Aichi Biodiversity Target 11 Country Dossier: LEBANON

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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.

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. 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 December 2021, terrestrial coverage in Lebanon is 195 km^2 (1.9%) and marine coverage is 44 km^2 (0.2%).

- **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:** Lebanon contains 2 terrestrial ecoregions, 1 marine ecoregion, and 1 pelagic province: the mean coverage by reported PAs and OECMs is 3.3% (terrestrial), 2.0% (marine), and 0.0% (pelagic); 1 pelagic province has no coverage by reported PAs and OECMs.

- **Opportunities for action:** there is opportunity for Lebanon 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:** Lebanon has 28 Key Biodiversity Areas (KBAs): the mean protected coverage of KBAs by reported PAs and OECMs is 12.5%, while 18 KBAs have no coverage by reported PAs and OECMs.

- **Opportunities for action:** there is opportunity for Lebanon 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 Lebanon, 2.4% of aboveground biomass carbon, 2.1% of belowground biomass carbon, 2.5% 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 Lebanon 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 1.8%.

- **Opportunities for action:** there is opportunity for a general increase in PA or OECM coverage 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:** as of December 20201, the most common governance type for reported PAs in Lebanon is: 74.1% governed by **governments** (by government-delegated management).

- **Opportunities for action:** explore opportunities for governance types that have lower representation. There is also opportunity for Lebanon 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 December 2021, 62.1% of the area of terrestrial PAs and 93.2% of the area of marine PAs have completed Protected Area Management Effectiveness (PAME) assessments reported in the GD-PAME.

- **Opportunities for action:** the 60% target for completed management effectiveness assessments (per COP Decision X/31) **has** been met for terrestrial PAs and **has** been met for marine PAs. Further increasing this percentage for terrestrial PAs could be beneficial overall for understanding how well protected areas are being managed.

- 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 Lebanon. Section I of the dossier presents data on the current status of Lebanon'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 Lebanon, in relation to each Target 11 element. The analyses present options for improving Lebanon's area-based conservation network to achieve enhanced protection and benefits for livelihoods and climate change. Section II presents details on Lebanon'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.

COVERAGE - TERRESTRIAL & MARINE

As of December 2021,[1] Lebanon has **27** protected areas reported in the World Database on Protected Areas (WDPA). 3 UNESCO-MAB Biosphere Reserves not included in the following statistics (see details on UNWP-WCMC's methods for calculating PA and OECM coverage **here**).

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

Current coverage for Lebanon (as of December 2021):

- 1.89% terrestrial (195 km^2)

- 0.23% marine (43.5 km^2)

Lebanon has currently 4 categories of Protected Areas:

- *Nature reserves*: 15 terrestrial and 3 marine
    - updated data is now available in the WDPA December release,[2])
- *Nature sites under the protection of the Ministry of Environment*: 18
    - Lebanon is currently working internally to finalize their related maps, once finished it will be shared with UNEP-WCMC to be posted on the WDPA
- *Protected Forests under the mandate of the Ministry of Agriculture*
    - No data or maps are finalized, when they are completed, they will be shared with UNEP-WCMC to be posted on the WDPA
- *Himas* (Community Based Natural Resources Management) declared through decisions from the local authorities (municipalities) and initiated by a local NGO in Lebanon
    - No maps are finalized till now, when they are completed, they will be shared with UNEP-WCMC to be posted on the WDPA

Regarding international and regional designations, Lebanon has:

- 3 UNESCO Man and Biosphere reserves: updated data and maps were provided to UNEP-WCMC and are included in the WDPA December release
- 2 SPAMIs (Specially Protected Areas of Mediterranean Importance): updated data and maps were provided to UNEP-WCMC and are included in the WDPA December release
- 4 Ramsar sites: already included in the WDPA, though Lebanon plans to provide an update regarding these sites

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[1] Statistics for other elements in the dossier are based on the May 2021 WDPA data. From May to December, there was a small decrease in terrestrial cover (~30 km^2) and no change for marine PAs.
[2] See: https://www.protectedplanet.net/country/LBN
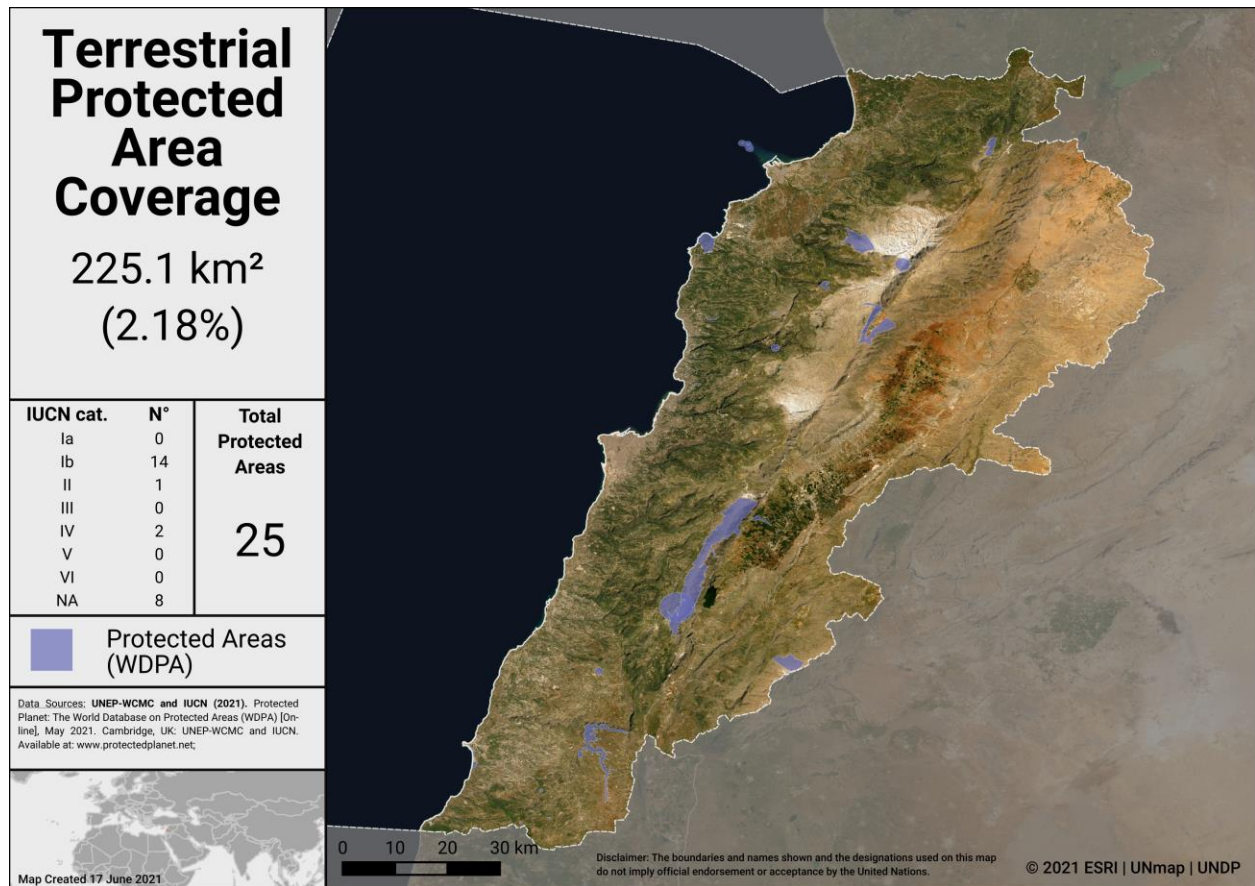
Terrestrial Protected Areas in Lebanon (as of May 2021). Data for Lebanon's PAs was updated in the WDPA in December 2021 (coverage is now 195 km^2 or 1.9%). For updated maps see: https://www.protectedplanet.net/country/LBN

