

Although much underwater archaeology is conducted with standard scuba equipment, using simple measuring, mapping, and drawing techniques, archaeologists have borrowed special methods for working in the underwater environment from marine science as well as commercial and military diving. Technologically sophisticated projects utilize both acoustic and magnetic remote-sensing technology for detecting underwater archaeological sites and a variety of acoustic, optical, infra-red, robotic, and diving technologies for site excavation and recording.

Methods of various allied fields of study including anthropology, chemistry, ethnography, geology, history, naval archaeology, oceanography, and paleogeography—to name only a few.



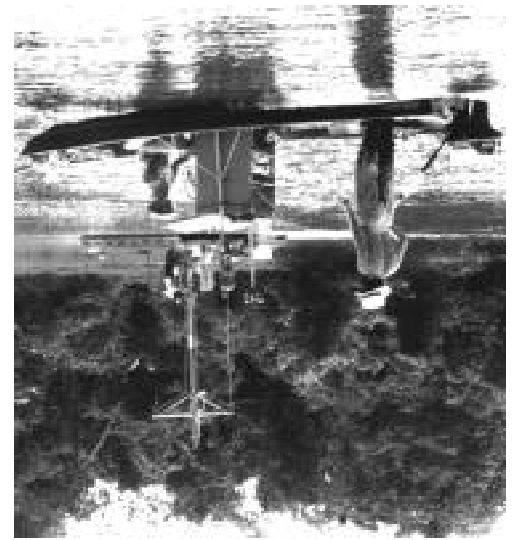
The practice of underwater archaeology is truly interdisciplinary, combining the

PUTTING IT All Together

Other types of sites in the underwater archaeologists' domain include: ancient land sites inundated after the last ice age; sink-holes or bogs where people placed offerings or buried their dead; cities and harbors now submerged by sea level change or earthquake; and dwelling, agricultural, and industrial sites along rivers, bays, and lakes. Underwater archaeologists extensively use historical records such as ship's plans, logs, and manifests; explorers' accounts; old maps; and legal, business, and tax records. They also study long-term geologic changes to locate submerged sites.

The majority of underwater archaeologists specialize in maritime archaeology: the study of the construction and operation of all types of prehistoric and historic watercraft. For these specialists, shipwrecks are the focus of research.

Archaeology is the scientific study of the human past through the investigation of artifacts (the physical remains of material culture), structures, the use of animals and plants, and human remains. Its goal is greater knowledge about past human cultures and behavior. Underwater archaeology carries these studies into a specialized environment, one containing numerous challenges and rewards for archaeological investigators.



Covering nearly three-quarters of Earth's surface, water is the source of all life on our planet. Water-borne transportation has allowed exploration of much of the globe and facilitated the rise and fall of great empires. Beneath the surface of our oceans, lakes, rivers, and wetlands lies a physical record of humankind preserved in prehistoric and historic shorelines, shipwrecks, inundated cities, harbor works, and other traces of our past.

Are you interested in ships and sailing, history, early settlement, and archaeology? Explore the world of underwater archaeology as a career, an avocation—or purely for enjoyment!

WHAT IS Underwater Archaeology?

READ More About It!

Dean, Martin, et al. 1995. *Archaeology Underwater: The NAS Guide to Principles and Practice*. Nautical Archaeology Society, Dorchester.

Green, Jeremy. 1990. *Maritime Archaeology: A Technical Handbook*. Academic Press, San Diego, CA.

The International Journal of Nautical Archaeology. Journal of the Nautical Archaeology Society, published quarterly from 1972.

Macaulay, David. 1993. *Ship*. Houghton Mifflin, Boston, MA.

Muckelroy, Keith. 1980. *Archaeology Under Water: Atlas of the World's Submerged Sites*. McGraw-Hill, NY.

Underwater Archaeology. Published annually by The Society for Historical Archaeology.

Organizations

Australian Institute for Maritime Archaeology, Western Australia Maritime Museum, Cliff Street, Fremantle, WA 6160, Australia

Département des Recherches Archéologiques Subaquatiques et Sous-Marines, Ministère de la Culture, direction du Patrimoine, Fort Saint-Jean, 13235 Marseille, Cedex 2, France

Maritime Archaeological and Historical Society, PO Box 44382, L'Enfant Plaza, Washington, DC 20026 USA

Nautical Archaeology Society, 19 College Rd., HM Naval Base, Portsmouth, Hants, PO1 3LJ, United Kingdom

Save Ontario Shipwrecks, 2175 Sheppard Ave. East, Suite 110, Willowdale, ON M2J 1W8, Canada

Underwater Archaeological Society of British Columbia, Vancouver Maritime Museum, 1905 Ogden St., Vancouver, BC V6J 1A3, Canada

Credits

Cover: Archaeologist mapping wreck site, Biscayne National Park. (National Park Service photo by John Brooks, Submerged Cultural Resources Unit.)

Archaeologist inspecting a wreck, Yellowstone National Park. (National Park Service photo by Brett Seymour, Submerged Cultural Resources Unit.)

Archaeologist making detailed drawing of schooner *Lucerne*. (State Historical Society of Wisconsin photo by David Cooper.)

Gradiometer survey boat used during the search for the caravel *Gallega*, lost in Río Belén, Panama, 1502. (Ships of Discovery.)

Drawing of a bronze four-pounder cannon from *La Belle*, lost in Matagorda Bay, Texas in 1686. (D. H. Keith, Ships of Discovery.)

Cleaning a bronze four-pounder cannon from *La Belle* (1686) in the Ships of Discovery conservation laboratory. (Ron Randolph, Ships of Discovery.)

