Marine World Heritage in the Western Indian Ocean

What is World Heritage?

The 1972 World Heritage Convention conserves and protects cultural and natural heritage of Outstanding Universal Value (OUV). Today, the World Heritage List contains 962 terrestrial and marine sites, in 157 countries. World Heritage natural sites protect almost 2.5 million km^2 of the planet's lands and waters.

World Heritage protects sites of ***Outstanding Universal Value*** – places that are recognized as heritage for all mankind, superlative examples of nature and cultural features on our planet. The convention has had success in conserving special places of which the loss would be irreplaceable. The goal of this project is to identify how best to apply the convention to exceptional places in the marine environment, with a focus on the Western Indian Ocean.

The oceans and World Heritage

More than 70% of the earth's surface is ocean, and more than 90% of its habitable volume. The World Heritage List includes 46 marine sites recognized as World Heritage because of the exceptional biodiversity of their ecosystems, their unparalleled beauty or because they contain geological processes found nowhere else on the planet. Of all 6,000 marine protected areas (MPAs) on the planet, these marine World Heritage sites cover about 1/3 of the total area.

The Western Indian Ocean

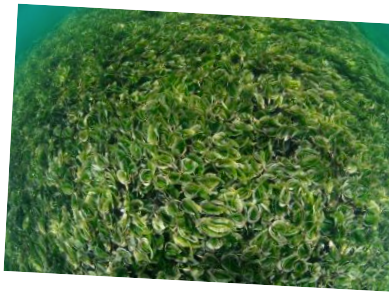
The Western Indo-Pacific (map, below) stretches from Thailand in the east to East Africa and the Red Sea in the west. It has a distinct fauna with up to ¼ of fish species being different from the broader Indo-Pacific. Evolutionarily it has links to the Tethys Sea that once flowed between Africa and Eurasia and the Middle East (250 to 15 million years ago).

The Western Indian Ocean (WIO) is the largest biogeographic province in this region, but among the least studied of the world's seas, posing a great challenge to effective conservation of its biodiversity.

This study was conducted to both pilot a new approach for identifying marine World Heritage (see back page), and to identify exceptional features in the WIO that possibly could become World Heritage. A novel feature of the work was to look for the first time at larger areas than the traditional country-by-country approach. Because many marine features transcend national boundaries, adequate protection of marine WH values will require this larger scale approach.

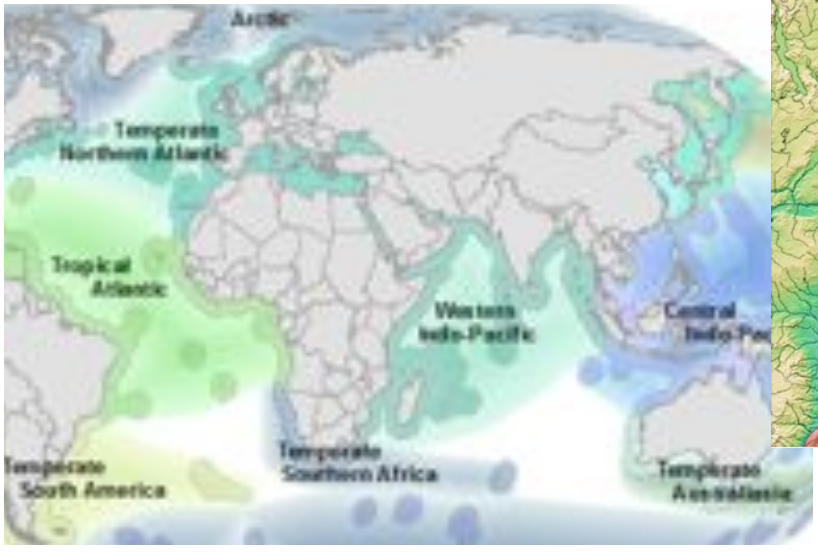
Exceptional marine sites in the Western Indian Ocean

