Kunming–Montreal GBF & NBSAPs in Republic of Korea

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NATIONAL INSTITUTE OF ECOLOGY

CONTENTS

국립생태원
멸종위기종복원센터

Global Extinction Status

DRIVERS

INDIRECT DRIVERS

Demographic and sociocultural

Economic

DIRECT DRIVERS

Terrestrial

EXAMPLES OF DECLINES IN NATURE

ECOSYSTEM EXTENT AND CONDITION
47% — Natural ecosystems have **declined by 47 per cent** on average, relative to their earliest estimated states.

SPECIES EXTINCTION RISK
25% — Approximately **25 per cent of species are already threatened with extinction** in most animal and plant groups studied.

ECOLOGICAL COMMUNITIES
23% — Biotic integrity—the abundance of naturally-present species—has **declined by 23 per cent** on average in terrestrial communities.*
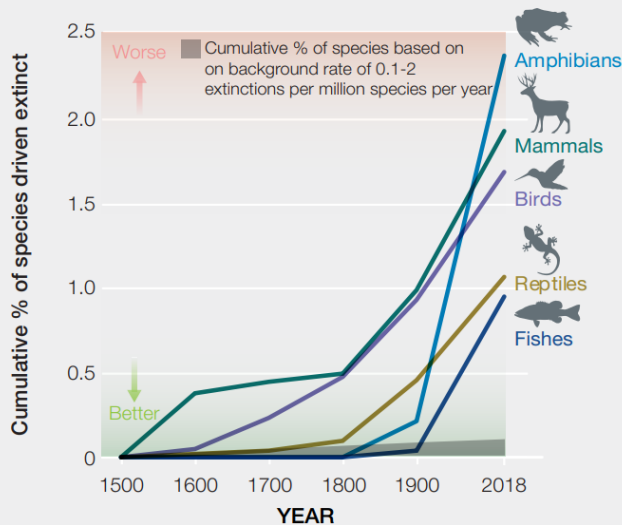
BIOMASS AND SPECIES ABUNDANCE
82% — The global biomass of wild mammals has **fallen by 82 per cent.*** Indicators of vertebrate abundance have declined rapidly since 1970
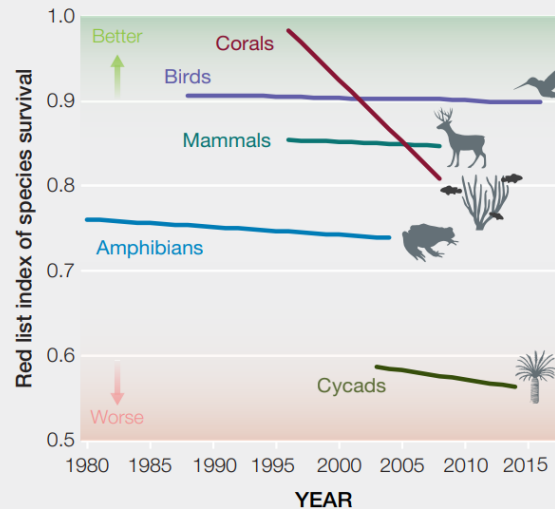
NATURE FOR INDIGENOUS PEOPLES AND LOCAL COMMUNITIES
72% — 72 per cent of indicators developed by indigenous peoples and local communities show **ongoing deterioration** of elements of nature important to them

B Extinctions since 1500

Cumulative % of species driven extinct

Worse / Better

Cumulative % of species based on on background rate of 0.1-2 extinctions per million species per year

Amphibians, Mammals, Birds, Reptiles, Fishes

C Declines in species survival since 1980 (Red List Index)

Red list index of species survival

Better / Worse

Corals, Birds, Mammals, Amphibians, Cycads

* Since prehistory

Source: IPBES_global_assessment_report 2019

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Aichi Targets

About Aichi Bio-divsersity Targets

• **Formation:** The Aichi Targets, were adopted during the 2010 CBD summit in **Nagoya**, located in Japan's Aichi prefecture.

• **Duration:** It is for the period from 2011 to 2020.

• **Goals:** The targets included 20 goals to address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.

• **Expectations from nations:** After parties adopted the Aichi Targets, nations were expected to devise their own national biodiversity strategies that would mimic the goals laid out by Aichi.

• **Implementation:** Nearly all parties created these strategies, but most were never fully implemented.

1 Awareness increased	2 Biodiversity values integrated	3 Incentives reformed	4 Sustainable consumption and production
5 Habitat loss halved or reduced	6 Sustainable management of marine living resources	7 Sustainable agriculture, aquaculture and forestry	8 Pollution reduced
9 Invasive alien species prevented and controlled	10 Pressure on vulnerable ecosystems reduced	11 Protected areas increased and improved	12 Extinction prevented
13 Genetic diversity maintained	14 Ecosystems and essential services safeguarded	15 Ecosystems restored and resilience enhanced	16 Nagoya protocol in force and operational
17 NBSAPs adopted as policy instrument	18 Traditional knowledge respected	19 Knowledge improved, shared and applied	20 Financial resources from all sources increased

Aichi Targets

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Macro Area	Aichi Biodiversity Target	Assessment of Progress (divided by sub-targets)

STRATEGIC GAOL A

1. Awareness of biodiversity increased
2. Biodiversity values integrated in reporting and national accounting
3. Incentives reformed (including the elimination of harmful incentives)
4. Sustainable production and consumption commitment by Governments and stakeholders

STRATEGIC GAOL B

5. Habitat loss at least halved, and degradation and fragmentation significantly reduced
6. Sustainable management and harvesting of fish and aquatic plants (avoiding overfishing)
7. Sustainable agriculture, aquaculture and forestry
8. Pollution (including excess nutrients, pesticides, plastics and other waste) brought to levels not detrimental to biodiversity
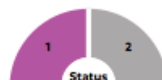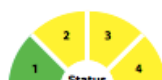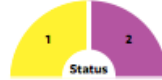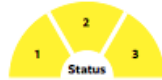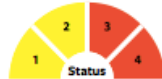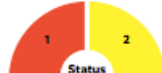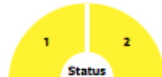9. Invasive alien species prevented and controlled
10. Minimize anthropogenic pressure on coral reefs and vulnerable ecosystem (impacted by climate change or ocean acidification)
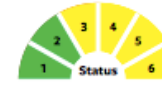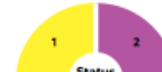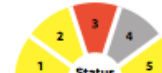
STRATEGIC GAOL C

11. Protected areas (17% of terrestrial and inland water areas and 10% of coastal and marine areas)
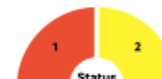12. Reducing risk of extinction
13. Safeguarding genetic diversity

STRATEGIC GAOL D

14. Ecosystem that provide essential services to be restored (taking into account the needs of women, indigenous and local communities)
15. Ecosystem restoration and resilience (at least 15% of degraded ecosystems to be restored)
16. Access to and sharing benefits from genetic resources
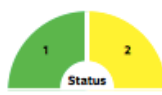
STRATEGIC GAOL D

17. Participatory and updated national biodiversity strategy and action plan
18. Traditional knowledge and practices of indigenous and local communities are respected
19. Science base and technologies relating to biodiversity are improved, widely shared and applied
20. Financial resources are mobilized to effectively implement the Strategic Plan

- **Blue: exceed**
- **Green: on track**
- **Yellow: some progress**
- **Red: no change**
- **Purple: moving away**
- **Grey: unknown**

- **Six targets**, including the land and ocean conservation target, were deemed "partially achieved". While 10% of the targets saw no significant progress.

- In the end, Aichi was deemed a failure by the United Nations and the CBD secretariat.

