To Dig or not to Dig?
The Example of the Shipwreck of the Elizabeth and Mary

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The Urgency of Emergency Excavations

Each day cultural heritage managers face a range of issues requiring them to make complex, even difficult decisions. These problems often relate to the delicate balance between, on the one hand, the interests of various groups whose activities either focus on cultural remains or are carried out in the immediate environment of these remains, and on the other hand, the responsibility to provide heritage protection. On other occasions, the potential impact results from the natural features requiring action where the schedule and time frame are beyond the manager's control. Needless to say, underwater heritage is not immune to these realities, and it actually presents unique problems because the remains are immersed.

Figure 1: Diver recording the plan of *in situ* remains of *Elizabeth and Mary* durring the process of site evaluation in 1995 (Marc-André Bernier)

This can be a heavy responsibility for underwater heritage managers if they do not have guidelines to provide clear direction and ensure consistency and continuity of action. These guidelines can be policies, directives, or even legislation. No matter what form they take, they must be clear enough so that the action to be taken is not left to drift because of individual interpretation, and flexible enough so that the manager is not put in an administrative straightjacket that limits effectiveness.

The salvage excavations of the *Elizabeth and Mary* are excellent examples of matching a flexible approach with the application of professional principles and rigorous ethics in order to salvage a unique feature of North American heritage.

The Discovery

On December 24, 1994, a sport diver in Baie-Trinité, Quebec, discovered the remains of a shipwreck recently uncovered by one of the violent storms in the St. Lawrence Estuary. The remains visible at the time of discovery included a section of wooden hull and an area of ballast stone mixed with artefacts, the variety of type and material of which were surprising. The very loose sandy bottom helped keep the objects extremely well preserved over the centuries, but its relative fluidity, along with the combined effect of waves and wind, had exposed the site to such an extent that its very survival was now threatened. At the time of discovery, the identity of the vessel shipwrecked in Baie-Trinité was unknown. Preliminary typological analyses pointed to a late 17th-century vessel, possibly English in origin.

A process to protect the site was set in motion as soon as the wreck was reported to provincial and federal authorities. Both orders of government immediately began working together on an emergency stabilization project, and a marine archaeologist was sent to try to stabilize the most fragile components of the site while gathering as much information as possible in order to confirm the identification of the wreck. The imminent freeze of part of the water covering the site called for immediate action, the top priority being to protect the remains *in situ*. Sandbags were therefore placed on the most vulnerable objects to protect them until the ice melted in the spring.

Non-Intrusive Assessment Followed by an Excavation

The data gathered during the emergency response confirmed that the site dated back to New France. They also confirmed the precarious situation of the remains. Freshly unearthed, these remains were exposed to a new wave of deterioration following a period of clear stabilization. It must be understood that a shipwreck site generally experiences various cycles of stability and instability. Following a period of accelerated deterioration that occurs when the vessel settles on the

sea floor, the site reaches a level of stability that varies depending on the environment. The equilibrium of the site, although considered fragile, is usually relatively stable. If the site's equilibrium is disrupted, either by a change in the site's natural environment (storm, diverging currents, radical temperature changes, ice) or by direct human intervention, a new cycle of rapid deterioration may occur, and part or all of the remains may be lost.

We often hear the argument emphasizing the vulnerability of underwater sites because they are located in a humid environment that is too often described as hostile. When there is a significant change in an underwater site's state of equilibrium, the usual reaction is to hurry to remove the objects that are threatened. Sound management of underwater heritage and, as in the case cited as an example, public funds force us to avoid acting hastily through a knee-jerk reaction to immediately remove objects from their environment. It is possible, even recommended, to wait as long as possible before deciding to go ahead with the excavation. Obviously there are some extreme situations that require immediate action, but experience has shown that it is a good idea to take the time available to adopt *in situ* preservation as the preferred first option as recommended in the UNESCO Convention on the Protection of Underwater Cultural Heritage. The case of the Baie-Trinité shipwreck is an excellent example of this.

The few months of winter that sealed the Baie-Trinité site under a sheet of ice gave the various stakeholders an opportunity to develop a strategy for an operation in spring 1995. At this time, everything indicated that the ship was from the fleet of Sir William Phips, who attacked the capital of New France, Quebec City, in 1690. After his failed attack on the city, Phips had to resign himself to returning to Boston. On the return voyage, four of his 32 ships were wrecked and dozens of his militiamen perished. There was no question about the site's potential significance, as Phips' siege was a pivotal event in the history of New France and North America.

Despite the obvious significance of the site, both in terms of historical and popular importance and the research opportunities it afforded, the Quebec Ministère de la Culture et des Communications [Department of Culture and Communications] and Parks Canada's Underwater Archaeology Service used a non-intrusive approach to preserve the site *in situ*. A non-intrusive approach means limiting the impact on the site as much as possible, without disturbing structures that are still intact. In other words, no excavations. There were a number of reasons for using this approach in our example.

First, we had to confirm the feasibility of protecting the site *in situ*. Since the ideal solution would be to protect the remains *in situ*, it was important to understand the site and its environment in order to determine to what extent we could mitigate the new dynamics acting on the shipwreck. To do this, minimal recording of the site was necessary to understand its scope and the nature of its components. In addition to learning about the remains, there was a need to gather as much data as possible about the site's environmental conditions: temperature, variations in depth, currents, salt content of the water, etc. An attempt to rebury the wreckage was even planned at the end of the operation in order to determine whether it was possible to provide *in situ* protection.

