

# 9

## Diver Awareness Program – *QAR* Dive Down

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“The fact that the general public rarely has the opportunity to view shipwreck sites immediately poses problems in persuading them of the importance of something that they cannot see,” (Staniforth, 1994:13).

### Introduction

Since its discovery in 1996, archaeological site 31CR314 has proven a challenge in submerged cultural resource management (Figure 9.1). As Blackbeard’s flagship, *Queen Anne’s Revenge*, it represents an internationally recognized discovery in the field of underwater archaeology and an important cultural resource for the state of North Carolina and Carteret County, where it resides. While absolute proof has not surfaced to establish an undisputable identity, interdisciplinary research conducted at the shipwreck site provides no viable alternative candidate, either historically documented, or through the probability of an unrecorded sunken vessel. It is on the strength of the circumstantial evidence that the shipwreck was identified as *Queen Anne’s Revenge (QAR)* and was placed on the National Register of Historic Places in 2004. Based on this recognition, archaeological site 31CR314 is commonly referred to as the *QAR* site and is promoted as such for an educational, public access program entitled *QAR Dive Down*. Program managers are committed to using interest in this historic shipwreck to heighten awareness of the archaeological process and, ultimately, to seek greater public support and protection of submerged cultural resources.

The *QAR* site is located at a depth of 7 meters (23 feet) below mean sea level, 2 kilometers (1.3 miles) off Fort Macon and 1,372 meters (1,500 yards) west of the present shipping channel of Beaufort Inlet. Marine conditions feature light to moderate inlet currents and water clarity averaging 1.54 meters (5 feet) and at times exceeding 6 meters (approximately 20 feet). Visible wreckage measures 7.62 by 4.57 meters (25 by 15 feet), and consists of 11 cannon, 2 anchors, a grappling hook, numerous iron cask hoops, several rigging elements, a cluster of cannon balls, and a large amount of ballast stone and unidentifiable encrusted artifacts (Figure 9.2). Wreckage extends vertically approximately 1.22 meters (4 feet) above the outlying seabed, with most of the exposed remains rising less than 0.61 meters (2 feet). A third large anchor is by itself approximately 15.24 meters (50 feet) north of the main concentration. Since much of the remaining site has only a thin