Marine Protected Area Coverage

43.5 km²
(0.23%)

IUCN cat.	N°	Total Protected Areas
Ia	0	
Ib	3	
II	0	
III	0	**4**
IV	0	
V	0	
VI	0	
NA	1	

Marine Protected Areas (WDPA)

Data Sources: **UNEP-WCMC and IUCN (2021).** Protected Planet: The World Database on Protected Areas (WDPA) [Online], May 2021. Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net;

Map Created 18 June 2021

0 10 20 30 km

Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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Marine Protected Areas in (as of May 2021). Data for Lebanon's PAs was updated in the WDPA in December 2021 (but no change in coverage for marine areas).

Potential OECMs

Examples of potential OECMs in Lebanon:

Potential OECM example	Area covered (km²)
Biosphere Reserve of Jabal Moussa (private protected area)	12.92
Buffer zone of Al Shouf Cedars Biosphere Reserve	184.54
Ammiq Wetland Ramsar Site	2.22

If the three potential OECM sites were included, the country's terrestrial PA coverage would increase by ~0.6%. See IUCN-WCPA (2020) for full details on potential OECMs.

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 Lebanon considers where to add new PAs and OECMs, the map below identifies areas in Lebanon 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.
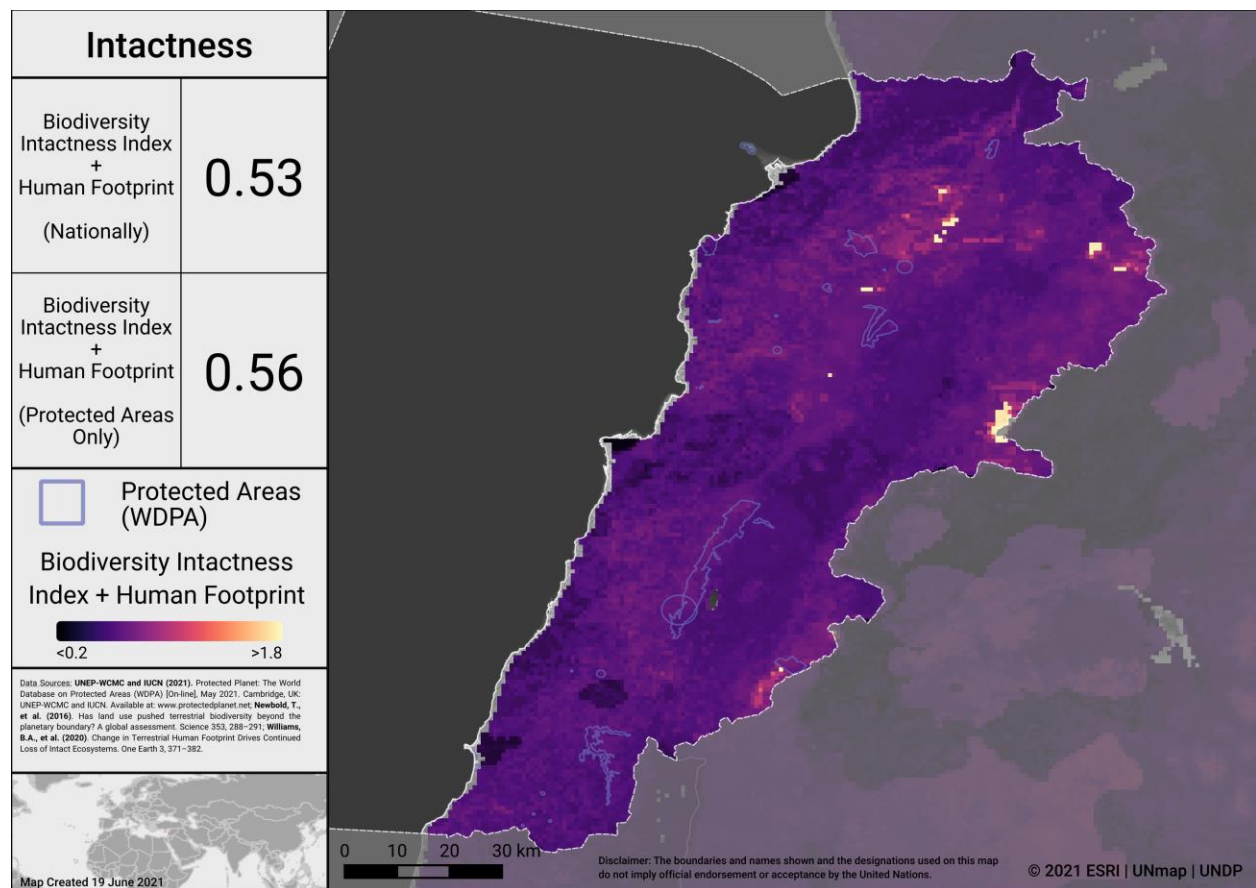
Intactness in Lebanon

