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Forum: Environment Commission Conference of the Parties on Biodiversity 2 (EC2)

Issue: Safeguarding marine and coastal cultural heritage in the face of rising sea levels

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Introduction

Cultural heritage sites, including archaeological, historical and cultural sites and environments, reflect past human life and activities in coastal areas, whereas marine cultural heritage sites are traces of human interaction with the ocean, such as shipwrecks, that show how people were associated with marine environments.¹ They are irreplaceable reminders of history, giving insights into old civilizations while enriching education and tourism among others. Marine and coastal cultural heritage sites are at great risk because of sea level rise, which is mainly an outcome of climate change. Sea level rise is caused by the melting of ice and the warming of the oceans,² and is a risk to coastal heritage due to erosion, flooding, damage to sites and the washing away of small objects. Despite being a major issue itself, rising sea levels affect approximately 400 UNESCO World Heritage sites.³ This is a pressing international issue, because cultural heritage is of global value and shapes cultural identity. Therefore, it requires coordinated international collaboration.

Definition of Key Terms

Sea Level Rise

“Sea level rise refers to the average increase in the water level of the Earth’s oceans.”⁴

Coastal Erosion

“Coastal erosion is the process by which local sea level rise, strong wave action, and coastal flooding wear down or carry away rocks, soils, and/or sands along the coast.”⁵

Small Island Developing States (SIDS)

“A distinct group of 39 States and 18 Associate Members of United Nations regional commissions that face unique social, economic and environmental vulnerabilities.”⁶

UNESCO World Heritage Sites

“The sites are designated as having “outstanding universal value” under the Convention Concerning the Protection of the World Cultural and Natural Heritage.”⁷

Background Information

Historical Background and Origins of Rising Sea Levels

Humans have actually been dependent on the sea for as long as our species has existed.⁸ Throughout the globe, lakes and rivers shaped civilizations and along the coast, some of the world's most charming cultures built cities. A remarkable example, Pavlopetri, in Greece, is a submerged prehistoric town and the oldest complete town ever found underwater, which consists of multiple cultural heritage sites.⁹ Meanwhile, coastal change has always happened, but current sea level rise is induced mainly by human activities. Greenhouse gas emissions from fossil fuel combustion are primarily responsible for the climate changes observed in the industrial era, especially over the last six decades, which is extremely relevant as sea level rise is mainly a consequence of climate change. Estimates have reported that since 1970, anthropogenic activities are behind about 70% of the observed sea-level rise, with the percentage approaching 100% as time goes on.¹⁰

Sea Level Rise Causes

Global sea level is rising due to global warming mainly because glaciers and ice sheets are melting, therefore escalating water level. Another cause of sea level rise is water volume expansion due to the water being warmed. The fact that humans utilize water taken from places where water exists on land, is another contributor to sea level rise, though much smaller, due to the said water ending up in the ocean.¹¹

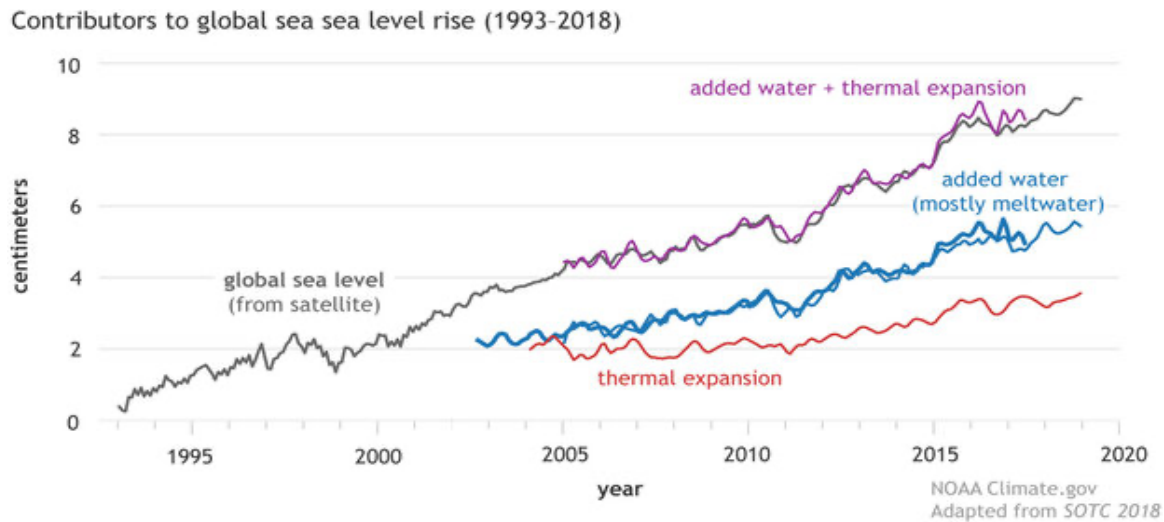


Figure 2: Contributors to global sea level rise over the course of the past few years (1993-2018)¹²

