CONSERVATION

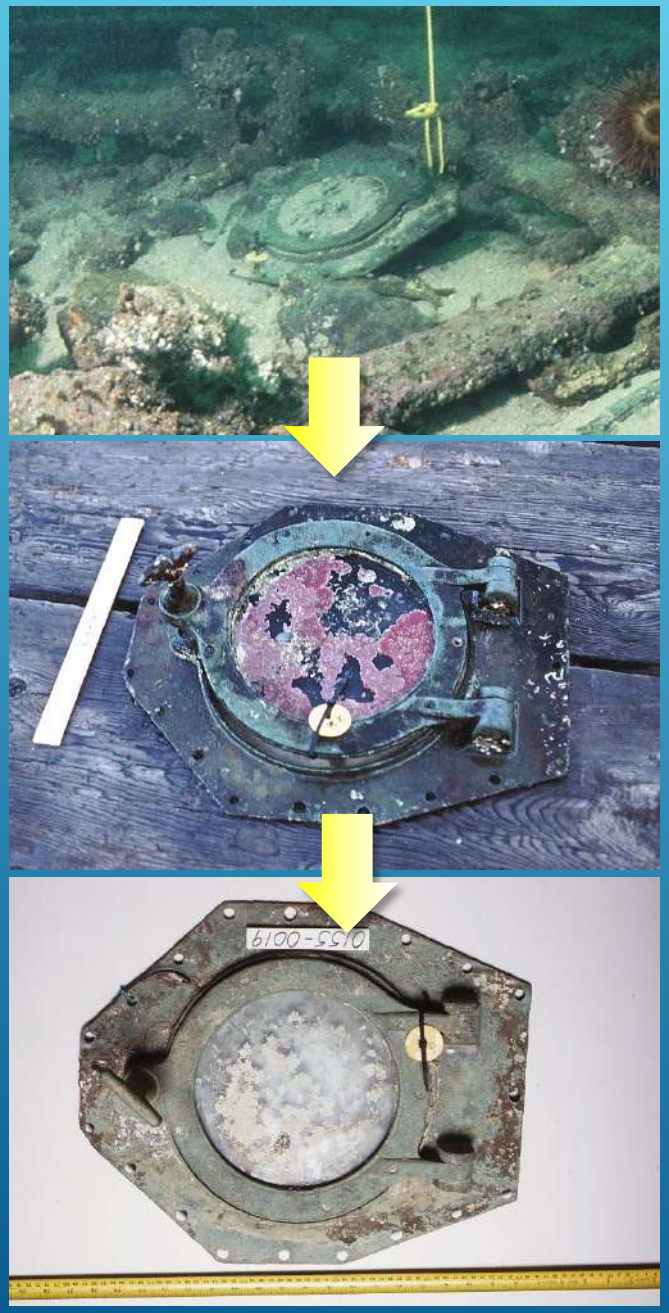
In Situ Preservation
& Recovery and Treatment

UASBC
Underwater Archaeological Society of BC

CONSERVATION

By the end of this module, you will understand:

- The **two approaches** to conservation.
- How to **recover** heritage objects from a site.
- How to **conserve** recovered objects.
- How to **document** recovery and conservation.



WHAT IS CONSERVATION?

Conservation is the examination, documentation, stabilization, preservation and repair of archaeological, historical, and cultural material.

There are two approaches to conservation:

- In situ preservation
- Recovery & treatment

IN SITU PRESERVATION

Leave artefact in place and monitor

In situ preservation results in the least amount of interference with an object and **leaves a site intact**.

A site's context is preserved for future archaeologists, and cultural integrity of object is conserved.

Materials eventually reach an equilibrium with their underwater environment – recovery upsets this.

IN SITU PRESERVATION

In addition to leaving artifacts in place, the UASBC also places educational plaques.

Information plaques can describe a vessels sinking, the history of a site, or interpret individual artifacts.

