



Convention on
Biological Diversity



Aichi Biodiversity Target 11 Country Dossier: DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

With generous support from:



DEUTSCHE ZUSAMMENARBEIT

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



UK Government



WCMC



Global Partnership on
AICHI TARGET 11



TABLE OF CONTENTS

GLOSSARY	3
EXECUTIVE SUMMARY	5
<i>Aichi Biodiversity Target 11 Elements: Current status and opportunities for action</i>	5
INTRODUCTION	8
SECTION I: CURRENT STATUS	10
<i>COVERAGE - TERRESTRIAL & MARINE</i>	11
<i>ECOLOGICAL REPRESENTATIVENESS – TERRESTRIAL & MARINE</i>	15
<i>AREAS IMPORTANT FOR BIODIVERSITY</i>	19
<i>AREAS IMPORTANT FOR ECOSYSTEM SERVICES</i>	23
<i>CONNECTIVITY & INTEGRATION</i>	25
<i>GOVERNANCE DIVERSITY</i>	26
<i>PROTECTED AREA MANAGEMENT EFFECTIVENESS</i>	27
SECTION II: EXISTING PROTECTED AREA AND OECM COMMITMENTS	29
<i>PRIORITY ACTIONS FROM 2015-2016 REGIONAL WORKSHOPS</i>	29
<i>NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)</i>	30
ANNEX I	31
<i>FULL LIST OF TERRESTRIAL ECOREGIONS</i>	31
REFERENCES	32



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
OECD	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-OECD	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.

This publication may be reproduced for educational or non-commercial purposes without special permission from the copyright holders, provided acknowledgement of the source is made. The SCBD and UNDP would appreciate receiving a copy of any publications that use this document as a source.



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 May 2021, terrestrial coverage in Democratic People's Republic of Korea is 2,975.6 km² (2.4%) and marine coverage is 25.6 km² (0.0%); national records show 12.6% of the total territory in the Democratic People's Republic of Korea is covered by PAs.
- **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:** Democratic People's Republic of Korea contains 4 terrestrial ecoregions, 2 marine ecoregions, and 1 pelagic province: the mean coverage by reported PAs and OECMs is 1.7% (terrestrial), 0.0% (marine), and 0.0% (pelagic); 1 terrestrial ecoregion, 2 marine ecoregions, and 1 pelagic province have no coverage by reported PAs and OECMs.
- **Opportunities for action:** there is opportunity for Democratic People's Republic of Korea to increase protection in terrestrial and marine ecoregions and pelagic



6 | Aichi Target 11 Dossier: DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

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:** Democratic People's Republic of Korea has 33 Key Biodiversity Areas (KBAs): the mean coverage of KBAs by reported PAs and OECMs is 8.6%, while 26 KBAs have no coverage by reported PAs and OECMs.
- **Opportunities for action:** there is opportunity for Democratic People's Republic of Korea 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 Democratic People's Republic of Korea, 3.2% of aboveground biomass carbon, 3.0% of belowground biomass carbon, 2.7% of soil organic carbon, 0.2% of carbon stored in marine sediments is covered by PAs and OECMs.
- **Opportunities for action:** for carbon, there is opportunity for Democratic People's Republic of Korea 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 1.2%.
- **Opportunities for action:** there is opportunity for a general increase of PAs or OECMs 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:** Governance type is not reported for any PAs in the WDPA.
- **Opportunities for action:** increase efforts to identify the governance types for the 100.0% of sites that do not have their governance type reported. If applicable, explore opportunities for governance types that have lower representation



7 | Aichi Target 11 Dossier: DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

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

Protected Area Management Effectiveness

- **Status:** 0.0% of terrestrial PAs and 0.0% of marine PAs have completed Protected Area Management Effectiveness (PAME) assessments reported.
- **Opportunities for action:** the 60% target for completed management effectiveness assessments (per COP Decision X/31) **has not** been met for terrestrial PAs and **has not** been met for marine PAs. Therefore, there is opportunity to increase protected area management effectiveness (PAME) evaluations for both terrestrial and marine PAs to achieve the target.
- There is also opportunity to implement the results of completed PAME evaluations, to improve the quality of management for existing PAs and OECMs (e.g. through adaptive management and information sharing, increasing the number of sites reporting 'sound management') and to increase reporting of biodiversity outcomes in PAs and OECMs.



INTRODUCTION

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

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

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

This dossier provides an overview of area-based conservation in Democratic People's Republic of Korea. Section I of the dossier presents data on the current status of Democratic People's Republic of Korea'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 opportunities for action for Democratic People's Republic of Korea, in relation to each Target 11 element. The analyses present options for improving Democratic People's Republic of Korea's area-based conservation network to achieve enhanced protection and benefits for livelihoods and climate change. Section II presents details on Democratic People's Republic of Korea's existing PA and OECM commitments as a summary of existing

9 | Aichi Target 11 Dossier: DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA

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, Democratic People's Republic of Korea has **34** protected areas reported in the World Database on Protected Areas (WDPA). 3 UNESCO-MAB Biosphere Reserves 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, Democratic People's Republic of Korea has **0** OECMs reported in the world database on OECMs (WD-OECM).

Current coverage for Democratic People's Republic of Korea:

- 2.4% terrestrial (31 protected areas, 2,975.6 km²)
- 0.0% marine (0 protected areas, 25.6 km²)

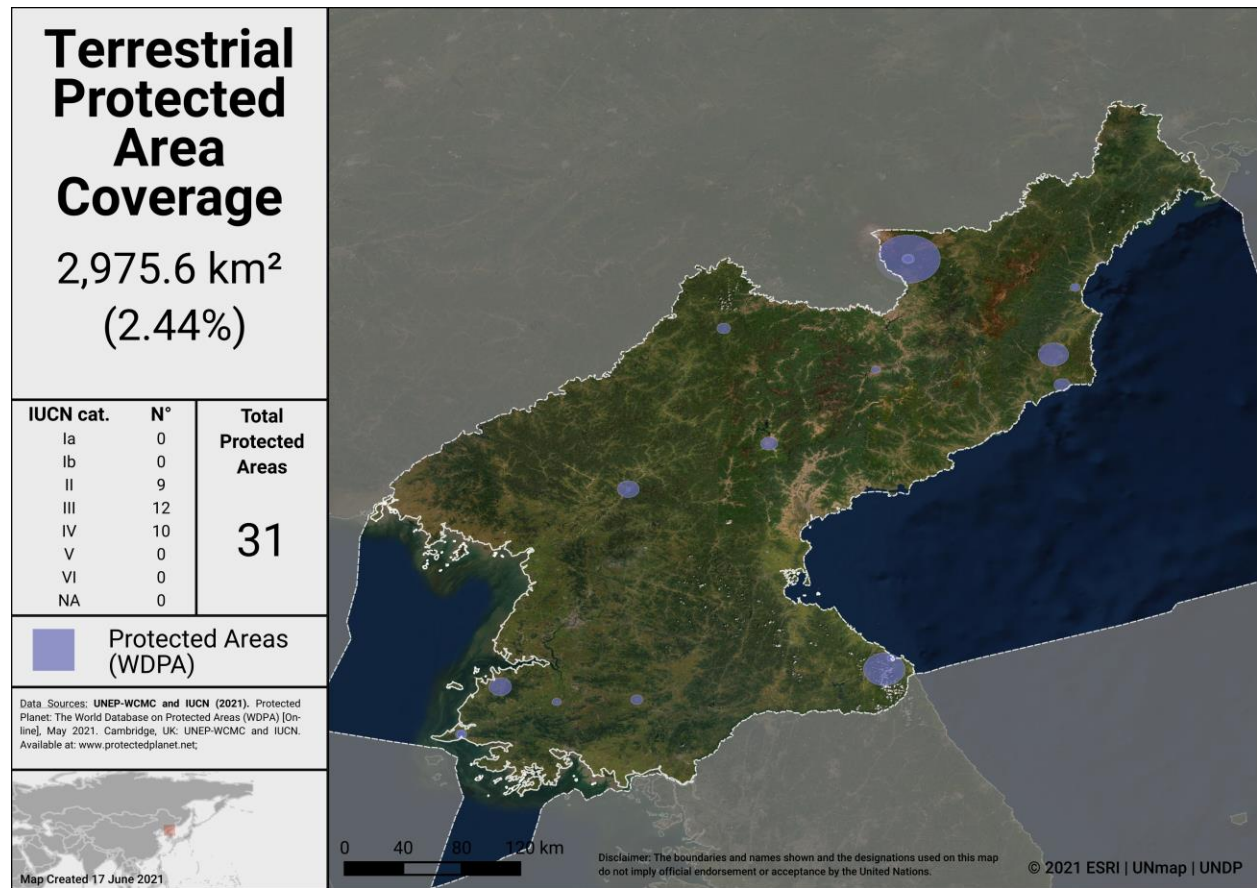
A recent submission from the Democratic People's Republic of Korea indicates **218 PAs** total, amounting to **12.6% of total territory** in the Democratic People's Republic of Korea (work is ongoing to ensure the WDPA is updated with these additional sites).