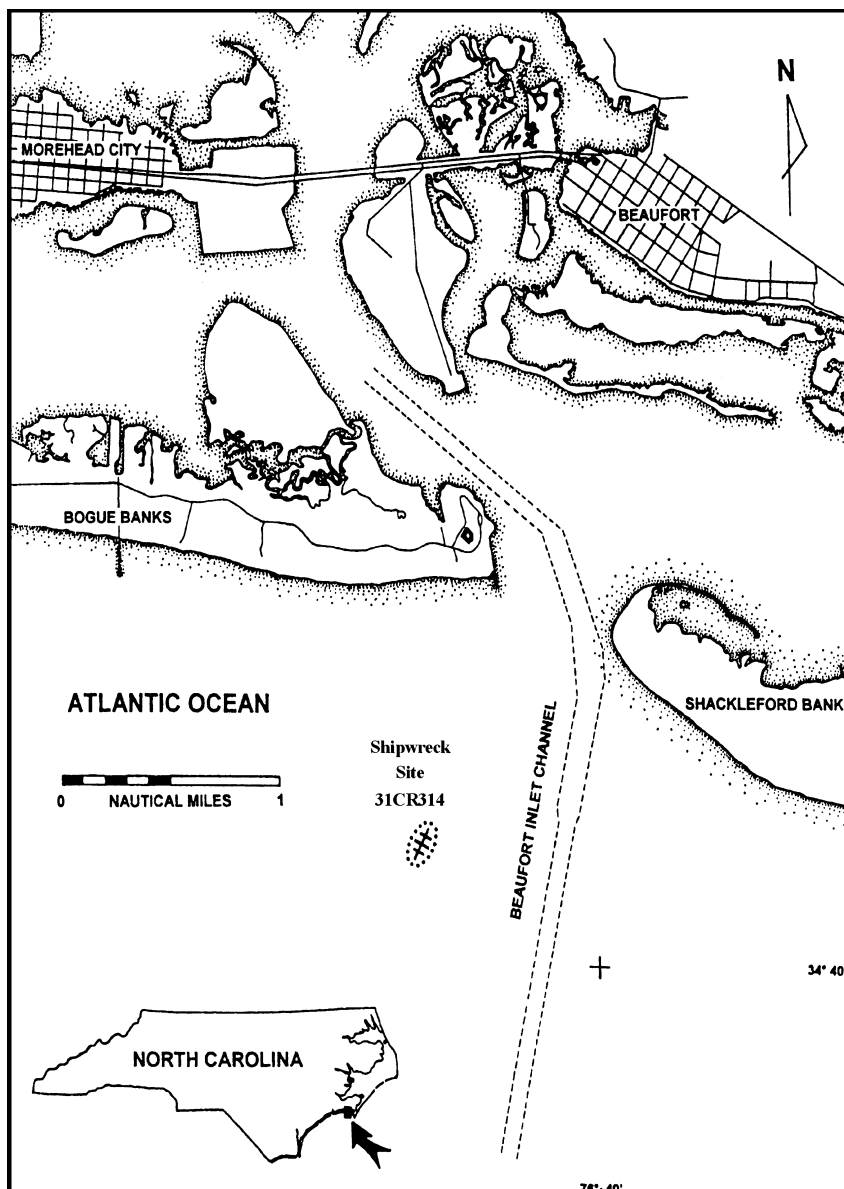


FIGURE 9.1. Location of the *QAR* site (Image courtesy of NC Department of Cultural Resources).

layer of protective sand, other encrusted artifacts occasionally become exposed. This is particularly true of six individual cannon and associated artifacts extending south of the main pile.

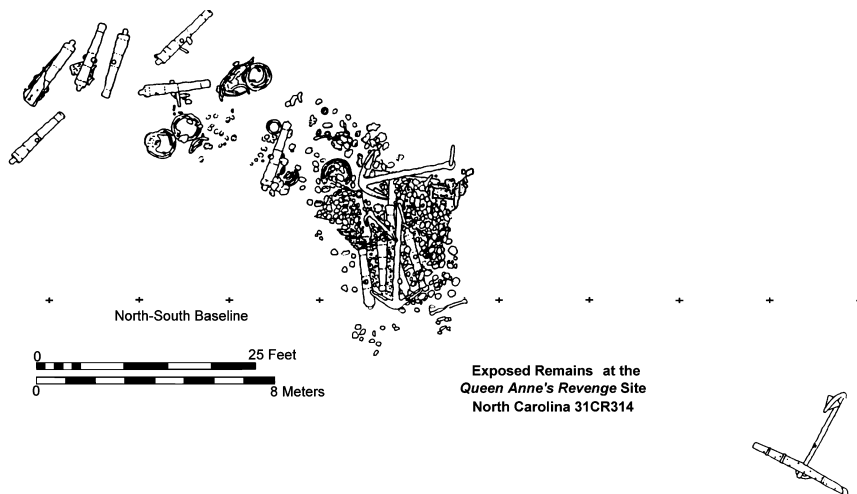


FIGURE 9.2. *QAR* site plan showing exposed remains (Image courtesy of NC Department of Cultural Resources).

Located within State waters near Beaufort Inlet, the *QAR* site falls under the jurisdiction of the North Carolina Underwater Archaeology Branch (UAB) who retains responsibility for its management (NCGS 121 Article 3, 1967). Since its discovery, access to the *QAR* site has been limited exclusively to scientists and archaeologists to ensure protection (NC Department of Cultural Resources, 1997). Public education has been satisfied through various traveling presentations, documentaries and publications, a primary exhibit at the North Carolina Maritime Museum, and in 2000 and 2001, through an innovative internet broadcast aimed at pre-collegiate audiences (Eslinger and Wilde-Ramsing, 2002). With public interest high and exposed remains extensively documented, the UAB decided to examine the possibilities of allowing recreational divers access to the site. While unlimited access was considered too great a threat to site preservation, there are various options for limited access programs that were considered. A thorough assessment explored these options during a comprehensive feasibility study (Hermley, 2004), which then was subjected to internal Department of Cultural Resources analysis, as well as to outside professional review by members of the National Park Service (Russell, 2004), NOAA's Maritime Archaeology Center (Broadwater and Casserley, 2004), and the Florida Bureau of Archaeological Research (Scott-Ireton, 2004). After final evaluation the UAB determined that it was feasible and in the best public interest to implement a recreational diver outreach program beginning Fall 2005. Program strengths are both the unique educational and entertaining experience provided to recreational divers and the opportunity to advocate for the protection of this and other underwater heritage sites through stewardship by increasing public understanding and awareness (Hermley and Wilde-Ramsing, 2005).