They also convey the UASBC philosophy: *respect our maritime heritage, take only photos and leave only bubbles*.

RECOVERY

Avocational underwater archaeologists should only consider recovering heritage objects when recovery is necessary to **protect** them.

Prior to recovery:

- Objects must be thoroughly **documented** and their condition **evaluated**.
- Conservation **treatment** must be determined.
- An appropriate **repository** must be selected.
- **Funding** must be approved.
- **Permission** and permits must be granted.

RECOVERY
LESSON LEARNED

The *Iroquois* prop was removed from the wreck site with **no conservation plan** in place.

- Damaged during recovery
- Not protected from elements
- No protective coating to stop oxidisation
- No educational information on display.

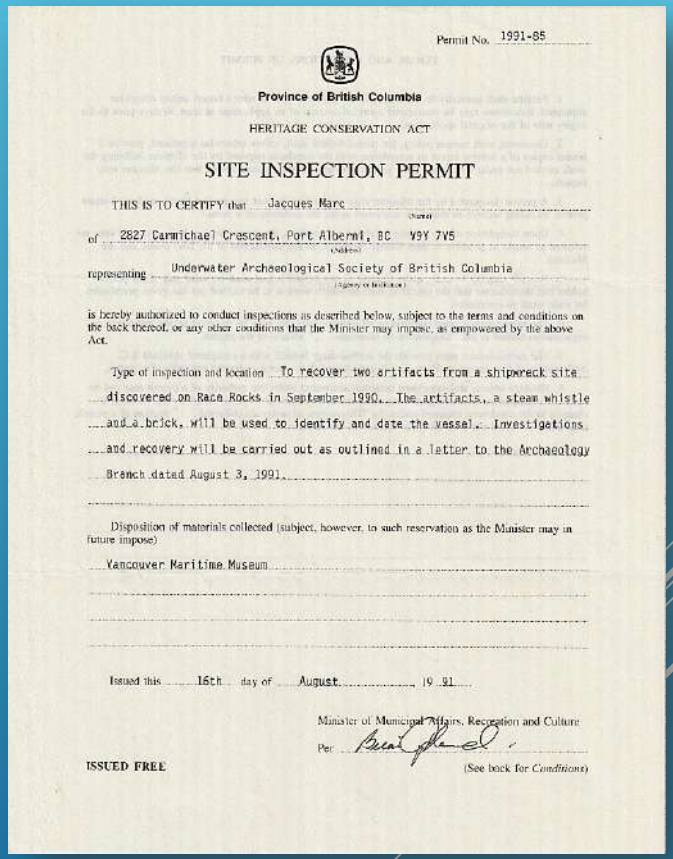
Note how badly rusted it is! How attractive is this as an exhibit?

PERMITTING

In British Columbia, a *Heritage Conservation Act* permit is required to authorise recovery of artifacts from underwater sites.

To obtain a permit an applicant must describe:

- How the archaeological context will be documented before recovery.
- **Recovery and transportation methods** that will be used.
- **Field conservation methods** that will be used to stabilize the artifact.
- Cleaning and preservation methods *and* names of **qualified specialists**.
- The final repository for the recovered artifact.



Permit No. 1991-85

Province of British Columbia

HERITAGE CONSERVATION ACT

SITE INSPECTION PERMIT

THIS IS TO CERTIFY that Jacques Marc (Name)

of 2827 Carmichael Crescent, Port Alberni, BC V9Y 7V5 (Address)

representing Underwater Archaeological Society of British Columbia (Agency or Institution)

is hereby authorized to conduct inspections as described below, subject to the terms and conditions on the back thereof, or any other conditions that the Minister may impose, as empowered by the above Act.

Type of inspection and location To recover two artifacts from a shipwreck site discovered on Race Rocks in September 1990. The artifacts, a steam whistle and a brick, will be used to identify and date the vessel. Investigations and recovery will be carried out as outlined in a letter to the Archaeology Branch dated August 3, 1991.

