

**A BASELINE INVENTORY OF MULTIBEAM ACOUSTIC TARGETS FROM
THE HUDSON RIVER BETWEEN
NEW YORK HARBOR AND WAPPINGERS FALLS**

A Final Report of the Tibor T. Polgar Fellowship Program

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ABSTRACT

The Hudson River has served as a focal point for human activity for more than 10,000 years. Use of the river has taken many different forms, resulting in a rich and diverse archaeological record. Study of this record preserved beneath the Hudson will have much to contribute to our understanding of the past in New York.

In 1998 five organizations teamed up to map the bottom of the Hudson River to learn the nature and extent of benthic habitats. Techniques used included multibeam swath bathymetry, side-scan sonar, sub-bottom profiling, and analysis of bottom samples. A detailed record of the Hudson floor from the Verrazzano Narrows to Troy was produced using multibeam swath bathymetry. In the process of mapping, hundreds of targets of possible anthropogenic origin were revealed, including many shipwrecks. The State has not yet permitted publication of the bathymetry data in detail because in doing so, the exact coordinates of these shipwrecks would be revealed, thus making them vulnerable to looting.

A first step to assessing and protecting the archaeological value of the Hudson River is to create a baseline inventory of the acoustic targets. An inventory was created for the seven sections mapped through 2001 and the images were compared with local history records to try to match acoustic targets with known past events. Thus far, 179 targets have been classified as shipwrecks in the multibeam data. Many of these targets appear to be canal boats. Other targets were classified as barges, steam ships, and possibly two Revolutionary War frigates. Eventually, steps need to be taken to improve the legislation in New York to better protect these resources.

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INTRODUCTION

The purpose of this project was two-tiered: first to construct a baseline inventory of the acoustic targets identified during sonar mapping in seven sections of the Hudson River and, second, to correlate the acoustic data with events documented in the local history of the Hudson River. By doing this, we hoped that some of the numerous shipwrecks revealed on the river bottom by sonar mapping could be positively identified, or at least classified by vessel type.

The acoustic targets were mapped as part of the Benthic Mapping Program, which began in 1998. The Benthic Mapping Program is a collaborative effort of five organizations: the New York State Department of Environmental Conservation (NYSDEC), Columbia University's Lamont-Doherty Earth Observatory (LDEO), the Marine Science Research Center (MSRC) at Stony Brook University, the Hudson River Estuary Program and the Hudson River Natural Estuarine Research Reserve (Bell et al. 2000). Mapping the bottom of the Hudson River with multibeam swath bathymetry has revealed the specific locations of hundreds of targets of likely anthropogenic origin, almost two hundred of which are shipwrecks and one which is a possible prehistoric feature.

The New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) has not yet allowed release of the high-resolution multibeam bathymetry data collected because publication of the exact locations of shipwrecks could put them at risk for looting. New York State fears that scavenging will destroy any historical or

archaeological value these targets could offer. Under the 1987 Abandoned Shipwreck Act the wrecks remain property of the state (National Park Service 1987). These resources are also protected by the 1980 New York State Historic Preservation Act (New York State Parks 1980). Therefore even as this project continues, the exact locations of shipwrecks remain confidential.

In the inventory constructed in the first part of the project, the targets' location and dimensions were recorded. Any morphological features that might help identify the ship were noted. The second part was to compare the historical record with the multibeam data in the hope that shipwrecks might positively identified.

There are several benefits to positively identifying a shipwreck. For example, in terms of marine geology, identifying a wreck (and its associated age) could help understand sediment processes on the river bottom. It also would yield invaluable archaeological knowledge to the community. Since these sites are currently at risk, proper steps could be taken for their protection. Ways of protecting these sites could include nomination of significant wrecks to the National Register of Historic Places, or perhaps updating the existing New York State legislation to better protect the state's archaeological resources.

Historical Context

Henry Hudson "discovered" the river that bears his name in 1609, although archaeological evidence suggests Native Americans have lived along its banks for more than 10,000 years. Soon after Hudson's voyage, the Dutch set up a fur trading post on

what would later become Manhattan Island. By the end of seventeenth century the Dutch sold their colonized area to the British who named the area New York.

Over the next 75 years, trade colonies would grow, as would the number of settlers in New York. The Hudson River was routinely traveled. By the end of the eighteenth century, the colonists had fought and won their independence from the British and in doing so, dramatically altered New York. The Hudson River valley was host to many pivotal battles both on land and water. One of those battles is the Battle of Fort Montgomery. The battle will be discussed in detail below as one example of historical events that contribute to the archaeological potential of the Hudson River.

During the Revolutionary War, the Hudson River was one of the most strategic and sought after locations for both the British and American armies. To each, the river served as the essential connection from the mid-Atlantic colonies to New England and Canada. To strangle the colonies and their revolution, the British schemed to capture the Hudson and isolate General George Washington in the north (Conley 2002). As the British planned to move into the Highlands from New York City, the Patriots made plans to construct fortifications at specific locations along the Hudson.

In 1775, the Continental Congress ordered the construction of two forts on the Hudson that would “most effectively prevent any vessels passing that may be sent to harass inhabitants on the borders of said river” (Journals of Continental Congress II 1775 cited in Carr and Koke 1937:8). The two forts were initially to be built in the vicinity of what would later be known as Constitution Island, on either side of the river. Later, the location was moved south, immediately north of Popolopen Creek and opposite Anthony’s Nose. The name of the installation was Fort Montgomery, in honor of

General Richard Montgomery who died in battle the previous year in Quebec (Conley 2002).

