

# Commission on Ecosystem Management

**Angela Andrade**  
2019





## CEM Mission

To provide expert guidance on **integrated approaches** to the management of natural and modified ecosystems to promote effective biodiversity conservation and sustainable development.

## CEM Objectives

To promote the adoption of, and provide guidance for, **ecosystem-based approaches** to the management of landscapes and seascapes; provide authoritative guidance and support for ecosystem-based management; and promote **resilient socio-ecological systems** to address global changes.

# CEM Structure

## 5 Priority Areas



### THEMATIC GROUPS

- Nature-based Solutions (NBS)
- Ecosystem-based Adaptation and Mitigation (EbA)
- Eco-Disaster Risk Reduction
- Ecosystem Restoration
- Ecosystem Services
- Sustainable Use of Biodiversity and EM (SUME)
- Ecosystem Resilience
- Red List of Ecosystems (RLE)
- Ecosystems and Invasive Species
- Ecosystem Governance
- Business and Ecosystem Management
- Biosphere Reserves
- Cultural Practices and Ecosystem Management

### SPECIALIST GROUPS

- Arctic
- Agroecosystems
- Coastal and Marine ecosystems
- Deep Sea and Mining
- Dryland ecosystems
- Forest Ecosystems
- Island ecosystems
- Mediterranean ecosystems
- Mountain ecosystems
- Oasis and Deserts
- Peatlands
- Holarctic Steppes
- Urban Ecosystems
- Wetlands

### TASK FORCES

- Systemic Pesticides
- EbAquaculture
- Fisheries Expert Group
- Re-wilding
- Synthetic Biology & E.
- Human Health and EM
- Emergent Pollutants

**Young Professionals Network**

# Steering Committee



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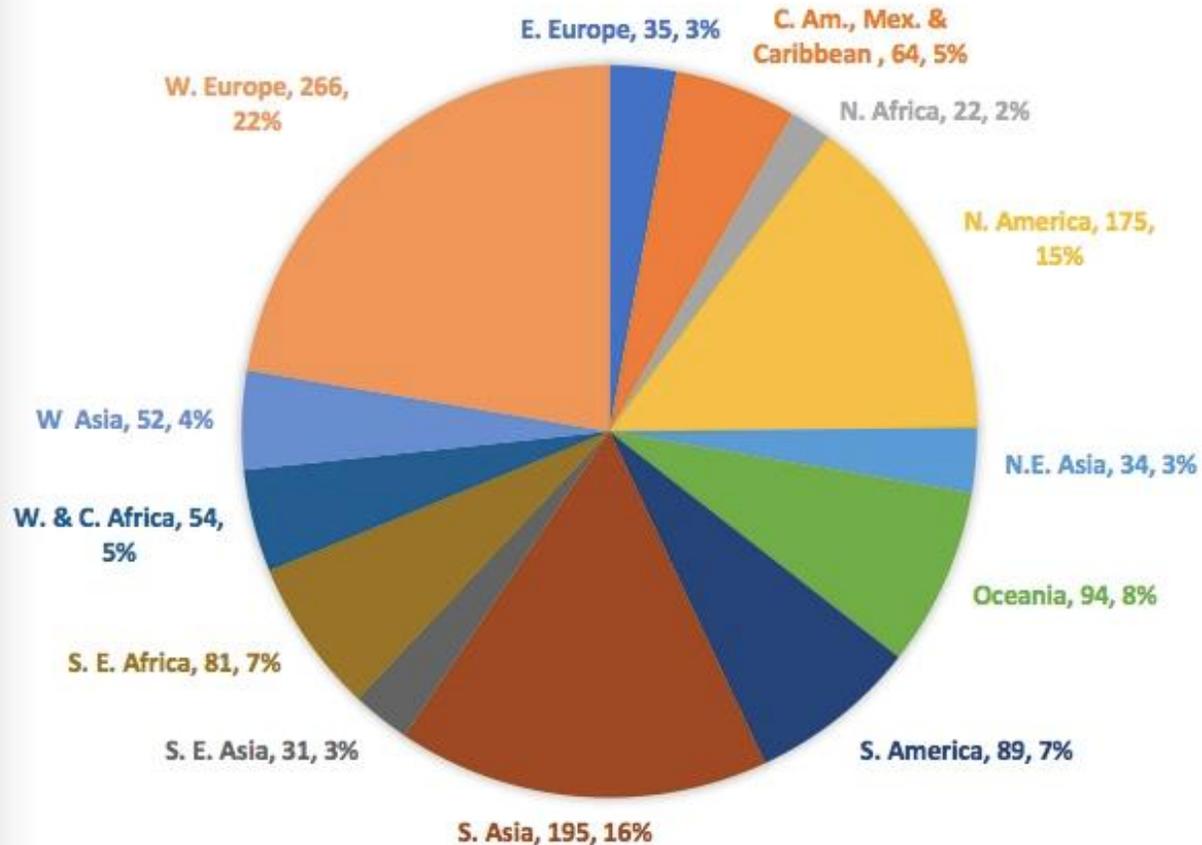
Stephen R. Edwards  
Advisor to the Chair