Disposition of materials collected (subject, however, to such reservation as the Minister may in future impose)

Vancouver Maritime Museum

Issued this 16th day of August, 19 91

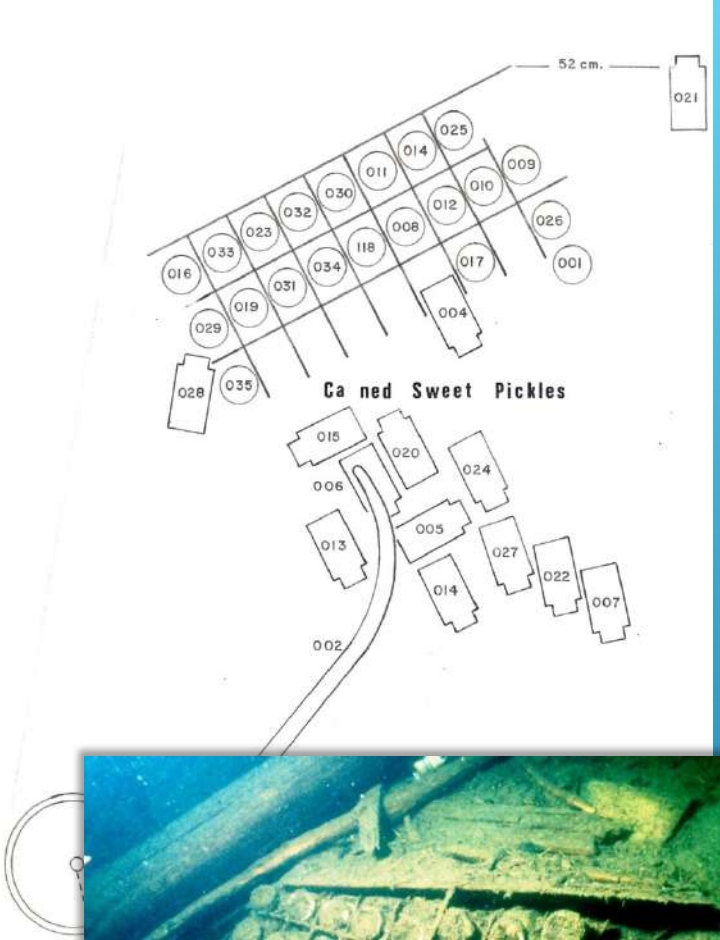
Minister of Municipal Affairs, Recreation and Culture

Per

ISSUED FREE

(See back for *Conditions*)

DOCUMENTING CONTEXT



Prior to recovery an object's *in situ* context must be recorded in detail.

- Complete a scale drawing to record its position.
- Use **Wide-angle photographs** to show general context
- Take **Close-up images** to document object condition
- **3D photogrammetry** is an excellent way to capture and preserve context

HANDLING & TRANSPORTATION

After an object has been documented and the conservation requirements evaluated, it can be recovered.

- All handling must be done with care and attention.
- Artifacts must be supported – weak spots may be difficult to determine.
- Always error on side of caution.
- Never lift objects over one another.
- Move objects from the water to a stable and secure location.

FIELD CONSERVATION

In advance of recovery, consult with a **professional conservator** to develop a field treatment plan.

Field conservation may include:

- Storing the artifact in fresh water.
- Controlling ambient temperature.
- Some initial cleaning to remove biological organisms (barnacles, seaweeds).

Generally, cleaning in the field is not recommended as this could remove important information.

LABORATORY TREATMENTS

Various types of materials recovered from underwater have **different conservation requirements**.

Selecting the proper treatment requires **expertise** in archaeology, chemistry, biology and many other sciences.

LABORATORY TREATMENTS

Ericsson Toilet Shard

Ceramics & earthenware need to be soaked in distilled water to remove salts.

Encrustations can be removed mechanically using a dental pick.

