Coral Red Listing 2020

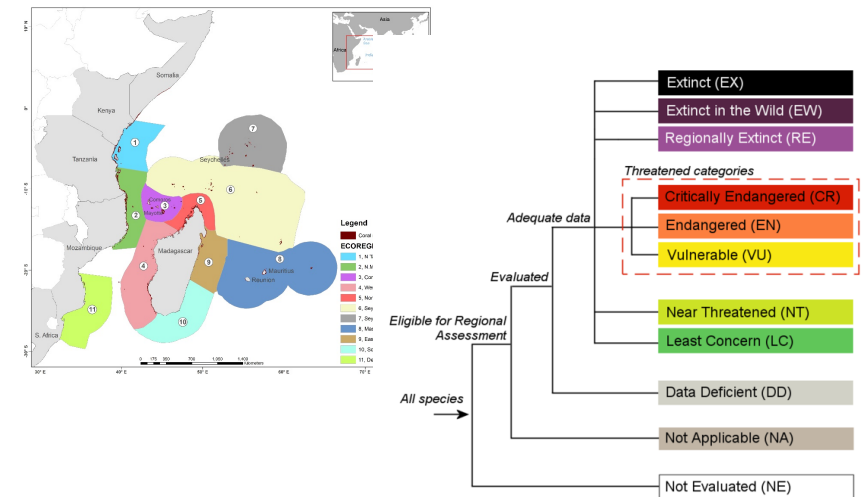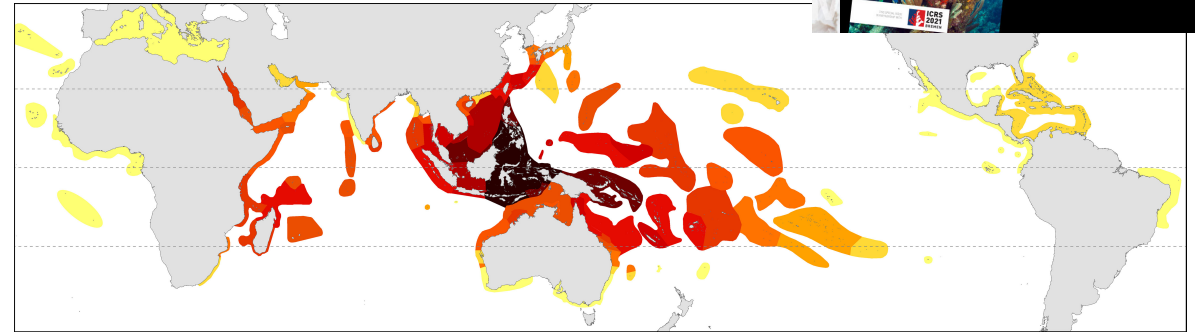|	

Day 1 morning (16th)
Bartlett Suite
9:00 – 13:00
	• Introductions
	• Overview of global and Chagos projects
	• Familiarise attendees with the assessment process and criteria
	• Assessment model – review draft documents
	• Data/attributes/model discussions
	  ○ Species input data – ranges, population numbers, traits (generation, susceptibility)
	  ○ Coral cover and extent – estimating reduction and continuing decli...
	  ○ Threat/other data

Day 1 afternoon (16th)
Bartlett Suite
14:00 – 17:30
	• Continued from morning
	• Chagos project
	  ○ list of species, specifics of data and attributes
	  ○ Discuss and agree on process to conduct assessment (including too...
	  ○ Agree on a timeline, products and assign responsibilities
	  ○ Develop (or start developing) indicators of progress

Day 2 morning (17th)
Seminar Room
Wellcome Building
9:00 – 13:00
	• Global project
	  ○ discuss species groups, attributes
	  ○ process to conduct assessment (i...
	  ○ Agree on a timeline, products and...
	  ○ Develop (or start developing) indi...
	  ○ Red List Index – back-casting to pre-1...