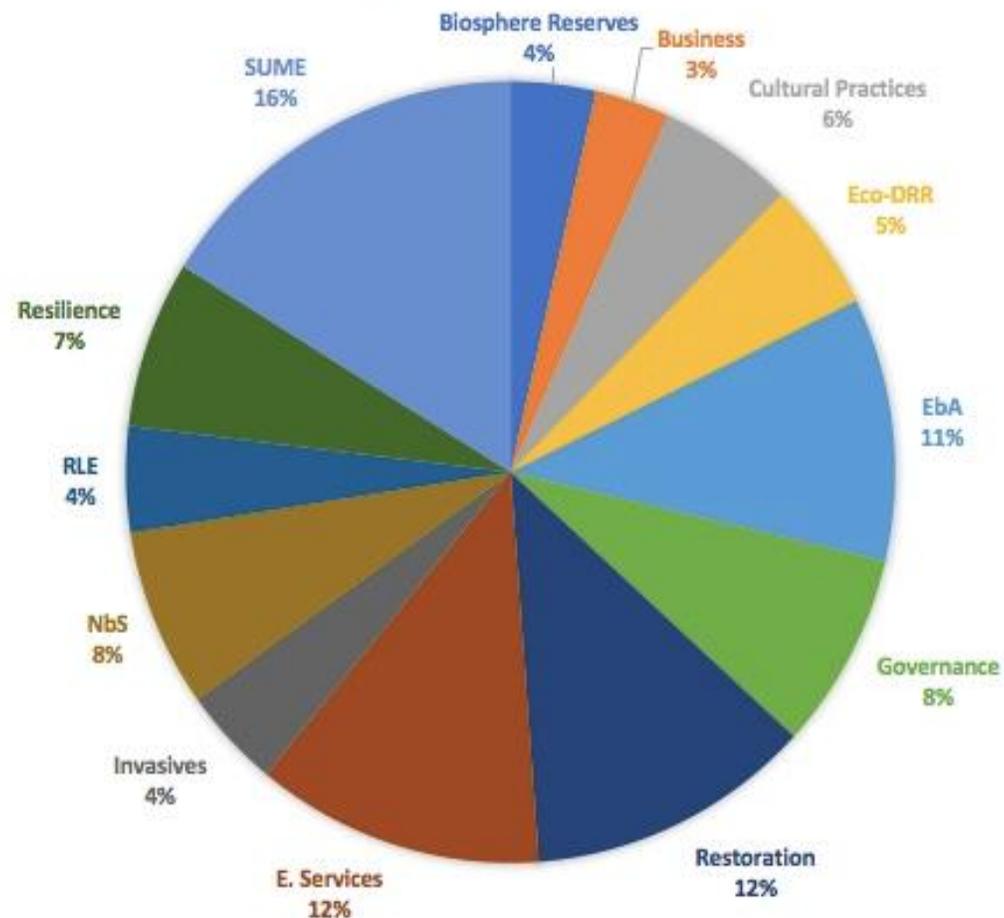


# CEM Regional Membership Distribution

## REGIONS



## THEMATIC GROUPS

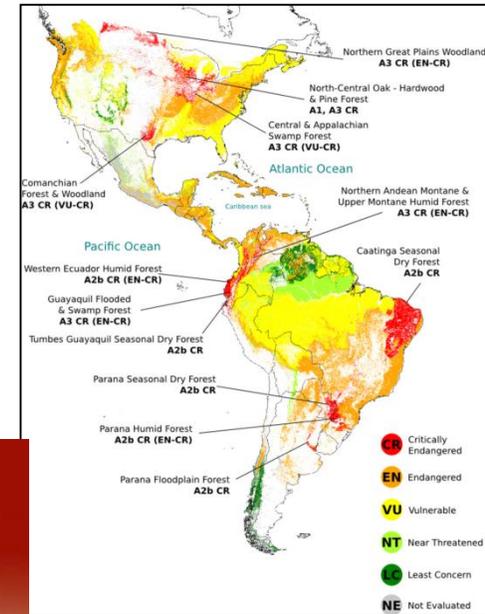
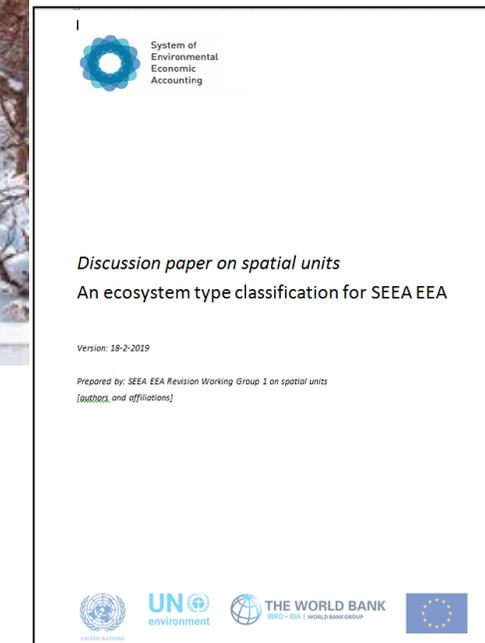


1217 CEM members in Portal.

# Ecosystem Risk Assessment

## Objectives:

- Assess and document the conservation condition of ecosystems of the world: from the most threatened to the ones in good conservation conditions.
- To promote the interaction with other products of the IUCN to have a more certain outlook of the situation of the biodiversity
- IUCN Categories and Criteria is a **Global Standard** for the assessment of the **conservation status** of ecosystems, at different levels.
- Evaluates whether ecosystems have reached the **final stage of degradation** (Collapse), or **threatened** at Critically Endangered, Endangered or Vulnerable levels.
- Based on a set of rules or criteria, for **performing evidence based**, scientific assessments of the **risk of ecosystem collapse**.

System of Environmental Economic Accounting

Discussion paper on spatial units  
An ecosystem type classification for SEEA EEA

