Survey and Assessment of the

Minesweeper *USS Strength*

Bay County Shipwreck Survey
Florida Bureau of Archaeological Research
Division of Historical Resources

November 1996

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Introduction

Florida's fragile and non-renewable cultural resources include a number of shipwreck sites that represent tangible remains of the state's unique maritime heritage. This heritage is often overlooked and is not as well understood when compared to other aspects of Florida's history. Shipwreck sites are not as easily accessible to the public as sites on land are. They also are not as easily managed or interpreted for the public benefit. Visited by scuba divers and fishermen, who often are not aware of a site's identity or history, shipwrecks can represent valuable cultural resources in addition to their role as artificial reefs.

Since 1987, Florida's Division of Historical Resources, Bureau of Archaeological Research has responded to nominations for the establishment of underwater shipwreck preserves from local divers and citizens throughout the state. To date, there are five Florida preserves: two Spanish galleons, *Urca de Lima* and *San Pedro*; a Suwannee River steamboat, *City of Hawkinsville*, the earliest American battleship, USS *Massachusetts*; and a British freighter, SS *Copenhagen*. As a result of active partnerships between state and local governments, and area businesses and citizens, these sites have been researched and documented for public interpretation with brochures and underwater guides, and designated as official Florida preserves by the placement of bronze plaques on site. They represent popular destinations for historical, recreational and ecological tourism, that, aside from providing additional tourism revenue, help to preserve these unique relics of Florida's maritime heritage for future visitors to enjoy.

In response to the largest number of nominations to date from a single region (five shipwrecks off Bay County, Florida), the Division received funding from the Florida Department of Community Affairs, Coastal Management Program, to record and assess the nominated sites, to form partnerships with local government and the public and to establish one or more as state preserves. The strategy included a regional symposium on maritime history, practical workshops for local divers and fishermen to exchange information, collection of historical data and archaeological fieldwork to assess each site. A team of State archaeologists and local volunteers formed the Bay County Shipwreck Survey, to work in partnership with Bay County Government and Museum of Man in the Sea to accomplish these goals. This report describes a survey and assessment of Minesweeper USS *Strength* which was one of the five candidates nominated to become a preserve in Bay County.

Historical Background

USS *Strength* (AM 309) was first launched on the 28th of March, 1944 from Associated Shipbuilders of Seattle, Washington. Built as one of 106 Admirable-class steel hulled minesweepers, she was 184 feet, 6 inches in length, 33 feet in beam and drew 9 feet 9 inches of water. These twin-screw vessels were driven by two diesel-electric engines for a total of 1,800 HP, and could reach top speeds of 15 knots. The port engine was located in the after engine room with two 60 KW diesel generators on the starboard side to balance out. These generators were used to power the magnetic cables in order to explode mines behind the ship. The starboard

main engine was located in the forward engine room balanced by a 100 KW generator on the port side, along with a large boiler used for hot water and space heating. There were nine diesel fuel storage tanks and three freshwater tanks. She carried one three-inch 50 caliber gun and four 40 mm anti-aircraft guns.

Table 1 Vital Statistics of USS ***Strength***

Minesweeper *Strength*		
Rig/Type of Craft:	Admirable-class steel hulled minesweeper	Crew complement: 100
Official Number:	AM-309; MSF-309	
Date of Construction	1943	
Designer		
Builder	Associated Shipbuilders	Seattle, Washington
Trade	Minesweeper	
Principle Dimensions:	Length 184 ft. 6 inches	tonnage: 650 tons
	Beam 33 ft.	
	Depth 9 ft. 9 inches	

USS *Strength* was commissioned in September of 1944, near the very end of World War II. By December of that same year she arrived in Pearl Harbor, Hawaii, where she began training for the invasion of Iwo Jima. In January of 1945 *Strength* joined the Task Group 51, LST Flotilla One on route to the Marianas for final preparations for the assault on Iwo Jima. She arrived there on February 16th, 1945 and began sweeping the local seas for mines and patrolling the area for submarines to clear the way for the invasion fleet. She continued these activities until mid-March, when she sailed for the Ryukyu Islands.