2020 Global Biodiversity Outlook places "Humanity at a Crossroads" – Sustainable Value Investors

Global Biodiversity Outlook 5

Convention on Biological Diversity

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Aichi Target 11

TARGET ELEMENTS

1. 17% of terrestrial and inland water areas conserved
2. 10% of coastal and marine areas conserved
3. Areas of particular importance conserved
4. Protected areas are effectively and equitably managed
5. Protected areas are ecologically representative
6. Protected areas are well connected and integrated

Status

Some Progress
No Change
On Track
Moving Away
Exceed
Unknown

Global Biodiversity Outlook 5

Convention on Biological Diversity

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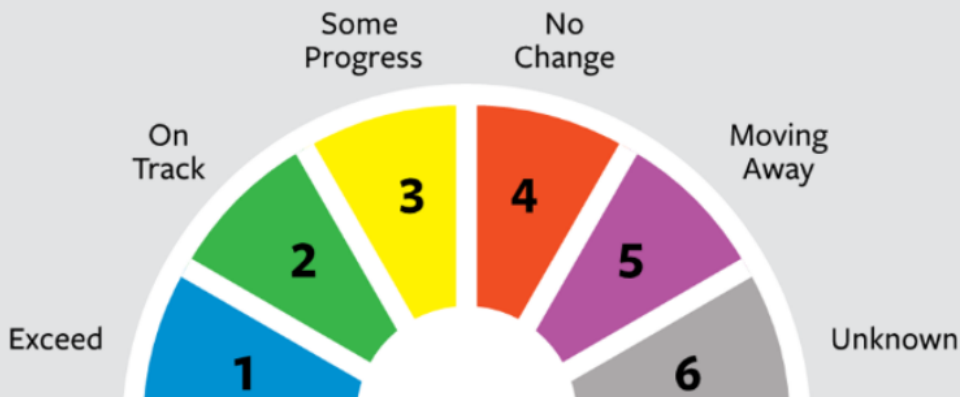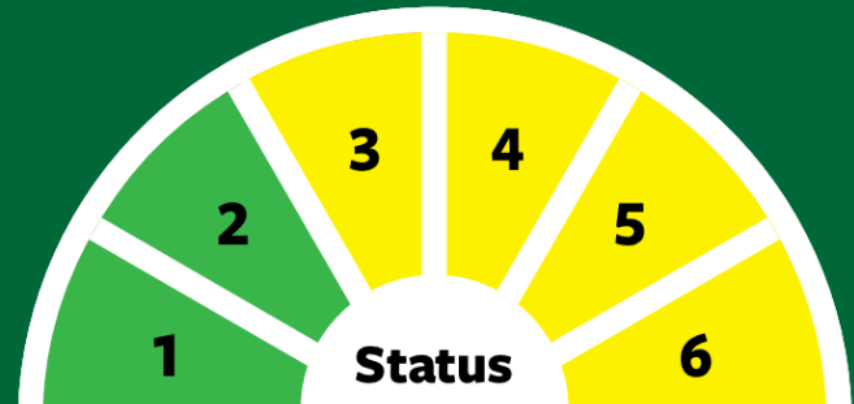
Aichi Targets

Aichi Target 12

TARGET ELEMENTS

1. Extinctions prevented
2. Conservation status of threatened species improved

1

2

Status

On Track — Exceed — Some Progress — No Change — Moving Away — Unknown

1 2 3 4 5 6

Global Biodiversity Outlook 5

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Aichi Target 13

TARGET ELEMENTS

1. Genetic diversity of cultivated plants maintained
2. Genetic diversity of farmed and domesticated animals maintained
3. Genetic diversity of wild relatives maintained
4. Genetic diversity valuable species maintained
5. Strategies to minimizing genetic erosion in place

Global Biodiversity Outlook 5

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Aichi Target 15

TARGET ELEMENTS

1. Ecosystem resilience and carbon stocks enhanced
2. 15% of degraded ecosystems under restoration

Status

| 1 | 2 |

On Track — Exceed — Some Progress — No Change — Moving Away — Unknown

1 2 3 4 5 6

Global Biodiversity Outlook 5

Convention on Biological Diversity

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Reasons for the failure of Aichi Targets

• **Unclear goals:** A lack of clearly defined metrics by which to gauge progress made the Aichi goals tough to implement.

• **Monitoring and reporting success:** It is another big issue with Aichi. Countries largely failed to update others on the progress they were or were not making.

• **Ineffective Framework:** Many of the targets, included vague language and did not hold countries to a specific action, making the framework ineffective.

• **A lack of financing:** It is the need for developing countries to meet the Aichi goals was also an obstacle to their success.
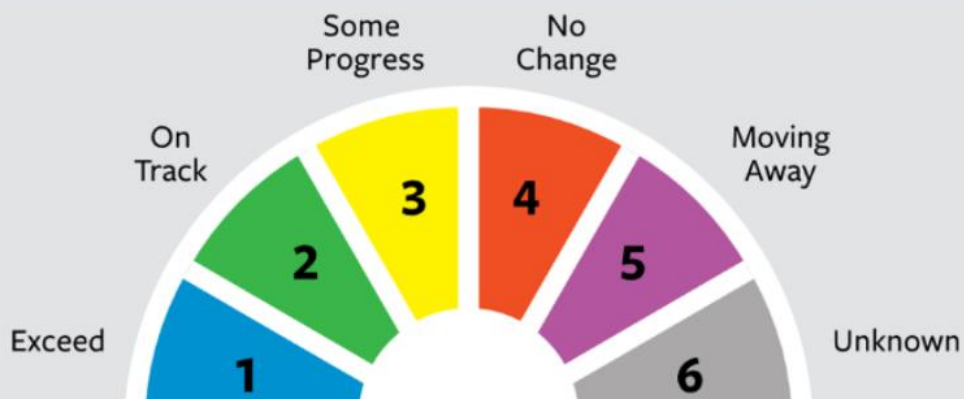
• **Relying:** The Aichi Targets also failed to garner buy-in from governments beyond the environmental ministers who brokered the deal.

•CBD secretariat had called on parties to come up with another guiding document to direct conservation efforts through 2030 and beyond.

•Many of the 23 conservation targets under discussion at the 15th Conference of the Parties (COP15) aim to avoid past mistakes (made during Aichi targets) and improve on the world's last set of conservation goals.

POST-2020 GBF

Background and Progress of Post-2020 GBF Discussions

☐ **Need for a New Biodiversity Implementation Strategy for 2021-2030**

  ○ Since 2002, the Convention on Biological Diversity (CBD) has established biodiversity implementation plans in 10-year intervals.

     - 1st Strategic Plan (COP6): Strategic Plan 2002-2010

     - 2nd Strategic Plan (COP10): Strategic Plan for Biodiversity 2011-2020 (Aichi Targets)

  ○ With the end of the 2nd Biodiversity Strategic Plan, Aichi Targets, there is a need to establish a new 10-year biodiversity implementation strategy.

☐ **(Original plan) Establishment of the Open-ended Working Group (OEWG) for the Development of the Post-2020 GBF**

  ○ At the 14th Conference of the Parties to the CBD (COP14), it was decided to establish an Open-ended Working Group (OEWG: Open-ended Working Group on Post-2020 Global Biodiversity Framework) to discuss the development of a new 10-year implementation plan, including the strategic plans of the Convention, the Cartagena Protocol, and the Nagoya Protocol.

  ○ Before COP16, scheduled to be held in December 2022, four working group meetings, as well as meetings of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and the Subsidiary Body on Implementation (SBI), are planned to discuss the development of the Post-2020 GBF.

  ○ The GBF established through the above discussions is scheduled to be finalized at COP15 Part 2.