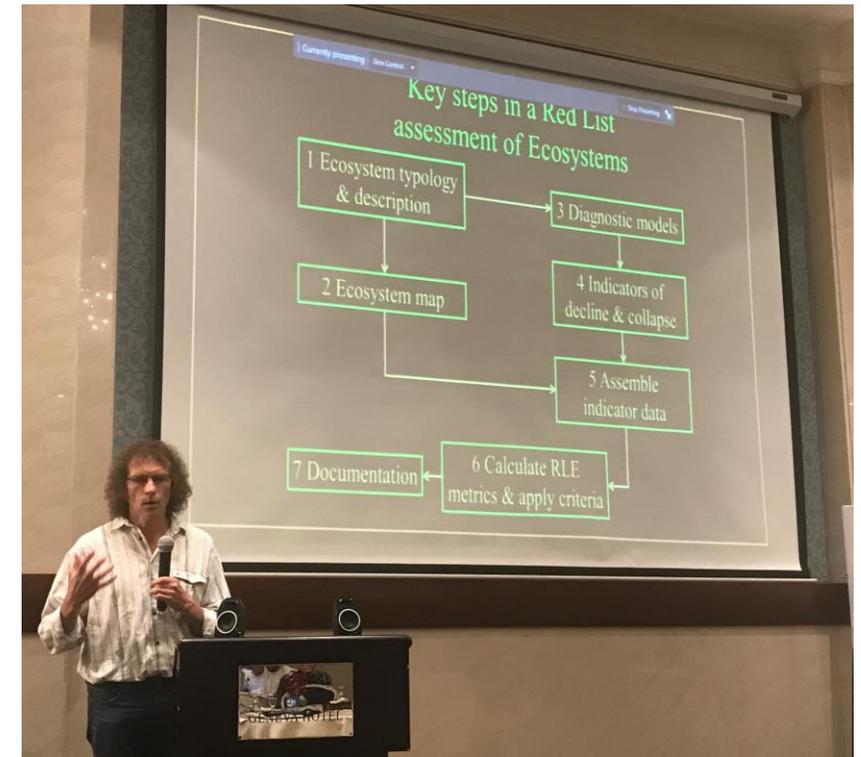
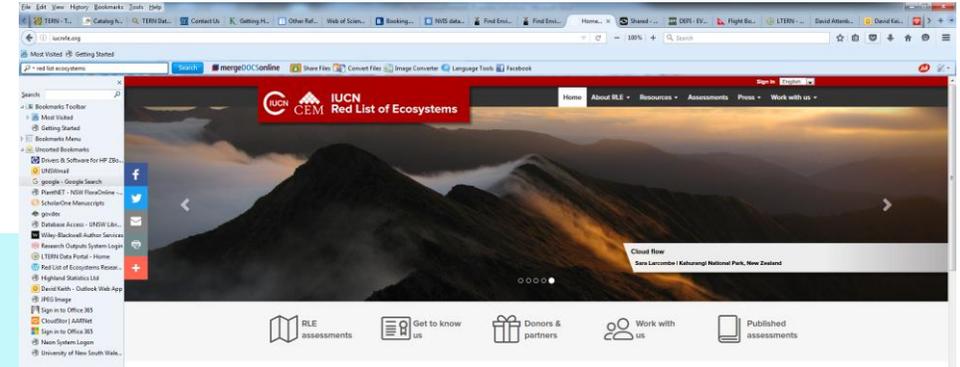
Version: 18-2-2019

Prepared by: SEEA EEA Revision Working Group 1 on spatial units  
(authors and affiliations)

Logos: UN Environment, THE WORLD BANK, ILO, IDA, WORLD BANK GROUP, EU

## Red List of Ecosystems

- RLE website [www.iucnrle.org](http://www.iucnrle.org): **150,073** visits from **209** countries. (50% more than 2017).
- **2** policy perspectives in review.
- Information from **37 RLE assessments**:
  - \* **1837** ecosystem types.
  - \* **1231** ecosystem types data, converted into xml files, and added additional assessment information.
- Facebook (IUCN Red List of Ecosystems): **24,841** followers  
Twitter (@redlisteco): **5,771** followers  
Instagram(@redlist\_of\_ecosystems): **3,204** followers. (20% more than 2017).