These sites include:¹ 80 National Parks, 4 Natural Reserves, 26 Animal Reserves, 26 Plant Reserves, 33 Migratory Bird (SeaBird) Reserves, 4 Natural Resource Management Areas, 21 Aquatic Resource Strict Reserves, 19 Stationariness Fish Resource Reserves, and 5 Biosphere Reserves.

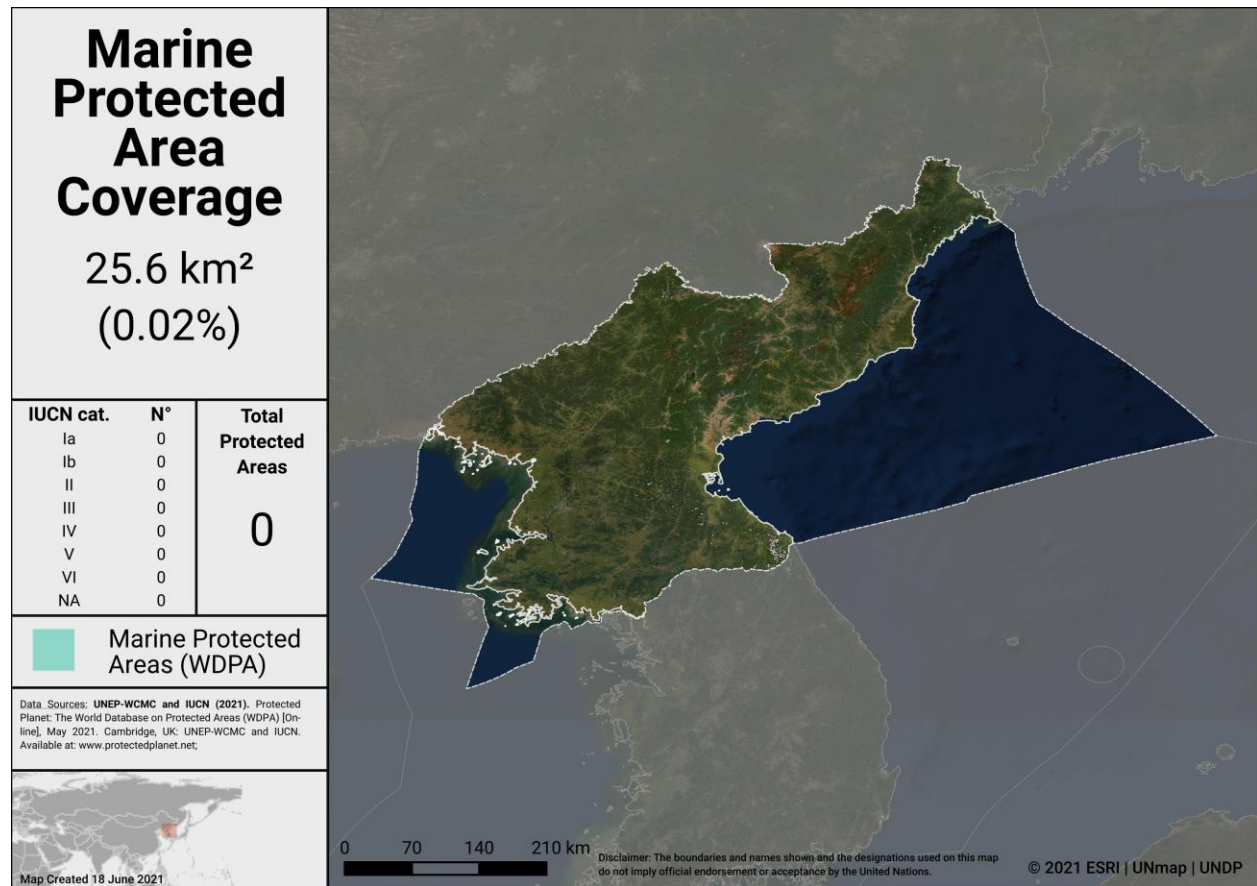
This increased coverage will impact elements in the following sections (which are based on the WDPA data from May 2021, and as such may be much lower than if calculated based on all 218 PAs)

¹ The 34 PAs currently reported in the WDPA (as of May 2021) include: 9 National Parks, 12 Natural Monuments, 7 Protected Areas, 2 Natural Reserves, 1 Scenery Reserve, and 3 UNESCO-MAB Biosphere Reserves





Terrestrial Protected Areas in Democratic People’s Republic of Korea



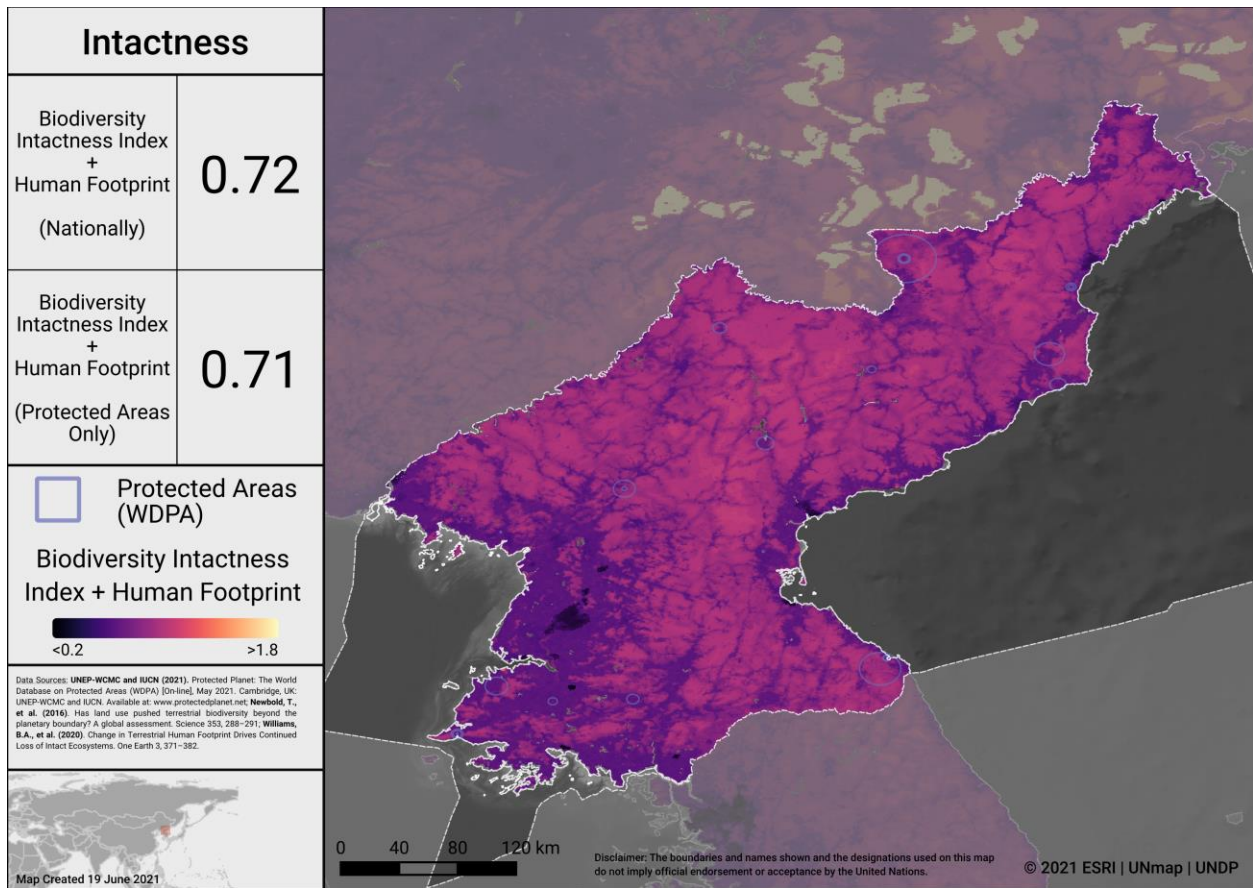
Marine Protected Areas in Democratic People’s Republic of Korea

Potential OECMs

There are currently no potential OECM examples for Democratic People’s Republic of Korea.