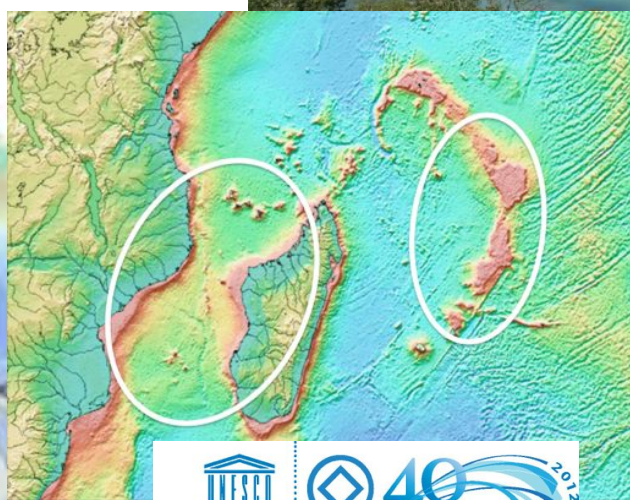
Two features stand out as globally unique in the Western Indian Ocean – the ***Mozambique Channel*** and the ***Mascarene Plateau*** (map, lower right). They are distinct elements of the geological history of the Indian Ocean basin and affect the currents that drive all marine ecosystems and biodiversity in the region, from millions of years ago, until today.



The Mozambique Channel formed over 150 million years ago when Madagascar separated from Africa.

The Mascarene Plateau was formed 40-25 million years ago by volcanic activity of the Mascarene-Reunion hotspot.





Main Findings

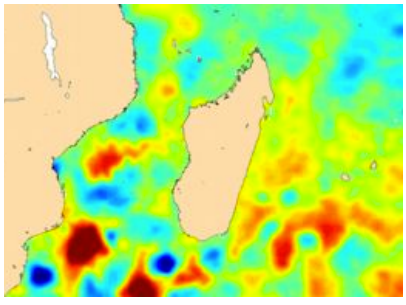
The Mozambique Channel

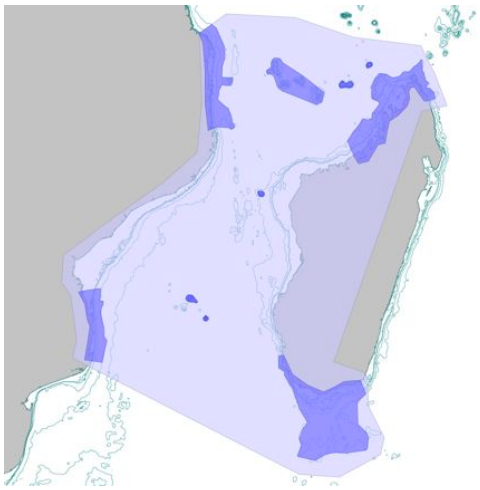
The Mozambique Channel experiences a highly energetic and variable regime of circular currents (eddies, approx. 100-300 km across) that cause water to flow in all directions – north, south, east and west. These fundamentally affect the diversity and productivity of marine ecosystems within the channel. The coral reefs in the northern part of the channel are the most diverse in the Western Indo-Pacific, and represent a second hotspot of tropical marine biodiversity globally.

The open-water food webs in the channel support high concentrations of fish, turtles, marine mammals and seabirds that are critical for the species survival and are spectacular natural phenomena. They also support the coastal and national economic activities of the bordering countries, in sectors such as fisheries and tourism. The Mozambique Channel and East African coast are the prime habitat of the coelacanth, a 'living fossil' that exemplifies the long-term stability of this region.

Selected sites within the Mozambique Channel express some aspect of the geological and/or oceanographic features that make the channel unique globally, combined with biological features best represented at the individual sites:

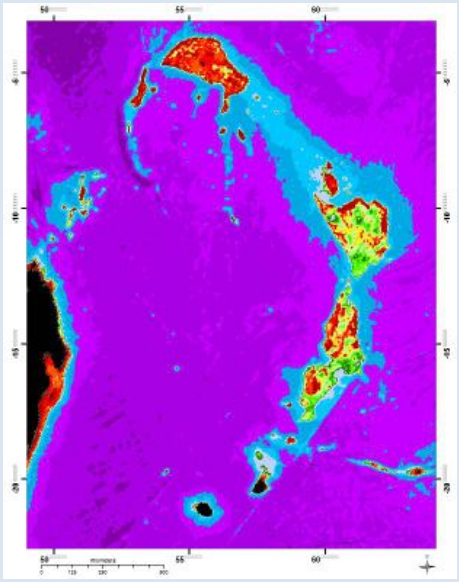
1. Quirimbas - Mtwara
2. Northern Madagascar
3. The Comoro Archipelago
4. The Iles Éparses (Scattered Islands)
5. Tofo – Bazaruto, Mozambique
6. Madagascar Plateau (the Deep South)





The Mascarene Plateau

The Mascarene Plateau was produced from about 40-25 million years ago by a volcanic hotpot, the Mascarene-Reunion volcano. The banks on the plateau (Saya de Malha, Nazareth and Cargados Carajos) rise to just 20 m below the sea surface over 100s of square km, with only a tiny fragment of emergent land at its southern tip, at St. Brandon's Island. The plateau is poorly known, but shows indications of unique oceanographic features and habitats, including the largest seagrass beds in the world, species endemism and significant aggregations of marine mammals and seabirds.



