Convention on Biological Diversity

UNDP

Aichi Biodiversity Target 11 Country Dossier: ERITREA

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GLOSSARY

AZEs	Alliance for Zero Extinction sites
CEPF	Critical Ecosystem Partnership Fund
EBSA	Ecologically or Biologically Significant Marine Area
EEZ	Exclusive Economic Zone
GCF	Green Climate Fund
GD-PAME	Global Database on Protected Area Management Effectiveness
GEF	Global Environment Facility
IBA	Important Bird and Biodiversity Area
ICCAs	Indigenous and Community Conserved Area Area (may also be referred to as territories and areas conserved by Indigenous peoples and local communities or "territories of life")
IPLC	Indigenous Peoples and Local Communities
KBA	Key Biodiversity Area
MEOW	Marine Ecosystems of the World
MPA	Marine Protected Area
NBSAP	National Biodiversity Strategy and Action Plan
OECM	Other Effective Area-Based Conservation Measures
PA	Protected Area
PAME	Protected Area Management Effectiveness
PPA	Privately Protected Area
PPOW	Pelagic Provinces of the World
ProtConn	Protected Connected land indicator
SOC	Soil Organic Carbon
TEOW	Terrestrial Ecosystems of the World
WDPA	World Database on Protected Areas
WD-OECM	World Database on Other Effective Area-Based Conservation Measures

Disclaimer

The designations employed and the presentation of material in this dossier do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Convention on Biological Diversity (SCBD) or United Nations Development Programme (UNDP) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The information contained in this publication do not necessarily represent those of the SCBD or UNDP.

This country dossier is compiled by the UNDP and SCBD from publicly available information. It is prepared, within the overall work of the Global Partnership on Aichi Biodiversity Target 11, for the purpose of attracting the attention of the Party concerned and other national stakeholders to facilitate the verification, correcting, and updating of country data. The statistics might differ from those reported officially by the country due to differences in methodologies and datasets used to assess protected area coverage and differences in the base maps used to measure terrestrial and marine area of a country or territory. Furthermore, the suggestions from the UNDP and SCBD are based on analyses of global datasets, which may not necessarily be representative of national policy or criteria used at the national level. The analyses are also subject to the limits inherent in global indicators (precision, reliability, underlying assumptions, etc.). Therefore, they provide useful information but cannot replace analyses at a national level nor constitute a future benchmark for national policy or decision-making.

The preparation of this dossier was generously supported by: the Government of the Federal Republic of Germany, *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GMbH*; the European Commission; the Government of the United Kingdom of Great Britain and Northern Ireland; and the Government of Japan (Japan Biodiversity Fund). The dossier does not necessarily reflect their views.

EXECUTIVE SUMMARY

This document provides information on the coverage of protected areas (PAs) and other effective area-based conservation measures (OECMs), as currently reported in global databases (the World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM)). It also includes details on the status of the other qualifying elements of Aichi Biodiversity Target 11 based on this data. These statistics might differ from those reported officially by countries due to difference in methodologies and datasets used to assess protected area coverage, differences in the base maps used to measure terrestrial and marine area of a country or territory, or if global datasets differ from the criteria and indicators used at the national level. Where available, data from national statistics for the elements of Target 11 are included alongside records from these global databases. This dossier also provides a summary of commitments made under Aichi Biodiversity Target 11, and a summary of potential opportunities regarding elements of the target for future planning.

The dossier has been developed in consultation with the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), which manages the WDPA, WD-OECM and Global Database on Protected Area Management Effectiveness (GD-PAME). Parties to the CBD are requested to contact protectedareas@unep-wcmc.org with any updates to the information in these databases.

Aichi Biodiversity Target 11 Elements: Current status and opportunities for action

Coverage - Terrestrial & Marine

- **Status:** as of May 2021, terrestrial coverage in Eritrea is 5,936.2 km^2 (4.9%) and marine coverage is 0.0 km^2 (0.0%); including 11 proposed PAs (if designated) increases coverage to >15% terrestrial and approximately 18% marine.

- **Opportunities for action:** opportunities for the near-term include updating the WDPA with any unreported PAs, and the recognizing and reporting OECMs to the WD-OECM. In the future, focus on relatively intact areas, while addressing the elements in the following sections, could be considered when planning new PAs or OECMs.

Ecological Representativeness– Terrestrial & Marine

- **Status:** Eritrea contains 6 terrestrial ecoregions, 2 marine ecoregions, and 1 pelagic province: the mean protected coverage by reported PAs and OECMs is 3.5% (terrestrial), 0.0% (marine), and 0.0% (pelagic); 2 terrestrial ecoregions, 2 marine ecoregions, and 1 pelagic province have no coverage by reported PAs and OECMs (1 terrestrial ecoregion covers <0.1% of the country). Nationally, Eritrea uses regional centers of endemism and agro-ecological zones; PA coverage has not yet been assessed, but most appear to have at least partial coverage from proposed PAs.

- **Opportunities for action:** there is opportunity for Eritrea to increase protection in ecoregions, regional centers of endemism and agro-ecological zones that have lower levels of coverage by PAs or OECMs. Ecoregions which currently have no coverage by PAs or OECMs are key areas for action.

Areas Important for Biodiversity

- **Status:** Eritrea has 15 Key Biodiversity Areas (KBAs): the mean protected coverage of KBAs by reported PAs and OECMs is 13.3%, while 13 KBAs have no coverage by reported PAs and OECMs.

- **Opportunities for action:** there is opportunity for Eritrea to increase protection of KBAs that have lower levels of coverage by PAs and OECMs; priority could be given to those with no current coverage.

Areas Important for Ecosystem Services

- **Status:** coverage of areas important for ecosystem services: In Eritrea, 2.1% of aboveground biomass carbon, 2.0% of belowground biomass carbon, 5.3% of soil organic carbon, 0.0% of carbon stored in marine sediments is covered by PAs and OECMs.

- **Opportunities for action:** for carbon, there is opportunity for Eritrea to increase PA and OECM coverage in both marine and terrestrial areas with high carbon stocks. Protecting areas with high carbon stocks secures the benefits of carbon sequestration in the area.

- For water, there is opportunity to increase the area of the water catchment under protection by PAs and OECMs, or in cases where there is high levels of protection, focus on effective management for these areas. Protecting the current area of forested land and potentially reforesting would have benefits for improving water security.

Connectivity and Integration

- **Status:** coverage of protected-connected lands is 3.2%.

- **Opportunities for action:** there is opportunity for a general increase of PA or OECM cover and to focus on PA and OECM management for enhancing and maintaining connectivity. Improving connectivity increases the effectiveness of PAs and OECMs and reduces the impacts of fragmentation.

- As well, a range of suggested steps for enhancing and supporting integration are included in the voluntary guidance on the integration of PAs and OECMs into the wider land- and seascapes and mainstreaming across sectors to contribute, inter alia, to the SDGs (Annex I of COP Decision 14/8).

Governance Diversity

- **Status:** the most common governance type(s) for reported PAs in Eritrea is: 100.0% under governance by Government (Federal or national ministry or agency).

- **Opportunities for action:** explore opportunities for governance types that have lower representation, for Eritrea this could relate to governance by Indigenous Peoples and/or local communities (IPLC), shared governance, etc.

- There is also opportunity for Eritrea to complete governance and equity assessments, to establish baselines and identify relevant actions for improvement. As well, a range of suggested actions are included in the voluntary guidance on effective governance models for management of protected areas, including equity (Annex II of COP Decision 14/8).

Protected Area Management Effectiveness

- **Status:** 0.0% of terrestrial PAs and 0.0% of marine PAs have completed Protected Area Management Effectiveness (PAME) assessments reported. Eritrea notes that: as to management effectiveness and governance, those reported protected and conserved area can be considered as effective endeavors.

- **Opportunities for action:** the 60% target for completed management effectiveness assessments (per COP Decision X/31) **has not** been met for terrestrial PAs and **has not** been met for marine PAs. Therefore, there is opportunity to increase protected area management effectiveness (PAME) evaluations for both terrestrial and marine PAs to achieve the target.

- There is also opportunity to implement the results of completed PAME evaluations, to improve the quality of management for existing PAs and OECMs (e.g. through adaptive management and information sharing, increasing the number of sites reporting 'sound management') and to increase reporting of biodiversity outcomes in PAs and OECMs.

INTRODUCTION

The Strategic Plan for Biodiversity 2011-2020 was adopted at the tenth meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) held in Nagoya, Aichi Prefecture, Japan from 18-29 October 2010. The vision of the Strategic Plan is one of "Living in harmony with nature" where *"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people"* (CBD, 2010). In addition to this vision, the Strategic Plan is composed of 20 targets, under five strategic goals. Aichi Biodiversity Target 11 states that *"By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes."*

With the conclusion of the Aichi Biodiversity Targets in 2020, Target 11 on area-based conservation has seen success in the expansion of the global network of protected areas (PA) and other effective area-based conservation measures (OECMs). The negotiation of the post-2020 Global Biodiversity Framework (GBF) and its future targets provide an essential opportunity to further improve the coverage of PAs and OECMs, to improve other aspects of area-based conservation, to accelerate progress on biodiversity conservation more broadly, while also addressing climate change, and the Sustainable Development Goals. This next set of global biodiversity targets are to be adopted at the fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity. These new targets must aim to build upon lessons learned from the last decade of progress to deliver transformative change for the benefit of nature and people, to realize the 2050 Vision for biodiversity.

The United Nations Development Programme (UNDP) and the Secretariat of the Convention on Biological Diversity have developed the Aichi Biodiversity Target 11 Country Dossiers, which provide countries with an overview of the status of Target 11 elements, opportunities for action, and a summary of commitments made by Parties over the last decade. Each dossier can support countries in assessing their progress on key elements of Aichi Biodiversity Target 11 and identifying opportunities to prioritize new protected areas and OECMs.