## Background

Those charged with protection of resources falling within the public domain, including submerged sites, continuously strive to find the best management solutions. Given the advent of recreational diving in the last half century and advances in underwater survey and exploration technology, pressures have increased dramatically on submerged archaeological sites. Users of these public resources fall into groups with various needs and agendas, including divers, fishermen, salvors, scientists, and the tourism industry (Kauru and Hoagland, 1994). To insure that all people are represented in the decision-making process, site managers have increasingly argued that public outreach and education is vitally important. "Without public appreciation of the importance of archaeological sites and information," states one early proponent, "there can be no effective protection of sites." Archaeologist Charles McGimsey (1972:6) continues, ". . . the greater one's knowledge of archaeology, regardless of formal training in the subject, the greater the responsibility to take the initiative to lead, to teach, and to persuade others to do likewise." Some also suggest that rather than rely solely on museum interpretive displays the public should be allowed to observe heritage resources in their original setting, which can strengthen the spirituality and meaningfulness of the experience (Carter and Horneman, 2001:67-68).

Managers must be aware that from a purely archaeological perspective, public access is not a preferred option for those sites that still retain significant, undocumented remains. Public access can reveal site locations and expose areas to looting, while visitation itself brings with it "wear and tear," which in turn can ultimately affect a site's integrity (Cohn, 2003:87). Catering to a general audience can be a serious distraction for archaeologists and take important time away from research. A survey of archaeologists from Great Britain found that while most believed, "that increasing public involvement would improve awareness of conservation issues in archaeology, and was justifiable because of public funding accountability, . . . [they] do not like to think of their excavations as visitor attractions" (Schackley, 1992:338).

Basic managerial options at the *QAR* site are three-fold, with the possibility of combining elements from each: a "public invited" park, a preserve allowing minimal disturbance, and a full-scale archaeological recovery. The 1999 management plan, developed for the *QAR* site, determined that the third option is the preferred course of action, if and when the proper facilities and funding are in place (Wilde-Ramsing and Lusardi, 1999). In the meantime, with exposed remains extensively documented and considered relatively robust in nature, managers of the *QAR* site are able to consider some level of public access. Underwater parks featuring shipwrecks have become increasingly common, especially in areas where recreational diving is popular. The Great Lakes (Vrana and Halsey, 1992) and Florida (Smith, 1991) are prime examples in the United States. In the majority of cases in which sport divers are invited to

explore shipwrecks, managers either deemed them to have been sufficiently documented or archaeologically insignificant.

There are a few instances where archaeologically significant shipwrecks have been successfully opened to public divers. After the survey and initial documentation phase of several eighteenth-century French warships, Parks Canada called for an *in situ* museum, “. . . to offer a different experience in providing direct access to genuine or untouched archaeological resources” (La Roche, 2004:32). From 1987 to 1997 the eighteenth-century warship *Célèbre* in Louisbourg Harbor, Nova Scotia, was successfully opened for controlled public access through dive tours with positive results and minimal damage to the site. Across the Atlantic, Scotland’s historic shipwreck visitor schemes involving the *Swan* and HMS *Dartmouth* have provided particularly relevant case studies for the QAR site (Robertson, 2003). They involved allowing semi-controlled dive access on these active archaeological sites where groups of up to twelve visitors holding permits and advanced dive training were permitted to dive without direct supervision. Over a period of eight years no damage was noted and, based on informal feedback from participants, the opportunity to dive on a historic shipwreck was overwhelmingly positive. This lead managers to conclude, “It is clear, therefore, that the Schemes have been invaluable in helping break down the sense of exclusion which recreational divers have felt in relation to historic shipwrecks” (Robertson, 2003:82-83).

To help with the many options that managers face, Todd Hannahs (2003:8-16) proposes a decision-making process for those considering opening a shipwreck site to the public, complete with flow charts and evaluation forms. We have employed a similar decision-making process evaluating the factors relating to the QAR site, such as dive conditions, site robustness, and historical associations. The result is a diver outreach program, entitled QAR Dive Down, that provides controlled public access while protecting the site and allowing for continued scientific study. Hosted by the UAB, the purpose of this program is to illuminate the value of this important shipwreck for the recreational diving community by providing a one-of-a-kind underwater experience. The program simultaneously advocates for the preservation of shipwrecks, and promotes Carteret County and North Carolina as home to this unique cultural resource.

## Program Goals

There are numerous goals associated with a public outreach program such as Dive Down, which permits recreational divers to visit an internationally recognized shipwreck. The program achieves these goals by incorporating a variety of methods successfully employed in other programs, as well as by introducing some new features. The identified goals fall into five categories: Education, Entertainment, Site Protection and Preservation, Benefits to State and Local Heritage Sites, and Implications for North Carolina Shipwrecks.

### *Education*

Rather than focusing on a shipwreck and its value to historical archaeologists, Dive Down broadens its scope and exposes participants to the value of a shipwreck as a database for multiple disciplines. Educational goals include not only history and archaeology, but also marine ecology and coastal geology. The program does not train archaeological fieldworkers or amateur historians. Instead, Dive Down provides, through an interdisciplinary syllabus and a unique diving experience, recreational sport divers with a better awareness of shipwrecks as underwater laboratories, worthy of preservation because of the natural and cultural information they hold.