# Global Typology of Ecosystems

## Terrestrial & Subterranean

## Freshwater & transitional

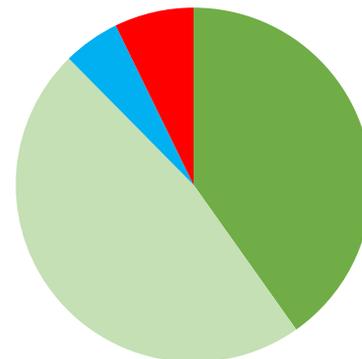
## Marine & transitional

Biome	Functional group (ecotype)		
T1 Tropical-subtropical forests	T1.1 Tropical/Subtropical lowland rainforests	x	1
T1 Tropical-subtropical forests	T1.2 Tropical/Subtropical dry forests and scrubs	x	1
T1 Tropical-subtropical forests	T1.3 Tropical/Subtropical montane rainforests	x	1
T1 Tropical-subtropical forests	T1.4 Tropical heath forests	x	1
T2 Temperate-boreal forests & woodlands	T2.1 Boreal and montane needle-leaved forest and woodland	x	1
T2 Temperate-boreal forests & woodlands	T2.2 Temperate deciduous forests and shrublands	x	1
T2 Temperate-boreal forests & woodlands	T2.3 Cool temperate rainforests	x	1
T2 Temperate-boreal forests & woodlands	T2.4 Warm temperate rainforests	x	1
T2 Temperate-boreal forests & woodlands	T2.5 Temperate pyric humid forests	x	1
T2 Temperate-boreal forests & woodlands	T2.6 Temperate pyric sclerophyll forests and woodlands	x	1
T3 Shrublands & shrub-dominated woodlands	T3.1 Seasonally dry tropical shrublands	x	1
T3 Shrublands & shrub-dominated woodlands	T3.2 Seasonally dry temperate heaths and shrublands	x	1
T3 Shrublands & shrub-dominated woodlands	T3.3 Cool temperate heathlands	x	1
T3 Shrublands & shrub-dominated woodlands	T3.4 Rocky pavements, screes and lava flows	x	1
T4 Savannas and grasslands	T4.1 Trophic savannas	x	1
T4 Savannas and grasslands	T4.2 Pyric tussock savannas	x	1
T4 Savannas and grasslands	T4.3 Hummock savannas	x	1
T4 Savannas and grasslands	T4.4 Temperate wooded savannas	x	1
T4 Savannas and grasslands	T4.5 Temperate grasslands	x	1
T5 Deserts and semi-deserts	T5.1 Semi-desert steppes	x	1
T5 Deserts and semi-deserts	T5.2 Thorny deserts and semi-deserts	x	1
T5 Deserts and semi-deserts	T5.3 Sclerophyll deserts and semi-deserts	x	1
T5 Deserts and semi-deserts	T5.4 Cool temperate deserts	x	1
T5 Deserts and semi-deserts	T5.5 Hyper-arid deserts	x	1
T6 Polar/alpine	T6.1 Ice sheets, glaciers and perennial snowfields	x	1
T6 Polar/alpine	T6.2 Polar/alpine rocky outcrops	x	1
T6 Polar/alpine	T6.3 Polar tundra	x	1
T6 Polar/alpine	T6.4 Temperate alpine meadows and shrublands	x	1
T6 Polar/alpine	T6.5 Tropical alpine meadows and shrublands	x	1
T7 Intensive anthropogenic terrestrial systems	T7.1 Croplands	x	1
T7 Intensive anthropogenic terrestrial systems	T7.2 Sown pastures and old fields	x	1
T7 Intensive anthropogenic terrestrial systems	T7.3 Plantations	x	1
T7 Intensive anthropogenic terrestrial systems	T7.4 Urban and infrastructure lands	x	1
S1 Lithic subterranean systems	S1.1 Aerobic caves	x	2
S1 Lithic subterranean systems	S1.2 Endolithic systems	x	2
S2 Subterranean freshwaters	S2.1 Underground streams and pools	x	2
S2 Subterranean freshwaters	S2.2 Groundwater aquifers	x	2
S3 Tidal subterranean systems	S3.1 Anchialine caves	x	2
S4 Anthropogenic subterranean systems	S4.1 Subterranean excavations	x	2
S4 Anthropogenic subterranean systems	S4.2 Water pipes and subterranean canals	x	4