This dossier provides an overview of area-based conservation in Eritrea. Section I of the dossier presents data on the current status of Eritrea's PAs and OECMs. The data presented in Section I relates to each element of Target 11. Section I also presents the PA and OECM coverage for two critical ecosystem services: water security and carbon stocks. In addition, the dossier presents potential opportunities for action for Eritrea, in relation to each Target 11 element. The analyses present options for improving Eritrea's area-based conservation network to achieve enhanced protection and benefits for livelihoods and climate change. Section II presents details on Eritrea's existing PA and OECM commitments as a summary of existing efforts towards achieving Target 11. This gives focus not only to national policy and actions but also voluntary commitments to the UN. Furthermore, where data is

available, this dossier provides information on potential OECMs, Indigenous and Community Conserved Areas (ICCAs; also, often referred to as territories and areas conserved by Indigenous peoples and local communities or "territories of life") and Privately Protected Areas (PPAs) and the potential contribution they will have in achieving the post-2020 targets.

The information on PAs and OECMs presented here is derived from the World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM). These databases are joint products of UNEP and IUCN, managed by UNEP-WCMC, and can be viewed and downloaded at www.protectedplanet.net. Parties are encouraged to provide data on their PAs and OECMs to UNEP-WCMC for incorporation into the databases (see e.g., Decisions 10/31 and 14/8). The significant efforts of Parties in updating their data in the build up to the publication of the Protected Planet Report 2020 (UNEP-WCMC and IUCN, 2021) were greatly appreciated. UNEP-WCMC welcomes further updates, following the data standards described here (www.wcmc.io/WDPA_Manual), and these should be directed to protectedareas@unep-wcmc.org. The statistics presented in this dossier are derived from the May 2021 WDPA and WD-OECM releases, unless explicitly stated otherwise. Readers should consult www.protectedplanet.net for the latest coverage statistics (updated monthly).

Some data from the WDPA and WD-OECM are not made publicly available at the request of the data-provider. This affects some statistics, maps, and figures presented in this dossier. Statistics provided by UNEP-WCMC (terrestrial and marine coverage) are based upon the full dataset, including restricted data. All other statistics, maps, and figures are based upon the subset of the data that is publicly available.

Where data is less readily available, such as for potential OECMs, ICCAs and PPAs, data has also been compiled from published reports and scientific literature to provide greater awareness of these less commonly recorded aspects. These data are provided to highlight the need for comprehensive reporting on these areas to the WDPA and/or WD-OECM. Parties are invited to work with indigenous peoples, local communities and private actors to submit data under the governance of these actors, with their consent, to the WDPA and/or WD-OECM.

Overall, PAs and OECMs are essential instruments for biodiversity conservation and to sustain essential ecosystem services that support human well-being and sustainable development, including food, medicine, and water security, as well as climate change mitigation and adaptation and disaster risk reduction. The data in this dossier, therefore, aims to celebrate the current contributions of PAs and OECMs, whilst the gaps presented hope to encourage greater progress, not just for the benefit of biodiversity and the post-2020 GBF, but also to recognize the essential role of PAs and OECMs to the Sustainable Development Goals and for addressing the climate crisis.

SECTION I: CURRENT STATUS

Aichi Biodiversity Target 11 refers to both protected areas (PAs) and other effective area-based conservation measures (OECMs). This section provides the current status for all elements of Aichi Biodiversity Target 11 where indicators with global data are available. Statistics for all elements are presented using data on both PAs and OECMs (where this data is available and reported in global databases like the WDPA and WD-OECM). It is recognized that statistics reported in the WPDA and WD-OECM might differ from those reported officially by countries due to differences in methodologies and datasets used to assess protected area coverage and differences in the base maps used to measure terrestrial and marine area of a country or territory. Details on UNEP-WCMC's methods for calculating PA and OECM coverage area available here. The global indicators adopted here for presenting the status of other elements of Target 11 may also differ from those in use nationally. Where available, results from national reporting are also included.

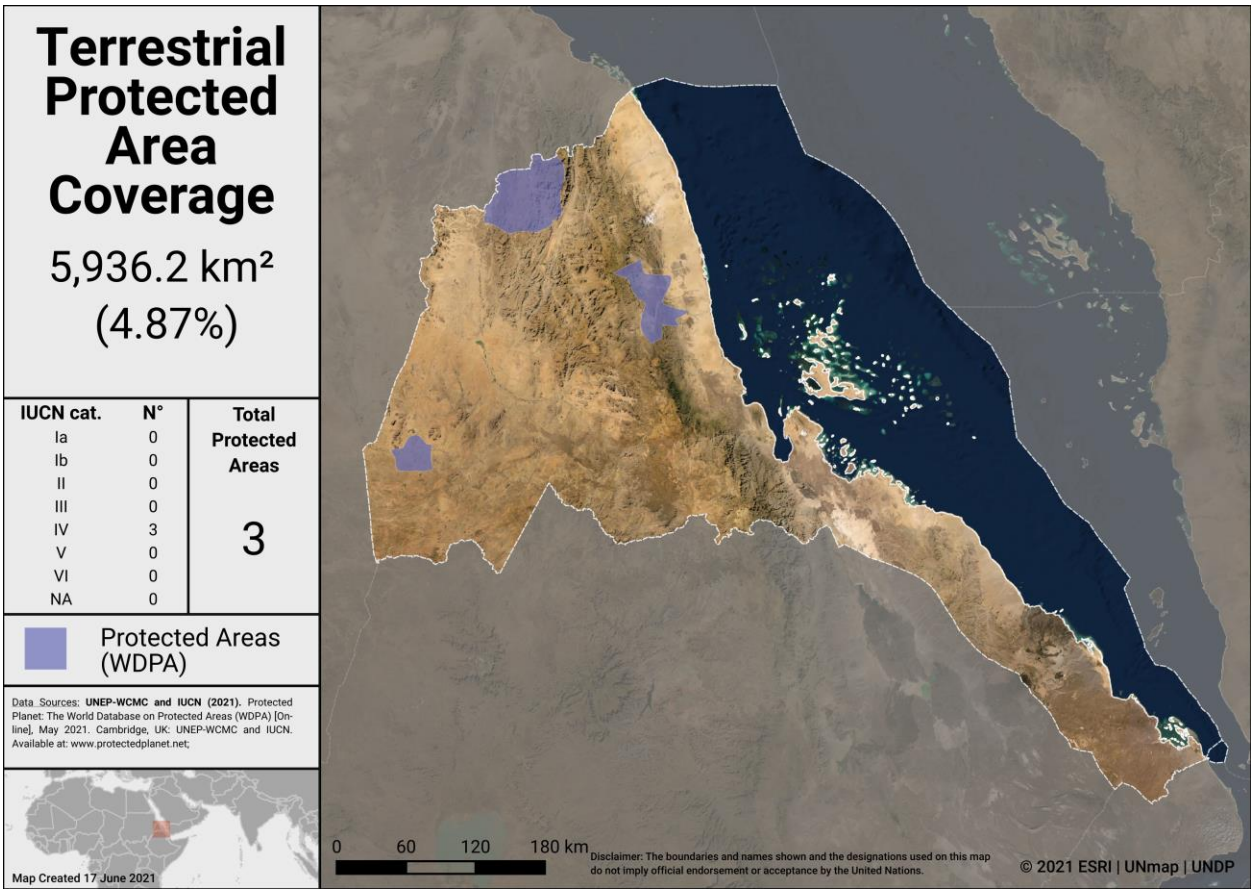
COVERAGE - TERRESTRIAL & MARINE

As of May 2021, Eritrea has 4 protected areas[1] reported in the World Database on Protected Areas (WDPA). 1 proposed PA is not included in the following statistics (see details on UNWP-WCMC's methods for calculating PA and OECM coverage **here**).

As of May 2021, Eritrea has **0** OECMs reported in the world database on OECMs (WD-OECM).

Current coverage for Eritrea:

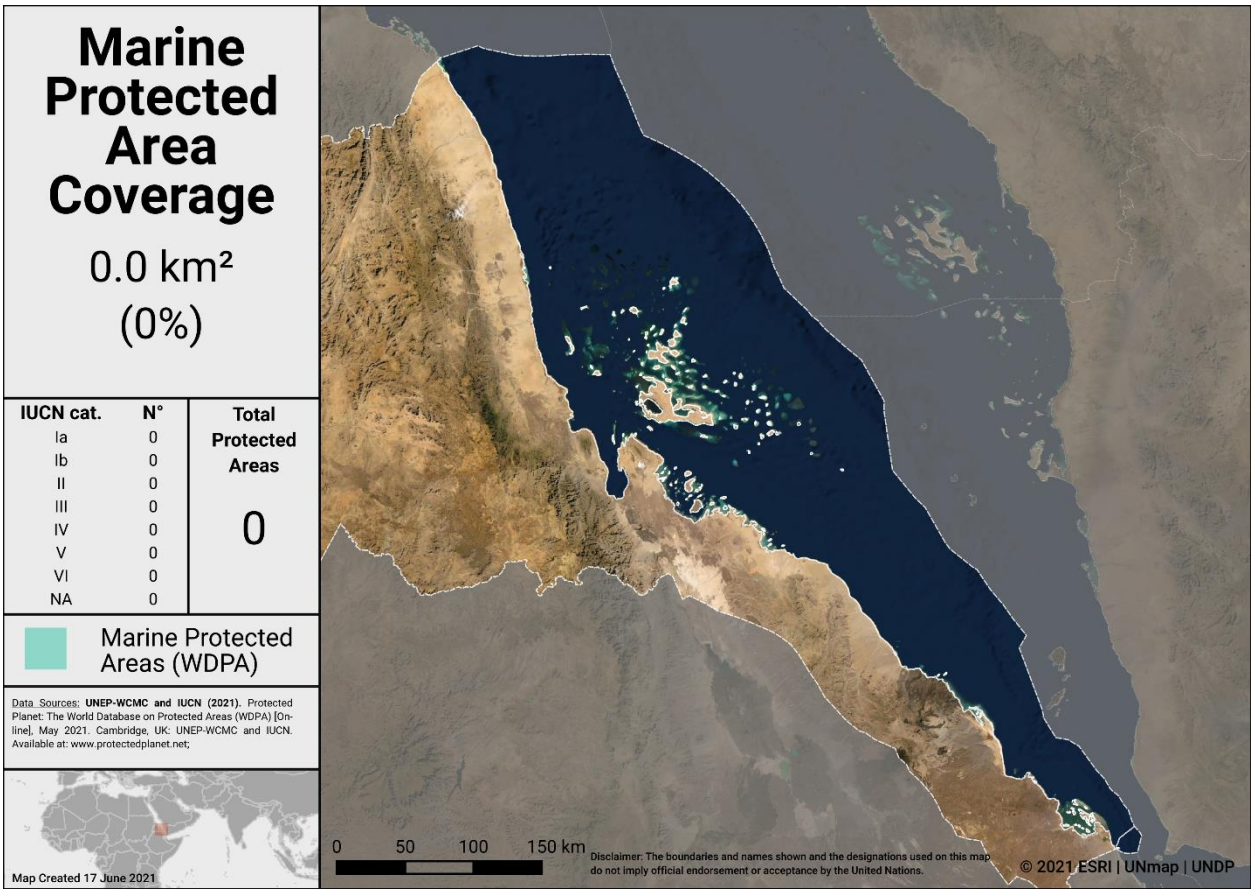
- 4.9% terrestrial (3 protected areas, 5,936.2 km^2)
- 0.0% marine (0 protected areas, 0.0 km^2)



Terrestrial Protected Areas in Eritrea

[1] Now, 11 sites are included in the WDPA (though all are listed as 'proposed'); current coverage is now 0% terrestrial and 0% marine.

