida and Vermont, as well as advice from their respective creators. The most direct extension of these results would be the creation of other historic shipwreck preserves in North Carolina. In fact, Watts and Lawrence make this very recommendation in the report of their investigation and assessment of a number of Civil War shipwrecks near Fort Fisher (2001). In evaluating the

potential of each of the wrecks for development as a preserve similar to that of *Huron,* they conclude that *Modern Greece, Condor,* and USS *Peterhoff* are all excellent candidates (Watts & Lawrence, 2001) (Figure 6). Aspects of the *Huron* Preserve that merit extension into similar preserves are the thorough archaeological investigation of the wreck prior to its designation as a preserve, the level of sustained community involvement, and the degree of active management and monitoring conducted at both the administrative and the community level. As with Florida's system of Underwater Archaeological Preserves, continued solicitation of nominations by the UAB would kick-start the process again, and convey the message that North Carolina is taking proactive measures to protect and interpret its shipwrecks, while facilitating access to them.

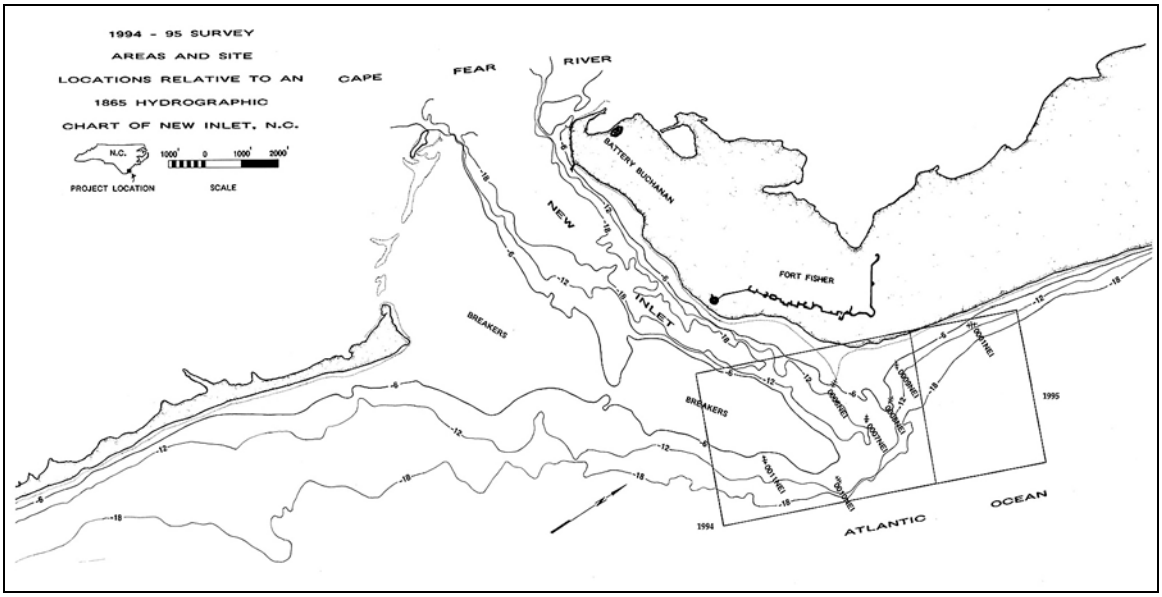

Figure 6. Locations of Fort Fisher wrecks with high potential for development as a preserve. From *An Investigation and Assessment of Civil War Shipwrecks off Fort Fisher, North Carolina* (p. 7), by Gordon P. Watts, Jr., and Richard W. Lawrence, 2001, Kure Beach, NC: Underwater Archaeology Unit.

Ashley River Paddling and Cooper River Underwater Heritage Trails (SC)

Background and Implementation

South Carolina's Lowcountry consists of "swamps and marshlands inhabited by an array of wildlife including ospreys, bald eagles, ducks, alligators, and fish, especially large catfish" (Spirek & Harris, 2003, p. 165). The prehistoric landscape of hardwood swamps has been culturally modified "to one conducive to colonial rice agriculture, and to modern water-control devices including a dam" (Spirek & Harris, 2003, p. 165). The Cooper River, flowing from the north, and the Ashley River, flowing from the northeast, converge in Charleston Harbor (Figure 7). Riverine archaeological sites "range in age from the early English colonial period to the beginning of the twentieth century," and "include the remains of sailing ships, steamboats, and ferry and plantation landings" (Spirek & Harris, 2003, p. 165).

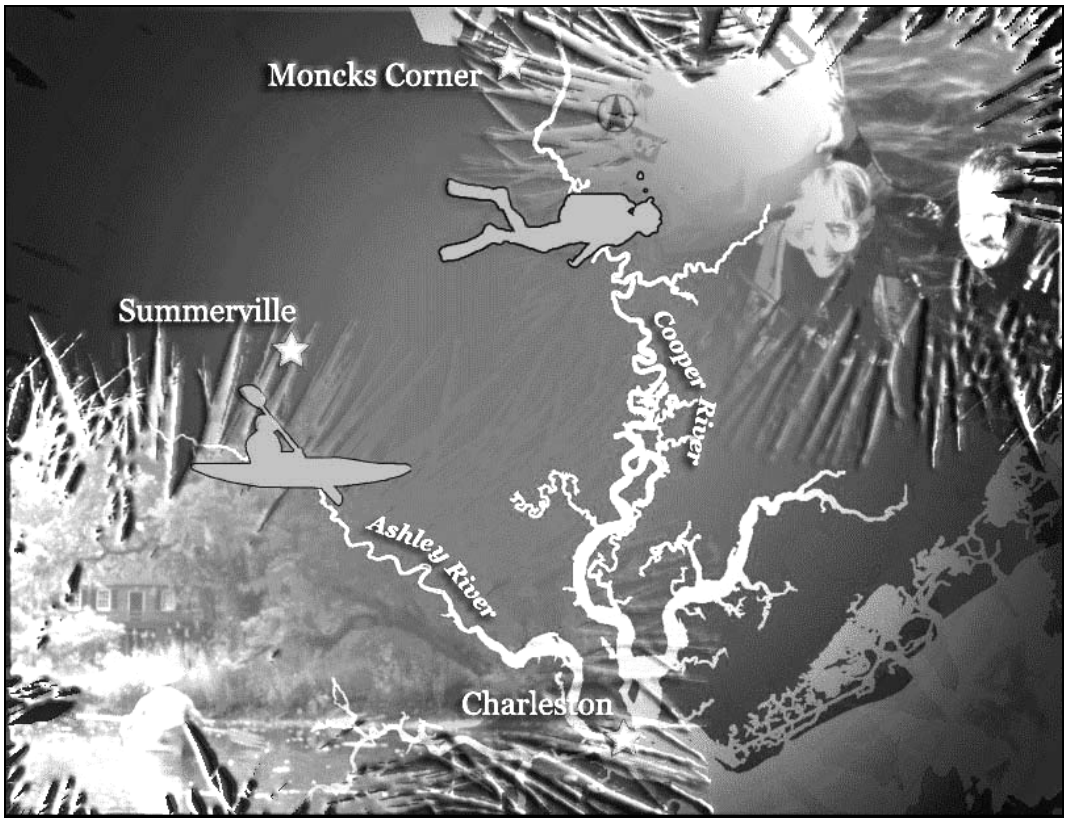

Figure 7. Location of Ashley River Paddling Trail and Cooper River Underwater Heritage Trail near Charleston, SC. Retrieved January 22, 2009, from MRD Web site: http://www.cas.sc.edu/sciaa/mrd/sdamp_mht_traillocs.html

In the late 1980's, SCIAA proposed "to create an underwater preserve on the remains of the SS *Lawrence*, and iron-hulled steamer that wrecked off Port Royal Sound in 1899" (Spirek & Harris, 2003, p. 166). However, the proposal "never went beyond the early planning stages," since "local divers and dive shop owners showed no enthusiasm for the project, mainly objecting to the winds and currents that made the site a fickle place to dive" (Beard as cited in Spirek & Harris, 2003, p. 166). SCIAA learned in invaluable lesson from this event, since the research, planning, and implementation of the Ashley River Paddling Trail and the Cooper River Underwater Heritage Trail relied heavily on involvement of the local diving community.

Ashley River Trail.

In 1995, a research affiliate of SCIAA conducted a survey along the Ashley River, locating sites that were then recorded by SCIAA archaeologists and volunteers using funds from an in-house grant program (Spirek & Harris, 2003). Concurrently, the South Carolina Department of Parks, Recreation and Tourism (SCPRT) began a statewide heritage tourism initiative, called the South Carolina Heritage Corridor, by soliciting trail nominations. "Fortuitously, the recently documented wrecks proved ideally suited" for a paddling trail with the goal of representing overlooked aspects of South Carolina history, such as maritime heritage (Spirek & Harris, 2003, p. 168).

The 10 selected sites include intertidal watercraft along a five-mile stretch of the Ashley River, and represent a range of wooden sailing and motorized vessels, a barge, and a tugboat, spanning the 18th-20th centuries (Figure 8).

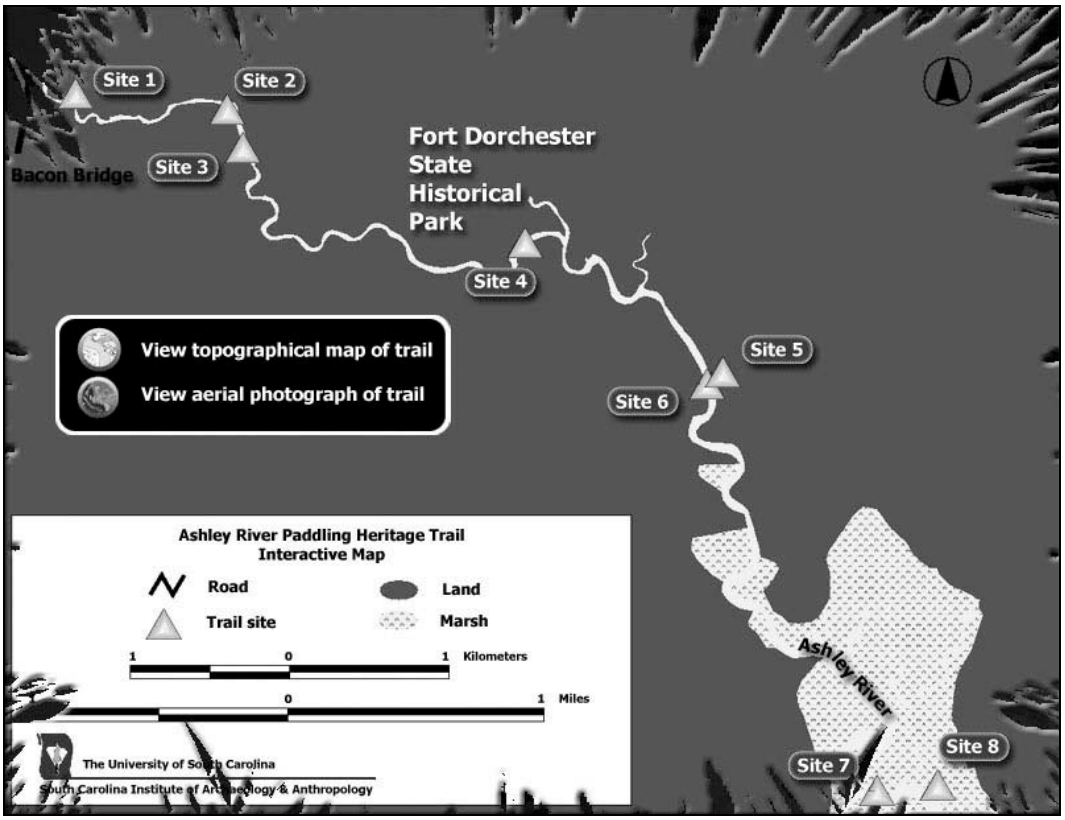

Figure 8. Map of Ashley River Paddling Trail. Retrieved January 22, 2009, from MRD Web site: http://www.cas.sc.edu/sciaa/mrd/sdamp_mht_arpht_vt.html

Visit time and site visibility are dictated by the tides, which have a range of up to four feet. Interpretation occurs with laminated slates developed by SCIAA, which paddlers carry to navigate through the trail, and which provide an illustrated guide to historical and archaeological information on the "demise of vessels, their use on the river, phosphate mining, vernacular shipbuilding, and adjacent historic properties" (Spirek & Harris, 2003, p. 168). During the first few years of the trail's inception, paddlers could arrange guided tours through the neighboring Old Dorchester State Historical Park or Middleton Place Plantation (Spirek & Harris, 2003), though as of 2009 this is no longer happening (L. Holland, personal communication, February 20, 2009). Visitors could also obtain the interpretive slates from these historic sites, though now they are exclusively available online for free download (from http://www.cas.sc.edu/sciaa/mrd/documents/

arhtslate.pdf). As of 2003, the Ashley River Trail involved virtually no maintenance or costs, with the historic site guides monitoring the sites for signs of deterioration. At that time, one maintenance task that SCIAA performed illustrates the natural and environmental impact that occurs to shipwrecks: a vessel's keelson needed to be reattached to its frames "with stainless steel fasteners to prevent the timber from washing away" (Spirek & Harris, 2003, p.169).

Cooper River Trail.

In 1993, SCIAA archaeologists enlisted local divers to assist in conducting a survey to "systematically locate and assess the underwater cultural resources" in a two-mile section of the Cooper River (Harris, Moss, & Naylor, 1993). SCIAA concluded that several of the sites would be good candidates for inclusion in an underwater heritage trail, and in 1997, the Underwater Archaeology Division (UAD; now Maritime Research Division/MRD) "received a $7,500 grant from the United States Department of Transportation's (USDOT) Federal Highway Administration's National Recreational Trails Program which was administered by SCPRT to develop a trail for scuba divers" (Spirek & Harris, 2003, p. 169). Local divers and a private construction firm donated matching funds in the form of time and services, and a private individual donated an additional $500. In 1998, SCIAA archaeologists and volunteers gathered historical and archaeological information, and recorded the remains of six trail sites, and in 1999 and 2000, Harris obtained two SCIAA Archaeological Research Trust grants, totaling $3,700, for further investigation of two trail sites. The main portion of the Cooper River Trail, consisting of six sites, was completed in 1999.

Interestingly, during a 1997 stakeholders' meeting, "response from the sport diving community was ambivalent," with local divers and dive shop owners expressing their view that "more divers on these sites would adversely impact the wreck sites" (Spirek & Harris,

2003, p. 169). Following SCIAA's counterpoints that these sites had already been completely stripped of artifacts by sport divers, and that this portion of the Cooper River is a highly visited dive location, the divers and dive shop owners became "more amenable to launching and assisting the project," ultimately agreeing with SCIAA's management position that "enhancing public access to these sites, [would improve] chances for their long-term preservation … by lessening harmful impacts made by anchors and divers" (Spirek & Harris, 2003, p. 170).

The Cooper River Underwater Heritage Trail consists of six sites along a two-and-a-half mile stretch of the river, which include the remains of a small British Revolutionary warship, an 18th-century ferry landing, a 19th-century sailing vessel, a late 19th-century towing barge, another 19th-century sailing vessel, and another landing (Figure 9). Access is unrestricted, with no cost additional to divers' transportation to and along the trail, and dive gear.

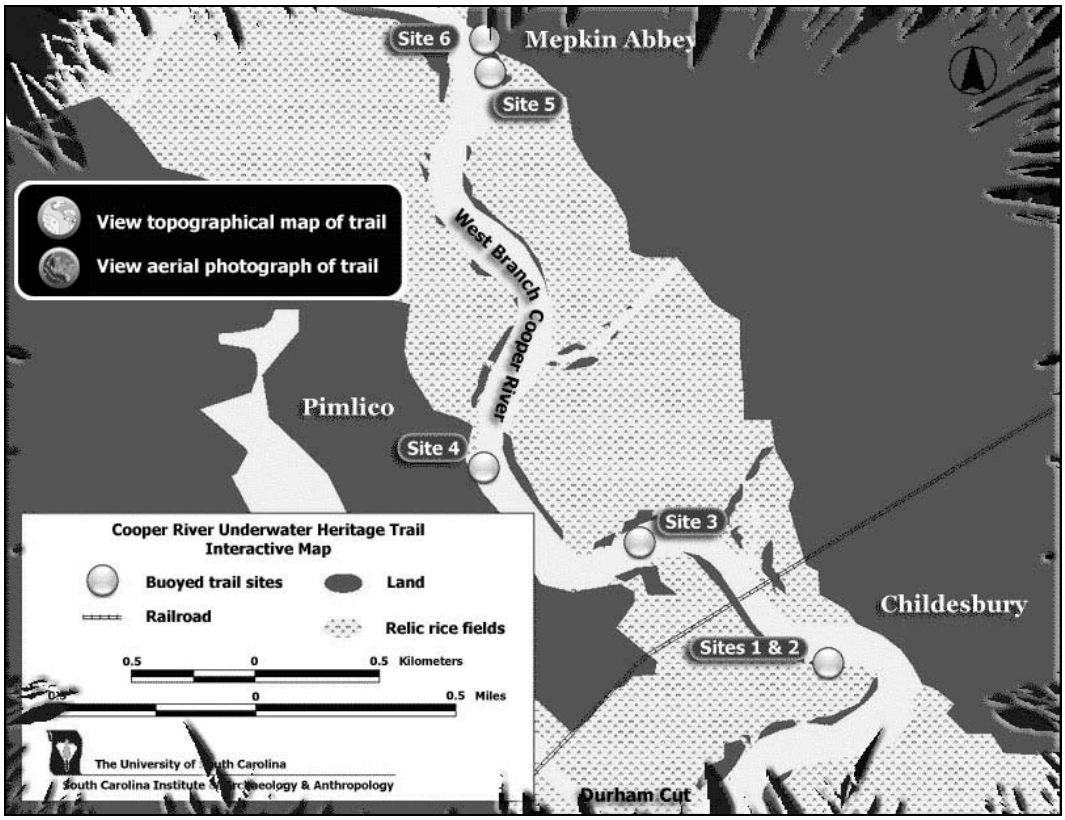

Figure 9. Map of Cooper River Underwater Heritage Trail. Retrieved January 22, 2009, from MRD Web site: http://www.cas.sc.edu/sciaa/mrd/sdamp_mht_crht_vt.html

Interpretation consists of a mooring buoy on the surface at each site, connected to a 340-pound cement block staked into the river bottom, which also displays an interpretive sign. Guide lines radiate out from each block to landmarks on the site, which are crucial since it is a blackwater diving environment, and river conditions are highly variable. SCIAA developed interpretive dive slates describing "history of the river's usage, local flora and fauna, mooring details, and diving information," and containing a trail map, as well as the history and archaeology of each site (Spirek & Harris, 2003, p. 172). Laminated versions of these slates were initially available in local dive shops, but are now exclusively available online for free download, (from http://www.cas.sc.edu/sciaa/mrd/documents/crhtslatebundle.pdf).

Yearly maintenance is more dynamic on the Cooper River Trail, with SCIAA staff and volunteers setting the mooring buoys each April, and removing them each October. At these times, the sites are also monitored for any damage or changes. Any maintenance costs are therefore covered by the Maritime Research Division (MRD) at SCIAA.

Both the Ashley River Paddling Trail and the Cooper River Underwater Heritage Trail are implemented by the MRD's Sport Diver Archaeology Management Program (SDAMP), which consists of two SCIAA staff and two or three regular volunteers. The goal of both trails is the same: primarily to "communicate to the visitor the historical and archaeological significance of these vestiges of the state's maritime heritage and surrounding maritime cultural landscape," and in so doing, to "help stimulate historical tourism to the area" (Spirek & Harris, 2003, p. 165). The enabling policy is the SC Underwater Antiquities Act of 1991 (S.C.C.L. 54-7-840), which does not include a "specific legislative mandate for SCIAA to improve public access to submerged cultural resources," but sections of which are concerned with education, and which SCIAA interpreted "as a mandate to improve public access to these underwater museums for educational purposes" (Spirek & Harris, 2003, p. 166). According to Spirek and Harris, this approach carries the added benefit of permitting "SCIAA to promote stewardship, recreation, and tourism centered on selected and monitored cultural resources" (2003, p. 166).

Evaluation

The program's stated goals, as well as SCIAA's interpretation of existing policy, primarily focus on effective interpretation, with a strong emphasis on education and stewardship. Community involvement and active management are not explicitly stated,

though it is evident from the program's implementation that both of these components are intended.

As the major stakeholder, local sport divers and dive shops were intimately involved in all stages of trail creation, from initial research and documentation of potential trail sites, to planning stages, to initial implementation, and ongoing management. According to SCIAA, as they visit the sites, they continue to monitor them and report any problems, and they also assist with mooring buoy and guide line maintenance each year (L. Holland, personal communication, February 20, 2009). Though maps and interpretive slates are available online, only kayakers and divers may experience the resources first-hand, limiting interest and involvement to this segment of the community. However, the importance of consulting this stakeholder group was illustrated vividly by SCIAA's attempt in the late 1980's to create an underwater preserve on the remains of SS *Lawrence*, which failed at its inception because of local divers' objection to unpredictable site conditions. The trail system would be non-existent without the extensive involvement of the local diving community.

The information in the interpretive slates is unquestionably well-researched and thorough regarding the history and archaeology of the region and of each site. The slates' availability online is a cost-effective strategy for dissemination, though copies available for purchase at dive shops and historic sites adjacent to the trails would also reach visitors who have not brought their own copies. Regarding visitor feedback, Spirek and Harris state that as of 2003, paddlers along the Ashley River Trail "respond[ed] with positive comments about the trail and appreciate[d] the ability to view shipwrecks and nature at the same time" (2003, p. 168). On the MRD website (http://www.cas.sc.edu/sciaa/

mrd/sdamp_mht_crht_vt.html), there are links to report maintenance issues and to leave visitor comments, though MRD Archaeologist Lora Holland reports that this feature is not frequently utilized, and that issues are still largely reported by phone (personal communication, February 20, 2009).

Effectiveness of interpretation, as well as public interest in the continued existence of the trails, may therefore only be stated as a matter of opinion by managers and evaluators. Informative dive slates and mooring buoys attached to site markers are the most practical method of interpretation, but the degree to which they are utilized, and successfully communicate the intended message, can only be speculative unless information is collected regarding visitor frequency and satisfaction. This could be attempted through more active overtures to the local diving community, perhaps by working with dive shops and regular SCIAA volunteers to encourage registration of site visitation, make the slates available in dive shops again, and implement a feedback system to gauge visitor frequency and satisfaction.

Active management is perhaps the weakest link in the degree of success of the trail system. Because all the sites are completely open for public access, and river traffic is not monitored at all, it is virtually impossible to track visitation. One potential method would be for SCIAA to request the historic parks or dive shops to keep track of formal tours, though this would comprise only a fraction of the visitation. Visitor impact upon the resources has been negligible, since practically all detachable artifacts had been removed from the sites prior to the trails' creation. In fact, the program's goal of education and stewardship is intended to prevent such behavior in the future, as well as foster a positive relationship between sport divers and archaeologists in the hope of obtaining as much information as

possible from other such cultural resources before they are destroyed. Trail management could be far more active, as suggested above, and though such a discretionary system of reporting and feedback would not yield a comprehensive picture of the visitor experience, it would nonetheless provide invaluable information to justify the existence and improve the implementation of the trail system.

The tradeoffs inherent in this type of program are relatively balanced, and the trail system in its current state can be considered sustainable. Community members are involved in the creation and maintenance of the trail system, and interpretation is moderately thorough for visitors who take the initiative to seek it out, though its effectiveness is not currently evaluated. Regarding active management, trail sites are monitored annually when mooring buoys are placed and removed, and no detachable artifacts remain, but visitation is not currently monitored at all. Though no negative impact from visitors has been observed, information on visitor frequency and satisfaction would be beneficial for improved implementation and management of the program.

Feasibility in North Carolina

The feasibility of a program similar to the Ashley River Paddling Trail in North Carolina has actually been addressed in a study conducted by Mark Wilde-Ramsing in 2004, who researched “Potential Outreach Programs Focused on Water-Related Archaeological Resources in the vicinity of Washington, North Carolina.” Washington is located in the heart of North Carolina’s “Inner Banks,” at the union of the Tar and Pamlico Rivers, at the mouth of the Pamlico Sound, and has a notable historic waterfront (Figure 10).

