



CUCH
China Underwater Cultural Heritage

CHINA

National Conservation Center for Underwater Cultural Heritage



The National Conservation Center for Underwater Cultural Heritage was established in September 2009 by the State Administration of Cultural Heritage (SACH). It is the administrative body of the National Conciliation Commission for UCH Conservation¹, as well as the core coordination and execution department of national underwater cultural heritage conservation work. The Center has 4 departments, such as the General & Research department, Underwater Archeology department, Equipment & Technical Support department, and the Science and Technology Laboratory of Marine Cultural Relics Protection, more than 10 professionals, and offices in 4 coastal and internal waters regions. The Center undertakes administrative works of the National Conciliation Commission for UCH Conservation; undertakes national development strategy and field planning; organizes, coordinates and implements national UCH surveys, excavations and conservation; undertakes consulting and analyses of UCH projects; coordinates local UCH offices to undertake excavation, marine cultural relics preservation, etc.; undertakes UCH comprehensive and key techniques research; undertakes the establishment of UCH guidelines, criteria and informatization; organizes trainings and provides guidance and consulting to local UCH institutes; undertakes publicity, international exchange and cooperation.



Twelfth Five-year Plan² for UCH Conservation

This programmatic document basically blueprints a UCH conservation system with a sound legal system, a firm foundation, a crack team and advanced technologies, forms a new administrative pattern dominated by the State, give priority to coastal regions and consideration on internal waters to realize the great development of the field. On the basis of improving the conservation and management system, strengthening the basic researches, reinforcing foreign exchange, the main scope in the future five years includes the survey and research on the Maritime Silk Road; UCH conservation projects in the South China Sea, the west part of the Taiwan Strait, the Yellow Sea and the Bohai Sea, internal waters; conservation projects for coastal defense heritage of Ming and Qing Dynasties; UCH informatization and work platform construction

Operational Guidelines for Underwater Archaeology

China has carried out the UCH conservation for over 20 years and accumulated certain experiences in practice and theoretic researches. It is the right time to draw upon and formulate feasible operational guidelines. Through the research project jointly carried out with the Administration of Cultural Heritage of Guangdong Province and other related institutions, the Center is formulating the operational guidelines with good operability to further promote the scientization and standardization of UCH conservation and lay a solid foundation for the higher-level development of underwater archaeology in China.

¹ The Ministry of Finance, Ministry of Foreign Affairs, Ministry of Science and Technology, Ministry of Transportation, Ministry of Culture, State Administration of Cultural Heritage, State Oceanographic Administration, People's Liberation Army Navy, etc.

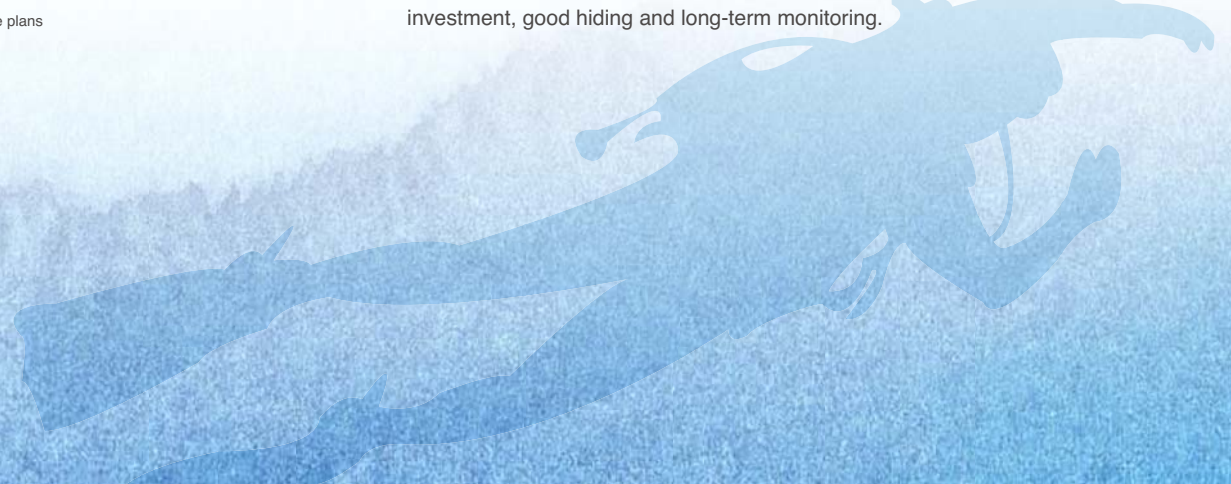
² Since 1953, the central government establishes a Five-year-plan for each period for different fields. These plans set goals, directions and major projects for the field.