Another objective was to gather as much information as possible in order to corroborate the identification of a ship from Phips' fleet. Although everything pointed in that direction, this hypothesis was not confirmed. There was a second practical application to the site recording since it provided a basis for this data collection.

Third, although the primary objective was *in situ* preservation, it was important to gather information that would be useful for future excavations. Should it prove impossible to stabilize the site, emergency excavation would be initiated. Any information to help plan and optimize the archaeological

Figure 2: The wreck of the *Elizabeth and Mary*, at Baie-Trinité in Québec, at the moment of its discovery in January 1995 (Marc-André Bernier)

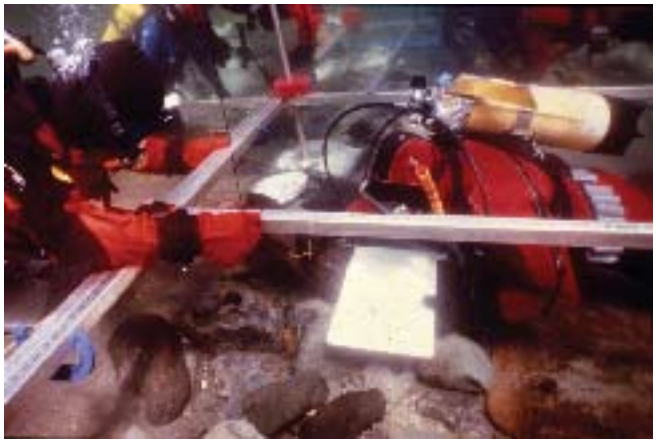

Figure 3: Emergency archaeological excavations, with the aid of squaring; the digs occurred over two season, in 1996 and in 1997 (Marc-André Bernier)

excavation work then became critical: extent of the site, types of artefacts, potential need of conservation, soundness of the ship's wooden structure, etc.

A three week operation with these three objectives was launched as soon as spring arrived, with an additional mandate to involve the community in order to encourage its members to take responsibility for the shipwreck's protection. Around twenty local sport divers received basic training in the Introduction to Marine Archaeology course by the Nautical Archaeology Society (NAS), a course endorsed internationally by the International Committee on the Underwater Cultural Heritage (ICUCH). Working under the supervision of a certified marine archaeologist, they took turns gathering data underwater. These divers, whose activities have in the past occasionally had a negative impact on shipwrecks due to a lack of awareness of the importance of protecting shipwrecks, have now become major players and advocates in the quest to protect underwater heritage.

At the end of the project, a map of the visible remains was produced, the diagnostic data about the various artefacts was compiled, and a rough evaluation of the scope of the buried remains was conducted. An effort was then made to stabilize the site. First, the divers brought up unburied objects considered to be very vulnerable, after having documented their origins in detail. The divers then carefully re-covered the site with geotextiles and sandbags.

In concert with this reburial, a regular site inspection program was developed to monitor the conditions of the site mound in order to be able to act immediately if necessary. Having a group of trained local divers paid off in a number of ways. Without these divers, visits to the site would have been much fewer and farther between. On one occasion, when a new part of the site was exposed by another storm, the divers were able to salvage a porringer with a crest on it, which was a key in positively identifying the shipwreck as one of the ships from Phips' fleet. At this point, we should emphasize the importance of not stripping shipwrecks of their artefacts, even if they may seem void of information. A single object can be the missing piece in the puzzle of a shipwreck.

The information gathered during the non intrusive work and the inspection visits made it possible to conclude with certainty that the site was unlikely to be covered by ice again and provided assurance that no parts of the shipwreck were in danger. Some of the tarps had moved during the fall storms, and a new section of the site had been exposed. During this time, the collected data was used to confirm that this was indeed a ship from Phips' fleet.

In view of these findings, the decision to be made by the authorities responsible for managing the site was easy. Although there did not appear to be resources available for an emergency excavation, the decision to do everything possible to salvage these remains was inevitable. It had been proven that this shipwreck was unique and priceless in terms of historical and archaeological value, and the attempt to preserve the site *in situ* had shown that this was not an option. Emergency excavations would have to be carried out.

Over the next two summers, a team of professionals and volunteers carried out archaeological excavations (Fig. 5), which uncovered one of the most interesting sites from the New France era. We now know that the ship was the *Elizabeth and Mary*, a 45 tun merchant vessel built in New England carrying some 50 men, all of whom came from the small town of Dorchester near Boston. But we finally know for certain that the details of their story would have been lost if the site had not been excavated.

Conclusion

The Baie-Trinité approach to delay emergency excavations for as long as possible was certainly not the only option, and clearly there would have been ample justification for initiating these emergency excavations the first year. However, the selected approach is consistent with a broader policy that favours *in situ* preservation as a first option whenever possible. This approach was therefore not exceptional, but rather part of an organizational philosophy and, accordingly, it had to be applied this way to ensure consistency in the entire action plan to prevent the process from being derailed. The same approach was recently used in 2004/2005 in the discovery of a fourth 16th-century Basque whaling ship in Red Bay, Labrador. This shipwreck is one of three very rare underwater sites from this century in North America, and its state of preservation is only comparable to the other Basque shipwrecks found in the incredible archaeological field of Red Bay. This time, the non-intrusive assessment conducted by Parks Canada established that the site could be protected *in situ*, which is what was done. This did not, however, exclude the collection of scientific data using some test excavations that only had a small impact on a very small percentage of the entire site. These types of decisions may seem difficult for heritage managers, but a consistent and systematic approach guided by professional principles and clear ethics may make the decisions easier, if not obvious. An underwater archaeological excavation uses considerable resources, so we must be well informed if we want to invest these resources in the right place.