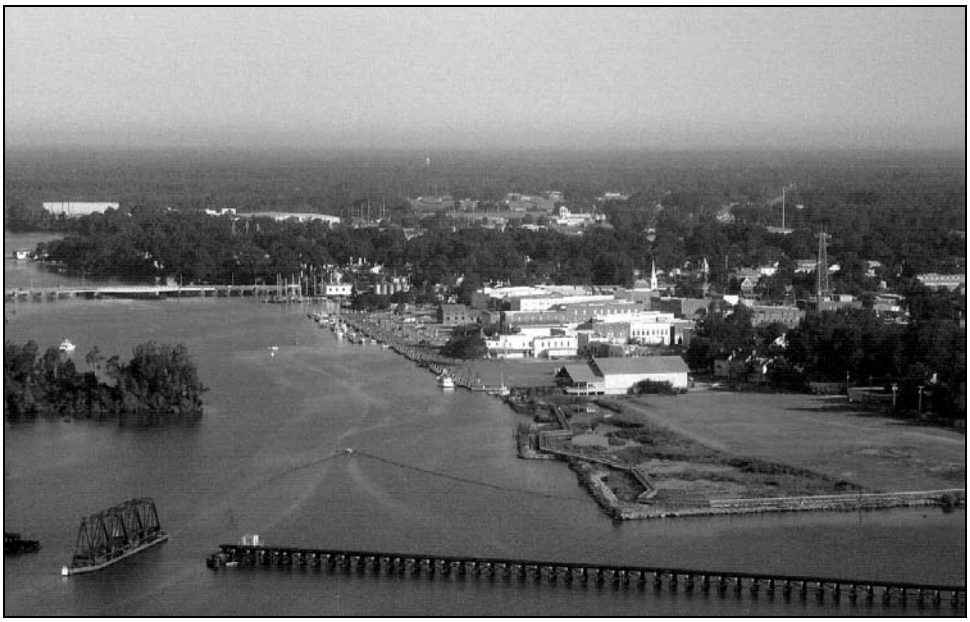

Figure 10. Photo of Washington waterfront. Retrieved January 29, 2009, from Web site of Realtor John Easterling: http://www.jeasterling.com

The study assessed the feasibility of a paddling trail along the Washington waterfront which would facilitate access to and interpret submerged and partially exposed archaeological sites. Wilde-Ramsing found a variety of cultural remains, representing a range of historic periods, which he concluded would not be conducive to a diving trail due to adverse conditions, but which would be viable subjects of a paddling trail. Via contact with stakeholders, including city officials and waterfront businesses, he found that interest exists in incorporating heritage resources into existing paddle trails, that current infrastructure would accommodate this modification, and that supporting funds may be available (in 2004, anyway). He ultimately concluded that interpretation of archaeological resources along the Washington waterfront could be incorporated feasibly into existing trails and tour routes, that stakeholder involvement would be a vital component of this process, and that funding could be sought from the County Tourism Bureau (Wilde-Ramsing, 2004).

Researchers at East Carolina University have also proposed a maritime heritage trail along the Wilmington, North Carolina waterfront. Wilmington is located at the mouth of the Cape Fear River, along the southern coast. Directly across the river from the Wilmington waterfront is Eagles Island, where a graveyard of abandoned ships serves as a reminder of the city's former thriving commercial maritime industry (An Eagles Island Ships' Graveyard Maritime Heritage Trail, 2007). Following extensive research and documentation of the ships and their remains, the team determined that a maritime heritage trail would be an appropriate method of interpreting them to the public. They have designed "drafts of a pamphlet, a series of static signs, a series of mini-documentaries, and a virtual maritime heritage trail which uses Apple iPods," with the goal of "transform[ing] these 'eyesores' into major heritage tourism sites that will benefit the people and economy of Wilmington" (Figure 11) (An Eagles Island Ships' Graveyard Maritime Heritage Trail, 2007, p. 5). As of 2009, the project has received considerate interest from Wilmington-based stakeholders, but is on hold pending further research (N. Richards, personal communication, February 26, 2009). A forthcoming dissertation in Coastal Resources Management by Calvin Mires will "measure the value and impact a maritime heritage trail may have on the local community through an economic analysis component" (An Eagles Island Ships' Graveyard Maritime Heritage Trail, 2007, p.5).

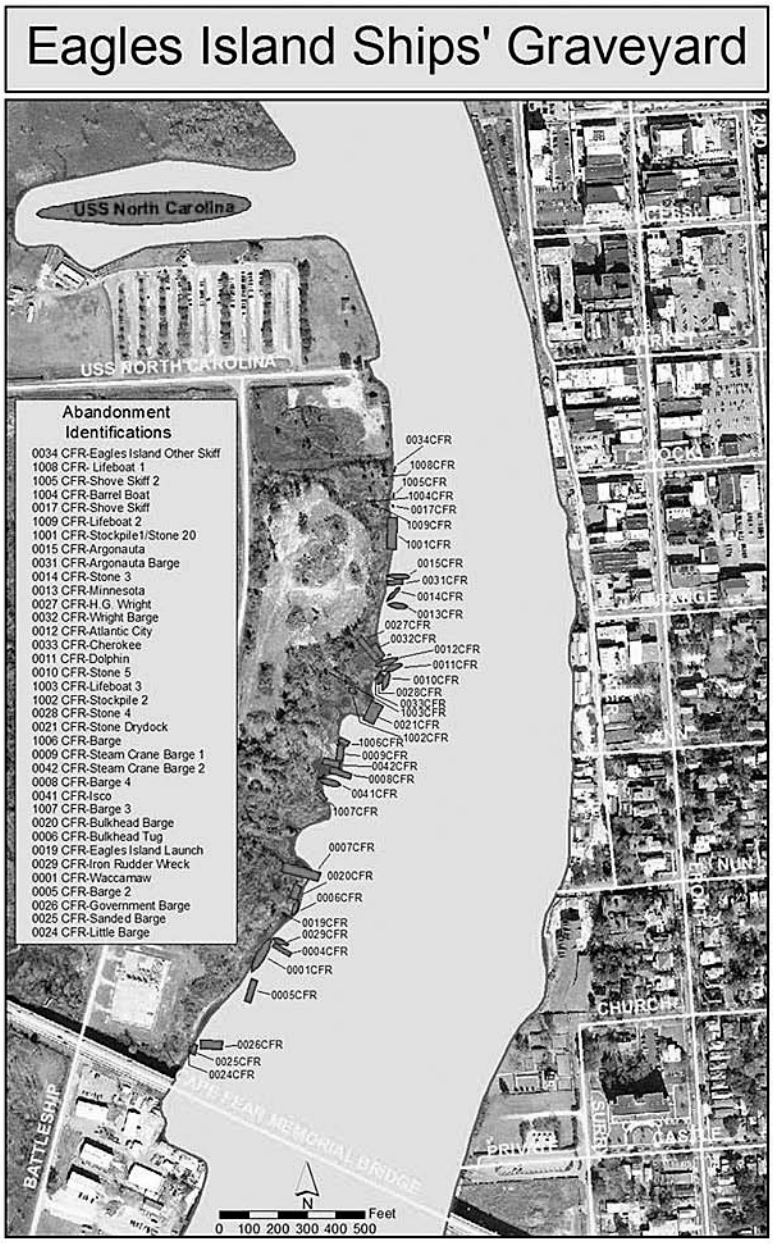

Figure 11. Eagles Island Ships' Graveyard. Image courtesy of N. Richards, Program in Maritime Studies, East Carolina University.

The feasibility of a program similar to the Cooper River Underwater Heritage Trail in North Carolina has not been formally studied, though similar riverine geomorphology and diving conditions exist along a large portion of the North Carolina coast, which possesses an equally rich maritime history. Researchers from East Carolina University's Program in Maritime Studies have extensively investigated and recorded shipwrecks and maritime sites

in sizeable segments of eastern North Carolina, providing research which would serve as a convenient starting point for a feasibility study of an underwater heritage trail.

Noteworthy aspects of the Ashley and Cooper River Trails are the full excavation and recording of the sites prior to trail creation, and the extensive involvement of the local diving community, from the initial survey through to continued site maintenance. When a crucial stakeholder group gains a vested interest in stewardship of the resources, a higher level of active management can be maintained with less input from managers.

Florida's Underwater Archaeological Preserves

Background and Implementation

As the location of some of the earliest European exploratory expeditions, as well as the crossroads of many vital trade routes in centuries to follow, Florida's maritime history and cultural landscape are particularly rich and colorful. Local Native Americans first encountered European explorers in the early 16th century, who began attempts at colonization shortly thereafter. The earliest shipwreck discovered in Florida is the wreck of the Emanuel Point Ship in Pensacola Bay, hypothesized to be part of the expedition of Tristán de Luna, who led the first attempt by Europeans to colonize Florida in 1559. Within a month of arrival in Pensacola, a hurricane destroyed most of the fleet's ships at anchor in the bay (Smith, Bratten, Cozzi & Plaskett, 1998).

The Spanish immediately began to capitalize on the vast amounts of natural resources discovered in the New World, including silver, gold, gems, spices, and other exotic goods. An increasing number of treasure-laden ships bound for Spain attracted the attention of such rivals as the French, British, and pirates. "To counter this threat, Spain developed a formal convoy system as early as 1537 to protect its merchant vessels from predators" (Florida Bureau of Archaeological Research [FBAR], 2005). These "Plate Fleets" consisted of at least two armed escorts to accompany the heavily laden ships across the Atlantic. In 1733, one of these fleets encountered a hurricane in the vicinity of the Florida Keys, where all but 5 of its 22 vessels were grounded at varying depths along the reef. By this time Spain had become so adept at salvage operations that nearly all of the cargo was recovered in short order, though some remained on the larger ships that perished farther from shore, most of which was then

recovered by salvage operations in the twentieth century. In 1988 and 2004, researchers from a collaborative field school and the FBAR conducted a thorough archaeological survey of the remaining wreck sites, creating the 1733 Spanish Galleon Trail in the Florida Keys National Marine Sanctuary.

Also during this time, Florida and its waters became an important junction along many trade routes, including the Transatlantic slave trade, which relied on the export of Caribbean materials such as sugar, molasses, rum, cotton, coffee, and tobacco to Europe. By the mid-19th century, such a great number of ships were frequenting the treacherous reefs and shoals of southern Florida that an official port of entry and salvage collection depot for wrecked cargoes were established in Key West. Wrecking became "a well-regulated enterprise with licensed vessels and strict legal controls," and between 1835 and 1858 the number of wrecking vessels increased from 20 to 57 (Division of Historical Resources [DHR], 2009a). Florida's maritime routes and communities continued to play pivotal roles in local and national history through the Civil War era and the late 19th and early 20th centuries, with innumerable extant sites and artifacts remaining as evidence of the richness and significance of Florida's maritime heritage.

Florida's Underwater Historic Preserves are a collaborative effort that began in the late 1980's when the Division of Historical Resources (DHR) began "working with local governments, private organizations, and individuals to establish state underwater archaeological preserves on historic shipwrecks in order to increase public access to and appreciation for coastal heritage sites" (FBAR, 1997, p. 3). Florida's first Underwater Historic Preserve was created in 1987, and since that time, 10 more Preserves have been created. The enabling policies behind the Preserve system are the Florida Historical

Resources Act (2007), and Florida Administrative Rules, Chapters 1A-31 and 1A-32 (Procedures for Conducting Exploration and Salvage of Historic Shipwreck Sites, 1987; Archaeological Research, 1975). These laws:

> …govern the use of publicly-owned archaeological and historical resources located on state property, both on land and in the water. Administered by the Florida Division of Historical Resources, the law establishes programs and policies to encourage preservation of historic resources for the public benefit. (DHR, 2009c)

These laws do not explicitly mention underwater preserves, but rather DHR interprets the mandate to increase public access and interpretation to submerged cultural resources via the creation of shipwreck preserves (D. Scott-Ireton, personal communication, April 16, 2009).

In 2008, state officials proposed changes to Administrative Rule 1A-31(Procedures for Conducting Exploration and Salvage of Historic Shipwreck Sites), which would "mandate an unprecedented new level of archaeological oversight for treasure salvage operations," though not ban them outright (Meeting Focuses on Florida Treasure Hunting, 2008). As of April 2009, the changes have not yet been implemented, though they are expected to be (D. Scott-Ireton, personal communication, April 16, 2009).

Though each shipwreck presents a unique set of circumstances for preserve establishment, a useful pattern has emerged "that ensures public participation and continuing local involvement with the project" (Scott-Ireton, 2003, p. 98). In general, the following steps have occurred:

1. A shipwreck is nominated to become a Preserve, generally by a local diver, boat captain, or school children, by submitting a nomination form to the Bureau of Archaeological Research.
2. The wreck site is visited by State archaeologists to determine if the shipwreck meets criteria for Preserve status:
    a. Lie within state waters
    b. Be accessible to the public
    c. Offer safe diving conditions
    d. Have history that is identifiable and verifiable
    e. Have recognizable features and marine life
3. State personnel visit area businesses, chambers of commerce, museums, boating and If the shipwreck meets the criteria it becomes a Preserve candidate.
4. State personnel visit area businesses, local government, Chamber of Commerce, boating and fishing clubs, dive shops, etc. to garner interest and assistance.
5. An informal Friends of the Preserve group is formed by interested individuals and is aided by State personnel. The Friends promote and help to establish the Preserve, and also raise funds and solicit in-kind donations and services which may range from providing refreshments at the public meeting to raising funds for a site plaque.
6. State archaeologists, with the help of local divers, survey and record the shipwreck and prepare a detailed site plan. Together with the Friends group,

State personnel research the ship's history and verify its identity. An assessment and inventory of the site's biological diversity also is conducted.

7. Once the site plan and history are complete, a public meeting is planned to present an official proposal for the new Preserve to area citizens and businesses and to address any questions or concerns.
8. The proposal, which includes the site plan and ship's history as well as educational and economic benefits of the Preserve, is distributed to area media. If there is public support, the proposal is considered to be accepted.
9. A formal opening ceremony with State and local dignitaries is held to dedicate the new Preserve and to place an underwater plaque designating the site a State Underwater Archaeological Preserve and Florida Heritage Site.
10. The Preserve is interpreted for the public through a brochure, an underwater guide for divers and snorkelers, a web page, a poster, and a local museum exhibit of artifacts, photos, etc. The Preserve also is nominated to the National Register of Historic Places.
11. The Friends of the Preserve provide continuing support by monitoring the site, distributing brochures and posters, and promoting visitation. (FBAR, 2004, p. 2-3)

Florida's program began in 1987 with community interest in *Urca de Lima*, a Spanish merchant ship cast ashore near Ft. Pierce during a hurricane in 1715. The St. Lucie County Historical Commission approached DHR "to explore the possibility of giving the shipwreck special status that would both interpret and protect the site for future visitors" (FBAR, 1997, p. 4). During the process of creating this first Preserve, "members of local waterfront

businesses organized with city, county, and state officials to enhance the wrecksite with replica cement cannons to replace those removed long ago," and "an official bronze plaque, embedded in a cement monument attached to a large mooring buoy, was positioned near the wreckage to mark the site and to discourage anchor damage," and interpretive brochures were created and distributed (FBAR, 1997, p. 4). "*Urca de Lima* thus was adopted by the local community as a new historical attraction; by placing the site in the public's trust, its preservation became important to everyone" (FBAR, 1997, p. 4).

Interest in the site that would become the second Preserve began in 1964, when the Monroe County Advertising Commission and the Florida Keys Underwater Guides Association expressed their desire that at least one of the sites of the 1733 Spanish Plate Fleet disaster be "set aside as an historic monument rather than remain available for salvage activities" (FBAR, 1997, p. 4). It would be another 25 years before the idea would be realized, beginning in the summer of 1988, when 11 of the wreck sites were surveyed and assessed by field school students from Indiana University and Florida State University. Each site was rated using the Preserve criteria, as well as the potential for enhancement and interpretation. *San Pedro* was found to be the best candidate, and was established in 1989 as the state's second Underwater Archaeological Preserve. The process included public presentation of the Preserve proposal, organization of the "*San Pedro* Trust," donation and installation of replica artifacts and markers on the site, and creation and distribution of interpretive brochures (FBAR, 1997).

These two Preserves became so immediately successful and popular, with such enthusiastic participation from local communities, that in 1990 DHR "prepared over a thousand mailings statewide to solicit nominations for potential new Preserve sites from

waterfront operators, dive clubs and amateur groups" (FBAR, 1997, p. 5). Responses were numerous and diverse, but within a few years, two leading candidates for new Preserves had emerged. The first, a steamboat named *City of Hawkinsville*, was accidentally sunk in the Suwannee River in the 1920s, and represents a surprisingly intact example of late 19th-century steamboat technology. The second, USS *Massachusetts*, is the nation's oldest surviving battleship, and one of three "Indiana" class battleships authorized in 1890 by Congress to be built for the new "Steel Navy." *Massachusetts* served in the Spanish-American War and World War I, but quickly became obsolete, and was loaned to the Army as a target, towed to Pensacola in 1921, scuttled in shallow water, and subjected to artillery tests. Following archaeological documentation of the sites, proposal presentation, non-profit group formation, and a concerted effort on the part of community members, the *Hawkinsville* Preserve opened in June 1992, and the USS *Massachusetts* Preserve was dedicated amid much fanfare on June 10, 1993—the 100th anniversary of the battleship's launching.

In 1993, DHR again sent a state-wide mailing to over 2,000 waterfront organizations, soliciting nominations for additional Preserve candidates. As a result, the wrecked steamship SS *Copenhagen* off Pompano Beach came under consideration for the fifth Preserve. In conjunction with the Marine Archaeological Council (MAC) of Broward County, and the Broward County Office of Natural Resource Protection, state archaeologists assessed the site, and helped to organize a local support group, which "became an effective community force that actively pursued the establishment of the fifth State Underwater Archaeological Preserve in June 1994. The *Copenhagen* Preserve has since become one of the most popular diving destinations in South Florida" (FBAR, 1997, p. 7).

Nomination of the sixth Preserve came from a 1994 meeting between State Underwater Archaeologist Roger Smith, a local dive shop owner, county planner, museum director, and the director of the Panama City Marine Institute. The meeting was organized to discuss local input on the possibilities of creating new Preserves in Bay County, which is noted for its shipwreck population. Smith applied for and received a grant from NOAA to conduct a survey of the five sites that were nominated, which was then matched by state and local monetary and in-kind resources. In 1996, the sites were assessed and ranked using the criteria of historical significance, archaeological integrity, aquatic life, water conditions, public interpretation, and public accessibility. SS *Tarpon*, an 1887 steamer that served the Gulf Coast but was lost in 1937 was determined to be the best candidate, and the necessary steps were subsequently followed to establish the *Tarpon* Preserve in 1997 (FBAR, 1997).

Nomination of the site that would become the seventh Preserve came from a local diver and amateur historian in 1997. The wreck of *Half Moon* was already a popular snorkeling and diving site, located in shallow water just off Key Biscayne, but its history was unknown. Research by state personnel, maritime historians in Germany and England, and descendants of the vessel's owner, identified the vessel as a sleek racing yacht named *Germania*, built in Germany in 1908, which spent its latter years as a floating saloon and fishing barge off Miami before being wrecked in a storm in the 1930s. The non-profit Friends of *Half Moon* was organized, and a graduate student at the University of Miami's Rosenstiel School of Marine and Atmospheric Science completed a master's thesis on the wreck. The *Half Moon* Preserve was dedicated in April 2001 (FBAR, 2004).

The wreck that would become Florida's eighth Preserve, *Lofthus*, was nominated by "the Marine Archaeological Research & Conservation Reporting (M.A.R.C.) team, a group

of avocational underwater archaeologists based in south Florida" (FBAR, 2004, p. 9). The team had conducted the necessary research to verify the wreck's identity and history, as a British iron barque built in 1868, and wrecked in 1898 while en route from Pensacola to Buenos Aires with a load of lumber. "Unable to be refloated, the hulk was stripped and dynamited to gain access to the valuable cargo" (FBAR, 2004, p. 10). Researchers from M.A.R.C. and the Maritime Archaeological and Historical Society (MAHS) recorded the site and determined that it met the necessary criteria to become a Preserve. With the assistance of Friends of *Lofthus*, Florida's eighth Preserve was dedicated in 2004 (FBAR, 2004).

The 1994 survey that resulted in the nomination of *Tarpon* as the sixth Preserve also included the wreck of *Vamar*, which was renominated by a local boat captain in 2002. State personnel and the M.A.R.C. team revisited the site and recorded the remains, and conducted research to verify its noteworthy history.

> Originally christened *Kilmarnock*, the ship was acquired by Admiral Richard E. Byrd, who renamed it *Eleanor Bolling* after his mother and used it during his Antarctic expedition of 1928-30. After the expedition, the steamer was acquired by the Vamar Shipping Company, renamed *Vamar*, and used as a tramp merchant vessel. The ship sank under mysterious circumstances March 21, 1942, while leaving Port St. Joe bound for Cuba with a load of lumber. The exact cause of sinking has never been determined. Although overloading and shifting cargo generally are blamed, the specter of foreign war-time sabotage still looms over the shipwreck.

Vamar was designated as Florida's ninth Preserve in 2004.

Dive shop owners in Bradenton Beach nominated the wreck of *Regina* to become a Preserve in 2001. Known locally as the "Sugar Barge," the ship was a steel steamer built in 1904 in Ireland for the Havana-based Cuban Molasses Transportation Company, becoming part of its molasses transport fleet. Encountering a violent storm while under tow in 1940, *Regina* parted tow lines and drifted helplessly, finally grounding and beginning to break apart under heavy wind and surf just off Bradenton Beach. Investigation found that the wreck met all criteria for Preserve status, it was archaeologically recorded, and eventually designated as Florida's tenth Underwater Archaeological Preserve in 2004 (FBAR, 2004; D. Scott-Ireton, personal communication, April 16, 2009).

The ship that would become Florida's eleventh Underwater Archaeological Preserve, *Georges Valentine*, was constructed in 1869 "as a 767-ton iron-hulled screw steamer with auxiliary sails in Liverpool, England. In 1889 the vessel was sold to a French firm, re-rigged as a three-masted barkentine, and by the early 1900s was working in Florida" (DHR, 2009b, *Georges Valentine*). In 1904, while sailing from Pensacola to Buenos Aires with a load of milled mahogany, she encountered a fierce storm in the Straits of Florida and sank, though much of the cargo was able to be salvaged. "Originally valued at $7,000.00, [it] was sold at auction for $200.00," and "much of the lumber was used to build homes in the Stuart area" (DHR, 2009b, *Georges Valentine*). The wreck was archaeologically investigated and documented, and designated as Florida's eleventh Preserve in 2006 (D. Scott-Ireton, personal communication, April 16, 2009).

The costs involved in Preserve creation are not easily quantifiable. There is no cost for initial nomination; anyone can do so by simply filling out a form. There are costs involved in the next step of on-site research conducted by DHR staff, though archaeologists

have generally received in-kind local support, ranging from dive shops contributing tank fills, to discounted hotel rates. DHR covers several initial and ongoing costs, including designing and printing the literature and the bronze plaque. The local community also covers a significant portion of the costs, with varying degrees of success, including continued printing of the dive guides, and creation and deployment of the cement monument on the site (D. Scott-Ireton, personal communication, April 16, 2009).

Evaluation

The stated goals of the Preserve system are "to promote education through recreation while encouraging protection of submerged cultural resources" (Scott-Ireton, 2003, p. 102). Though not a measurable objective, the Preserve system can be considered an unqualified success. Using as a gauge the additional designation of a new Preserve every few years, the program can also be considered well-established and highly sustainable. A look at the three measures reveals the reasons.

Florida's Underwater Archaeological Preserves set the standard for community involvement, representing perhaps the strongest of any of the programs analyzed. Public support and interest provide the driving force behind each Preserve's creation, from nomination through designation through continued management of each site. This participation is not spontaneous, but is based on considerable effort by FBAR to solicit and maintain it. Program initiators founded the Preserve system upon the notion that:

> …by encouraging citizens to adopt their local shipwreck Preserve, learn its history, and care for the site, a sense of stewardship is developed that helps to protect these resources from damage and exploitation. Public education and

> access builds the feeling of ownership and encourages local people to become guardians of their maritime heritage. (Scott-Ireton, 2003, p. 102)

While state archaeologists and staff provide organization and guidance, as well as diver education, it is local community members, businesses, sport divers, and the Friends group that is formed for each Preserve who contribute at least as much time and effort to make each Preserve a success. By fostering a sense of pride and responsibility in local historic resources, the Preserve system has essentially ensured its future sustainability.

The methods of interpretation in the Preserve system are diverse and thorough. One of the more lasting educational techniques occurs during the process of Preserve creation, when state archaeologists conduct a workshop in cooperation with a local dive shop to train sport divers in archaeological recording. Workshop graduates are then invited to help survey and record the shipwreck site. In this way, divers not only learn about the particular shipwreck they help map, but also learn about archaeological method and ethics, and can extend this knowledge and behavior to future dives.

Each site is interpreted by an underwater plaque, usually embedded in a concrete block, to which is attached a mooring buoy. The buoys remain on site year-round, and serve the dual purposes of allowing dive boats to moor without dropping anchor on the site, and providing a guideline for divers to descend directly to the wreck. An interpretive brochure is created and widely distributed, which includes “the ship’s history, how it came to be at its present location, a description of the underwater environment, an explanation of features, directions to find the site, and instructions for diving” (Scott-Ireton, 2003, p. 99). Laminated underwater guides are also produced, showing the site plan, any special features, and descriptions of sea life present; these are available from local dive shops. Also, “a local

museum or other establishment generally hosts a shore-based exhibit including artifacts, pictures, and information," and "an opening ceremony dedicates the site with the placement of a plaque proclaiming the shipwreck a State Underwater Archaeological Preserve and Florida Heritage Site" (Scott-Ireton, 2003, p. 99). Preserves also become part of Florida's Maritime Heritage Trail (http://www.flheritage.com/archaeology/underwater/maritime), and are listed on the National Register of Historic Places. In 2009, online interpretation was significantly expanded with the Museums in the Sea Website (http://www.museumsinthesea.com), which includes a webpage for each Preserve enabling internet visitors to virtually dive on each shipwreck (Figure 12). Each Preserve page includes video footage of the shipwreck remains, with narration describing the history and marine life present on the wreck. Visitors are also able to download the interpretive brochure and the underwater diving guide.

