

Overview of cultural properties affected by disaster in the Great East Japan Earthquake of March 2011

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Abstract

On March 11, 2011, the Great East Japan Earthquake occurred with its epicenter in the ocean bottom 130km off the Pacific coast of Tohoku area. The earthquake, registering magnitude 9.0 on the Richter scale, was the largest earthquake on record that occurred in the vicinity of the Japanese archipelago. It triggered a large tsunami with wave height exceeding 10m and maximum height of over 40m that brought about tremendous damage in an area centering on the Pacific coast of Japan from the Tohoku area to the Kanto area. This tsunami also led to a meltdown of Tokyo Electric Power Company's Fukushima No. 1 Nuclear Power Plant and the leakage and scattering of a great amount of radioactive materials due to hydrogen explosion. Cultural properties also suffered hitherto unknown damage because of this disaster. With regard to nationally designated and nationally registered cultural properties alone, 744 cases of damage (damaged or lost) have been confirmed over a distance exceeding 1000km from Aomori to Kochi prefectures (as of the end of July 2012).

The activities of the Committee for Salvaging Cultural Properties Affected by Disasters established on the occasion of the Great Hanshin-Awaji Earthquake that occurred in 1995 in west Japan pioneered a program in Japan for activities to salvage cultural properties. Following the Great East Japan Earthquake, the Committee for Salvaging Cultural Properties Affected by the 2011 Earthquake off the Pacific Coast of Tohoku and Related Disasters [secretariat at the National Research Institute for Cultural Properties, Tokyo (NRICPT)] was established, consisting of members of the Independent

Administrative Institution, National Institutes for Cultural Heritage and other organizations associated with cultural properties and fine arts, and has been engaged in activities to salvage cultural properties in collaboration with the Agency for Cultural Affairs upon requests for aid made by the disaster-affected prefectures. The activities of the Rescue Program for Cultural Properties Damaged by the Great East Japan Earthquake currently in progress is modeled after the program of the Committee for Salvaging Cultural Properties Affected by Disasters, the largest of the kind.

The aims of the current program are to provide emergency protection for movable cultural properties including craft works, excavated objects and folk tools as well as works of art, whether they are designated by the nation or local authorities, that have been damaged by the earthquake and its subsequent tsunami; to prevent disposal or scattering of cultural properties accompanying the clearance of damaged buildings and rubble; and to temporarily store and/or execute emergency treatment of affected cultural properties.

As a result of various activities that started in April 2011, temporary storage of salvaged cultural properties has been almost completed now in areas other than that neighboring the Fukushima No. 1 Nuclear Power Plant. However, with regard to emergency treatment, full-scale repair and stable storage, many issues need to be addressed from the point of view of finance, personnel and system. In this report, an outline of the current program will be given together with the present situation and issues. Biological issues that have become apparent will also be mentioned.

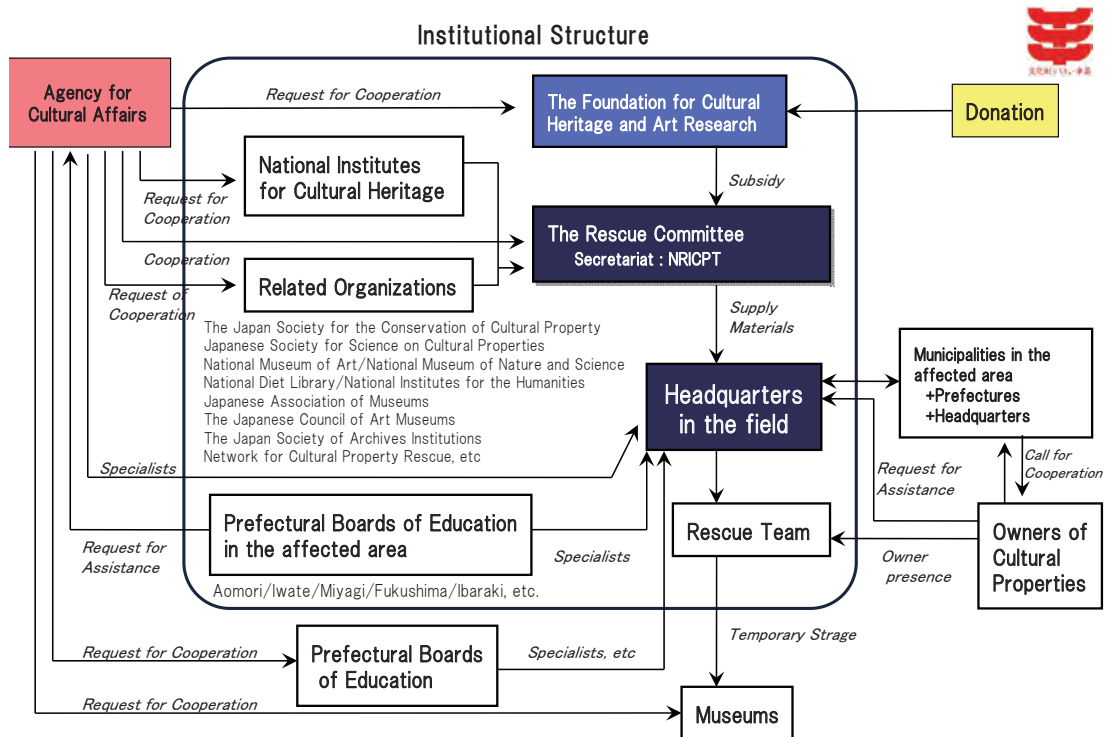


Fig.1 Rescue Program for Cultural Properties Damaged by the Great East Japan Earthquake