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 Democratic People’s Republic of Korea considers where to add new PAs and OECMs, the map below identifies areas in Democratic People’s Republic of Korea 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 Democratic People’s Republic of Korea

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).

Democratic People's Republic of Korea has 4 **terrestrial** ecoregions. Out of these:

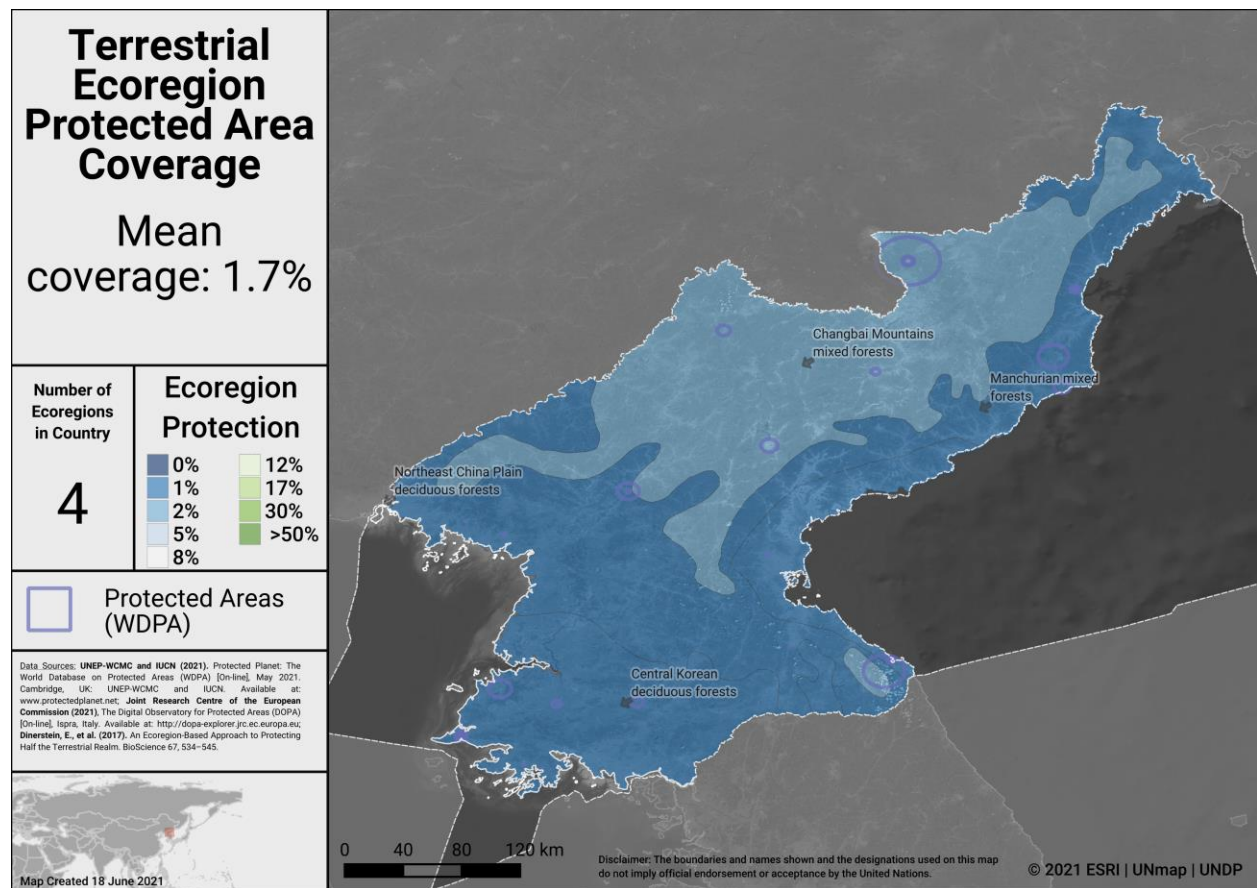
- 3 ecoregions have at least some coverage from PAs and OECMs.
 - 1 remaining ecoregion covers <0.1% of the country
- 0 ecoregions have at least 17% protected within the country.
- The average terrestrial coverage of ecoregions is 1.7%.

Democratic People's Republic of Korea has 2 **marine** ecoregions and 1 **pelagic province**. Out of these:

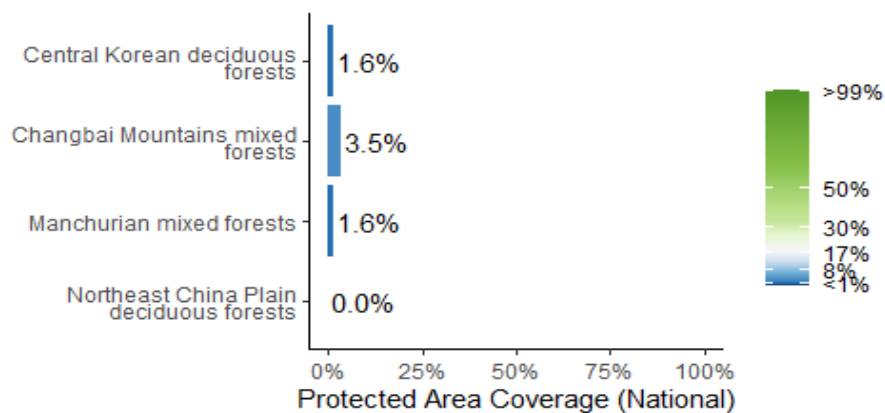
- 0 marine ecoregions and 0 pelagic provinces have any coverage from reported PAs and OECMs; coverage is 0.0% (marine ecoregion) and 0.0% (pelagic province).

A full list of terrestrial ecoregions in Democratic People's Republic of Korea is available in Annex I.



