Aichi Biodiversity Target 11 Country Dossier: SAUDI ARABIA

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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 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. 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 (per the WDPA), terrestrial coverage in Saudi Arabia is 92,063.6 km^2 (4.8%) and marine coverage is 5,495.5 km^2 (2.5%). More recent national reporting indicates total terrestrial coverage (PAs and OECMs) of 17.206% (344,151 km^2) and total marine coverage (PAs and OECMs) of 7.92% (19,179 km^2)

- **Opportunities for action:** opportunities for the near-term include updating the WDPA and WD-OECM with these unreported PAs and OECMs. 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:** Saudi Arabia contains 14 terrestrial ecoregions, 3 marine ecoregions, and 1 pelagic province: the mean coverage by reported PAs and OECMs is 5.3% (terrestrial), 3.5% (marine), and 0.0% (pelagic); 5 terrestrial ecoregions, 1 marine ecoregion and 1 pelagic province have no coverage by reported PAs and OECMs.

- **Opportunities for action:** ecological representation will need to be reassessed once data on new PAs and OECMs is available. There may be opportunity for Saudi Arabia 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

- **Status:** Saudi Arabia has 53 Key Biodiversity Areas (KBAs): the mean coverage of KBAs by reported PAs and OECMs is 22.0%, while 38 KBAs have no coverage by reported PAs and OECMs. Other important areas for biodiversity include Important Plant Areas and nationally identified biodiversity hotspots; these will be assessed in the coming years to determine which meet KBA criteria using the new global standard.

- **Opportunities for action:** there is opportunity for Saudi Arabia 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. As assessments are completed in the coming years for other important areas (including Important Plant Areas and nationally identified biodiversity hotspots), improved protection may be required for these important areas.

Areas Important for Ecosystem Services

- **Status:** coverage of areas important for ecosystem services: In Saudi Arabia, 4.7% of aboveground biomass carbon, 4.9% of belowground biomass carbon, 4.5% of soil organic carbon, 2.9% of carbon stored in marine sediments is covered by PAs and OECMs. As recent PAs and OECMs have more than tripled both terrestrial and marine coverage, the amount of carbon stored in PAs and OECMs will be much higher than the values listed above.

- **Opportunities for action:** for carbon, there is opportunity to reassess the carbon storage in PAs and OECMs following updates of the WDPA and WD-OECM. If applicable, there is opportunity for Saudi Arabia 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 1.7% (as of January 2021; value will be higher with addition of new PAs and OECMs).

- **Opportunities for action:** there is opportunity for a targeted designation of PAs or OECMs in strategic locations for connectivity 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:** All existing PAs and OECMs have one governance type, **under Government**, with 75% managed by the Federal Government and the remaining 25% by a sub-national entity

- **Opportunities for action:** explore opportunities for governance types that have lower representation. There is also opportunity for Saudi Arabia 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:** as of May 2021 (per the GD-PAME), 19.5% of terrestrial PAs and 0.0% of marine PAs have completed Protected Area Management Effectiveness (PAME) assessments reported. The percentages will have to change in light of the changes made to the number and coverage of PAs and OECMs.

- **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 (as of May 2021). Therefore, there may be 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 Saudi Arabia. Section I of the dossier presents data on the current status of Saudi Arabia'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 Saudi Arabia, in relation to each Target 11 element. The analyses present options for improving Saudi Arabia's area-based conservation network to achieve enhanced protection and benefits for livelihoods and climate change. Section II presents details on Saudi Arabia's existing PA and OECMs 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.

COVERAGE - TERRESTRIAL & MARINE

As of May 2021, Saudi Arabia has **70** protected areas reported in the World Database on Protected Areas (WDPA). 41 proposed PAs are not included in the following statistics (see details on UNWP-WCMC's methods for calculating PA and OECM coverage **here**).

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

Current coverage for Saudi Arabia (per the May 2021 WDPA):

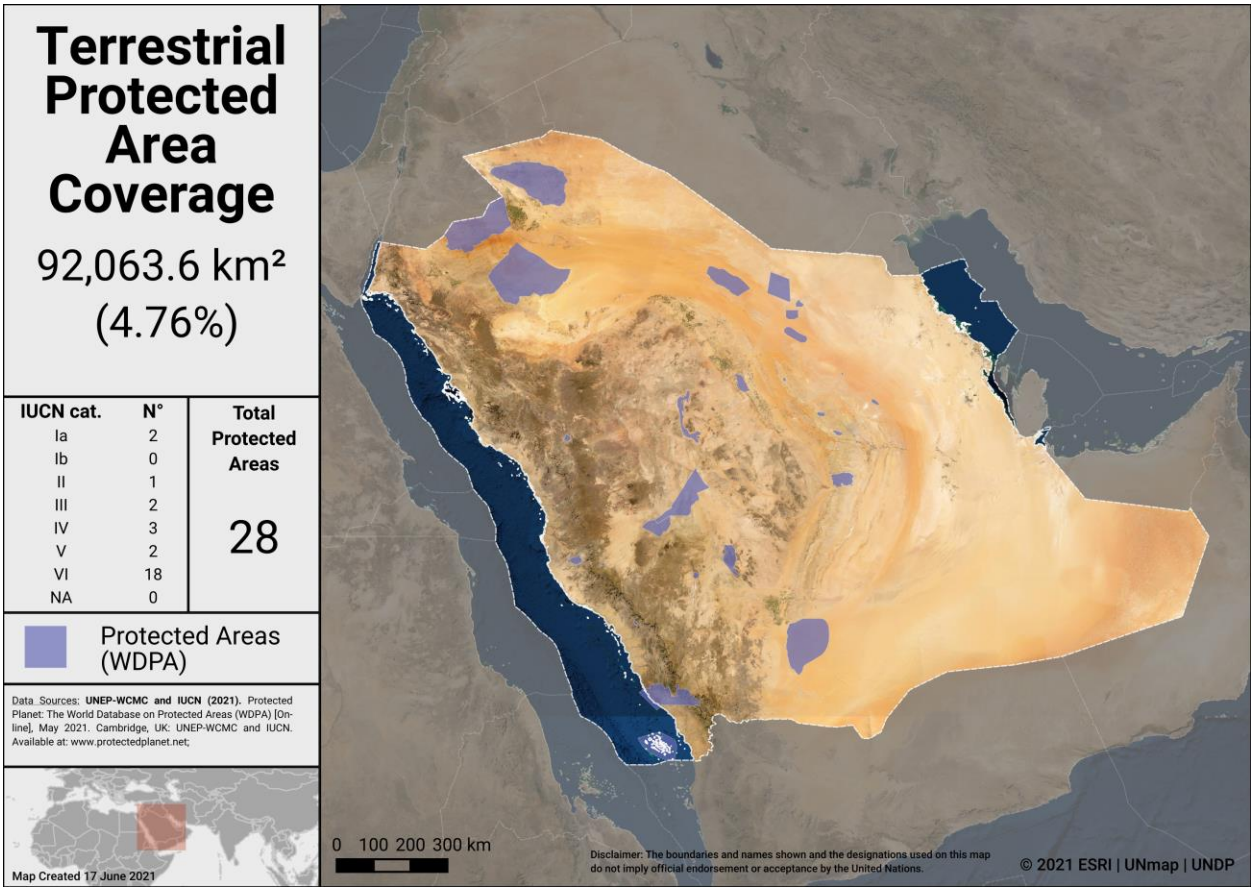
- 4.8% terrestrial (28 protected areas, 92,063.6 km^2)
- 2.5% marine (4 protected areas, 5,495.5 km^2)

The number and type of terrestrial and marine protected areas and OECMs have changed during the last few years as a result of a major institutional and programmatic transformation associated with the country's vision 2030.