biome	functional group (ecotype)		
FT 1 Palustrine wetlands	FT 1.1 Tropical flooded forests and peat forests	x	1
FT 1 Palustrine wetlands	FT 1.2 Seasonal floodplain marshes	x	1
FT 1 Palustrine wetlands	FT 1.3 Subtropical/temperate forested wetlands	x	1
FT 1 Palustrine wetlands	FT 1.4 Episodic arid floodplains	x	1
FT 1 Palustrine wetlands	FT1.5 Boreal, temperate and montane peat bogs	x	1
FT 1 Palustrine wetlands	FT1.6 Boreal and temperate fens	x	1
FT 1 Palustrine wetlands	FT 1.7 Artesian springs and oases	x	2
FT 1 Palustrine wetlands	FT 1.8 Geothermal wetlands	x	2
F1 Rivers and streams	F 1.1 Permanent upland streams	x	2
F1 Rivers and streams	F 1.2 Permanent lowland rivers	x	2
F1 Rivers and streams	F1.3 Freeze-thaw rivers and streams	x	2
F1 Rivers and streams	F 1.4 Monsoonal upland stream	x	2
F1 Rivers and streams	F 1.5 Monsoonal lowland rivers	x	2
F1 Rivers and streams	F 1.6 Arid episodic lowland rivers	x	2
F2 Lakes	F2.1 Freeze-thaw freshwater lakes	x	2
F2 Lakes	F2.2 Large permanent freshwater lakes	d	2
F2 Lakes	F2.3 Small permanent freshwater lakes	d	3
F2 Lakes	F2.4 Ephemeral freshwater lakes	x	2
F2 Lakes	F2.5 Permanent inland salt lakes	x	2
F2 Lakes	F2.6 Ephemeral salt lakes	d	2
F3 Artificial wetlands	F4.1 Large reservoirs	d	2
F3 Artificial wetlands	F4.2 Rice paddies	d	2
F3 Artificial wetlands	F4.3 Constructed lacustrine wetlands	d	3
F3 Artificial wetlands	F4.4 Canals and storm water drains	d	4
FM1 Transitional waters	FM1.1 Deepwater coastal inlets	d	4
FM1 Transitional waters	FM 1.2 Permanently open riverine estuaries and bays	d	4
FM1 Transitional waters	FM 1.3 Intermittently closed coastal lagoons	x	2

Biome	Functional group (ecotype)		
MT1 Shoreline systems	TM 1.1 Rocky Shores	x	2
MT1 Shoreline systems	TM 1.2 Muddy Shores	x	2
MT1 Shoreline systems	TM 1.3 Sandy Shores	x	2
MT1 Shoreline systems	TM 1.4 Boulder/cobble shores	x	2
MT2 Coastal vegetation	TM 2.1 Coastal shrublands and grasslands	x	2
MT3 Artificial shorelines	TM 3.1 Artificial shores	x	2
M1 Subtidal shelves and shelf breaks	M1.1 Seagrass meadows	x	2
M1 Subtidal shelves and shelf breaks	M1.2 Kelp forests	x	2
M1 Subtidal shelves and shelf breaks	M1.3 Photic coral reefs	x	2
M1 Subtidal shelves and shelf breaks	M1.4 Shellfish beds and reefs	x	2
M1 Subtidal shelves and shelf breaks	M1.5 Marine animal forests	x	3
M1 Subtidal shelves and shelf breaks	M1.6 Rocky reefs	x	2
M1 Subtidal shelves and shelf breaks	M1.7 Subtidal sandy bottoms	x	2
M1 Subtidal shelves and shelf breaks	M1.8 Subtidal muddy bottoms	x	2
M1 Subtidal shelves and shelf breaks	M1.9 Upwelling zones	x	2
M2 Pelagic ocean waters	M2.1 Epipelagic ocean waters	x	2
M2 Pelagic ocean waters	M2.2 Mesopelagic ocean waters	x	2
M2 Pelagic ocean waters	M2.3 Bathypelagic ocean waters	x	2
M2 Pelagic ocean waters	M2.4 Abyssopelagic ocean waters	x	2
M3 Deep sea floors	M3.1 Continental slope and island slopes - soft substrate	x	3
M3 Deep sea floors	M3.2 Continental slope and island slopes - hard substrate	x	2
M3 Deep sea floors	M3.3 Marine canyons	x	2
M3 Deep sea floors	M3.4 Abyssal plains - soft substrate	x	2
M3 Deep sea floors	M3.5 Hadal zones	x	2
M3 Deep sea floors	M3.6 Seamounts, plateaus, hills, knolls	d	4
M3 Deep sea floors	M3.7 Deepwater biogenic systems	d	3
M3 Deep sea floors	M3.8 Chemosynthetically-based ecosystems	x	2
M4 Artificial marine systems	M4.1 Artificial reefs	d	4
MFT1 Brackish tidal systems	MFT 1.1 Coastal river deltas (formerly FM1.4)	d	4
MFT1 Brackish tidal systems	MFT1.2 Intertidal forests and shrublands (formerly FM1.5)	x	2
MFT1 Brackish tidal systems	MFT 1.3 Intertidal marshes (formerly FM1.6)	x	2