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).

Lebanon has 2 **terrestrial** ecoregions. Out of these:

- All 2 ecoregions have at least some coverage from PAs and OECMs.
- 0 ecoregions have at least 17% protected within the country.
- The average terrestrial coverage of ecoregions is 3.3%.

Lebanon has 1 **marine** ecoregion and 1 **pelagic province**:

- Coverage from reported PAs and OECMs is 2.0% (marine ecoregion) and 0.0% (pelagic province).

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

In addition, a recent regional assessment (see IUCN-WCPA, 2020) evaluated ecological representativeness based on the number and proportion of ecosystem classes within PAs and OECMs (using the EMODnet Seabed Habitat layer, EUSeaMap, for marine ecosystems, and the Land Use/Land Cover data from the Copernicus Global Land Cover map for terrestrial ecosystems).

Currently, in Lebanon:

- 4 out of 8 terrestrial and freshwater ecosystem types have at least 2% coverage from PAs

- No terrestrial and freshwater ecosystem types have at least 17% coverage

- None of the 4 marine ecosystem types have >10% coverage from PAs and OECMs (while 2 have <2% coverage).

See regional report, *Achieving Aichi Target 11 in the Southern and Eastern Mediterranean Region* (IUCN-WCPA, 2020) for full details.

Terrestrial Ecoregion Protected Area Coverage
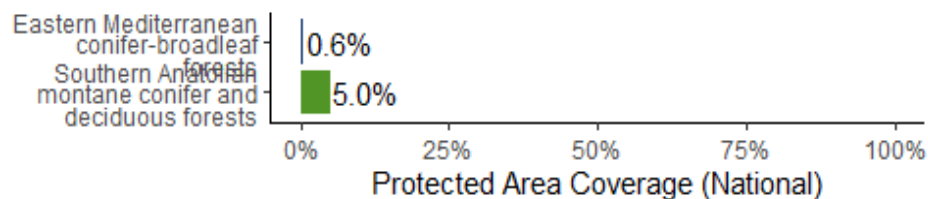
Mean coverage: 2.8%

Number of Ecoregions in Country	Ecoregion Protection	
2	0%	12%
	1%	17%
	2%	30%
	5%	>50%
	8%	

Protected Areas (WDPA)

Data Sources: **UNEP-WCMC and IUCN (2021).** Protected Planet: The World Database on Protected Areas (WDPA) [On-line], May 2021. Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net; **Joint Research Centre of the European Commission (2021).** The Digital Observatory for Protected Areas (DOPA) [On-line], Ispra, Italy. Available at: http://dopa-explorer.jrc.ec.europa.eu; **Dinerstein, E., et al. (2017).** An Ecoregion-Based Approach to Protecting Half the Terrestrial Realm. BioScience 67, 534–545.