### *Entertainment*

Dive Down is a program for the recreational diving community. As a result, it is critical that we remain conscious of the importance of creating an experience that, while educational, is also entertaining (Figure 9.3). Participants are apt not to become bored or lose interest and are more likely to retain information during an engaging and enjoyable activity. Promoting the recreational aspects of Dive Down also is a powerful marketing tool as it considerably adds to the program's attractiveness. Lastly, by ensuring that the experience is enjoyable, participants



FIGURE 9.3. Diver examining Anchor A1 on the main ballast pile (Photo courtesy of Julep Gillman-Bryan, NC Department of Cultural Resources).

not only are more likely to engage in future similar endeavors, but also will be more inclined to encourage family and friends to do likewise.

### *Site Protection and Preservation*

Site protection is of utmost importance for the *QAR* site since researchers have just begun to realize its rich archaeological record. Having studied the shipwreck and its surrounding conditions since 1996, site managers now are in a better position to consider on-site diver visitation as a potential public use. The site represents a heritage resource that not only is unique and demands high public interest, but is situated in a location exhibiting easy accessibility, reasonably good diving conditions, and striking visible remains. Remains that extend above the seabed have been thoroughly documented through archaeological mapping and photography. Small, recognizable artifacts have been recorded and removed, thus minimizing the temptation for potential souvenir collecting. For the most part, the reference and datum stations presently in place on the site can be used or strengthened to serve as part of a visitor guide system, and as restraining devices to protect exposed artifacts. This system leads the visiting diver around the site, offering site interpretation at select locations while keeping artifacts and the reef's biological community protected from adverse affects of inadvertent human contact.

As site managers, we feel the *QAR* site's archaeological integrity is sustainable during the Dive Down program. To ensure that loss is minimal, the program budget supports periodic site monitoring through visual inspections, video imaging, and an *in situ* conservation program to track the stability of the larger artifacts. A higher level of site monitoring assists in addressing storm-related impacts.

Adverse threats to site preservation are expected to be negligible. Should, however, evidence from monitoring suggest otherwise, remedial steps would be developed and implemented to mitigate problems. In an extreme and highly unlikely situation, site managers reserve the right to terminate the program.

### *Benefits to State and Local Heritage Sites*

While Dive Down is an initiative controlled and administered by the state, there are numerous opportunities for community participation, collaboration, and benefit. The existence of shipwrecks lost in nearby waters has long been a part of the Cape Lookout area, providing both real and intangible benefits to the region.

The program provides for the direct distribution of marketing materials with the intent of encouraging participants to seek additional information about the rich interpretive centers available locally and regionally. Moreover, there is also the opportunity for the various organizations to directly participate by providing meeting facilities and speakers. Through direct involvement, local groups can realize benefits, while enhancing the experience for participants and supporting managerial goals.

### *Implications for North Carolina Shipwrecks*

Our efforts to monitor, study, document, and protect the numerous shipwrecks in North Carolina waters benefit from an increased public awareness of the importance of preservation of these valuable cultural resources. Dive Down not only illustrates to recreational divers the value of a shipwreck, it also encourages them to advocate for the preservation of shipwrecks in their own communities. North Carolina's offshore waters contain one of the largest collections of diveable shipwrecks in the world. With the state's only current diver outreach program being the open access USS *Huron* Shipwreck Preserve (Lawrence, 2003), Dive Down provides an opportunity for the UAB to assume a more pro-active role in encouraging public stewardship of North Carolina's submerged cultural resources.

Another benefit of Dive Down is the merging of two often-conflicting sides of the shipwreck contingency, namely underwater archaeologists and the sport diving community, in a common goal. By focusing efforts on a single, mutually beneficial project that utilizes skills and assets from both sides, it is likely that a new relationship, based on communication and respect, will develop. This represents a potentially important step toward better management and preservation of North Carolina's publicly owned shipwrecks.

### Program Specifics

The goals for Dive Down are ambitious, with success hinging on the coordination of a multitude of resources. Only a little over a mile offshore, the *QAR* site is readily accessible to the shore facilities of major dive operations. Carteret County's healthy sport diving industry provides for the availability of boats, dive equipment, and personnel already familiar with local conditions. Equally important is the wealth of educational resources extant in Carteret County. Home to the *QAR* shipwreck project headquarters, the Division of Marine Fisheries' Artificial Reef Program, the marine science programs of three major North Carolina universities (University of North Carolina - Chapel Hill, North Carolina State, and Duke University), Carteret Community College, NOAA regional offices, and the NC Maritime Museum, the county provides an invaluable consortium of expertise and usable facilities.