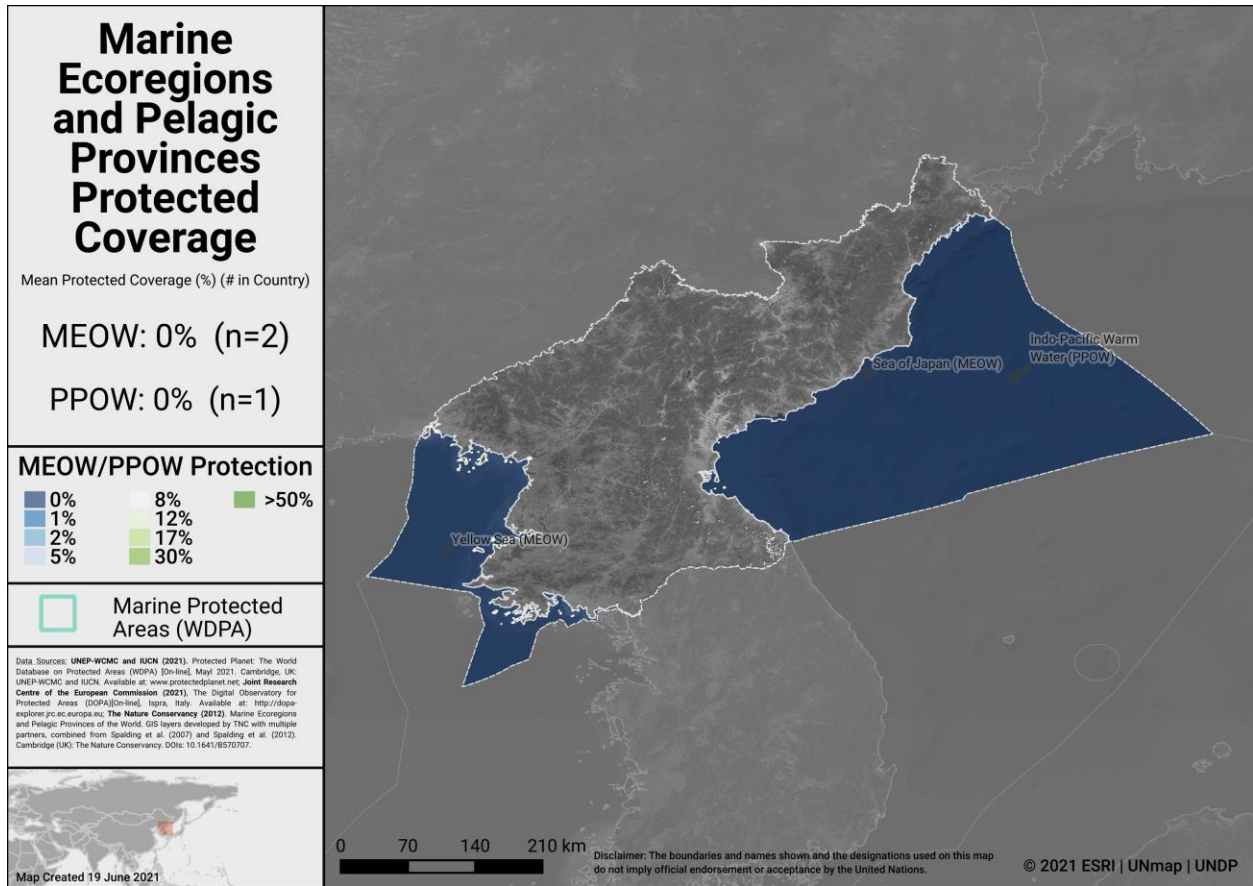


Terrestrial ecoregions in Democratic People’s Republic of Korea

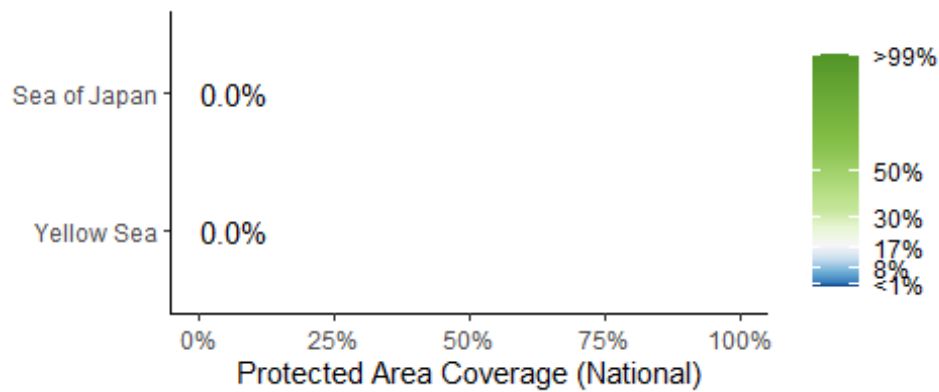


Terrestrial ecoregions of the World (TEOW) in Democratic People’s Republic of Korea



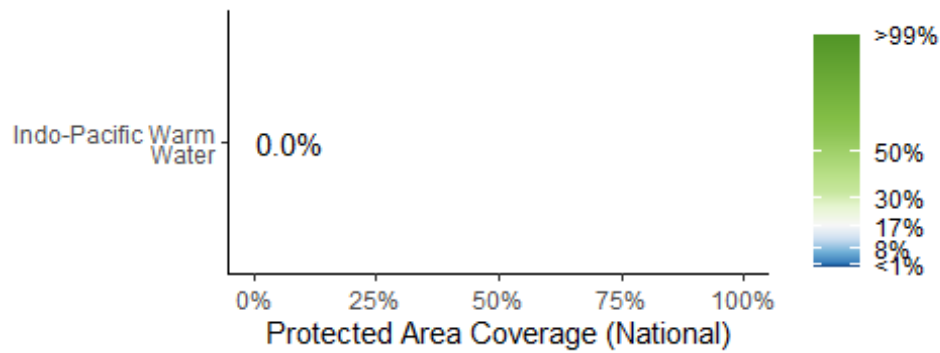


Marine ecoregions and pelagic provinces



Marine Ecoregions of the World (MEOW) in Democratic People’s Republic of Korea





Pelagic Provinces of the World (PPOW) in Democratic People’s Republic of Korea

Opportunities for action

There is opportunity for Democratic People’s Republic of Korea 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.

Democratic People's Republic of Korea has **33** Key Biodiversity Areas (KBAs).

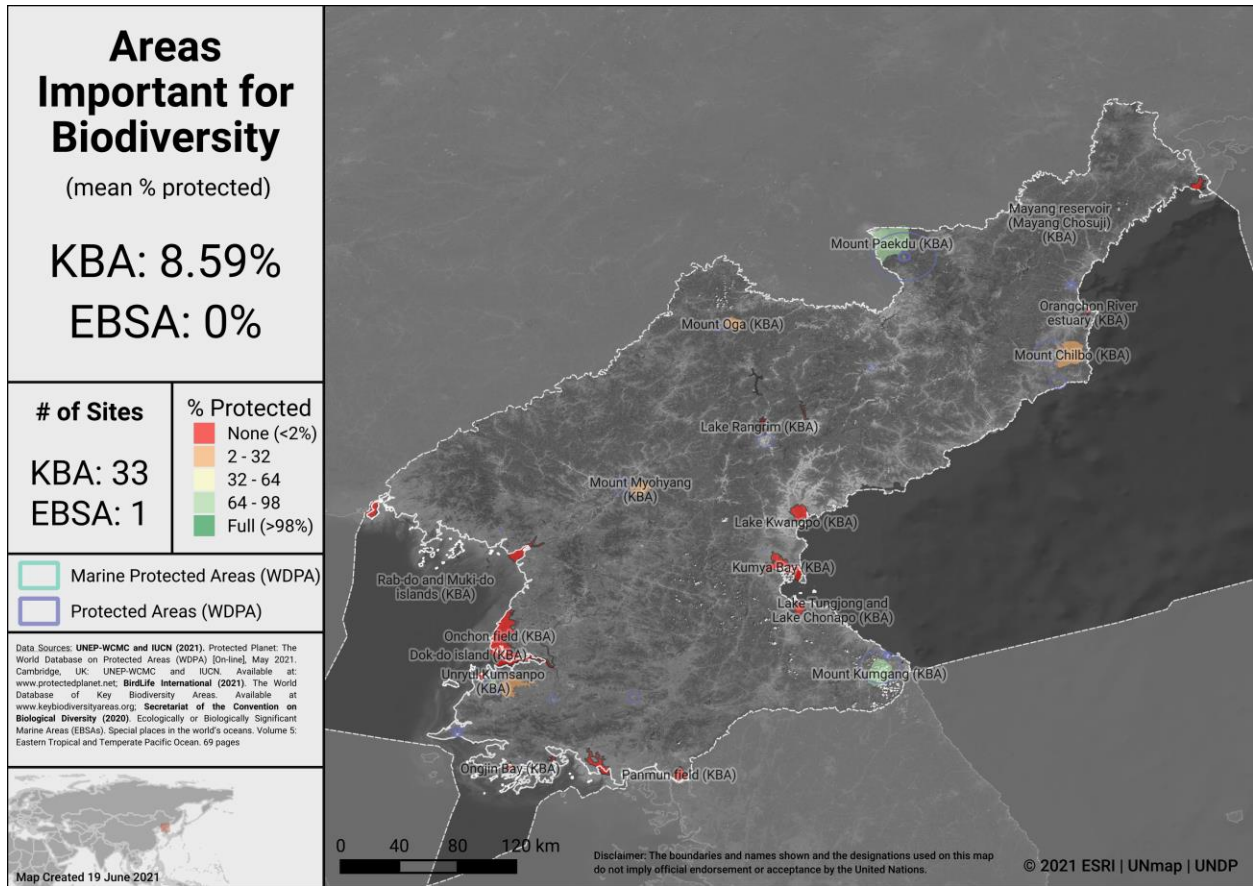
- Mean percent coverage of all KBAs by PAs and OECMs in Democratic People's Republic of Korea is **8.6%**.
- **0** KBAs have full (>98%) coverage by PAs and OECMs.
- **7** KBAs have partial coverage by PAs and OECMs.
- **26** KBAs have no (<2%) coverage by PAs and OECMs.