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The progress of meetings related to the establishment of the Post-2020 GBF
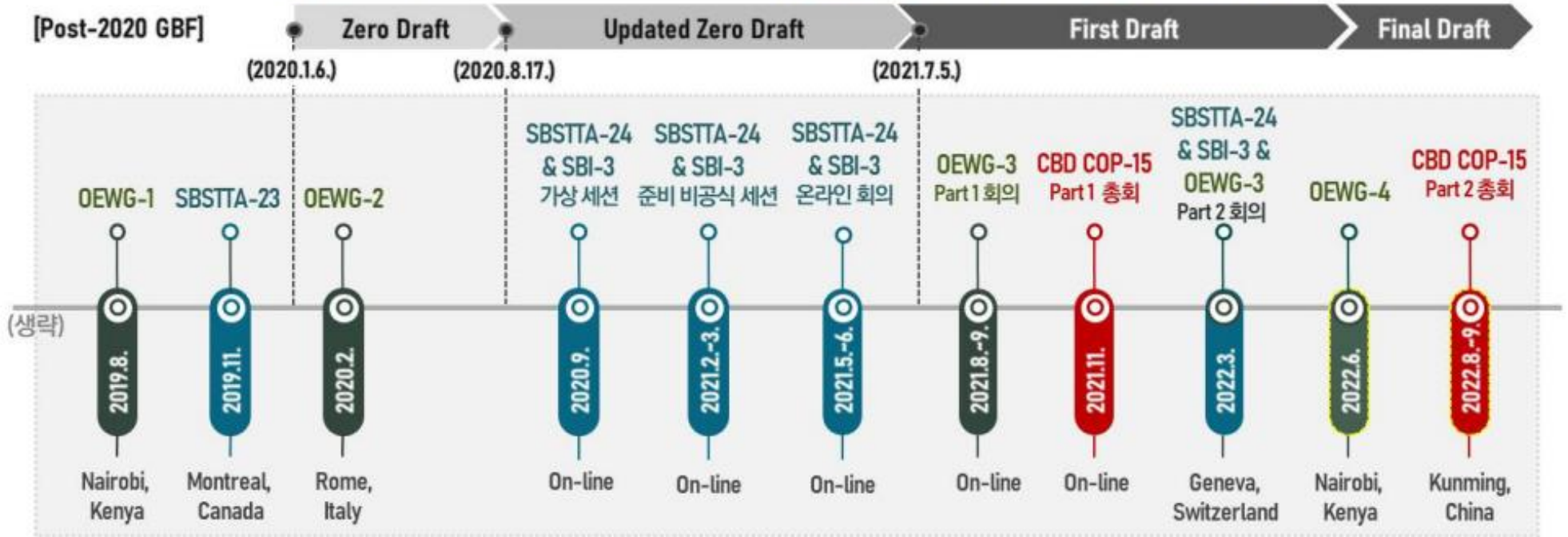
It takes more than 3 years (2019.8. ~ 2022. 12.) to establish K-M GBF

Kunming–Montreal GBF draft meeting (OEWG–4, JUNE 2022)

- Contact Group 1 addressing goals, milestones, and principles and approaches, co-led by Vinod Mathur (India) and Norbert Baerlocher (Switzerland), met in the afternoon to discuss Goal A, which addresses the three levels of biodiversity: ecosystems, species, and genetic diversity.

Kunming–Montreal GBF Final draft

UN environment programme

CBD

Convention on Biological Diversity

Distr.
GENERAL

CBD/COP/DEC/15/4
19 December 2022

ORIGINAL: ENGLISH

CONFERENCE OF THE PARTIES TO THE
CONVENTION ON BIOLOGICAL DIVERSITY
Fifteenth meeting – Part II
Montreal, Canada, 7-19 December 2022
Agenda item 9A

DECISION ADOPTED BY THE CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY

15/4.   **Kunming-Montreal Global Biodiversity Framework**

Figure 1: The Kunming-Montreal Global Biodiversity Framework hierarchy (HSF)

KUNMING MONTREAL GLOBAL BIODIVERSITY FRAMEWORK

CONSERVE
1. Biodiversity-inclusive **spatial** planning, «**near-0 loss**»
2. Effectively **restore 30%** of degraded nature
3. Effectively **conserve 30%** of lands and seas
4. Halt human-induced **extinctions**

AVOID
5. Stop unsustainable **use, harvest, trade** of species
6. Reduce **alien species** spread by at least 50%
7. Reduce **pollution** risks, impacts by at least 50%
8. Reduce **climate change** impacts

SAFE-GUARD
9. Sustainably **manage and use** wild species
10. Sustainable **agri/aquaculture, fisheries, forestry**
11. Restore and enhance **nature's goods**, services
12. Increase area, quality of **urban** green/blue spaces
13. Fair sharing of benefits from **genetic resources**

ACT
14. **Mainstream** biodiversity into all policy, practice
15. **Businesses** to monitor, disclose nature impacts
16. Sustainable **consumption**, half food waste
18. Phase out 'perverse' **subsidies**, increase **finance**
17. 23. Strengthen **capacity, participation, IPLC, women**

2030-goals
Not time specific

Four overarching goals
A. Halt loss, restore nature
B. Use lands & seas sustainably
C. Share benefits and services
D. Mobilize necessary resources
to be met by 2050

https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf

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Kunming-Montreal Global Biodiversity Framework
Themes and Targets

23. Ensure gender equality

22. Respecting rights and cultures of Indigenous peoples and local communities

21. Ensure data, information and knowledge, are accessible to decision makers, practitioners and the public

20. Strengthen capacity-building and technical and scientific cooperation

19. Substantially and progressively increase the level of financial resources

18. Identify, and eliminate, phase out or reform incentives, including subsidies

17. Establish, strengthen capacity for, and implement biosafety measures as set out in Article 8(g)

16. Encourage and enable sustainable consumption choices

15. Integrate legal, administrative or policy measures within business and financial institutions

14. Integrate biodiversity and its multiple values into policies, regulations, planning and development processes

1. Reducing land- and sea-use change

2. Restoration of degraded ecosystems

3. Protect and conserve areas

4. Halting species extinctions and reducing extinction risk

5. Harvesting and trade of wild species

6. Managing invasive alien species

7. Reducing negative impact of pollution on biodiversity

8. Minimize impacts of climate change

9. Management of wild species

10. Agriculture, aquaculture, fisheries, and forests are sustainably managed

11. Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services

12. Urban blue and green spaces

13. Fair and equitable sharing of genetic resources and DSI

Global Biodiversity Framework

Tools and solutions for implementation and mainstreaming

Reducing threats to biodiversity

Meeting people's needs through sustainable use and benefit-sharing
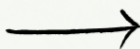
TARGET 2

W4B

What is Target 2?

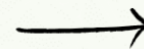Restore 30% of all
Degraded Ecosystems

Ensure that **by 2030 at least 30 per cent** of areas of **degraded terrestrial, inland water, and coastal and marine ecosystems** are **under effective restoration**, to **enhance biodiversity and ecosystem functions and services**, ecological integrity and connectivity.

→

TARGET 3

W4B

What is Target 3?

Conserve 30% of Land,
Waters and Seas

Ensure and enable that **by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas**, especially areas of particular importance for biodiversity and ecosystem functions and services, are **effectively conserved and managed** through **ecologically representative, well-connected and equitably governed systems** of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and **respecting the rights of indigenous peoples and local communities**, including over **their traditional territories.**

→

TARGET 4

W4B

What is Target 4?

Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts

Ensure urgent **management actions** to **halt human induced extinction** of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly **reduce extinction risk**, as well as to **maintain and restore the genetic diversity** within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management practices, and effectively **manage human-wildlife interactions to minimize human-wildlife conflict** for coexistence.

→

TARGET 9

W4B

What is Target 9?