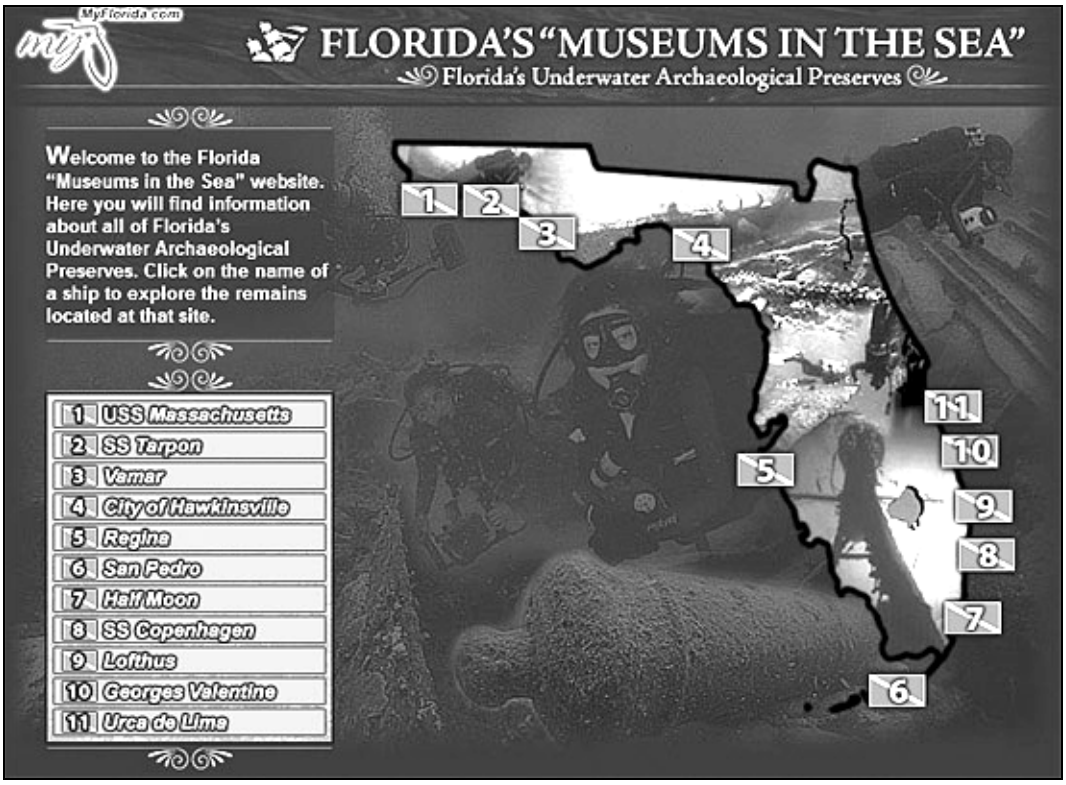

Figure 12. Locations of Florida's Underwater Archaeological Preserves. Retrieved April 18, 2009, from: http://www.museumsinthesea.com/

These diverse methods of interpretation possess both quantitative and qualitative aspects. A broad spectrum of the public is able to experience the Preserves in some manner, ranging from casual tourists to divers to virtual visitors, and all methods of interpretation are free of charge. All methods also include a message about stewardship to accompany the descriptions of the site's history and biota.

One way to gauge effectiveness of interpretation is via visitor feedback and satisfaction. In the case of Florida's Preserves, this information is not systematically collected following the designation of each Preserve. During the process of creation, there are several opportunities for public comments and questions, though at this stage in the process they typically concern the Preserve designation itself rather than interpretive materials. The range and depth of interpretive materials are considerable, but the degree to

which they are actually utilized, and successfully communicate the intended message, will remain mostly speculative unless more information is collected regarding visitor frequency and satisfaction. This could be attempted through more active overtures to the local diving community after Preserve creation, perhaps by working with dive shops and regular Preserve volunteers to develop and experiment with innovative ways of gathering visitor frequency and satisfaction data. There may be ways of encouraging or providing incentives for visitor registration, as well as gathering visitor feedback, which would at least yield more information than is currently available.

Scott-Ireton states that management is passive, as the state is unable to monitor visitors to each site, which is the Preserve system's primary weakness (2003). "State personnel visit each Preserve once a year to inspect the site, note any variation in its condition, and determine the extent, if any, of changes to the site," but community members typically assume responsibility for maintenance, as "a local dive shop or diving club generally adopts the Preserve and schedules regular trips to clean the site of debris and scrub growth off the plaque" (Scott-Ireton, 2003, p. 99). Regarding visitation, "general statistics are available from the dive shops and charter boats that run trips to the sites, but comprehensive specifics are elusive" (Scott-Ireton, 2003, p. 101). According to managers, "the next challenge is to determine a way to generate accurate Preserve visitation data" (Scott-Ireton, 2003, p. 101), as mentioned in the preceding discussion of effective interpretation.

Though visitation to open-water sites may not be actively monitored, management of the Preserve system is remarkably active in many other ways. The steps previously outlined for Preserve creation are methodical, and are followed for each Preserve, ensuring that new Preserves are created in a timely manner, and that all bases are covered each time. Many of

the steps also involve raising community interest and support, which then serves as a management system for the Preserves on a daily basis, as members of the public have a vested interest in the Preserves' success.

While state personnel are not able to monitor the sites directly, there are several other ways that they maintain an active level of management. The mail-out forms soliciting Preserve nominations are one such way. Thousands of requests are mailed to waterfront businesses and organizations statewide, which serve the dual purposes of seeking information, and conveying the state's commitment to preservation of its submerged cultural resources, as well as communicating the necessity of public involvement in the process.

The workshops held to train sport divers in archaeological method are intended for educational purposes, but also serve as active management in numerous ways. They are open to anyone who is interested, therefore reaching a broader segment of the public. They also illustrate the state's dedication to shipwreck protection, and its desire to foster positive public interaction with historic resources. Finally, the workshops teach archaeological ethics, in the hope that participating divers will extend this behavior to future interactions with shipwrecks, thereby indirectly serving as a management system for all of Florida's submerged cultural resources.

No negative impact on resources is contributed by existence of Preserve system. Many of the shipwrecks are in very dynamic environments and are regularly covered and uncovered, resulting in continuing changes to the site and its marine life. By the time sites become Preserves, most, if not all, of the detachable artifacts have been removed, either through prior salvage or looting, or during archaeological recording and excavation. Any negative impact therefore occurs via environmental causes or incidental contact. In fact,

significant positive impact occurs during the process of Preserve creation, as each site is properly investigated and documented.

There are few, if any, tradeoffs involved in Florida's Underwater Archaeological Preserves. The system is cost effective, with both monetary and in-kind costs shared between federal, state, and local agencies and organizations. Community involvement is maximized, at the individual and organized level, and provides much of the impetus that sustains the program. Interpretation is effective, and achieved through diverse and thorough methods, so that a wide range of audiences can experience the Preserves. Management is notably active, with semi-regular mailings distributed to solicit site nominations, diver training workshops whose message of stewardship serves to protect other shipwrecks, and regular site maintenance conducted by state personnel and private groups. Impact on the resources as a result of Preserve creation is positive, in the form of archaeological documentation, and the excavation and conservation of any extant artifacts. The tradeoff is that which is inherent in facilitating public access to open-water cultural resources. A degree of negative visitor impact is inevitable with increased visitation, but with a targeted program of public education, visitor behavior can at least be directed. The main drawback of the program is the difficulty of gathering visitor frequency and satisfaction data, but based on indirect information gleaned from such sources as tourist literature, comments from public meetings, and the sustained level of community interest in the Preserve system, the program can be considered a tremendous success. The Preserve system has also become so widespread within Florida, as well as renowned elsewhere, that with the current level of resource and time investment by state personnel, the program is not only sustainable, but will continue to grow.

Feasibility in North Carolina

Shipwreck preserves and parks like Florida's Underwater Archaeological Preserves do exist elsewhere. In fact, managers of Florida's Preserves were "following the lead of Michigan and Vermont, where sites in cold, fresh water were established as preserves" (FBAR, 2004, p. 4). Following the success of Florida's second Preserve based on the *San Pedro*, managers in other states with similar environmental conditions, like North Carolina, began to consider applying the model to some of their shipwrecks. North Carolina State Underwater Archaeologist Richard Lawrence led a team to explore Florida's Preserves in the late 1980's, and successfully adopted the model to create the USS *Huron* Preserve in 1991. Since then, however, no other preserves have been created in North Carolina.

The components of Florida's Preserves that North Carolina managers should more diligently implement are the high degree of community involvement and the diversity of interpretive methods. To begin to create new preserves in North Carolina, managers should consider periodic mailing of forms soliciting nominations of shipwreck candidates, and other means of expressing the state's interest in creating new preserves, including presentations in local communities, at such locations as museums and dive shops. For the existing *Huron* Preserve, managers could print and distribute interpretive brochures and laminated dive slates, and augment the online interpretative component to include a more dynamic and interactive experience.

Watts and Lawrence (2001) have recommended three wrecks off Fort Fisher as excellent candidates for preserves, based on survey and analysis. A possible next step in this process would be the securing of funds, potentially from NOAA as Florida did for its sixth Preserve, and subsequently the planning of diver training workshops and communication

with local media outlets to begin establishing stronger community support networks. Local divers could assist with full excavation and recording of the sites, thereby building a base of support for the resources, and building relationships between managers and stakeholders.

Wisconsin's Maritime Trails

Background and Implementation

The Great Lakes extend from Duluth, Minnesota to Kingston, Ontario, and empty into the Atlantic Ocean via the St. Lawrence River. "Formed by the advance and retreat of continental glaciers, the lakes did not settle into their present shapes and approximate elevations until about 4000 years ago" (Halsey, 2002, p. 169). Though Native Americans were plying the Great Lakes with dugout canoes as early as 3550 B.P., the size and nature of these vessels confined travel to near shore areas (Halsey, 2002). The first full-sized sailing vessel on the lakes was La Salle's *Le Griffon* in 1679, which mysteriously sank on the return trip of its maiden voyage from Green Bay to Niagara (Mills, 1910). While the Great Lakes Exploration Group has claimed to have discovered the wreck, an ongoing legal battle over ownership has hindered further exploration and confirmation of the wreck's identity (Gohs, 2009).

During the late 16th and early 17th centuries, when French exploration led to the growth of the fur trade industry, the Great Lakes became instrumental in commerce, and the locale of events that would influence several nations. In the 60-year span encompassing the French and Indian War, the American Revolution, and the War of 1812, France, England, Native American tribes, and American pioneers (and later statesmen) all struggled for domination of the Great Lakes region. During this time, cities and borders formed that would shape the central portions of present-day America and Canada (Mills, 1910; Barry, 1996; Bamford, 2007).

As immigrants increasingly settled in the area, utilizing the livelihoods of the fur trade and the growing commercial fishing and timber industries, the Great Lakes formed the backbone of industry and commerce. To this end, canals were opened and channels were deepened, and lighthouses and life-saving stations were constructed. During this heyday, the Great Lakes witnessed the evolution of water transport, from the great schooners and warships of the Age of Sail, to the advent of steamships with their increased tonnage and passenger comfort, to the 1000-foot modern freighters that largely haul products for the steel industry (Mills, 1910; Barry, 1996; Halsey, 2002; Bamford, 2007).

Because the weather and conditions on the lakes can be fickle, an untold number of ships have met their demise in the region, "leaving on [the lakes'] bottoms a sample of virtually every type of vessel that traversed them, an unparalleled museum of naval architecture, propulsion and cargoes" (Halsey, 2002, p. 170). Shipwrecks in the Great Lakes have an advantage over those in the ocean: cold freshwater is much more conducive to preservation than warmer saltwater, and many Great Lakes shipwrecks exhibit a near pristine appearance. Unfortunately, in addition to the invasive and now ubiquitous zebra mussel, the activities of salvors and unscrupulous divers have taken a serious toll on many of the wrecks whose location is known (Halsey, 2002).

Halsey (2002) describes Wisconsin's maritime archaeology program as the most fully-formed of any of the Great Lakes states, with former State Underwater Archaeologist David Cooper having worked to forge "partnerships with a wide variety of agencies, groups, and individuals" (p. 173). Development of a formal program, and compilation of information for a Wisconsin shipwreck database began in 1988 (Halsey, 2002; K. Meverden, personal communication, January 26, 2009). A series of surveys conducted cooperatively by federal

and state archaeologists and partner organizations resulted in the documentation and inventory of dozens of shipwrecks spanning the entirety of Wisconsin's extensive shoreline (Halsey, 2002).

The intent of Wisconsin's Maritime Trails is to take visitors "back to the days when schooners and steamers sailed the Great Lakes" (Wisconsin's Maritime Trails, 2009). The resources interpreted encompass Wisconsin's coastal and maritime attractions, including historic shipwrecks, lighthouses, museums, historic markers, historic vessels, and waterfront parks. The first grant specifically for the Maritime Trails was obtained in 2000, and the process of converting the database files to a digital and online format was begun in 2002. The stated goals of the program are "to foster wider public appreciation of the state's rich maritime past and encourage preservation of unique historic sites such as shipwrecks, lighthouses and historic waterfronts," as well as "to document, preserve and protect the state's submerged archaeological sites" (Wisconsin's Maritime Trails, 2009).

The methods of interpretation are diverse, targeting a wide range of audiences. "Through Web sites, interpretive signage, public presentations and shipwreck moorings, the Maritime Trails initiative encourages divers, snorkelers, boaters, maritime enthusiasts, and tourists to visit and enjoy Wisconsin's diverse collection of maritime resources" (Wisconsin's Maritime Trails, 2009). The primary Web site includes lists and descriptions of all of Wisconsin's coastal and maritime attractions, a searchable shipwreck database, and resources to learn about Wisconsin's maritime history and underwater archaeology. An additional component of the program is Wisconsin's Great Lakes Shipwrecks, whose Web site www.wisconsinshipwrecks.org, enables visitors to explore virtually some of Wisconsin's shipwrecks "through underwater video, historic photographs, and archaeological discoveries"

(Wisconsin's Great Lakes Shipwrecks, 2009). Online information is grouped into four geographic areas (Figure 13).

Figure 13. Geographic groupings of maritime resources on Wisconsin's Maritime Trails and Wisconsin's Great Lakes Shipwrecks. Retrieved July 8, 2009, from: http://www.maritimetrails.org/visit.cfm

The program is therefore accessible to everyone, and the only costs involved are admission fees to some of the museums and historic vessels. Wisconsin's Maritime Trails currently includes 123 visitor attractions, the database contains 682 historic shipwreck losses, and "each year new attractions are added – most often new maritime trails signs and shipwrecks added to the National Register of Historic Places" (K. Meverden, personal communication, January 26, 2009).

The program is a collaborative effort between the Wisconsin Historical Society (WHS) and the University of Wisconsin Sea Grant Institute, and is implemented by Wisconsin Historical Society staff. Other partners include federal, state and local agencies,

chambers of commerce, private businesses, non-profit organizations, and individuals interested in promoting historic preservation and heritage tourism. Enabling policy consists of Wisconsin state statute Chapter 44, addressing State and Local Historical Societies, and the 1992 Wisconsin Act 269. State statute charges the Wisconsin Historical Society with "the research, protection, restoration, and rehabilitation of historic properties within Wisconsin" (K. Meverden, personal communication, January 26, 2009), as well as "the use and conservation of such property representative of both the rural and urban heritage of the state for education, inspiration, pleasure and enrichment" of the public (Wisconsin Stat. § 44.30, 1987). In 1992, Wisconsin Act 269 "modified Wis. Stats. § 44.47, creating a submerged cultural resources program and a new Submerged Cultural Resources Council" (Wisconsin Historical Society, 2005, p. 28). The act also "authorizes the designation of state marine preserves and beefs up protection of state underwater archeological resources" by "making artifact theft and site looting on state lands and bottomlands a crime rather than a civil offense" (Cooper, 1993, p. 2).

The initial grant for start-up costs in 2000 was in the amount of $175,000 from the University of Wisconsin Sea Grant Institute. Since that time, Sea Grant has continued to provide two-year grants which help fund research vessels, dive equipment, and vehicles. According to State Underwater Archaeologist Keith Meverden, "only 14% of [WHS's] annual operating budget comes from state funds; all other expenses are funded by grants that cover both personnel and expenses," which include one full-time and one part-time staff member, as well as 12 volunteers (K. Meverden, personal communication, January 26, 2009). In addition to Sea Grant, the Wisconsin Coastal Management Program and the Wisconsin Department of Transportation are the other two significant grantors, and "each year there

have been subsequent grants to build the program that vary between $60-$100,000" (K. Meverden, personal communication, January 26, 2009).

The task of converting the WHS shipwreck database to a digital and online version involved numerous WHS staff, and close collaboration between archaeologists and information technology specialists, who were charged with "taking an archaeologist's 'wish list' of features and functionality and making it a reality" (Wisconsin's Maritime Trails, 2009, "Research: About the WHS Shipwreck Database"). Design team Rapidigm Inc. was also contracted for this purpose, using "funds from the Federal Highway Commission's Transportation Enhancement Program, administered through the Wisconsin Department of Transportation" (Wisconsin's Maritime Trails, 2009, "Research: About the WHS Shipwreck Database").

Evaluation

At achieving its goals of protection, education, and promotion of Wisconsin's maritime heritage, the program is a significant success. Assessment of the program's community involvement, effectiveness of interpretation, and active management finds that these three components are all significantly present and well-balanced.

Unlike Florida's Underwater Archaeological Preserves, which began with community interest, Wisconsin's Maritime Trails initially began with shipwreck investigations under state auspices. Even during the program's early years, Cooper worked conscientiously to forge partnerships between government agencies, private groups, and individuals. In this way, the community began to gain awareness and appreciation for Wisconsin's submerged cultural resources prior to the advent of the official Maritime Trails program.

During the initial decade of intensive survey, the primary segment of the involved public was the diving community, who were able to assist in various archaeological tasks. This pattern has been perpetuated in the program's present incarnation, largely as a cost effective strategy for maximizing available resources. According to Meverden, with "only 1.5 positions to cover all the submerged resource sites throughout the state," WHS finds the best use of limited time and resources to be "concentrat[ing]… on submerged shipwreck sites," and the diving community (K. Meverden, personal communication, January 26, 2009). Additional collaboration occurs with the Wisconsin Department of Natural Resources (DNR) on buoy placement and site monitoring, as well as with "local museums and civic groups to give educational programs on Wisconsin's maritime heritage, and we are beginning to work with the Wisconsin Maritime Museum on an upcoming exhibit" (K. Meverden, personal communication, January 26, 2009). Non-diving members of the community have not been instrumentally involved in the program's implementation, and perhaps do not possess a tremendous vested interest in the program's success, though the program's staffing and funding have been reliable enough to counteract this potential shortcoming.

Diversity of interpretation is clearly important in the program's design and implementation. The Web sites for Wisconsin's Maritime Trails and Wisconsin's Great Lakes Shipwrecks are freely accessible to everyone, and include comprehensive information and opportunities for thorough virtual exploration of Wisconsin's maritime heritage. In addition to the Web sites, the trail initiative "includes outreach and education programs designed for both divers and non-divers of all ages," including "WHS and UW Sea Grant funded dive guides and publications showcas[ing] site maps and archaeological findings," shoreline historical markers, and museum exhibits (Wisconsin's Maritime Trails, 2009,

"Learn More"). "Public programs on Wisconsin's maritime history and nautical archaeology also allow residents and visitors to explore the state's historic treasures" (Wisconsin's Maritime Trails, 2009, "Learn More"). Additionally, while WHS underwater archaeologists are conducting field work, they post daily journal entries online, "contain[ing] text, underwater images, and occasionally underwater video" (Wisconsin's Maritime Trails, 2009, "Learn More").

In this way, quantity of interpretation is successfully accomplished: according to Meverden there were "125,292 visits by 44,160 unique visitors last year to [the Web site] www.maritimetrails.org" (K. Meverden, personal communication, January 26, 2009). Shoreline signage has the potential to reach countless visitors, though many of the "maritime trails signs are at remote locations," and as is also the case for shipwrecks in the open waters of the Great Lakes, "there is no accurate way to track visitation of submerged sites within Wisconsin" (K. Meverden, personal communication, January 26, 2009). There are also five "interactive kiosks installed at museums around the state, and for those we cite the yearly visitation of the museum as an estimate" (K. Meverden, personal communication, January 26, 2009).

Regarding the quality of interpretation, WHS staff receive participant feedback in several ways, and incorporate it into modifications to, and maintenance of, the Trails program. WHS staff members receive significant amounts of feedback from "attend[ing] all the regional shipwreck/diving conferences," and also as a result of the "20-30 public presentations [given each] year" (K. Meverden, personal communication, January 26, 2009). Both of the Maritime Trails and the Great Lakes Shipwrecks Web sites also have opportunities for sending feedback to WHS. Additionally, WHS staff "are also privately

active in the local diving community and have constant contact with users of the resource" (K. Meverden, personal communication, January 26, 2009). The combination of all these outreach methods encompasses both the quantitative and qualitative aspects of interpretation, and considers participant feedback in the continued implementation of the program.

Management of the virtual aspect of the program is among the most active of the 10 programs evaluated. Both Web sites are updated regularly and frequently to reflect new developments in research and outreach, in addition to being continually augmented with new information. Management of the physical sites on a daily basis faces the same challenge as all cultural resources in open water, which are practically impossible to monitor. WHS staff realize that the "most effective management tool is education and fostering a sense of ownership and protection among the local community divers who then take a personal interest in protecting and promoting the sites: they are our most effective management tool" (K. Meverden, personal communication, January 26, 2009). The active education component of the program, therefore, serves to strengthen the management aspect.

On a long-term scale, WHS staff have observed a general trend in the management of the physical sites which reflects the effectiveness of the outreach efforts. If the most significant indicator of active management is considered to be impact on the resources, then the success of the program is demonstrated by "reduced looting each year (especially on newly discovered wrecks)," in addition to WHS "increasingly [being] the first ones contacted by shipwreck hunters when they have a new discovery: each year we have new requests for aid in documenting new wrecks" (K. Meverden, personal communication, January 26, 2009).

The tradeoffs of Wisconsin's Maritime Trails are minimal. Community involvement (at least among the diving sector of the community) is high, interpretation is diverse and

designed to be both quantitative and qualitative, management is notably active, and the impact upon the resources has been largely positive. As with all shipwreck programs that raise awareness of site locations, the program has the potential to increase site visitation in conjunction with limited site monitoring, which is why the program's strong education component serves to teach divers the value of stewardship. With the program's current level of staffing and resources, it is sustainable in its present state, and is likely to continue expanding as research is conducted. A larger line item in the state budget, in addition to more staff, would nonetheless help ensure its long-term stability, and expand its positive impact on Wisconsin's submerged cultural resources.

Feasibility in North Carolina

The physical environmental conditions differ greatly between Wisconsin and North Carolina, with the latter possessing warm saltwater which is detrimental in numerous ways to shipwrecks. Nonetheless, a program such as this would be extremely feasible in North Carolina, and in fact, is highly recommended. Both the goals and the methods of the Trails program merit extension, and actually serve as a model which could be fairly directly duplicated. Place-based as well as interactive online interpretive methods enable both physical and virtual visitors to experience Wisconsin's maritime history.

The shipwreck files of the North Carolina UAB comprise a considerably comprehensive inventory of known shipwrecks. Grants could theoretically be obtained from the University of North Carolina Sea Grant Institute, as well as the Federal Highway Commission's Transportation Enhancement Program, to name a few potential sponsors, to begin the process of digital and online conversion of the records. With such resources, UAB staff, and possibly ECU Maritime Studies students, could follow Wisconsin's example in

relatively short order, beginning the process of a similar trails program that would greatly benefit the people and the archaeological resources of North Carolina.

Chapter 7: Educational Programs

Student Archaeology Workshop (SAW) (NC)

Background and Implementation

In 1999, teacher Sheri Coates and NHHC archaeologist Wendy Coble had an idea for a program designed to teach students the theory, method, and ethics of shipwreck archaeology, by recording the remains of shipwrecks on the beach. For one week that summer, a small group of eighth graders from Tri-City Academy in High Point, North Carolina conducted an archaeological investigation of a selected site at Cape Hatteras, and for the following two years Coble and Coates brought successively larger groups of students to the Outer Banks for the week-long program. In 2003 Joe Schwarzer, Director of the Graveyard of the Atlantic Museum, inquired about museum sponsorship of the project, and local donor Fin Gaddy offered to subsidize the work. Unfortunately Coates passed away unexpectedly in late 2003, but Coble was able to continue the program starting in 2004, with the support of Schwarzer and his wife Melanie, museum volunteer Lynn Foster, and local teacher Beverly Henson (Coble, 2006). Since then, the program has been conducted for one week each summer until 2009, when Coble's departure from the Naval Historical Center and the ongoing budget crisis caused the program to be postponed indefinitely.

The Student Archaeology Workshop is conducted for one week each summer, and accepts 8-22 high school students per session, though the number has been limited to 12 in recent sessions. The program's goals are to teach students about the methods and ethics of archaeology, and via interaction with beach visitors and media reports, the necessity of public stewardship of cultural resources (Coble, 2006). The cost is $300 per participant, and

grants are available if needed. Because the program was first implemented as a class trip, initial start-up costs were covered by the school system. Supplies were then able to be reused, or purchased using the next year's class funds. When museum sponsorship began in 2003, local donor Fin Gaddy contributed $5,000, an amount which has been sustained each subsequent year, providing financial assistance to participants if needed. In addition to this monetary donation, local individuals also generously donate a significant amount of time and resources, in the form of housing, meals, local transportation, and field trips (W. Coble, personal communication, January 29, 2008). During the evenings, students enjoy local excursions to participate in beach vacation activities and visit local attractions.