Eritrea has identified four priority areas for protection, and these are: Semienawi and Debubawi Bahri (106,000 ha), Buri-Irori-Hawakil (867,000 ha), Berasole estuary (13,100ha) and the Gash-Setit Elephant Sanctuary (44,000ha). Although not officially gazetted, Semienawi and Debubawi Bahri protected area and the Gash-Setit Elephant Sanctuary, which encompasses 150,000 ha (~1.2% of the country) are demarcated and well protected through government directives. Bure-Irori-Hawakil and Berasole (about 7% of the country) are also expected to be demarcated and zoned in the coming two years (see Annex 1 for map of priority sites).



Marine Protected Areas in Eritrea

Eritrea has noted that there is little progress in establishing marine protected areas. The MoMR proposed Dessie/ Madot and Sheik Said Island to be designated as protected area. However, no action has been taken so far to declare the sites. These islands are small in size and there is a need to identify more islands/or coastal areas for protected areas.

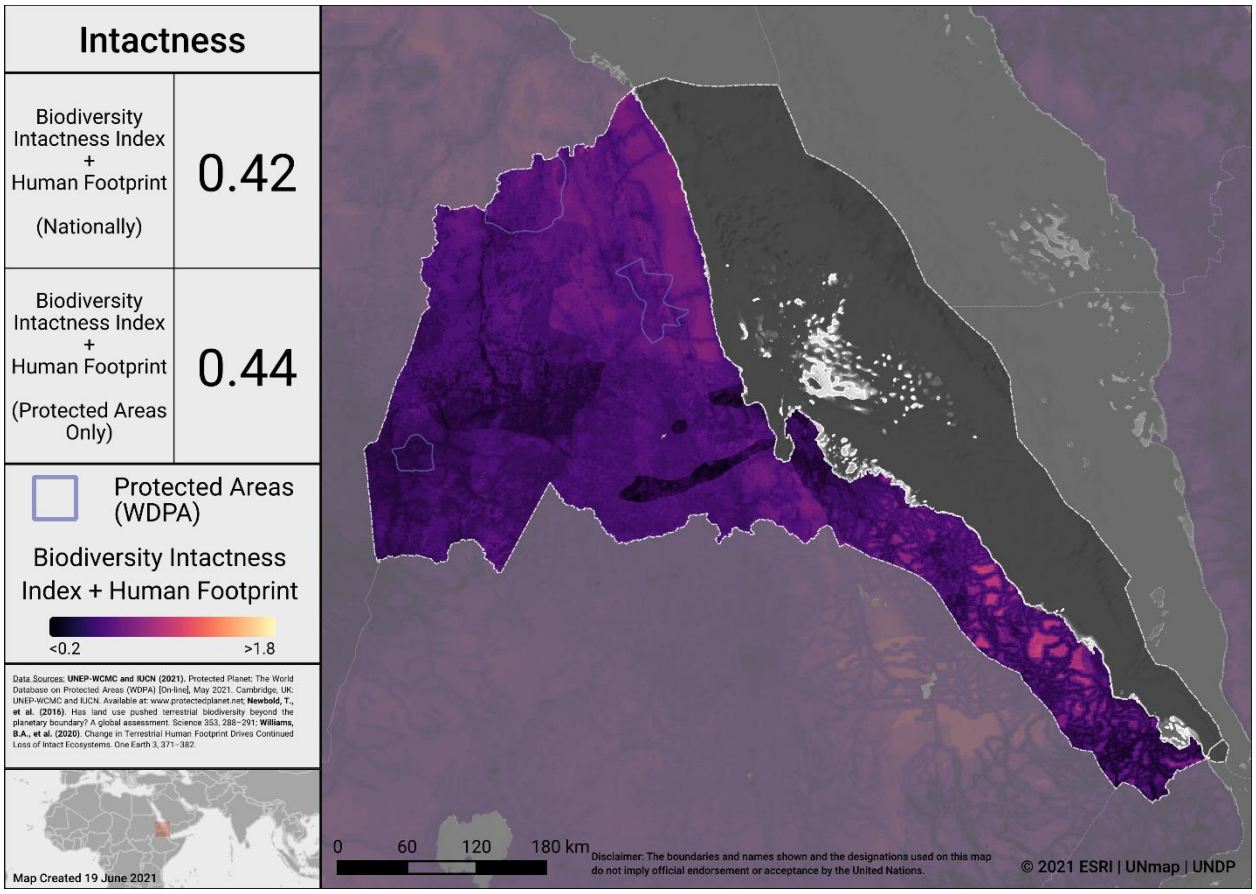
As of October 2021, Eritrea now has 11 proposed sites reported in the WDPA (see country profile for map of these 11 proposed sites). If these 11 proposed sites are designated, terrestrial coverage could surpass 15% and marine coverage could reach 18%.

Potential OECMs

Communities' conserved areas (enclosures) could be considered as OECMs. Eritrea has communities' conserved areas (enclosures) which are common in the highlands. The village level enclosures are mainly designed to rehabilitate degraded landscapes and sustainably manage wooded lands/forests around villages. These enclosures contribute to biodiversity conservation by serving as habitat to many wild animals. The enclosure areas are established and managed by the local community through customary laws. Cases related to dispute and transgression of the local rules and regulations are settled based on customary laws. The total area of these enclosures (conserved areas) is estimated at 224,890 ha (~1.8% of the country).

Opportunities for action

Opportunities for the near-term include updating the WDPA with any unreported PAs, and the recognizing and reporting OECMs to the WD-OECM. In the future, as Eritrea considers where to add new PAs and OECMs, the map below identifies areas in Eritrea where intact terrestrial areas are not currently protected. Focus on relatively intact areas, while addressing the elements in the following sections, could be considered when planning new PAs or OECMs.



Intactness in Eritrea

To explore more on intactness visit the UN Biodiversity Lab: map.unbiodiversitylab.org.

ECOLOGICAL REPRESENTATIVENESS – TERRESTRIAL & MARINE

Ecological representativeness is assessed, globally, based on the PAs and OECMs coverage of broad-scale biogeographic units. Globally, ecoregions have been described for terrestrial areas (Dinerstein et al, 2017), marine coastal and shelf ecosystems (to a depth of 200m; Spalding et al 2007) and surface pelagic waters (Spalding et al 2012).

Nationally, Eritrea uses several other indicators (regional centers of endemism, and agro-ecological zones).[2]

The natural vegetation map of Africa includes 20 major regional centers of endemism, out of which five are represented in Eritrea.[3] These centers give rise to distinct vegetation types rich in biodiversity. When climate, soil types and other parameters are taken into account, Eritrea is divided into six agro-ecological zones: (i) the Moist Highlands, (ii) Arid Highlands, (iii) Sub-Humid Highlands, (vi) Moist Lowlands, (v) Arid Lowlands and (vi) the Semi-Desert (see map in Annex I). Elevation ranges from 100m (Semi-Desert) to 3018m (Moist Highlands). Mean annual temperature ranges from 15°C in the Moist and Arid Highlands to 32°C in the Semi-Desert. Annual precipitation varies from less than 200 mm in the Semi-Desert to 1100 mm in the Sub-Humid Zone (see Eritrea's Sixth National Report to the CBD for further details.

PA coverage of regional centers of endemism, and agro-ecological zones has not yet been assessed, but most appear to have at least partial representation within proposed PAs.

Eritrea has 6 **terrestrial** ecoregions (based on Dinerstein et al 2017). Out of these:

- 4 ecoregions have at least some coverage from PAs and OECMs.
  - 1 unprotected ecoregion covers <0.1% of the country; the other will have PA coverage if proposed PAs area designated
- 0 ecoregions have at least 17% protected within the country.
- The average coverage of terrestrial ecoregions is 3.5%.

Eritrea has 2 **marine** ecoregions and 1 **pelagic province**. Out of these:

- 0 marine ecoregions and 0 pelagic provinces have at least some coverage from reported PAs and OECMs.
- The average coverage of marine ecoregions is 0.0% and the coverage of the 1 pelagic province is 0.0%.

A full list of terrestrial ecoregions in Eritrea is available in Annex II.