Between them, these regions host the most important and largest populations of vulnerable species such as sharks and large reef fish, and the largest aggregations of migratory species such as whalesharks, marine turtles, seabirds and mammals, in the Western Indian Ocean.

The results here are a guide for future work, and should be considered indicative, as further work may bring to light features of potential OUV in other sites in the region.

Policy Relevance of the Findings

Trans-boundary protection

Importantly for the region, and potentially foretelling the future of marine World Heritage, the two primary areas identified here show the opportunity for inter-governmental cooperation and set a precedent toward a more comprehensive approach when identifying potential new marine sites. Contrary to the traditional country-by-country approach, marine World Heritage requires reflection of features at larger scales meaningful from an ecosystem perspective.

State Parties with jurisdiction over these sites could consider innovative inter-governmental approaches to establish multi-country 'serial sites" for World Heritage protection.

The ***Mozambique Channel*** is fully contained in the Exclusive Economic Zones (EEZs) of 5 countries that are States Parties to the World Heritage Convention: Mozambique, Madagascar, Comoros, Tanzania and France.

The ***Mascarene Plateau*** is more complex - Mauritius and the Seychelles have individual or joint jurisdiction over the entire seabed of the plateau, while the waters over the Saya de Malha Bank are beyond national jurisdiction and in the High Seas.

For both sites identified here, the ***Nairobi Convention*** *(for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region)* is the prime vehicle for intergovernmental cooperation in marine environmental affairs, and all countries in the region are party to both it and the World Heritage Conventions. Visit the Nairobi Convention website at: http://www.unep.org/NairobiConvention/

Further, the islands are signatories to the ***Indian Ocean Commission*** (visit the IOC website at: http://www.coi-ioc.org), and a number of international programmes and organizations support the goals of these intergovernmental bodies, for marine conservation and management in the WIO.

For the Saya de Malha bank, whose waters are in the High Seas and beyond the jurisdiction of individual countries, initiatives under the Convention on Biological Diversity (Ecologically and Biologically Significant Areas, EBSAs) and the United Nations Law of the Sea offer avenues for multi-country cooperation and new approaches to High Seas governance.

An ecosystem approach can considerably enhance future conservation of exceptional marine features on the World Heritage list because this approach is more meaningful from an environmental perspective.

Serial and trans-boundary sites

To cope with new and larger sites, World Heritage has established new categories of sites - "serial" and "transboundary".

A ***serial site*** consists of two or more geographically separate areas that belong to the same geological or biogeographic province, or may be linked directly by ocean currents. For serial site designation, the entire series of sites is required to meet the criteria of OUV, and none of the individual components would meet the criteria of OUV on their own.

A ***transboundary site*** may occur where the features of a site span international boundaries.

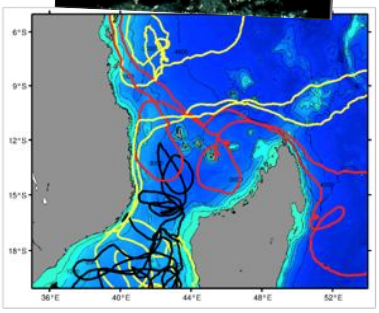
In both cases, the site is listed as a single property on the World Heritage List.

In the example for the Mozambique Channel presented here, if all six locations are nominated as a single integrated cluster, they would be assessed as a single serial transboundary World Heritage site.

Other models include cooperation between World heritage Sites, such as:

a) Sister site cooperation between two World Heritage marine sites in the Pacific: Papahanaumokuakea (USA) and Phoenix Islands Protected Area (Kiribati);
b) a Regional World Heritage marine network in the Eastern Tropical Pacific comprising 4 sites in separate countries: Galápagos (Ecuador), Cocos (Costa Rica), Coiba (Panama) and Malpelo (Colombia).

An example of a serial transboundary site is the Wadden Sea World Heritage Site, comprising several separate pieces in The Netherlands and Germany (map at right).