Dive Down is slated to run from late September through late November each year. The fall months exhibit the best conditions for diving on the site as the prevailing offshore winds yield an overall cycle of calmer sea states. In addition, because this period is a traditionally slower time for Carteret County tourism, necessary resources and personnel are more likely to be available.

Two and a half days are required for the Dive Down program, however, it takes place over three and a half days, allowing an extra day for potentially inclement weather or difficult tides. Water clarity at the *QAR* site generally is dependent on tides with a few hours on either side of extreme high tide providing optimal conditions (Figure 9.4). The program plans for twenty divers twice a week, for a





FIGURE 9.4. Elements of exposed ship's rigging (Photo courtesy of Julep Gillman-Bryan, NC Department of Culture Resources).

period of eight weeks. One group schedule is from Sunday evening through Wednesday, and the other group from Tuesday evening through Friday.

Dive Down emphasizes the interdisciplinary nature of submerged archaeological sites, specifically the *QAR* site. As such, the education segment of the program is divided into four modules: Maritime History, Underwater Archaeology, Coastal Geology, and Marine Ecology. Each module is slated for a specific time during the program and has its own expert presenter(s) and accompanying set of materials. In addition, divers will receive training in skills to necessary for the *QAR* dive. The enjoyment from diving the *QAR* site is not likely to come from the quality of the dive since conditions are rarely comparable to offshore wrecks. Rather, gratification will stem from the unique opportunity to view the sunken remains of a classic colonial shipwreck as a true archaeological site - a personal experience rarely offered to the recreational diver.

### *Maritime History Module*

The History Module provides an overview of Carteret County's maritime history covering the coastal NC colonial economy, the types of SHIPS employed during this time, and the impact of piracy. Additionally, the area's more recent past is discussed, focusing on the American Civil War and events of World War II when shipwreck loss was extremely high in the region.

The purpose of the History Module is two-fold. First, historical context is critical to the *QAR* dive experience. It explains why the ship is located in Beaufort Inlet and the circumstances under which it sank. Second, by illustrating to divers the benefits of being familiar with the history associated with a given vessel, it encourages them to incorporate history into any future shipwreck diving experiences.

### *Underwater Archaeology Module*

Several objectives are achieved with the Underwater Archaeology Module. First, the module provides an overview of the discipline, focusing on the importance of research and the systematic study of a shipwreck. Second, it serves to illuminate the research associated with the *QAR* site, as the purpose of the program is to encourage divers to observe the site from an archaeologist's perspective. Third, the module is a way to dispel the misconception that underwater archaeology is simply the removal of artifacts from a given shipwreck site and thus no different from salvors and divers who do the same. By stressing the fact that *not* removing artifacts is a viable option, *in situ* preservation of submerged cultural resources is advocated. Finally, the *QAR* site exemplifies the difficulties involved in positively identifying underwater archaeological sites. The various ways archaeological evidence is processed and viewed can be openly discussed regarding the identification of 31CR314 as *Queen Anne's Revenge*.

### *Coastal Geology Module*

Conveying the important role of geology in the study of shipwrecks is the goal of the Coastal Geology Module. As an integral part of the site formation process, how the site came to exist in its current condition is tied directly to geological features and processes. This module focuses on the unique geological composition of the North Carolina coastline, emphasizing its dynamic environment and sediment types. The effects of sediment types and their movement on underwater sites are examined, and how these factors contribute to the overall state of site preservation are demonstrated. This module also provides an opportunity to discuss the importance of sand and the advantages of site burial, especially in the case of the *QAR*.

### *Marine Ecology Module*

The Marine Ecology Module has two objectives. The first is to outline the biological activities that affect a wreck site, namely, woodborers, bacteria, and crustaceans. Similar to geology, these factors contribute to site formation processes and carry implications for how artifacts from the *QAR* site are affected by biological elements. Organisms present on the shipwreck are identified and examined for their effects on the shipwreck, as well as at other locations.

The second objective emphasizes that the *QAR* site is a living, near-shore reef. The ecology module introduces participants to the marine life they likely will encounter during their dive. Divers are encouraged to observe particular species, their abundance, and behavior, further contributing to their understanding of the interdisciplinary nature of the site. Awareness hopefully will be raised concerning the importance of reefs, both natural and artificial, as marine habitats.

### *Diving Component*

After completing the four education modules, participants proceed with the diving component. With potentially adverse site conditions, including low visibility, strong currents, and lower temperatures, safety is of the utmost concern, and therefore Dive Down is open only to experienced divers holding advanced certifications. Furthermore, skills emphasized in the diving component necessitate a comfort level in the water and familiarity with equipment typically not present in new divers. To remain consistent with precedents set by the recreational dive industry, completion of the Dive Down Program will result in a NAUI or PADI specialty certification entitled North Carolina Site Diver. Approval from these agencies lends credibility as well as marketability to the program.