Manage Wild Species Sustainably To Benefit People

Ensure that the management and use of wild species are sustainable, thereby providing **social, economic and environmental benefits for people**, especially those in vulnerable situations and those most dependent on biodiversity, including through sustainable biodiversity-based activities, products and services that enhance biodiversity, and protecting and encouraging **customary sustainable use by indigenous peoples and local communities.**
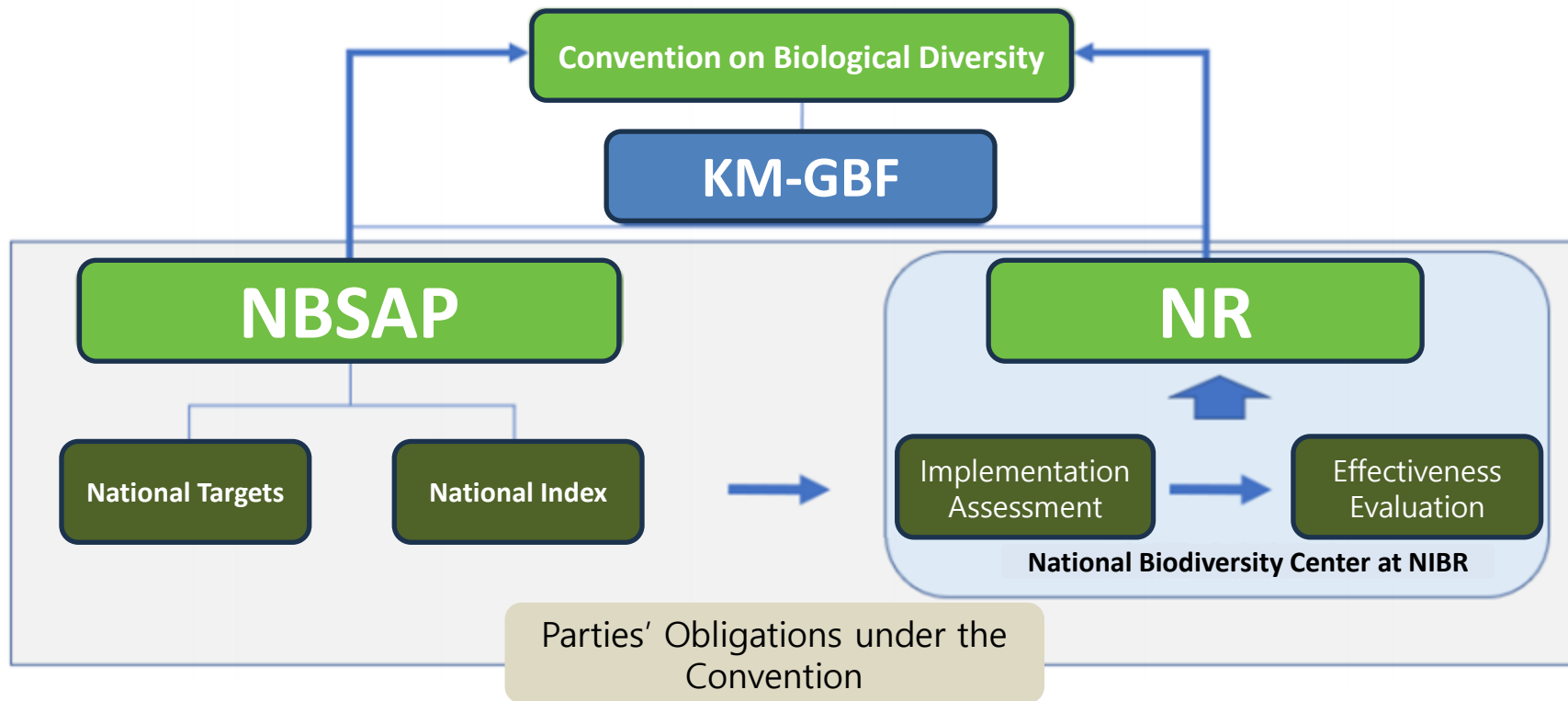
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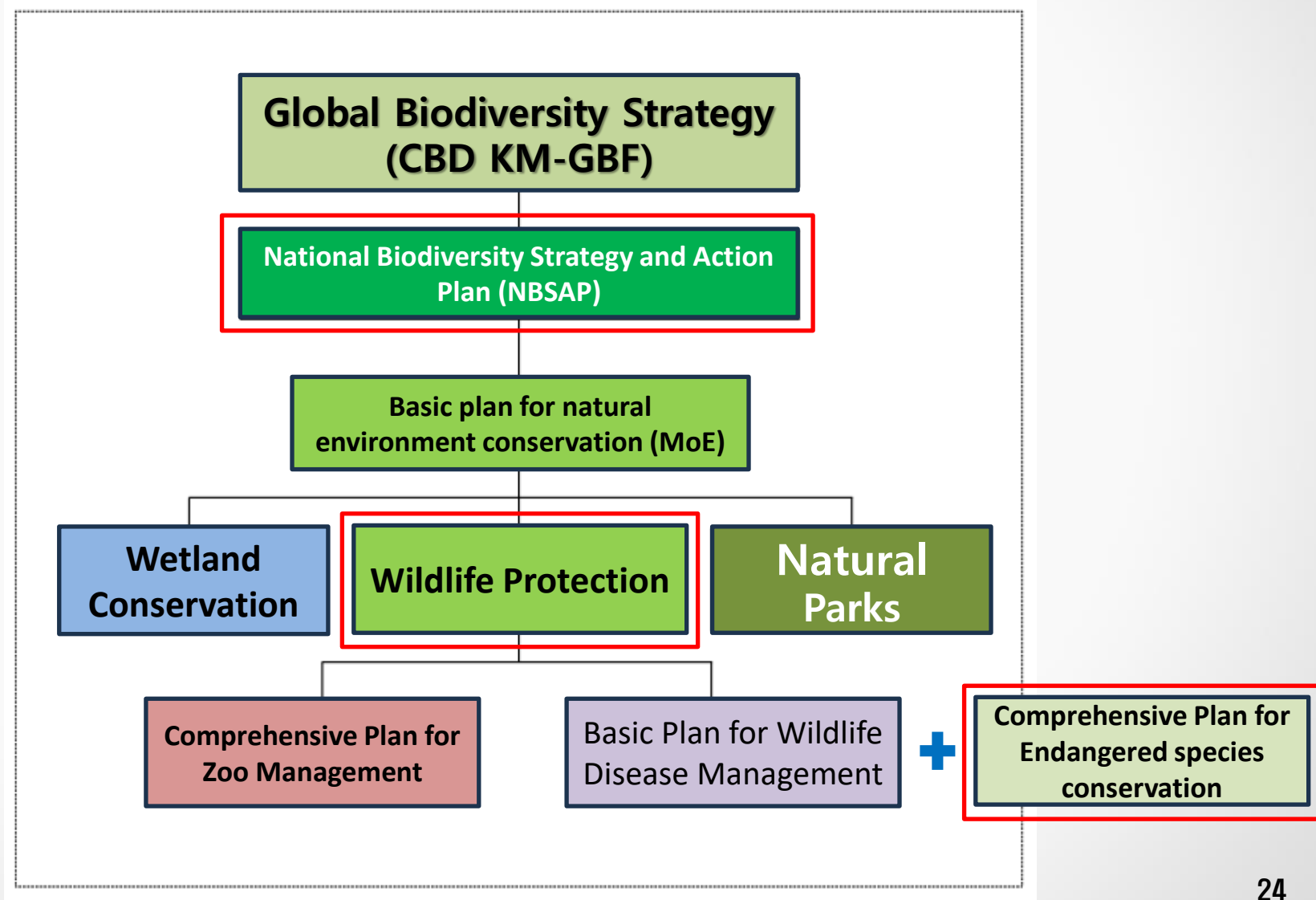| Goal/target	Indicator name	Status	Group	Metadata	
Goal A	A.1 Red List of Ecosystems	4	Headline	See metadata	
Goal A	A.2 Extent of natural ecosystems	4	Headline	See metadata	
Goal A	A.3 Red List Index	5	Headline	See metadata	
Goal A	A.4 The proportion of populations within species with an effective population size > 500	4	Headline		
Target 2	2.1 Area under restoration	4	Headline		
Target 3	3.1 Coverage of protected areas and other effective area-based conservation measures	5	Headline		
Target 4	A.3 Red List Index	5	Headline		
Target 4	A.4 The proportion of populations within species with an effective population size > 500	4	Headline		

Status explanation

Methods not yet developed, and a process needs to be established to develop these
Methods not yet developed, but a process is underway, led by one or more organisations, to develop them
Methods developed (or partially developed) and tested/piloted, but data not yet widely available (and/or collection not yet underway).
Methods established, data being compiled, and indicator operational in at least some countries, but further investment in methods ongoing and/or further (data collection required).
Methods established, data being compiled and accessible, and indicator operational for most/all countries.