Ecologically or Biologically Significant Marine Areas (EBSAs)

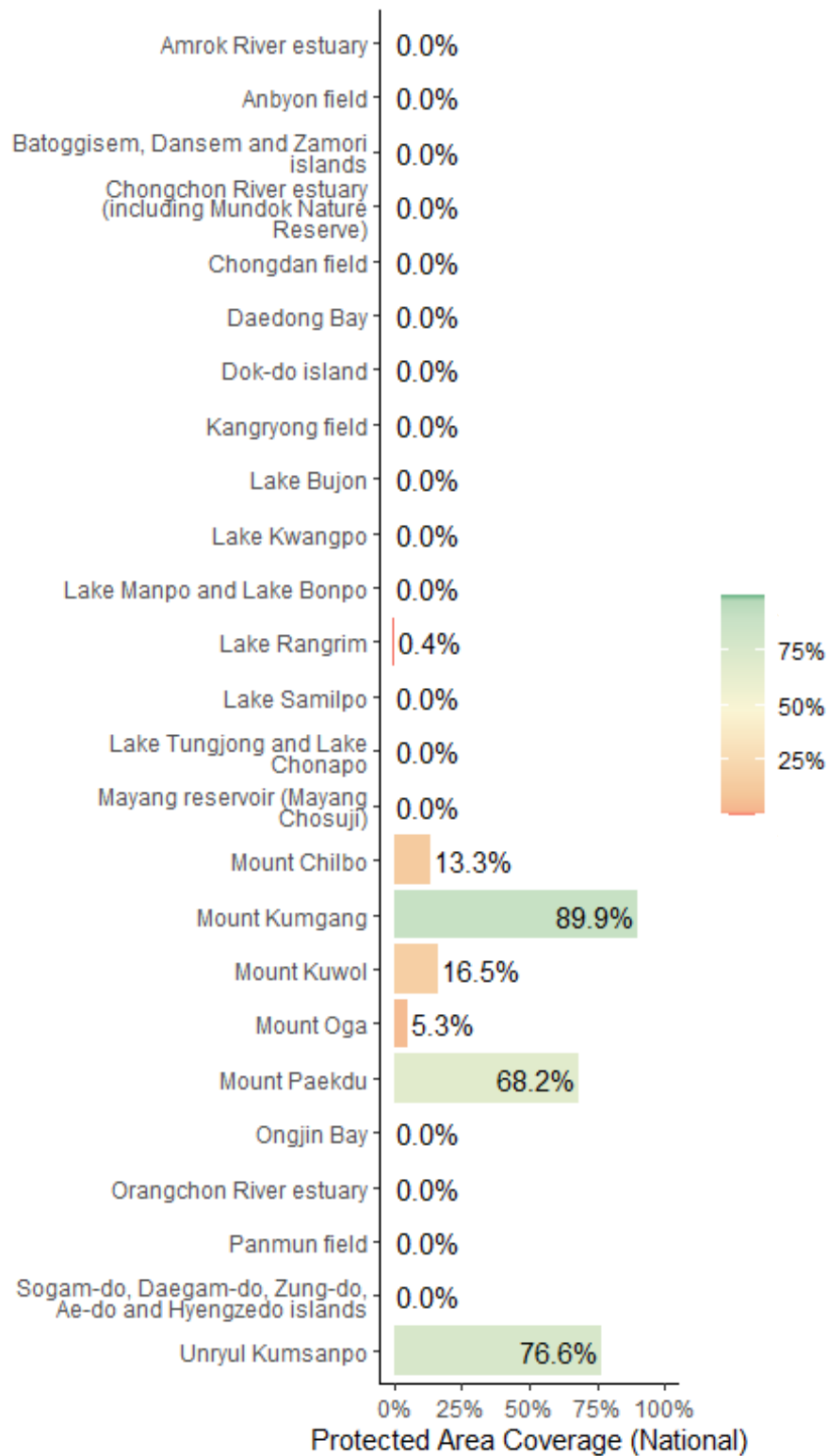
Other important areas for biodiversity may also include Ecologically or Biologically Significant Marine Areas (EBSAs), which were identified following the scientific criteria adopted at COP-9 (Decision IX/20; see more at: <https://www.cbd.int/ebsa/>). Sites that meet the EBSA criteria may require enhanced conservation and management measures; this could be achieved through means including MPAs, OECMs, marine spatial planning, and impact assessment.

There is 1 EBSA with some portion of its extent within Democratic People's Republic of Korea's EEZ; this 1 EBSA has no coverage from PAs and OECMs.

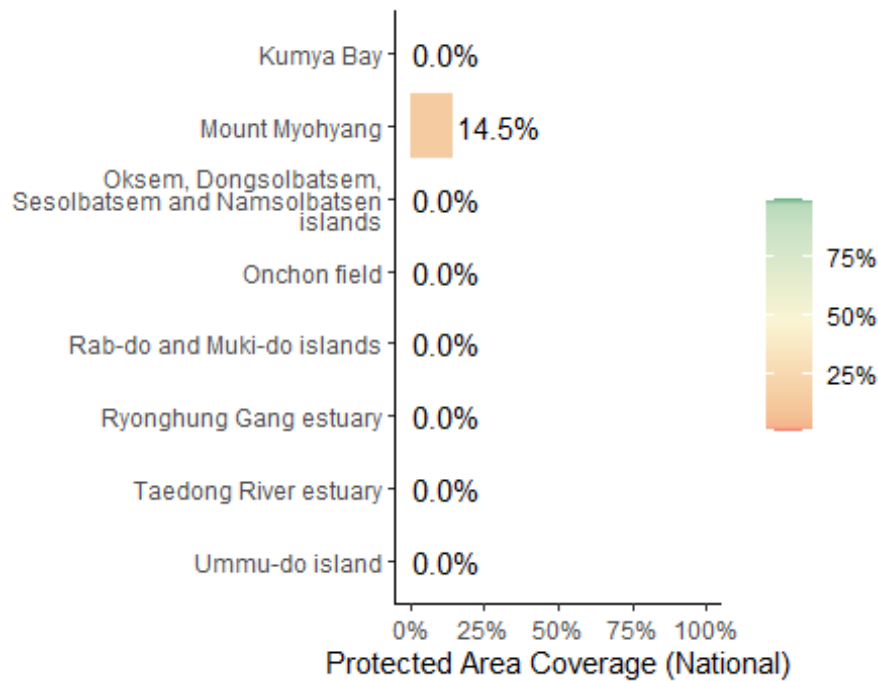




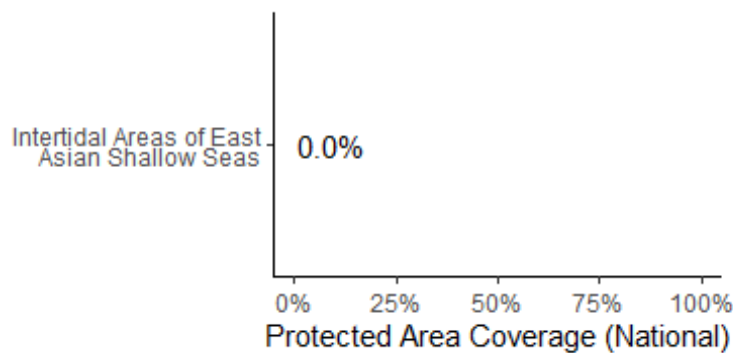
Areas Important for Biodiversity in Democratic People’s Republic of Korea



Key Biodiversity Area Coverage (KBA) in Democratic People’s Republic of Korea



Key Biodiversity Area Coverage (KBA) in Democratic People’s Republic of Korea



Ecologically or Biologically Significant Marine Areas (EBSAs) in Democratic People’s Republic of Korea

Opportunities for action

There is opportunity for Democratic People’s Republic of Korea 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.