At the program's inception, there was no enabling policy. Because the program is now implemented through the Graveyard of the Atlantic Museum, which became part of NCDCR in 2008, NCDCR's mandate for public education under North Carolina General Statute 121 will apply for future sessions, if there are any (North Carolina Archives and History Act, 1973). Coble's departure from the Naval Historical Center effectively ended the center's direct association with the program. NOAA's *Monitor* National Marine Sanctuary also participates, with its outreach coordinator leading a remotely operated vehicle (ROV) activity during each session. Each site selected for study has been within Cape Hatteras National Seashore, under National Park Service jurisdiction, but since the program is based on non-disturbance documentation, NPS does not require an ARPA permit (W. Coble, personal communication, January 29, 2008).

Prior to the beginning of each session, students are provided instructional materials and literature on maritime archaeological theory and method. During the first day of the program, they learn basic recording methods, including triangulation and the use of a plumb

bob and line level, and collaborate to produce a practice site map. The site to be investigated consists of remains of a beach shipwreck in the Cape Hatteras area, selected by program managers in consultation with NPS staff. The bulk of sand overburden around the wreck is first removed with a backhoe, so that students may immediately begin more detailed excavation and recording. During investigation of the wreckage, students also learn how to use GPS equipment and GIS software to record and view the exact geographic location of the site. They also keep a detailed field notebook, which serves multiple purposes: students are encouraged to be more meticulous in their observations at the site, they produce journal entries of local field trips, and at the end of the week they are asked for feedback regarding their favorite aspects of the program, as well as suggestions for improvement.

Figure 14. Wendy Coble and SAW participants in 2006 session. From *Student Archaeology Workshop 2006 Report* (p. 1), by Wendy Coble, 2006, Washington, D.C.: Naval Historical Center.

Evaluation

The program began as a brainchild of Coble and Coates, rather than growing out of community interest and initiative. Within a few years of its initial implementation, however,

the Graveyard of the Atlantic Museum had opened, which was itself a product of community interest and initiative, and museum staff and volunteers began assisting with program implementation. Because of this support, as well as media coverage of the annual program, other members of local communities increasingly began to lend their support as well, in the form of monetary contributions, student housing, meals, and local transportation. This involvement has played a critical role in the program's continued success, though the program's postponement in 2009 shows that more ingredients are necessary to make it sustainable.

The various methods of interpretation during the week-long program are unquestionably effective. Students are required to read the literature sent to them prior to the beginning of the week, concerning maritime archaeological theory, method, and ethics, and they are expected to have a working knowledge of the material. Upon arrival, they then practice some of the methods, and begin recording the selected site. Their work is supervised, and Coble produces the final site map and report, but the data is derived from the students' maps and field notes. This hands-on learning experience, with accompanying responsibilities, is a highly effective educational technique. While the students are working on the site, they are also expected to interact with reporters and beach passersby who visit the site, answering questions, and explaining their work, including the importance of wreck preservation. During the afternoons and evenings, students visit local historic sites and experience local attractions, as well as attend lectures by local historians and divers. Each day they are required to keep a journal, which includes field notes as well as their impressions of their experiences (Coble, 2006). Coble considers this participant feedback critical for program improvement, with the goals of maximizing the students' experience, and building support

and interest for future program sessions (W. Coble, personal communication, January 29, 2008). Participant feedback is overwhelmingly positive and enthusiastic, with many students returning in successive years, and a number of local schools expressing eager interest in participating.

Effective interpretation therefore clearly possesses a qualitative aspect, but the quantity of participants is one of the program's major shortcomings, with only 12 students able to participate each year. Interest in participation is much greater than available resources can currently accommodate. The number of applicants continues to grow every year, and local awareness and media coverage of the program has spurred a growing number of students and teachers wishing to participate. Unfortunately, the current level of monetary support, student housing, and archaeological instruction and supervision are prohibitive for more than 12 students, and more than one week each summer.

The level of management until 2009 has been notably active. For all intents and purposes, the program is a residential summer camp that has been organized and successfully implemented by a very small number of people. The fieldwork and activities scheduled each day maximize the students' time and learning experience, and require significant planning and organizing prior to the beginning of the session. Regarding impact on the resource as it relates to management, each wreck site is uncovered for the purpose of the workshop, and participant behavior is guided and supervised. In this way, the program has actually resulted in a positive impact on the resources, since the end product is a site map and report which otherwise would not have been produced. Though the uncovered wreck is unguarded during lunch breaks and at night, only one incidence of disturbance has been observed in eight sessions. In 2006 during a lunch break, a beach passerby moved one of the five-foot

increment markers along the baseline of the site, which was not noticed by students until nearly the end of the day, when several units of the site map had to be redrawn. No negative impact has been observed upon any of the wreckage though.

The main problems with program management are the program's lack of established funding, and its reliance on one person for continued implementation. Though the Graveyard of the Atlantic Museum began sponsoring the program in 2004, and the museum became part of NCDCR in 2008, the current budget crisis, and Coble's departure from the NHHC are the primary causes for the indefinite postponement of the program in 2009. Though the museum and a portion of the local community recognize the importance and value of the program, it does not have its own annual budget line, or apparently anyone else able to add its organization and implementation to their schedule.

The Student Archaeology Workshop has been hugely successful at teaching the theory, method, and ethics of maritime archaeology to a select group of students, and at raising community awareness and interest in cultural resource preservation. The program's main tradeoff is the limited number of people who can participate in it, with only 12 students selected each session, and one session per year. Interest definitely exists on the part of other students and teachers to participate, but the program's continuation even at its current level is apparently tenuous. Based on the success of the program through 2008, it could easily be sustainable, but additional funding and administrative measures will have to be taken.

Feasibility Elsewhere

The program's teaching of archaeological theory, method, and particularly ethics warrants continuation and extension. The program effectively conveys a comprehensive stewardship message to its audience, and even evaluates this effectiveness. Expansion of the

audience to more students, as well as teachers, would dramatically increase the scope of the program's goals. Though the North Carolina coast is among the more volatile sections, sandy beaches of the eastern seaboard generally have a wide, gently sloping continental shelf, and enough storm action to reveal long-buried wrecks fairly regularly. With sufficient initiative and funding, programs similar to this one could be implemented in any number of coastal communities. If the Student Archaeology Workshop were able to become more solidly established in North Carolina first, however, it would serve as a better model for extension elsewhere.

The program deserves its own annual budget line, more than one staff member who is able to be dedicated to the program in the summer, and housing that can accommodate more than 12 students. The Graveyard of the Atlantic Museum could theoretically supply the first two of these items. The North Carolina Center for the Advancement of Teaching (NCCAT) has converted the old Coast Guard Station in Ocracoke Village to a fully functional retreat facility, which may be an additional option for housing, and possibly supplemental staff. The University of North Carolina's Coastal Studies Institute (UNC-CSI), an inter-university research facility currently in the planning stages of its campus on Roanoke Island, would also be an excellent candidate to begin sponsoring the program, since the goals of SAW fit so nicely with the mission of UNC-CSI, which is to "undertake research, offer educational opportunities, provide community outreach programs, and enhance communication among those concerned with the unique history, culture and environment of the maritime counties of North Carolina" (University of North Carolina, Coastal Studies Institute, 2009).

Queen Anne's Revenge *Dive Down (NC)*

Background and Implementation

> In November 1717, English pirates captured the French slave-ship *La Concorde* near the island of Martinique. Led by the notorious Blackbeard, the pirates converted *La Concorde* into their flagship and renamed the vessel *Queen Anne's Revenge.* After spending the winter searching for prizes in the Caribbean, the pirate fleet, consisting of *Queen Anne's Revenge* and three smaller sloops, blockaded the port of Charleston in May 1718. Continuing up the coast, Blackbeard lost his flagship while attempting to enter Beaufort Inlet, North Carolina and five months later he was killed in a bloody battle at Ocracoke. (NCDCR, n.d., *QAR* Project Web site, "History")

In 1996, under the auspices of a NCDCR search permit, the private research firm Intersal, Inc. discovered what appeared to be remains and artifacts from the ship. In cooperation with the NCDCR's UAB, eight weeks of survey excavation were conducted in 1997 and 1998 to complete a site assessment (Wilde-Ramsing and Lusardi, 1999). The wreck site is located at a depth of 23 feet, 1.3 miles offshore from Fort Macon, and on the west side of the current shipping channel of Beaufort Inlet (Figure 15). The site spans approximately 150 feet by 50 feet, with a concentrated area of visible remains in the center measuring about 25 feet by 15 feet. In 1997, the NCDCR Secretary declared the site (NC shipwreck 31CR314) a Protected Area, and in 2004 it was listed on the National Register of Historic Places. Notable artifacts include 25 cannon of different sizes and origins, 3 anchors, and a 27-foot by 8-foot section of hull structure, largely covered by cannon, anchors, and ballast

stones. Recovered artifacts were originally stored and conserved at the UAB Headquarters at Fort Fisher, and at the University of North Carolina at Chapel Hill's Institute of Marine Sciences (IMS) in Morehead City, until a dedicated conservation laboratory opened in 2004, on East Carolina University's West Research Campus (ECU-WRC) in Greenville. In 2006, the *QAR* Project entered full excavation mode, and after three working seasons, approximately one-third of the wreck has been fully excavated. Fully conserved artifacts are displayed at the North Carolina Maritime Museum (NCMM) in Beaufort.

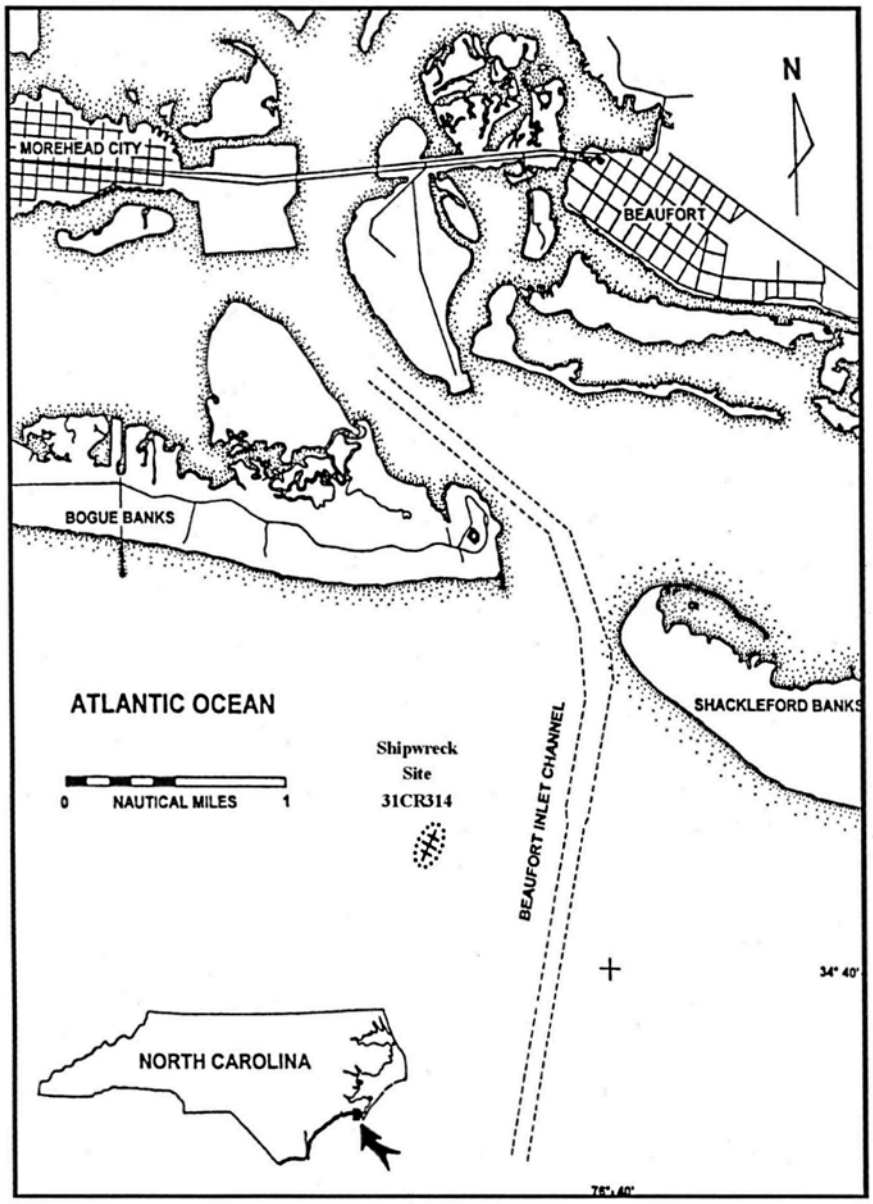

Figure 15. Map of *Queen Anne's Revenge* shipwreck site in Beaufort Inlet. From *Out of the Blue: Public Interpretation of Maritime Cultural Resources* (p. 128), John H. Jameson, Jr. and Della A. Scott-Ireton (Eds.), 2007, New York: Springer.

In 2004, "with public interest high and exposed remains extensively documented, the UAB decided to examine the possibilities of allowing recreational divers access to the site" (Wilde-Ramsing & Hermley, 2007, p. 129). ECU Maritime Studies student and local dive guide Lauren Hermley conducted a feasibility study (Hermley, 2004), which was reviewed by professionals from the National Park Service (Russell, 2004), NOAA's Maritime

Archaeology Center (Broadwater & Casserley, 2004), and the Florida Bureau of Archaeological Research (Scott-Ireton, 2004). Following determination of feasibility by the UAB, *QAR* Dive Down was first implemented in 2005. The program accepts between 12 and 20 recreational divers, with an advanced open water SCUBA certification, per session. The program cost of $500 per participant (increasing to $550 in 2009) includes instruction and materials, a welcome reception dinner, breakfasts and lunches, a tour of the North Carolina Maritime Museum, a practice dive on a different historic shipwreck, a guided dive on *QAR*, and specialty certification as a PADI Heritage Awareness Diver. Classroom modules consist of maritime history, underwater archaeology, coastal geology, and marine ecology. Through a multi-faceted approach, which includes "Education, Entertainment, Site Protection and Preservation, Benefits to State and Local Heritage Sites, and Implications for North Carolina Shipwrecks," the program attempts to

> convey the historical, archaeological, geological, and ecological importance of the *Queen Anne's Revenge* shipwreck site in order to encourage its future preservation and study, and to advocate for the appreciation of North Carolina's submerged cultural resources by encouraging divers to use this multidisciplinary approach for their own individual wreck diving experiences. (Wilde-Ramsing & Hermley, 2007, pp. 131, 143)

Because the wreck site is in state waters, it falls under UAB jurisdiction (Salvage of Abandoned Shipwrecks and Other Underwater Archaeological Sites, 1967). The program has therefore been implemented by the UAB, though the newly founded non-profit organization Friends of *QAR* will administer the program beginning in 2009. Start-up costs, including the feasibility and marketing study, were covered by two two-thousand dollar grants from the

Crystal Coast Tourism Enhancement Program, and private donors Leon and Sylvia Sylvestor. The following year, a four-thousand dollar grant was received from the Crystal Coast Tourism Enhancement Program to support the Trial Program for NC Dive Operators and initial program implementation in the spring of 2005 (L. Hermley, personal communication, February 18, 2009) . Afterward, the program was designed to be self-funding with participant fees.

Since its inception, the program has averaged between 75 and 100 participants per year. The participant fee has successfully covered all operating costs each year, and though it is not intended to provide revenue, there has been a small amount of residual revenue that has been able to help cover site monitoring costs. Following implementation of the first sessions in 2006, several points of the original program plan were restructured. Group size was reduced from 20 participants, sessions were scheduled less frequently than every weekend, MP3 units were replaced with dive guides using underwater communication equipment and clearer reference points on the site, and more time was scheduled for classroom presentations. (Wilde-Ramsing & Hermley, 2007)

Program administration is largely accomplished by Hermley, who contracts the instructors and dive guides for each session. She states that it constitutes a “relatively sizable time commitment” for her, estimating between 40 and 50 hours of input per session (L. Hermley, personal communication, February 18, 2009). Beyond initial curriculum design, instructors and dive guides typically only work for the program during each weekend-long session. A participant feedback form was constructed, though it has not been utilized as much as intended, due to time and energy constraints of the program’s schedule. According to Hermley, the site dive at the end of the second day of each session ends late, with “everyone

excited and exhausted, unloading gear, etc., and there just hasn't been a good window" to have the form completed (L. Hermley, personal communication, February 18, 2009). She states that managers "do rely heavily on input we receive from participants, but it's more in the form of casual conversation, reviews online, follow-up emails, etc." (L. Hermley, personal communication, February 18, 2009).

Evaluation

Based on participant interest alone, the program has been a monumental success, with session enrollment filling up months in advance. The three qualitative measures of success tell the story behind this continued public enthusiasm for the program. In the program's stated goals, managers do not explicitly mention community involvement, though effective interpretation and active management are intended to be accomplished through numerous avenues.

Because public access to the site is strictly limited, the program began as a top-down rather than a grassroots effort. The program is administered by dedicated individuals in positions of authority, and participation is limited to a select group of advanced divers who have the means to afford the participant fee. This model does not lend itself easily to community involvement, since there are no particular roles that members of the general public can play.

One manner of gauging effectiveness of interpretation is through participant feedback. Though feedback forms are not routinely completed at the end of each session, managers are nonetheless eagerly receptive to participant opinion. Analysis of existing feedback finds that "participant reaction coincide[s] with diver skill," with more experienced divers generally reporting high levels of satisfaction, and less experienced divers expressing

less positive reactions (Wilde-Ramsing & Hermley, 2007, p. 142). This finding will be utilized by "more comprehensive screening and an emphasis on diver preparedness [which] should yield participants who are more qualified," and who should be able to enjoy the interpretive experience more productively, as they would not be focused on basic SCUBA skills (Wilde-Ramsing & Hermley, 2007, p. 142). Though no measures are available to gauge the effectiveness of the classroom modules, their intent is undoubtedly comprehensive and thorough interpretation, encompassing the maritime history, underwater archaeology, coastal geology, and marine ecology of the ship and the wreck site. Completion of the visitor satisfaction survey, including questions about the classroom modules and diving excursions, could be encouraged in a variety of ways even after participants have returned home, and would provide concrete data regarding program effectiveness.

The program's goal statement promotes active management by "encourag[ing] … future preservation and study [of *QAR*], and … advocat[ing] for the appreciation of North Carolina's submerged cultural resources by encouraging divers to use this multidisciplinary approach for their own individual wreck diving experiences" (Wilde-Ramsing & Hermley, 2007, p. 143). The *QAR* site is actively managed, by protection from unauthorized visitors, and preservation through archaeological excavation and conservation. In addition, the program teaches stewardship of all shipwrecks to divers, in the hope that they will direct their own behavior towards the appropriate management of other underwater cultural resources. Perhaps the most telling measure of active management is user impact on the target resource. In this case, the status of the wreck site is meticulously monitored, and because program participants are accompanied at all times, no negative impact on the site has occurred as a result of this program.

In summary, what *QAR* Dive Down lacks in community involvement, it compensates for with effective interpretation and active management, ultimately rendering this program a significant success. The program's main drawback is the limited number of people who can participate. Because its message is so critical to the preservation of archaeological resources, and its participants so enthusiastic, the program's model merits consideration for adaption to other settings, where a broader audience may be reached. The tradeoff, of course, is that interpretation and management may only be so enthusiastically received in such a targeted environment on such a unique shipwreck. Unfortunately, because the *QAR* Project is currently in full-recovery mode, the Dive Down program is not inherently sustainable, and will come to an end when the shipwreck site has been fully excavated. The idea has been discussed of recreating some of the site's features and artifacts for future visitation (M. Wilde-Ramsing, personal communication, February 16, 2009), but without the element of authenticity, the program can no longer exist to protect and interpret the original resource.

Feasibility Elsewhere

Queen Anne's Revenge is unique in its historical significance, its degree of public interest, and the circumstances that created its administrative framework and management plan. Implementation of a program similar to Dive Down elsewhere would require similarity in all these components. Of primary importance is the wreck's geographic location, which enables constant monitoring and enforcement of the prohibition on unauthorized visitation. This situation is highly unusual. The ship's historical significance and degree of public interest are what mandate this prohibition, and also what enable the program to be self-sustaining with a high participant fee. The breadth and depth of education offered to the

diving community is certainly worth extending, and could theoretically be offered through other avenues, such as dive shop lecture series, courses, and special certifications.

Shoreline Heritage Identification Partnerships Strategy (SHIPS) (MA)

Background and Implementation

The origins of the Shoreline Heritage Identification Partnerships Strategy (SHIPS) are rooted in community involvement, and the attempts of resource managers to capitalize on this interest. Collaboration in resource protection efforts between the Massachusetts Board of Underwater Archaeological Resources (MBUAR) and local non-governmental organizations (NGOs) was not new. The Newburyport Maritime Society (NMS), "a non-profit organization dedicated to preserving and interpreting the maritime heritage of the lower Merrimack Valley" had developed a working relationship with MBUAR through "permitted field investigations and educational activities," as well as jointly organized events for Massachusetts Archaeology Month (Mastone & Trubey, 2007, p. 145-146).

The idea that would become SHIPS began with a series of events that led NMS museums "to approach the Board with a specific need and ask MBUAR to develop a cooperative program to address that need" (Mastone & Trubey, 2007, p. 146). On one occasion, NMS staff members contacted MBUAR "to report finding parts of a shipwreck while casually walking along the beach on nearby Plum Island," but "by the time MBUAR staff could arrange a site visit, the vessel remains were completely re-covered with sand and became invisible once again" (Mastone & Trubey, 2007, p. 146). Concurrently, the NMS museums had been receiving calls from members of the public, regarding both the "possibility of viewing and visiting shipwreck sites that were accessible to the non-diver," as well as reporting finds of beach wrecks and hoping to identify them (Mastone & Trubey, 2007, p. 146). MBUAR therefore realized the need "to design a program that would meet

both its needs and those of the NMS, creating a true partnership that would have broader geographical application" (Mastone & Trubey, 2007, p. 146).

SHIPS was designed to identify and protect cultural resources found along Massachusetts beaches, and simultaneously to foster public education and stewardship. The target resources are beach wrecks encountered by casual visitors, and the target audience is therefore "people who essentially 'walk the beaches' on a regular basis and may have an interest in local maritime history" (Mastone & Trubey, 2007, p. 145). The program is implemented by MBUAR, which is under the purview of the Massachusetts Executive Office of Environmental Affairs, in partnership with NMS.

The enabling policy is Massachusetts General Law Chapter 6, sections 179-180 (Board of Underwater Archaeological Resources, 1973), which established MBUAR in 1973 as a state agency "charged with the responsibility of encouraging the discovery and reporting, as well as the preservation and protection, of underwater archaeological resources" (Mastone & Trubey, 2007, p. 145). The Board's specific responsibilities include the compilation of an inventory of these resources, as well as collaboration with a variety of public entities, and private organizations and individuals. Given these mandates, and the above set of circumstances, the Board found itself seeking "a way to capitalize on the public's fascination with shipwrecks which would: 1) allow for public participation; 2) fit into the mission; and 3) have minimal to no costs" (Mastone & Trubey, 2007, p. 146).

Managers also needed to combine the goals of the two groups collaborating to implement the program. The general goals of MBUAR are:

1. Surveying the historical environment around the Massachusetts shoreline to ensure historical and archaeological properties are not lost through neglect or are not inadvertently destroyed.
2. Promoting interest, research, and knowledge of maritime resources and heritage.
3. Stimulating public awareness, enjoyment, and participation in the maritime archaeological heritage.
4. Building partnerships to increase collaboration with MBUAR and among NGO's. (Mastone & Trubey, 2007, p. 147)

While the goals of NMS are:

1. Identification and protection of fragile maritime resources.
2. Encouraging interest and new memberships in their organization.
3. Finding new potential funding source(s) including membership dues, etc.
4. Collecting rumors and other information useful to the organization, which contributes to the other three goals, particularly site discovery. (Mastone & Trubey, 2007, p. 148)

Combining these approaches, SHIPS was developed with the intent to "1) accomplish site discovery objectives, 2) stimulate interest in maritime cultural heritage and preservation, 3) build local partnerships, [and] 4) reach a wide audience" (Mastone & Trubey, 2007, p. 156). With SHIPS, the Board hoped to "capitalize on the need to respond to casual reporting of coincidental discoveries and the on-going need to inventory shoreline cultural resources" (Mastone & Trubey, 2007, p. 145). Unlike the majority of preexisting submerged cultural resource programs designed for recreational divers, or designed to deliver secondhand

information to non-divers via museum exhibits or video footage, SHIPS was designed to enable non-divers to participate directly in cultural resource management, and to experience that tangible connection to maritime history.

The program is based on a three-tiered system of site discovery and reporting, which involves: “1) casual discovery of possible resources; 2) verification and preliminary documentation of resources; [and] 3) random and systematic surveys working toward a comprehensive inventory” (Mastone & Trubey, 2007, p. 151). The methods of interpretation are based on two categories of participants: Casual Observers and Coast Watchers. For the former group, the education component consists of “lectures on maritime archaeology, a brochure to guide reporting and transmitting of messages, and feedback,” but “no formal program of specialized training” (Mastone & Trubey, 2007, p. 152). The Coast Watchers, however, are designed to be “a cadre of trained volunteers … established at participating institutions,” who “would be the main interface between the general public and the MBUAR and would serve two primary functions: 1) to review reporting forms, and 2) to act as a rapid response survey team” (Mastone & Trubey, 2007, p. 152). In addition to the services and products that the Casual Observers receive, the Coast Watchers also receive a “three-part training course, a basic tool kit, and on-going technical assistance with site recording and reporting” (Mastone & Trubey, 2007, p. 152) (Figure 16).