A non-disturbing dive on an archaeological site requires the utilization of several integral skills and techniques. The diving component emphasizes the importance of two skills, non-disturbance and observation. During the classroom portion of dive training, participants will be instructed on techniques designed to ensure neutral buoyancy and minimal body movement as they move around the site. Archaeological site diving also requires task management, and divers are asked to make observations and take notes while monitoring their buoyancy and air consumption. Following the classroom portion of the diving component, divers make a practice dive to review their techniques.

Local charter operators are used for dive operations. This arrangement affords numerous benefits, not the least of which are convenience and insurance. Moreover, their knowledge of local conditions and navigation provides an added level of safety and professionalism to the program.

### *QAR Dive*

The dive on the *QAR* site begins with a site review and dive plan. Present on the site are station markers and a guideline to facilitate movement and safety. Participants are divided into ten buddy teams, with a minimum of two supervisory divers in the water at all times. Each dive lasts approximately thirty minutes, with a maximum of four teams on site at once. Divers descend the mooring line and proceed along the guideline, stopping at six to eight pre-designated stations (Figure 9.5).

As an experimental feature, submersible MP3 units are utilized. This addition allows the dissemination of information about prominent site features by providing participants a narrated tour. With this new technology, it is not only possible to

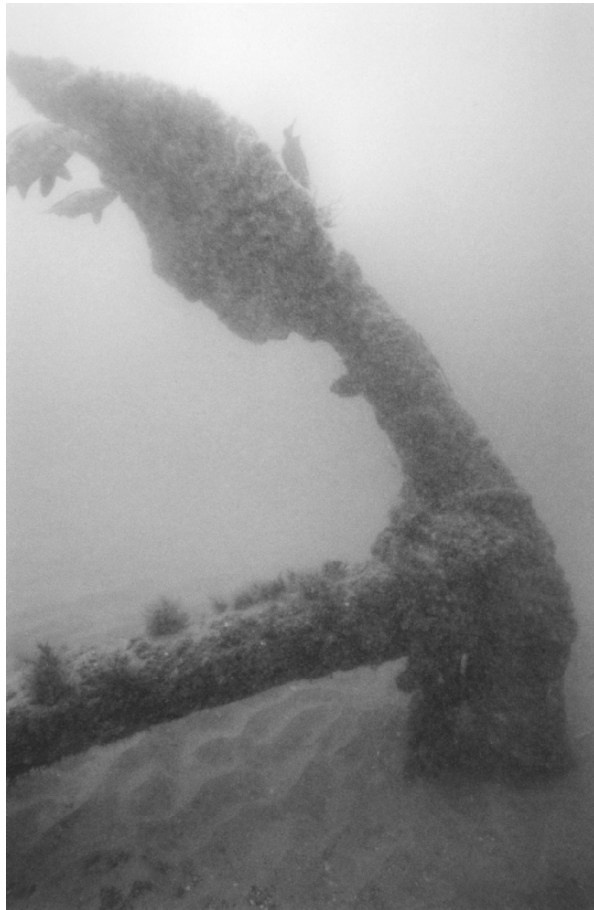


FIGURE 9.5. The North Anchor, A3 (Photo courtesy of NC Department of Cultural Resources).

promote site education and control diver movement, but also to provide a level of sophistication not experienced by the participants on past dives.

The dive is followed by a short debriefing session. The program concludes with the presentation of certification cards, certificates, and closing words. Participants complete an evaluation form to record their experiences throughout the program, and to solicit attitudes regarding the preservation of submerged cultural resources.

## Project Funding and Budget

As with any project, funding is of critical importance. Most programs of this nature rely on grants from various funding sources including government organizations and foundations. Initial grants from the Carteret County Tourism Development Board and several private donors covered the feasibility and marketing study and

initial start-up costs. After considering the market for the Dive Down program and conducting a cost/benefit analysis, program developers determined that an annual program involving 320 diver participants over an eight-week period was most appropriate (Hermley, 2004; Wilde-Ramsing, 2005). As proposed the program will run for a limited period to keep demand high, and in anticipation that full-scale recovery will commence within the near future resulting in most or all visible remains from the *QAR* site being removed.

Once implemented, the Dive Down program is designed to be self-funding with fees charged to participants reinvested in the program to achieve sustainability. The ability of the program to be self-funding is a requirement for two reasons. The first and more pragmatic reason is that public funding is not available. While grants are useful alternatives, they require extensive man-hours to obtain. With a full work schedule managing all North Carolina shipwrecks, the UAB is restricted in their ability to devote personnel to pursuing outside funding for site-specific projects or new initiatives.