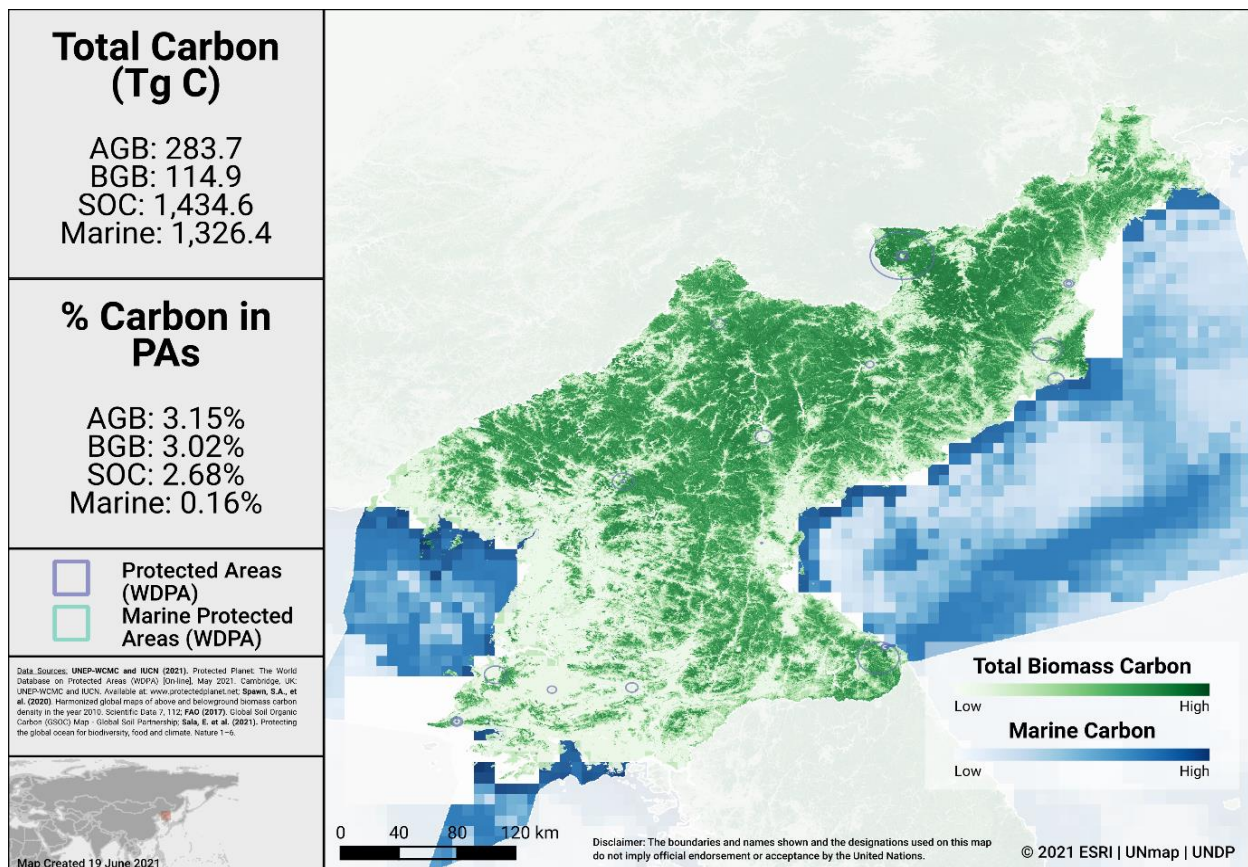
AREAS IMPORTANT FOR ECOSYSTEM SERVICES

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 Democratic People’s Republic of Korea and the percent of carbon in protected areas. The total carbon stocks is 283.7 Tg C from aboveground biomass (AGB), with 3.2% in PAs; 114.9 Tg C from below ground biomass (BGB), with 3.0% in PAs; 1,434.6 Tg C from soil organic carbon (SOC), with 2.7% in PAs; and 1,326.4 Tg C from marine sediment carbon, with 0.2% in PAs.



Carbon Stocks in Democratic People’s Republic of Korea

Water

Forests 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 Democratic People's Republic of Korea 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 Democratic People's Republic of Korea to increase PA and OECM coverage in both marine and terrestrial areas with high carbon stocks, as identified in the map above. Protecting areas with high carbon stocks secures the benefits of carbon sequestration in the area.

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



CONNECTIVITY & INTEGRATION

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

Protected Connected Land Indicator (Prot-Conn)

As of January 2021, as reported in the Joint Research Centre of the European Commission's Digital Observatory for Protected Areas (DOPA) (JRC, 2021), the coverage of protected-connected lands (a measure of the connectivity of terrestrial protected area networks, assessed using the ProtConn indicator) in Democratic People's Republic of Korea was 1.2%.

PARC-Connectedness Index

In 2019, as assessed using the PARC-Connectedness Index (values ranging from 0-1, indicating low to high connectivity), connectivity in Democratic People's Republic of Korea is 0.30. This represents no significant change since 2010.

Corridor case studies

There are currently no corridor case studies available for Democratic People's Republic of Korea (but see general details on conserving connectivity through ecological networks and corridors in Hilty et al 2020).

Opportunities for action

There is opportunity for a general increase of PAs or OECMs 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 Democratic People's Republic of Korea reported in the WDPA have the following governance types:

- 0.0% are governed by **governments**
- 0.0% are under **shared** governance
- 0.0% are under **private** governance
- 0.0% are under **IPLC** governance
- 100.0% **do not** report a governance type

OECMs

As of May 2021, there are **0** OECMs in Democratic People's Republic of Korea reported in the WD-OECM, therefore there is no data available on OECM governance types.

Privately Protected Areas (PPAs)

There is currently no data available on PPAs for Democratic People's Republic of Korea (see Gloss et al., 2019, and Stolton et al., 2014 for details)

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

There is currently no data available on ICCAs for Democratic People's Republic of Korea (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 Democratic People's Republic of Korea (see Garnett et al 2018 for details).

Opportunities for action

Increase efforts to identify the governance types for the 100.0% of sites that do not have their governance type reported. If applicable, explore opportunities for governance types that have lower representation. There is also opportunity for Democratic People's Republic of Korea 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.

Protected area management effectiveness (PAME) assessments

As of May 2021, Democratic People's Republic of Korea has 34 PAs reported in the WDPA; of these PAs, 0 (0.0%) have management effectiveness evaluations reported in the global database on protected area management effectiveness (GD-PAME).