On March 26th, 1945, a midget Japanese submarine fired four torpedoes at *Strength*, two passed beneath her and two passed her stern. *Strength* opened fire, but no damage was done to the enemy vessel. She then motored to Okinawa and began sweeping the approach in preparation for the impending assault on that island. Japanese *Kamikaze* pilots launched a massive attack on the fleet in an attempt to repel the Americans. One of these suicide planes targeted *Strength*, but the minesweepers gunners were able to set it afire and it splashed astern of the ship.

The Japanese ceased hostilities by August of 1945, and *Strength* continued to sweep known mine fields between Kyushu and Korea until early December when she began the voyage back to the United States, stopping at Pearl Harbor on the way. *Strength* arrived back at San Diego by January of 1946 and she was placed out of commission and in reserve by July of that same year. In 1955 *Strength* was reclassified MSF-309, and she was struck from the Navy list of ships by 1967. The vessel received three battle stars for her World War II service.

After decommissioning, *Strength* was based Washington, D.C. and later Panama City for experimental dive training programs. She was purposefully sunk and refloated by dive trainees learning underwater salvage techniques. She was brought to the Naval Coastal Systems Center in Panama City in 1980. As Danny Grizzard has observed *Strength* has hosted thousands of highly trained Navy divers.

In 1986 *Strength* was given to the Navy's Salvage Diving Training Command and she was sunk for the final time as a large artificial reef project.

The Sinking of the USS ***Strength***

The hulk of *Strength* was intentionally sunk on May 19, 1987 as an artificial reef. This action involved several local organizations including the Naval Experimental Diving Unit, Panama City Marine Institute and Hydrospace Dive Shop. *The News Herald* reported on Thursday, May 21, 1987 reported that she was "loaded with explosives in her belly" and that "USS the ship was laid to rest in 75 feet of water in the Gulf of Mexico."

Since her initial sinking, the vessel has been used by U.S. Navy Divers to experiment with explosives to cut the vessel into smaller, moveable sections. The purpose of these exercises was to practice advanced methods of removing sunken ships which may represent navigational hazards, either by enemy action or natural disasters.

USS *Strength* Site Description

The hulk of USS Strength lies approximately 5.5 nautical miles from the pass at St. Andrew Bay, on a heading of 170 degrees (Fig. 1). The deck rests at a depth of approximately 40 feet, and the sandy substrate on which she lies is at 72 feet. The remains lie at a position of 30 degrees, 01.944 minutes North, 85 degrees, 42.521 minutes West (LORAN 14076.7 / 46943.9; UTM 16 6245099 R 3323078). The bow points to a heading of approximately 340 degrees.

To survey and assess *Strength*'s remains, the hulk was mapped, filmed and recorded with video. Students and staff of the Panama City Marine Institute assisted in the mapping and assessment of the wreck of USS *Strength*, having participated in a short course in the techniques of underwater archaeology taught by staff of the Bay County Shipwreck Survey. Field measurements and recordings were integrated into computer-generated graphic images to develop a general site plan (Fig. 2) and side scan sonar imaging also took place, showing the great differences of relief of the wreckage of the vessel (Fig. 3). These activities were accomplished during several visits to the site in the Summer and early Autumn of 1996. The bottom environment and associated marine life were recorded as the site represents a significant artificial reef within the offshore ecosystem.