Underwater Archaeology



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UNDERWATER ARCHAEOLOGY Around the World

Underwater projects range from the exploration of 19th-century shipwrecks below the ice of Canada's Arctic Ocean to surveys of artificial islands in Polynesian Ponape, and from inundated springs in Florida containing some of the oldest physical remains of humans in the New World to Bronze Age lake dwellings in the Swiss Alps. Because most of the earth's surface is covered in water, and the underwater world until recently has been largely inaccessible, the underwater archaeological repository is vast.

Some current research includes La Salle's ship *La Belle* (1686) in Texas; a flooded cave in the Dominican Republic containing pre-Columbian artifacts; the *Emanuel Point* shipwreck (1564) in Florida; the remains of prehistoric dwellings in Scottish



divers with a forum for presenting research results, communicating with colleagues, meeting new people, and learning about new findings and technology.

Additional opportunities may be found in the many organizations that train and lead volunteers and avocational archaeologists. Working under the supervision of archaeological professionals, volunteers participate in nearly every facet of archaeology: archival research, field survey and excavation, boat handling, diving, laboratory work, project planning, logistics, and fundraising.

PRESERVING A Threatened Resource

Through archaeological investigation, a window to the unknown past is opened, allowing a view of life as our ancestors lived it. Preservation of our archaeological resources is vital to keeping this window open. Inevitably, a few archaeological sites are lost each year as the result of accidents and natural processes, but the pilfering of sites for the recreation or commercial profit of a few individuals is far more destructive. Whether it be relics from a Civil War battlefield or gold or silver from a shipwreck, the clandestine "mining" of sites results in an irreplaceable loss to the collective heritage of present and future generations.

Simply put, archaeological investigations are the best, most efficient use of a nonrenewable resource — a nation's cultural heritage. A site can be destroyed and its contents dispersed in a moment from salvage, or it may be preserved and studied

lochs; the *Pandora* (1791) in Australia; the British warship *Mary Rose* (1545) in Portsmouth, England; the Swedish warship *Kronan* (1676) in the Baltic Sea; and a 14th-century B.C. shipwreck in Turkey.

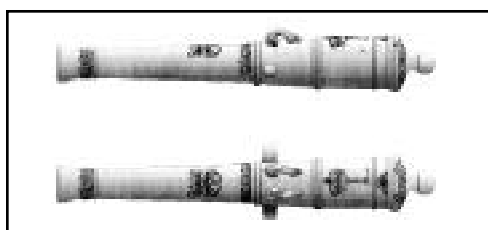
ARCHAEOLOGICAL Conservation

Underwater archaeology does not always involve excavation, but when material is removed for detailed study, laboratory facilities to preserve the artifacts are essential. The miraculously well-preserved condition of objects recovered from underwater sites is more apparent than real.

During lengthy immersion, artifacts react chemically with the water and sediments surrounding them. Sudden removal from their watery environment and exposure to air can set off a chain of chemical and physical reactions in the objects which could lead to their destruction.

Conservators are specialists who work with archaeologists to preserve artifacts for study and display. The conservation of objects takes much longer than their actual excavation, and the long-term care of a collection of excavated objects is expensive and time-consuming. Unless proper facilities and resources are available, it is often best to leave objects in their underwater environment. Conservators also work with archaeologists and site managers to monitor the condition of sites and artifacts left in place to preserve them for future generations.

by scientists and enjoyed by the public in perpetuity. All people, not just a select few, benefit from preservation. The study and enjoyment of archaeological resources for science, tourism, recreation, and education not only preserves sites but benefits the economy over a long period of time.



WHAT Can I Do?

Individuals from all walks of life can help preserve our archaeological heritage through several vitally important actions.

Support organizations which study and protect heritage resources including museums, universities, parks, and government agencies.

Support legislation and funding for the preservation and management of archaeological sites and the enforcement of antiquities laws.

Do not engage in the sale or purchase of artifacts.

Make sure that an organization to which you are donating is conducting real archaeological work, not for-profit treasure salvage.

Do not disturb or remove artifacts from sites. Even the taking of small "incon-

HOW TO Get Involved

Underwater archaeologists are typically employed by government agencies, museums, universities, and private consulting firms. As an exciting career for talented, motivated individuals with a great love for studying and preserving the past, outdoor activity, and travel, underwater archaeology requires individuals with technical abilities such as scientific writing, drafting, conservation, photography, electronics, remote-sensing, diving, vessel operations, and chemistry. Opportunities for full-time career employment may be limited, but participation in professional and avocational organizations offers additional occasions for selective involvement. Conferences and meetings, such as the annual SHA Conference on Historical and Underwater Archaeology, provide professionals, avocational archaeologists, and stu-



sequential" souvenirs such as potsherds, ballast stones, and nails will eventually leave a site barren of both scientific information and recreational interest.

UNDERWATER ARCHAEOLOGICAL Organizations

Many avenues lead into underwater archaeology. For career training, obtain the SHA publication *Guide to Graduate Programs in Historical and Underwater Archaeology*. Contact your state/provincial archaeology department or your local library or check out *A Guide to Underwater Archaeology Resources on the Internet* at: <http://fiat.gslis.utexas.edu:80/~trabourn/underwater.html> for a listing of Web pages and Internet resources devoted to underwater archaeology.

THE ADVISORY COUNCIL ON Underwater Archaeology

The Advisory Council on Underwater Archaeology is a committee of The Society for Historical Archaeology that is working to educate and advise scholars, governments, sport divers, and the general public on issues relating to underwater archaeology, conservation, and submerged cultural resource management. The ACUA assists the SHA Conference Committee in organizing the annual SHA Conference on Historical and Underwater Archaeology and aids the editor in producing *Underwater Archaeology*, an SHA publication series.