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

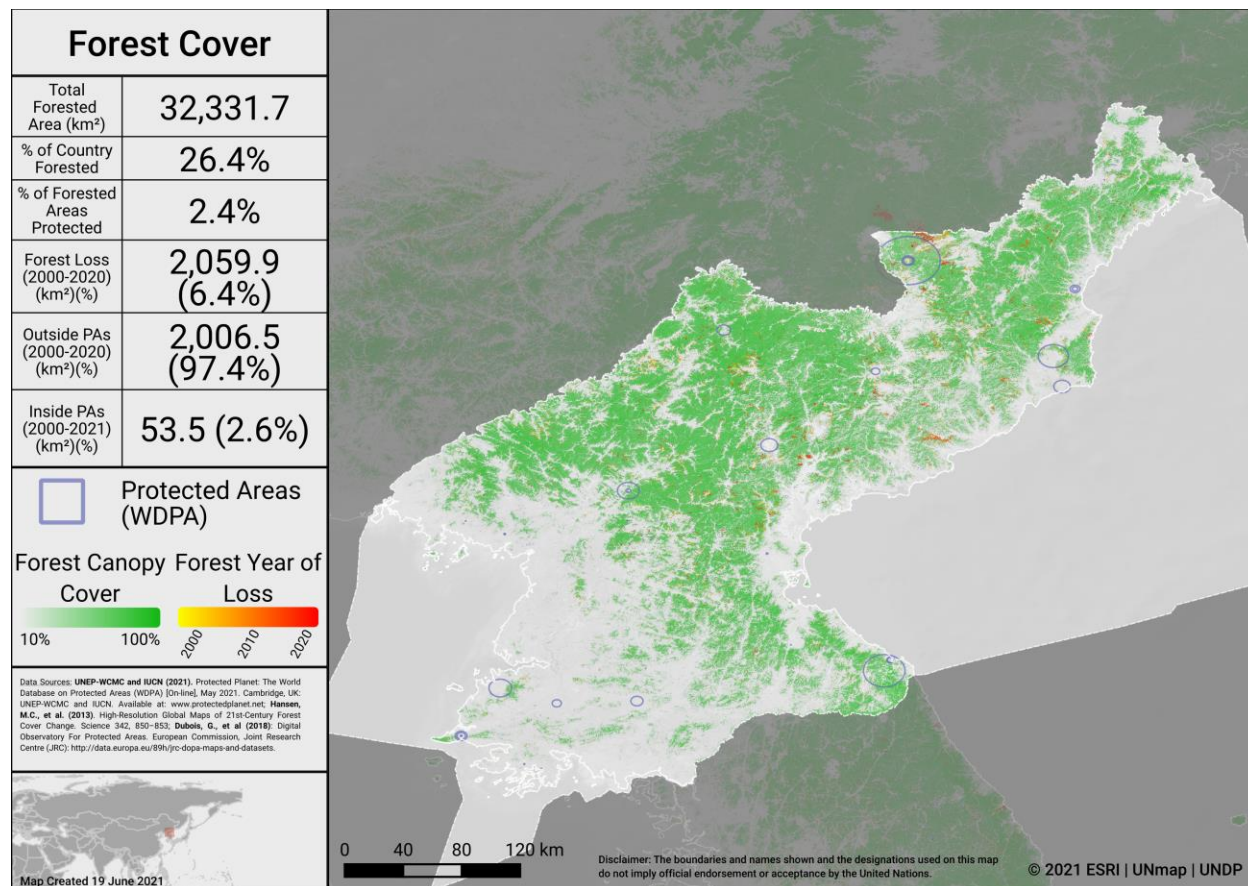
The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has not** been met for terrestrial PAs and **has not** been met for marine PAs.

As of May 2021, there are 0 OECMs in Democratic People's Republic of Korea reported in the WD-OECM and no information available on the management effectiveness of potential OECMs.

Changes in forest cover in protected areas and OECMs

Forested areas in Democratic People's Republic of Korea cover approximately 26.4% of the country, an area of 32,331.7 km². Approximately 26.4% (763.7 km²) of this is within the protected area estate of Democratic People's Republic of Korea. Over the period 2000-2020 loss of forest cover amounted to over 2,059.9 km², or 1.7% of the country (2.4% of forest area), of which 53.5 km² (2.6% of forest loss) occurred within protected areas. The map below shows how forest cover has changed in Democratic People's Republic of Korea 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 Democratic People's Republic of Korea

Opportunities for action

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

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

SECTION II: EXISTING PROTECTED AREA AND OECM COMMITMENTS

PRIORITY ACTIONS FROM 2015-2016 REGIONAL WORKSHOPS

National priority actions for Aichi Biodiversity Target 11 were provided by Parties following a series of regional workshops in 2015 and 2016. The Capacity-building workshop for East Asia and Southeast Asia on achieving Aichi Biodiversity Targets 11 and 12 took place 15 - 18 September 2015 in Yanji, Jilin Province, China. 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/>

Priority actions and identified opportunities, if completed as proposed, will increase coverage of terrestrial areas by **6,979km²**. Bringing with them benefits for the other qualifying elements of Aichi Biodiversity Target 11.

The following actions were identified during the workshops:

Terrestrial coverage: planned to establish management framework of the designated protected areas and strengthen their functions and to extend the protected areas to 8 percent of the territory area toward 2010.

Ecological representation: Ministry of Land and Environmental Protection (MoLEP) and State of Academic Science (SoAS) in cooperation with various Universities have carried out some research on ecological representation. Expecting to further cooperation with international organizations.

Areas Important for biodiversity and ecosystem services:

- 1) Ministry of Land and Environmental Protection (MoLEP) and State of Academic Science (SoAS) in cooperation with various Universities have carried out some research on ecological representation. Expecting to further cooperation with international organizations.
- 2) The contributions of Reservoir Forest Reserves to biodiversity conservation will be assessed. Regarding valuation of the ecosystem service, it will be evaluated focusing on disaster risk reduction, food security, etc.

Connectivity: Further surveys and research will be needed to strengthen the PA network system – establish new BRs – establish eco-corridors.

Management effectiveness: It will be helpful to develop Training courses or Orientation workshops on this issue.

OECMs: In order to identify OECM in national level, continuous efforts will be needed.



NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)

Democratic People's Republic of Korea has submitted an NBSAP during the Strategic Plan for Biodiversity 2011-2020 (most recent NBSAP is available at: <https://www.cbd.int/nbsap/search/>).

This NBSAP **did** include a quantitative target for **terrestrial** PAs or OECMs (8%).

- As of May 2021 (based on the WDPA/WD-OECM) has the target been met: **NO**
 - Target will be met with completion of National Priority Action for terrestrial PA coverage (see previous section).

This NBSAP **did not** include a quantitative target for **marine** protected areas or OECMs.

Goal 1: Establish national nature reserve network system, comprehensive protected area networks (Objective: By 2010, the size of protected areas is increased to 8% of the territory (at present 7.2%) and a comprehensive protected area network system established in a farsighted-way with a linkage to national nature reserve network system)

- 1) Rearrangement of existing protected areas to improve capacity and effectiveness:
 - Site-based protected area management plan is in place to establish appropriate institutions and to complete management systems. In particular, the infrastructure of comprehensive conservation and management at the areas of Mts. Kumgang, Chilbo, Chail and Oga, of key importance in biodiversity conservation, is reinforced.
 - Protected area management personnel should be re-educated to enhance their leading role in biodiversity conservation.
 - National system is established to enable regular resource survey and effective monitoring of protected areas.
- 2) Establishment of new nature reserves in areas of great significance in the biodiversity National Biodiversity Strategy and Action Plan 73 conservation. By 2010, the size of protected areas is increased to 8% of the territory by improving the management and conservation of nature reserves and establishing new protected areas and management system in key areas in biodiversity conservation, in consideration of possibility to increase to 10%.
- 3) Establishment of a comprehensive national conservation network with its centre on nature reserve system It is important to establish the national network connecting nature reserves via ecological corridor. National network is planned, designed and established in harmonious connection, via ecological corridors, between nature reserves and various types of environmentally-friendly forests including scenic forest, windbreak forest, bank-protecting forest and field-protecting forest)

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
Central Korean deciduous forests	28,448.2	27.2	23.2	451.6	1.6
Changbai Mountains mixed forests	47,358.5	50.7	38.6	1,645.2	3.5
Manchurian mixed forests	46,649.3	9.2	38.1	746.7	1.6
Northeast China Plain deciduous forests	42.5	0.0	0.0	0.0	0.0