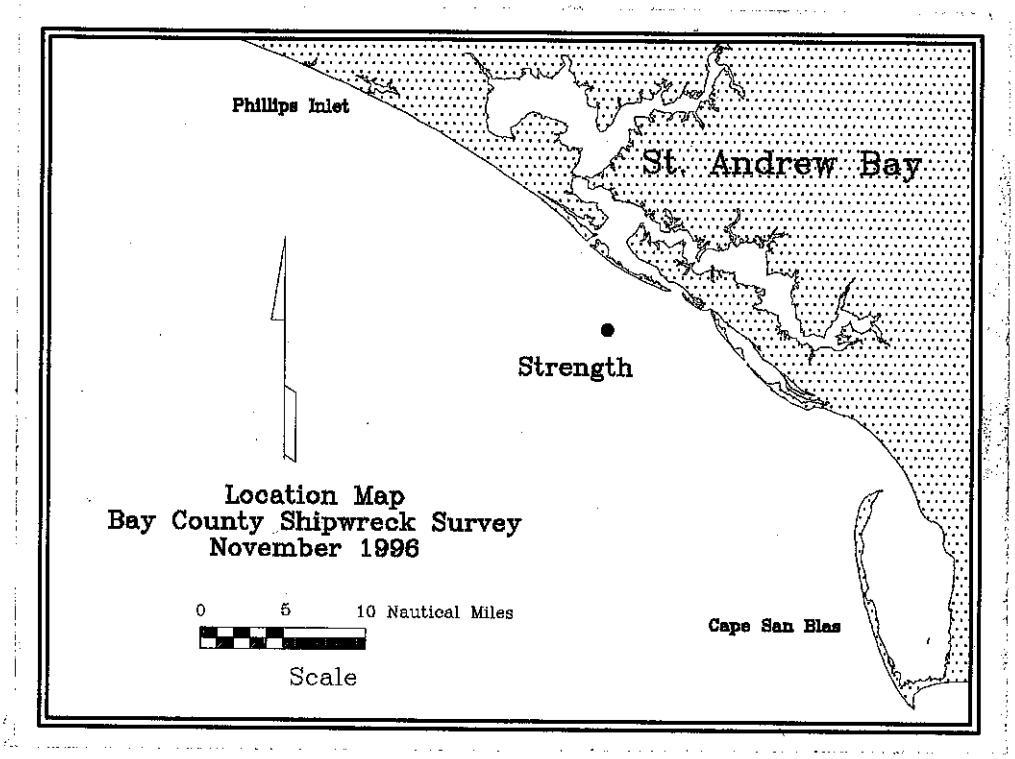