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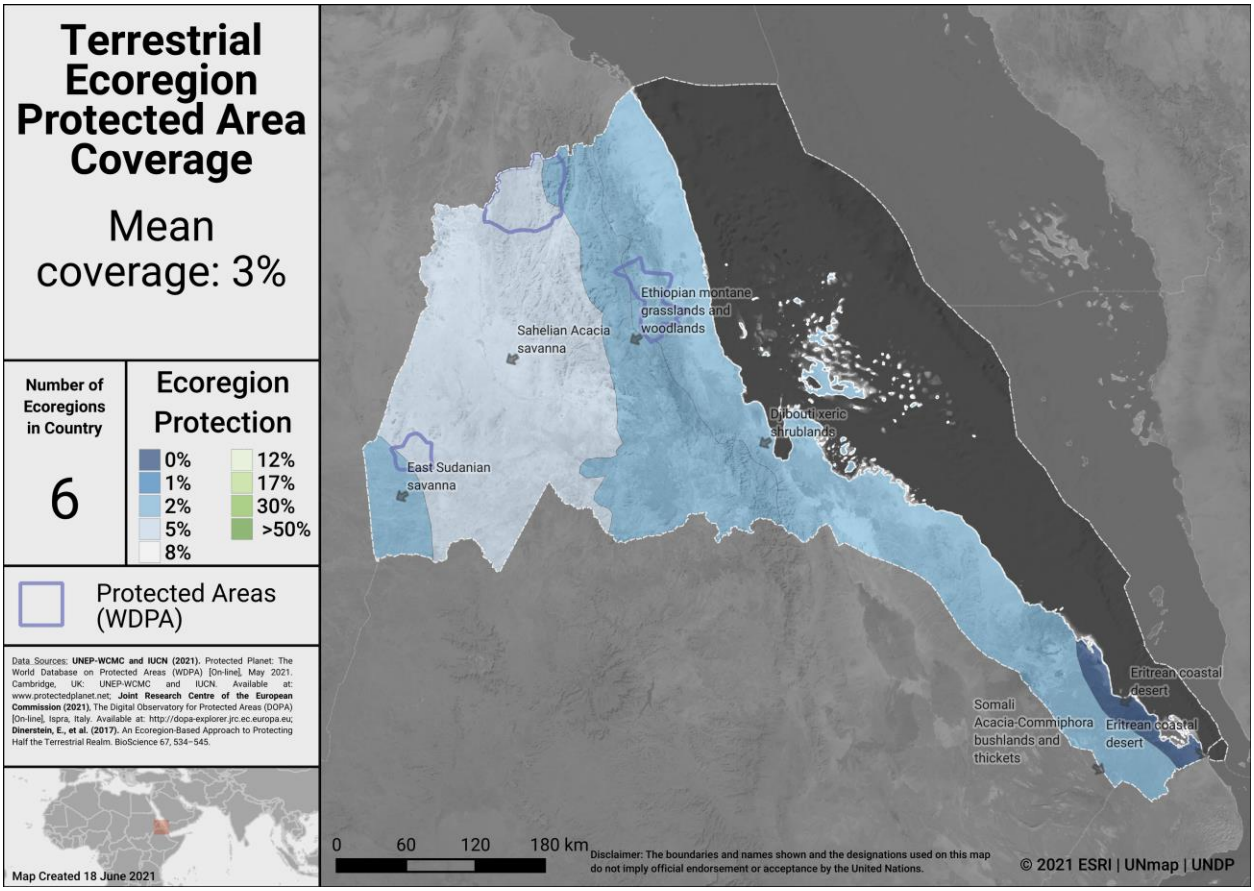
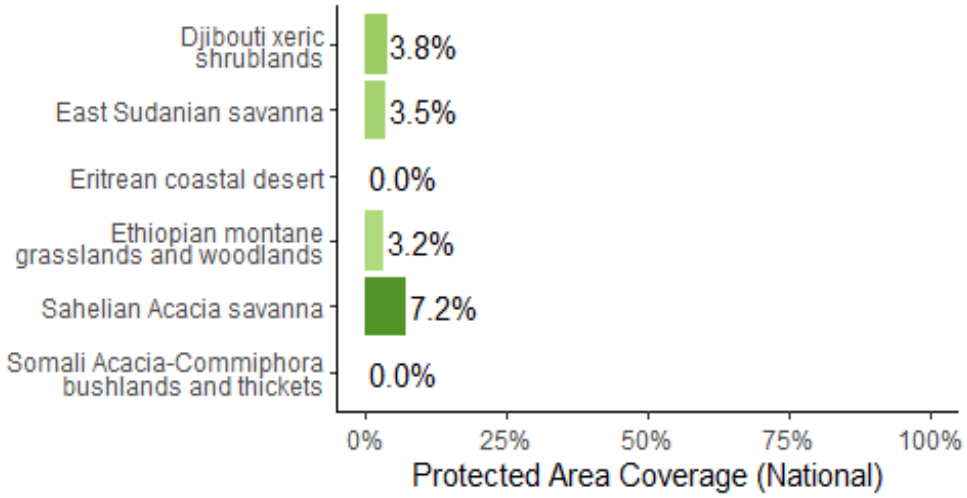
[2] See maps in Annex I

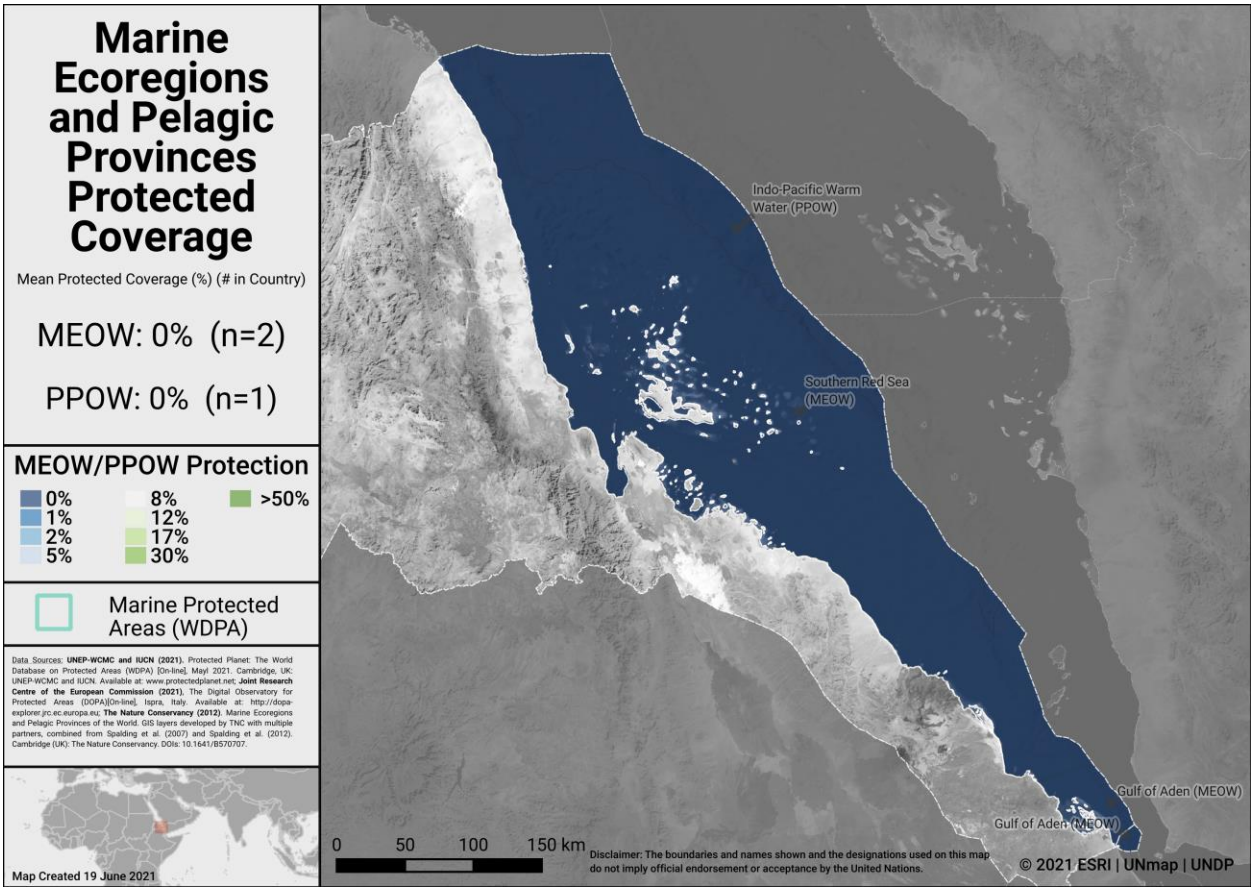
[3] These are Afromontane region, Sudanian region, Somali-Masai region, the Sahelian region and the Sahara regional transitional zone (White, 1983 cited in DoE, 1999 and Ogbazghi et al, 2004).



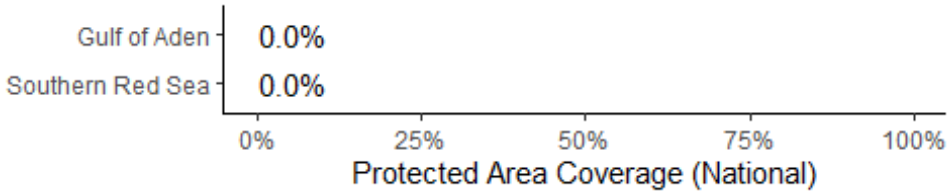
Terrestrial ecoregions in Eritrea



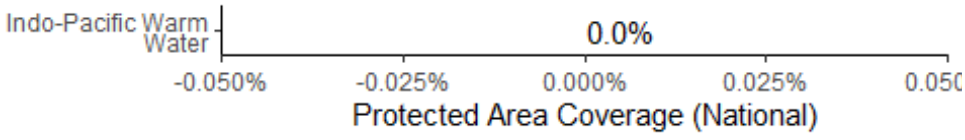
Terrestrial ecoregions of the World (TEOW) in Eritrea



Marine ecoregions and pelagic provinces



Marine Ecoregions of the World (MEOW) in Eritrea



Pelagic Provinces of the World (PPOW) in Eritrea

The 11 proposed PAs in Eritrea, if designated, will increase coverage for 1 unprotected terrestrial ecoregion, 1 unprotected marine ecoregion, and 1 unprotected pelagic province, and also increase coverage for other terrestrial ecoregions.

Opportunities for action

There is opportunity for Eritrea to increase protection in terrestrial and marine ecoregions and pelagic provinces that have lower levels of coverage by PAs or OECMs. Ecoregions which currently have no coverage by PAs or OECMs are key areas for action.

AREAS IMPORTANT FOR BIODIVERSITY

Key Biodiversity Areas (KBAs)

Protected area and OECM coverage of Key Biodiversity Areas (KBAs) provide one proxy for assessing the conservation of areas important for biodiversity at national, regional and global scales. KBAs are sites that make significant contributions to the global persistence of biodiversity (IUCN, 2016). The KBA concept builds on four decades of efforts to identify important sites for biodiversity, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and KBAs identified through Hotspot ecosystem profiles supported by the Critical Ecosystem Partnership Fund. Incorporating these sites, the dataset of internationally significant KBAs includes Global KBAs (sites shown to meet one or more of 11 criteria in the Global Standard for the Identification of KBAs, clustered into five categories: threatened biodiversity; geographically restricted biodiversity; ecological integrity; biological processes; and irreplaceability), Regional KBAs (sites identified using pre-existing criteria and thresholds, that do not meet the Global KBA criteria based on existing information), and KBAs whose Global/Regional status is Not yet determined, but which will be assessed against the global KBA criteria within 8-12 years. Regional KBAs are often of critical international policy relevance (e.g., in EU legislation and under the Ramsar Convention on Wetlands), and many are likely to qualify as Global KBAs in future once assessed for their biodiversity importance for other taxonomic groups and ecosystems. To date, nearly 16,000 KBAs have identified globally, and information on each of these is presented in the World Database of Key Biodiversity Areas: www.keybiodiversityareas.org.