Day 2 afternoon (17th) Seminar Room Wellcome Building 14:00 – 17:30	• Continued from morning • Training needs • Next steps for Sept-Dec 2019 and first trimester 2020

- *Global coral species*
- *Western Indian Ocean coral reef ecosystems*

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Red list assessment of scleractinian/reef-building corals

Updating global policy with the extinction status of reef-building corals

Funding – National Geographic, Species Recovery grant – $39,500

Eurofins - €10,000

Duration: 10 July 2019 – 31 December 2021

Co-funding – Arizona State University, Zpological Society of London (ZSL), CORDIO
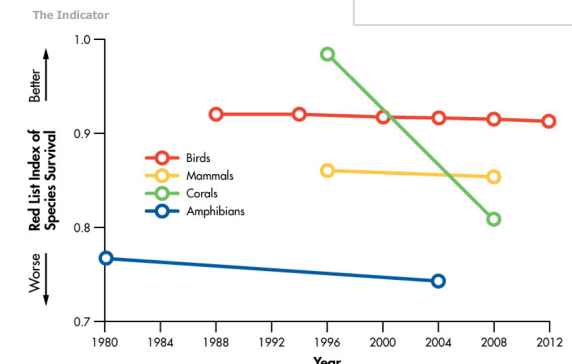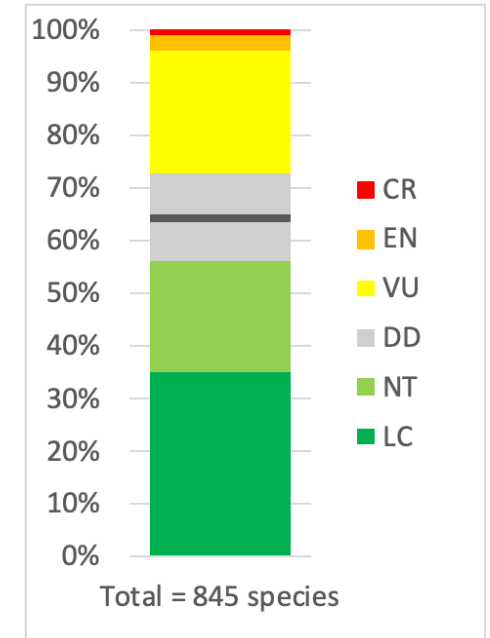
Core team
David Obura, Emma Pettersson – CORDIO
Beth Polidoro, Krista Kempinnen, Luis Gutierrez – Arizona State University
Fran Cabada, Paul Pearce Kelly – Zoological Society of London

Approach
- ≈950 species – World Register of Marine Species (WoRMS) (linked to Corals of the World and 2008 red list)
- Remote process (Covid-proof) - ≈ 8-10 taxon teams/working sets – taxonomy and geography, e.g. Caribbean, *Acropora* (genus), Poritidae, etc.
- Online training, Googledocs, Slack Workspaces

Total = 845 species

One-Third of Reef-Building Corals Face Elevated Extinction Risk from Climate Change and Local Impacts
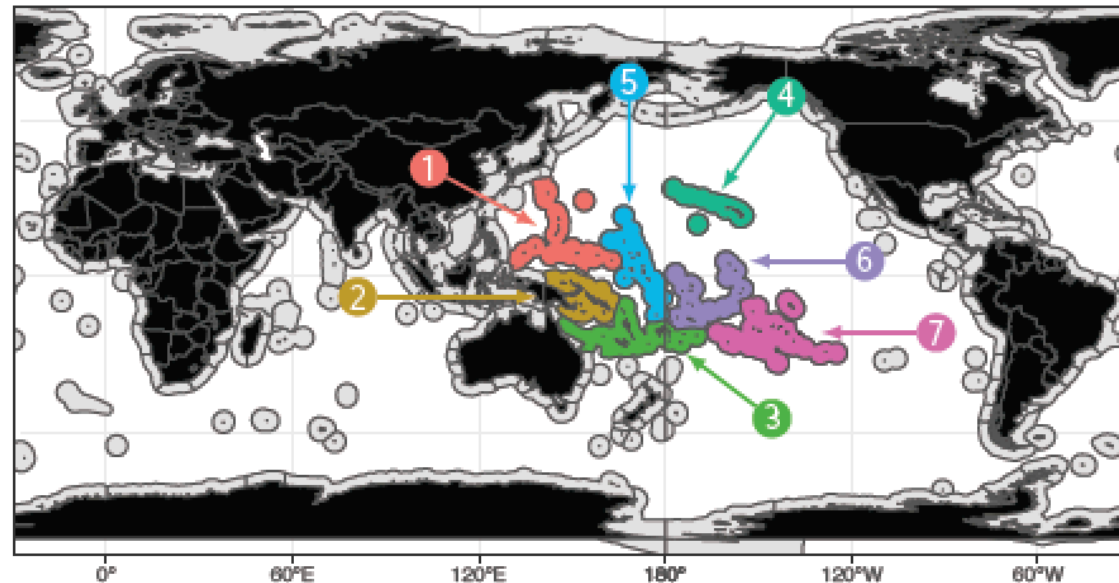*Carpenter et al,. 2008. Science, vol 351*