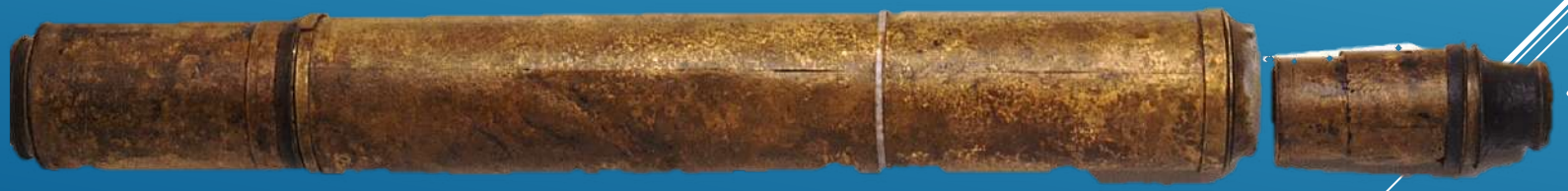
LABORATORY TREATMENTS

Iron & steel oxidize often becoming more corrosion than metal.

Reverse electrolysis is used to treat iron and steel objects.

LABORATORY TREATMENTS

Bronze or Brass often just needs to be cleaned and treated for bronze disease, a green residue that forms on the outside, and coated to prevent it from re-occurring.



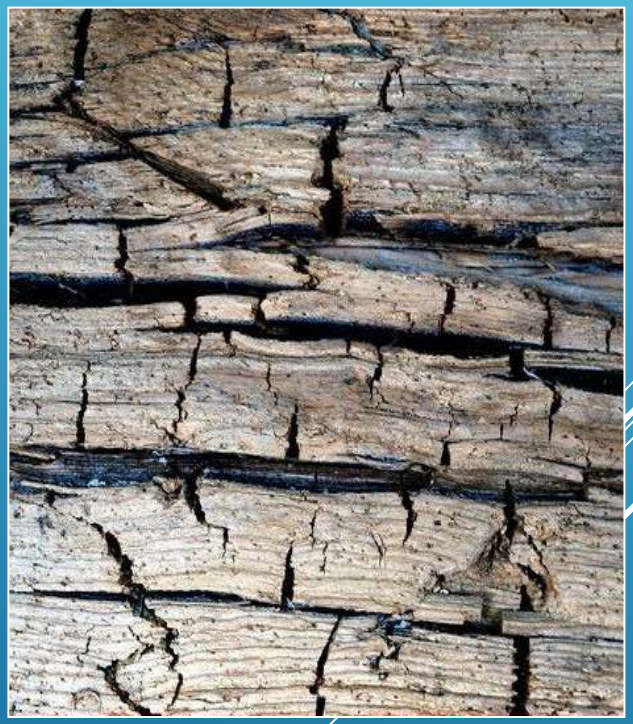
Lord Western Shoe

LABORATORY TREATMENTS

The water which saturates **wood objects** must be replaced during treatment to preserve the wood's structure.