Major Developments

New research has shown that over the last 30 years the global sea level rise doubled, measuring the average rise in sea level each year.¹³ Rising sea levels is one of the occurrences that pose large threats to a humongous number of ancient sites around the globe, deeming the integration of archaeology into global climate policy crucial for the preservation of the world's archaeological heritage.¹⁴

Over the past years, deep water archaeology has been driven by technology available to only a few archaeologists. However, the field has now expanded, and new tools are necessary to address new questions, such as rising sea levels and underwater cultural heritage. These challenges are especially urgent for vulnerable nations.¹⁵ Climate agreements highlight both least developed countries (LDCs) and small island developing states (SIDS), which tend to be at the forefront due to their particular vulnerability to rising sea levels.¹⁶

Current Impact Globally

Radical changes in temperature and sea level rise patterns are currently worsening the physical environment of cultural heritage. At the same time, extreme weather events such marine floods pose serious risks to their preservation. Moving on, sea-level-rise induced dangers towards cultural heritage, not only affect the cultural aspect of nations, but also directly affects their economy. For example, heritage tourism is currently a very important part of the Mediterranean economy, as historic sites act as famous tourism destinations, and is a crucial pillar of the job market. Therefore, Mediterranean nations such as Tunisia, Italy, and Spain have been highly researched on this issue, mainly because of their large cultural heritage and high vulnerability to sea level rise.¹⁷

In addition, an analysis by UNESCO and World Resources Institute (WRI) has shown that 73% of World Heritage sites are vulnerable to water related dangers. This increasing vulnerability is already

evident through examples from across the globe, including significant damage to the Archaeological Ruins in Pakistan, Angkor in Cambodia and Petra in Jordan as well as parts of Africa in Niger and Mali.¹⁸

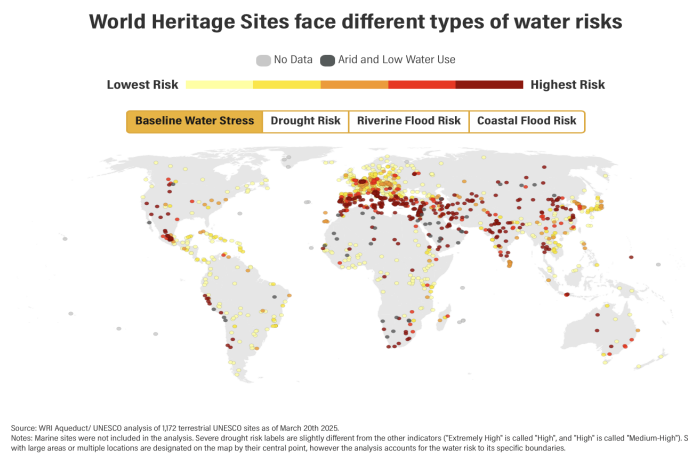


Figure 1: World Heritage Sites Facing Severe Water Risks¹⁹

Major Countries and Organizations Involved

UN and International involvement

- **Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972**

This Convention of UNESCO concerns the protection of cultural and natural heritage. Despite sea level rise not being an issue yet in the 1970s, the convention explicitly mentions changes in water level (article 11.4).²⁰

- **Culture and sustainable development, 19 December 2023 A/RES/78/161**

This resolution, adopted by the General Assembly, calls on nations and important stakeholders to protect cultural and natural heritage from risks such as sea level rise. Thus, the resolution recognizes the fact that climate change and rising sea levels impact cultural heritage and that efforts to protect it from such must be accelerated. (17.i)²¹

United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO directly manages World Heritage Sites, and is actively making efforts in order to achieve the Sustainable Development Goals (SDG), which include climate change (SGD 13: Climate Action), meaning also tackling sea level rise.²² The organization has also done several conventions and its mission is directly relevant to the preservation of marine and coastal cultural heritage in the face of rising sea levels.