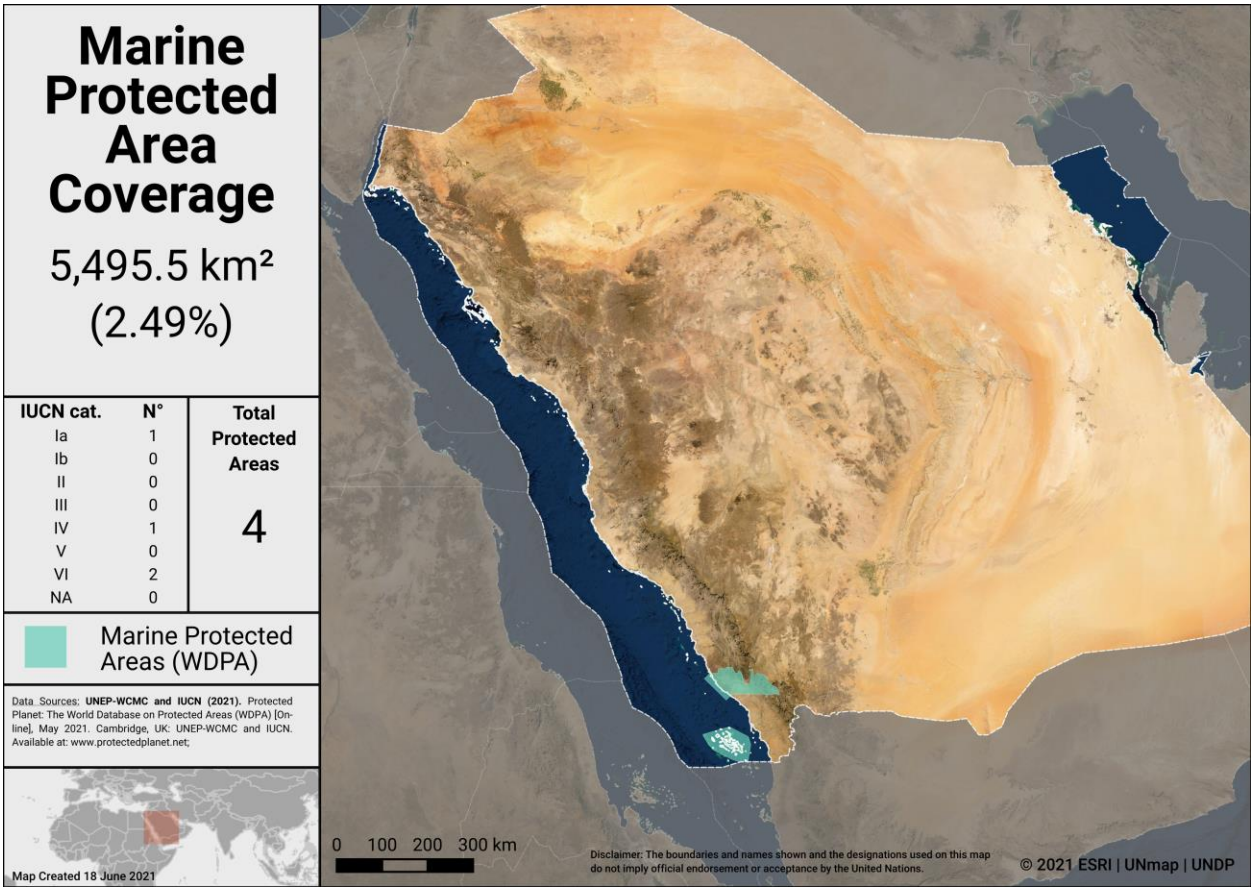
The following are the current coverage statistics for Saudi Arabia (per national reporting):

- **17.206% terrestrial** coverage (344,151 km^2)
    - Terrestrial Protected Areas: 90,895 km^2 (4.544%)
    - Terrestrial OECMs: 253,256 km^2 (12.662%)
- **7.92% marine** coverage (19,179 km^2)
    - Terrestrial Protected Areas: 7,433 km^2 (3.07%)
    - Terrestrial OECMs: 11,746 km^2 (4.85%)

As a result, statistics in the following sections (based on data from the May 2021 WDPA) likely underestimate the current situation in Saudi Arabia. Data in the WDPA and WD-OECM will need to be updated to reflect the changes in coverage.



Terrestrial Protected Areas in Saudi Arabia (per the May 2021 WDPA). Actual coverage is now 17.206% (form both PAs and OECMs).



Marine Protected Areas in Saudi Arabia (per the May 2021 WDPA). Actual coverage is now 7.92% (form both PAs and OECMs).

Potential OECMs

The Kingdom of Saudi Arabia has identified a number of OECMs as described in the above section. The total number of OECMs sites is 25, of which, 23 are completely terrestrial, and 2 are mixed terrestrial and marine.