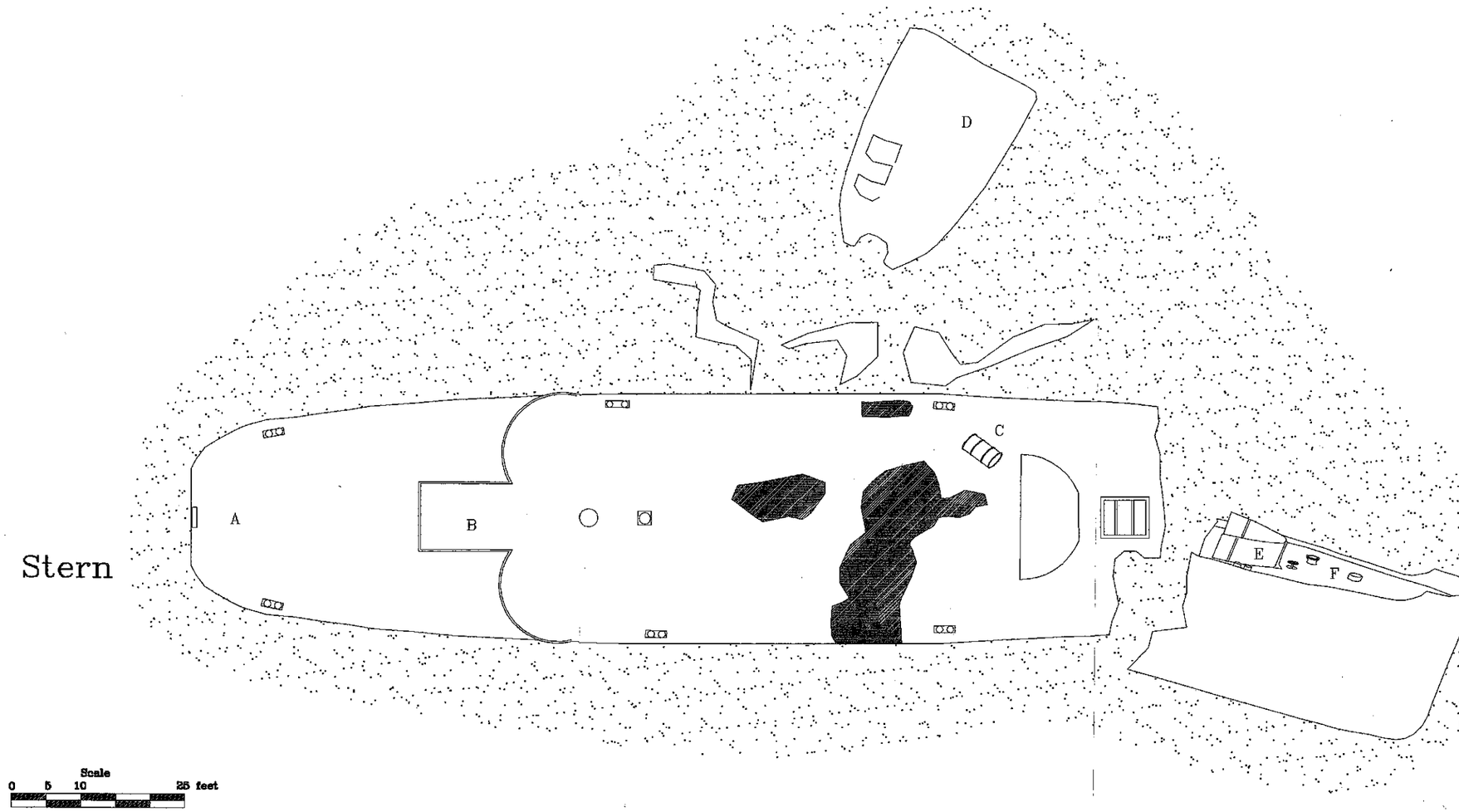