Research on the Influence of China's Accession to the 2001 Convention on the Protection of the Underwater Cultural Heritage on UCH Conservation in China

China hasn't joined the Convention and there has been few analysis on it. UCH professionals need to know about the international rules and current work beside excavation and restoration. The project focuses on the effect of the Convention on UCH in China if it takes effect, analyzes the international legislations and general principles, sorts out UCH laws and practical experience of the Convention states and non-states, compares the similarities and disparities between the Convention and the legislation and ideas in China, deliberates the conservation status in China and forms an feasibility report that provides a reference to officers.

Application and Innovation of Underwater Passive Sonar Prevention System

In response to severe damages of underwater cultural sites, especially shipwrecks, the project studies an effective anti-theft safety precaution system that can be used in complex sea environments to end lootings and reach the long-term monitoring, and it doesn't need to be charged chronically as traditional security equipments. The project designs an underwater passive sonar appliance and a highly sensitive receiving equipment. Given the aid of the buoyancy of sea water, the former can provide real-time power to start up the alarming system to give out warning while the latter can receive, analyze and control the warning information, thus achieving an aim of precaution. Through investigations of UCH sites, considering the surrounding environment of UCH, a passive sonar warning system can achieve the aim of simple handling, small investment, good hiding and long-term monitoring.

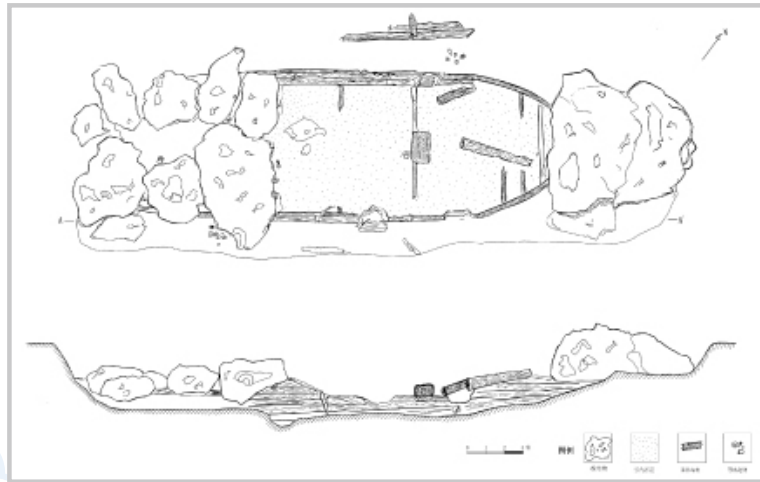


Excavation

Shipwreck Nanhai I

*Song Dynasty; Yangjiang, Guangdong; appr. 30m*10m, 25m undersea, discovered in 1987*

Relics may exceed 60,000 pieces. After the integral salvage in 2007, it is preserved in the Guangdong Maritime Silk Road Museum. Through preliminary excavations in 2009 and 2011 by the Guangdong Archaeological Research Institute, the discovered objects primarily are porcelains from Jingdezhen kiln, Dehua kiln, Cizao kiln and Longquan kiln, accompanied with wood wares, iron wares, copper coins, copper rings and lacquer chips. The information of the shipwreck was basically clear that lay the foundation for the further overall conservation. Desalination of discovered objects has been completed. In 2011, the Center organized experts to compile the Conservation Proposal of Cultural Relics of Nanhai I, and began to consolidate professionals in the excavation and conservation of the shipwreck.