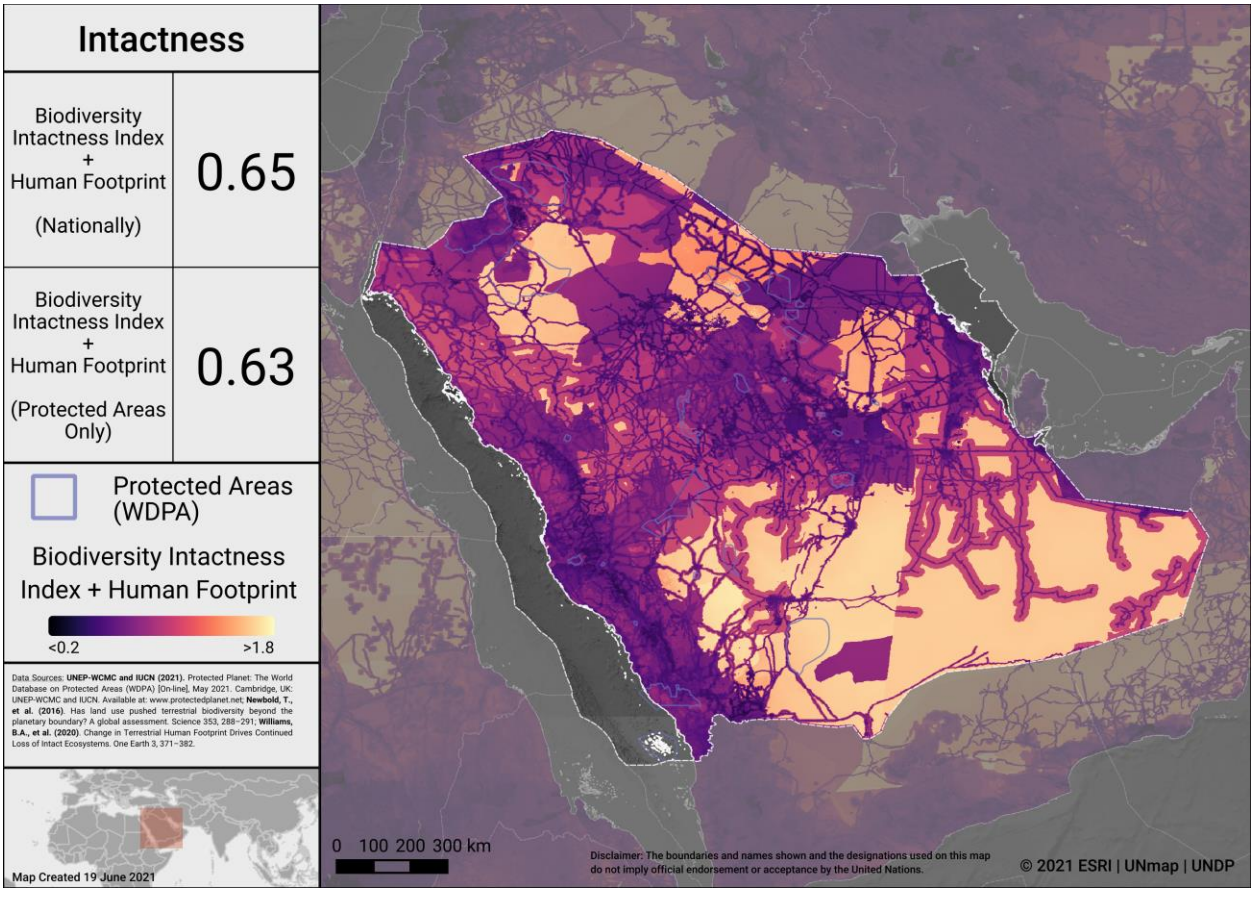
These include the seven newly established Royal Reserves, in addition to 18 sites managed by other government entities. A national map is available for all OECMs.

- The total terrestrial area covered by the OECMs is 253,256 km2 (12.662%), and 11,746 km2 (4.85%) are covered in marine sites.
- All OECMs are managed by government entities and follow similar governance arrangements.
- As a new protected category, no management effectiveness assessments has been conducted for any of the OECMs. A plan to do so will commence in 2023.

- Also, the OECMs conservation impact has not been evaluated yet, however, a program for assessing their impact will commence starting 2023 and will be reported to CBD accordingly.

Opportunities for action

Opportunities for the near-term include updating the WDPA and WD-OECM with unreported PAs and OECMs. In the future, as Saudi Arabia considers where to add new PAs and OECMs, the map below identifies areas in Saudi Arabia 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 Saudi Arabia

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

ECOLOGICAL REPRESENTATIVENESS – TERRESTRIAL & MARINE

Ecological representativeness is assessed 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).

Saudi Arabia has 14 **terrestrial** ecoregions. Out of these:

- 9 ecoregions have at least some coverage from PAs and OECMs.
- 1 ecoregion has at least 17% protected within the country.
- The average coverage of terrestrial ecoregions is 5.3%.

A full list of terrestrial ecoregions in Saudi Arabia is available in Annex I.

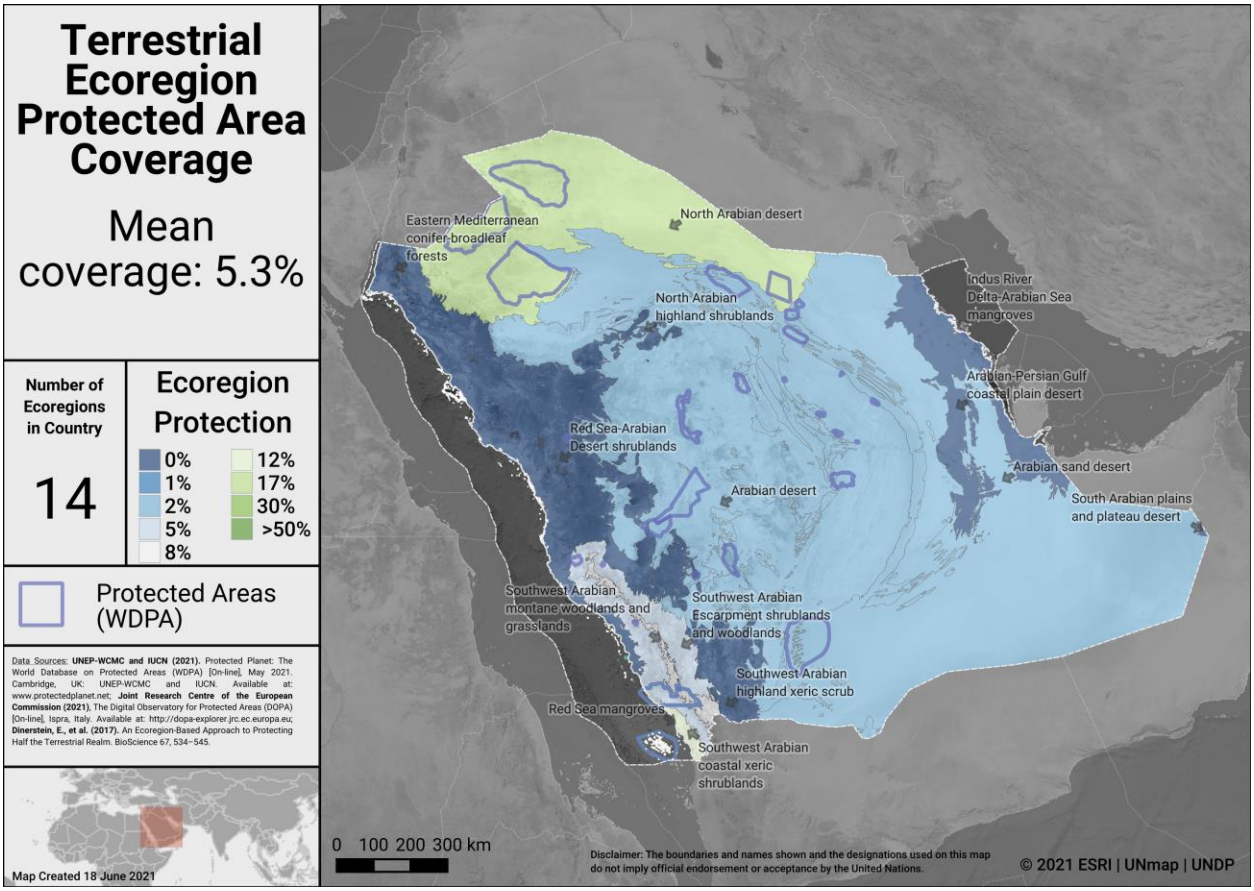
Saudi Arabia has 3 **marine** ecoregions and 1 **pelagic province**. Out of these:

- 2 marine ecoregions and 0 pelagic provinces have at least some coverage from reported PAs and OECMs.
- 1 marine ecoregion and 0 pelagic provinces have at least 10% protected within Saudi Arabia's exclusive economic zone (EEZ).
- The average coverage of marine ecoregions is 3.5% and the coverage of the 1 pelagic province is 0.0%.

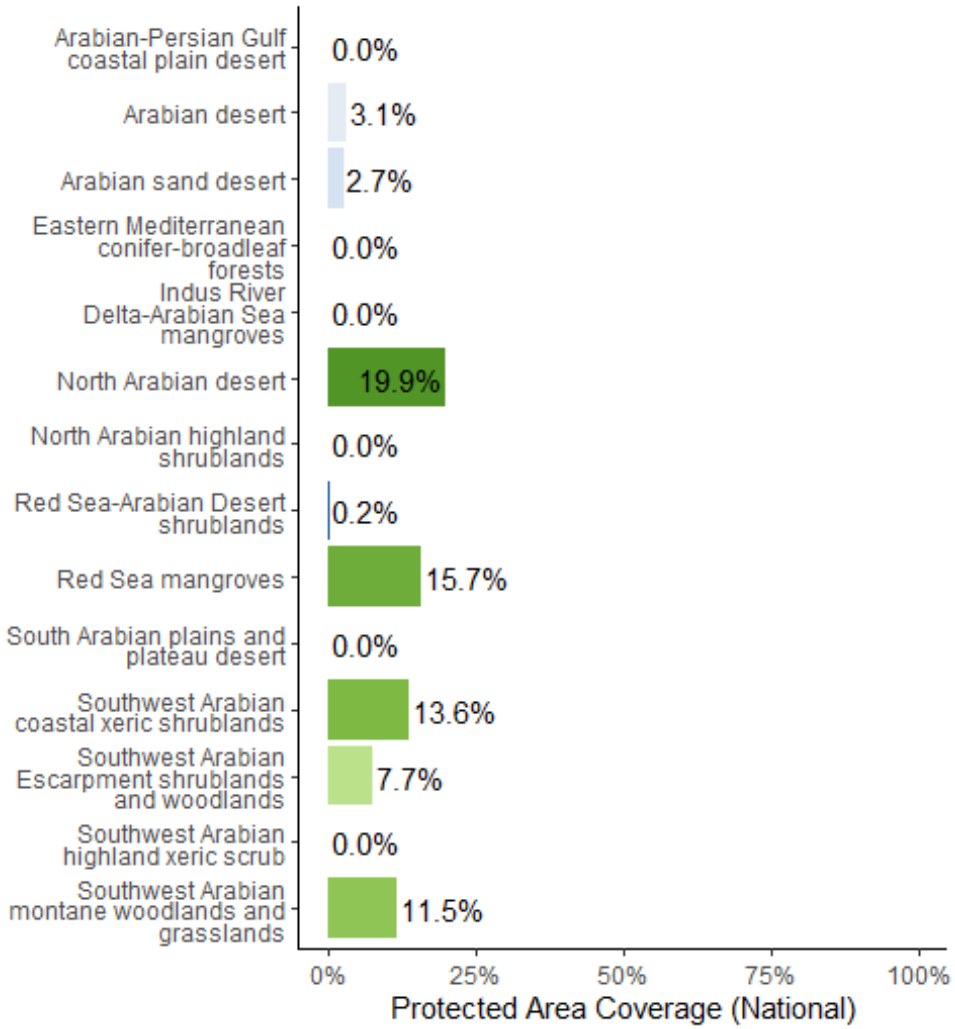
Coverage of terrestrial ecoregions, marine ecoregions, and the pelagic province will all increase due to the recent changes to PA and OECM coverage (see previous section). Ecological representativeness will need to be reassessed once data on the new PAs and OECMs is available.

The information on the number of terrestrial ecoregions, marine ecoregions and pelagic province are correct as the classification and map of terrestrial ecoregions was prepared by NCW Department of Protected Area Planning and Monitoring.