Figure 16. Volunteers recording a beach site, Manchester, Massachusetts. From *Out of the Blue: Public Interpretation of Maritime Cultural Resources* (p. 153), by John H. Jameson, Jr. and Della Scott-Ireton (Eds.), 2007, New York: Springer.

The field tool kit itself is not provided by MBUAR, but is designed to be assembled by each Coast Watchers team, in order to conduct preliminary documentation of discoveries. The kit should include such items as a recording form which is created by MBUAR, locational tools, photographic equipment, and recording implements. Managers anticipated that volunteers would have their own cameras and access to GPS units, which would minimize start-up and maintenance costs. Because of this expectation, the program does not have a cost of access per se, though there may be nominal costs involved for Coast Watchers to assemble the tool kit and complete the training course. No costs are anticipated for the

casual observers, as the likely scenario involves verbal reporting of discoveries to the local partner, who would then conduct the investigation and complete the reporting form.

Unfortunately, as of 2009, the program has not been fully implemented. According to MBUAR Director Victor Mastone, program creators envisioned that "the NGO partner would take the lead in organizational priorities/staffing, [but] unfortunately, the pilot NGO partner underwent severe reduction in services/staffing and could not carry forward, [and] another pilot partner has not been identified" (V. Mastone, personal communication, February 9, 2009). Exacerbating the issue was the initial reluctance of the original NGO to allow MBUAR to work with other NGOs, resulting in the lack of a readily available alternative partner (V. Mastone, personal communication, February 9, 2009). Furthermore, MBUAR has also experienced a reduction in staff, leaving Mastone the only employee, and making it virtually impossible to undertake the tasks necessary to further implement the program, such as the volunteer training component (V. Mastone, personal communication, February 9, 2009). No visitor data is maintained at this time, since "participation has been ad hoc individual reporting events" (V. Mastone, personal communication, February 9, 2009).

Evaluation

As Mastone and Trubey state in their 2007 chapter:

> …creating a formal volunteer or avocational program requires substantial ongoing involvement and resources to be and to remain successful and useful and to contribute to our goals; MBUAR does not have such resources. Any new program or initiative needed to be low tech, low maintenance, and have minimal daily staff effort and involvement. It would depend not only on local

> partner collaboration with MBUAR, but rely strongly on their ability to engage the public. (p. 149)

Though managers were fully aware of these considerations, priorities, and potential pitfalls, they were unable to anticipate the specific components that would fail, nor were they able single-handedly to solve these problems.

In the program's design, community involvement provides its foundation. Unfortunately, community members have not been as interested and involved as was hoped, largely due to the inability of the pilot NGO partner to fulfill its responsibilities, and the inability of MBUAR to find an alternate partner. As previously mentioned, the staff reductions of the pilot partner were unanticipated, but the situation was made worse by the NGO's unwillingness to allow MBUAR to work with other NGOs, resulting in the lack of a readily available alternative partner. MBUAR's agreement to these terms is understandable, considering the commitment required of an NGO partner in this program. However, now that it has been demonstrated that the success of the entire program depends on the partner upholding its end of the bargain, perhaps MBUAR will be able to insist more strongly on keeping its options open in the future. According to Mastone, "some reporting by community members has been taking place, but it is ad hoc" (personal communication, February 9, 2009).

Interpretation was planned to consist of "lectures on maritime archaeology, a brochure to guide reporting and transmitting of messages, and feedback" for the Casual Observers, and in addition to this, a "three-part training course, a basic tool kit, and on-going technical assistance with site recording and reporting" for the Coast Watchers (Mastone & Trubey, 2007, p. 152). As of 2009, "only the lecture component has been implemented,

essentially building on earlier outreach efforts, [and] brochure development and the training course have not been implemented due to severe limits on agency staffing" (V. Mastone, personal communication, February 9, 2009). The planned interpretive methods and activities are designed to target both a broad segment of the public at a more general knowledge level, and a narrow segment of the public at a deeper level, capturing both the quantitative and the qualitative aspects of effectiveness. There are also multiple ways built into the program for managers to gather feedback from participants, as the actual implementation of the program involves active collaboration at several levels. Effectiveness of interpretation cannot be gauged at this point though, since the program has not been fully implemented.

Similarly, active management can only be evaluated at the planning level. SHIPS was designed as a resource management strategy that would involve oversight from MBUAR, and education and stewardship on a daily basis by local partners and members of the general public. Once established, this system would be self-sustaining (with a considerable amount of effort, of course), and would address the root of the resource management issue, enforcing the necessity of public stewardship rather than enforcing restrictive laws. Management has been unable to proceed according to plan, however, as "the lack of staff resources has not allowed us the opportunity to implement the program, [and] any activities have been responsive rather than pro-active" (V. Mastone, personal communication, February 9, 2009).

Recent management activities have been focused on organization of volunteer dive teams, which has also been challenging and time-consuming. According to Mastone, there are currently two groups of local sport divers interested in starting volunteer organizations, though they "started as one group, but personality issues caused a split" (V. Mastone, personal communication, February 9, 2009). This development has complicated the

undertaking, since he must now work with both groups, though he states that the result would be worth the sacrifice if involvement with both groups can serve to limit activities which may negatively impact the resources (V. Mastone, personal communication, February 9, 2009).

The intent of SHIPS is ultimately to have a positive impact on the resources, through avocational archaeological recording and mapping. The state database of cultural resources will be augmented, and the necessity of stewardship will be imparted to members of the public. In most cases so far, "resources have been located, but not examined or entered into site files" (V. Mastone, personal communication, February 9, 2009).

The tradeoffs of this type of program are minimal. Ideally, if the local partners are able to fulfill their responsibilities, the initial investment and maintenance costs, as well as the cost of access for participants, would be nominal. The program does not facilitate public access to resources beyond that which already occurs on a daily basis, and encourages productive interaction with the resources by teaching fundamental archaeological method and ethics. In its current state, however, the main tradeoff of the program is that by depending on the resources and commitment of potentially fickle local partners and volunteers, the program has yet to be fully implemented. In its current state, therefore, SHIPS is not sustainable, and will require a greater investment of state resources and personnel in order to increase NGO participation and public support.

Feasibility in North Carolina

Though the physical environmental conditions differ significantly between Massachusetts and North Carolina, the amount of shipwreck remains that are regularly exposed along the shoreline is comparable. The Student Archaeology Workshop (SAW) at the Graveyard of the Atlantic Museum, evaluated previously, is based on investigation of a

beach wreck for a week each summer, and Duffus' 2007 *Shipwrecks of the Outer Banks* describes 18 beach wrecks whose location is currently known. Along North Carolina's "Inner Banks," or the shores of the expansive sounds and river mouths, lie even more shipwreck remains which may be casually encountered by the public.

Though SHIPS has yet to prove its long-term feasibility even in Massachusetts, Mastone is making every attempt to keep the program afloat until better fortunes allow more staff and resources to fill its sails again. The goals of the program certainly merit extension, and would be beneficial to North Carolina's people and cultural resources. In fact, program creators originally envisioned SHIPS as a "low-maintenance volunteer effort," which could "serve as a template for other agencies and organizations to use" (Mastone & Trubey, 2007, p. 156). Naturally, components such as the organizing agency and the local partners would be place-specific, but the general goals of site discovery, stimulating "interest in maritime cultural heritage and preservation," building local partnerships, and reaching a wide audience would remain the same (Mastone & Trubey, 2007, p. 156).

In North Carolina, the UAB would be the organizing agency, though its staff and budget resources are also limited and spread thin for the time being. Each of North Carolina's three maritime museums has a Friends non-profit group that could serve as local partners. Perhaps a collaboration could even be pioneered with the SAW program, which currently only caters to a dozen high school students for one week each summer, which would mutually benefit both programs and extend the outreach effort to a broader segment of the public. The University of North Carolina's Coastal Studies Institute (UNC-CSI) in Manteo, which is still being developed, would also be a viable partner for a program of this nature,

since key components of its mission are education and outreach about the history, culture, and environment of the North Carolina coast.

Chapter 8: Unique Program

Hobby Diver License Program (SC)

Background and Implementation

Legislation regulating shipwreck salvage in South Carolina began in 1968, with the passage of the law "Shipwrecks and Salvage Operations." Written by a lawyer, a diver, and a shrimp boat operator to protect their discovery of a Civil War blockade runner from other potential salvors, this law was largely ignored by the sport diving community. It remained South Carolina's only shipwreck guideline until passage of the Underwater Antiquities Act in 1976, which was amended in 1982 to reassert "the state's jurisdiction over lands submerged beneath its navigable waterways as well as its sovereign control over submerged cultural resources within that jurisdiction" (Amer, 1994, p. 119). The Act also delegated custodianship of those resources to the South Carolina Institute of Archaeology and Anthropology (SCIAA) and "defined an historic archaeological site as one that has been abandoned or unclaimed for longer than 50 years (Amer, 1994, p. 119)".

The main regulatory mechanism of the law is a system of licensing, which includes three types of licenses: Search, Salvage, and Hobby Licenses. All three types of licenses have an accompanying fee, and require submission of regular reports to SCIAA. A Search License is granted "for the purpose of conducting underwater search operations using electronic remote sensing systems, ranging systems, or other sophisticated methods of search," has a duration of three months, and a geographic range of one square mile (or one linear mile in a river) (Albright, 1985, p. 149). A Salvage License is granted "for the purpose of conducting a well planned, continuing, underwater salvage operation with experienced personnel and

adequate financial support," has a duration of one year, and is issued for a specific site (Albright, 1985, p. 149). These two types of licenses are a common approach to submerged cultural resource management, and some variation of them is typical in most states.

The Hobby License is unique to South Carolina, and was intended to regulate the surface collection of artifacts and fossils. This license is issued to sport divers for "temporary, intermittent, noncommercial search and salvage operations of a recreational nature requiring minimal equipment, training, and experience" (Albright, 1985, p. 149). Its creation "reflected a responsible view of dealing with the multiple-use pressure imposed on the resource base," though its primary provision has the potential to be controversial (Amer, 1994, p. 120). This provision enables licensees "to collect artifacts and fossils not embedded in submerged lands" providing that they report their finds to the state (Amer, 1994, p. 120).

This unusual approach to cultural resource management was spurred by Alan Albright's observation in 1973, after becoming a SCIAA archaeologist, that "several hundred sport divers were recovering artifacts and fossils on a regular basis from the 12,000 plus linear miles of creeks and rivers of the State" (Albright, 1985, p. 148). Realizing that a different resource management strategy was in order, he decided that "utilizing the numbers, energy, expertise and local knowledge of the sport divers was the most practical and reasonable approach to take for a one-man operation with wide responsibilities and very limited resources" (Albright, 1985, p. 148). He reasoned that a realistic philosophy would be based on such premises as "cooperation is more effective than confrontation and threats of law enforcement," "education is the key to understanding, and understanding is the foundation of conservation," "it is sometimes necessary to accept a short-range loss in order to make a long-range gain," and "people generally want to become involved" (Albright,

1985, p. 147). In other words, the intent was that by "allowing divers to buy into a licensing program whereby they reported finds to the archaeologists, the state would benefit from the information while the divers got what they wanted - the goodies" (Amer, 1994, p. 120).

As a result of ongoing evaluation, some aspects of the Hobby License have been modified in the years since the law's initial implementation. In 1987, an internal review was conducted, finding that a lack of specific regulations left parts of the law open to interpretation, that few divers were reporting their collecting activities, and the reports that were filed contained practically useless archaeological information. To remedy these problems, "formal procedures for reviewing and monitoring licensed activities were instituted," and "a drive was made to improve the quality of information being generated by the program," since descriptive and locational information about the submerged cultural resources "was the only real benefit of the hobby licensing system" (Amer, 1994, p. 120).

In 1989, SCIAA created the Underwater Archaeology Division Sport Diver Archaeology Management Program (SDAMP), intended to address these problems holistically "by becoming more proactive in the management of the state's submerged cultural resources and the sport diver's impact on that resource" (Amer, 1994, p. 120). This educational program has accomplished its mission in several ways:

> …through the development of weekend archaeology field training courses for hobby divers and members of the interested public and production of an avocational archaeology manual as well as through public lectures, distribution of a quarterly newsletter, and opportunities for course graduates to participate in field projects conducted by the division. (Amer, 1994, p. 120)

Also around this time, “a Complaint in Admiralty was filed in United States District Court for the District of South Carolina by an individual requesting title to, and custodianship of an abandoned shipwreck in South Carolina Waters,” claiming that the wreck was farther than three miles from shore (Amer, 1994, p. 120). The case revolved around the questionable presence of a sandbar in determining the exact location of three miles from shore, but also served to highlight “an apparent ambiguity in the South Carolina Underwater Antiquities Act of 1982 that put it at odds with the federal definition of territorial boundaries in regards to the state” (Amer, 1994, p. 121). In the end, the state was granted title to the wreck, but “the incident was an expensive lesson which exemplified only some of the problems in the state's underwater antiquities act” (Amer, 1994, p. 122). This case, combined with the concurrent passage of the federal Abandoned Shipwreck Act in 1987, indicated the necessity of significantly amending the 1982 Act.

The process of drafting, revising, and getting a new version of the Underwater Antiquities Act passed gave managers a unique opportunity to receive and consider feedback from colleagues and stakeholders regarding the management of South Carolina’s submerged cultural resources. Managers sought advice from other resource management agencies in South Carolina and in other states, and the South Carolina Office of the Attorney General was consulted to ensure consistency with other state statutes. Using these multiple sources of input, as well as the ASA and the National Park Service Guidelines, a bill was drafted. Next, meetings were held to solicit comments from such stakeholders as sport divers, dive clubs and dive shops, the general public, and special interest groups. Response ranged from opposition to ambivalence to support, and managers then tried to consider and accommodate the spectrum of concerns represented. The final version of the bill, passed in 1991,

represented “a compromise between Senate and House support for the individual's right of access and recovery of abandoned cultural material on state submerged lands and the protection of those resources” (Amer, 1994, p. 123).

The Hobby Diver License is designed to allow “small-scale, non-commercial, and non-mechanical artifact collecting from state-owned bottomlands,” and “anyone desiring to collect artifacts or fossils from state-owned bottomlands must have a license” (Marine Research Division [MRD], 2008, Hobby Diver Licenses). Divers may apply for a license for a period of either six months or two years, with the cost of the former being $5.00 for South Carolina residents and $10.00 for non-residents, and the cost of the latter $18.00 for residents and $36.00 for non-residents. Licensees are required to submit quarterly reports to SCIAA (or the State Museum in the case of fossil collectors), describing the location of their activities and listing their artifact finds. If the site is a shipwreck, a maximum of 10 artifacts per day may be recovered, and “divers may not destroy the integrity of the ship's structure by removing or moving timbers, fittings, fastenings, or machinery” (MRD, 2008, Hobby Diver Licenses). Also in cases of a shipwreck site, the quarterly report must include a locational reference to the site on a topographical or hydrographic chart, as well as a sketch map of the wreck site showing the exact locations of recovered artifacts. The majority of activities reported do not necessarily involve interaction with recorded archaeological sites, but rather, divers who “basically drift through gravel beds on the river bottoms where artifacts and fossils accumulate due to both environmental and cultural processes” (L. Holland, personal communication, February 16, 2009). When a report does actually involve a site, or when “an area has the potential to be archaeologically significant SDAMP staff further investigate the site” (L. Holland, personal communication, February 16, 2009).

To aid divers in the identification of artifacts for reporting purposes, numerous links to external Web sites are included on the MRD's Hobby Diver License Web page, and artifact identification workshops were held regularly until recent years. SCIAA and the State Museum also reserve "the right to inspect and photograph all recovered items for 60 days after they are reported in quarterly report forms" (Naylor, 2003, p. 7). As of 2009, approximately 200 new and renewal licenses are granted annually. The license fee represents the only revenue generated, and these fees are applied towards SDAMP operations (L. Holland, personal communication, February 24, 2009).

Since the passage of the amended Act in 1991, the major modification to the Hobby License provision has been the elimination of Weekend Hobby Licenses and Instructional Hobby Licenses, which occurred in June 2002. This change was deemed necessary since both of these licenses left significant gaps in site and artifact reporting. "Weekend Hobby Licenses were temporary two-day licenses designed to allow non-residents to collect during a brief visit to the state," and were issued by dive clubs and dive shops (Naylor, 2003). Unfortunately, it turned out that many of these licenses were being issued "to resident divers who had allowed their individual licenses to expire and wanted to collect before they had submitted a renewal," and that few weekend licensees ever reported their finds to SCIAA (Naylor, 2003).

"Instructional Licenses were issued to charter boat captains, dive shops, and dive instructors and allowed the holder to take dive charters and classes on collecting trips without each diver being required to have their own license" (Naylor, 2003, p. 7). In theory, "all recoveries were reported by the holder of the Instructional License," but in practice, "the holder reported fossils and artifacts without regard for which of their group found what"

(Naylor, 2003, p. 7). As a result, SCIAA and the State Museum were unable to gather further information about a particular artifact or fossil. There were only 19 Instructional Hobby Licenses issued since 1991, and 6 were current at the time of the modification, all of which remained in effect until their expiration dates. After that point, the license holders could renew as regular Hobby Divers (Naylor, 2003).

Evaluation

Evaluation of the success of the Hobby Diver License program must consider the circumstances of its creation, and its intent. When Albright's tenure as a state underwater archaeologist began, he clearly recognized a need to try to gain at least some information from the unchecked activities of sport divers. Realizing that a command-and-control approach would increase the divide between sport divers and archaeologists, and prove ineffective at managing cultural resources in open water, he instead advocated for an approach that would foster cooperation, promote education, and increase the role played by sport divers in South Carolina's submerged cultural resource management. While the practice of allowing private individuals to retain artifacts and fossils is anathema to most archaeologists, the Hobby Diver License was born of necessity, and reflects the opinions and interests of managers as well as a range of stakeholders.

First created with the passage of the South Carolina Underwater Antiquities Act of 1976, which was amended in 1982 and then again in 1991, the Hobby Diver License does not represent an ideal situation, but rather reflects the practical considerations of conflicting interests in the resource base. The bottom line is that archaeologists and managers realized the impossibility of restricting the actions of sport divers, and instead developed a strategy whereby at least some information could be gained by the state, which is the primary goal of

the Hobby Diver License. During the 1987 review, when managers realized the poor quality of information contained in divers' reports, the public education component of the program was augmented, rendering this goal equally important.

The level of community involvement was highest during the program's creation and the early years of its implementation. During the drafting and review of the Underwater Antiquities Act, stakeholders as individuals and groups were particularly vocal in their opinions regarding the provisions that would impact their interests. Their motivations ranged from desire to be productively involved in management of the state's submerged cultural resources to fear that their ability to collect artifacts would be revoked, but managers and legislators nonetheless recognized the validity of their opinions and took them into consideration. Following the creation of SDAMP in the late 1980's, and the accompanying augmentation of public education activities, community involvement again increased, as members of the public attended workshops and lectures, participated in archaeological field training courses, and assisted MRD staff with tasks ranging from office to field work.

These activities also comprise the program's methods of interpretation. Though a systematic method for gauging the effectiveness of this interpretation is lacking, SCIAA archaeologists have noticed a gradual improvement in the quality of information contained in divers' reports (L. Holland, personal communication, February 16, 2009). This pattern indicates a degree of effectiveness, and has increased the productivity of the program's contribution towards building the state cultural resources database. In this way, the reports serve as a form of participant feedback. There is also an option to provide feedback on the MRD Web site, though the degree it is utilized could be increased with incentives for completion, as well as distribution at events and dive shops.

There are numerous aspects of the program's management. As reports are filed, MRD staff review them and then follow up to collect additional information, or conduct archaeological surveys as needed. This aspect has always been diligently performed. However, the public education component is not currently executed as conscientiously, which has a direct impact on the effectiveness of interpretation. The MRD Web site lists the last field training course and lecture as being scheduled for the spring of 2008, and no artifact identification workshops are currently being conducted (L. Holland, personal communication, February 16, 2009). Though only two MRD staff currently have duties with the SDAMP, and funding certainly has not increased in recent years, these methods of education need to be scheduled regularly to ensure that interpretation remains effective, and management remains active. Diver education can be a valuable tool in the management of resources that are not able to be monitored, but managers must continue to make the first move in this process.

Tradeoffs are the Hobby Diver License's raison d'être. As Albright stated in his philosophy of submerged cultural resource management, "it is sometimes necessary to accept a short-range loss in order to make a long-range gain" (Albright, 1985, p. 147). In a situation where the state was judged to be hemorrhaging artifacts with no accompanying information being obtained by the state, the most practical management option was one which "affords reasonable protection to the resource, involves those affected by the law in its application, and is cost effective" (Albright, 1985, p. 148). In short, "information derived from the sport diver is usually more valuable to our long range goals in our quest for knowledge than their surface collecting is harmful to the resource" (Albright, 1985, p. 147). Amer defends the program by contending that collectors have the potential "to make a significant contribution

to the management and interpretation of their heritage," which can be accomplished if the state assumes the "responsibility to enforce its cultural resource protection laws and convince the public that collecting the heritage bit by bit is a privilege, not a right" (Amer, 1994, p. 124). He concludes that "there is little doubt that there is a place for avocationals in our field, but the benefit they provide must be balanced against the destruction they wreak" (Amer, 1994, p. 124).

In order for the Hobby Diver License program to be truly sustainable, the public education component needs to be revitalized. The current provisions for the license under the South Carolina Antiquities Act have been appropriately adjusted according to changing needs and policy evaluations, and divers continue to purchase licenses and file reports, which are dutifully logged by MRD staff. These aspects of the program can continue without additional investment of state resources. However, the program's goal of diver education is being compromised by the infrequency with which training courses and artifact identification workshops are currently being held. These activities need to be increased in order to ensure that useful information continues to be obtained from diver reports.

Feasibility in North Carolina

The question of the Hobby Diver License's applicability elsewhere is not easily answered. In short, the appropriateness of such a controversial program must be evaluated on a case-by-case basis. Albright states that the program "might serve as a guide for consideration by other authorities but should not be adopted verbatim," since the evolution of the program in South Carolina reflects a unique set of cultural and environmental circumstances (Albright, 1985, p. 148). The exact resource management plan is therefore not directly transferable, but its philosophy, which "addresses the social aspect of resource

management," is transferable, and may merit consideration elsewhere (Albright, 1985, p. 148). The primary condition that would make such a program viable is the large-scale collection of artifacts by a significant number of people. In places where this is not a problem, this program would be unwarranted, as is currently the case in North Carolina.

The North Carolina Administrative Code does contain a Hobby License provision (Special Areas for Sport and Hobby Operations, 1985), but a critical difference is that hobby licenses are only issued in designated areas. This provision was also only used during the early years of underwater archaeology in North Carolina, when licenses were issued to approximately 200 divers participating in the recovery effort of *Modern Greece*. Since 1974, the UAB has not designated any further sites for hobby collection, or issued any hobby licenses (R. Lawrence, personal communication, May 6, 2009). The Hobby Diver License has achieved considerable success at accomplishing its goals in South Carolina, but the unique set of cultural, environmental, and political circumstances in North Carolina render this alternative unnecessary for the management of its submerged cultural resources.

Chapter 9: Institutionalized Programs

Graveyard of the Atlantic Museum (NC)

Background and Implementation

The Civil War ironclad USS *Monitor* was a revolutionary warship. Constructed at the beginning of the war, the ship was a technological feat boasting a steam-powered propeller, a rotating gun turret, protective iron plating, and having "the engineering spaces, crew and officer quarters and galley … all located below the water line" (*Monitor* National Marine Sanctuary [MNMS], 2007a). In an era when "naval power traditionally consisted of wooden tall ships with gun ports," *Monitor* represented a major advance (MNMS, 2007a). Deployed in 1862 to protect the Federal fleet at Hampton Roads, Virginia, *Monitor* engaged the Confederate ironclad CSS *Virginia* in battle twice, with the *Virginia*'s crew ultimately scuttling her to prevent capture. Other than this engagement, "the *Monitor's* brief career was uneventful. Shortly after midnight on December 31, 1862, while under tow by the *Rhode Island* to Beaufort, North Carolina for repairs, the *Monitor* sank in a storm off Cape Hatteras, North Carolina" (MNMS, 2007a).

The Graveyard of the Atlantic Museum began indirectly with the discovery in 1973 of *Monitor* 16 miles off Cape Hatteras. "In the 1980s, a group of Hatteras villagers made a pitch to the federal government to house the artifacts … in a shipwreck museum in their village" (Joe Schwarzer is Named Director, 2008). Recovery efforts were slated to begin much sooner than a facility could be constructed on the Outer Banks, and the decision was made to conserve and house the artifacts in the Mariners' Museum in Newport News, Virginia. Undaunted, "the villagers continued their efforts to build a museum, named for the

Graveyard of the Atlantic," which "would celebrate the history and cultural heritage of the seafaring people of the Outer Banks by telling the story of the nation's maritime history" (Joe Schwarzer is Named Director, 2008).