Map Created 18 June 2021

Southern Anatolian montane conifer and deciduous forests

Eastern Mediterranean conifer-broadleaf forests

Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
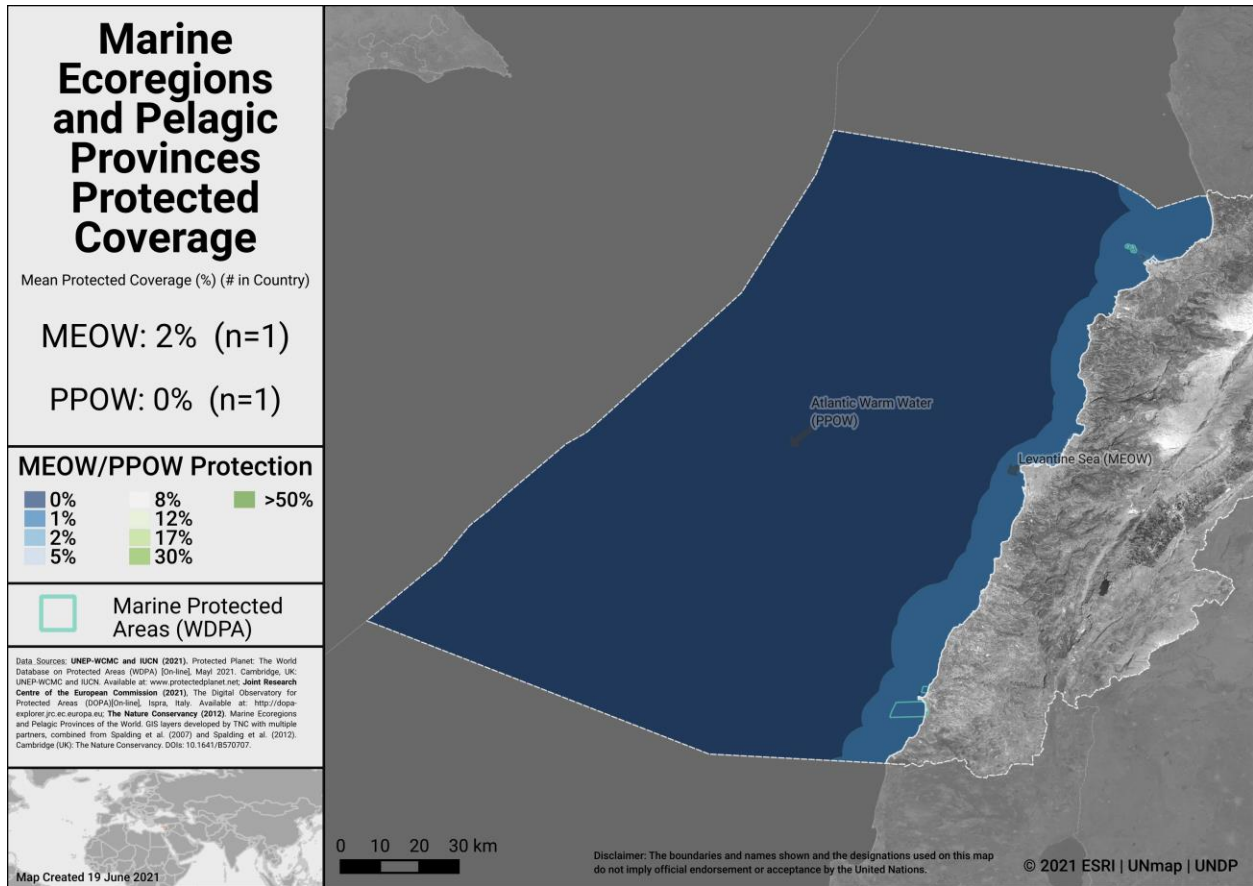
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Terrestrial ecoregions in Lebanon (coverage as of May 2021; slight decrease in terrestrial coverage from the December 2021 WDPA release may impact results).
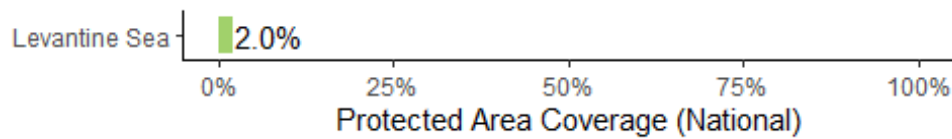

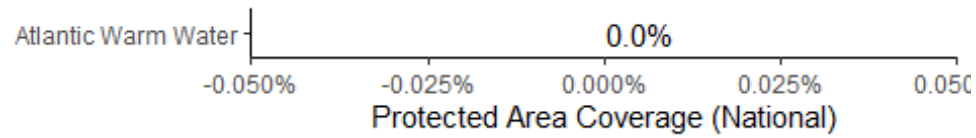Terrestrial ecoregions of the World (TEOW) in Lebanon

Marine ecoregions and pelagic provinces

Marine Ecoregions of the World (MEOW) in Lebanon

Atlantic Warm Water ┤   0.0%

-0.050%   -0.025%   0.000%   0.025%   0.050

Protected Area Coverage (National)

Pelagic Provinces of the World (PPOW) in Lebanon

Opportunities for action

There is opportunity for Lebanon 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.

This country has established a Key Biodiversity Area (KBA) National Coordination Group which brings together a wide range of stakeholders, from government agencies, NGOs, academia and wider society. The group oversees and coordinates the identification, delineation, monitoring and promotion of conservation of KBAs, and is currently undertaking a national assessment of KBAs across all taxonomic groups and ecosystems for which data exist, building on the existing network of KBAs in the country.

Lebanon has 30 Key Biodiversity Areas (KBAs) [**28** KBAs included in the analysis]

- Mean percent coverage of all KBAs by PAs and OECMs in Lebanon is **12.5%**.
- **0** KBAs have full (>98%) coverage by PAs and OECMs.
- **10** KBAs have partial coverage by PAs and OECMs.
- **18** KBAs have no (<2%) coverage by PAs and OECMs.
- *2 KBAs lack spatial data to allow PA/OECM coverage to be determined*

Several additional KBAs would have improved coverage if the three potential OECMs were included (see IUCN-WCPA, 2020).

