IUCN RED LIST OF ECOSYSTEMS & IMPLICATIONS FOR HUMAN HEALTH

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CBD Regional Workshop on the Linkages Between Biodiversity and Health in the European Region
Helsinki, Finland, 23 October 2017
Biodiversity-Health Linkages

Benefits for Human Health

- Food/Nutrition
- Shelter
- Medicine
- Clean Water
- Clean Air
- Energy
- Climate regulation
- Well-being
- Disease regulation
- DRR

Ecosystem resilience

Ecosystem function
BIODIVERSITY-HEALTH LINKAGES

CHANGES IN LAND USE AND COVER
Deforestation, dams and irrigation, agricultural extension and intensification, livestock management, urbanization, road construction

RESOURCE SCARCITY
Land degradation, water scarcity, deforestation, wildlife population declines

CLIMATE CHANGE
Warming temperatures, elevated carbon dioxide, more extreme storms, hydrologic extremes, sea-level rise

DETERIORATION OF ECOSYSTEM SERVICES
Provision of nutrition, safe water, clean air, protection from natural hazards, regulation of infectious diseases, and maintenance of stable climate

NEGATIVE HEALTH OUTCOMES

Meyers et al. 2013 PNAS
CONSERVATION IMPERATIVES

- Which ecosystems are most at risk of large changes that involve loss of diversity?
- How great are the risks?
- How soon are the changes likely to occur?
1. A **standard method** for assessing and comparing risks of ecosystem collapse.

2. **Easily understood** by policy makers and the public.

3. **Transparent, objective** and **scientifically rigorous**.

4. Applicable to **terrestrial, marine, freshwater** and **subterranean** ecosystems.

5. Allows risk assessment of **local to global areas**.

6. **Flexible** to use data of varying quality and coverage.

7. Focus on **ecological processes** not just patterns.

8. Ecosystems & ecosystem services as essential components of planning & policy.
Goal:

Support conservation in resource use and management decisions by identifying ecosystems most at risk of biodiversity loss.
ASSESSING ECOSYSTEM CHANGE

Each criterion has sub-criteria that represent different measures of risk, e.g., different timeframes or distribution metrics.
Assesses **risk of ecosystem collapse**, as measured by losses in area, biotic/abiotic degradation, and modelling.

Keith et al. 2013 PLoS ONE  [http://dx.plos.org/10.1371/journal.pone.0062111](http://dx.plos.org/10.1371/journal.pone.0062111)
Bland et al. 2017 [https://portals.iucn.org/library/node/45794](https://portals.iucn.org/library/node/45794)
High risk of collapse

- **Why**?(risk) Forest clearance, climate change agriculture, poor governance (tenure, rights)
- **What action**? (choice) Restoration, agro-forestry, protected areas, assess species at risk (RLS)
- **Who**? People/villages, governments...
- **So what**? Revisit RLE after X time – changes??
RISK ASSESSMENT OUTPUTS

- Descriptions of **defining biotic components, abiotic environments & ecological processes** that define the ecosystem type
- Diagnosis of **threats & salient mechanisms** that drive loss of biodiversity from the system
- Identification of **ecological variables** thought to provide the most **sensitive and direct measures** of ecosystem status
- Collation and synthesis of **spatial data** and **time series data** relevant to tracking the status of the ecosystem type
- Identification of the major factors that **management strategies** must address to conserve the ecosystem type
- Contextual information, such as contributions to ecosystem services
### Results for non riparian Mediterranean forest ecosystems

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ASSESSMENTS: TARGETED ECOSYSTEMS
Valuable tool for:

- **Monitoring and reporting** status of biodiversity (local, national, regional, global)
- **Standardize data and metrics** (across countries, regions & sectors)
- Integration of biodiversity-health links in **NBSAPs**
- **Integrated risk assessment** in policies, plans and actions
- Identify **priority areas** to/for:
  - Safeguard ecosystem services essential to health & well-being
  - Ecosystem restoration
  - Strengthen monitoring of areas potentially vulnerable to EID outbreaks, food & nutrition insecurity, mental health, etc.
- Create **synergies** between the RLE and other assessment tools
  - More integrated assessment of trade-offs, where inevitable
Thank you for your attention

IUCN Red List of Ecosystems

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