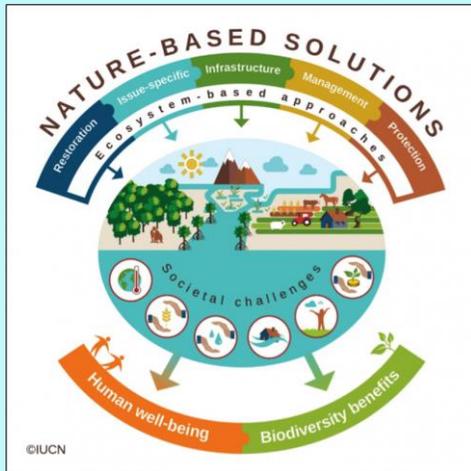
### Progress on descriptive profiles



- Complete
- Complete ex map
- Draft
- To do

# Nature-based Solutions

Nature-based Solutions (NbS) are defined by IUCN as “**actions to protect, sustainably manage, and restore natural or modified ecosystems**, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”.



Nature-based Solutions to address global societal challenges

Editors: E Cohen-Shacham, G Walters, C Janzen, S Maginnis





# Nature-based Solutions

## Objective

**Develop** and **improve** the **knowledge base on NbS** support the integration of this knowledge **in planning and decision making**, take part in the further development and expansion of the NbS work, with the IUCN Secretariat and other relevant commissions (WCPA, WCEL, CEC, *CEESP*).

**Contribute to the operational framework to implement the NbS Resolution: developing the parameters/standards, the guidelines; testing the standards** in case-studies;  
Collect evidence base on successful NbS standards;  
Synthesize NbS experiences & linkages.

**ECO-Disaster Risk Reduction**

**Ecosystem-based Adaptation and Ecosystem-based Mitigation – EbA&M**

**Ecological Restoration**

**Ecosystem Services**

**Sustainable Use of Biodiversity-SUME**



# Sustainable Use and Management of Ecosystems SUME

## Objective

- Identifying how **sustainable use** of renewable natural resources can **contribute** to **management** and restoration of ecosystems.
- Identifying and promoting conservation advantages accruing to biodiversity from more effective ecosystem management.
- **Facilitating research** and **knowledge sharing** that explores how sustainable use of renewable natural resources can foster more resilient ecosystems.



### TG with most members:

SUME	533
E. Services	399
Restoration	396
EbA	359
Resilience	229

## Objective:

To clarify the **concept of resilience** with respect to simple and complex systems and **demonstrate the value of tools for resilience-based** natural resource stewardship, **disaster risk reduction** and **ecosystem-based adaptation**.

- Building capacity for resilience thinking and assessment in a **“learning-by-doing”** process:
- Provides **tools** and **guidance to assess resilience** in a wide range of ecosystems.
- Communicates lessons learned from case studies for **social learning**. Assists the development of policies that support the emergence of resilience in SE systems.
- Platform to facilitate **sharing of lessons learned** for policy and regulatory frameworks.



## Objective:

To foster discussion and analyze information that may help better **understand how ecosystem governance can be supported and enhanced across the world and in various ecosystems to ensure biodiversity conservation, protection of ecosystem services, and environmental sustainability.** Concepts and actions focus on supporting the SDGs, Paris Agreement and the Aichi targets under the CBD.