Figure 1. Location of USS *Strength*



Key

A Cable Guide
B Magnetic Cable Reel Housing
C Ventilator Deflector
D Navigation Bridge
E Gun Turret
F Anchor Windlass

Scale
0 5 10 25 feet

The Remains of the Minesweeper Strength

Bay County Shipwreck Survey
Bureau of Archaeological Research
Panama City, Florida
October 1996

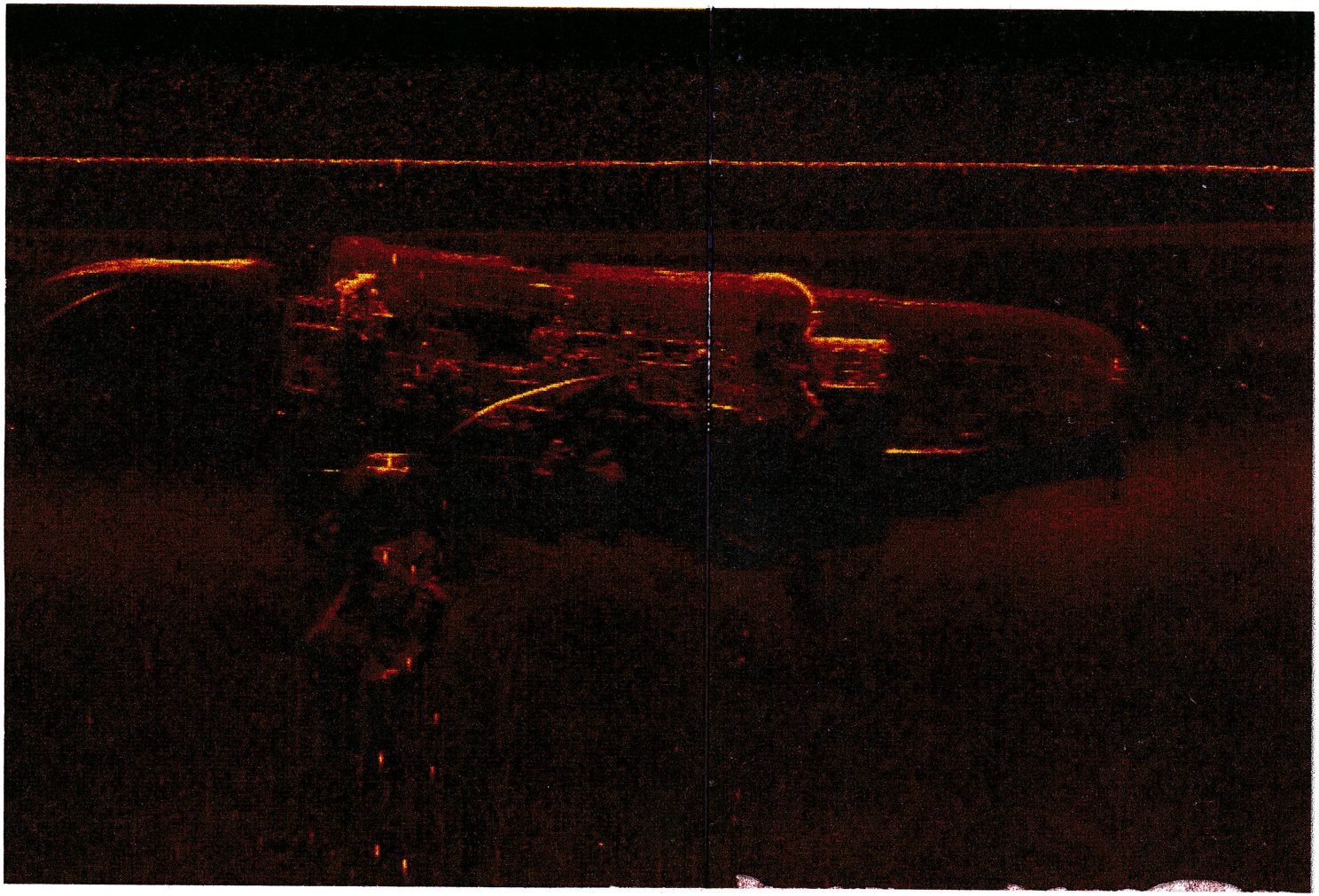


Figure 3 Sidescan sonar image of USS *Strength*

Features of Shipwreck

The stern and midships section of *Strength* are upright. The bow section is severed from the main hull, cut by the explosives testing that has occurred since her sinking. The bow lies on its port side, approximately six feet from the main structure and lists at an angle of approximately 45 degrees. According to Danny Grizzard and other local divers, the entire vessel used to lie on its port side prior to hurricane Opal in 1995. The force of the storm rolled the vessel upright, separating the open bridge and navigating bridge structure (which now lie to the port side) away from the wreckage a distance of approximately 20 feet.

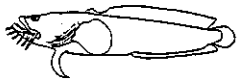
On the bow there is a large semi-circular gun turret, valve, hawser pipes and an anchor windlass. There is a bull nose in the point of the bow. A rectangular "projector", used for re-supplying ammunition to the 50 caliber anti-aircraft gun from an ammunition magazine below, is located on the forward portion of the vessel structure, abaft the blown away bow. Behind this feature, a portion of the Captain's stateroom remains, which was separated from the bridge structure when the ship rolled over in the 1995 hurricane.