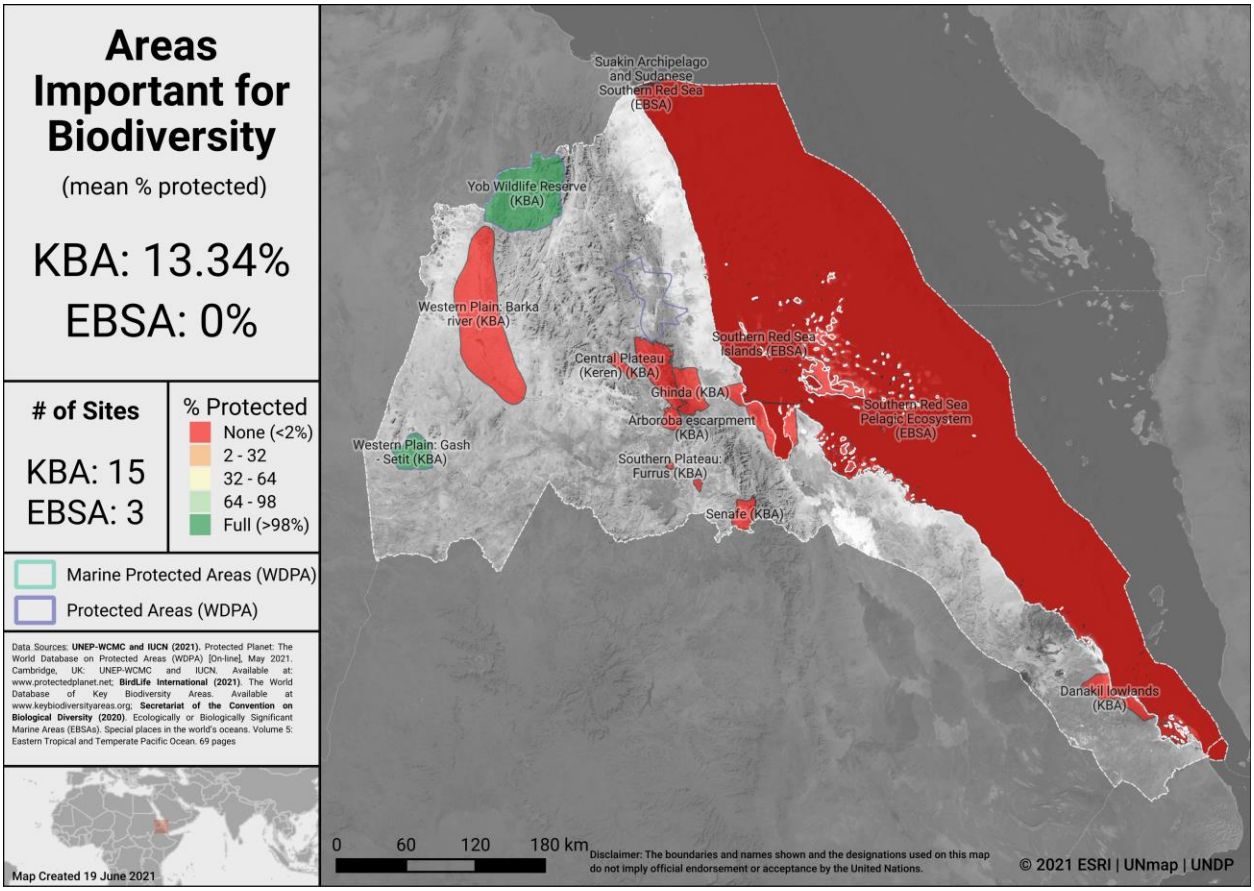
Eritrea has **15** Key Biodiversity Areas (KBAs).

- Mean percent coverage of all KBAs by PAs and OECMs in Eritrea is **13.3%**.
- **2** KBAs have full (>98%) coverage by PAs and OECMs.
- **0** KBAs have partial coverage by PAs and OECMs.
- **13** KBAs have no (<2%) coverage by PAs and OECMs.

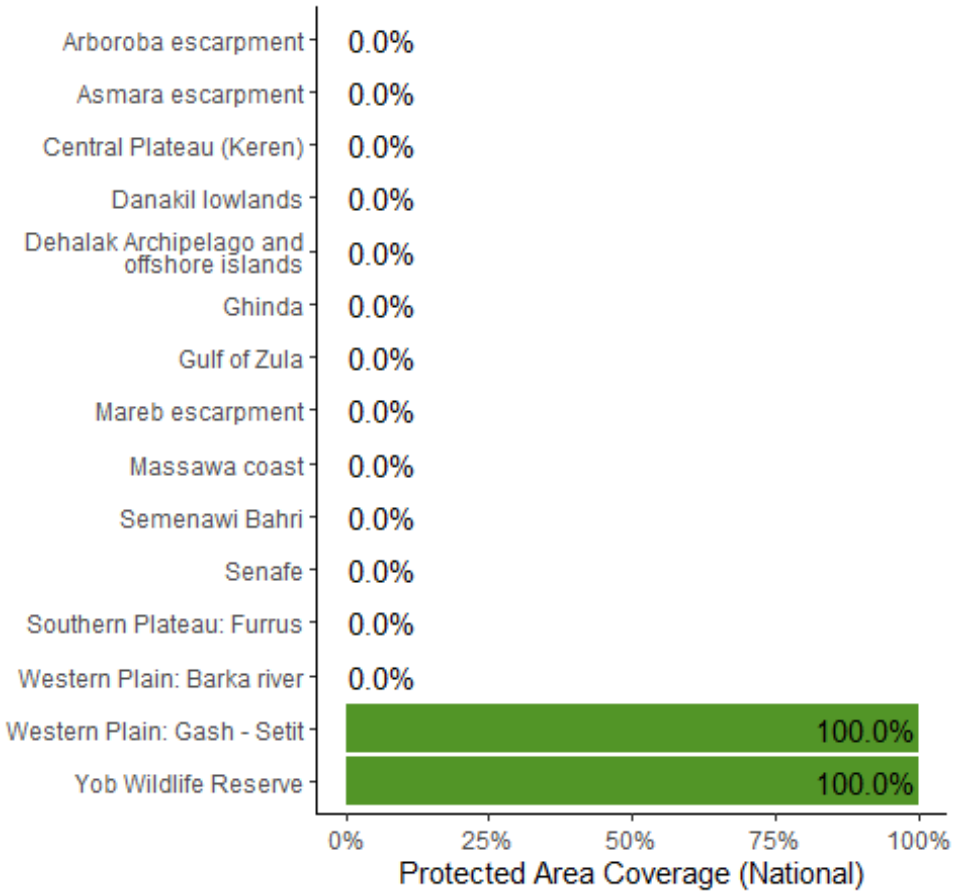
Ecologically or Biologically Significant Marine Areas (EBSAs)

Other important areas for biodiversity also include Ecologically or Biologically Significant Marine Areas (EBSAs), which were identified following the scientific criteria adopted at COP-9 (Decision IX/20; see more at: https://www.cbd.int/ebsa/). Sites that meet the EBSA criteria may require enhanced conservation and management measures; this could be achieved through means including MPAs, OECMs, marine spatial planning, and impact assessment. There are 3 EBSAs with some portion of their extent within Eritrea's EEZ, of which all 3 have no coverage from PAs or OECMs.

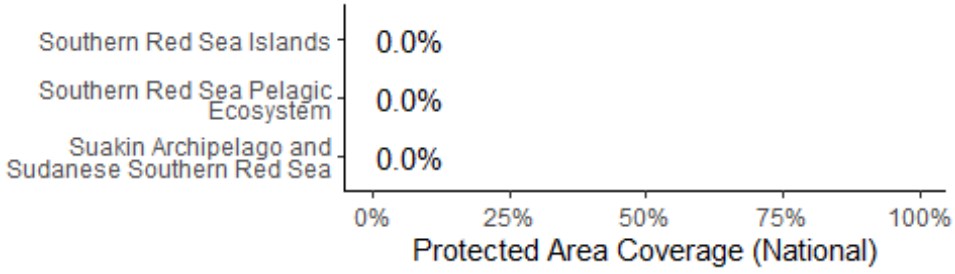
Coverage of KBAs and EBSAs may increase once the 11 proposed PAs in Eritrea are designated.



Areas Important for Biodiversity in Eritrea



Key Biodiversity Area Coverage (KBA) in Eritrea



Ecologically or Biologically Significant Marine Areas (EBSAs) in Eritrea

Opportunities for action

There is opportunity for Eritrea to increase protection of KBAs that have lower levels of coverage by PAs and OECMs; priority could be given to those with no current coverage.