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IA

The implementation framework of the Convention on Biological Diversity after the adoption of the K-M GBF

Convention on Biological Diversity

KM-GBF

NBSAP

NR

National Targets

National Index

Implementation Assessment

Effectiveness Evaluation

National Biodiversity Center at NIBR

Parties' Obligations under the Convention

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TARGET 4

W4B

What is Target 4?

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Ensure urgent **management actions** to **halt human induced extinction** of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly **reduce extinction risk**, as well as to **maintain and restore the genetic diversity** within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management practices, and effectively **manage human-wildlife interactions to minimize human-wildlife conflict** for coexistence. →
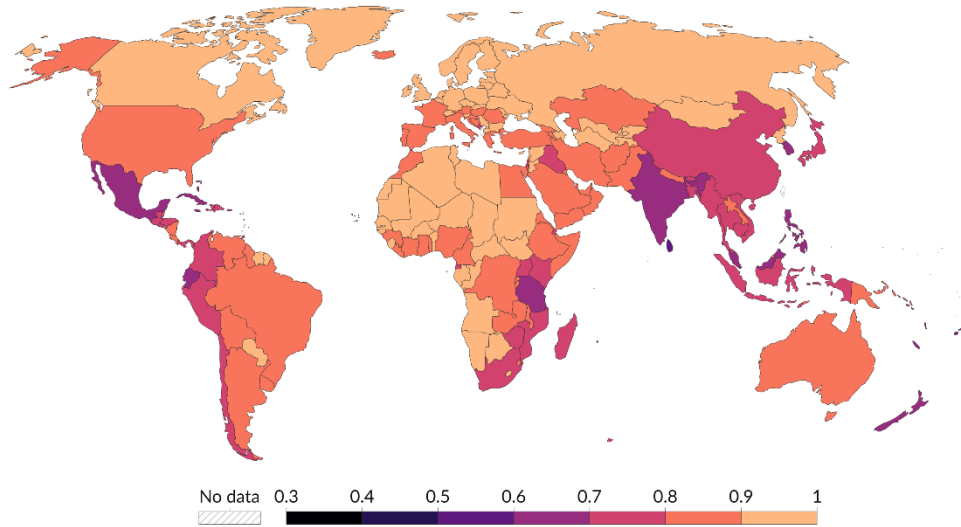

$$RLI_t = 1 - \frac{\Sigma_s \, W_{c(t,s)}}{(W_{EX} * N)}$$

IUCN Red List of Threatened Species

Red List Index, 2023

The Red List Index[1] shows trends in overall extinction risk[2] for groups of species. It is an index between 0 and 1. A value of 1 indicates that there is no current extinction risk to any of the included species. A value of 0 would mean that all included species are extinct.

No data 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

Data source: Birdlife International and International Union for Conservation of Nature   OurWorldInData.org/biodiversity | CC BY
Note: Extinction risk estimates for mammals, birds, cycads, amphibians and corals are used to calculate the Red List Index. National and regional Red List Indices are calculated by weighting by the fraction of each species' distribution occurring within them.

1. Red List Index: The Red List Index (RLI) tracks the status of species groups within the IUCN's Red List, which is a measure of species extinction risk. The RLI is an index between 0 and 1, which changes over time based on changes in a species extinction risk. A declining RLI trend indicates that the risk of extinction among the species included in the index is increasing. To be included in the RLI, species groups need to be fully assessed. Currently, only mammals, birds, corals, amphibians, and cycads have the necessary data to be included. This means the RLI is an aggregate index based on these species groups only. An RLI can also be calculated for individual species groups or for countries.

2. Extinction risk: The International Union for the Conservation of Nature (IUCN) evaluates the risk of a species going extinct based on several criteria, including their geographical range and current population size. The IUCN publishes these assessments in its flagship Red List. Species are sorted into nine categories, extending through: Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct.
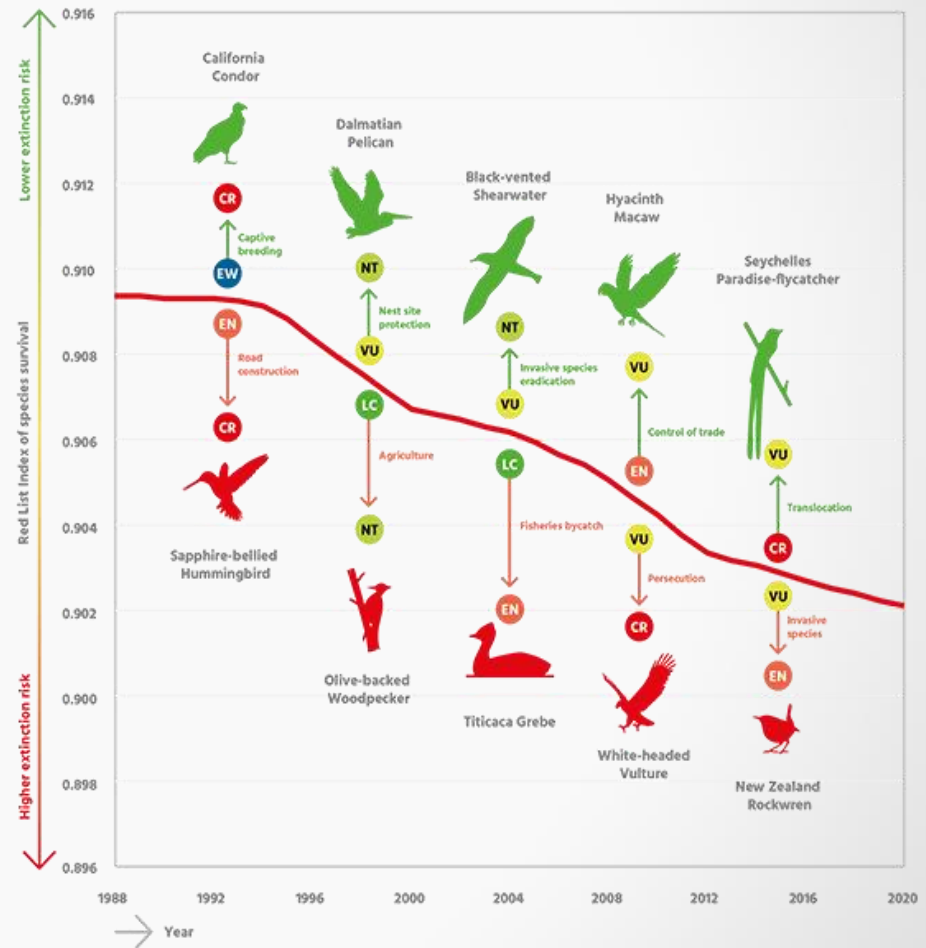
The formula requires that:
- Exactly the same set of species is included in all time periods, and
- The only Red List Category changes are those resulting from genuine improvement or deterioration in status (i.e., excluding changes resulting from improved knowledge or taxonomic revisions), and
- Data Deficient species are excluded (or treated according to the procedure described above).

i) Data Deficiency: Red List categories (from Least Concern to Extinct) are assigned to all Data Deficient species, with a probability proportional to the number of species in non-Data Deficient categories for that taxonomic group;

ii) Extrapolation uncertainty: although RLIs were extrapolated linearly based on the slope of the closest two assessed point, there is uncertainty about how accurate this slope may be. To incorporate this uncertainty, rather than extrapolating deterministically, the slope used for extrapolation is selected from a normal distribution with a probability equal to the slope of the closest two assessed points, and standard deviation equal to 60% of this slope (i.e., the CV is 60%);

iii) Temporal variability: the 'true' Red List Index likely changes from year to year, but because assessments are repeated only at multi-year intervals, the precise value for any particular year is uncertain.