In 1994, the Hatteras Village Civic Association (HVCA) began raising funds for the museum, and in 1995, the museum board hired Executive Director Joseph Schwarzer. Though Schwarzer was led to believe that sufficient funds had been raised to begin construction of the museum, only a small portion of the $8 million that would be required had been obtained at that time (J. Schwarzer, personal communication, November 23, 2004). For the next 12 years, Schwarzer and the board would struggle to raise the necessary funds, though "in 1999, still without enough funds to finish, the board decided to break ground and open a building, in the hope that would bring more money to the project" (Joe Schwarzer is Named Director, 2008). Also, as word began to spread that such a museum was in the works, locals began to donate artifacts to Schwarzer, some of which required immediate conservation measures (J. Schwarzer, personal communication, November 23, 2004).

The museum opened to the public in 2003 with temporary exhibits, and in 2007 the North Carolina Legislature passed NCGS 121, Article 1 (7.4), "making the Graveyard of the Atlantic museum the state's eighth history museum" (Joe Schwarzer is Named Director, 2008). In this way, there was no enabling policy at the museum's inception, but this General Statute now serves as the museum's legislative mandate. The Friends of the Graveyard of the Atlantic Museum is the museum's non-profit group which "encourage[s] and promote[s] public awareness of the Graveyard of the Atlantic Museum and serves as a philanthropic organization for the support of the resources, programs and facilities" of the museum (Graveyard of the Atlantic Museum, 2009). The Friends group "is overseen by a Board of

Directors who have oversight, set general policy, and conduct the business of the Corporation" (Graveyard of the Atlantic Museum, 2009). The Museum sits on seven acres of land donated for that purpose by the National Park Service. Because of this, and because of the museum's connection to *Monitor*, which became the first National Marine Sanctuary in 1975, NPS and NOAA have collaborated in the development of the project. The 18,768-square-foot museum is located near the Hatteras ferry dock, directly at the end of the island. The front of the building faces east, and is separated from the ocean by sand dunes and a stretch of beach (Figure 17).

Figure 17. Graveyard of the Atlantic Museum, designed to evoke the structure of a ship. Retrieved June 16, 2009, from: http://www.islandfreepress.org/2008Archives/07.17.2008-JoeSchwarzerIsNamedDirectorOfStatesMaritimeMuseums.html

The stated goals of the museum are:

> …the preservation, advancement and presentation of the maritime history and shipwrecks of the North Carolina Outer Banks from the earliest periods of exploration and/or colonization to the present day, with particular emphasis on the period from 1524 to 1945. The Museum preserves, researches, exhibits and interprets its collections for the benefit of the general public and specialized audiences. The Museum serves its diverse audiences in order to

> inspire appreciation, encourage discovery, and promote an active, responsible understanding of the maritime heritage of the Outer Banks in itself and in relation to that of the United States and the broader history of seafaring. (Graveyard of the Atlantic Museum, 2009)

Admission to the museum is free, but donations are encouraged. There are several temporary exhibits in the main entryway and the future education room. Upon entering the Museum, the visitor first encounters the original 1854 Fresnel lens from the Cape Hatteras Lighthouse, resting on its original pedestal. On one wall is a chronological exhibit based on the career of Brig. Gen. Billy Mitchell, who pioneered the birth of military air power, as well as the role of Hatteras in these events. Adjacent to the welcome desk is the aforementioned enigma machine, displayed in a tank of water in between conservation sessions by Schwarzer and a conservator from the Mariners' Museum. In the other room currently open to the public are several temporary exhibits based on notable contributions of the Outer Banks to maritime history. These include displays featuring the USS *Huron* Historic Shipwreck Preserve in Nags Head, the loss of the Civil War submarine USS *Alligator* and the recent collaborative search effort for it, the *Monitor* National Marine Sanctuary, and recent archaeological excavations at Fort Ocracoke.

The main gallery space will house a mix of permanent and temporary exhibits. As of 2004, the space plan included three galleries, each with a different theme (J. Schwarzer, personal communication, November 23, 2004). One gallery will contain exhibits on exploration, transportation, and commerce. Another will pertain to piracy and warfare, and the third gallery will focus on the discovery, research, and interpretation of shipwrecks. Schwarzer anticipates the active involvement of East Carolina University in this gallery. A

standing exhibit will be devoted to *Monitor*, which will not conflict with the exhibits at the Mariners' Museum, but will complement them.

The museum conducts a variety of education and outreach efforts. The official Web site is designed and hosted by LK Associates, and contains information about maritime history and archaeology, as well as about the museum itself. The Web site also has an interactive section devoted to the mystery of *Carroll A. Deering*, a five-masted schooner dubbed the "Ghostship of Diamond Shoals" because it was discovered in 1921 stuck on a sandbar with its sails and rigging intact but completely abandoned. The museum hosts a series of free workshops and lectures, for both children and adults, on topics ranging from local maritime traditions to the archaeology and conservation of landmark shipwrecks. Upon the opening of the museum to the public, staff also began sponsoring the Student Archaeology Workshop (SAW), which is evaluated in chapter 7.

The estimated project cost for the Graveyard of the Atlantic Museum is approximately $8 million. Funds have been raised from a wide variety of sources, both public and private. By 2004, the State of North Carolina had contributed nearly $2 million. A NOAA grant composed the second largest amount of $760,000, while additional federal contributions comprised the third largest amount of $739,000. Besides private donors, other significant sources of funding include the Outer Banks Visitors Bureau, an NC Department of Motor Vehicles License Plate Program, and numerous foundations (J. Schwarzer, personal communication, November 23, 2004). When the state assumed administration in 2007, "Schwarzer estimated that $2.7 million would be needed to finish the project, including about $1.2 million for exhibits" (Joe Schwarzer is Named Director, 2008). In the same bill, lawmakers allocated "$300,000 annually in recurring funds for staff positions," and they later

"approved $408,700 in funds toward finishing the museum" (Joe Schwarzer is Named Director, 2008). Most recently, the Request for Proposals for an exhibit design firm closed April 3, 2009 (Underwater Archaeology and Maritime History Jobs, 2009). Additional financial figures were not able to be obtained by the author at the time of writing.

Visitors are counted with a manual clicker by the volunteer manning the front desk. Though total numbers were affected by the museum's closing for four months following Hurricane Isabel in September 2003, subsequent visitation figures are listed in Table 4.

Table 4. Visitation by year to the Graveyard of the Atlantic Museum. From Administrative Assistant Clara Scarborough, personal communication, July 8, 2009.

Year	Visitors	Percent Change (from previous year)
2004	41,000	
2005	43,619	+6.4%
2006	47,163	+8.1%
2007	40,796	-13.5%
2008	50,190	+23.0%
January-June 30, 2009	22,978	
Totals	245,746	

Evaluation

Though the Graveyard of the Atlantic Museum is still a work in progress, it can be considered a model of just how much community initiative and dedicated staff can accomplish. Having originated as a movement by Hatteras villagers, and eventually the Hatteras Village Civic Association, to keep USS *Monitor* in the area, the museum's existence stands as a testament to the power of community involvement. After unsuccessfully petitioning federal officials for such a museum, the HVCA assumed the responsibility of raising funds and hiring a director to guide the project. As community awareness and support grew with the museum's opening, the contributions and efforts of volunteers became increasingly important in sustaining the fledgling museum. These efforts include manning the welcome desk, assisting with and conducting workshops and lectures, and helping implement the Student Archaeology Workshop.

Effectiveness of interpretation cannot properly be evaluated until the exhibit space is completed, and the museum becomes fully operational. Current interpretive measures consist of the temporary exhibits described above, the workshop and lecture series, the Web site, and SAW. These measures do encompass a wide range of topics, and are accessible to a variety of audiences, though their frequency and scope are limited by the pending completion of the

museum's exhibit and conservation space. Overall, visitor figures show a steady increase since the museum's opening, though visitor feedback is not systematically collected. The apparent decrease in visitation during 2007 may be explained by "an extended closure for the month of December," and inconsistency in "the format for recording visitation numbers" (C. Scarborough, personal communication, July 8, 2009). The deficiency of visitor feedback is also likely due to the incomplete status of the exhibits, since feedback would be more productive, and will be encouraged, once the museum is nearer completion.

In addition to the critical role played by community initiative in the museum's beginnings, active management in the form of staff dedication ensured the museum's endurance in the period prior to state administration. Until this occurrence in 2007, Schwarzer and his wife, Melanie, were the sole continuous staff, working tirelessly to raise funds and support while overseeing the daily tasks involved in planning and construction, and even artifact conservation. While currently there are still only three staff members, the assumption of administration by the state ensures that the museum's continued existence does not rely solely on the monumental efforts of a few individuals. Schwarzer's appointment in 2008 to head all three of the state's maritime museums illustrates the state's commitment to manage the museums as a cohesive system, and to assume a proactive stance on effectively interpreting and preserving North Carolina's rich maritime heritage.

Since the museum is not a place-based program that encourages direct interaction with primary resources (with the exception of SAW, evaluated in chapter 7), any accompanying impact on the resources would be positive, in the form of interpretation and public education. One potential snag that has arisen involves the enigma machine, recovered illegally and illicitly by a diver and turned over to Schwarzer anonymously. Incidents such as

this invoke an ongoing debate within the museum field, regarding the ethical dilemma posed by accepting artifacts which have clearly been obtained in this way. The opposing view contends that by doing so, site looting and treasure hunting is indirectly condoned, even if the offender does not profit from the "donation." The supporting argument is that unscrupulous individuals will continue to acquire artifacts regardless of any form of discouragement, and that if the artifacts can receive proper conservation and interpretation, they can at least remain part of the public trust. The true impact upon the resources stemming from this practice is therefore open to debate, but in the big picture, the museum unquestionably has a significant positive impact on its target resources.

Among the other benefits of non-place-based programs, such as museums, are minimal tradeoffs and a high degree of sustainability. When direct access to archaeological resources is not being facilitated, or visitation to a site increased, then the tradeoffs and questions of sustainability that accompany a shipwreck trail or park do not become an issue.

Feasibility Elsewhere

Maritime museums are not a new concept, and in fact, the Graveyard of the Atlantic Museum is now part of the state system of history museums. Thus the case does not need to be made for the feasibility of such a program elsewhere. However, the primary lesson that can be learned from the creation of this museum is the power of grassroots initiative. The story of how the museum came to be, after a seemingly missed opportunity, and of what the museum has become, illustrates the potential of persistence to advance an item of importance on the social agenda.

Thunder Bay National Marine Sanctuary (MI)

Background and Implementation

As mentioned previously, the National Marine Sanctuaries Act of 1972 authorizes NOAA's Office of National Marine Sanctuaries (ONMS) to "identify, protect, conserve, and enhance the natural and maritime heritage resources, values, and qualities of the National Marine Sanctuary System for this and future generations throughout the nation" (Thunder Bay National Marine Sanctuary [TBNMS], 2009b, p. 1). Currently, the 14 designated National Marine Sanctuaries encompass "more than 150,000 square miles of ocean and Great Lakes waters," and range in size from one-quarter square mile to more than 134,000 square miles (TBNMS, 2009b, p. 1).

Each sanctuary is typically designated for a unique purpose, and incorporates site-specific regulations and restrictions into its management plan. The first sanctuary to be designated was the *Monitor* National Marine Sanctuary (MNMS), as discussed previously, which is centered on the wreck of USS *Monitor*. The primary protective regulations of the MNMS, therefore, "prohibit anchoring, stopping, and drifting within the sanctuary; conducting salvage or recovery operations; using diving, dredging, or wrecking devices; conducting underwater detonation; drilling in the seabed; laying cable; and trawling" (MNMS, 2007b). The 11 successive National Marine Sanctuaries were designated primarily to protect natural and biological resources, and regulate activities that would impact a fragile coral reef or a whale species, for example. The 13th sanctuary to be designated, Thunder Bay, was again based on cultural resources, and serves to protect "one of America's best-preserved and nationally significant collections of shipwrecks" (TBNMS, 2009b, p. 2).

The maritime heritage of the Thunder Bay region is rich and diverse. Located near Alpena, Michigan in northwestern Lake Huron, Thunder Bay is adjacent to “Shipwreck Alley,” “one of the most treacherous stretches of water within the Great Lakes system,” characterized by “unpredictable weather, murky fog banks, sudden gales, and rocky shoals” (TBNMS, 2009b, p. 2). More than 200 shipwrecks have occurred in the Thunder Bay region, spanning over a century and a half, and representing “a microcosm of maritime commerce and travel on the Great Lakes” (TBNMS, 2009b, p. 2). This complex maritime cultural landscape also includes “the remains of commercial fishing sites, historic docks, and other underwater archaeological sites” (TBNMS, 2009b, p. 2).

In the 1970s, Alpena community members began expressing interest in the development of an underwater shipwreck park. Supported by the findings of state surveys, as well as “a local diving club and other civic organizations, Thunder Bay became one of the first State of Michigan underwater preserves in 1981” (TBNMS, 2007a). Concurrently, “NOAA was developing a Site Evaluation List (SEL) of potential candidates for designation as National Marine Sanctuaries,” and submission of a proposal for a Thunder Bay National Marine Sanctuary landed it on the final SEL in 1983 (TBNMS, 2007a).

In 1991, following the elevation of Thunder Bay to active candidate status for National Marine Sanctuary designation, public scoping meetings were held “to learn more about the bay's resources, activities, and associated management issues, and to share information with community members about the National Marine Sanctuary Program and the feasibility of a Thunder Bay National Marine Sanctuary” (TBNMS, 2007a). A series of meetings between local, state, federal, and tribal agencies, organizations, and businesses occurred over the next three years, culminating in the formation of the Thunder Bay Core

Group in 1994. The Core Group developed a series of management alternatives, and ultimately "recommended that the sanctuary focus only on underwater cultural resources," instead of joint management with natural resources "in light of the fact that existing federal and state agencies were already managing these resources" (TBNMS, 2007a).

In 1997, the Draft Environmental Impact Statement/Management Plan (DEIS/DMP) was published, and "the Sanctuary Advisory Council (SAC) was established to provide NOAA and the Governor of Michigan with recommendations regarding issues of concern to the local communities" (TBNMS, 2007a). Following a series of public hearings, and a period of public comments, the City of Alpena passed a non-binding referendum "opposing the proposed sanctuary (776 voted for the sanctuary and 1,770 voted against it)" (TBNMS, 2007a). However, because "NOAA still considered Thunder Bay's unique shipwreck collection to be of national historic significance and thus an excellent candidate for National Marine Sanctuary designation," and also because "NOAA believed it could successfully address state and local concerns," the designation process continued, with the encouragement of Governor John Engler (TBNMS, 2007a).

In 1999, the Final Environmental Impact Statement/Management Plan was published, representing the collaborative efforts of NOAA, "the State of Michigan, the SAC, and other interested parties" (TBNMS, 2007a). Also under construction were "a Memorandum of Understanding [MOU] between NOAA and the State, and a Programmatic Agreement between NOAA, the State, and the Federal Advisory Council on Historic Preservation" (TBNMS, 2007a). Because the sanctuary represents a federal-state partnership, "these documents describe the responsibilities of each party in the management of the sanctuary," with particular emphasis on the changes made by NOAA "to the sanctuary regulations in

order to make them more similar to State of Michigan laws" (TBNMS, 2007a). The Michigan state agency that "represents the state in managing the sanctuary" is the Michigan Historical Center, within the Department of History, Arts, and Libraries (TBNMS, 2009b, p. 2).

Between late 1999 and mid-2000, a series of meetings occurred between "Governor John Engler [and] a group of local community and business leaders," and then between Governor Engler and Secretary of Commerce William Daley, after which Secretary Daley restated the importance of the sanctuary, as well as the necessity of stakeholder support. During subsequent negotiations between "NOAA and the State of Michigan on topics ranging from the sanctuary name and boundary to funding and staffing arrangements," agreement was finally reached on the terms of sanctuary designation, and on October 7, 2000, NOAA designated Thunder Bay the nation's 13th National Marine Sanctuary (TBNMS, 2007a).

The mission of TBNMS "is to preserve nationally significant shipwrecks and regional maritime landscape through resource protection, education, and research" (TBNMS, 2007c). These three activities are accomplished by promoting appreciation and multiple, yet responsible, uses of Thunder Bay, the Great Lakes, and the oceans. Access to sanctuary shipwrecks is not restricted. The range of depth of the shipwrecks appeals to a variety of diver skill levels and also promises recreational opportunities for non-divers. The shallower wrecks can be viewed by snorkelers, kayakers, and boaters. (TBNMS, 2007c)

As previously mentioned, sanctuary regulations are site-specific, and because "the Thunder Bay National Marine Sanctuary solely manages maritime heritage resources," the regulations outlined in the designation document and the MOU do "not regulate fishing and

other natural resources" (TBNMS, 2009c). The regulations do prohibit the following activities without a permit: "1) Recovering, altering destroying, or possessing underwater cultural resources; 2) drilling into, dredging, or otherwise altering the lake bottom associated with underwater cultural resources; 3) using grappling hooks or other anchoring devices if a mooring buoy exists" (TBNMS, 2009b, p. 3).

Though the original proposal to the State of Michigan encompassed an 808-square-mile area, the area was reduced to 448 square miles, which continues to be the sanctuary's current extent (Figure 18). In 2007, the boundary expansion working group recommended to the Sanctuary Advisory Council (SAC) that the sanctuary be expanded to 3,662 square miles, "extending from Alcona County to Presque Isle County, east to the international border with Canada," and the SAC "passed a resolution to expand the boundary to the recommended area" (TBNMSAC, n.d., pp. 2, 5).

Figure 18. Thunder Bay National Marine Sanctuary. From *Thunder Bay National Marine Sanctuary Draft Management Plan,* (p. 48), by Thunder Bay National Marine Sanctuary, Office of National Marine Sanctuaries, 2009.

The sanctuary is headquartered in the Great Lakes Maritime Heritage Center (GLMHC), a 20,000-square-foot facility which also features "9,000 square feet of state-of-the-art shipwreck and Great Lakes exhibits, a 93-seat auditorium, an archaeological conservation lab and climate controlled artifact storage, 2,000 feet of innovative education space, research facilities, and administrative space" (TBNMS, 2007d) (Figure 19).

Figure 19. TBNMS Headquarters in Great Lakes Maritime Heritage Center. Retrieved July 1, 2009, from: http://www.thunderbay.noaa.gov/pdfs/06GLMHC.pdf

The Center currently contains permanent, self-guided exhibits with interpretation geared towards a general audience. Highlights include both a life-size 19th-century schooner battling a Great Lakes storm, with accompanying audio program, and a simulated shipwreck that visitors can walk through, climb over, and explore. The exhibits also include scale models of historic ships representing shipwrecks of Thunder Bay and accompanying underwater video footage and other interpretive media focusing on the shipwrecks and their stories. A dome/video projection area is also available to view underwater footage of several shipwrecks. The Center's artifact conservation lab and artifact storage area are also viewable from the main exhibit area. The Center provides a theater seating approximately 100 visitors. A variety of educational programs complement and expand on the permanent exhibits throughout the year. (S. Waters, personal communication, May 28, 2009)

Prior to its opening, the Center was anticipated to attract 60,000 visitors annually (TBNMS, 2007d); Visitor Experience Coordinator Sarah Waters reports that between June 2008 and May 2009, the newly opened "Shipwreck Century" exhibit attracted approximately

60,000 visitors (S. Waters, personal communication, May 28, 2009). There are currently 18 full- and part-time employees, 2 full-time seasonal fellowship students, and 100 volunteers (S. Waters, personal communication, May 28, 2009). In collaboration with the Alpena County Public Library, TBNMS also maintains a searchable online database of shipwrecks and photos, available from http://www.greatlakesships.org/.

Evaluation

As with Florida's Underwater Archaeological Preserves, interest in preserving and protecting Thunder Bay shipwrecks began in the local community. This interest developed into Michigan's first Underwater Preserve in 1981, setting the stage for the designation of TBNMS. Though community did not unequivocally support the creation of a national sanctuary, state and federal officials working together made a concerted effort to increase public understanding of the value and the goals of the sanctuary. While the ultimate responsibility for sanctuary designation does rest with politicians, officials realized the necessity of garnering community support for this endeavor, and of encouraging the perception of community benefit.

Continued management of the sanctuary also involves significant community input. While "the sanctuary superintendent manages the day-to-day operations and activities of the site," and "a Joint Management Committee…makes major policy, budget, and management decisions," an advisory council representing the interests of stakeholders "provides advice to the sanctuary superintendent," with council members serving "as liaisons between their constituents and the sanctuary, keeping sanctuary staff informed of issues and concerns" (TBNMS, 2009b, p. 3).

Numerous interpretive methods and activities of the sanctuary also actively involve members of the community. In this way, interpretation becomes effective on a quantitative and qualitative level. Sanctuary staff continually develop and implement innovative education and outreach programs designed to “provide educators, students and the interested public with opportunities for virtual historic time travel into the submerged hulls of Thunder Bay shipwrecks” (TBNMS, 2009c). Some of these methods include school curricula and lesson plans for use in classrooms, interactive Web sites with activities and underwater videos, ROV building competitions, live broadcasts, and public events like the Thunder Bay Maritime Festival (TBNMS, 2009c). Activities such as these serve to accomplish the sanctuary’s goal of education and outreach, but also address the fundamental issue of resource protection through education. During these activities and events, managers also receive public feedback, even if indirectly, and incorporate it into future planning. Visitors to the GLMHC are also “asked to voluntarily sign a visitor log book and provide written comments prior to leaving” (S. Waters, personal communication, May 28, 2009).

Management of TBNMS is by far the most active of all the programs evaluated here. To enforce the sanctuary regulations, NOAA “partners with the U.S. Coast Guard, Michigan Department of Natural Resources, Alpena County sheriff's Marine Patrol, and Michigan State Police” (TBNMS, 2007b). A particularly important component is “reports from recreational divers and other members of the community,” which “is one example of how strong community involvement and support helps the Sanctuary successfully protect the resources” (TBNMS, 2007b). The sanctuary has also installed and maintains “a mooring buoy system to provide safe access to shipwrecks with minimum impact to the resources” (TBNMS, 2007b).

The original management plan was completed in 1999 as part of the Final Environmental Impact Statement. This initial plan was intended to span five years, and categorized priorities into Management (which included both sanctuary administration and resource protection), Education, and Research. Each category consists of general goals, which are based on terms such as “develop,” “encourage,” and “ensure,” but which do not incorporate specific, measurable objectives. This is understandable given that TBNMS was the first managed area of its type, and given the lack of precedent in the field of cultural resource management. The plan does go on to outline specific activities that would begin to address the goals, forming as complete a strategy as can realistically be set forth at the beginning of such a pioneering program.

As required by the reauthorized National Marine Sanctuaries Act of 1992 (16 U.S.C. § 1431 *et seq*), which “requires periodic updating of sanctuary management plans to reevaluate site-specific goals and objectives and to develop management strategies and activities to ensure the sanctuary best protects its resources,” TBNMS began the process of Management Plan Review in 2006, and produced its first Draft Management Plan (DMP) in 2009 (TBNMS, 2009b, p. 5). The process involves extensive opportunities for public comment, including numerous public comment meetings and solicitation of written public comments.

The plan represents a collaborative effort between NOAA, Michigan’s Department of History, Arts, and Libraries, the Thunder Bay SAC, and “input from the public, local governments, state and federal agencies, and other stakeholders” (TBNMS, 2009b, p. i). The basis of the DMP is four action plans similar to the original Management Plan’s categories: Education and Outreach, Research, and the original “Management” category divided into

Resource Protection and Sanctuary Operations. “Each action plan begins with background information on current sanctuary programs and overview of the direction the sanctuary will take to address current management needs,” and also includes general goals and specific objectives (TBNMS, 2009b, p. 7). Each objective is accompanied by strategies describing how it will be accomplished, and “each strategy is divided into specific activities for sanctuary staff to complete” (TBNMS, 2009b, p. 7). Financial resource requirements are also estimated for implementation of each strategy over a five-year period. Most importantly, “performance measures for each action plan are identified to assist in evaluating the sanctuary’s progress over time” (TBNMS, 2009b, p. 7). Sanctuary staff will be able to monitor these measures and periodically evaluate “progress towards the achievement of outcomes,” an undertaking not present in any other program evaluated here, and which is critical to the success and sustainability of all programs (TBNMS, 2009b, p. 7). Examples of these goals, objectives, strategies, and activities are listed in Table 5.

Table 5. Examples of goals and objectives for TBNMS, from 2009 Draft Management Plan.

Action Plan	Resource Protection	Education
Goal	Strengthen protection of Thunder Bay National Marine Sanctuary's resources through compliance with sanctuary regulations, while increasing resource access.	Use education as a management tool to protect sanctuary resources by increasing public awareness and understanding of the sanctuary's maritime landscape and by encouraging responsible stewardship of its maritime heritage resources.
Objective	Increase access while promoting responsible use of sanctuary resources.	Build an education and outreach program that complements and promotes sanctuary resource protection and research programs.
Strategy	Evaluate and assess a proposed expansion of the sanctuary to a 3,662-square-mile area from Alcona County to Presque Isle County, east to the international border with Canada to protect, manage, and interpret additional shipwrecks and other potential maritime heritage resources.	Increase awareness and knowledge of the sanctuary by developing education and outreach materials for a broader audience.
Activity	Initiate a public process to consider the advisory council's recommendation to expand the sanctuary boundary.	Develop education materials and lessons for students and educators.
Outcome	Increased awareness of sanctuary and state regulations among recreational users of Thunder Bay National Marine Sanctuary.	Educators are provided with new and updated classroom material on the sanctuary.
Performance Measure	By 2014, 100% of major boat launches and marinas adjacent to the sanctuary will have outdoor signage or kiosks about regulations and responsible use of sanctuary resources.	By 2011, 30 new sanctuary lesson plans and classroom activities will be available to educators.
Baseline	There are eight major boat launches or marinas in the three-county (Alpena, Alcona, and Presque Isle) region, none of which have adequate signage.	Currently, 15 lesson plans and classroom activities are available to educators.