The second reason for establishing a self-funding program is ethical in nature. Participation in Dive Down is confined to a small percentage of the population, namely divers with advanced certifications. This demographic is clearly not representative of the overall population, thus, the fiscal responsibility should lay with the participants. The ability of Dive Down to exist as a self-funding entity depends on whether the recreational diving industry can support the proposed US\$500 fee for participation, which supports program administration and increased site monitoring. Analysis of comparable costs for a NAUI or PADI specialty certification, two half-day dive charters with air tanks off the Carteret County coast, and several meals provided during the program, indicates the total retail value of Dive Down is approximately \$350. In order to meet the \$500 fee, the recreational diving market is expected to pay an additional \$150 per diver. The added values of presenter expertise, the lure of diving a high profile site, and the uniqueness of the experience increases an individual's willingness to pay. An informal polling of local dive shop owners revealed not only a demand for diver access to *QAR*, but a concurrence with the above stated market conditions and fees (Hermley, 2004:36). Furthermore, as Dive Down will be offered for a limited time, namely three to five years and up to 1,500 recreational divers, the cost ensures program attendance levels will benefit from the laws of supply and demand. This is based on the concept of carrying capacities for tourist destinations, which assumes that, "sooner or later a threshold is perceived to decline in desirability" (Martin and Uysal, 1991:267-270). For instance, after an initial peak at the shipwreck *Célèbre*, a dramatic decrease in public visitation was observed (La Roche, 2004:34).

It should be noted that Dive Down has the potential to instill a sense of ownership among divers, and a desire to contribute further toward the protection and preservation of the *QAR* site. While we are hopeful participants will be supportive financially and politically, Dive Down is an educational program with a budget that meets only basic expenses. All fund-raising activities are passive in

nature and conducted through the distribution of information and continuing contact with participants via email and mailings, rather than through overtly asking for contributions.

## Project Implementation

On October 28, seventeen leaders from the North Carolina recreational diving community came to Morehead City to participate in a two-day planning event for the proposed public outreach program, Dive Down. By hosting the event, two primary goals were accomplished – feedback was elicited on program marketability and participation, and questions were answered regarding program logistics, cost, and facilitation.

The first evening, participants were presented an overview of North Carolina underwater archaeology and a discussion of the new program. The following morning, divers assembled for a site briefing and dive planning session. After the short ride to the *QAR* site, buddy teams entered the water in ten-minute intervals with no more than four teams diving at any time. Divers observed the site aided by pre-set polypropylene guidelines encircling exposed shipwreck remains. Upon completion of the dive, participants engaged in a debriefing session before touring the Blackbeard exhibits at the NC Maritime Museum.

During informal discussions and scheduled meeting sessions, invaluable insight was acquired from the diving community regarding the implementation of Dive Down. The results from the planning event are summarized below:

1. Overall opinions
  - a) Implementation - Given that the *QAR* site is a state resource, North Carolina divers should be given preference during sign-up.
  - b) Impacts to the site.
    - i) Good buoyancy is needed – an advanced certification plus a “peak performance buoyancy” course is recommended.
    - ii) The temptation to remove artifacts is minimal.
2. The Training Dive – rename the “training” dive as a familiarization or practice dive.
3. The *QAR* site dive
  - a) Due to its size, limit the number of divers on the site at any given time to three buddy teams.
  - b) Given the amount of surge, divers need to be able to stabilize themselves on the site. [Note: Program organizers feel this can be accomplished by installing unobtrusive, non-moving stations capable of sustaining two divers and connected by a lead line system.]
  - c) More than two support divers need to be on the bottom to monitor and direct traffic.
  - d) No negative comments were made concerning the small size of the wreck site and the short time (30 minutes) that it takes to see it.

#### 4. Promotion and message

- a) Marketing is important to make this a special event given the fact the QAR site does not provide the optimal dive environment recreational divers often experience.
- b) Good promotional materials and certificates should highlight the uniqueness of the experience.
- c) A strong connection should be made between artifacts lying on the seabed and the processes of documentation, recovery, cleaning, analysis, and conservation as the artifacts make their way to display in a museum.

The meeting fostered a new dialogue between state archaeologists and the recreational diving community, which is essential for successful implementation of not only Dive Down, but also of similar endeavors involving North Carolina's submerged cultural resources. During the event an element of North Carolina pride and camaraderie emerged among participants. This phenomenon underlies the enthusiasm for Dive Down and provides a positive impact on participation.