<Forest areas·Red List Index·Rate of Local Livestock Breeds at Risk, 2000-2022>
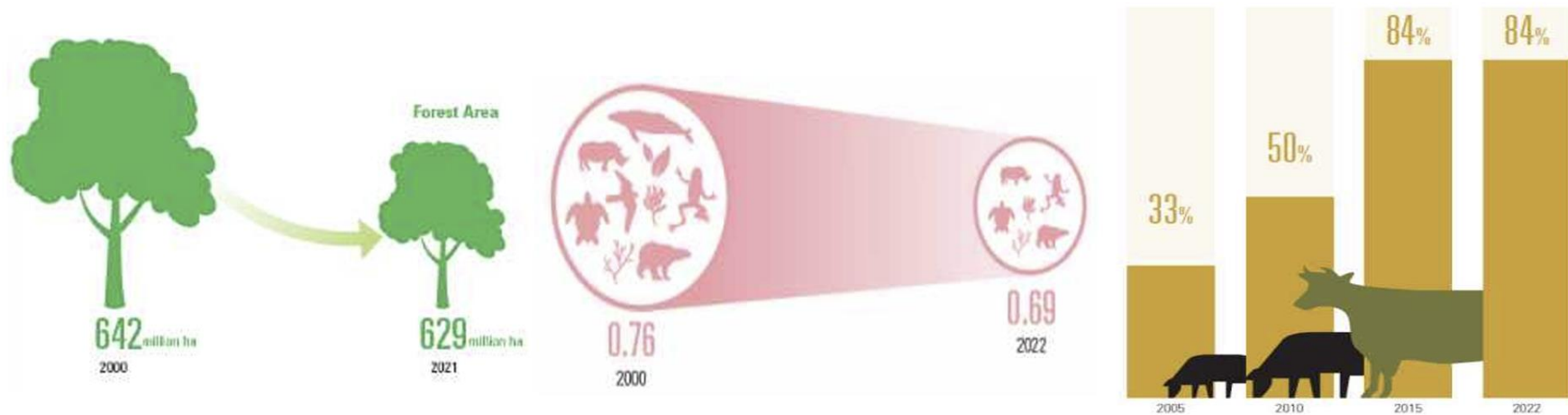
Source: Korea Forest Service's Annual Report on Forest and Forestry Statistic, and UN SDG
     Indicators Database(https://unstats.un.org/sdgs/dataportal)
Note 1 : The Red List Index is on a scale of 0 to 1, where a value closer to 0 indicates a greater
     risk of extinction for endangered and endemic species and lower biodiversity.
Note 2 : The Rate of Local Livestock Breeds at Risk refers to the percentage of local livestock
     breeds registered in the UN FAO and DAD-IS that are classified as at-risk out of local
     livestock breeds whose at-risk level is known.

IUCN REDLIST

- **The world's most comprehensive information source on the global extinction risk status of species**
- **Currently, more than 150,300 species on The Red List, with more than 45,300 species threatened with extinction**

More than 45,300 species are threatened with extinction
That is still 28% of all assessed species.

AMPHIBIANS 41%	MAMMALS 26%	CONIFERS 34%	BIRDS 12%
SHARKS & RAYS 37%	REEF CORALS 36%	SELECTED CRUSTACEANS 28%	REPTILES 21%
CYCADS 71%			
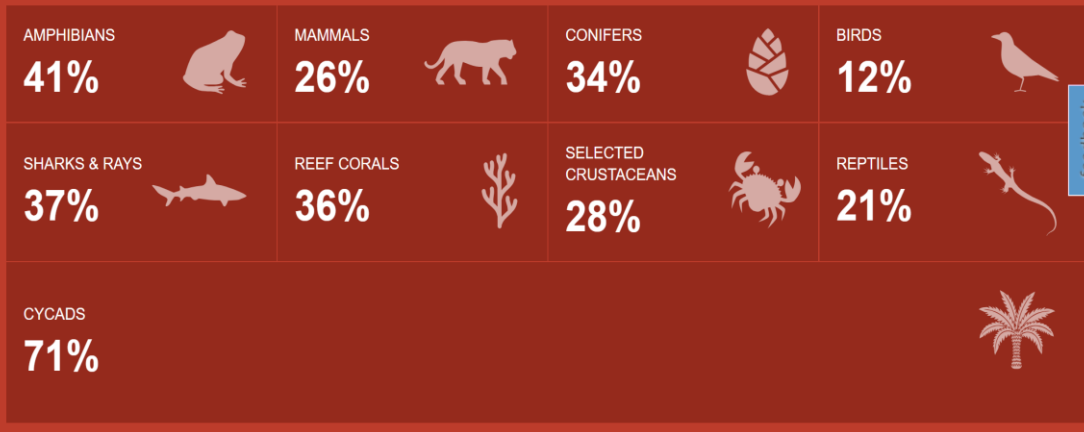
Red List: Categories of the IUCN

(EX)	Extinct
(EW)	Extinct in the Wild
(CR)	Critically endangered
(EN)	Endangered
(VU)	Vulnerable
(NT)	Near Threatened
(LC)	Least Concern
(DD)	Data Deficient
(NE)	Not Evaluated

threatened

risc of extinction

Sources : IUCN
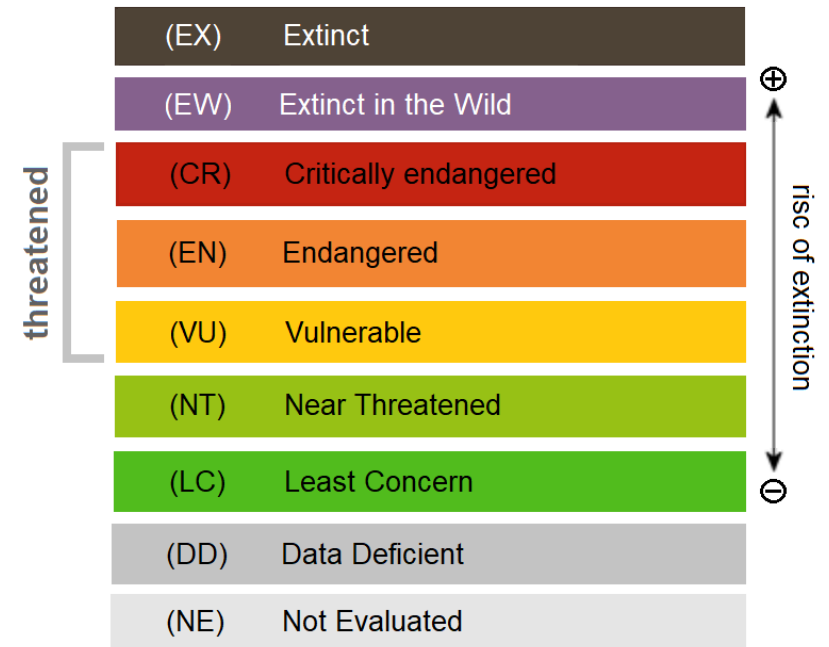
Endangered Species in RoK

Designated by **Wildlife Conservation Act**

❖ **Endangered wild species Class I**

The species that is determined by the order of the MoE in consultation with the heads of the related central government agencies among the endangered wild species whose object numbers are significantly reduced due to the natural or artificial threats

❖ **Endangered wild species Class II**

The species that is determined by the order of the MoE in consultation with the heads of the related central government agencies among the wild species that might be exposed to the danger of extinction in the near future without removal of the current threats as the object numbers have been significantly decreasing due to the natural or artificial threats.

