## Waterlogged Wood

When wooden objects are submerged in water for a long time – like on a ship wreck – the cellular structures will degrade.



**Cellular Structure of Wood** 



# Waterlogged Wood Cells viewed under 20x magnification

#### Untreated

### Waterlogged

#### Dried



Note: **/** Visible Middle Lamella

Note: Swollen Lumen and Compressed Cell Walls

Note: Thin Cell Walls and Lumen Appear Flatter

#### **Cellular Degradation**

The cellular structure degrades beginning with the hemicellulose, then the cellulose, and finally leaving only the lignin.



The longer the wood remains in water, the more damage occurs.

The water is now supporting the cell walls. When this water dries out, the cells collapse. The resulting cellular shrinkage causes dimensional changes and cracks within the wood.

#### Wood in Collections

Wooden objects can suffer from dimensional change without being waterlogged. Changing moisture levels in the air will also cause cracking.



Cap Crest Mask Nigeria, early 20<sup>th</sup> century MCCM 2005.069.001

Statue of a Man Egypt, 2300-2170 BC MCCM 2002.041.001

#### Waterlogging Wood



Soaking the wood.



Cutting a thin section.



Transverse Plane (Grain Cross-Section)