Maldives

The Maldives are extremely vulnerable to sea level rise, knowing that 80% of the country's islands are less than one meter above the sea level. The most culturally significant sites, such as those

related to the country's Islamic heritage, are at great risk of being damaged irreversibly over the course of next decades.²³

Bangladesh

In Bangladesh, Bagerhat is a city that includes 360 mosques from the 15th century. However, rising sea levels are bringing more flooding and salt water to the city, causing the surfaces to disintegrate more rapidly. Bangladesh has made multiple efforts over the last decade, by adopting the National Adaptation Plan of action (NAPA), establishing climate change funds, and approaching the issue through community-based projects.²⁴

Ghana

Rising sea level is threatening some of the country's historic slave forts and castles built near the ocean. In response, Ghana has built sea walls, planned defence projects like the Keta Sea Defence Wall, asked for international funding and has started managing preservation projects.²⁵

Australia

Inundation and coastal erosion are likely to have a high impact on the indigenous and historic heritage of Australia.²⁶ In response to these threats, organisations have taken part, such as the Australasian Institute for Maritime Archaeology (AIMA), which has the mission of preserving underwater cultural heritage and has also been active internationally, supporting work throughout Asia and the Indian and Pacific Ocean regions.²⁷

The Ocean Foundation

The Ocean Foundation is approved as an Accredited Non-Governmental Organization to UNESCO and the only foundation focused on ocean health.²⁸ The Ocean Foundation incorporates Indigenous and coastal communities in its missions, and is an active participant in global forums. Moreover, it plans to address them through the combination of natural and cultural heritage through ecosystem protection and sustainable development.²⁹

Timeline of Events

Date	Description of event
1863	Modern sea level rise due to climate change first noticed
November 16th, 1972	Convention Concerning the Protection of the World Cultural and Natural Heritage, the first international treaty to protect cultural heritage from threats, such as sea level rise.

1978 First list of World Heritage Sites of protected places published by UNESCO

Previous Attempts to solve the Issue

Tuvalu Coastal Adaptation Project (TCAP)

Under the TCAP the government of Tuvalu carried out projects to minimize the impacts of climate-induced sea level rise and their impact on infrastructure. TCAP is using a variety of measures for coastal protection and focuses on ensuring coastal resilience in three of Tuvalu's nine inhabited islands. As a result, not only infrastructure is protected, but also the cultural heritage of Tuvalu.³⁰

MOSE Project — Flood-Barrier System for Venice, Italy

Venice is at an important risk from rising sea levels, as a report from UNESCO has revealed.³¹ Due to a major flood in 2019, as a preventative measure, MOSE flood protection system was set in operation in October 2020. It includes 78 steel giants which form a protective barrier and was successfully used. Ultimately, it was criticized on whether it should have been engineered earlier. Despite it being able to protect Venice today, it is certainly not a long-term solution as rising sea levels are likely to eventually exceed the barrier's height, and has significant drawbacks such as expensive maintenance work and environmental concerns.³²

Possible Solutions

Research and Monitoring and Data Collection Mechanisms

This way, the heritage sites that are in danger can be identified and nations can act prior to damage being done. It can be done through the use of satellite data and region-specific coastal measurements as sea level varies by region. Lists like the World Heritage Sites list by UNESCO can be made, and archaeologists and climate experts may collaborate to predict long term coastal changes on a timely manner.

Preservation and Adjustment of Coastal and Marine Cultural Heritage Sites

To protect sites from damage due to rising sea levels, natural and artificial barriers should be strengthened such as sea walls. Also, sites that are near water may be lifted on foundations or reinforced accordingly, however this varies by site. Movable items of important cultural heritage could be relocated when deemed necessary by experts.

Coastal Protection Through Community Based Initiatives

Through this solution, locals are engaged in the protection of coastal and marine culture in parallel to strengthening the local economy. Locals can be trained to report changes regularly and jobs related to sustainable heritage tourism can be promoted. To ensure sustainable tourism, digital tourism experience for specific sites can be launched, reducing strain on already fragile sites and also spreading awareness. In addition, we can include Indigenous populations, as their traditional ecological knowledge is vital for the monitoring of marine and cultural heritage.

Special Protection Programs for the Coastal & Marine Cultural Heritage in SIDS

This solution refers to the most exposed nations having the strategies to safeguard their cultural heritage. For starters, the establishment of SIDS heritage preservation funds could be an important step towards the safeguarding of near-water environments of cultural importance, as financing is a major challenge for some. Also, heritage protection forums can be created specifically for SIDS communication, where such nations that face related risks can share expertise and new technologies.

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