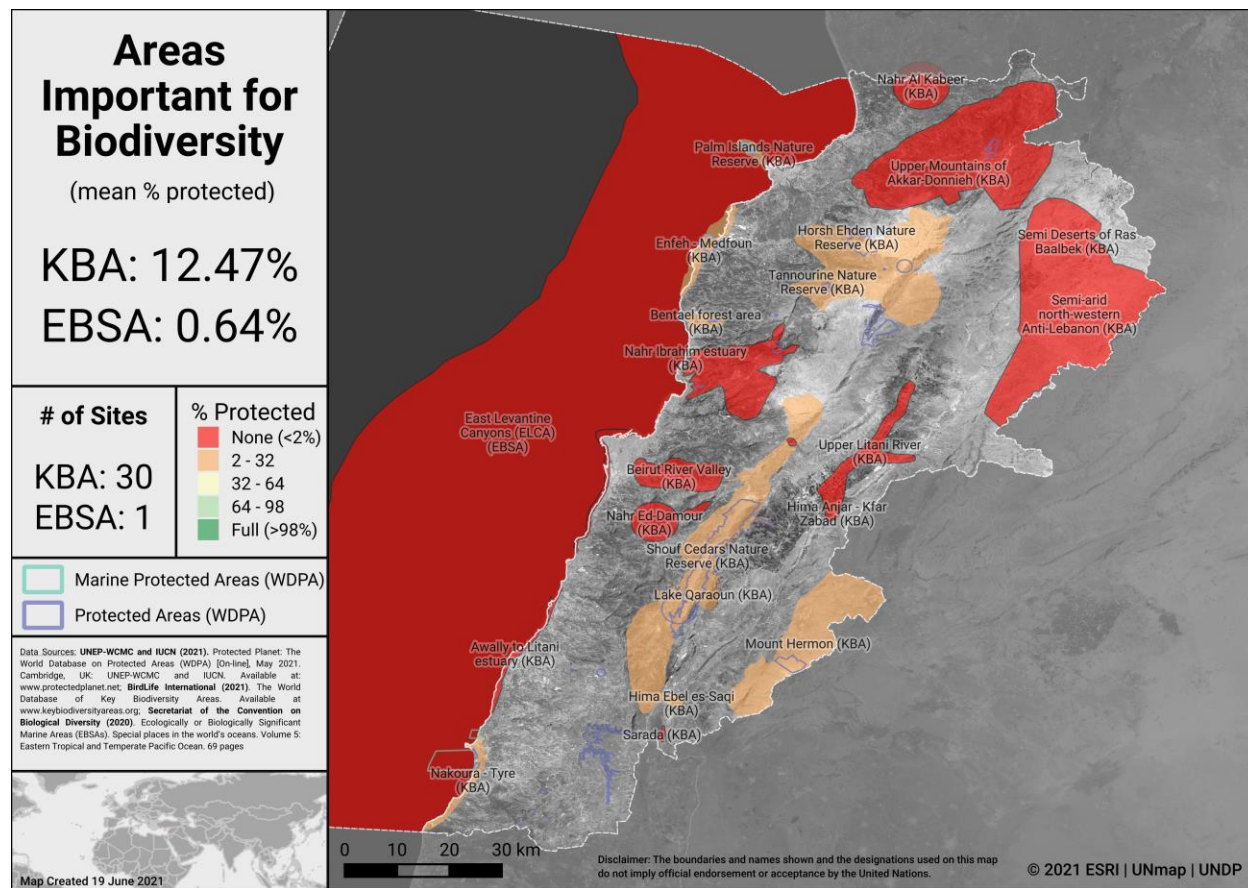**Ecologically or Biologically Significant Marine Areas (EBSAs)**

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.

Lebanon has 1 EBSA with some portion of its extent within Lebanon's EEZ, which has 0.6% coverage from PAs and OECMs.

Areas Important for Biodiversity in Lebanon (coverage as of May 2021; slight decrease in terrestrial coverage from the December 2021 WDPA release may impact results).
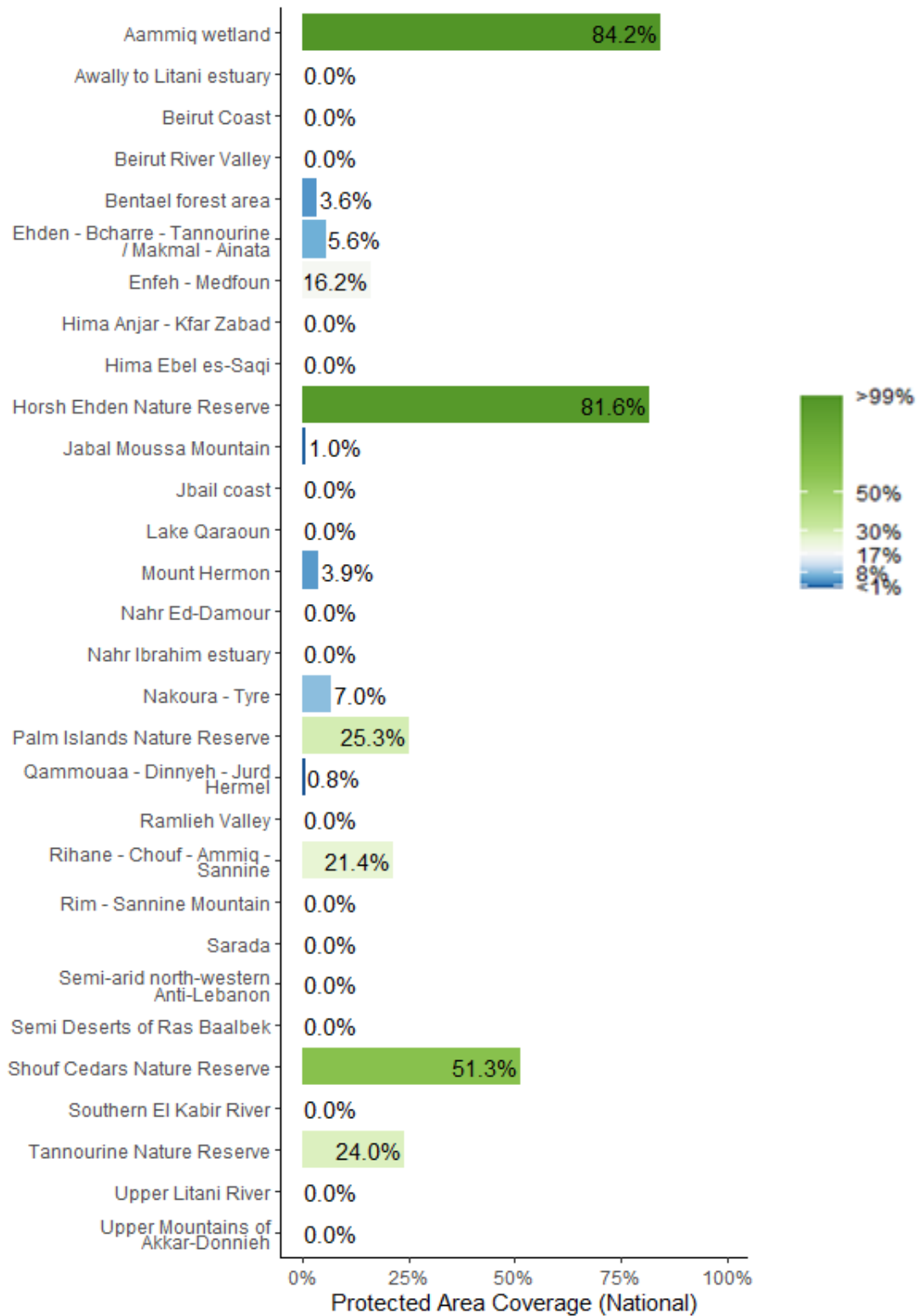
Key Biodiversity Area Coverage (KBA) in Lebanon