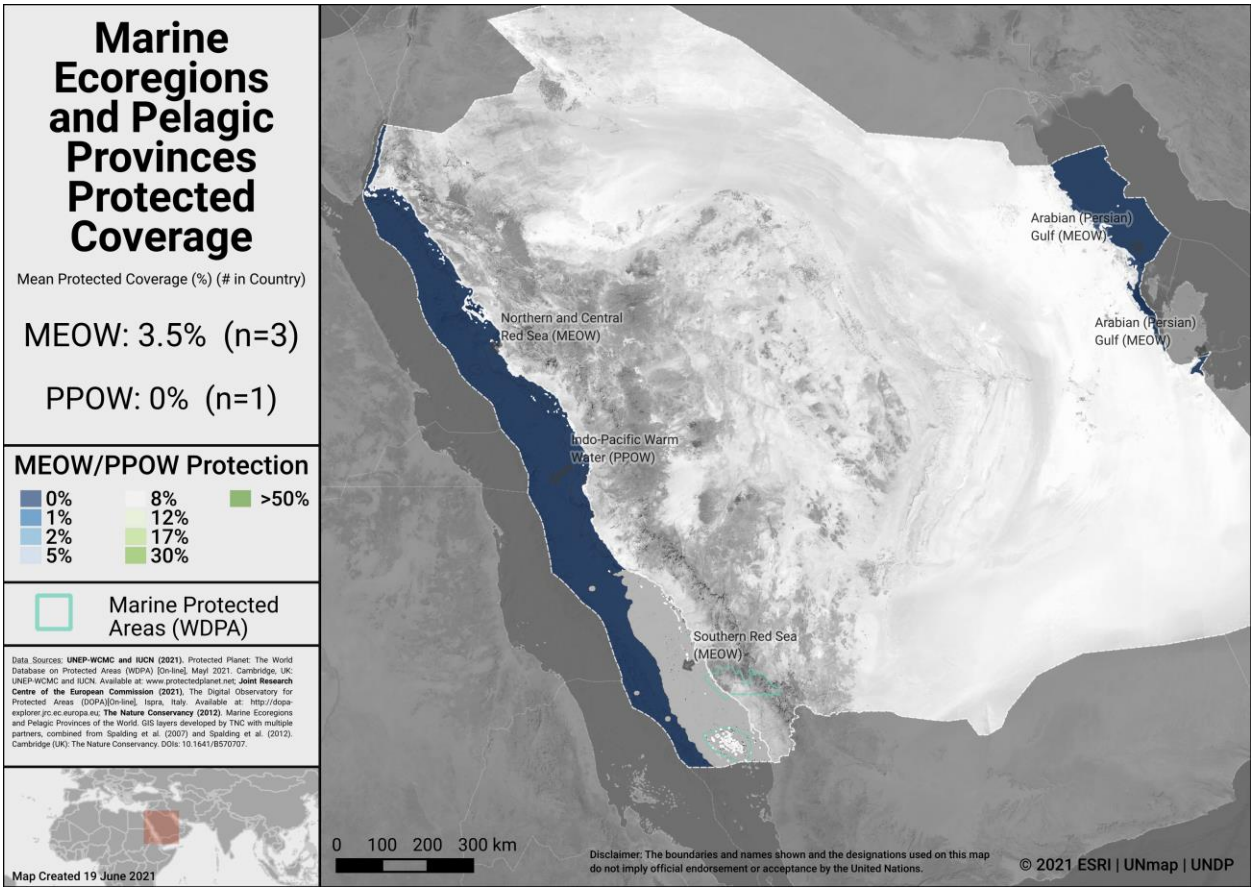
However, the classification and map of terrestrial and marine ecoregions / pelagic provinces is now being refined (subdivided, with approximately 44 terrestrial and inland wetland ecoregions) and is to be available at the beginning of 2022.



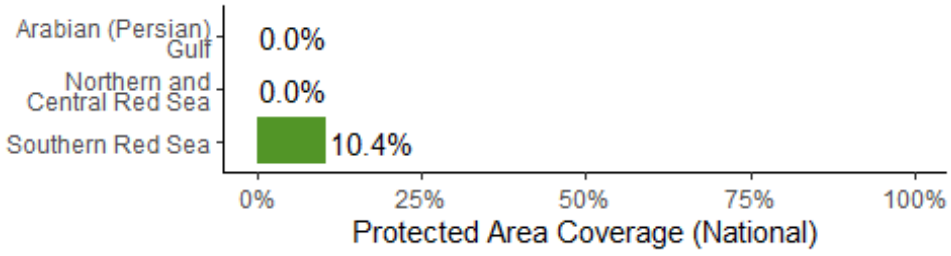
Terrestrial ecoregions in Saudi Arabia (per the May 2021 WDPA). Actual coverage will be higher due to new PAs and OECMs.



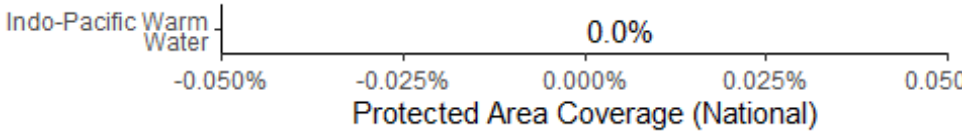
Terrestrial ecoregions of the World (TEOW) in Saudi Arabia



Marine ecoregions and pelagic provinces (per the May 2021 WDPA). Actual coverage will be higher due to new PAs and OECMs.



Marine Ecoregions of the World (MEOW) in Saudi Arabia



Pelagic Provinces of the World (PPOW) in Saudi Arabia

Opportunities for action

Ecological representation will need to be reassessed once data on new PAs and OECMs is available. There may be opportunity for Saudi Arabia 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.

Saudi Arabia has **53** Key Biodiversity Areas (KBAs).

- Mean percent coverage of all KBAs by PAs and OECMs in Saudi Arabia is **22.0%**.
- **8** KBAs have full (>98%) coverage by PAs and OECMs.
- **7** KBAs have partial coverage by PAs and OECMs.
- **38** KBAs have no (<2%) coverage by PAs and OECMs.

The Kingdom of Saudi Arabia notes: KBAs that are currently included in the dossier (most of which are Important Bird Areas) are acceptable, but in the NCW's view, Important Plant Areas are even more important as biodiversity hotspots; four have been assessed in a peer-reviewed journal and approximately 15 are provisionally assessed and under preparation for publication.

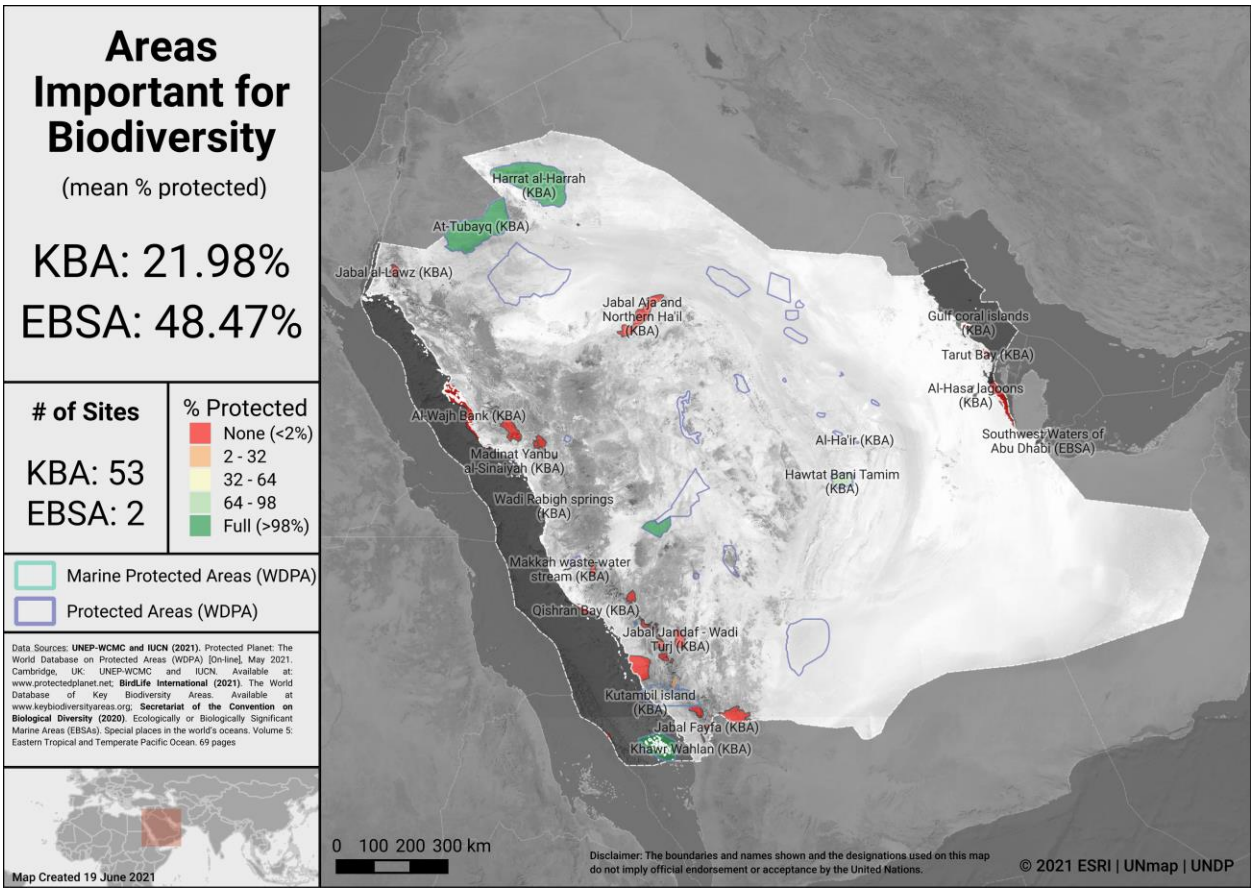
Further, some 520 biodiversity hotspots have been identified as coordinate points and are to be arrayed as shape-files in early 2022; over time these will be assessed to determine which meet KBA criteria using the new global standard.