Endangered Species in Republic of Korea

Year	Number
1989	92
1993	179
1996	203
1998	194
2005	221
2012	246
2017	267
2022	282

Sources : NIE, MoE, Seoul grandpark, CBD-CHM Korea
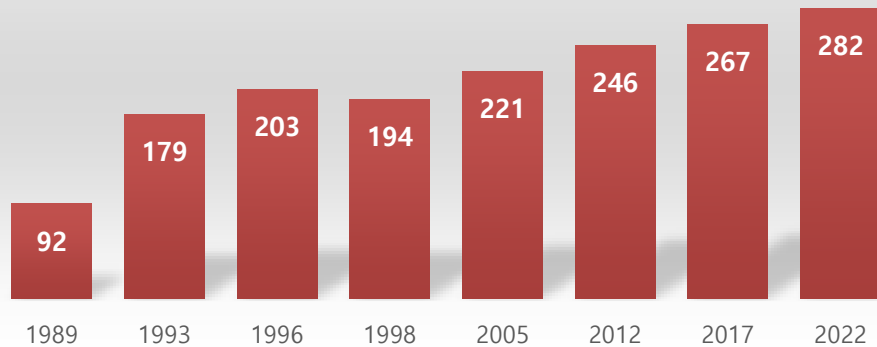
blackfaced spoonbill

otter

dung beetle

Koreanohadra koreana

Conservation Effort

Comprehensive Plan for
Endangered Specie Conservation
2018~2027

Research Center for Endangered Species
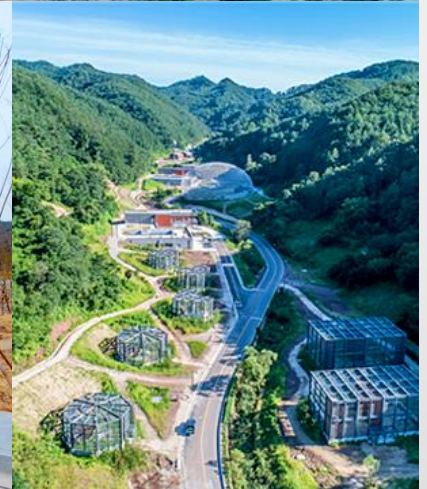
Sources : NIE, MoE

Conservation Effort

NATIONAL INSTITUTE OF ECOLOGY

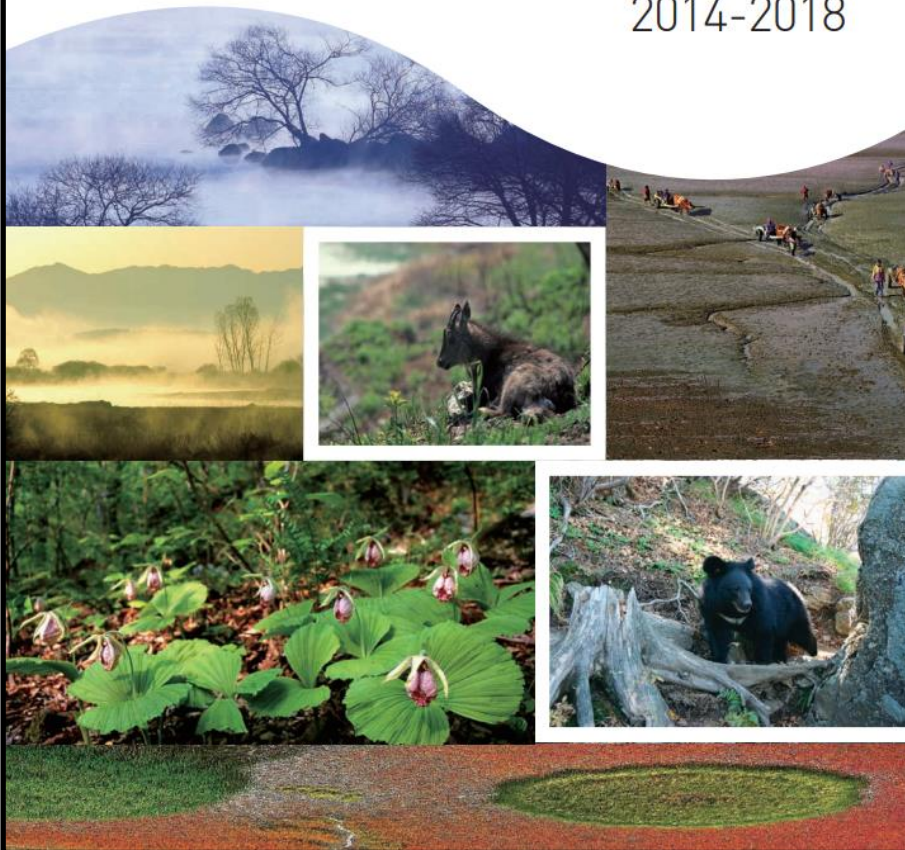Space of high-quality ecological research exhibition education

Conservation Effort
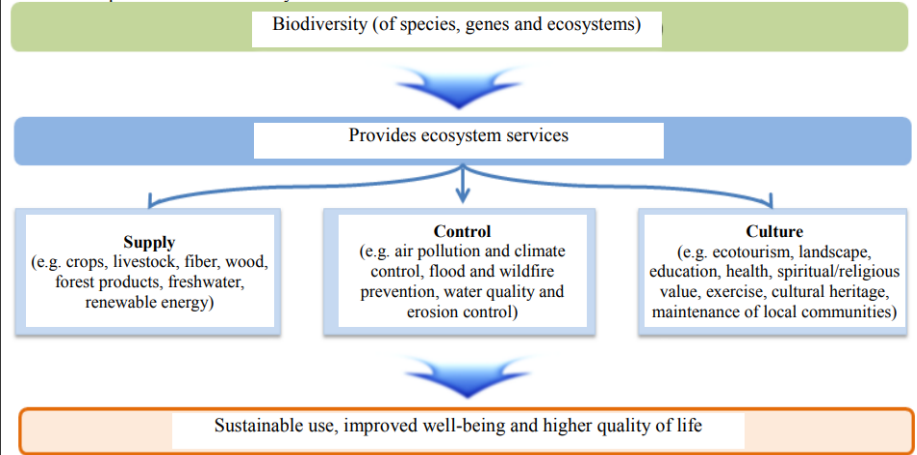
Korea's National **Biodiversity** Strategy 2014-2018

The Republic of Korea's Fourth National Biodiversity Strategy
2019 – 2023

November 2018

Jointly prepared by the Ministry of Education (MOE), the Ministry of Science and ICT (MSIT), the Ministry of Foreign Affairs (MOFA), the Ministry of Culture, Sports and Tourism (MCST), the Ministry of Agriculture, Food and Rural Affairs (MAFRA), the Ministry of Trade, Industry and Energy (MOTIE), the Ministry of Health and Welfare (MOHW), the Ministry of Environment (ME), the Ministry of Oceans and Fisheries (MOF), the Rural Development Administration (RDA) and the Korea Forest Service (KFS)

☐ Importance of biodiversity

Biodiversity (of species, genes and ecosystems)

Provides ecosystem services

Supply	Control	Culture
(e.g. crops, livestock, fiber, wood, forest products, freshwater, renewable energy)	(e.g. air pollution and climate control, flood and wildfire prevention, water quality and erosion control)	(e.g. ecotourism, landscape, education, health, spiritual/religious value, exercise, cultural heritage, maintenance of local communities)

