

Underwater Excavation of Gogunsan Archipelago in Gunsan

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ABSTRACT

In Gogunsan Archipelago in Gunsan, explorations and underwater excavations have been conducted by the National Research Institute of Maritime Cultural Heritage since 2021, and a total of 570 artifacts have been recovered. This study introduced limitations and problems stemming from investigation progress and method. The characteristics of Gogunsan Archipelago in Gunsan were identified through analysis on the recovered artifacts. Based on the exploration conducted in 2021 and the contents of the excavation in 2022, the progress of the examination for the entire sea area, and the limitations and problems stemming from the examination method were identified. Through the analysis of the distribution patterns, types, and periods of recovered artifacts this study established the date and characteristics of the remains, and the direction for future investigations. A significant area where the artifacts are estimated to be buried, has not been investigated so results may change in future. The waters of Gogunsan Archipelago in Gunsan have been frequented by ships from the past. Many pottery sherds, wooden structures constituting ships, and daily items on ships, have been excavated. A minimum of two ships are believed to have sunk in this area based on artifacts from various periods (i.e. Three Kingdoms to the Joseon). Currently, only about one per cent of the total investigated area are dredged, so future work will likely reveal maritime exchanges centered on the Gogunsan Islands.

Keywords: Gunsan, Gogunsan Archipelago, underwater excavation, exploration

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OVERVIEW OF THE INVESTIGATIONS

Gogunsan Archipelago in Gunsan is an archipelago located in the southern part of the West Sea of Korea and consists of 63 islands including Seonyudo, Munyeodo and Shinsido. The name, Gogunsan Archipelago, was derived from the central island, Seonyudo. Seonyudo has been called Gunsando since the Goryeo Dynasty, and during the reign of King Taejo of the Joseon Dynasty, a naval base called Gunsanjin was established to defend against Japanese invaders along the west coast. Later, during the reign of King Sejong, as Gunsanjin moved to the mainland, the name of this area was prefixed with the Chinese character '古', which means old times, and it was called Gogunsan Archipelago.

Gogunsan Archipelago played an important role as a port of call on the route with China's Song Dynasty during the Goryeo Dynasty. According to *Seonhwa Bongsu Goryeo Dogyeong* of Seo Geung, who came as an envoy from the Song Dynasty in 1123 (the first year of King Injong), in Gunsando, there was a building called Gunsanjeong, which was used as a reception hall for envoys, and it was recorded that there were government office buildings and Buddhist temples.

Waters where the investigation was conducted is located on the eastern side of Seonyudo, the central island of the Gogunsan archipelago. The remains became known in December 2020 when a report was received that a diver who was working on a dive in the waters of Seonyudo Island found pottery and hull fragments. Afterwards, the location was reported by the reporter, and in 2021, an exploration of the entire sea area of the Gogunsan Islands, including Seonyudo, was conducted.

The exploration was targeted on a wide area around Seonyudo and Munyeo Islands, including the reported points, to find out whether there were ancient ships, whether or not artifacts were buried, and the distribution range. As a result of the investigation, about 200 artifacts such as pottery and anchor stones were recovered from the entire Gogunsan Islands area, and it was confirmed that various artifacts from different eras were distributed.

In particular, around the reef on the eastern side of Seonyudo, 81 pieces of celadon bowls and plates were found in the form of stacked cargoes, and tools used by ships such as wooden anchors, oars, and anchor stones presumed to be lost at the time of the wreck were found. Judging from these aspects, it is estimated that the possibility that an ancient ship was wrecked in the vicinity is very high. From April to October 2022, a full-scale excavation was conducted in the waters of Seonyudo to confirm the concentration of artifacts and the sunken ancient ship.

INVESTIGATION DETAILS

The excavation was conducted in the eastern waters of Seonyudo from April 19 to October 22, 2022. In the exploration of underwater cultural property in 2021, a range of 500 m from north to south and 500m from east to west was set as the investigation area, centering on the area where a bundle of celadon and a large number of artifacts were identified, and the total area is measured to 235,00 m². As for the total investigation range, 25 zones with a size of 100 × 100 m were set and named as A to Y zones, and 100 grids of 10 × 10 m units were set in detail for each zone.

As the targeted area is shallow and has reefs, it is difficult to anchor the Nurian, an underwater excavation vessel. Therefore, a barge exclusive for underwater excavation equipped with the necessary equipment for the survey was used, and the Nurian served as a support ship providing board and lodging for the investigators.

The excavation was aimed to identify the distribution patterns of artifacts widely identified in the investigated waters, and concentrated artifacts burial sites and sunken ships. To this end, after installing a 1m-wide reference line for dredging in each grid, a trial excavation was conducted along the line to a depth of about 1m. According to the distribution of artifacts and the quality of the soil, full-scale dredging was carried out simultaneously, and a dredging pump installed on a barge for underwater excavation investigation was used.

In the south of the soil investigation area and on the east side of Seonyudo, a RIB (Rigid inflatable boat) was used for search, and the distribution of artifacts was identified. For search, a search line was installed, circular and zigzag methods were used along the line, and the search was conducted using a probe rod.