Ecologically or Biologically Significant Marine Areas (EBSAs)

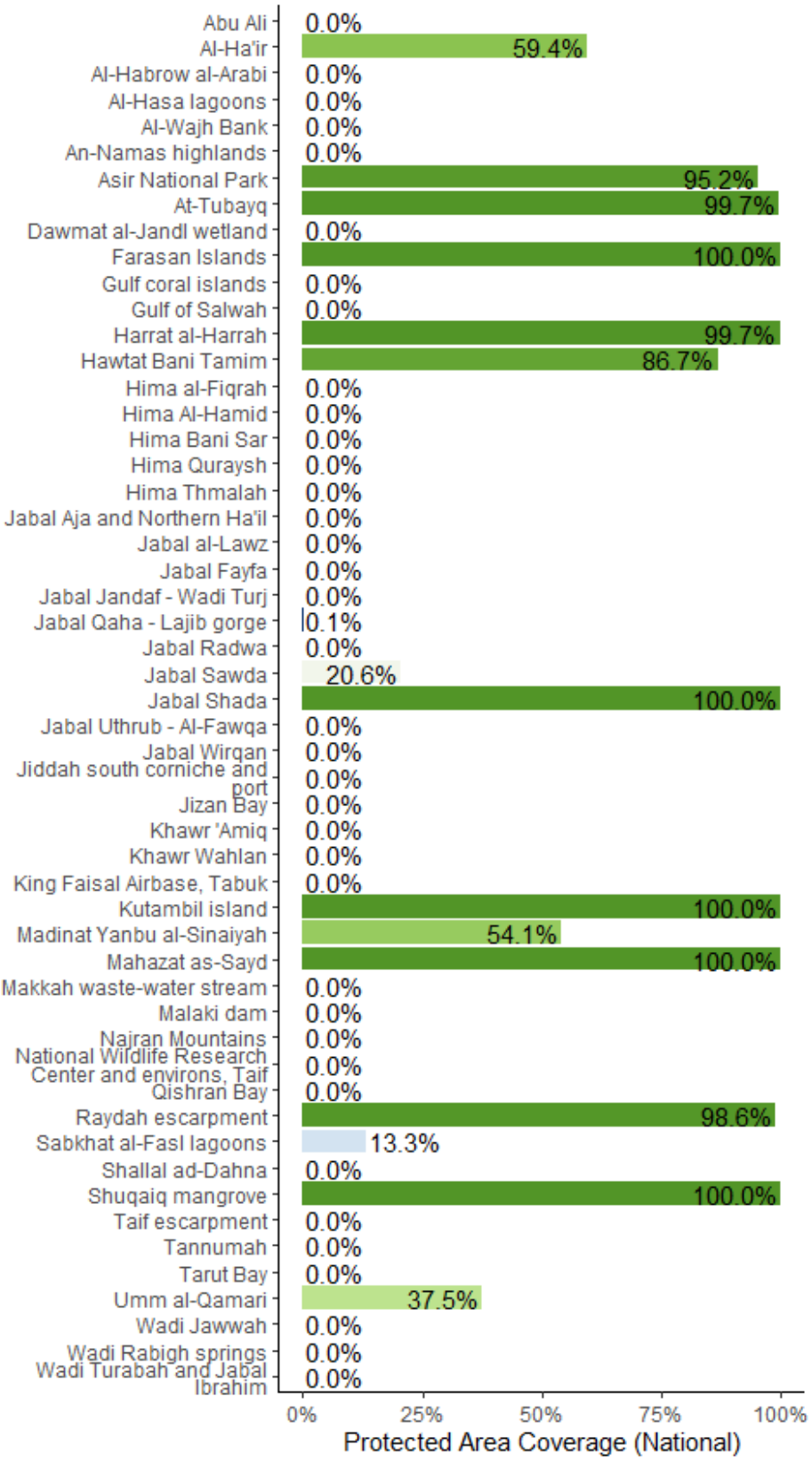
Other important areas for biodiversity may also include Ecologically or Biologically Significant Marine Areas (EBSAs), which were identified following the scientific criteria

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.

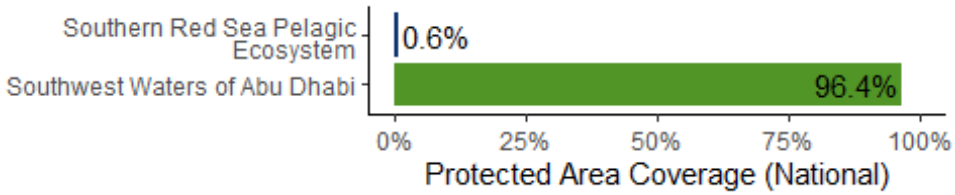
There are 2 EBSAs with some portion of their extent within Saudi Arabia's EEZ, both of which have at least some coverage from PAs and OECMs.



Areas Important for Biodiversity in Saudi Arabia (per the May 2021 WDPA). Actual coverage will be higher due to new PAs and OECMs.



