

Monitor National Marine Sanctuary

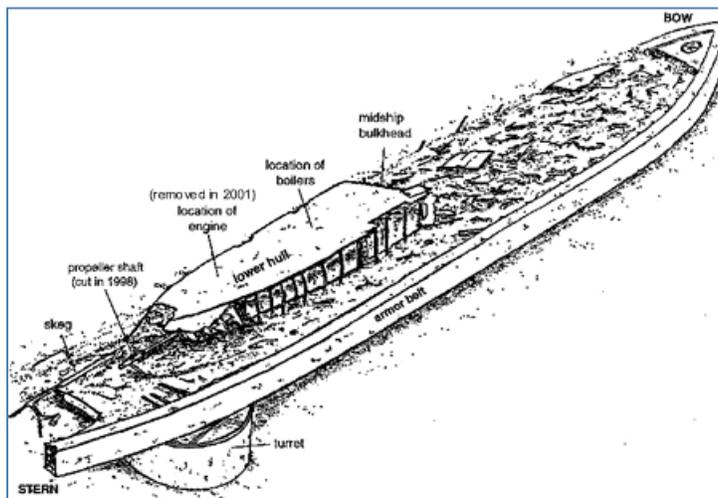
Resource Degradation and Corrosion

Management Issue

Corrosion potential analysis of submerged cultural material needs to be conducted to make informed management decisions and aid in predictive modeling.

Description

The USS Monitor and cultural resources within the region are considered non-renewable resources. Located in a dynamic environment, these resources are in a constant state of degradation due to natural corrosion in seawater. Water quality, climate change, biological distribution and cultural factors all play a part in the impact of submerged cultural heritage. Resources off of the coast of North Carolina exist in a wide range of environmental conditions, all which have a different effect on the severity and urgency of corrosive issues. A quantitative analysis to define these factors in this region has not been undertaken. Understanding these factors will enable managers to make informed decisions regarding stabilization efforts and prioritization of survey work.



*The wreck of the Monitor showing degradation to the hull structure.
Image Credit: ONMS*

Questions and Information Needs

- 1) What are the environmental factors that influence corrosion?
- 2) Can a regional model be developed that would be indicative of a broad range of resources based on known factors?
- 3) What are the criteria for prioritization for management responses?
- 4) To what degree can predictive modeling be relied upon for management decision?
- 5) What options exist for mitigation or stabilization?
- 6) What are the costs of intervention?
- 7) What are the potential environmental impacts associated with corrosion and degradation (i.e. bunker fuel, unexploded ordnance)?

Scientific Approach and Actions

- Accumulate data by gathering field samples of material for analysis
- Compare field samples to a range of environmental factors identified in the study area
- Develop a reference database of material as a study collection
- Establishment of interagency relationships for research purposes

Updated: 6/18/2014

For More Information -- <http://www.sanctuaries.noaa.gov/science/assessment>

Key Partners and Information Sources

East Carolina University Program in Maritime Studies, University of Rhode Island, Duke Marine Lab
University of North Carolina Coastal Studies Institute (UNC-CSI), Mariners' Museum, National Parks
Service, Minerals Management Service

Sanctuary Resources Available

- Research vessel
- Personnel

Resources Needed

- Partnerships for shared responsibility of project development, data collection, analysis, and reporting

Management Support Products

- Scientific papers and reports
- Potential mitigation recommendations
- Maps and GIS distribution models

Planned Use of Products and Actions

- Interpretation of data will be used as a starting point to prioritize management actions regarding stabilization and intervention.
- Data has the potential to illustrate site sensitivity through education and outreach products.
- Appropriate management actions based on findings

Program References

MNMS Management Plan.

- Resource Monitoring and Resource Protection Action Plan

MNMS Condition Report

- What is the integrity of known maritime archaeological resources and how is it changing?
- Do known maritime archaeological resources pose an environmental hazard and how is this threat changing?

ONMS Performance Measures

- 3.4: Measuring Characterization Performance
- 3.7: Measuring Maritime Heritage Resources Performance

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