GCRMN inputs (2020 report):

Primary input for estimation of coral reef decline
– (% coral cover decline). Criterion A.

- 10 regions; 3-5 subregions per region
- Lay species range over change in coral cover
  to estimate potential species decline
- Adjust with species traits, other threats.
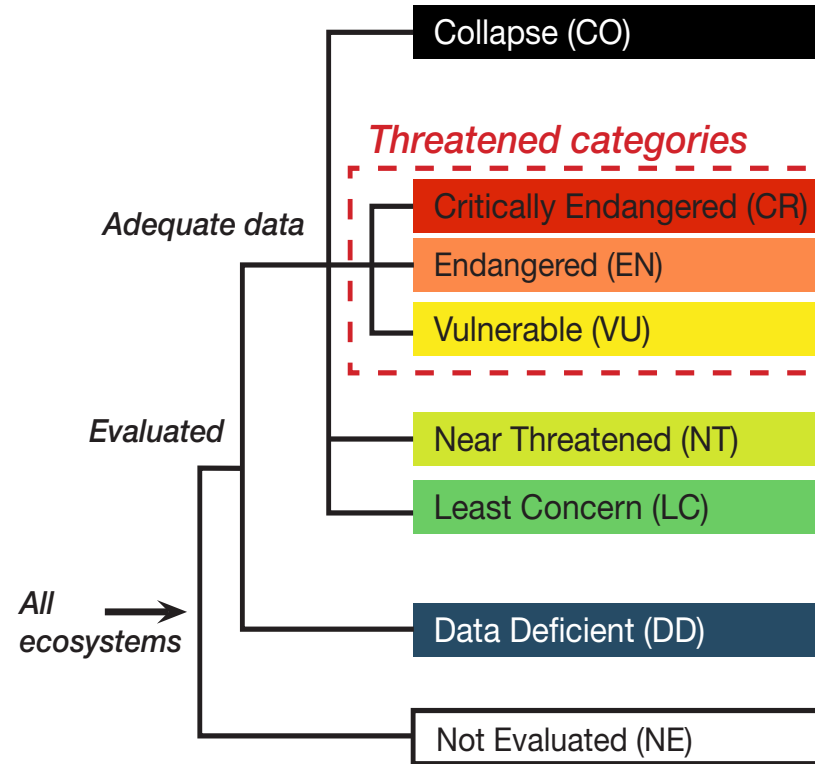
Some 90 volunteer assessors

Caribbean species:

- Species info complete
- Maps being updated
- GCRMN data – in process

Indo-Pacific species:

- Working/taxon groups compiling
  species info

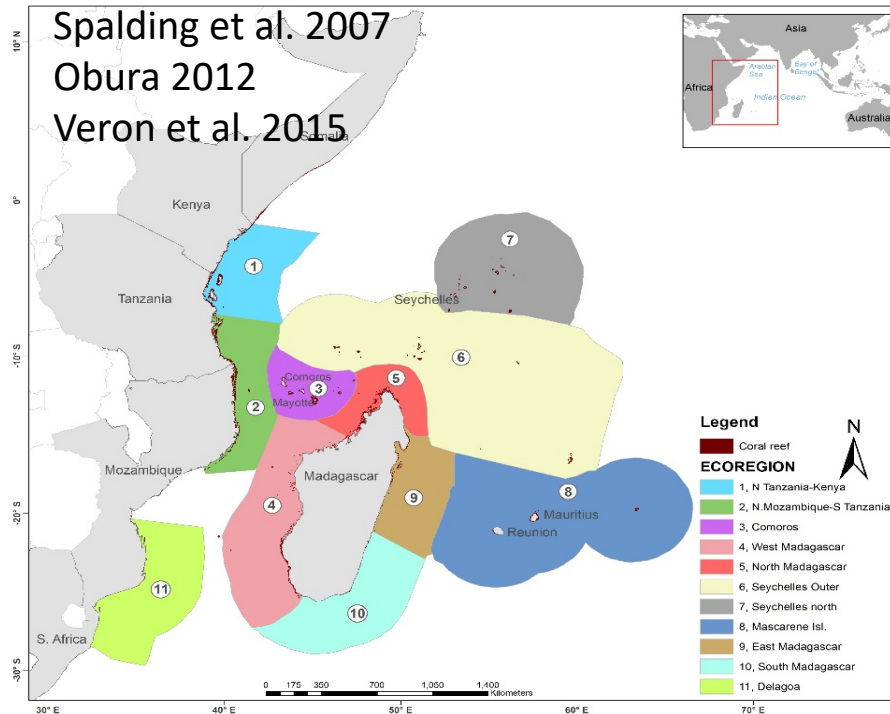# Red List of Ecosystems of Western Indian Ocean coral reefs

2019-2020

Collapse (CO)

Threatened categories

Critically Endangered (CR)

Endangered (EN)

Vulnerable (VU)

Adequate data

Evaluated

Near Threatened (NT)

Least Concern (LC)

All ecosystems

Data Deficient (DD)

Not Evaluated (NE)

- a **framework for assessing the conservation status of ecosystems**

- Identify ecosystems most at risk of biodiversity loss using a **unified standard**

- applicable from sub-national to global levels

- By 2025, IUCN aims to assess the status of the world's terrestrial, freshwater, marine and subterranean ecosystems at a broad global level.
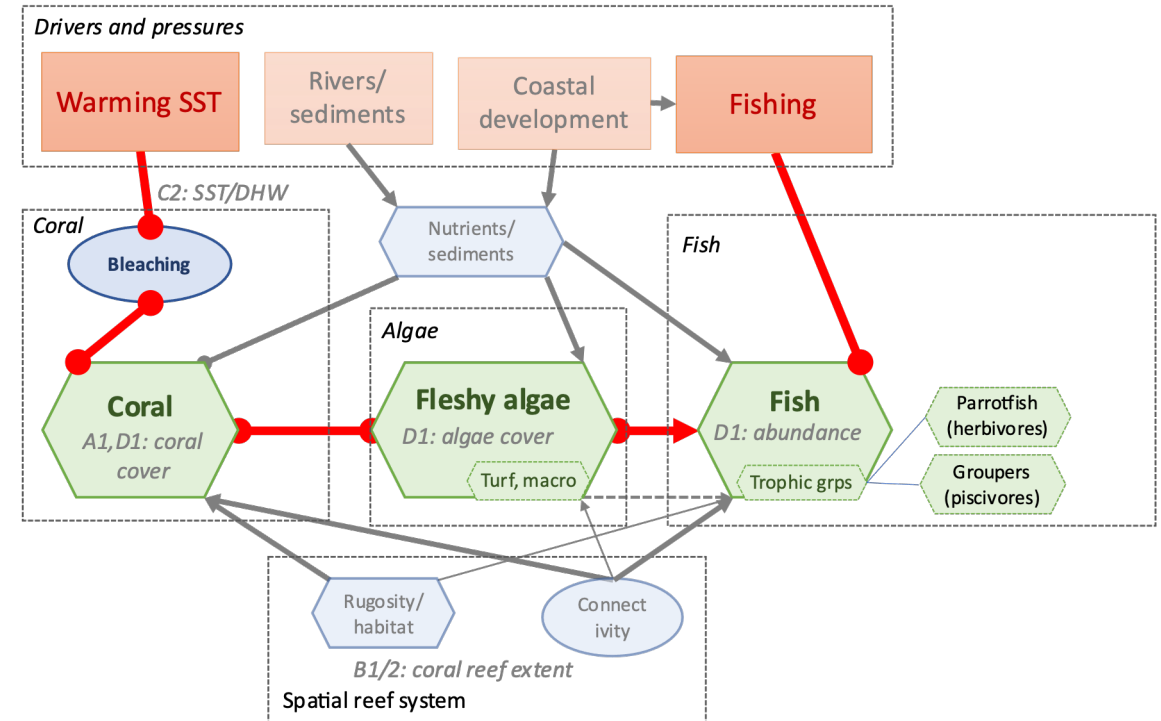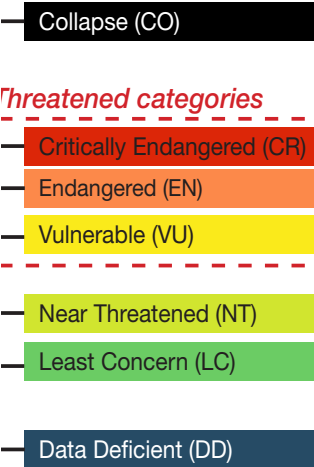
Geographic units of assessments