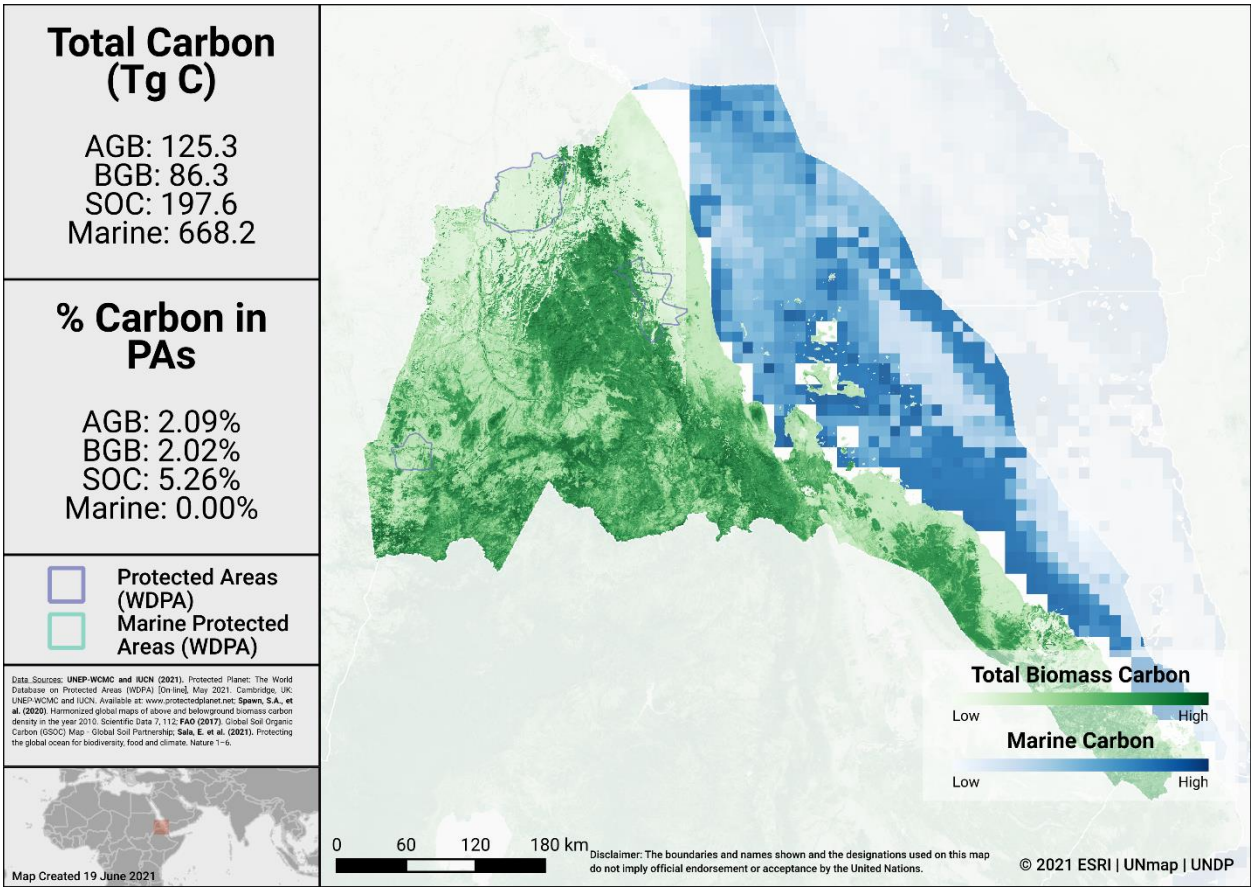
AREAS IMPORTANT FOR ECOSYSTEM SERVICES

There is no single indicator identified for assessing the conservation of areas important for ecosystem services. For simplicity, two services with available global datasets are assessed here (carbon and water). In future, other critical ecosystem services could be explored.

Carbon

Data for biomass carbon comes from temporally consistent and harmonized global maps of aboveground biomass and belowground biomass carbon density (at a 300-m spatial resolution); the maps integrate land-cover specific, remotely sensed data, and land-cover specific empirical models (see Spawn et al., 2020 for details on methodology). The Global Soil Organic Carbon Map present an estimation of SOC stock from 0 to 30 cm (see FAO, 2017). Data is also presented from global maps of marine sedimentary carbon stocks, standardized to a 1-meter depth (see Sala et al., 2021, and Atwood et al., 2020).

The map below presents the total carbon stocks in Eritrea and the percent of carbon in protected areas. The total carbon stocks is 125.3 Tg C from aboveground biomass (AGB), with 2.1% in protected areas; 86.3 Tg C from below ground biomass (BGB), with 2.0% in protected areas; 197.6 Tg C from soil organic carbon (SOC), with 5.3% in protected areas; and 668.2 Tg C from marine sediment carbon, with 0.0% in protected areas.



Carbon Stocks in Eritrea

Water

Forests and intact ecosystems support stormwater management and clean water availability, especially for large urban populations. Research that has examined the role of forests for city drinking water supplies shows that of the world's 105 largest cities, more than 30% (33 cities) rely heavily on the local protected forests, which provide ecosystem services that underpin local drinking water availability and quality (Dudley & Stolton, 2003).

Drinking water supplies for cities in Eritrea may similarly depend on protected forest areas within and around water catchments. Intact catchments can support more consistent water supply and improved water quality.

Opportunities for action

For carbon, there is opportunity for Eritrea to increase PA and OECM coverage in both marine and terrestrial areas with high carbon stocks, as identified in the map above. Protecting areas with high carbon stocks secures the benefits of carbon sequestration in the area.

For water, there is opportunity to increase the area of the water catchment under protection by PAs and OECMs, or in cases where there is high levels of protection, focus on effective management for these areas. Protecting the current area of forested land and potentially reforesting would have benefits for improving water security.

CONNECTIVITY & INTEGRATION

Two global indicators, the Protected Connected land indicator (ProtConn; EC-JRC, 2021; Saura et al., 2018) and the PARC-Connectedness indicator (CSIRO, 2019), have been proposed for assessing the terrestrial connectivity of PA and OECM networks. To date there is no global indicator for assessing marine connectivity, though some recent developments include proposed guidance for the treatment of connectivity in the planning and management of MPAs (see Lausche et al., 2021).

Protected Connected Land Indicator (Prot-Conn)

As of January 2021, as reported in the Joint Research Centre of the European Commission's Digital Observatory for Protected Areas (DOPA) (JRC, 2021), the coverage of protected-connected lands (a measure of the connectivity of terrestrial protected area networks, assessed using the ProtConn indicator) in Eritrea was 3.2%.

PARC-Connectedness Index

In 2019, as assessed using the PARC-Connectedness Index (values ranging from 0-1, indicating low to high connectivity), connectivity in Eritrea is 0.37. This represents no change from 2010.

Corridor case studies

There are currently no corridor case studies available for Eritrea (but see general details on conserving connectivity through ecological networks and corridors in Hilty et al 2020).

Opportunities for action

There is opportunity for a general increase of PA or OECM cover and to focus on PA and OECM management for enhancing and maintaining connectivity. Improving connectivity increases the effectiveness of PAs and OECMs and reduces the impacts of fragmentation.

As well, a range of suggested steps for enhancing and supporting integration are included in the voluntary guidance on the integration of PAs and OECMs into the wider land- and seascapes and mainstreaming across sectors to contribute, inter alia, to the SDGs (Annex I of COP Decision 14/8).

GOVERNANCE DIVERSITY

There is a lack of comprehensive global data on governance quality and equity in PAs and OECMs. Here, we provide data on the diversity of governance types for reported PAs and OECMs.

As of September 2021, PAs in Eritrea reported in the WDPA have the following governance types:

- 100.0% are governed by **governments** (by federal or national ministry or agency)
- 0.0% are under **shared** governance
- 0.0% are under **private** governance
- 0.0% are under **IPLC** governance
  - 0.0% by Indigenous Peoples
  - 0.0% by local communities
- 0.0% **do not** report a governance type

OECMs

As of May 2021, there are **0** OECMs in Eritrea reported in the WD-OECM, therefore there is no data available on OECM governance types.

Privately Protected Areas (PPAs)

There is currently no data available on PPAs for Eritrea (see Gloss et al., 2019, and Stolton et al., 2014 for details).

Territories and areas conserved by Indigenous Peoples and local communities (ICCAs)

There is currently no data available on ICCAs for Maldives (see Kothari et al., 2012 and the ICCA Registry for further details).

Other Indigenous lands

Lands managed and/or controlled by Indigenous Peoples cover an area of 36,425.0 km^2, of which 36,425.0 km^2 falls outside of formal protected areas. Indigenous lands with a human footprint less than 4 (considered as 'natural landscapes') cover an area of 15,737.0 km^2 (for details on analysis see Garnett et al., 2018).

For Eritrea, evidence for the presence of Indigenous Peoples comes from: Indigenous Work Group on Indigenous Affairs. Indigenous World 2017 (Indigenous Working Group on Indigenous Affairs, 2017).

Boundaries of the lands Indigenous Peoples manage or have tenure rights over come from: *Afar, Kunama, Nara*: Tronvoll, K. Marginalisation of Minorities in Eritrea - Sustaining Policies of Cultural Superiority. Nordisk Tidsskrift for Menneskerettigheter 27, 409–426 (2009).

Opportunities for action

Explore opportunities for governance types that have lower representation, for Eritrea this could relate to governance by Indigenous Peoples and/or local communities (IPLC), shared governance, etc.

There is also opportunity for Eritrea to complete governance and equity assessments, to establish baselines and identify relevant actions for improvement. Examples of existing tools and methodologies include: Governance Assessment for Protected and Conserved Areas (Franks & Brooker, 2018), Social Assessment of Protected Areas (Franks et al 2018), and Site-level assessment of governance and equity (IIED, 2020). As well, a range of suggested actions are included in the voluntary guidance on effective governance models for management of protected areas, including equity (Annex II of COP Decision 14/8).

PROTECTED AREA MANAGEMENT EFFECTIVENESS

This section provides the percentage of land and marine areas covered by PAs and OECMs with completed protected area management effectiveness (PAME) assessments as reported in the global GD-PAME. The proportion of terrestrial and marine PAs with completed PAME assessments is also calculated and compared with the 60% target agreed to in COP-10 Decision X/31. Information is also included regarding changes in forest cover nationally within PAs and OECMs.

Protected area management effectiveness (PAME) assessments

As of September 2021, Eritrea has 11 PAs reported in the WDPA; of these PAs, 0 (0.0%) have management effectiveness evaluations reported in the global database on protected area management effectiveness (GD-PAME).

- 0.0% (0.0 km²) of the terrestrial area of the country is covered by PAs with completed management effectiveness evaluations.
  - 0.0% of the area of terrestrial PAs have completed evaluations.
- 0.0% (0.0 km²) of the marine area of the country is covered by PAs with completed management effectiveness evaluations.
  - 0.0% of the area of marine PAs have completed evaluations.

The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has not** been met for terrestrial PAs and **has not** been met for marine PAs.

As of May 2021, there are 0 OECMs in Eritrea reported in the WD-OECM and no information available on the management effectiveness of potential OECMs.