After construction of Fort Montgomery was well underway, General James Clinton wrote to Washington explaining that while Fort Montgomery was situated advantageously due to the elevation, Popolopen Creek provided a natural division that would prevent any Patriot attempts at retaliation should the British attack Fort Montgomery. Therefore, with the advice of Clinton, Washington and the Continental Congress approved the building of a twin fort in 1776, on the south side of Popolopen Creek. George Clinton's brother, Colonel James Clinton was named the commander of the fort, named Fort Clinton. There is some disagreement as to which Clinton it was named after (Carr and Koke 1937, Conley 2002, Diamant 1989).

Meanwhile, in December of 1775, a resolution passed by the Continental Congress approved the construction of two Continental frigates, the first commissioned naval vessels. Built in Poughkeepsie, the first of the frigates, the *Congress*, was built as a 28-gun ship (Figure 1). It measured 38.4 meters in length, 10.4 meters in beam, and 3.2 meters in depth (122 x 33 x 10 feet). The second frigate was named the *Montgomery* and was slightly smaller. The *Montgomery* was a 24-gun ship with dimensions measuring 36.3 meters in length, 9.8 meters in beam, and 3.2 meters in depth (116 x 31 x 10 feet) (OPRHP 2003). Construction on the ships continued into mid-1777 however they were never fully outfitted before participating in naval activities on the Hudson River.

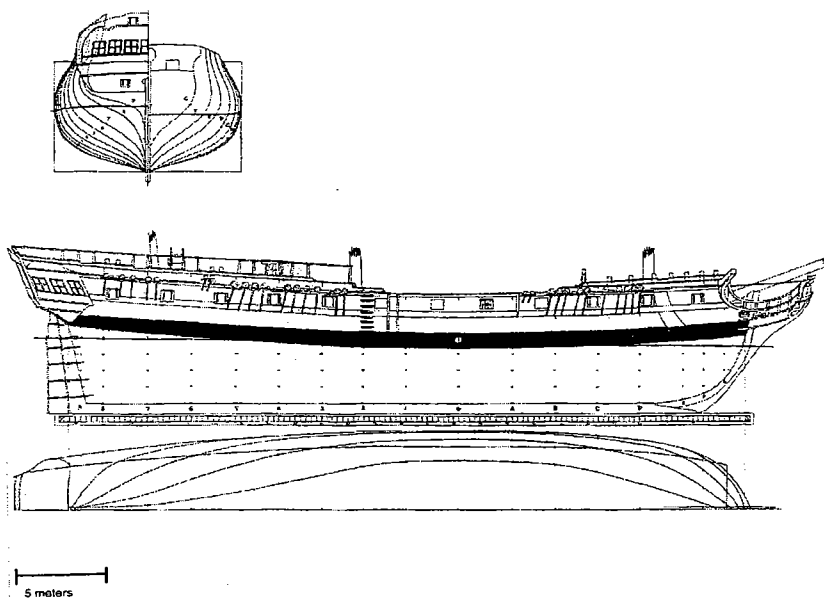


Figure 1. This is a scale drawing of the 28-gun Continental frigate *Congress*. The ship was run aground and scuttled on Constitution Island during the Battle of Fort Montgomery.

In 1776, the Secret Committee of the Continental Congress began making plans to further obstruct the Hudson River from the British (Diamant 1989, Cole 2002). The Committee was forewarned that two British fifth-rate warships the *Phoenix* and *Rose* were sailing into Haverstraw Bay and preparing to move north and attack. In response to this, the Great Iron Chain was stretched across from Fort Montgomery to Anthony's Nose. The Great Iron Chain was a series of oversized metal links, a large investment of specialized skill and labor. Attached to the links were floats. The chain was to prevent ships from passing or at the very least cause the ships some delay during which they would be situated directly in front of either Fort Montgomery or Fort Clinton. Conveniently, this area is also one of the Hudson's narrowest sections thus minimizing the effort of getting the chain from one side to the other. In November of that year, the chain was secured on either side of the river.

In October of 1777 Forts Montgomery and Clinton were attacked by British forces. The forces of the Patriots were no match for the British. With approximately 3,100 men and a fleet consisting of six ships, the British descended upon the twin forts. The patriots had only 900 men at both forts and with a naval fleet of the frigates *Montgomery* and *Congress*, two rowed galleys, and a privateer sloop, all located just north of the Great Iron Chain (Conley 2002). Within two days the British gained control of both forts after attacking by land rather than water. The two Continental frigates under the command of a fresh crew were no match for the strong ebb of the Hudson and the maneuvers of the British fleet. The *Congress* sailed north to escape impending British capture. Captain Daniel Shaw ran the ship aground at Fort Constitution, where Constitution Island is today. Shaw scuttled the ship, burning it to prevent enemy capture, in the evening of October 7, 1777. At the time of loss, it was said that the *Congress* was armed with nine or more 9-pound cannons (OPRHP 2003).

The *Montgomery* suffered a similar fate. During the Battle of Fort Montgomery, the ship was forced south by the tide and was too close to the Great Iron Chain. With no way to safely save the ship or its crew, Captain Hodge also scuttled the ship, with all of his crew safely off the vessel. The ship was armed with eight 12-pound cannons at the time of scuttling. As Carr and Koke (1937: 405-406) quote from Charles Stedman (1794), "...flames suddenly broke forth; and, as every sail was set, the vessels soon became magnificent pyramids of fire. The whole was sublimely terminated by the explosions [of the fire reaching the cannons], which again left all to darkness."

Following the battle, the British fleet sailed north to Kingston to burn the city to the ground. However, they were unable to join up with British General Burgoyne coming