East Levantine Canyons (ELCA) — | 0.6%

0%   25%   50%   75%   100%
Protected Area Coverage (National)
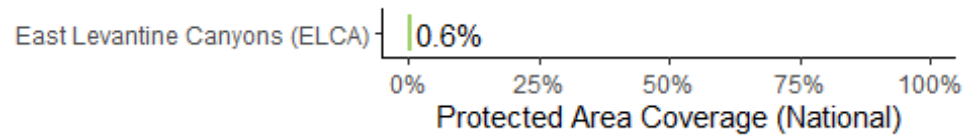
Ecologically or Biologically Significant Marine Areas (EBSAs) in Lebanon

Opportunities for action

There is opportunity for Lebanon 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 Lebanon and the percent of carbon in protected areas. The total carbon stocks is 5.1 Tg C from aboveground biomass (AGB), with 2.4% in protected areas; 5.4 Tg C from below ground biomass (BGB), with 2.1% in protected areas; 58.1 Tg C from soil organic carbon (SOC), with 2.5% in protected areas; and 134.5 Tg C from marine sediment carbon, with 0.0% in protected areas.
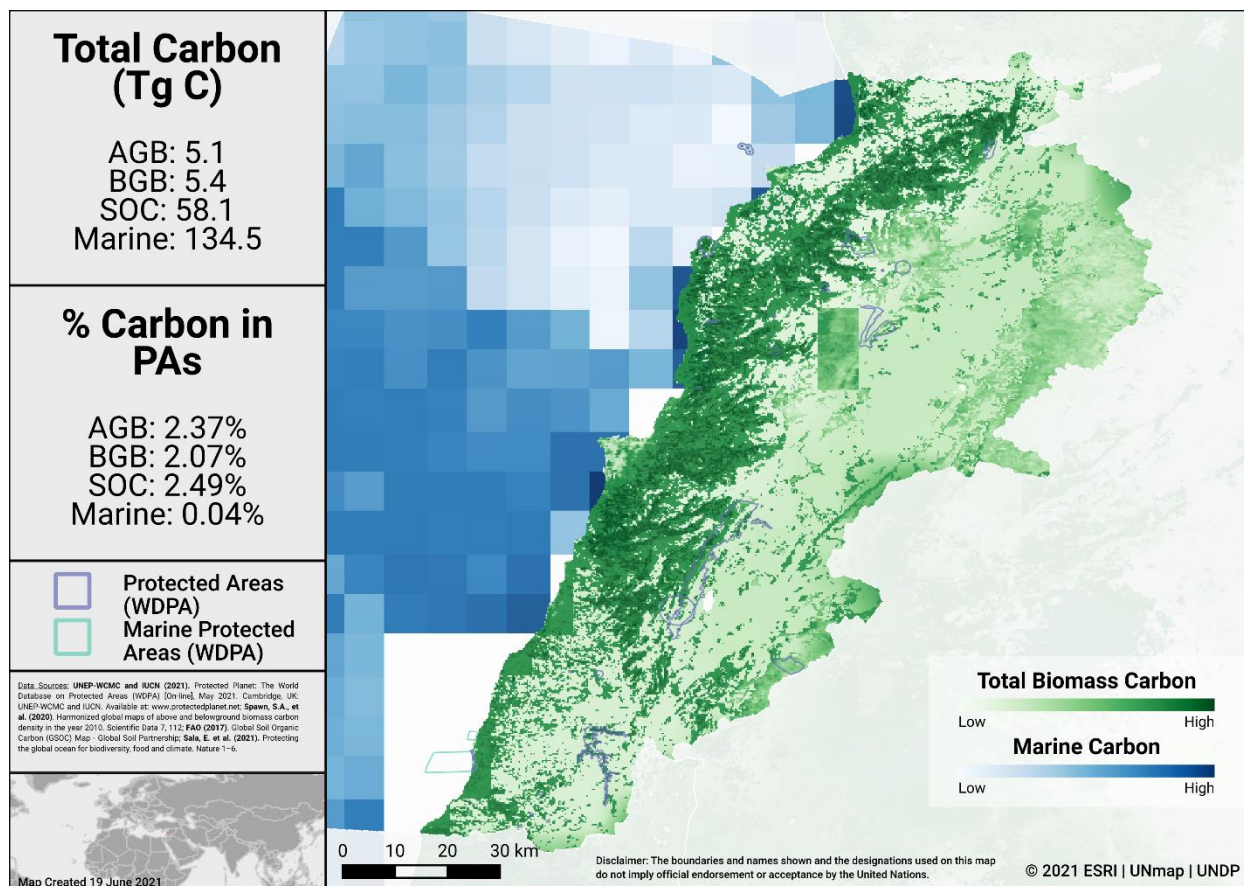
Carbon Stocks in Lebanon

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 Lebanon 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 Lebanon 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).

In addition, a recent regional assessment (see IUCN-WCPA, 2020) evaluated connectivity based on the number of connections, less than or equal to 20km, between terrestrial or marine PA patches with a minimum size of 0.5 km^2 within the PA network of each country. As of 2020, 95.83% of the Lebanon's PAs were within a 20km distance from another PA; if potential OECMs were included, this would increase to 95.15% of the country's PAs (these high figures are explained by the relative small size of Lebanon, and the indicator used).

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 Lebanon was 1.8%.

PARC-Connectedness Index

In 2019, as assessed using the PARC-Connectedness Index (values ranging from 0-1, indicating low to high connectivity), connectivity in Lebanon is 0.19. This represents no significant change since 2010.