Eritrea notes that: as to management effectiveness and governance, those protected and conserved area we reported in the Sixth National Report (see Annex I and list of 11 proposed PAs in WDPA country profile) can be considered as effective endeavors.
In addition, proposals for institutional framework for the establishment and management of protected areas, biodiversity conservation training program, national biodiversity conservation monitoring strategy, and national strategy for the conservation and financing of PA's have been prepared.

Opportunities for action

The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has not** been met for terrestrial PAs and **has not** been met for marine PAs. Therefore, there is opportunity to increase protected area management effectiveness (PAME) evaluations for both terrestrial and marine PAs to achieve the target.

There is also opportunity to implement the results of completed PAME evaluations, to improve the quality of management for existing PAs and OECMs (e.g. through adaptive management and information sharing, increasing the number of sites reporting 'sound management') and to increase reporting of biodiversity outcomes in PAs and OECMs.

SECTION II: EXISTING PROTECTED AREA AND OECM COMMITMENTS

PRIORITY ACTIONS FROM 2015-2016 REGIONAL WORKSHOPS

National priority actions for Aichi Biodiversity Target 11 were provided by Parties following a series of regional workshops in 2015 and 2016. The Capacity-building workshop for Africa on achieving Aichi Biodiversity Targets 11 and 12 took place 21 - 24 March 2016 in Entebbe, Uganda. Progress towards the quantitative targets for marine and terrestrial coverage has been assessed based on data reported in the WDPA and WD-OECM as of 2021. For more information, see the workshop report at: https://www.cbd.int/meetings/

Summary from the workshop:

Terrestrial coverage: Operationalized protected area system on three selected areas that cover a total of 10,098.6km^2 will be established - including one Terrestrial PA that covers 6,492.76km^2 [now listed as proposed PAs in the WDPA; not yet designated].

Marine coverage: Operationalized protected area system on three selected areas that cover a total of 10,098.6km^2 will be established - including two Marine PAs with 3,605.94 km^2 [now listed as proposed PAs in the WDPA; not yet designated].

Ecological representation: The ecological representation of Eritrea will be updated (It is an old classification).

Areas Important for biodiversity and ecosystem services: Out of 14 IBAs, 3 IBAs will be protected.

Connectivity: No actions were identified for this element of Target 11.

Management effectiveness:

1) Process for legislation enactment, including gazetting protected areas, institutionalized and lead to formal gazettement of 2 additional protected areas covering 190,770 ha from a baseline of 100,000ha.

2) 2) Strategic institutions with sectoral responsibilities for biodiversity conservation and land use planning (Ministries of Agriculture, Fisheries and regional administrations) provided with capacity to participate in PA management.

Governance and Equity: Norms and standards guiding the PA management, including co-management produced and adopted by the relevant institutions.

Integration: The Operationalizing Protected Area Management Systems (OPAMS) will be integrated with other programmes and projects to reinforce the activities that have been already undertaken by the Government emphasizing food security, conservation of

biodiversity, adaptation to impacts of climate change, combating land degradation and desertification. Therefore, all projects that have been conducted or are ongoing, and the PA system will be directed based on the main factors: participation of communities, integrated management system and a multi-sectoral approach; Social and economic sustainable development, consideration of gender sensitivities, Soil and water conservation, Rehabilitation and restoration of degraded lands, Sustainable Natural Resources Management (SNRM), Poverty alleviation, human and institutional capacity building ,Enhancing researches and education as well as awareness raising programmes, sharing past experiences and lessons learned, and consideration of the traditional knowledge..

OECMs:

1) Temporary and permanent enclosures will be established in all administration regions.
2) Massive afforestation, terracing hillsides, SLM/SFM, water development and use, promotion and dissemination of alternative energy sources, income generating activities will be promoted widely.
3) Capacity building activities will be enhanced.

NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)

Eritrea has submitted an NBSAP during the Strategic Plan for Biodiversity 2011-2020 (most recent NBSAP is available at: https://www.cbd.int/nbsap/search/).

Target 11: By 2020, at least 10% of the national territory, set-aside for Protected Area System for Conservation of Biodiversity and Mitigation of Land Degradation. Eritrea shall operationalize an integrated Semenawi and Debubawi Bahri, Buri-Irrori- Hawakil as well as Bara'sole Protected Area System with a total land area of 1,009,860 ha (649,266 ha for terrestrial and 360,594 ha for marine protected area) for Conservation of Biodiversity and Mitigation of Land Degradation. Biodiversity also continues to be managed and conserved in other potential woodland, grasslands and forest areas.

- Both terrestrial and marine targets will be met when proposed PAs are designated (see sections above).

Actions from the NBSAP will also address other elements of Aichi Biodiversity Target 11:

NBSAP Action number	Action (original language from NBSAP)
5.4	Biodiversity loss and human-induced degradation reduced and effectively managed in protected areas
5.5	Implementation of SDB, Buri, Irrori and Hawakil islands PA system
11.1	Operationalizing of Integrated Semenawi and Debubawi Bahri, Buri-Irrori-Hawakil Protected Area System for Conservation of Biodiversity and Mitigation of Land Degradation
11.2	capabilities and competences of national partners are enhanced
14.3	Promotion of Integrated PA and design networks to allow long-term species and ecosystem responses to climate change.
19.3	comprehensive PA Plan developed through knowledge based participatory process, taking climate change risks into considerations and implementation plan agreed
E-4.1.1	Delineate and demarcate PA
E-4.1.2	Preparation of management and business plan
E-4.1.3	Recruitment of PA staff
E-4.1.4	Capacity building and training
E-10.4	Establish Marine Protected Area legal framework, management plans and an ongoing monitoring programmes

NBSAP Action number	Action (original language from NBSAP)
E-12.5	Establish marine protected area management plans and strengthen institutional capacity for monitoring programmes
E-12.10.14	Delineate Sea bird protected area

APPROVED GEF-5, GEF-6, PROTECTED AREA PROJECTS

Approved GEF-5 and GEF-6 PA-related biodiversity projects

This includes biodiversity projects from the fifth and sixth replenishment of the Global Environment Facility (GEF-5 and GEF-6) with a clear impact of the quantity or quality of PAs; also including some projects occurring within the wider landscapes/seascapes around PAs. Only those with a status of 'project approved' or 'concept approved' as of June 2019 were considered. The qualifying elements likely benefiting from each GEF project is assessed based on a keyword search of Project Identification Forms (PIF). Where spatial data for the proposed PAs was available, further details (based on an analysis by UNDP) regarding their impacts for ecological representation, coverage of KBAs, and coverage of areas important for carbon storage is included.

GEF ID	PA increase?	Area to be added (km^2)	Type of new protected area	Qualitative elements potentially benefitting (based on keyword search of PIFs)
4559	Yes	6,795	Terrestrial	All except Connectivity
9266	No	N/A	N/A	All except Ecologically representative

Based on spatial data available for GEF project 4559, benefits will arise for several elements of Target 11:

Coverage of Terrestrial and Marine Ecoregions:

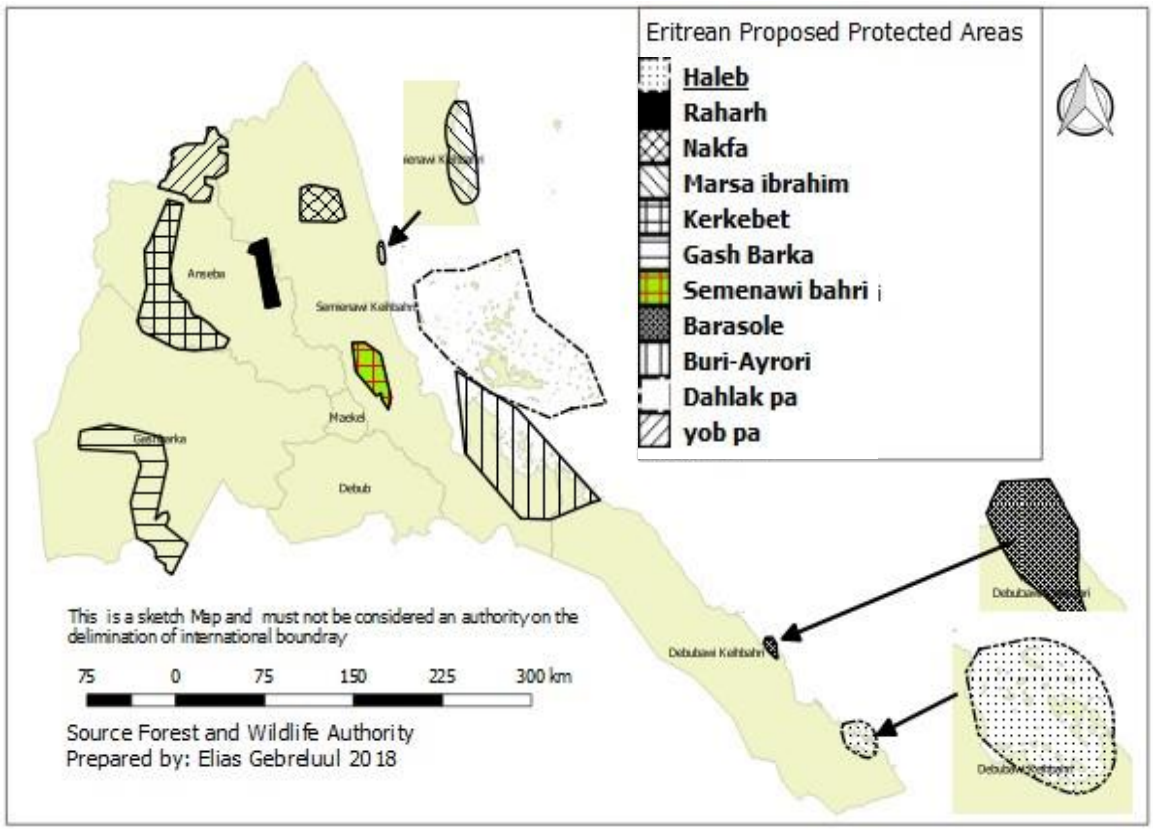
- 2 Terrestrial Ecoregions will have improved coverage. These Ecoregions are: Djibouti xeric shrublands; Ethiopian montane grasslands and woodlands.
  - The average increase in coverage of Terrestrial Ecoregions will be 0.21%.