The investigated area is a partial grid of area M and L. Initially, the investigation was intended to be conducted around area L, where bundles of celadon, ship accessories, and a large amount of pottery were found, but the investigation was conducted around area M, as the cruise ship route was formed around the area. In the areas L, Q, and V, where cruise ship routes are located, investigations were conducted only temporarily for two months (September-October) with the cooperation of shipping companies and people of the fishing village, and it is now in progress.

Along with the excavation survey, exploration was conducted in the sea area outside the total range of 500 × 500 m using Seamuse, an underwater cultural property exploration ship. In this exploration, not only were Seonyudo, but also the Gogunsan Archipelago, such as Sinsido and Munyeodo, investigated with expanded scope of the exploration.

In the meantime, in order to overcome the poor marine environment and conduct efficient investigations during the excavation, state-of-the-art marine exploration equipment such as scanning sonar, which can identify abnormalness in dark underwater visibility, and USBL (Ultra Short Base Line), which can accurately measure the location underwater were used. In addition, parametric sub-bottom profiler investigations were conducted on the surrounding waters by Seamuse to detect abnormal points, and detailed investigations and diving investigations were conducted on the points. The investigation found that most of abnormal bodies were marine waste including discarded fishing gear, but a small amount of ceramics were confirmed at some points.

RECOVERED ARTIFACTS

In 2002, a total of 286 artifacts were recovered through an underwater excavation in the waters of the

Gogunsan Archipelago in Gunsan. Ceramics, which account for the largest number of recovered artifacts, are mainly from the Goryeo and Joseon dynasties, with celadon being the most common, and plates and bowls being the main ones. In addition, white porcelain cups, pottery bottles, and pottery kettles have been identified, and one piece of Naesommyeong Buncheongware, which was also identified in the underwater excavation of Mado no. 4 shipwreck, was recovered. Moreover, during the exploration, the plate of earthenware, which is presumed to be from the Three Kingdoms period, was also found.

As for stone materials, one anchor stone was found and 100 stone tools presumed to be grinding stones were excavated in the form of shipments. They are long rod-shaped artifacts of fine-grained sandstone or rhyolite, similar to whetstones, but without signs of wear or grinding. As for metals, coins, bronze spoons, and iron pots for cooking were identified as metal items, and anchor branches were extracted from wood items.

The fact that a large amount of pottery has been found is proof that pottery carriers or cargo ships frequently came and went in the past. In particular, the excavated Naesommyeong Buncheongware shows the possibility that ships from the Joseon Dynasty may have sunken. In addition, anchor stones, bronze spoons, and anchor branches among those excavated are shipboard items used on ships, which also show that there is a possibility that ancient ships were sunken in the waters of Gogunsan Archipelago.

Table 1. Status table of artifacts recovered from underwater excavations in the Sea of Gogunsan Archipelago, Gunsan in 2022

Project Name	Ceramics				Stone Materials		Metals			Wood materials	Total
	Celadon	Bunch-eong	White porcelain	Pottery	Anchor stone	Whetstone (?)	Co in	Spoon	Iron pot		
Underwater excavation of Gogunsan Islands 2022	78	16	63	21	1	100	1	4	1	1	286



Figure 1. Underwater condition of the bundles of celadons



Figure 2. Recovered all Artifacts from Seonyudo

CONCLUSIONS

The waters of Gogunsan Archipelago in Gunsan have been recorded as a sea area frequented by ships since the Goryeo Dynasty. In the Goryeo Dynasty, there was Gunsanjeong where envoys from the Song Dynasty were accommodated, and in the Joseon Dynasty, a naval base was installed to prevent invasion by Japanese raiders. Demonstrating it as proof, various artifacts such as anchor stones, anchor branches, bronze spoons, and iron pots presumed to have been used in ships along with a large amount of pottery artifacts were recovered during the excavation and exploration.

The point where the artifacts are mainly identified is near the reef, about 300 m east of Seonyudo. Including this reef, large and small reefs are scattered all over the waters of the Gogunsan Archipelago, which is a major danger to navigation even today. In the past when navigation technology was less developed than now, these reefs can be seen as the cause of many ships sinking, indicating the possibility that ancient ships may have sunk in this area.

In the investigation until 2022, only 1,955 m², less than one per cent of the total area of 235,000 m², was investigated after dredging due to various limitations. Large and small pebbles are widely distributed throughout the seabed, which makes it difficult to dredge, and some of the major excavation points have not yet been investigated because some of the investigation ranges overlap with the route of the cruise ship. In particular, the area near the coast of Seonyudo where Naesomnyeong Buncheongware was identified and the point where bundles of celadon were excavated should be investigated through full-scale dredging. Fortunately, with the cooperation of Gunsan City and the shipping company, an agreement was reached to change the route of the cruise ship from 2023, and it is possible to investigate major points from the 2023 investigation.

If the full control of the main finds, excavation point is made through continuous investigation in the future, it is expected that traces will be discovered that will more clearly identify the nature of the underwater ruins in Gogunsan Archipelago in Gunsan, including the ancient ship.

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