Background Information on World Heritage

The Convention

The *Convention Concerning the Protection of the World Cultural and Natural Heritage* was adopted by the General Conference of UNESCO in 1972. The primary mission of the Convention is to identify and protect the world's natural and cultural heritage considered to be of "outstanding universal value" (OUV):

Outstanding – the site should be *exceptional*. The World Heritage Convention sets out to define the geography of the superlative – the most outstanding natural and cultural places on Earth.

Universal - The scope of the Convention is *global* in relation to the significance of the properties to be protected as well as its importance to all people of the world. Sites cannot be considered for OUV from only a national or regional perspective.

Value - implies clearly defining the *worth* of a property, ranking its importance based on clear and consistent standards, including the recognition and assessment of its integrity.

Criteria – specific criteria have been established against which a site's values need to be assessed. For natural World Heritage, there are four primary criteria. Every site that aspires to World Heritage status must comply with one or more of these criteria and:

vii. contain superlative **natural phenomena** or areas of **exceptional natural beauty** and aesthetic importance;

viii. be outstanding examples representing **major stages of Earth's history**, including the record of life, significant ongoing **geological processes** in the development of landforms, or significant geomorphic or physiographic features;

ix. be outstanding examples representing significant ongoing **ecological and biological processes** in the **evolution and development** of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

x. Contain the most important and significant **natural habitats** for in situ **conservation of biological diversity**, including those containing threatened species of OUV from the point of view of science or conservation.

How are World Heritage sites selected?

Only countries that are States Parties to the convention can nominate sites to the World Heritage List. The International Union for the Conservation of Nature (IUCN) is the official advisory body that evaluates a site nomination on its natural OUV. The final decision is taken by the World Heritage Committee during its annual meetings, which are traditionally held in June-July. Multiple resources are available to guide the nomination process.

Focused guidance for marine systems is contained in the following reports:

The Western Indian Ocean study formed the basis for this brochure. It was commissioned by the World Heritage Centre with the support of the Govt. of Flanders, in consultation with IUCN. The study used existing data and information to identify the appropriate bio-regional scale at which to apply the assessment, the key physical and biological features that distinguish the region compared to others globally and the sites in the region that exemplify these features and that are of sufficient integrity and scale to potentially meet the criteria of OUV. A consultative meeting with over 40 experts in marine science and conservation was hosted by the Govt. of Ile de la Réunion, France, in February 2012, to finalize recommendations of the report. Full reference - Obura DO, Church JE, Gabrié C (2012) *Assessing Marine World Heritage from an Ecosystem Perspective: The Western Indian Ocean* World Heritage Centre, United Nations Education, Science and Cultural Organization (UNESCO) 124 pp. Obtain the report at: whc.unesco.org/uploads/activities/documents/activity-13-23.pdf

IUCN Thematic report on marine World Heritage – this study addresses broader questions about applying the World Heritage Convention to marine environments globally. It describes and clarifies the nomination process and World Heritage criteria focusing on natural values of marine sites. Based on a global analysis, the report also identifies marine sites that may meet the criteria for OUV emphasizing the gaps among existing marine World Heritage sites in terms of biogeography, habitat and region - Abdulla A, Obura DO, Berstky B (to be released in 2013) *Marine World Heritage Thematic Study*. IUCN

Biogeographic aspects of marine World Heritage – this study presents an initial stock-take using current biogeographic classifications of the marine environment to help build a more representative World Heritage List – Spalding M (2012) Marine World Heritage: Toward a representative, balanced and credible World Heritage List. World Heritage Centre. UNESCO, Paris. Obtain the report at: http://whc.unesco.org/uploads/activities/documents/activity-13-24.pdf

This brochure was produced as an information document for the Ad Hoc Technical meetings of the Nairobi Convention and WIO Consortium of NGOs, August 2012, Maputo, Mozambique. It will be updated based on feedback during those meetings.

Existing marine World Heritage sites in the Western Indian Ocean

Aldabra Atoll (Seychelles)

Was inscribed on the World Heritage List in 1982. The site is an outstanding example of biological evolution, containing superlative natural phenomena and the only habitat where a number of animals of OUV can survive

iSimangaliso Wetland Park, (South Africa)

Was inscribed on the World Heritage List in 1999 (then the Greater St Lucia Wetlands Park). The site consists of 13 contiguous protected areas comprising the largest estuarine system in Africa and the southernmost extension of coral reefs on the continent.

For further information :

World Heritage marine programme:
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IUCN World Heritage office:
http://www.iucn.org/worldheritage/

Western Indian Ocean project
http://www.vliz.be/projects/marineworldheritage/indianocean.php

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