Spalding et al. 2007
Obura 2012
Veron et al. 2015

Global typology – Keith et al. 2020
1. Realm – marine
2. Functional biome – shelf ecosystems
3. Ecosystem functional group – coral reef (global)
4. Biogeographic ecotype – province/ecoregion? (top-down/bottom-up?)
5. Global ecosystem type – ecoregion? (bottom-up?)
6. Subglobal ecosystem type – derived from bottom up (observations)
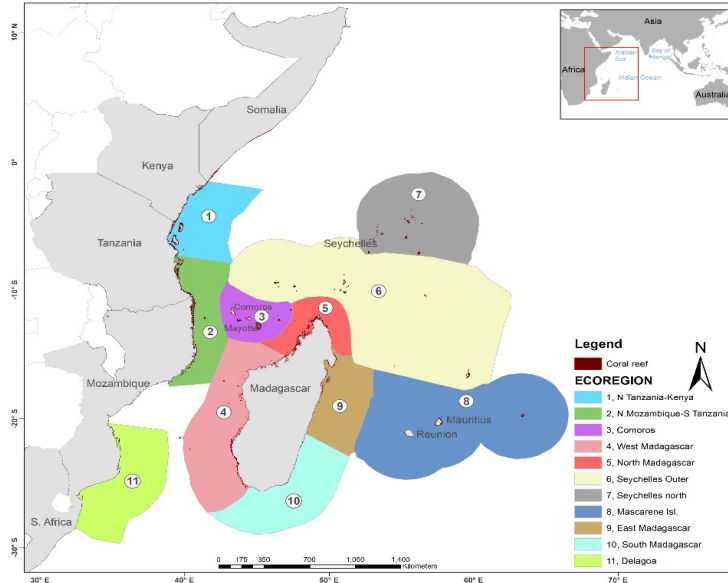
Conceptual model

- What does a functioning coral reef look like (in the WIO)?
- What are its key components?
- How do they interact with one another and what processes are they involved in?
- **Key interactions assessed**

	CRITERIA	INDICATORS/THRESHOLDS
Spatial/area	A – decline in ecosystem extent	Past 50 years, coral cover < 10%
	B – small geographic distribution	Standard area thresholds
Integrity	C – abiotic disruption	Future 50 years, RCP 6; DHW > 12, > 2* decade
	D – biotic disruption	Past 50 years 1. Coral cover < 5% 2. Algae:coral ratio – 0.833 3. Parrotfish abundance – 10% initial 4. Grouper abundance – 20% initial

Collapse (CO)

Threatened categories
Critically Endangered (CR)
Endangered (EN)
Vulnerable (VU)

Near Threatened (NT)
Least Concern (LC)

Data Deficient (DD)

Stepped algorithm:
-- coral
-> algae
-> herbivores
-> piscivores

Potential value as in ecosystem (area and integrity) indicator in the Global Biodiversity Framework