Sketch map of the survey in 2001



Positioning container used in the integral salvage of Nanhai I

Excavations of Nanhai I

Nanhai I in exhibition at the Guangdong Maritime Silk Road Museum

Part of cultural relics from Nanhai I



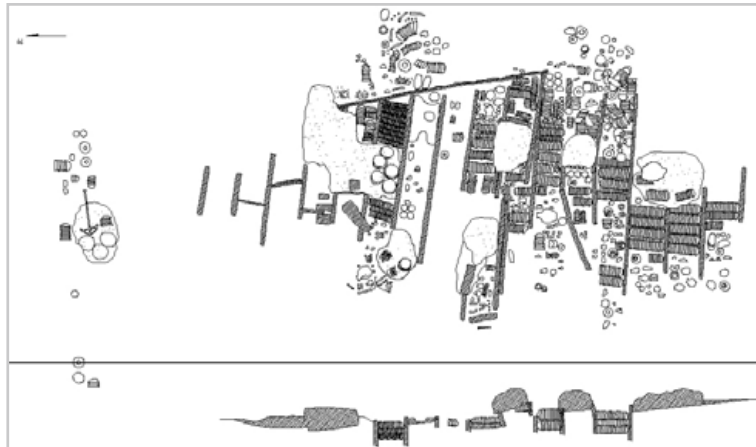
Excavation

Shipwreck Nan'ao No.1

*Ming dynasty; Nan'ao, Guangdong; appr. 27m*7.5m (disclosed), 28m undersea, started in 2009*

As one of the Great 10 National Archaeological New Finds of 2010, Nan'ao No. 1 project is important for the research of foreign trades in late Ming dynasty, the Maritime Silk Road, etc., as well as a successful trial of the disciplinary development and practice of underwater archaeology in China. It greatly raises the public awareness on UCH.

Through two excavation periods of 2010 and 2011, the team basically mastered the distribution of the site. The structure of the ship is almost complete (25 shifting boards), over twenty thousand relics with diversified kinds were discovered (primarily blue and white porcelains and dragon patterned jars, accompanied with potteries, iron wares and copper wares), and soil samples, metal samples, and remains of animals and plants were selected.



Sketch map of the survey in 2011



Part of cultural relics from Nan'ao 1

Underwater archaeologists work in the site

Part of the hull

Part of cargos from Nan'ao 1 (T4019-T4022);

UCH survey at Laoyemiao, Jiangxi



Deck of the shipwreck at Sanhuamiaodi, Tianjin



Bronze bowl from Banyangjiao (Reef) I



Porcelains and pottery from Banyangjiao I



Qing dynasty shipwreck at Xiaobaijiao (Reef), Zhejiang



Mast step of the shipwreck Banyangjiao I



UCH survey at Danjiangkou reservoir area



Keel of the shipwreck Banyangjiao I

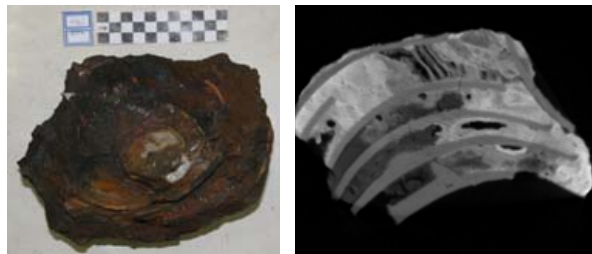


Protection

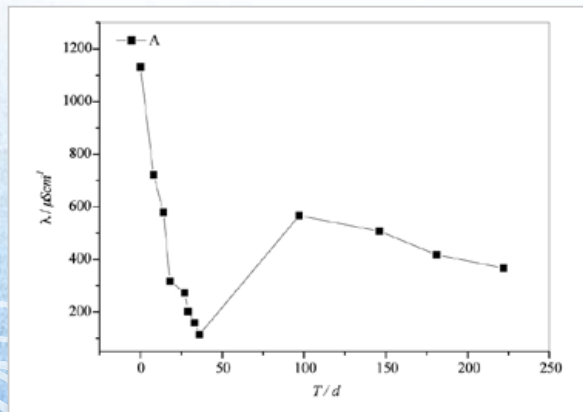
Relics from the Shipwreck Huaguangjiao (Reef) I

Song Dynasty; Xisha Islands, Hainan; 2006 to 2008

Approximate 10,000 pieces of relics and 511 pieces of decks were discovered. The preliminary experimental study on the conservation of ceramics, metal and wooden relics were started in 2010 and the Conservation and Repairing Proposal of Ceramics & Ironwares and Conservation Proposal of Components of the Wooden Ship, and Regulations on the on-site Conservation of Marine Ceramics, Metal and Wooden Relics were completed. Conservation of decks and handling of coagulations enclosing relics is the emphasis in future works.