Coverage of KBAs:

- Coverage will improve for 6 KBAs.

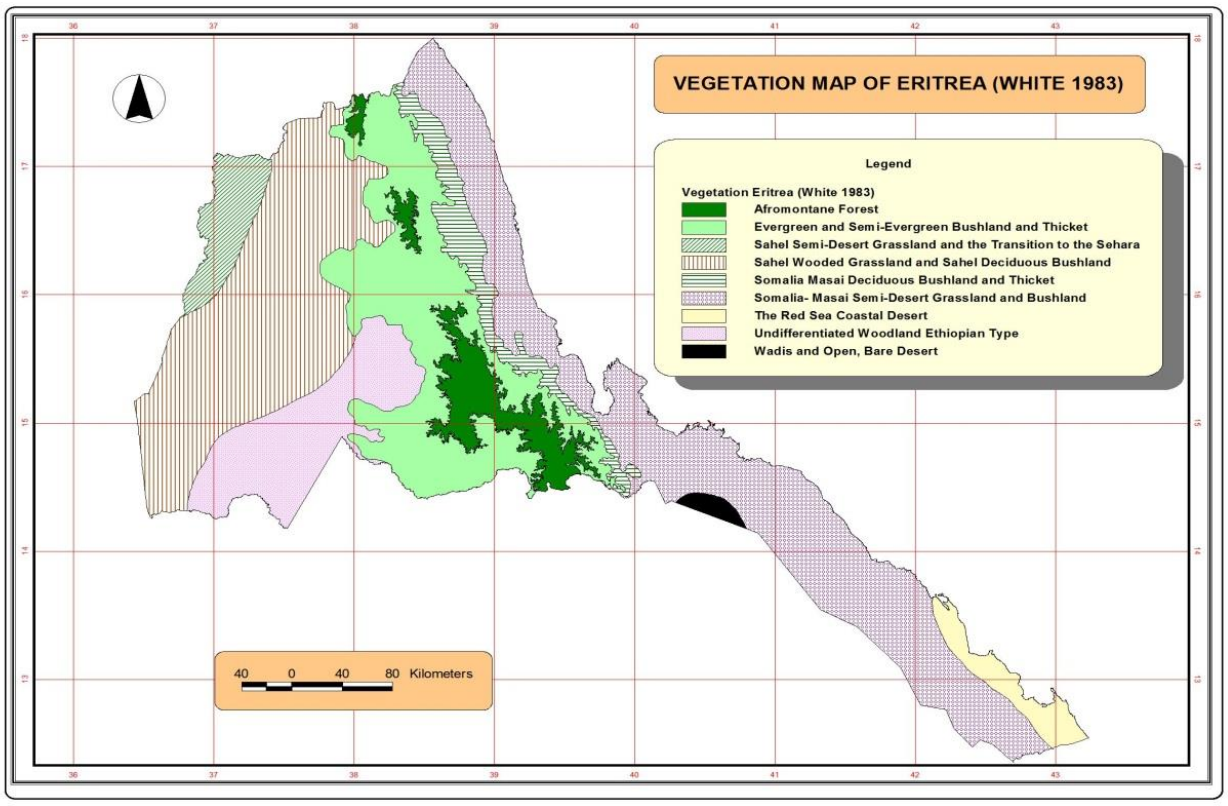
ANNEX I

ADDITIONAL MAPS

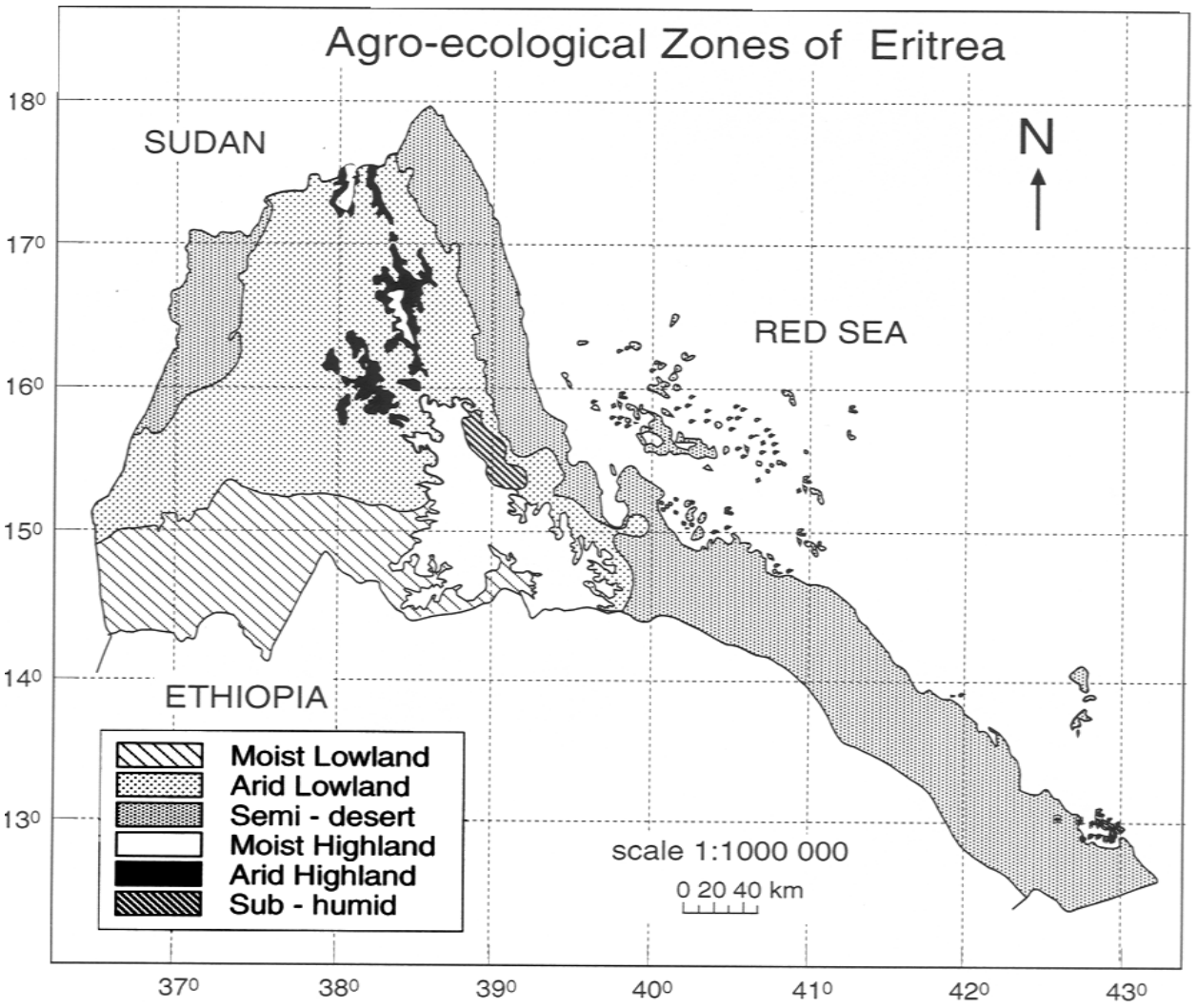


Proposed protected areas 2018 (Modified from FWA Report, 1997; see further details in Eritrea's Sixth National Report to the CBD)

N.B: In the Legend Please read Semienawi Bahri as Semienawi and Debubawi Bahri and Gash Barka as Gash Setit



The vegetation map of Eritrea based on the vegetation map of Africa (White 1983; see Eritrea's Sixth National Report to the CBD)



Agro-ecological zones of Eritrea (FAO, 1997; see Eritrea's Sixth National Report to the CBD)

Agro Ecological Zone	Description
Moist Highland	Makes up 7.4 percent of the total land area of the country. It provides suitable environment for agriculture due to its moist climate and fertile soils. This zone accounts for 26 percent of the total annual crop production and 33 percent of the total cultivated land in the country. Rain-fed agriculture is the dominant form of economic activity.
Moist Lowland	Located in the southwestern part of Eritrea covering an area of about 16 percent of the total land surface of the country. It consists of some of the most productive agricultural lands in the country, which are suitable for rain-fed and irrigated agriculture.

Agro Ecological Zone	Description
Arid Highland	Sparsely populated zone that covers 3 percent of the land surface of the country. It is characterized by deficiency in rainfall and a short growing season. Rain-fed agriculture and pastoralism form the basis for livelihood.
Arid Lowland	Occupies a large part of the northwestern lowlands and covers an area of 34 percent of the total land surface of the country. High temperatures and irregularity in precipitation characterize the climatic conditions of this zone, which imply factors of unpredictability. Livestock rearing is the main economic activity, though agro-pastoralism is also becoming important.
Sub-Humid	A small stretch of land covering only 0.8 percent of the total land area of the country. It is located in the Eastern Escarpment receiving bi-modal rainfall. The zone is commonly referred to as the Green Belt Zone and biologically it is the most diversified part of the country.
Arid Lowland	Occupies a large part of the northwestern lowlands and covers an area of 34 percent of the total land surface of the country. High temperatures and irregularity in precipitation characterize the climatic conditions of this zone, which imply factors of unpredictability. Livestock rearing is the main economic activity, though agro-pastoralism is also becoming important.
Semi-Desert	Occupies the largest area of the country (39 percent) ranging from hot to very hot climate. The seasonal rivers in this zone flow eastwards, which are diverted to irrigate agricultural fields. The dominant form of land use in this agro-ecological zone is flood irrigation and nomadic pastoralism

ANNEX II

FULL LIST OF TERRESTRIAL ECOREGIONS

Ecoregion Name	Area (km^2)	% of Global Ecoregion in Country	% of Country in Ecoregion	Area Protected (km^2)	% Protected in Country
Djibouti xeric shrublands	44,151.6	18.7	36.7	1,680.7	3.8
East Sudanian savanna	4,469.8	0.4	3.7	157.4	3.5
Eritrean coastal desert	2,898.9	63.4	2.4	0.0	0.0
Ethiopian montane grasslands and woodlands	22,680.6	10.3	18.8	722.3	3.2
Sahelian Acacia savanna	46,140.0	1.3	38.3	3,322.8	7.2
Somali Acacia-Commiphora bushlands and thickets	0.025	0.0	0.0	0.0	0.0

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For any questions please contact support@unbiodiveristylab.org.