

# Yet Our Treasures are Alive

The Rescue Operations for Cultural Properties  
by the Rikuzentakata City Museum



Rikuzentakata City Museum  
Masaru Kumagai, Chief Curator

March 11, 2011  
2:46PM

About 130km East-Southeast off the Oshika Peninsula  
Depth of 24km  
Magnitude 9.0  
Seismic Intensity 6 weak (Rikuzentakata City)

# Tsunami approaching the inner city area beyond the seawall(March 11)



View from the 4<sup>th</sup> floor of the Iwate Prefectural Takata Hospital (March 11)



Photo Courtesy of Toshimichi Sato

# Catastrophic damage of the inner city area

Photo Courtesy of Tokai Shimposha



**City Museum  
City Library  
The Storage for  
Archaeological Artifacts**

**Sea and Shell  
Museum**

# Human Loss in Rikuzentakata City



Dead 1,556

Missing 216

# Damage to Cultural Institutions



# Rikuzentakata City Rescue System

- 1 staff member (working at the Sea and Shell Museum and the City Museums concurrently)
- 1 former museum director
- 5 part-time employees (2 education board members, 3 Sea and Shell Museum staff)
- 4 temporary staff (former City Museum staff, former Sea and Shell Museum staff)

Commenced from April 1, but all members met together from late April.

7 out of 11 were victims (lost homes, family)

## The 1st Stage of Rescue

(Transfer of materials from devastated area to safe location)

April 1 – June 17, 2011 (Excl. large items)

Cooperating Organizations: Iwate Prefectural Board of Education/Municipal Boards of Education, Iwate Prefectural Museum, other prefectural museums, Self-Defense Force

Rescued about 460,000 items from the 4 facilities

Transferred to:

Former Oide Elementary School (approx. 300,000 items)

Iwate Prefectural Museum (approx. 100,000 items)

Organizations outside of the prefecture (approx. 60,000 items)

# Damage to the City Museum





First Floor Exhibition Room (April 21)



**First Floor Exhibition Room after debris removal:  
more than 1m of sand accumulated on the floor**

First Floor Storage Room (April 21)



Materials retrieved from First Floor Storage Room (April 30)





**Clothing cases carried out from Second Floor Storage Room (filled with black and muddy sea water (May 6))**

Preparation to carrying out old documents (City Library, April 2)



**Temporary storage facility (Former Rikuzentakata City  
Oide Elementary School, June 7)**



# The Second Stage of Rescue (Stabilization Process)

Stabilization Process - Treatment of removing degradation factors in order to keep in a stable condition for long-term preservation

- Removal of Biological factors
- Removal of Chemical factors
- Removal of Physical factors

Removing mud → Sterilization → Desalination →  
Drying out → Follow-up Observation

## Damaged Materials - **Wide ranging**

- Natural history materials (insects, plants, geological objects, taxidermy, shellfish etc.)
- Humanities materials (archeology, folklore, anthropology, history, art etc.)
- Others (books, letters etc.)

Need to collaborate with professional institutions etc.

# Stabilization Process for Paper Materials

1. Selection of materials suited for washing in water
2. Taking photos
3. Protection with non-woven fabrics
4. Cleaning with tap water
5. Cleaning by aqueous sodium hypochlorite solution
6. Desalination with tap water
7. Measurement of chloride ion concentration
8. Ultrasonic cleaning with tap water
9. Ultrasonic cleaning with purified water
10. Pressurized water removal
11. Natural drying
12. Checking materials and removing internal residual soil
13. Protection with waterproof paper and non-woven fabrics
14. Preliminary freezing
15. Vacuum freeze dry treatment
16. Material sterilization (fumigation with sterilizer)
17. Checking and classifying materials
18. First aid restoration for peeling parts
19. Digitization of restored materials (academically significant materials)
20. Preservation in neutral paper envelopes or boxes
21. Follow-up observation