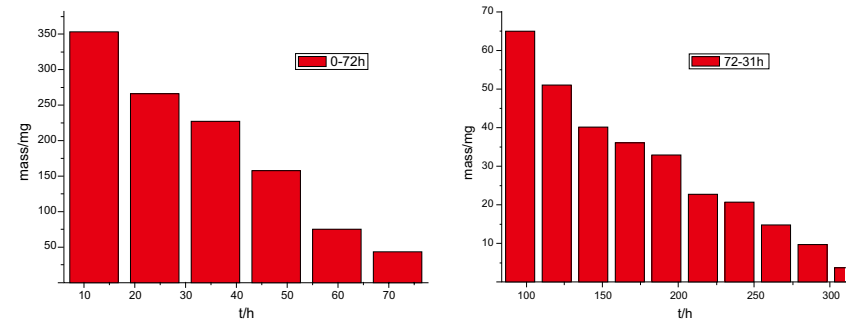


Industrial CT scanning photograph for typical concrete enclosing porcelain and ironware

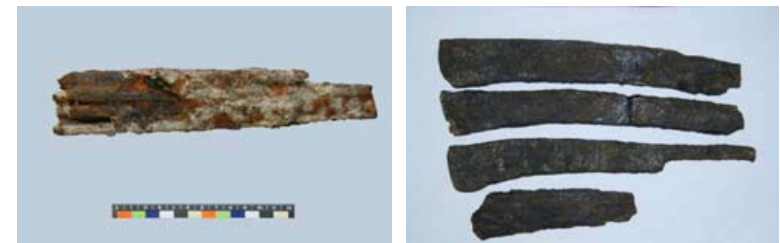


Desalination protection experiment of decks

Protection



Constant current desalination of ironware



Ironware before and after protective restoration (coagulations removed)



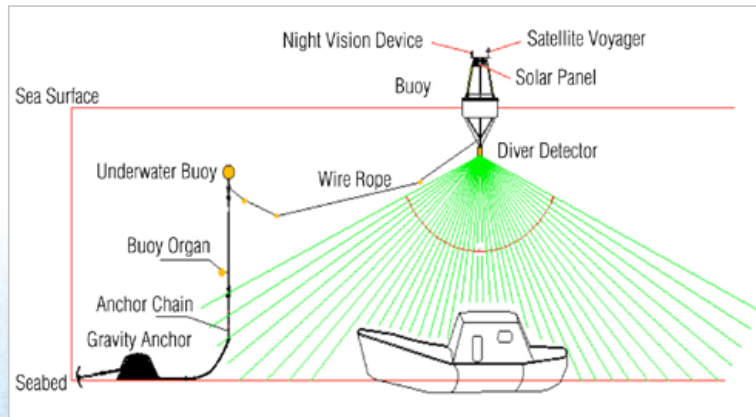
Porcelains before and after protective restoration

Monitoring

UCH Safety Monitoring of the Shipwreck Banyangjiao (Reef) I

*Song Dynasty; Longhai, Fujian; appr. 9.2m*2.5m (left); 20m undersea; surveyed in 2010*

Breast boards, some bottom plates, mast seats and keels are remained, as well as few relics-primarily bowls from Jian kiln, blue and white porcelains and potteries. To better protect the site and study the monitoring issues of underwater sites at coastal regions in China, a workshop was held among professionals and officers. They reached the overall approach and technical means, and provided the technical schemes on buoy monitoring, bottom monitoring, anti-diver sonar, UAV cooperative monitoring, 3G network monitoring, etc., and made discussions on the integrate implementation of defenses of technology and people.



The monitoring scheme in research

Equipment

UCH Conservation Research-ship

The Center organized the feasibility study of the first professional research-ship in the field of China. Its design and construction is based on the task "Given priority to offshore and considerations on open seas and internal waters", 500 tons, can meet offshore surveys and excavations needs with about 25 professionals on board. It is equipped with multi-tape sonar, side-scan sonar, bottom profiler, etc. It is capable of UCH survey, preliminary excavation, small-size excavations, on-site protection, small-scale exhibitions, etc. It is provided with rational integration of four systems, i.e., surveys and detections, diving support, communication and monitoring, protection of relics, thus significantly promote the efficiency of UCH works.



UCH Conservation Research-ship



Lay-out drawing of the UCH research-ship

Training & Education

The First Training Course on Marine Cultural Relics Protection

Hold from December 2009 to February 2010, the training is for protection and restoration technicians to deal with current conditions and issues on the protection of marine relics. 17 trainees from museums, archaeological institutes in coastal regions received one-month thematic study and two-month lab practice, systematically studied cultural relic restoration, maritime archaeology, marine environment and microbiology, classification and symbol illustration of diseases of relics, specification for compilation of conservation and restoration plan, specification for recording of conservation and restoration archives, conventional technologies for analysis and detection, protection of marine ceramics, metals and wood, etc. The trainees made protective handling on above 70 pieces of ceramics & ironware from the Huaguangjiao I.