The impact on the resources can be considered resoundingly positive. The sanctuary's existence does encourage increased site visitation, but also directs and regulates the activities

of visitors, with the aid of law enforcement, mooring buoys, and an extensive system of educational materials. Known sites are also monitored periodically by sanctuary staff. The collective impact on the resources of TBNMS therefore consists of documentation, inventory, preservation, interpretation, public education, and protection.

The tradeoffs of such a program are negligible. Such a positive impact on cultural resources can be accomplished without prohibiting public access, and local communities economically benefit from increased tourism and job creation. Being established by a Congressional Act, and forming a significant portion of NOAA's annual budget line, the sustainability of the ONMS is unquestionable. Thunder Bay National Marine Sanctuary, specifically, has become so established that the local community possesses a vested interest in its continuation, and participates in its management, thus ensuring its long-term sustainability and increased success.

Feasibility in North Carolina

As previously mentioned, a National Marine Sanctuary does exist off the coast of North Carolina, the *Monitor* National Marine Sanctuary, which is also the only other NMS designated to protect cultural resources. Unlike TBNMS, the MNMS was intended solely to protect the site of one shipwreck, and therefore constitutes an area of one square mile, to the depth of the wreck site at approximately 240 feet. Admittedly, the physical and environmental conditions of the Great Lakes and the Atlantic Ocean are entirely dissimilar, and present different management challenges. For this reason, direct application of the Thunder Bay model to *Monitor* is not feasible. However, the success of TBNMS, and indeed the recommendation of the Boundary Expansion Committee to expand the boundary of the sanctuary eight-fold, are noteworthy components for MNMS.

While the site of *Monitor* "is open to divers through a permitting process, the easiest way for most people to visit the *Monitor* Sanctuary is through museums" (MNMS, 2008a, p. 8). In many ways, the Graveyard of the Atlantic Museum in Hatteras would have been the most logical choice of location for sanctuary headquarters and an interpretive center. However, at the time when planning was underway, a suitable site along the North Carolina coast was unavailable. The Mariners' Museum in Newport News, VA, the largest maritime museum in North America and open since 1934, emerged as the best candidate for these facilities. "In 2005, staff moved into permanent office space at NOAA's Maritime Archaeology Center," located next to the museum, and "in March 2007, exactly 145 years after the historic clash between *Monitor* and CSS *Virginia*, the USS *Monitor* Center opened at The Mariners' Museum" (MNMS, 2008a, p. 8).

> The $30 million, 63,500-square-foot facility serves as the primary visitor center for the *Monitor* sanctuary. In partnership, the museum and NOAA brought the story of this unique ironclad to the public through this dramatic center where visitors come face-to-face with history. Visitors learn the story of the USS *Monitor* and her worthy opponent the CSS *Virginia* through a rich array of original artifacts, archival materials, immersive multimedia experiences and recreated ship interiors that transport the visitor back to 1862. The center is also home to thousands of artifacts, a major interactive exhibition on the two ironclad vessels, and ongoing efforts to conserve more than 1,200 artifacts from the sanctuary. Visitors can walk on a full-scale replica of the *Monitor*, experience the drama of the Battle of Hampton Roads in a high-definition theater, watch the recovery of the turret, and observe

> hands-on conservation taking place in the state-of-the art conservation facility. (MNMS, 2008a, p. 8)

Now that the Graveyard of the Atlantic Museum is open to the public, and designing new exhibits, *Monitor* will be an integral part of the final product. The museum will house *Monitor* exhibits, as well as NOAA office space, though the *Monitor* Center and sanctuary headquarters will remain in Newport News.

Monitor's national significance, high profile, and imminent preservation requirements necessitated its immediate protection upon discovery. Largely because of this, the current extent of the boundary and the current regulations have been largely uncontested. As previously mentioned, these regulations prohibit activities that could damage the remains of *Monitor* or its accompanying natural resources, "such as anchoring, discharging waste material into the water, seabed drilling, seabed cable-laying, the detonation of explosive material, dredging and trawling," in addition to commercial fishing, and "subsurface salvage or recovery operation, diving, lowering below the water any grappling, suction, conveyor, dredging or wrecking device" (MNMS, 2008b). Inevitably, there are parties who object to some or all of the restrictions, but sanctuary regulations in this case tend to be generally understood as necessary to protect such a significant shipwreck.

The current *Monitor* National Marine Sanctuary management plan was written in 1983. Since then, long-range plans and expedition operations manuals have been completed, but no other comprehensive management documents exist. The sanctuary has achieved many significant milestones since its designation, and a new management strategy is needed to guide the site's future direction. (MNMS, 2009b)

The process of Management Plan Review is currently underway, which has led to the production of a *Monitor* Condition Report and a State of the Sanctuary Report, and has also included numerous public scoping meetings and compilation of written public comments. Perhaps inspired by the positive reception of the approved boundary expansion of TBNMS, as well as the renown and significance of the "Graveyard of the Atlantic," managers have begun to consider boundary expansion for MNMS. This process is already beginning to happen on the administrative end, though public response has been lukewarm. Managers are well aware of the importance of community support, and have made efforts at garnering it, though there is still a long way to go, as evidenced by the prevalence of such comments as the following:

- I am submitting this written comment in opposition to including any other nearby wreck sites in the NMS, or any expansion of said NMS.…Wrecks are the backbone of Mid-Atlantic diving, as there is basically nothing else out there to dive.…Recreational and commercial fishing interests will be compromised if this goes through, as each wreck would have 'exclusion zones' where no anchoring or fishing will be allowed. I feel this is would be [sic] totally unnecessary, hard to understand for the average boater, and nearly impossible for an already financially strapped US Gov't to manage. (MNMS, 2009a, p. 13)
- I am against the expansion of any Marine Sanctuaries, especially in the proximity of Cape Hatteras National Seashore Recreational Area. We are already under assault from land. Limit our off shore fishing and what's next.

> Why not just shut everything down and wait for people to leave so you can turn the whole coast into a ghost town. (MNMS, 2009a, p. 14)

- The wreck of the *Monitor*, if not, should be open to the diving public. It is deteriorating rapidly and my [sic] not be around much longer. No doubt, digging up the turret and bring [sic] it to Hampton Roads didn't help the site either. (MNMS, 2009a, p. 17)

While the latter comments also clearly indicate a failure to understand the purposes and potential benefits of National Marine Sanctuaries, and the specific regulations of MNMS, they also illustrate the pressing need for managers to better publicize these purposes, benefits, and regulations. Some such endeavors have clearly made a positive impact, however, as evidenced by the following comments:

- I am in support of the concept of expanding the *Monitor* Sanctuary to encompass other cultural resources in the Grave Yard of the Atlantic. I am not in support of restricting access to these resources. I do believe you can do both. (MNMS, 2009a, p. 16)
- I believe that NOAA Sanctuary has the ability to be good stewards of these wrecks if: 1) Divers are allowed open access to these sites as they are the conservation monitors, 2) Education of the dive community and public is vigorously continued and promoted, 3) Mooring apparatus is installed and maintained at needed sites such as the important warcraft sites. (MNMS, 2009a, p. 21)
- I feel the protection of these sites and others like them is a just and reasonable mission that should be undertaken. I must state that while I am in favor of the

> protection of these wrecks I am not in favor of restricting access to them. In order for the stated objective of preserving and teaching our underwater cultural heritage to be successful, it has to include the ability of divers to access these and other sites that will eventually be discovered. (MNMS, 2009a, p. 30)

Comments such as these indicate that an important contingent of stakeholders understands the value of stewardship, and the ability of a National Marine Sanctuary to both protect and interpret underwater cultural resources. However, there is still a failure to consider the power of non-place-based interpretive programs to present shipwrecks to both divers and non-divers in interesting and innovative ways. Perhaps this oversight by stakeholders is due partly to the lack of such programs in North Carolina, but nonetheless also illustrates the need for increased communication on the part of managers. This and other important points are stated explicitly and brilliantly by ECU Maritime Studies professor Nathan Richards in his written comment:

> It is clear from the public scoping meeting I attended that the public is either ill-informed or paranoid about a Federal presence in NC waters. Some of this, it could be argued, comes from a lack of communication from agencies by NOAA, and part of this is just what one would expect whenever the public and government interact. I feel that it doesn't matter where or why this is happening, but that effort should be put into fixing this *perception.*… An education campaign of some sort is needed.…I think it is particularly important that products such as pamphlets, maritime heritage trails (signage, iPod tours, other innovative etc…), as well as diver cards and popular books

> (including waterproof books and 'coastal atlases') should feature prominently in the mission of the *Monitor* sanctuary (whether expanded or not).…***the support of maritime archaeological and historical research off NC=$$$ for coastal Carolina*** (MNMS, 2009a, pp. 18-19)

Some of Richards' points are also priorities of sanctuary managers, as evidenced by statements issued during the May 2009 Sanctuary Advisory Council Meeting, which was open to the public. Sanctuary Superintendent David Alberg emphasized the necessity of state support for any NOAA plans, and explained that an expanded sanctuary would not likely include the same restrictions as those currently imposed on *Monitor*. "We're not advocating shutting down any wrecks," he stated, adding that diver input will receive serious consideration in the updated management plan (Kozak, 2009, p. 15). Statements such as these demonstrate the recognition by managers that stakeholder support is critical, though a broadly-based education campaign using multi-media products would undoubtedly make a significant contribution toward this goal.

A poignant and personal example of "the public [being] ill-informed or paranoid about a Federal presence in NC waters" occurred recently as the author was requesting permission to use images in this document. Permission was requested to use an image of the North Carolina coast showing the bathymetry of capes and shoals, as well as the general location of a number of known and suspected shipwrecks. The image was to be inserted in the coastal geomorphology section of the literature review, and is available for viewing from the Web site of the Association of Underwater Explorers. The company owner, however, declined permission for use, stating the following: "While I understand the image(s) would be used for your doctoral dissertation, due to less than transparent activities/developments

related to a potential expansion of the MONITOR NMS, I am unwilling to allow the use of any AUE product that could be used with that effort in the future" (M. Barnette, personal communication, August 19, 2009). Clearly, the message that the current restrictions imposed on *Monitor* would not necessarily be imposed in an expanded sanctuary, as well as the educational and economic benefits of an expanded sanctuary, are not being disseminated effectively enough to concerned stakeholders.

During the summers of 2008 and 2009, MNMS staff and partners conducted research expeditions on several World War II vessels from the Battle of the Atlantic, including German U-boats as well as vessels which were sunk by U-boats. Suggestions are circulating that at least some of these wrecks would be viable candidates for initial sanctuary expansion, based on a Battle of the Atlantic theme. Because of the historical significance and the emotional importance of this event and these wrecks, both supporters and opponents of their inclusion in a National Marine Sanctuary are vociferous.

However, the logistics of extending sanctuary protection to the majority of the North Carolina Outer Banks will require a carefully orchestrated effort by managers to convey the purposes, capabilities, and benefits of the sanctuary system to stakeholders. As indicated by the comments of one meeting attendee, a local diver, "NOAA needs to clarify what qualifies as historically significant, what wrecks deserve protection, and how that can best be done while maintaining access for divers and fishermen" (Kozak, 2009, p. 31). He elaborates that wreck diving is "an incredible source of revenue for North Carolina," and that "the diving community is suspicious of another layer of bureaucracy" (Kozak, 2009, p. 31). Clearly, this represents a tremendous opportunity for managers to explain the site-specific regulations of the sanctuary system, as well as the benefits of sanctuary inclusion. Comments such as these

indicate public desire to preserve their heritage, and also misunderstanding and apprehension about the role of NOAA. A concerted education campaign would convey the wide range of opportunities and benefits of sanctuary expansion, from increasing the quality of the diving experience, to exhibit and trail creation, to increasing local economic development.

Chapter 10: Analysis/Conclusions

General Trends: Quantitative Measures

When quantitative data is available for these programs, it is not the type of data that lends itself to statistical analysis. Therefore, even when numbers have been presented for such quantitative aspects as start-up and maintenance costs, development time, number of staff, and visitation, the most appropriate form of analysis consists of derivation of general trends, which allows informative conclusions to be drawn. Trends for the stated components are as follows:

1. Start-up costs: Monetary start-up costs for these programs are generally not high, though they can be difficult to quantify for these types of programs. Funding comes from a variety of sources, including state government, grants, and private donors. However, in most cases start-up requires a significant amount of initiative, time, and energy on the part of a relatively small group of people.
2. Maintenance costs: Maintenance costs are also difficult to quantify, since maintenance tasks may frequently be performed as part of a permanent staff member's duties, or included as part of an annual budget line. In some cases, visitor or participant fees cover part or all of the program's maintenance costs, but this is not usually the case. Again, significant amounts of time and energy are donated.
3. Development time: Most of the programs have a relatively short span of time from initial conception to implementation. Some of the programs were based on existing programs elsewhere, which provided a model. Most of the programs also possess an inherent flexibility, which enables managers to adapt to perceived needs on a continuing basis.

4. Number of staff: Surprisingly, this is also difficult to quantify. In some cases, programs are part of a state or federal agency, and do have dedicated full-time staff. In other cases, program implementation forms a small component of a staff member's regular duties, and in still other cases, programs are only implemented for several days or weeks each year. In the latter two types of programs, this can cause one of the main drawbacks, since the responsibility tends to fall on one or two dedicated individuals to perpetuate the program from one year to the next.
5. Visitation: Visitor data are kept meticulously for programs which restrict access to sites, and which charge an admission or program fee. Visitation to some of these programs is so restricted that the scope of public outreach becomes limited, as only a small number of the public may participate in the programs. On the other end of the spectrum, programs that are based on unrestricted access to sites have no practical way to track visitation or monitor visitor behavior.

This last quantitative measure is perhaps the most influential on site impact. Logic dictates, and this analysis confirms, that there is a direct correlation between site accessibility, visitor statistics, and impact on the resources. Programs which restrict or limit public access to sites have fewer total visitors, and no unsupervised or unauthorized visitation, and therefore little to no visitor impact upon the resources themselves. However, a very limited segment of the public is able to experience and learn about the resources through these programs. Programs that encourage or facilitate unsupervised access to resources, even though periodic monitoring may occur, undoubtedly sustain more impact on the resources. This is one of the major tradeoffs of such programs, and can be a difficult balance to achieve.

The result of this analysis leads back to a major tenet of both public archaeology and heritage tourism: public interaction with historic resources can be educational and entertaining, as well as an effective means to impart the necessity of stewardship. However, unrestricted access to historic resources can ultimately contribute to their demise. Heritage tourism programs which are based on archaeological resources must strike a balance between these opposing interests if they are to be sustainable. Heritage tourism development must be guided by the principles of both tourism management and cultural resource management. A successful attraction must be educational, entertaining, and economically viable, but must also use the target resource in a sustainable way.

Program Comparisons: Qualitative Measures

Not surprisingly, Thunder Bay National Marine Sanctuary stands out as the most successful program, with all three qualitative measures of success maximized, tradeoffs negligible, a significant positive impact on the resources, and a high degree of sustainability. Contributing to this success is the presence of a management plan, complete with specific objectives and accompanying performance measures, as well as evaluation of past sanctuary goals and outcomes. As discussed by Hall and McArthur (1998), the performance measures of the TBNMS management plan are designed to evaluate both effectiveness and efficiency of the planned strategies and activities. Noteworthy components of the program's implementation include the instrumental involvement of a wide range of community members and groups all the way from its inception through to its continued daily management. Many of the sanctuary's methods of interpretation actually foster this involvement, as well as address the education objective, which in turn helps sustain the level

of active management, via stakeholder stewardship. Because of ONMS' status within NOAA, there is a suite of staff members dedicated to sanctuary management, ensuring the program's long-term success and sustainability. While the physical environmental conditions differ greatly between Michigan and North Carolina, there are numerous important aspects of TBNMS which would be feasible in North Carolina, and are recommended for increased resource protection and interpretation.

On the other end of the spectrum, SHIPS has experienced the least success, though proper evaluation is difficult since the program has not yet been fully implemented. The program's intent was to utilize existing interest to build a base of community support which would begin to sustain the program. Interpretation would consist of lectures and training, which would enable participants to record beach wrecks they encountered. Management duties would continue on the part of state officials and partners, but would increasingly be assumed by trained avocational archaeologists. The tradeoffs would be minimal, with a positive impact on the resources in the form of public education and recording, and the financial investment required would be relatively low.

Unfortunately, the combination of a failure on the part of the pilot partner, the lack of a readily available alternative, and a decrease in state resources has caused the program to stall. Evaluation of this postponement reveals a lack of broadly-based community support for the program, as in the case of Florida's Underwater Preserves. Though initial interest came from stakeholders via the pilot partner, the partner's unwillingness to involve other groups, and MBUAR's consent to these terms, led to the unavailability of an alternate partner when the primary failed. Also, the failure occurred early enough in the process of implementation that community members had not gained enough of a vested interest to fight for the

program's continuation. Furthermore, the program's primary manager did not have the resources to continue the program unassisted. In theory, the program would be feasible in North Carolina, and would make a positive impact on the state's beach shipwrecks. However, a recommendation can only be tentative without a successful model.

The remaining programs fall between these two extremes in their respective degrees of success. With the exception of the Hobby Diver License (SC), each program (or some component thereof) is feasible in North Carolina, and each North Carolina program merits expansion.

The USS *Huron* Historic Shipwreck Preserve, though it is openly accessible and has the potential to reach a broad audience, does not necessarily do so. Like the Graveyard of the Atlantic Museum, the preserve began with local interest. Unlike the museum though, this interest was mainly on the part of two individuals. They successfully appealed to the UAB to conduct a full excavation of the wreck, which then provided the option of opening the site for public visitation. The town of Nags Head has dutifully performed its responsibilities in creating and maintaining the preserve. However, it remains North Carolina's only shipwreck preserve, and is not publicized locally, nor probably visited frequently. In its current state it is sustainable, but deserves to be reinvigorated, publicized, and expanded into a system of preserves similar to Florida's Underwater Archaeological Preserves.

The Ashley River Paddling Trail and the Cooper River Underwater Heritage Trail near Charleston, South Carolina have achieved considerable success at accomplishing their goals. Begun as a collaborative effort by state archaeologists and local divers, utilizing federal and state tourism initiatives, potential trail sites were surveyed and properly recorded prior to being incorporated into the trails. The program maintains a moderate level of

community involvement, interpretation, and management, and presently managers are doing an adequate job with available resources. In the future, however, an increase in educational activities and products would be advisable to enhance the role of the diving community in the stewardship and management of the trail sites. The development of a system of monitoring and feedback would also strengthen the program. A trail system such as this would be feasible and recommended in North Carolina, which possesses comparable riverine and estuarine environments and associated cultural resources.

Florida's Underwater Archaeological Preserves have achieved nearly the same level of success as Thunder Bay National Marine Sanctuary. Community involvement and effective interpretation are maximal. Local initiative was not only the impetus for the creation of the first Preserve, but is proactively encouraged by managers, and is integral in sustaining the program. Interpretation is thorough and diverse, and readily available at each Preserve site and online. Though no formal management plan procedure exists for the Preserves, as it does with TBNMS, numerous articles, chapters, and reports have been published which describe the activities and procedures involved with Preserve creation and maintenance. During this ongoing process, components that have been successful are noted, as well as shortcomings, thus providing a form of evaluation useful for future Preserve planning. Also unlike TBNMS, comparable regulations do not exist regarding visitor behavior, and daily interaction with the resources is neither monitored nor regulated. Managers recognize this shortcoming, but are left with only education as the strongest weapon in their arsenal of resource protection. Because such efforts to enlist diver assistance, encourage stewardship, and foster a sense of local responsibility are so proactive, this program stands out as a beacon. The model is extendable to areas where restrictive

regulations may not be particularly feasible, such as North Carolina, and where a concentrated program of education and collaboration may be most effective.

Wisconsin's Maritime Trails also represent a notable success of state-level management. Begun as a series of research projects under state auspices, sport divers assisted where possible, and are still the subject of significant attention from managers. Because a key method of interpretation is Internet-based, opportunities for involvement of the non-diving community are not as abundant. This segment of the public is nonetheless able to experience many shipwrecks nearly first-hand via the diverse and thorough interpretation available online. The management situation is analogous to Florida's Preserves, with open access to shipwreck sites, and lacking the ability to monitor visitor behavior. For this reason, managers of Wisconsin's Maritime Trails also undertake an active program of diver education as a management tool, and they have observed positive changes in diver behavior. Though environmental conditions between Wisconsin and North Carolina waters are entirely dissimilar, many aspects of the Maritime Trails program merit consideration for resource protection and interpretation.

The SAW program at the museum had an entirely different beginning, as the brainchild of a teacher and a maritime archaeologist, designed to teach the basics of maritime archaeology to a select group of high school students. Program creators were able to garner enough support to begin implementing the program, after which community interest and involvement began to grow. The program was buoyed further by the beginning of museum sponsorship in 2003, also illustrating the power of persistence. However, when managers proved unable to implement the program in 2009, museum staff (and resources) were concurrently overburdened with tasks involved in the museum's transition to state auspices,

as well as the completion of its exhibit space. Perhaps when the museum's daily operations are on firmer footing, the program can be resumed as part of the regularly offered summer educational programming. Though only a small number of students can participate each year, SAW has experienced great success at accomplishing its goals, and popularity among its participants and the local community.

QAR Dive Down began similarly, as an idea of *QAR* Project staff members to capitalize on diver interest in the wreck, and to extend the much-needed message of stewardship to the diving community. Because access to the site is completely prohibited, community involvement in most aspects of the program is impractical, though local groups and individuals have provided financial support and assistance during the implementation of program sessions. Though the program has become self-supporting with participant fees, as anticipated by its creators, and wildly popular, it is inherently unsustainable since it is based on a wreck site which is in full excavation mode. While *QAR* certainly presents a unique set of circumstances, being the purported flagship of Blackbeard, the success of the Dive Down model warrants adaptation to other settings, where its interdisciplinary curriculum and guided site dive would address a critical need for diver education about site stewardship. More systematic collection of participant feedback would provide concrete evidence of the program's effectiveness.

South Carolina's Hobby Diver License program was created to address a specific need at a certain time, and even its managers do not recommend its extension elsewhere unless similar circumstances are present. Tradeoffs are the program's *raison d'être*, allowing sport divers to retain artifacts they recover, providing that they have a current license, and they file quarterly reports. The program was enacted as a response to the observation that

sites were being looted at an alarming rate, with the rationale that at least some record of potential sites would be made. However, in recent years as the frequency of workshops and lectures has decreased, the effectiveness of the program's education component, and by extension the quality of information contained in divers' reports, has become jeopardized. Such a program is not necessary in North Carolina, and not recommended.

The most noteworthy aspect of the Graveyard of the Atlantic Museum is its origination from community initiative. Though an agreement was not able to be struck in time for North Carolina to retain the excavated portions of *Monitor,* the HVCA proceeded with raising funds and hiring a director, who then worked tirelessly for years to bring the museum to fruition. The ultimate acquisition of the museum by NCDCR virtually ensures its long-term success, and serves as a model of the power of grassroots initiative and perseverance on behalf of maritime heritage.

With the exception of TBNMS, a commonality of all the programs analyzed here is the lack of management plan, including specific objectives, performance measures or indicators, and evaluation. This is not to imply that cultural resource managers are unaware of the benefits of this process, or choose not to undertake it. The assumption that they also think such a model from the business world does not apply to cultural resource programs is not necessarily true. The fact is simply that the majority of cultural resource managers are not utilizing this process, at least to its full potential. The reasons are undoubtedly as myriad and site-specific as the programs themselves, and may frequently be as simple as staff and resources which are already spread too thin, with no capacity for additional tasks. There may also be uncertainty over how to establish specific objectives with associated performance measures for cultural resource programs.

In this regard, the TBNMS Draft Management Plan (2009) could be particularly helpful. Though few, if any, other programs exist in the U.S. with comparable geographic scope, regulations, and financial resources, the individual components of the plan can serve as examples for managers elsewhere of how to set specific objectives with accompanying strategies and activities for accomplishing them, as well as how to utilize performance measures for evaluation. Beginning to apply these concepts and practices to state- and locally-managed cultural resource programs, combined with increased collection of participant feedback, will serve to increase the effectiveness of interpretation as well as the level of active management. It will also help programs to justify their continued existence and funding, as well as better accomplish their goals.