The launch of Dive Down in the summer of 2005 met with welcomed success. Marketing and planning efforts proved effective as evidenced by the 75%-100% capacity levels going into the first dive season of twelve planned sessions. Unfortunately, program execution in the fall was nothing short of disappointing. The 2005 hurricane season brought repeated postponements and cancellations, ultimately culminating in the decision to cancel the program entirely because of poor site conditions and customer frustration levels. In an attempt to salvage the program, the project team decided to run a limited number of sessions in spring 2006 for those participants able to reschedule. Surprisingly, what began as a last-ditch effort ended with very positive results, including collection of primary observations that resulted in changes to the initial project design. Using the spring 2006 season as a pilot program, the project team was able to make several key adjustments so that the resulting program is even stronger than initially planned:

##### 1. Reduction in group size.

Initially, the program design called for groups of 20 divers divided into buddy teams with no more than four buddy teams on the wreck at any one time. Unfortunately, as evidenced by both sessions, eight divers together on the site caused a greater deterioration of site visibility than anticipated. Project managers therefore decided to reduce the number of participants per session to raise the overall quality of the experience. Although this change will decrease the revenue generated by Dive Down, participant fees will continue to maintain program self-sufficiency.

##### 2. Session scheduling adjustments.

The fall 2005 season was planned with back-to-back sessions, providing very few options in the event of cancellation. The result was heightened anxiety and frustration experienced by participants, as well as by program managers. For future seasons, less aggressive schedules will allow for greater flexibility when postponements or cancellations occur. While this will lower participation levels, overall participant satisfaction is expected to increase.

3. Dive guides equipped with underwater communication equipment and clearer reference points on the site will replace MP3 units.

Although potential advantages were afforded to the program by the MP3 players, namely the ability to control diver movement while disseminating information, the use of this new technology creates a task management issue with divers, as most are not accustomed to operating in the low visibility and surge they are likely to encounter on the *QAR* site. While safety concerns remain minimal, many divers lack the ability to simultaneously manage diving skills, such as buoyancy and navigation, with efficient operation of the unit. The project instead will use skilled dive guides equipped with underwater communication units instead of the MP3 players. The purpose of the underwater communication is not for guides to speak to divers, but rather for guides to speak to one another and to topside monitors, thus facilitating diver movement around the site. With a detailed dive briefing and more comprehensive site tagging system, site guides can effectively point out areas of interest, as well as monitor the safety and behavior of the divers. Costs are comparable to providing MP3 units, given the availability of topside communication units among participating state agencies and dive charter operators, and guides are readily available to provide this service.

4. More generous scheduling needed for presentations.

The quality and content of the presentations surpassed expectations. The information not only was interesting and relevant, but also was presented in a palatable and concise format. As is often the case, however, presenters in the first session exceeded their allotted time slots. To correct this problem, the project team adjusted the schedule for the second session to allow more time for each presentation. As a result, presenters and participants alike were more at ease, allowing for an expanded question-and-answer exchange and a more relaxed and effective learning environment.

5. Participant reaction coincided with diver skill.

Participant feedback ranged greatly with the majority expressing positive sentiments. Three participants were so enthusiastic they submitted letters asking for congressional support for the *QAR* project, confirming the program's potential for spawning public advocacy. The few participants who expressed less-than-positive reactions cited poorer than expected diving conditions as the cause. Coincidentally, this later group represented the least experienced of those who participated. While diver safety was never an issue, managing basic diving skills is challenging in low visibility and surge, especially for the newer diver. For the more experienced diver these skills are easier, thereby minimizing anxiety and allowing more attention to be placed on site content and observation. For future sessions, more comprehensive screening and an emphasis on diver preparedness should yield participants who are more qualified, therefore increasing overall participant satisfaction levels.

As it turned out, the abbreviated spring 2006 Dive Down season did more than salvage a disappointing first attempt. By running the program with fewer participants, project managers were able to thoroughly evaluate the program, implement and test new strategies, and ensure more effective program execution for future sessions. The initial participation levels and the positive feedback received from



the spring 2006 divers were encouraging. Dive Down is on schedule to continue during fall 2006 and spring 2007.

QAR Dive Down represents a new opportunity to feature North Carolina's underwater archaeological sites. The aim of the program conveys the historical, archaeological, geological, and ecological importance of the *Queen Anne's Revenge* shipwreck site, encourages future preservation and study, and advocates for the appreciation of all North Carolina's submerged cultural resources by encouraging divers to use this multidisciplinary approach for their own individual wreck diving experiences. As the program comes to fruition, successes and failures will be examined and discussed in hopes this and future programs can benefit from lessons learned. Through the Dive Down program the UAB strives to achieve a higher level of management for North Carolina's rich sunken heritage.

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