Based on the Science and Technology Laboratory of Marine Cultural Relics, the Center will conduct more complete trainings. The lab mainly research on extraction method of marine relics, non-destructive extraction, disease analysis, on-site protection, desalination and repair technology, as well as developing regulations on the protection of primary materials of marine relics, analysis and detection of marine relics, technological support for major protection projects, and promoting technological achievement.



Trainee cleans the metallic cultural relic by ultrasonic equipments in the First Training Course on Marine Cultural Relics Protection in 2010



Some equipments of the lab



Training & Education

The First National Training Course on UCH Conservation (Archaeology)

Hold from June to September of 2011, the training consists of three phrases: diving; theory study of UCH surveys and researches-including ships and cargos, foreign trades, porcelains and kilns, onshore surveys, heritage & community, on-site protection, etc.; experience on complete working procedures of underwater surveys and excavations. 20 personnel with the major of cultural heritage have grown up as UCH conservation professionals with the CMAS 3* license.

Investigation of one folk kiln in Zhangzhou, Fujian



Trainees in Yushan Island, Zhejiang in June 2011



The Director of SACH issued the license to a trainee

Nitrox Diving Training

To adapt underwater archaeological works of Nan'ao I with poor visibility, deep water and fast current, to improve the safety and the working efficiency, 10 members of underwater archaeologists were selected to attend the twin-cylinder nitrox diving training in April 2010. After the training, they can expertly use the mastered diving skills on excavations in Nan'ao. The training played an important role for the successful completion of the Nan'ao I project, and also is a successful trial for the first organization of the professional diving training held by the Center.

Exchange & Cooperation

International Meeting on Protection, Presentation and Valorisation of UCH

Hold on November 24 to 26 2010, in Chongqing, over 80 UCH experts, scholars and representatives from the UNESCO and 9 countries attended the conference with reception of 22 academic reports. Over 20 domestic and oversea experts made profound discussions and exchanges on underwater archaeology, protection of marine cultural relics, UCH exhibition and utilization, the Convention and other themes. The attendants visited Baiheliang Underwater Museum (Chongqing), Maritime Silk Road Museum (Guangdong) and highly praised on innovative actions of UCH conservation in China, i.e., set-up the museum at the original site and integral salvage. The Conference adopted Chongqing Suggestions on Reinforcing UCH Conservation, which called upon governments of all countries and the society to take actions on UCH conservation, give support to developing countries in personnel training, suggested on reinforcing the capacity building, strengthening the in-situ conservation, enhancing awareness of the society, resolutely stopping illegal salvage and smuggling and opposing commercial salvage, strengthening the international cooperation, research and implement on the Convention.

Meeting of the Scientific and Technical Advisory Body of the Convention

As an inspector from nonparty states of the Convention, the director of the Center participated the second meeting of the advisory body. Participates discussed recommendations on the revision of Operational Guidelines of the Convention. This is the first time for a representative from China to participate in meetings of the advisory body, and got importance and welcome from it as well as the secretary of the Convention. The Center learned latest trends of the Convention and introduced status of UCH conservation in China to colleagues from other countries.

Exchange & Cooperation

Korea

Invited by the National Research Institute of Marine Cultural Heritage of Korea, the Center went to Korea for investigations on UCH conservation in October 2010. They visited shipwreck excavations and the conservation base for marine cultural relics. Both parties made a thesis seminar on UCH status, conservation and management methods, the underwater archaeology workshop, and agreed upon a cooperation intention.

Italy

The Center visited the Italian Ministry of National Heritage and Culture, UCH institutions, companies and experts in December 2010, investigated on UCH work-shop, GIS application, research and exhibition of ancient shipwrecks, general issues in underwater archaeology, management methods, etc., and discussed on the cooperation of UCH conservation.

Taiwan, China

To promote the exchange and cooperation on the field of UCH conservation between both sides of the Taiwan Strait and response to the invitation from Taiwan Underwater Archaeology Institute, in August 2011 the Center visited Taiwan Research Institute, Southern Office of Headquarters Administration of Cultural Heritage Council for Cultural Affairs, Taiwan Undersea Technology Association, Penghu Underwater Archaeology Working Station and other institutes for profound learning on UCH management system and implementation status in Taiwan. Both parties made exchange on the experience of the talent cultivation and legal system construction and reached an intention on the talent exchange and business cooperation.





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