Corridor case studies

There are currently no corridor case studies available for Lebanon (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 in PA or OECM coverage 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 December 2021, PAs in Lebanon reported in the WDPA have the following governance types:

- 74.1% are governed by **governments** (by government-delegated management)
- 3.7% are under **shared** governance (by collaborative governance)
- 3.7% are under **private** governance (by Non-profit organisations)
- 0.0% are under **IPLC** governance
    - 0.0% by Indigenous Peoples
    - 0.0% by local communities
- 18.5% **do not** report a governance type
    - (All of which are Ramsar sites; Lebanon plans to provide updates regarding these sites)

OECMs

As of May 2021, there are **0** OECMs in Lebanon reported in the WD-OECM, therefore there is no data available on OECM governance types. For potential OECMs, 1 (Biosphere Reserve of Jabal Moussa) is under private governance; governance type is note reported for the other potential OECMs.

Privately Protected Areas (PPAs)

Since the SISPAM project ended in 2006, Lebanon has issued a *Protected Areas Framework Law* in 2019 which has defined the mechanisms and legal instruments to establish a nature reserve on private land. To date, there are no nature reserves established on a private land, however there is one under the category 2 mentioned above "Nature site under the protection of the Ministry of Environment" which is *Jabal Moussa* (also a Biosphere reserve).

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

There is currently no data available on ICCAs for Lebanon (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 Lebanon (see Garnett et al 2018 for details).

Opportunities for action

Explore opportunities for governance types that have lower representation. There is also opportunity for Lebanon 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 information on the coverage of PAs and OECMs with completed protected area management effectiveness (PAME) assessments as reported in the global database (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.

Currently, almost half (49.2%) of Lebanon's terrestrial PAs and 0.59% of Lebanon's marine PAs have a reported management plan (see IUCN-WCPA, 2020).

Protected area management effectiveness (PAME) assessments

As of December 2021, Lebanon has 27 PAs reported in the WDPA; of these PAs, 10 (37%) have management effectiveness evaluations reported in the global database on protected area management effectiveness (GD-PAME).

- 1.2% (121 km²) of the terrestrial area of the country is covered by PAs with completed management effectiveness evaluations.
    - 62.1% of the area of terrestrial PAs have completed evaluations.
- 0.21% (41 km²) of the marine area of the country is covered by PAs with completed management effectiveness evaluations.
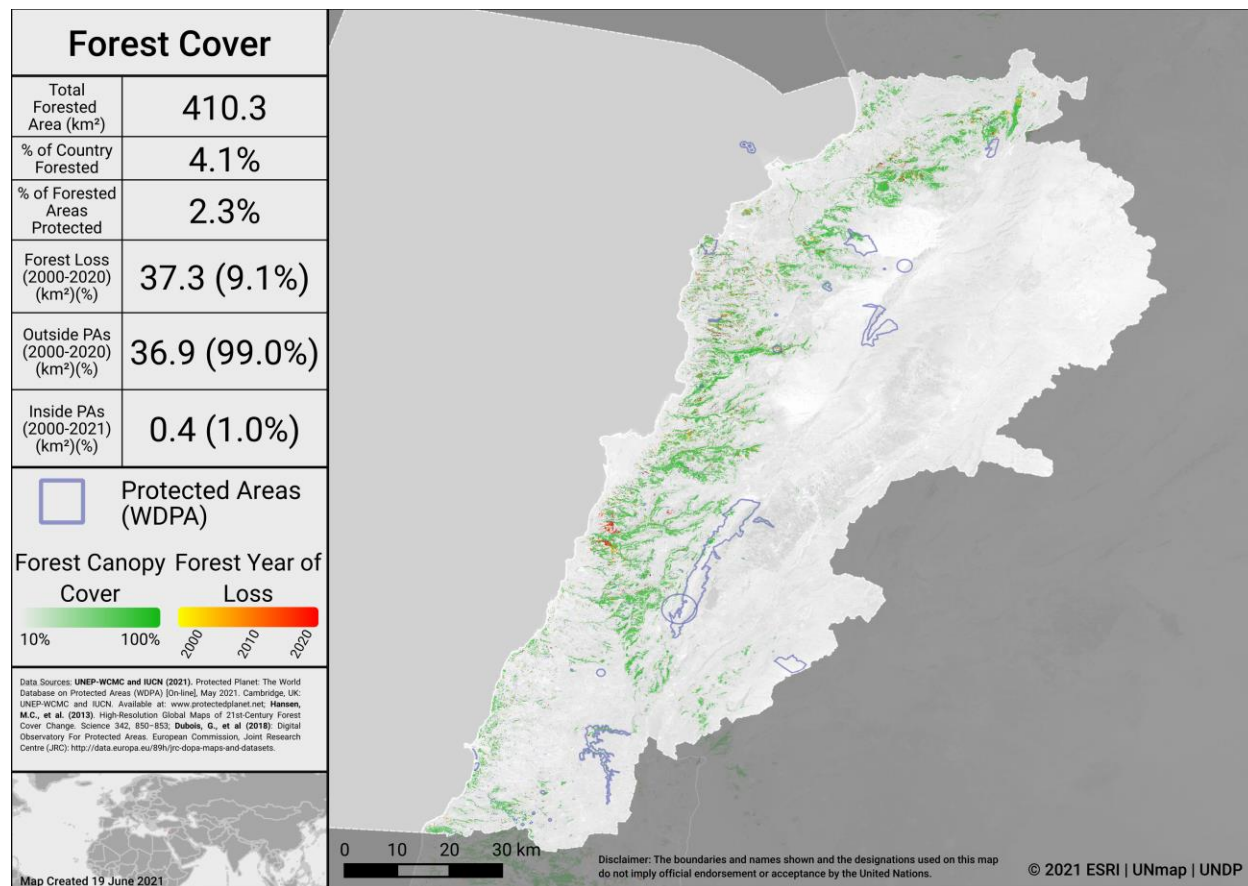   - 93.2% of the area of marine PAs have completed evaluations.