Equipment still attached to the wreckage include bitts astern, midships and forward on both the port and starboard sides. A magnetic cable reel still lies in the rectangular structure on the main deck, toward the stern, and there is a cable guide on the fantail which was used to play out magnetic cables when sweeping for mines. There is a large canister or ventilation director on the port deck amidships.

A gaping hole in the midships section of the structure could allow divers access to the forward engine room. Around this cut away area, and in many other places on the midships and forward areas of the structure, there are jagged pieces of metal and exposed electric cables. The exposure forward, where the bow was once attached, does not allow access into the structure due to the presence of several bulkheads. The upper deck, main deck and platform deck are all exposed. The fantail decks are virtually intact and without explosion damage. The propellers have been removed, but the propeller shafts are intact.

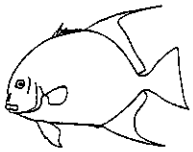
Larger pelagic fishes are also frequently encountered on *Strength* these include: Amber Jack (Carangidae), Spanish Mackral (Scombridae), Ling (Rachycentridge) and Nurse Shark (Rhincodontidae). Captain James Logan Main has reported that a 350 lb. Jewfish (Serranidae) was a resident of the structure throughout the Summer of 1994.

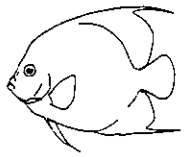
Marine Life USS ***Strength***

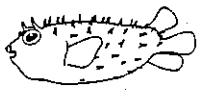

Toadfish


Grouper/Seabass


Filefish

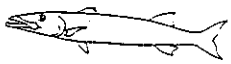

Spadefish


Angelfish

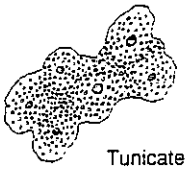

Puffer


Snapper


Mackerel

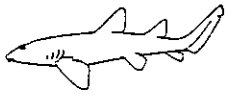

Barracuda


Grouper/Seabass


Tunicate


Sea Cucumbers

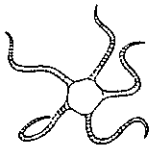

Cobia

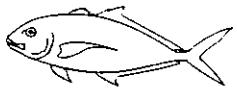

Nurse Shark

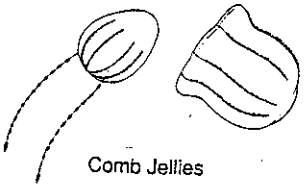

Sea Urchins


Flounder

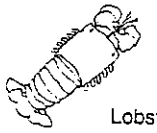

Sea Stars

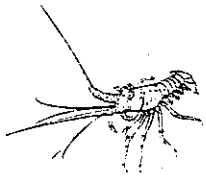

Brittle Stars


Jack


Comb Jellies


Hydromedusa


Lobsters



Conclusions

Built during World War II, USS *Strength* represents one of 106 Admirable-class vessels. She had a distinguished career as a minesweeper in the Pacific theater at the end of that conflict. After being decommissioned *Strength* was sunk, refloated and blown up by numerous Navy divers in training. As an artificial reef today, *Strength* is one of the most popular diving and fishing sites of the Panama City area due in part to its large size and an increasing abundance of marine life. *Strength* is often used for scuba certification dives, continuing her role as a tool for educational purposes.

Table 2, below, presents the ranking of *Strength* in relation to the other preserve candidates targeted by the Bay County Shipwreck Survey. The archaeological integrity of the site has been diminished because most of the ship's hardware and other portable artifacts were removed prior to her being sunk as an artificial reef. Of the sites surveyed only *Strength* contains hazards which need to be brought to the attention of divers. There are several places where sharp edges and electrical cables exposed on the hulk structure could create threats to divers. In addition, the explosion ripped openings of the central portion of the remains, which allow possible access into the passageways and compartments of the vessel, could become traps for the inexperienced. Another place where divers can access the interior portions of the remains is the in the stern area where access can be gained to the engine rooms.