Key Biodiversity Area Coverage (KBA) in Saudi Arabia



Ecologically or Biologically Significant Marine Areas (EBSAs) in Saudi Arabia

Opportunities for action

There is opportunity for Saudi Arabia 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. Other important areas include Important Plant Areas and nationally identified biodiversity hotspots; as assessments are completed in the coming years, improved protection may be required for these important areas.

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

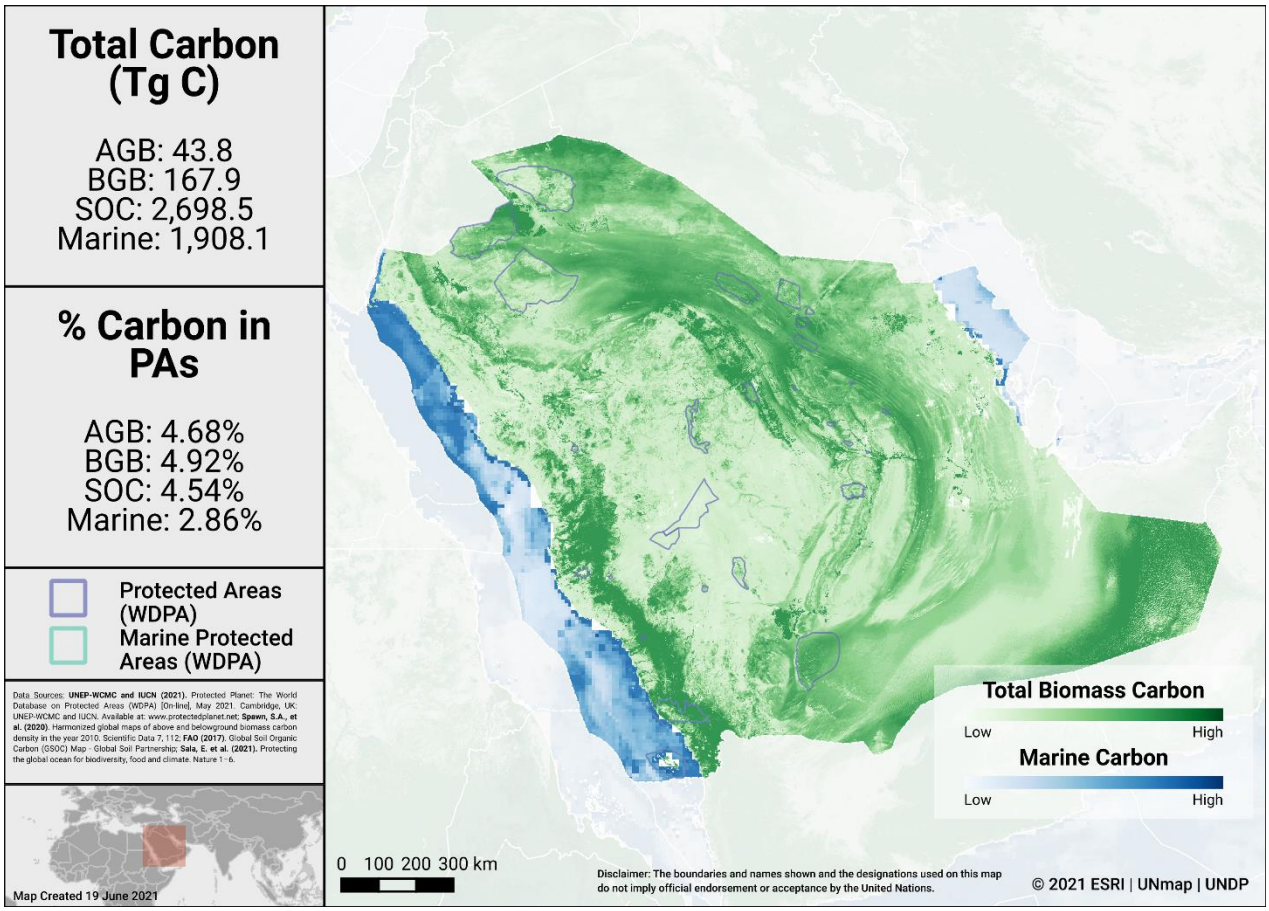
Data for biomass carbon comes from temporally consistent and harmonized global maps of aboveground biomass and belowground biomass carbon density (at a 300-m spatial resolution); the maps integrate land-cover specific, remotely sensed data, and land-cover specific empirical models (see Spawn et al., 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 on the following page presents the total carbon stocks in Saudi Arabia and the percent of carbon in protected areas (based on the May 2021 WDPA). The total carbon stocks is 43.8 Tg C from aboveground biomass (AGB), with 4.7% in protected areas; 167.9 Tg C from below ground biomass (BGB), with 4.9% in protected areas; 2,698.5 Tg C from soil organic carbon (SOC), with 4.5% in protected areas; and 1,908.1 Tg C from marine sediment carbon, with 2.9% in protected areas. As recent PAs and OECMs have more than tripled both terrestrial and marine coverage, the amount of carbon stored in PAs and OECMs will be much higher than the values listed above (this will need to be reassessed once data is available in the WDPA and WD-OECM for these sites).

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 Saudi Arabia may similarly depend on protected areas within and around water catchments. Intact catchments can support more consistent water supply and improved water quality.



Carbon Stocks in Saudi Arabia (per the May 2021 WDPA). Actual carbon stocks in PAs and OECMs will be higher due to new sites.

Opportunities for action

For carbon, there is opportunity to reassess the carbon storage in PAs and OECMs following updates of the WDPA and WD-OECM. If applicable, there is opportunity for Saudi Arabia 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.

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).

Values for both Prot-Conn and the PARC-Connectedness Index for Saudi Arabia will have to change in light of the changes made to the number and coverage of PAs and OECMs (see section on Coverage).

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 Saudi Arabia was 1.7%.

PARC-Connectedness Index

In 2019, as assessed using the PARC-Connectedness Index (values ranging from 0-1, indicating low to high connectivity), connectivity in Saudi Arabia is 0.46. This represents no significant change since 2010.

Corridor case studies

There are currently no corridor case studies available for Saudi Arabia (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 targeted designation of PAs or OECMs in strategic locations for connectivity 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 May 2021, PAs in Saudi Arabia reported in the WDPA have the following governance types:

- 80.0% are governed by **governments**
  - 72.9% by federal or national ministry or agency
  - 7.1% by sub-national ministry or agency
- 8.6% are under **shared** governance
  - 4.3 % by collaborative governance
  - 4.3% by joint governance
- 2.9% are under **private** governance (by for-profit organisations)
- 5.7% are under **IPLC** governance (by local communities)
- 2.9% **do not** report a governance type

As noted above, the number and coverage of PAs and OECMs have changed recently.