Sustainable use, improved well-being and higher quality of life

Black-faced spoonbill

National Institute of Ecology

Conservation Effort

Dung beetle Reintroduction

Conservation Effort
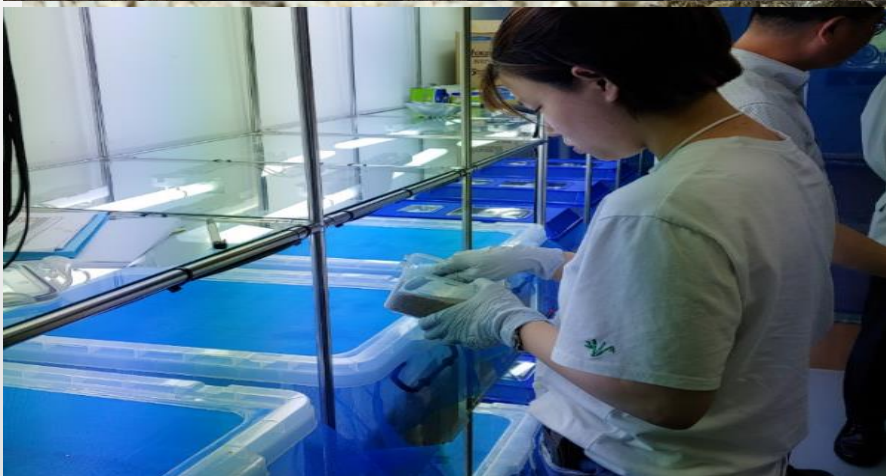
ROK-IUCN GLOBAL RED LIST PARTERSHIP

- **Hosting of the Red List Assessment and Review Workshop (National Institute of Biological Resources) and the Workshop on the Development of Species Conservation Plans for Endemic Species (Restoration Center for Endangered Species).**
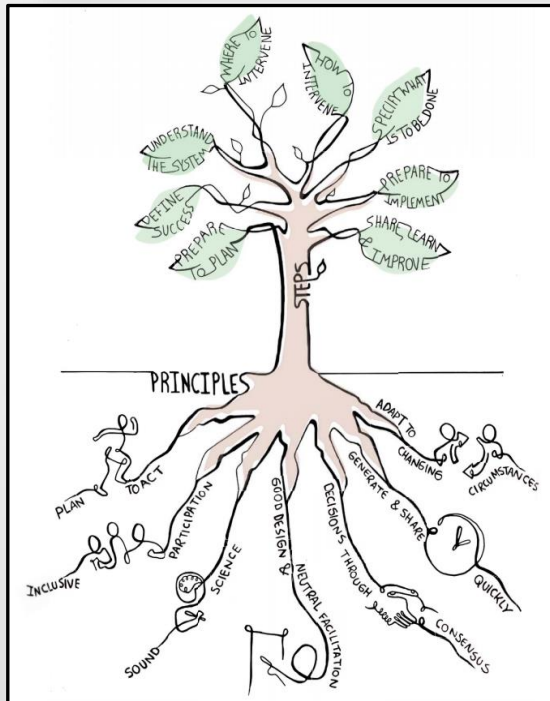
CPSG'S
SPECIES CONSERVATION PLANNING STEPS

1 Prepare to plan
2 Define success
3 Understand the system
4 Decide where to intervene
5 Agree on how to intervene
6 Specify what is to be done
7 Prepare to implement
8 Share, learn and improve

CASE STUDY: BELLINGER RIVER SNAPPING TURTLE

Figure 1. Diagram of brainstormed issues potentially affecting the sustained recovery of the Bellinger River Snapping Turtle with their causes, impacts and inter-connections. In addition, one example of output from subsequent discussion of these issues.
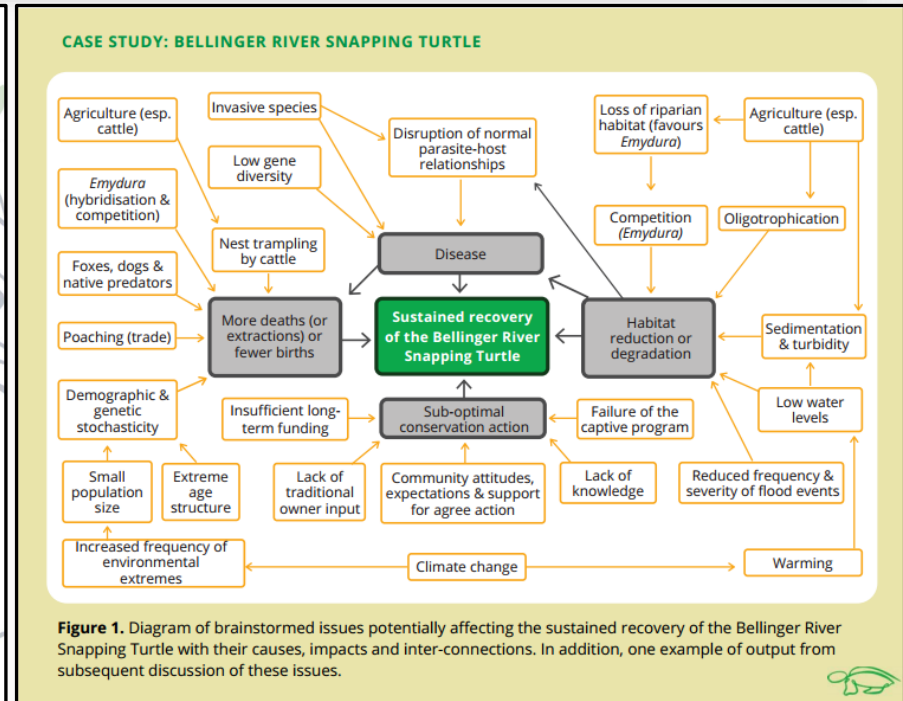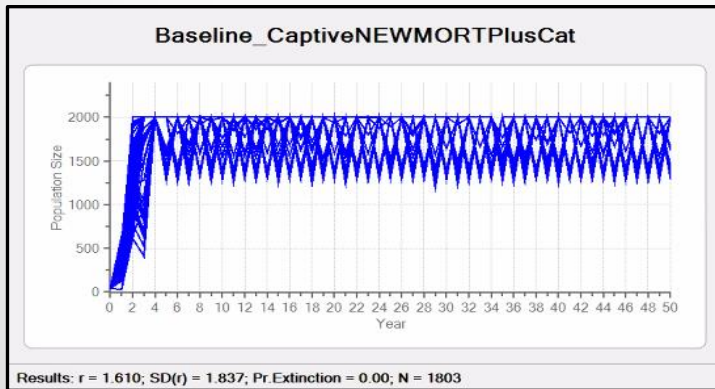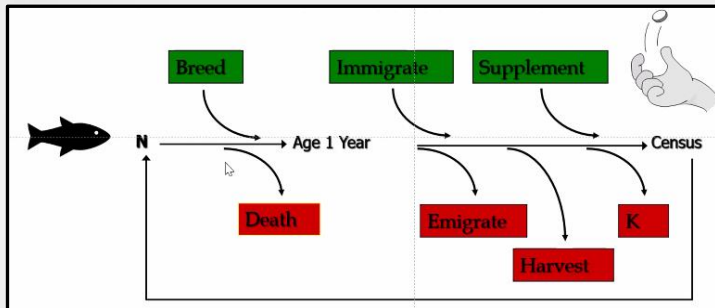
Conservation Effort

ROK-IUCN GLOBAL RED LIST PARTERSHIP

- Species Conservation Planning Workshops (IUCN Conservation Planning Specialist Group)

- PVA, PHVA workshops for one species

Thank you

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