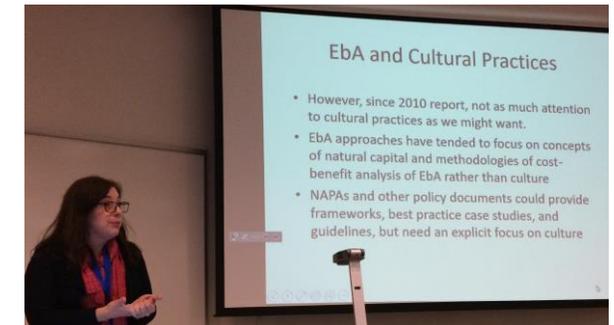
- ✓ **Stimulate research** on how different approaches to ecosystem governance, including biosphere reserves.
- ✓ Develop a framework to **assess ecosystem governance** and **support sustainable development** and the **delivery of ecosystem services** at regional scales, particularly in the context of climate change.
- ✓ **Communicate with governments**, communities, corporations and the general public to encourage the use of **EG to support SDGs.**



# Cultural Practices and Ecosystem Management

**Objective:** provide expert knowledge and guidance on the **values of culture and cultural practices to support biodiversity conservation**, maintain and enhance cultural diversity and **address the impacts of climate change** in the management of both natural and modified ecosystems.

- Enhance understanding of **cultural practices** that contribute to or erode **conservation and climate change adaptation**, and the **cultural values** and value systems that support them.
- **Increase knowledge of the role that human culture** plays in climate change.
- Promote the development of tools and guidance to understand the **relationship between various cultures and ecosystem management**.
- Assist the development of policies that include and support the role of **culture in ecosystem management for biodiversity conservation and climate change adaptation**.





# Communications

## CEM Newsletters

## TG- Newsletters

## Facebook Pages

**ECOSYSTEM INSIDER**  
The Ecosystem insider brings you news from the Commission on Ecosystem Management

September 2017- Edition 3

Dear CEM member,

Follow us for more news and updates

We are pleased to bring you the Third issue of the IUCN Commission on Ecosystem Management (CEM) Newsletter for 2017.

**CEM HIGHLIGHT**

**Steering Committee meeting in Cartagena**  
Our 45<sup>th</sup> Steering Committee took place from the 31<sup>st</sup> July to August 4<sup>th</sup> in Cartagena, Colombia. We advanced in the discussions about Strategic Planning of the Commission, its organizational development and fund raising, the role of innovation in ecosystem management, and enhancing business engagement.

**BIOSPHERE RESERVES**  
The team of the Thematic Group on Biosphere Reserves brings you recent news

March 2017 - Edition 1

**AGROECOSYSTEMS**  
A Quarterly Newsletter from IUCN-CEM Agroecosystems Specialist Group

January-March 2017  
Vol (01) Issue (01)

**Mountain Ecosystem News**  
Newsletter of the Mountain Ecosystems thematic group

Editor: Omer Ajazi

Volume 4, July 2017

Welcome to the Mountain Ecosystem Newsletter

**IUCN Ecosystem Management**  
@IUCN.EcosystemManagement

**3,172 followers**

**Comisión Gestión Ecosistemas IUCN - Sudamérica**

Grupo cerrado

Información

Miembros

Accesos directos

- Si a la paz en los territ...
- IUCN Ecosystem Ma...
- Geógrafxs Colombianis...

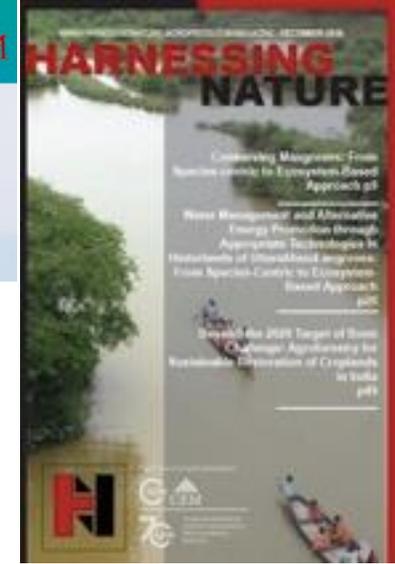
## Twitter

**1,062 followers**

**IUCN Ecosystem Management**  
@IUCN\_Ecosystem

Tweets: 741 | Following: 471 | Followers: 1,062 | Likes: 85 | Lists: 1 | Moments: 0

Your Tweet activity  
Your Tweets earned 2,535 impressions



**Agroecosystem Specialist Group of CEM, IUCN**  
@ASOIJUCH

**Followers: 1458**



# Get Involved



<https://www.iucn.org/commissions/commission-ecosystem-management/get-involved>





# Muchas Gracias