- All existing PAs and OECMs have one governance type, **under Government**, with 100% representation.
- For the 20 PAs, 15 are managed by Federal Government and the remaining 5 by a sub-national entity.
- As for the 25 OECMs, 9 are managed by federal agencies and the remaining 16 are managed by sub-national entities.
- It is anticipated that a number of proposed PAs and potential OECMs will adopt other forms of governance including co-managed areas and community managed areas.

OECMs

The Kingdom of Saudi Arabia has identified a number of OECMs[1] as described in the above section. All OECMs are managed by government entities and follow similar governance arrangements.

Privately Protected Areas (PPAs)

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

[1] Currently, none are reported in the WD-OECM.

Information on territories and areas conserved by Indigenous Peoples and local communities (ICCAs) reported from CBD technical series case studies:

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

Other Indigenous lands

There is currently no data available on lands managed and/or controlled by Indigenous Peoples in Saudi Arabia (for details on analysis see Garnett et al., 2018).

Opportunities for action

Explore opportunities for governance types that have lower representation. There is also opportunity for Saudi Arabia 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 May 2021, Saudi Arabia has 70 PAs reported in the WDPA; of these PAs, 3 (4.3%) have management effectiveness evaluations reported in the global database on protected area management effectiveness (GD-PAME).

- 0.9% (17,932 km^2) of the terrestrial area of the country is covered by PAs with completed management effectiveness evaluations.
  - 19.5% of the area of terrestrial PAs have completed evaluations.
- 0.0% (0.0 km^2) 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.

The percentages will have to change in light of the changes made to the number and coverage of PAs and OECMs.

OECMs

The Kingdom of Saudi Arabia has identified a number of OECMs as described in the above section. As a new protected category, no management effectiveness assessments has been conducted for any of the OECMs. A plan to do so will commence in 2023. Also, the OECMs conservation impact has not been evaluated yet, however, a program for assessing their impact will commence starting 2023 and will be reported to CBD accordingly.

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 (as of May 2021). Therefore, there may be 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 South, Central and West Asia on achieving Aichi Biodiversity Targets 11 and 12 took place 7 - 10 December 2015 in New Delhi, India. 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:

Saudi Arabia's workshop submission identified a list of **38** proposed protected areas (managed by SWA or partner agencies). If these proposed protected areas were to be completed, coverage of terrestrial areas would increase by **99,325km²** and coverage of marine areas would increase by **11,614km²**. Bringing with them benefits for the other qualifying elements of Aichi Biodiversity Target 11.

Update on progress:

As described above, Saudi Arabia has taken major steps to enhance the national network of Protected Areas and OECMs. The current number of PAs is 20 with a total 98,328 km² (4.385%) of both terrestrial and marine.

On the other hand, OECMs have become a significant contributor to land and marine coverage in Saudi Arabia with a total number of EOCMs established/identified is 25 with a total surface area of 265,002 km² (11.81%) for both terrestrial and marine sites. Many of the OECMs are anticipated to become protected during the coming months/years thus contributing to Saudi Arabia progress towards the 2020 target and beyond.

NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)

Saudi Arabia has not submitted an NBSAP during the Strategic Plan for Biodiversity 2011-2020 (most recent NBSAP is available at: https://www.cbd.int/nbsap/search/).

submitted NBSAP prior to adoption of the Strategic Plan

Update on progress:

The NBSAP will be updated as part of the National Environment Strategy (NES) which was adopted by the Saudi Government in 2018. The NES program includes the update of the NBSAP with the aim to be aligned with the post-2020 Global Biodiversity Framework (GBF). The process of update will commence in 2022 and will include the following:

1- Restructuring the national biodiversity committee.

2- Establishment of the national working group for the NBSAP preparation.

3- Undertake a stakeholders' engagement process to ensure their full participation of key concerned entities form government, private sector, and civil society including women sector.

4- Endorsement of the final NBSAP by the Cabinet of Ministers.

5- Communicate the update NBSAP to the CBD secretariat.

The above coincides with the restructuring of the national environment sector governance which included the establishment of the National Centre for Wildlife (NCW) which was established in 2019. The center is mandated to lead the national program on biodiversity conservation and wildlife protection – including protected area planning and monitoring - in the post-2020 GBF.

Further, there are two other national and regional initiatives which will contribute the implementation of the new biodiversity conservation program, namely:

1- The Saudi Green Initiative (SGI): this includes a) increasing the protected areas coverage to 30% of the Kingdom's Terrestrial and Marine environments by 2030, b) reducing carbon emissions by more than 4% of global contribution, c) plant 10 billion trees across the country.

2- The Green Middle East initiative (GMI): this focuses on

   a. planting 50 billion trees across the region including 10 billion trees in Saudi Arabia alone,

   b. restoration of 200 million hectares of degraded land thus reducing 2.5% pf global carbon levels, and

   c. contribute to the reduction of hydrocarbon production by more than 60%.

OTHER ACTIONS/COMMITMENTS

Saudi Arabia's statement at the 2020 UN Biodiversity Summit mentions PAs, OECMs or corridors:

The government has developed a plan for a system of protected areas including natural reserves and desert, mountainous, and marine landscapes. Several regions have been classified as nature reserves which contributes to achieving target 11 of the Aichi biodiversity targets.

Update on progress:

The National System Plan for Saudi Arabia is currently being finalized and will be endorsed officially early 2022. The Plan includes the updated network of protected areas and OECMs using a national standard which was based on international best practice guidelines and benchmarks.

ANNEX I

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
Arabian desert	673,389.2	82.6	35.0	20,587.8	3.1
Arabian-Persian Gulf coastal plain desert	79,201.1	65.2	4.1	4.5	0.0
Arabian sand desert	574,083.7	80.5	29.8	15,288.6	2.7
Eastern Mediterranean conifer-broadleaf forests	1,539.6	1.1	0.1	0.0	0.0
Indus River Delta-Arabian Sea mangroves	36.6	0.6	0.0	0.0	0.0
North Arabian desert	241,467.8	51.6	12.5	48,140.8	19.9
North Arabian highland shrublands	8,079.9	100.0	0.4	0.0	0.0
Red Sea-Arabian Desert shrublands	261,404.8	83.3	13.6	626.3	0.2
Red Sea mangroves	40.6	3.5	0.0	6.4	15.7
South Arabian plains and plateau desert	461.0	0.1	0.0	0.0	0.0
Southwest Arabian coastal xeric shrublands	6,063.5	14.7	0.3	825.0	13.6
Southwest Arabian Escarpment shrublands and woodlands	61,018.6	60.8	3.2	4,688.6	7.7

Ecoregion Name	Area (km^2)	% of Global Ecoregion in Country	% of Country in Ecoregion	Area Protected (km^2)	% Protected in Country
Southwest Arabian highland xeric scrub	3,289.0	10.1	0.2	0.0	0.0
Southwest Arabian montane woodlands and grasslands	12,606.8	44.6	0.7	1,450.7	11.5

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