Operations to salvage cultural properties

The tsunami brought great damage particularly along the northeastern coast of Japan, extending from Aomori prefecture in the north to Iwate, Miyagi, Fukushima, Ibaraki and Chiba prefectures. More than 19,000 people were killed, injured or reported missing. Damage also extended to many cultural properties, although Hiraizumi in Iwate prefecture, where Buddhist culture flourished mainly in the 12th

century and which was listed on the World Heritage List immediately after the disaster, escaped damage.

Immediately after the earthquake and tsunami, the Agency for Cultural Affairs, mainly NRICPT, and other National Institutes for Cultural Heritage, initiated activities to salvage these damaged cultural properties. Other national culture- and art-related organizations also cooperated (Fig. 1). Part of the funding came from the national budget but much of the resources came from both in and out of Japan. We



Fig.2 Ishinomaki City Museum with a collection of over 100,000 items

cordially appreciate the help.

Ishinomaki, Miyagi prefecture

Majority of the salvage activities was conducted at Ishinomaki City Museum (Cultural Center) in Miyagi prefecture (Fig. 2) which was filled with rubble (Fig. 3). Behind the museum was the city hospital. The museum and the city hospital were the only remaining buildings in the vicinity.



Fig.3 A heap of rubble in the museum (white rubble)

In Ishinomaki, salvage activities started 40 days after the earthquake, on April 20. The first floor of the museum had been completely flooded with tsunami water. There was much rubble in the museum; the white rubble in Figure 4 came from a paper factory next to the museum. The first part of the activity was the removal of rubble. Figure 5 shows the first floor storage room, but since there was a door to stop fire from spreading in the special storage room, only 2 to 3 centimeters of water seeped into this area and water did not go up to the second floor exhibition room.



Fig.4 Storage room for art objects (Ishinomaki City Museum)



Fig.5 Removing rubble in a storage

Therefore, it was shown that such doors prevent tsunami damage inside storages, even though facilities may be damaged by very strong quakes.

After the Great Hanshin-Awaji Earthquake of 1995, measures such as the use of anti-seismic tables and nylon gut are used to stabilize objects in exhibition rooms in museums. This helped mitigate the impact of the earthquake in the Ishinomaki City Museum, and many objects remained intact in the exhibition room on the second floor.

Salvaged objects were transported to safety with the cooperation of a number of transportation companies specializing in the transport of artifacts (Fig. 6).



Fig.6 Transportation of salvaged objects

Rikuzentakata, Iwate prefecture

Damage at the Rikuzentakata City Museum in Iwate prefecture was more devastating than at the Ishinomaki City Museum. After six-weeks' search by the Japan Self Defense Force for victims of the disaster, it was found that all the staff of this museum

had lost their lives because of the earthquake and tsunami. The Self Defense Force helped much with the salvaging of cultural properties at with the search for missing people.

Sukagawa, Fukushima prefecture

Sukagawa city located in inland of Fukushima prefecture was not directly affected by the tsunami but an inland dam upstream crumbled because of the earthquake and water flowed downstream, washing away the foundation of a storage containing archaeological objects and documents (Fig. 7).



Fig.7 Storage room for archaeological objects and documents (Sukagawa city, Fukushima pref.)

In Fukushima, specialists from NRICPT led the salvage activities with the cooperation of experts in radiology, always checking the amount of radiation for the safety of the workers and of objects.

Freeze-drying treatment

Figure 8 shows the freeze-dryer at the Nara National Research Institute for Cultural Properties (NNRICP). It is ordinarily used for archeological objects such as excavated wood, but after the earthquake and tsunami it was used for conservation of wet paper documents. A cold storage freezer company helped us in this endeavor in Nara. Details are given in Dr. Kohdzuma's poster presentation.

Professors and students of Tohoku University of Art and Design also conducted conservation of old documents which were damaged, wet and stained.



Fig.8 Freeze-dryer (NNRICP)

Seminar to handle damaged materials

Information related to salvage activities has been provided in various ways. In May 2011, a seminar was conducted at NRICPT on how to handle materials damaged by the tsunami, mainly for people working on site (Fig. 9). Details may be obtained in the report by Dr. Kigawa and others.

Cultural properties in evacuated areas in Fukushima

Radiation level in Fukushima is not uniform. It varies from place to place, but within an area of 20-kilometer radius, all the residents have been forced to evacuate. Not much has changed in this area from the time immediately after the disaster.

There are many cultural properties in this area although not many are nationally designated. A mural painting of the 7th century was not directly affected, but tree roots are now growing so closely to it that it



Fig.9 Workshop to share information about early responses in salvaging objects (2011.5.10.) (NNRICPT)

is difficult to maintain it on a daily basis.

Two summers have already passed after the earthquake and biological damage, such as mold and fungal growth, are appearing. A major salvage operation has begun since August 2012.

Acknowledgement

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