Western Indian Ocean – RLE results in a nutshell
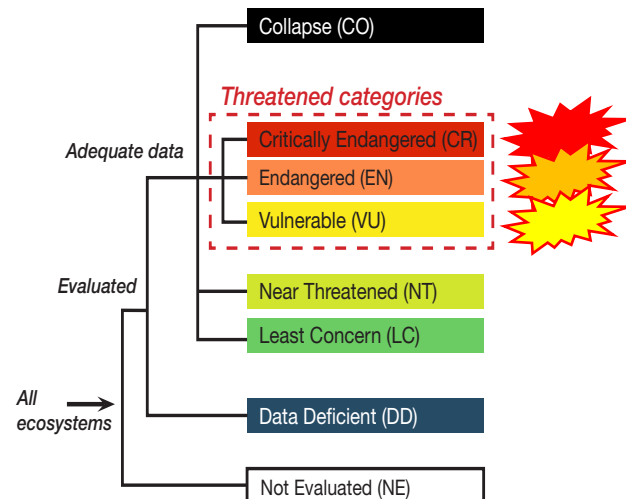
Findings

- The region and all ecoregions are in threatened categories
- Greatest threat is from future warming
- Lesser threat is from fishing impacts
- Impact of past bleaching events masked by some levels of recovery
- Did not assess coral composition, may underestimate actual risk

Recommendations

- Management recommendations include full portfolio from climate mitigation/ adaptation to fisheries/ ecosystem-based management

Next steps

- National policy processes – Kenya, Tanzania, Mozambique – through 'National Coral Reef Assessments'
- **Extend RLE coral reefs to other GCRMN regions for global coverage within 3-4 years**
- Extend RLE assessment to mangrove and seagrass systems for integrated approach

Call to ICRI members, with the RLE partnership

GCRMN Implementation and Governance Plan

Goal 2. Analyse and communicate coral reef trends ...

- Obj. 2.2 Support assessments and reporting ... internationally adopted goals and targets ...
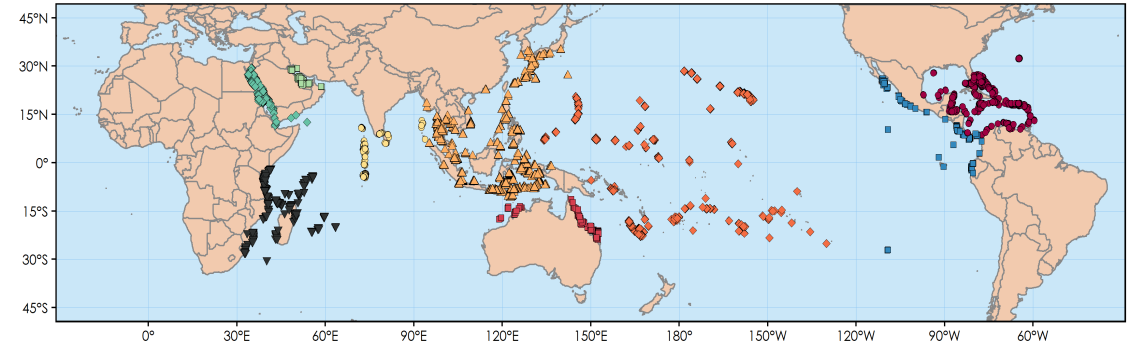
Goal 3. Enable and facilitate greater utilization of coral reef data

- 3.2 Contribute to and operationalize innovations and their application in coral reef monitoring, research and modelling.

Operationally:

- WIO regional approach replicable in all coral reef regions
- GCRMN regional networks a primary platform for implementation.

RLE partnership - IUCN, University of New South Wales , Deakin University, Arizona State University, Provita Venezuela, Wildlife Conservation Society, CORDIO East Africa, Conservation International (Colombia),

2021-2030 (by 2025?)

- Extend RLE across global extent of coral reefs
- Qualify as a global indicator for coral reefs?
  - For spatial coverage
  - For temporal coverage need to get to 2 and more time points (5/10 year intervals?)

Call for involvement of ICRI members and GCRMN regions

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RLE partners meeting and strategic planning (March 2021)