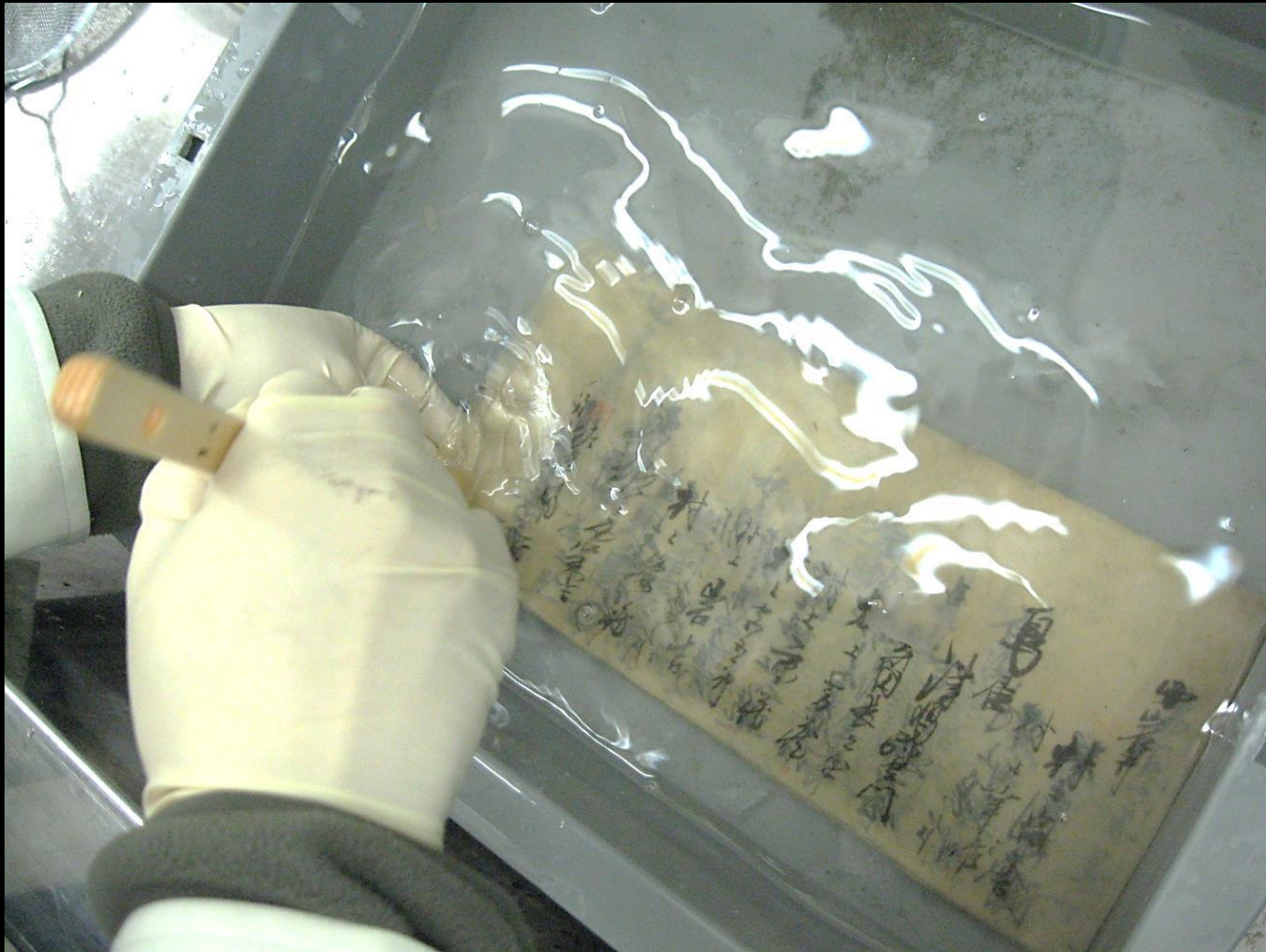


Old manuscripts immediately after rescue



Old manuscript after desalination

# Cleaning with tap water (removing mud)



■ Prevention of dust/harmful substances

# Desalination of Papers

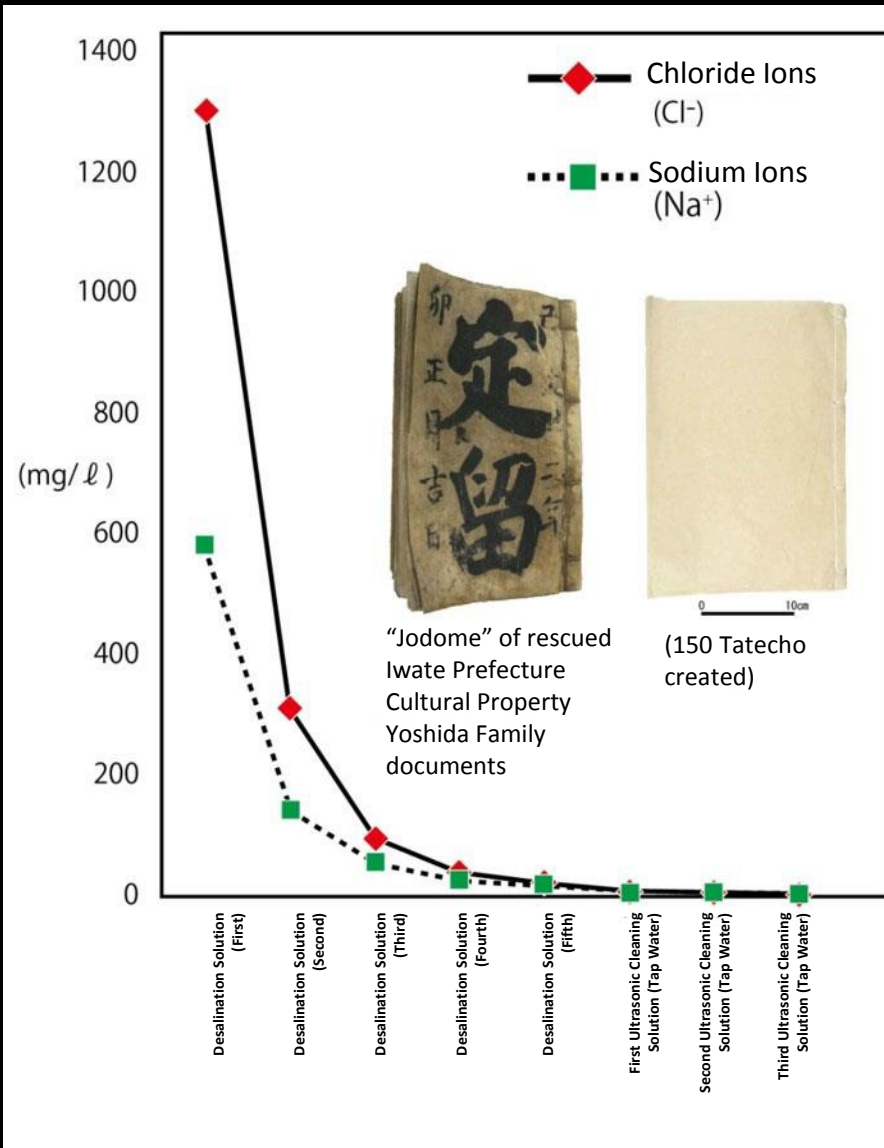
Courtesy of Mr. Hideo Akanuma



# Desalination (For increasing efficiency)



# Confirmation of Desalination Effect



# Desalination of Iron Items



# Stabilization Process for Folklore Artifacts

“Yuzukegata”



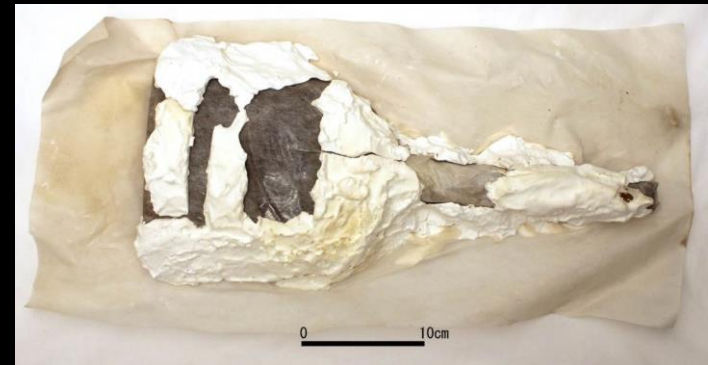
(Before Desalination)



“Mamenihera”



(Before Desalination)



