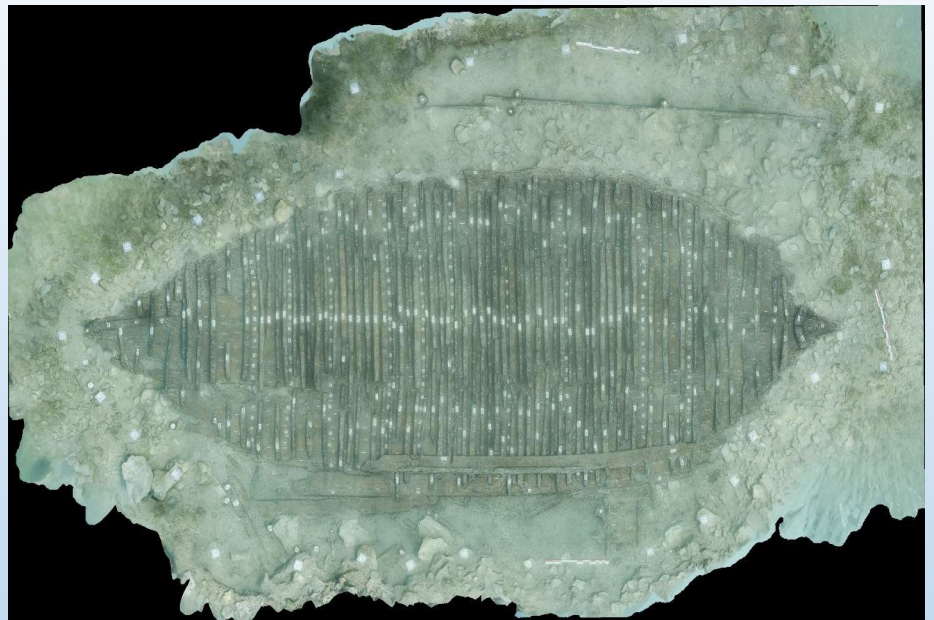


The Bay of Kaštela is a partially protected coastline near Split, Croatia. It is formed by the Marjan peninsula to the west of the city of Split, and the island of Gvozd to the south and east of the city of Trogir. Kastel Sućurac is the eastern-most town of seven Kaštela, situated along the northern coast of the Bay. It is also closest to the city of Solin (ancient Salona). Trstenik is the eastern section of Kastel Sućurac along the coast. The star indicates the location of Trstenik. (Google Maps)

The North and Central Adriatic, showing the location of the Bay of Kaštela. (Google Maps)



Photogrammetry performed after removal of stringers. North is to the top. The ship rests on its keel, and was scuttled in an east-west orientation, which was very fortuitous for future computer reconstruction. The port side, which was against the sea wall, was perfectly preserved to the turn of the bilge and to the depth of the ship to the first wale. The starboard side cracked twice due to the weight of the stones in the ship, which allowed a greater number of strakes to be preserved under the weight of the stones and sediment that covered the wreck. The white tags are over the keel, illustrating the additional hull planking preserved to starboard. The sea wall, with wooden support posts, is visible to the north of the ship. (credit: K. Yamafune)

Historical Context

In the early Imperial period of Rome, the city of Salona (modern day Solin) was the capital of the Roman province of Dalmatia, with an estimated population in excess of 50,000 people. To date, no large port has been found that served the city of Salona, but sites of numerous villas along the coast have been located; these villas were likely associated with seafaring and economic activity that supported Salona.



Trstenik site, looking to the north. Inserts indicate the relative positions of the dolium, the amphorae site, and the ship. The dotted red line indicates the general orientation of the Imperial wooden sea wall. The excavation team stayed in a house on the coast, diving from land and using water dredges powered from a nearby pier. (drawings N. Lete; photograph E. Šilić)

The Ship

Built shell first, with mortise and tenon plank joinery and frames attached to the shell by wooden pegs driven from outside-in, the ship was clearly well-used before it was scuttled; several repaired planks were noted, including repair tenons coated with pitch. Frame construction varied throughout the ship—some frames were mostly floor timber/futtock combinations, alternating with half-frames in several positions. Some frames appeared to be repaired during the life of the ship. The most unique construction feature was the density of frames: 69 frames were used in a length of only 12 meters. Some frames were so closely spaced that it was difficult to insert a hand between the two frames. Four hundred wood samples were taken during the excavation, for the analysis of wood species used for building and repairing the ship. 230 artifacts were cataloged and photographed, including an oil lamp, two Roman coins, and numerous pieces of broken ceramic.



Example of frame notches cut to support mounting a keelson/mast step. The tacks indicate peg locations (driven from outside the hull) for attaching the frames to the hull; note the differing frame thicknesses. (photo: S. Govorčin)



2012 excavation. An abbreviated three-week excavation season in 2012 verified the existence of the ship, and cleared the rocks from the western end of the wreck. The uncovered section was documented, then covered with geotextile to preserve in situ. (photo: S. Govorčin)

2015 Excavation

An international team of student archaeologists, led by Dr. Irena Radić-Rossi of the University of Zadar, Croatia, and Dave Ruff, PhD candidate at Texas A&M University, fully excavated the ship from April 13th through May 10th. The weather cooperated, with 23 diving days conducted, and only one day of diving cancelled due to high winds. The team logged 267 dives, executing 624 hours of bottom time. This year's work uncovered the previously excavated section, and also completed excavation of the rest of the ship. The four weeks of the excavation were consumed by removal of stones and sediment from the wreck, documentation of the ship's construction, photogrammetry of the site, and extensive sampling of the ship and overall site.



The 2015 excavation team. From left to right: Nick Budsberg, Luka Golubović, Jelena Glamač, Saša Koren, Matko Čvrljak, Dr. Irena Radić-Rossi, Ervin Šilić (drone pilot), Sofia Blanchard, Petra Mašić, Dave Ruff, Gita the dog, Arianna DiMucci, Derik Durbin, Sebastian Govorčin. (photo: E. Šilić)

Discovery of the Ship

Several seasons of excavations at multiple sites around the Bay of Kaštela have identified Imperial-era remains of seafaring activities, including wooden pilings, sea walls, and amphorae piles. In 2002, a large perforated dolium was discovered which had probably been repurposed for storing live fish by drilling holes in it. During the recovery of the dolium, researchers located a nearby concentration of Dressel 20 amphorae trapped within a wooden piling, and in 2006 also identified the outline of a ship intentionally scuttled alongside a Roman wooden sea wall by filling it with rocks.

Way Ahead

The study of the Trstenik ship is part of the AdriaS project (Archaeology of Adriatic Shipbuilding and Seafaring), a four year international project sponsored by the Croatian Science Foundation. The research of the Trstenik site as well as other Roman sites around the Bay of Kaštela will continue in future years with the scope of the overall site analysis.

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