Regardless, this vessel is a proud survivor of World War II that served her country in battle at the end of that conflict and then, later, as an object of Navy diver training exercises. She now serves the local community as an artificial reef, dive attraction and diver certification destination. The efforts of PCMI's Director, Danny Grizzard, the Department of the Navy and Hydrospace Dive Shop to place the remains of *Strength* offshore should be appreciated by all who dive her.

Table 2. Bay County Preserve Candidates - Criteria Ratings Matrix

Shipwreck	Historical Significance	Archaeological Integrity	Aquatic Life	Water Conditions	Public Interpretation	Public Accessibility	Total Ranking
Tarpon	5	5	5	5	5	2	27
Simpson	4	3	3	4	4	4	22
Vamar	5	4	3	3	4	1	20
Strength	4	2	4	3	3	3	19
Chickasaw	2	2	3	5	2	3	17

Key: 5 = Outstanding; 4 = Good; 3 = Medium; 2 = Fair; 1 = Poor

Recommendations

We recommend additional field work on *Strength* to locate and identify more features of the wreck for public interpretation and education. Additional mapping could be undertaken on *Strength* to map more details of her condition, map and describe possible hazards and to assess her deterioration through time. Since this is a popular diving location, a dive guide, similar to those printed for other shipwrecks in National Parks and State Underwater Archaeological Preserves, could be produced to orient divers around this high profile, multicomponent structure.

Perhaps the local dive community could organize an interest group to initiate additional research and training on *Strength*. This kind of project could also involve students from PCMI, given proper professional guidance. These interested locals and students could visit *Strength* periodically to map and assess the growth of the marine biological community and to record the deterioration of the wreck. Hazards to diving could be marked on the remains and noted on a dive guide and warnings could be made regarding the safety of the vessel. Finally, periodic reporting and map making exersizes could be the continued focus of academic exercises for students.

Acknowledgements

The mapping and background research undertaken on *Strength* benefited from the enthusiasm and assistance of staff and students from the Panama City Marine Institute (PCMI), under the direction of Danny Grizzard. Mr. Grizzard also graciously loaned his files and his copy of the plans of *Strength* for our use. Students who helped us from PCMI included Chad Bruster, Colin Burkett, Joshua Garner, Steven Herring, Jacob Kubitscheck, Jason Lawley, Scott Littlefield, and James Sawyer. Craig Gold supervised the students and gave good advice on the dive plans. Ms. Janet Parks, Christine Mullen, Dennis Schwinn and Capt. James Logan Main assisted in the survey of the vessel.

References

Berg, Daniel.
1991 *Florida Shipwrecks: The Divers Guide to Shipwrecks Around the State of Florida and the Florida Keys.* Aqua Explorers, East Rockaway, New York

Chesneau, Roger (ed.)
1980 *All the World's Fighting Ships 1922-1946.* Conway Maritime Press, London

DeLoach, N. Ned
1993 *DeLoach's Diving Guide to Underwater Florida.* New World Publications, Jacksonville, Fl.

Fahey, James C.
1966 *Ships and Aircraft of the United States Fleet* Naval Institute Press, Annapolis, Md.

Grizzard, Danny
1987 *Scuba Panama City.* Private Publication

Kafka, R. and Pepperburg, R.L.
1946 *Warships of the World* Cornell Maritime Press, New York

Keatts, Henry C. and George C. Farr
1990 *Dive Into History, Vol. One: Warships* Gulf Publishing Company, Houston

Mooney, James L. (ed.)
1970 *Dictionary of American Naval Fighting ships,* Vol. 5. Department of the Navy, Naval Historical Center, Washington, D.C.

Morison, Samuel E.
1947-1962 *History of the United States Naval Operations in World War II.* Little Brown, Little, Boston

Silverstone, Paul H.
1987 *U.S. Warships Since 1945* Naval Institute Press, Annapolis, Md.

The Panama City News-Herald
1987 "Old Ship Sunk for Last Time" Thursday, May 21, pp B1