The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has** been met for terrestrial PAs and **has** been met for marine PAs.

As of May 2021, there are 0 OECMs in Lebanon reported in the WD-OECM and there is no information available on the management effectiveness of potential OECMs (but see IUCN-WCPA, 2020 for some details regarding conservation measures in potential OECMs).

Changes in forest cover in protected areas and OECMs

Forested areas in Lebanon cover approximately 4.1% of the country, an area of 410.3 km². Approximately 2.3% (9.4 km²) of this is within the protected area estate of Lebanon. Over the period 2000-2020 loss of forest cover amounted to over 37.3 km², or 0.4% of the country (9.1% of forest area), of which 0.4 km² (1.0% of forest loss) occurred within protected areas. The map below shows how forest cover has changed in Lebanon from 2000-2020 both inside and outside of PAs. This can indicate how effective PAs are in reducing forest cover loss.

Forest Cover and Forest Loss in Lebanon

Opportunities for action

The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has been** met for terrestrial PAs and **has been** met for marine PAs. Further increasing this percentage for terrestrial PAs could be beneficial overall for understanding how well protected areas are being managed.

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/

The following actions were identified during the workshops:

Terrestrial coverage: By 2020, the total area of nature reserves is increased to reach at least 4% of Lebanon's area (see NBSAP target, next page)

Marine coverage: By 2020, Lebanon will achieve the 11th Aichi target by having 10% as marine protected areas by:

1) Finalizing the designation of 2 marine protected areas and starting their official work.

2) Working on the designation of 6 new marine protected areas selected among the MPAs in "Lebanon's marine protected area strategy "where biodiversity surveys were already completed.

Ecological representation:

1) By 2020, at least 15% of natural ecosystems are protected and all types of ecosystems are represented in the PA network.

2) By 2020, the total area of nature reserves is increased to reach at least 4 % of Lebanon's area.

Areas Important for biodiversity and ecosystem services:

1) By 2020, the enforcement of the hunting law and the control of the hunting violations will lead to at least 70% of decreasing in illegal hunting in Lebanon 3)

2) By 2020, all classified "Important Bird Areas" IBAs in Lebanon which constitutes migratory routes of key migratory birds, are protected.

Connectivity:

1) By 2020, Biodiversity and Protected Areas are mainstreamed into major land use plans.

2) By 2020, The MoE will be able to protect the mountain peaks, natural areas, coastal zones, green spaces, and agricultural lands after the preparation of a master plan for their protection.

3) By 2020, implementing the National Physical Master Plan for the Lebanese Territory (NPMPLT).

Management effectiveness:

1) By 2020, all protected areas in Lebanon have effective management plans, and effective management teams and a management effectiveness assessment is conducted.

2) By 2020, the Protected Areas in Lebanon have effective business plans and are implementing regular income generating activities.

3) By 2020, 25% of all natural ecosystems are sustainably managed and properly considered in land-use planning implementation.

Governance and Equity: By 2020, legislation is in place in Lebanon to recognize different categories of PAs including community conservation areas, and to recognize the establishment of PAs on private lands.

Integration: Revising and updating its National Biodiversity Strategy and Action Plan (NBSAP).

OECMs: By 2020, Lebanon will be able to establish new Himas adopting a community-based approach, through municipal decisions. (Hima is defined as a Community Based Natural Resources Management (CBNRM): System that promotes Sustainable Livelihood, Resources Conservation, and Environmental Protection for the human wellbeing (UNU-INWEH). A Hima is under the supervision of the municipality, the union of municipalities).

NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)

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

National Target 5: By 2030, the total percent coverage of nature reserves is increased to reach at least 5% of Lebanon's area

This NBSAP **did** include a quantitative target for **terrestrial** PAs or OECMs (5%).

- As of May 2021 (based on the WDPA/WD-OECM) has the target been met: **No (but post-2020 target date)**
- Accounting for other projects, actions and commitments, if this target is met, coverage in the country will increase by **321 km²** by 2030.

This NBSAP **did** include a quantitative target for **marine** protected areas or OECMs.

- As of May 2021 (based on the WDPA/WD-OECM) has the target been met: **No (but post-2020 target date)**
  - Target will be surpassed if national priority action is completed (see previous section)

Other relevant targets:

Target 4: By 2030, at least 20% of natural terrestrial and marine ecosystems are protected and all types of ecosystems are represented in the PA network

OTHER ACTIONS/COMMITMENTS

Leaders' Pledge for Nature

Lebanon **has** signed onto the Leaders' Pledge for Nature.

Political leaders participating in the United Nations Summit on Biodiversity in September 2020, representing 88 countries from all regions and the European Union, have committed to reversing biodiversity loss by 2030. By doing so, these leaders are sending a united signal to step up global ambition and encourage others to match their collective ambition for nature, climate, and people with the scale of the crisis at hand.

Commitments for PAs and OECMs from Other National Policies

Policy document	Ecosystem	Policy text
National Agriculture Strategy	Forest ecosystems	Encourage and support the use of renewable energy in the agricultural sector
National Agriculture Strategy	Forest ecosystems	Valorize non-timber forest products such as aromatic and medicinal plants
National Agriculture Strategy	Wetland ecosystems	Enhance the efficient use of irrigation water and expand the supply of water resources for irrigation
National Agriculture Strategy	Grasslands & Agricultural systems	Promote climate smart agriculture techniques such as conservation agriculture, smart planting
National Forest Programme	Forest ecosystems	Mitigate the effect of climate change on vulnerable forest ecosystems
National Forest Programme	Forest ecosystems	Apply measures related to prevision, prevention and fire fighting in forests

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
Eastern Mediterranean conifer-broadleaf forests	6,410.3	4.5	62.7	37.3	0.6
Southern Anatolian montane conifer and deciduous forests	3,704.8	4.8	36.3	183.6	5.0

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