Securing with plaster before desalination to prevent deformation

# Desalination of Large Materials (traditional fishing boat)



# Restoring Insect Specimens

Courtesy of Sayo Insect Museum,  
Iwate Prefectural Museum



Damaged stag beetle specimens



Cleaning with mixed solution of  
ethanol/hydrogen peroxide  
surfactant water



Joining dislocated legs



Damaged butterfly specimen



Removing mud



Wings conditioned and dried after  
cleaning with mixed solution of  
ethanol/hydrogen peroxide surfactant  
water

# Restoring Plant Specimens

Courtesy of Tokushima Prefectural Museum



Damaged plant specimens



Desalination after cleaning



Drying



Before

After

# Restoring Stuffed Eagle at Yamashina Institute for Ornithology



1. Dismantled



2. Stuffing



3. Cleaning



4. New stuffing



5. Drying



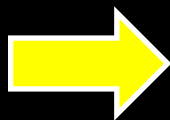
6. Finished

# Discoloration and Offensive Odors



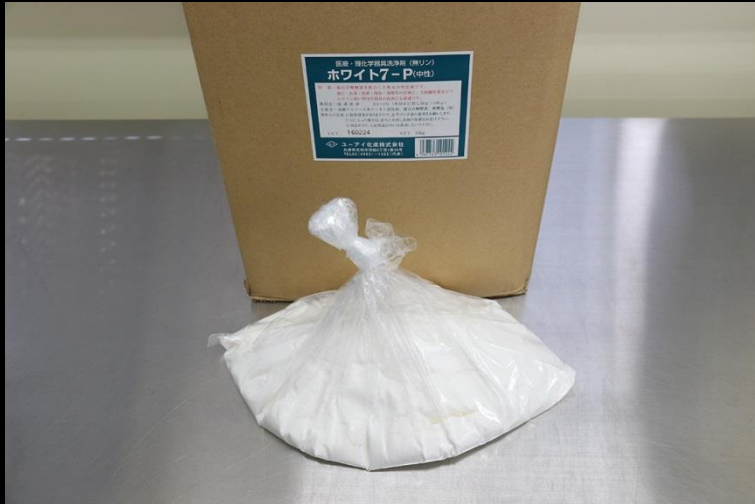
Because organic chemical substances remaining in the materials were decomposed by microorganisms...

About 3 ½ years  
after the disaster



- Non-woven fabric turns yellow
- Unpleasant odors

# Measures for Discoloration and Offensive Odors



(1) Neutral detergent



(2) Adding neutral detergent to stir



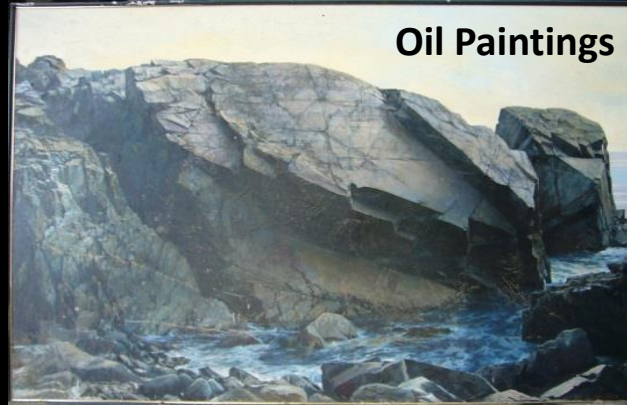
(3) Immediately after soaking in neutral detergent



(4) 24 hours after adding neutral detergent

# Materials currently in tentative storage because of no secure treatment methods

- Art pieces (oil paintings etc.)
- Lacquered artifacts (coated)
- Leather items
- Materials written in ink
- Tin toys etc.



Oil Paintings



Lacquered Artifacts

## \*Storage locations:

- Former Oide Elementary School
- Iwate Prefectural Museum
- Commercial refrigerated storage etc. and other locations



Tin toys



Leather Items

Stored only with first aid treatment.

Currently considering stabilization treatment methods

Please do not take museum materials away.  
They are important treasures for reconstructing  
Takata's nature, history and culture.

博物館資料を  
去らなリて下ヤ  
高田の自然 歴史  
復元する大事な宝です。  
市教委



Reconstruction without cultural assets  
is not true reconstruction.