REFERENCES

- Atwood, TB, Witt, A, Mayorga, J, Hammill, E, & Sala, E. (2020). Global patterns in marine sediment carbon stocks. *Frontiers in Marine Science*.
<https://doi.org/10.3389/fmars.2020.00165>
- BirdLife International (2021). World Database of Key Biodiversity Areas. Available at:
<http://www.keybiodiversityareas.org>
- CBD (2010). Decision adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting. Decision X/2. Strategic plan for biodiversity 2011–2020. Retrieved from <https://www.cbd.int/doc/decisions/cop-10/cop-10-dec02-en.pdf>.
- CSIRO (2019). Protected area connectedness index (PARCconnectedness).
<https://www.bipindicators.net/indicators/protected-area-connectedness-index-parcconnectedness>
- Dinerstein, E., et al. (2017). An ecoregion-based approach to protecting half the terrestrial realm. *BioScience* 67(6), 534-545.
- Donald et al., 2019, The prevalence, characteristics and effectiveness of Aichi Target 11's "other effective area-based conservation measures" (OECMs) in Key Biodiversity Areas. *Conservation Letters*, 12(5).
- EC-JRC (2021). DOPA Indicator factsheets: <http://dopa.jrc.ec.europa.eu/en/factsheets>
- FAO (2017). Global Soil Organic Carbon (GSOC) Map - Global Soil Partnership [WWW Document]. URL <http://www.fao.org/global-soil-partnership/pillars-action/4-information-and-data/global-soil-organic-carbon-gsoc-map/en/>.
- Franks, P and Booker, F (2018). Governance Assessment for Protected and Conserved Areas (GAPA): Early experience of a multi-stakeholder methodology for enhancing equity and effectiveness. IIED Working Paper, IIED, London. <https://pubs.iied.org/17632IIED>
- Franks, P. et al. (2018). Social Assessment for Protected and Conserved Areas (SAPA). Methodology manual for SAPA facilitators. Second edition. IIED, London.
<https://pubs.iied.org/14659iied>
- Garnett et al. (2018). A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability*, 1(7), 369.
- Global Environment Facility (GEF-5 and GEF-6); all projects can be found online at:
<https://www.thegef.org/projects>
- Gloss, L. et al. (2019). International Outlook for Privately Protected Areas: Summary Report. International Land Conservation Network (a project of the Lincoln Institute of Land Policy) and United Nations Development Programme. Summary report, and individual country profiles, available at: <https://nbsapforum.net/knowledge-base/resource/international-outlook-privately-protected-areas-summary-report>

Hansen, M.C., Potapov, P.V., Moore, R., Hancher, M., Turubanova, S.A., Tyukavina, A., Thau, D., Stehman, S.V., Goetz, S.J., Loveland, T.R., Kommareddy, A., Egorov, A., Chini, L., Justice, C.O., Townshend, J.R.G., (2013). High-Resolution Global Maps of 21st-Century Forest Cover Change. *Science* 342, 850–853. <https://doi.org/10.1126/science.1244693>

Hilty, J et al. (2020). Guidelines for conserving connectivity through ecological networks and corridors. Best Practice Protected Area Guidelines Series No. 30. Gland, Switzerland: IUCN. <https://portals.iucn.org/library/sites/library/files/documents/PAG-030-En.pdf>

IIED 2020. Site-level assessment of governance and equity (SAGE)
<https://www.iied.org/site-level-assessment-governance-equity-sage>.

IUCN (2016). A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0. First edition. Gland, Switzerland: IUCN.
<https://portals.iucn.org/library/sites/library/files/documents/2016-048.pdf>

IUCN-WCPA (2017). IUCN-WCPA Task Force on OECMs collation of case studies submitted 2016-2017. <https://www.iucn.org/commissions/world-commission-protected-areas/our-work/oecms/oecm-reports>

Joint Research Centre of the European Commission (JRC) (2021), The Digital Observatory for Protected Areas (DOPA) Explorer 4.1 [On-line], [Apr/2021], Ispra, Italy. Available at: <http://dopa-explorer.jrc.ec.europa.eu>

Kothari, A., et al. (Eds) (2012). Recognising and Supporting Territories and Areas Conserved By Indigenous Peoples And Local Communities: Global Overview and National Case Studies. Secretariat of the CBD, ICCA Consortium, Kalpavriksh, and Natural Justice, Montreal, Canada. Technical Series no. 64.

Lausche, B., Laur, A., Collins, M. (2021). *Marine Connectivity Conservation 'Rules of Thumb' for MPA and MPA Network Design*. Version 1.0. IUCN WCPA Connectivity Conservation Specialist Group's Marine Connectivity Working Group.

McDonald, R.I., Weber, K., Padowski, J., Flörke, M., Schneider, C., Green, P.A., Gleeson, T., Eckman, S., Lehner, B., Balk, D., Boucher, T., Grill, G., Montgomery, M., (2014). Water on an urban planet: Urbanization and the reach of urban water infrastructure. *Global Environmental Change* 27, 96–105. <https://doi.org/10.1016/j.gloenvcha.2014.04.022>

National Biodiversity Strategy and Action Plan (NBSAPs); most recent NBSAP is available at: <https://www.cbd.int/nbsap/search/>

Newbold, T., Hudson, L.N., Arnell, A.P., Contu, S., Palma, A.D., Ferrier, S., Hill, S.L.L., Hoskins, A.J., Lysenko, I., Phillips, H.R.P., Burton, V.J., Chng, C.W.T., Emerson, S., Gao, D., Pask-Hale, G., Hutton, J., Jung, M., Sanchez-Ortiz, K., Simmons, B.I., Whitmee, S., Zhang, H., Scharlemann, J.P.W., Purvis, A., (2016). Has land use pushed terrestrial biodiversity beyond the planetary boundary? A global assessment. *Science* 353, 288–291.
<https://doi.org/10.1126/science.aaf2201>

Sala, E. et al. (2021). Protecting the global ocean for biodiversity, food and climate. *Nature*, 592(7854), 397-402. <https://doi.org/10.1038/s41586-021-03496-1>

Saura, S. et al. (2018). Protected area connectivity: Shortfalls in global targets and country-level priorities. *Biological Conservation*, 219, 53-67.

Saura, S. et al (2017). Protected areas in the world's ecoregions: How well connected are they? *Ecological Indicators*, 76, 144-158.

Spalding, M.D., et al. (2012). Pelagic provinces of the world: a biogeographic classification of the world's surface pelagic waters. *Ocean & Coastal Management* 60, 19–30.

Spalding, M.D., et al. (2007). Marine ecoregions of the world: a bioregionalization of coastal and shelf areas. *BioScience* 57(7): 573–583.

Spawn, S.A., Sullivan, C.C., Lark, T.J., Gibbs, H.K., (2020). Harmonized global maps of above and belowground biomass carbon density in the year 2010. *Scientific Data* 7, 112.
<https://doi.org/10.1038/s41597-020-0444-4>

Stolton, S. et al. (2014). *The Futures of Privately Protected Areas*. Gland, Switzerland: IUCN.

UNEP-WCMC and IUCN (2021) *Protected Planet Report 2020*. UNEP-WCMC and IUCN: Cambridge UK; Gland, Switzerland.

UNEP-WCMC and IUCN (2021), *Protected Planet: The Global Database on Protected Area Management Effectiveness (GD-PAME)* [On-line], [May/2021], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.

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.

UNEP-WCMC and IUCN (2021), *Protected Planet: The World Database on Other Effective Area-based Conservation Measures (WD-OECM)* [On-line], [May/2021], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.

UN Ocean Conference Voluntary Commitments, available at:
<https://oceanconference.un.org/commitments/>

Williams, B.A., Venter, O., Allan, J.R., Atkinson, S.C., Rehbein, J.A., Ward, M., Marco, M.D., Grantham, H.S., Ervin, J., Goetz, S.J., Hansen, A.J., Jantz, P., Pillay, R., Rodríguez-Buriticá, S., Supples, C., Virnig, A.L.S., Watson, J.E.M., (2020). Change in Terrestrial Human Footprint Drives Continued Loss of Intact Ecosystems. *One Earth* 3, 371–382.
<https://doi.org/10.1016/j.oneear.2020.08.009>

This document was created using the knitr package with R version 4.0.5.

For any questions please contact support@unbiodiveristylab.org.