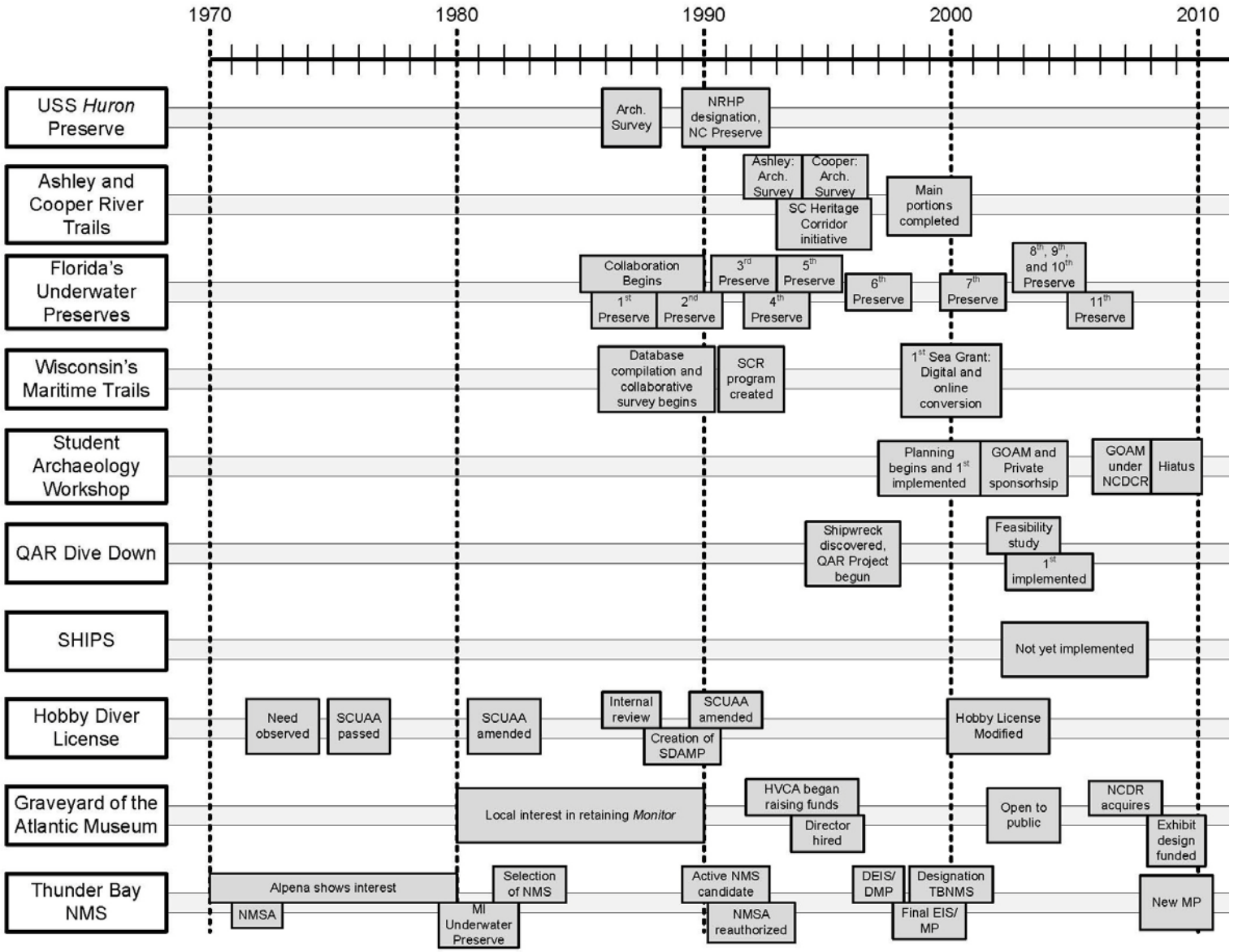

Figure 20. Timeline of program initiation through implementation.

Policy Implications

As mentioned previously, the life cycle model is widely recognized as capturing the important aspects of policy-making that correspond to political reality. The model's six components are agenda setting, policy formulation, policy legitimation, policy implementation, policy and program evaluation, and policy change. These six phases do not necessarily proceed in an orderly fashion, and any given policy may actually embody more than one phase at a time.

Ultimately, the stages of the policy life cycle model have the ability to be informative, if not necessarily predictive, about the degree of success of cultural resource programs. As argued throughout this analysis, community involvement is a key ingredient, and frequently a determinant, in the success of programs. Correspondingly, a program's status on the social and political agenda is also an important precursor to its successful implementation and sustainability. In the cases of the Graveyard of the Atlantic Museum, Florida's Underwater Archaeological Preserves, and Thunder Bay National Marine Sanctuary, pre-existing community interest provided the impetus for program creation. This interest has also been proactively cultivated by managers during these programs' continued implementation, and helps ensure their long-term sustainability. On the other hand, the Student Archaeology Workshop, the USS *Huron* Preserve, and SHIPS, represent cases where the issue either was not high on the social or political agenda initially, or where community involvement has not been successfully fostered enough to assist with program continuation in the event of a glitch in one of the other phases. In this way, agenda setting is perhaps the most predictive of program success.

The remaining life cycle phases are more descriptive than predictive. Frequently, policy formulation, legitimation, and implementation occur somewhat simultaneously, and even have the potential to create a positive feedback loop which increases program success. As in the cases of the Graveyard of the Atlantic Museum, Florida's Underwater Preserves, and Wisconsin's Maritime Trails, legitimation via financial and in-kind support was obtained while program formulation was ongoing. Initial program implementation immediately promised to be a productive use of resources, which helped secure additional support. During continued implementation, periodic assessment has occurred, even if informally, which allows for ongoing program reformulation, thus increasing the programs' potential for long-term sustainability.

Program evaluation, while not necessarily predictive of success, makes a significant contribution toward meeting program goals. With the exception of TBNMS, the programs analyzed here do not conduct formal evaluations, partially because they also do not establish specific objectives or employ monitoring using indicators. However, managers of most programs do publish chapters, articles, and reports describing their respective program's process of creation, and the ways in which modifications have been made to increase the success of implementation. In this way, managers are at least self-reflective, and attempt to reap the benefits of even informal evaluation. Though visitation can be difficult to monitor, and participant feedback is rarely collected systematically, most managers do attempt to incorporate user input into ongoing implementation, thus constituting the most common form of policy change in cultural resource programs.

Only in the cases of the Graveyard of the Atlantic Museum and the Hobby Diver License did formal policy change occur to enable creation of the program. In all other cases,

the program was able to be implemented using existing policy, or at least an interpretation of it. Most commonly, the relevant state law includes a mandate for public education, or a phrase pertaining to resource protection which can be interpreted as such by managers who recognize the role of stewardship in this process. As previously mentioned, the most common form of policy change is program modification during ongoing implementation, based on managerial assessment of successful or unnecessary components. As managers consider changing circumstances, as well as user feedback, during program execution, aspects may be adapted in order to improve each program's accomplishment of its goals, and by extension the success of its outcome. When this process ceases to occur regularly, programs can become stagnant, and with decreasing effectiveness of interpretation, can jeopardize their own relevance and long-term sustainability.

Chapter 11: Recommendations

Tourism to North Carolina's coast is a booming industry, which would be well-served by increased emphasis on the cultural resources associated with the Graveyard of the Atlantic. The following recommendations are based on the preceding evaluation of existing interpretive and protective programs for shipwrecks, considering each of their tradeoffs, as well as their viability in North Carolina. The recommended programs may be implemented effectively and feasibly, with the goals of interpreting North Carolina shipwrecks to a diverse audience, teaching stewardship, economically benefitting local communities, and helping to preserve these irreplaceable cultural resources.

Of the programs that have been implemented in North Carolina, all four have experienced considerable degrees of success, and merit continuation and expansion. The Graveyard of the Atlantic Museum is a vivid illustration of the power of grassroots initiative and perseverance. Now that the museum is under the auspices of NCDCR, its existence is virtually ensured, but its effectiveness at accomplishing its goals will be dependent on the availability of financial and staff resources. While the state budget allocation in the past has been adequate for maintenance of the status quo, an increase will be necessary to ensure the completion of the exhibit space and the hiring of additional staff, including a full-time artifact conservator. Additional resources should also be devoted to the expansion of educational programming, including the SAW program. Such increases will be necessary to elevate the museum from its status as open but incomplete to fully functioning, and able to accomplish its goals and meet the needs of the community.

The Student Archaeology Workshop experienced significant success during its implemented sessions. The main drawback of the program is the small number of students

who are able to participate. The program's methods are successful at accomplishing its goals, and deserve expansion. The participant fee, combined with donated scholarships and local in-kind contributions, was able to finance the program at its current level, though expansion would undoubtedly incur greater expenses. While the Graveyard Museum staff is currently burdened with the tasks of making the museum fully operational, SAW managers might turn elsewhere for additional sponsorship. The goals of the program fit nicely within the purview of the North Carolina Center for the Advancement of Teaching, which has a newly opened campus in Ocracoke, as well as the UNC Coastal Studies Institute, which is currently constructing its campus in Manteo. Both NCCAT and UNC-CSI stand to benefit from sponsoring a program such as SAW, and would help ensure the program's continuation. Expansion of SAW to greater numbers of students, and to teachers, renders the use of actual beach shipwrecks impractical, though innovative solutions such as mock-ups could certainly be effective at teaching the theory, method, and ethics of maritime archaeology.

QAR Dive Down has been hugely successful, but like SAW, has been limited in the number of people able to participate. Unlike SAW, the opportunities for expansion are impractical. Dive Down, by definition, is not sustainable since the wreck is being fully excavated. While some incarnation of the program may be able to live on, the element of authenticity, and the allure of a dive on the actual site of Blackbeard's flagship, will be lost. However, the diver education component is certainly worth continuing, and may be adapted to a range of circumstances, including programs that may be offered by dive shops, or by the UAB. Such programs could still be funded by participant fees, and could consist of a similar classroom module, culminating with a guided site dive, even if the site is already open for public access. Wreck diving in North Carolina is a prospering industry, and there is surely a

segment of that community which would welcome additional opportunities for education, especially if the program culminates in the certification of North Carolina Site Diver. Expansion of the program in this way would also help increase communication and forge relationships between archaeologists and sport divers, which would aid in the preservation of all submerged cultural resources.

The USS *Huron* Historic Shipwreck Preserve has experienced qualified success, but has become stagnant. Managers would be well-advised to utilize the model of Florida's Underwater Archaeological Preserves in reinvigorating and expanding the *Huron* Preserve into a state-wide system of shipwreck preserves. Though many actions that would serve this purpose would require additional investment of financial and staff resources, Florida managers' efforts at fostering community involvement have paid the largest dividends in program sustainability. Among these efforts are the establishment of a Friends of the Preserve group for each site, involvement of local divers with site survey and recording, media and public events during the final stages of each Preserve's designation, and the continued solicitation of new site nominations. The latter of these actions is recommended as soon as resources permit, in addition to increased publicity of the *Huron* Preserve locally. Mailings to, and communication with, coastal businesses and organizations would begin the process of raising interest and awareness in the existing preserve, and the benefits of an expanded preserve system. Since UAB staff has also already identified three wrecks in the Fort Fisher area as excellent candidates for designation as preserves, efforts could be increased to enlist the assistance of the local diving community to help begin the process.

Of the programs that have been implemented in other states, only some have experienced considerable degrees of success, and merit consideration in North Carolina.

South Carolina's Hobby Diver License was created to address a site-specific need, and has been moderately successful at accomplishing its goals, but is unnecessary in North Carolina, and not recommended. The remaining five programs, or selected components thereof, would be effective and feasible in North Carolina. Florida's Underwater Preserves are discussed above, as a model for expansion of the USS *Huron* Shipwreck Preserve.

South Carolina's Ashley and Cooper River Trails have achieved considerable success at accomplishing their goals, though the availability of interpretive materials has decreased. The program has represented a way for archaeologists to forge relationships with sport divers, and has involved them with continued trail management. Though open access to sites is facilitated, in the absence of a practical method of monitoring visitation, trail sites are assessed biannually, and minimal negative site impact has been observed as a result of the trail's existence. Physical conditions between North and South Carolina are similar, making both the paddling trail and the diving trail model adaptable to selected areas of North Carolina coastal rivers and sounds. For example, the waterfront districts of Washington and Wilmington are excellent candidates for development of such trails. In fact, federal funding may also be newly available for such proposals. The 2009 Omnibus Public Land Management Act formally authorized the Preserve America and the Save America's Treasures Programs, which are intended to facilitate partnerships among federal agencies, "state, tribal, and local governments and the private sector, to support and promote the preservation of historic resources" (ACHP, 2009). The initiative includes grants to help designated communities develop "economic and educational opportunities related to heritage tourism" (Preserve America Initiative, 2009, "Overview"). Grant proposals could be drafted

for a number of waterfront communities, requesting such funds to develop paddling and diving trails.

Massachusetts' Shoreline Heritage Identification Partnerships Strategy cannot be considered successful, as it has yet to be fully implemented. For this reason, it cannot receive an unqualified recommendation for creation in North Carolina. However, North Carolina does possess comparable cultural resources which could benefit from the implementation of such a program. Since one of the primary reasons for the program's lack of success was reliance on a single NGO partner, a second attempt at implementation, or an attempt in North Carolina, should focus on building a broader base of partners. However, since another reason the program did not take off was concurrent cutbacks in state resources, such a program cannot be recommended for creation in North Carolina at this time. The idea certainly merits being kept on the back burner though, and also deserves consideration by UNC-CSI in its search for innovative maritime education programs.

The Wisconsin's Maritime Trails program has achieved a great deal of success at accomplishing its goals, and even though environmental conditions are dissimilar between Wisconsin and North Carolina, such a program would be feasible and recommendable. Numerous components of the program are directly applicable, including mooring buoys, signage, public presentations, and many aspects of the Web sites. The online shipwreck database is strongly recommended for implementation, though other media offerings such as underwater video would not always be as engaging in North Carolina waters, which typically do not possess the same visibility as the Great Lakes. Though the already overburdened UAB would be the agency responsible for management, staff or a partner could propose a project such as Wisconsin's Maritime Trails, or even a single component of it, to North Carolina Sea

Grant. ECU Maritime Studies students, for example, would be excellent candidates to work on such a grant.

Thunder Bay National Marine Sanctuary has achieved tremendous success, and represents a model that would be effective and feasible in North Carolina, namely, as expansion of the *Monitor* National Marine Sanctuary. There are several major differences between the two situations that must be mentioned, and which render direct application of the model impractical. First, preservation conditions between the Great Lakes and the Atlantic Ocean are dramatically different, meaning that North Carolina does not possess nearly the same density of well-preserved wrecks as the Thunder Bay region, and that the experience for divers is also quite different. Second, TBNMS began as a 290-square-mile state underwater preserve which was established in 1981, and already possessed a significant amount of community support by the time it was nominated to be a NMS. Because of the distinct collection of shipwrecks within a finite area, and because of the pre-existing level of stakeholder support, Thunder Bay was an ideal candidate for sanctuary designation, which included expansion of the boundary from that of the state preserve.

On the other hand, in the case of the North Carolina coast and the MNMS, many of these conditions do not exist. North Carolina shipwrecks, though frequented by divers, are not as well preserved individually and as a collection, and known wrecks tend to be more isolated and farther apart. Also, the extent of the MNMS is one square mile, and prohibits all activity which would negatively impact the site. Partly because of these regulations, many North Carolina stakeholders may harbor a misunderstanding about the site-specific and adaptable regulations of sanctuaries. As indicated by many of the public comments received by sanctuary managers during the ongoing Management Plan Review process, there is

widespread confusion and opposition toward an expanded NOAA presence on the North Carolina coast.

As stated by Dr. Richards, the causes of this perception are less important than the remedy. He argues for an education campaign by managers, and increased efforts to convey the true purposes and potential benefits of National Marine Sanctuaries. MNMS managers clearly recognize the necessity of building stakeholder support (D. Alberg, personal communication, October 11, 2007), but have not widely publicized this message outside Sanctuary Advisory Council meetings. Efforts need to be redoubled to begin accomplishing this task, possibly in the form of pamphlets, outreach to local media, and the enlistment of assistance from stakeholder groups who understand and support the mission of the sanctuaries, including archaeologists, teachers, and a number of wreck divers.

Recent research expeditions to a number of shipwrecks from the Battle of the Atlantic have publicized the wrecks' consideration by managers for inclusion into an expanded sanctuary. However, the geographic range represented by some of the wrecks is raising concerns that the majority of the North Carolina coast would become restricted for divers and fishermen. While this fear is unfounded, the issue is nonetheless among the logistics that must be considered during discussions of sanctuary expansion. Recommendations will not be made here about specific boundaries, and regulations which would be most effective yet agreeable. If, however, managers are considering an expanded sanctuary which would not prohibit diver access or selected activities of fishermen, these intentions need to be made much clearer to concerned stakeholders than they currently are.

The recommendation based on this research is for expansion of MNMS to include more historically significant wrecks in the Graveyard of the Atlantic. This process should be

comprised of a concerted and targeted education campaign to better convey to stakeholders the purposes and benefits of National Marine Sanctuaries. These purposes and benefits include resource protection, education, and research, as well as local economic stimulation via job creation and tourism. Utilizing the model of TBNMS, the priority activities of an expanded MNMS would include "placing mooring buoys at identified shipwrecks, initiating an inventory and documentation of shipwrecks, and developing a maritime heritage education program" (MNMS, 2007c). Products of this education program could encompass terrestrial signage, dive slates, school curricula, and self-guided audio tours to accompany travelers of Highway 12.

If any of these recommended actions receive serious consideration by managers and officials, several theoretical issues should be incorporated into the early planning stages. First, the dissonant nature of heritage should be kept in mind (Graham et al., 2000), so that when a maritime heritage site has cultural significance to varying stakeholder groups (such as a slave ship converted into a pirate ship, or a Civil War shipwreck), each unique perspective may be interpreted to portray the complete picture of the site's history (Flatman, 2003).

Second, the heritage tourism industry is an industry. The development of historic and archaeological sites as tourist attractions, with accompanying educational programming, should begin with a strategic plan which includes goals and measurable objectives (Hall & McArthur, 1998). Evaluation is necessary to assess a program's accomplishment of these objectives, and systematic collection of visitor feedback is vital in evaluation of heritage attractions (Masberg & Silverman, 1996).

Third, though terminology and labeling of heritage sites may seem semantic, words such as "preserve" and "sanctuary" can cause misunderstanding, and influence public

perception of a site's purpose and intent. Managers should choose terms carefully, and should diligently market and publicize the true nature of a site (Hannahs, 2003). Interpretation and education are typically important goals of maritime heritage preserves and sanctuaries, which frequently encourage rather than restrict access to cultural resources (Harris, 2002).

Fourth, education is a stronger protective tool than regulation and enforcement (Nutley, 1987; Lerner & Hoffman, 2000). Along with information about a site's history and heritage, interpretive materials should include a message of public stewardship of submerged cultural resources. Members of the general public and local communities would begin to take more personal interest in, and responsibility for, the preservation of these irreplaceable resources if such a message were more broadly and frequently reinforced (Nutley, 1987; Lerner & Hoffman, 2000).

Finally, the importance of community involvement and stakeholder support cannot be overemphasized. Thought these two terms derive from the same fundamental issue, they do carry different connotations. "Community involvement," as used by Scott-Ireton, addresses the role played by local individuals and groups in assisting with program implementation. "Stakeholder support," on the other hand, connotes the variety of local individuals and groups who may have opposing views on the most appropriate use of the target resources, as well as the potential impacts of that use. However, in both cases, a critical step in the process of program creation is effective outreach by program managers and administrators to local individuals and groups. This outreach should strive to communicate the purposes and benefits of the proposed program, to address the concerns of all parties with an interest in the

resource, and to recruit assistance with program implementation, thereby increasing the number of parties who have a vested interest in the program's success.

A recent study from North Carolina State University reached this conclusion with an examination of the federal government's use of the "war on terror" as a rhetorical tool for advancing federal agendas and policy objectives (Zagacki, 2008). Communications professor Kenneth Zagacki studied the response of citizens in two rural North Carolina counties where the U.S. Navy had plans to construct an outlying landing field (OLF) near a National Wildlife Refuge. He found that local stakeholders opposed the OLF fairly unanimously, ranging from conservative rural farmers to environmentalists and politicians, and that when they "defined themselves as patriotic, common-sense agents, and the scene as heritage, [they] built a more credible connection to a patriotic American ethos than did the rhetoric of the Navy, which defined the OLF debate primarily as part of the war on terrorism" (Zagacki, 2008, p. 261). Ironically, "local citizens relied upon some of the same arguments as did the Navy, invoking core values such as liberty, democracy, private property, national security, and patriotism to present themselves as … the 'guardians of the nation's heritage'" (Zagacki, 2008, p. 262). In effect, "they turned their justifications around on Navy officials, placing the Navy in the awkward position of appearing to threaten the nation's 'heritage' while they claimed to be protecting it" (Zagacki, 2008, p. 262).

As a result, they were able to work together to oppose the government's definition of the problem, and compel the Navy not to proceed with construction, thereby providing a model for building an effective alliance out of disparate interests, an approach which could be applied in other areas faced with similar land-use issues (Zagacki, 2008). As of April 2009, a bill had been passed in the North Carolina House of Representatives that would

"decline to give the federal government permission to acquire land in some areas of the state" for the OLF (Associated Press, 2009, April 16), and in response, the Navy issued a statement that the proposed state law would not stop the project, since "the federal government has the authority to build the practice runway despite state law" (Associated Press, 2009, April 23).

Nonetheless, this occurrence illustrates the power of stakeholder initiative, and serves as a cautionary tale for managers wishing to expand the NOAA presence along the North Carolina coast. Just as with Florida's Underwater Archaeological Preserves, where community members take action to ensure the success of the proposed program, local antagonism towards a project can also prevent its implementation. This lesson should particularly be heeded in the case of the *Monitor* National Marine Sanctuary. If expansion is to proceed as recommended, managers must take extra measures to ensure that local stakeholders and communities fully understand the purposes and benefits of this action, so that misunderstandings and unwarranted opposition are minimized.

With the exception of TBNMS, which already utilizes formal management plan review, the levels of effective interpretation and active management for each of the programs evaluated here could be strengthened. The development of a strategic plan, with an evaluation process using measurable objectives and visitor feedback, would help initiate this process. This is admittedly a general rather than specific recommendation, since the plan and objective for each program would need to be site-specific. Components of the TBNMS Draft Management Plan (2009) could serve as a springboard for practically every submerged cultural resource program to begin this process, since the plan includes objectives, activities, and performance measures for resource protection, education, research, and administration. It would be impractical to recommend formal management plan creation for the less

institutionalized programs analyzed here, such as SAW and SHIPS, though a number of the aforementioned aspects of Thunder Bay's management plan would serve to strengthen these smaller programs if adapted.

The maritime cultural landscape of the North Carolina coast has shaped, and been shaped by, the peoples who have and who continue to call it home. The region's past is rich and diverse, and its history is storied and colorful. From the earliest Native Americans, to European explorers and colonists, revolutionaries and rebels, pioneers and patriots, farmers and mariners, to life-long Bankers and tourists, the North Carolina coast has been many things to many people, and has an endless variety of heritage narratives. In addition to the stuff of history books, the findings of archaeologists can tell the untold stories of interactions between natives and settlers, and of slave ships turned pirate ships. If investigators and interpreters of these stories are diligent, present and future generations can come to gain a fuller understanding and appreciation of the lives and events that compose the vivid maritime cultural landscape of the North Carolina coast.

North Carolina stands to benefit tremendously from further development of interpretive and protective programs for its submerged cultural resources. A statement by John Broadwater provides a degree of insight into why such programs have been slow to develop in North Carolina:

> Virginia's conservatism makes her very sympathetic to the concept of historic preservation but, at the same time, reluctant to spend money on such preservation. I suspect that this dichotomy is not unique to Virginia. In fact, five years ago, Gordon Watts, who was at that time state underwater archaeologist for North Carolina, told me that the secret to a continuing state

> effort in underwater archaeology may be projects, not programs, since it is often easier to find support for a project with short-term goals and needs. (Broadwater, 1985, p. 151)

Both the reticence of political conservatives to fund historic preservation, as well as greater justifiability for funding projects rather than programs, have shaped the development of submerged cultural resource policy and planning in North Carolina for decades. However, more effective cultural resource policy and planning would reverse both of these trends to better address resource protection and public education needs. Managers should develop strategic plans for long-range programming, which would help legislators justify allocating more resources to them. Also with such plans in hand, managers would be better equipped to take advantage of existing heritage tourism initiatives.

This systematic analysis of 10 existing programs for shipwreck interpretation and protection finds that a number of finite action items could be taken which would more effectively protect, preserve, and interpret North Carolina shipwrecks. Recommendations are for cultural resource managers and program administrators to begin building more extensive community support networks, and to redouble efforts to collect and utilize visitor feedback. Specific action items include:

- Soliciting nominations of sites for shipwreck trails;
- Organizing diver training workshops in anticipation of collaborative site investigations;
- Conducting feasibility studies for shipwreck trails along the Washington and Wilmington waterfronts;
- Applying for grants, and encouraging graduate student involvement in augmentation and digital and online conversion of North Carolina shipwreck databases;

- Sponsorship and implementation of programs such as SAW and SHIPS by NCCAT and UNC-CSI;
- Extension of QAR Dive Down model and curriculum to other venues;
- A concerted campaign on the part of state and federal managers to convey the economic and educational benefits of increased government involvement in shipwreck protection and interpretation.

> Tourism builds social community… [and] communities acquire solidarity through the actions they take to attract and create tourists. The benefits arise through the teambuilding that accompanies promotion of festivals, the organization of special event weeks, and the mounting of local tourism campaigns. Indeed, an inevitable consequence of escalated tourist promotion is the heightened sense of community togetherness (Knopf & Parker, as cited in Hoffman, 1997, p. 78).

Further development of heritage tourism programs along the North Carolina coast will have a significant positive impact on local communities and on the maritime heritage of the Graveyard of the Atlantic. The growth and expansion of programs designed to protect, preserve, and interpret shipwrecks will increase public stewardship of these irreplaceable cultural resources, and stimulate local economies via job creation and tourism.

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