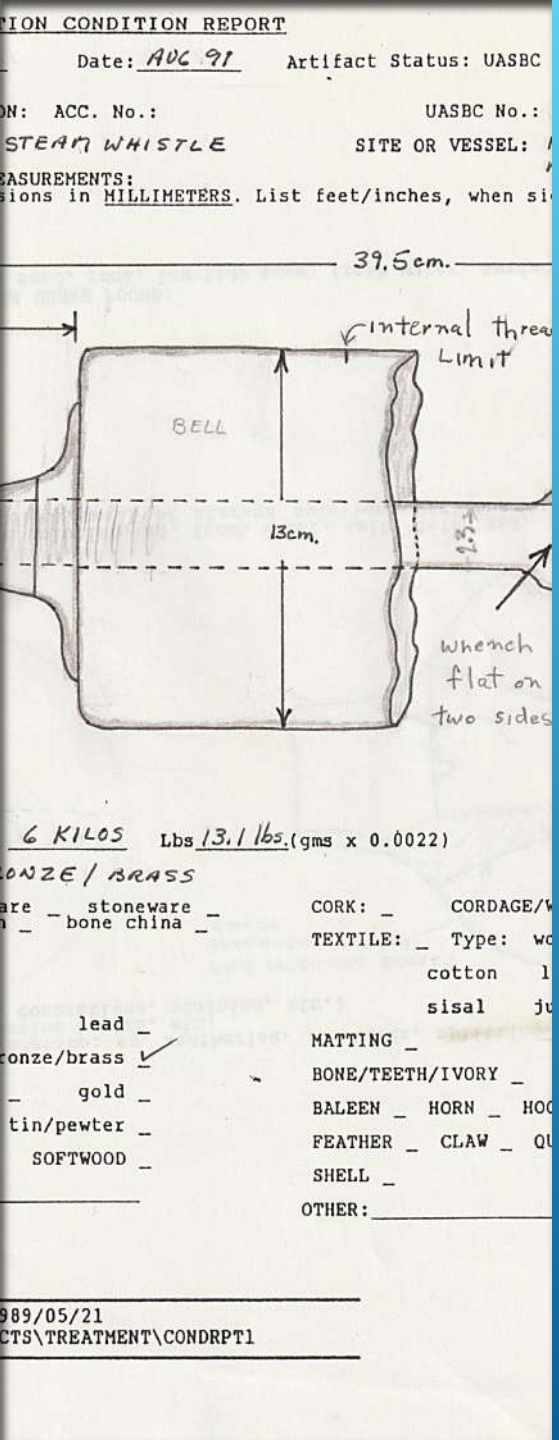
First, salts are removed by treatment with freshwater, then the water is replaced with a stable chemical. **Polyethylene glycol** (PEG) is a common treatment for wood.

Leather & fabrics may require similar treatment.



LABORATORY TREATMENTS

Sometimes things don't work out. The bell from the *SS Iroquois* was in one piece before treatment and is now in two pieces, most likely from the presence of residual salt.


TION CONDITION REPORT

Date: AUG 91 Artifact Status: UASBC

ON: ACC. No.: UASBC No.:

STEAM WHISTLE SITE OR VESSEL:

EASUREMENTS:
sions in MILLIMETERS. List feet/inches, when si

39.5cm.

internal threa
Limit

BELL

13cm.

wrench
flat on
two sides

6 KILOS Lbs 13.1 lbs. (gms x 0.0022)

ONZE / BRASS

are _ stoneware _
_ bone china _

CORK: _ CORDAGE/W
TEXTILE: _ Type: wo
cotton l
sisal ju

lead _
onze/brass ✓
_ gold _
tin/pewter _
SOFTWOOD _

MATTING _
BONE/TEETH/IVORY _
BALEEN _ HORN _ HOO
FEATHER _ CLAW _ QU
SHELL _
OTHER: _____

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CTS\TREATMENT\CONDRPT1

DOCUMENTATION

Documentation starts the moment an artifact enters the lab.

- Record of transportation & delivery
- Original location (site name)
- Measurements
- Drawing or sketch
- Photographic record
- Condition description
- Description of treatments

This paperwork accompanies the artifact wherever it goes.

ACCESSIBILITY

Each heritage object contains a wealth of information, which is part of our **shared cultural legacy** and the **public record**.

Archaeologists and conservators must ensure that recovered and restored heritage objects are accessible.

Accessibility becomes part of an object's heritage value. Generally, the greater the access, the greater the value.

We have only briefly touched on what conservation is! However, at the very least you have learned that dive recovered objects need care and attention if you want them to survive.

This lecture will be followed by two exercises:

Exercise 1: Students will be given an artifact. Which they must draw and complete an artifact condition report. (30 Minutes)

Exercise 2: Students will be given a chapter from a regional shipwreck report and will complete a documenting shipwrecks form. (60 Minutes)