# IUCN Global Species Programme

# MBU

## Marine Biodiversity Unit

### in partnership with the IUCN Species Survival Commission and Old Dominion University

## 2017 in Review

# OVERVIEW & ACCOMPLISHMENTS

Due to its vast size, the ocean has long been considered less threatened by anthropogenic stressors than terrestrial and freshwater environments. However, through escalating technological advances, our activities threaten even the most remote of marine ecosystems. Global change is affecting temperature and weather patterns. Pollution is ubiquitous, from the Great Pacific Garbage Patch and microplastics in the Arctic. Overfishing decreases the abundance of target and non-target species. As our population continues to grow, our impacts will follow.

Proper management of the oceans is vital to the existence of humankind. The threats facing the ocean jeopardize not just the environment and its inhabitants, but also the myriad of benefits we derive from it. The ocean covers more than 70% of Earth's surface area and more than 99% of its livable space. It drives global weather patterns. Over half of the oxygen we breathe is produced in the ocean. Around 80 million tonnes of fish are caught annually and more than 10% of the world's population depends on fisheries. Our lives depend on a healthy ocean.
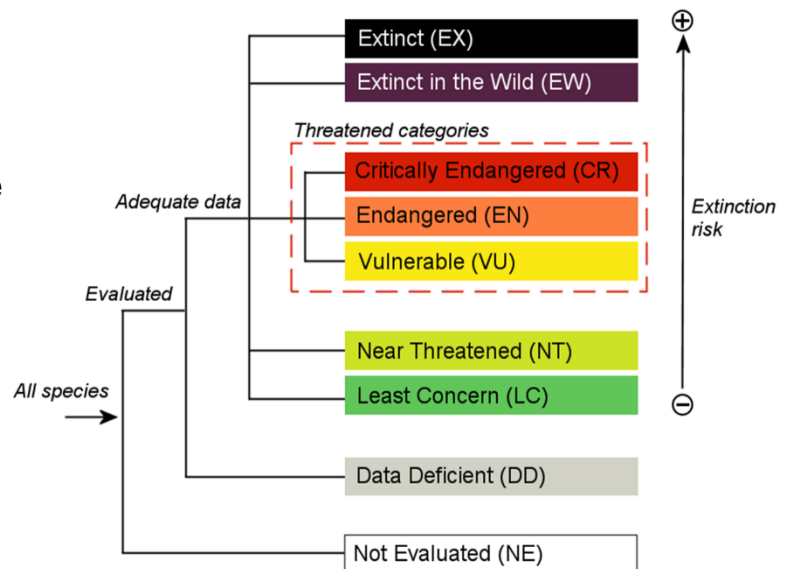


*IUCN Red List Categories*
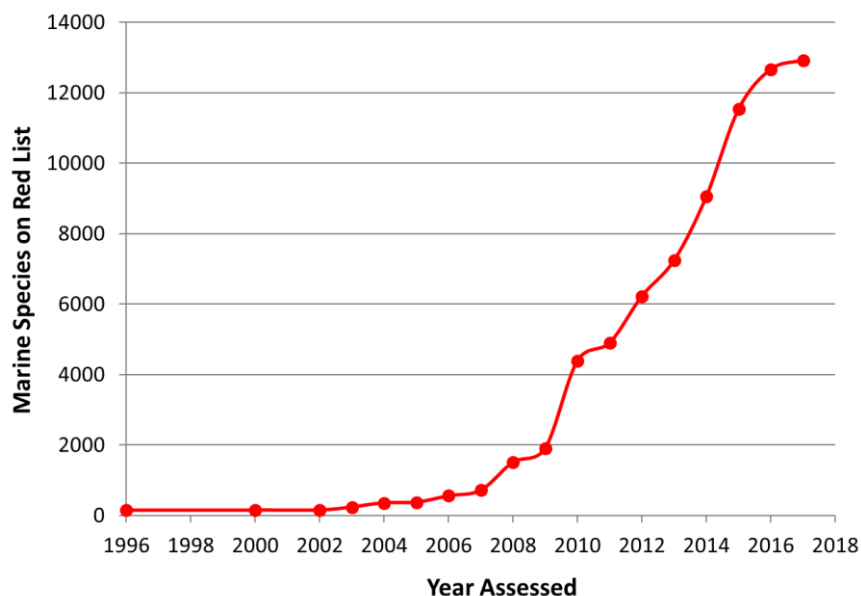


*Cumulative number of marine species published on the IUCN Red List*

Protection begins with the species as the unit of stewardship, but a clear framework is needed to determine which species to protect. This is where the International Union for Conservation of Nature (IUCN) Red List of Threatened Species is key. The IUCN Red List, the global gold standard for evaluating relative extinction risk, has been guiding species conservation at global and sub-global scales since the 1960s.

As concerns regarding the status of the oceans have mounted, the IUCN Marine Biodiversity Unit was created to lay the foundation for global marine biodiversity conservation. This is being achieved by compiling comprehensive, species-specific data and extinction risk assessments through the Global Marine Species Assessment (GMSA) project. The objective is to evaluate 20,000 marine species against the IUCN Red List methodology. This will provide the current conservation status of marine biodiversity and a benchmark against which future changes can be measured.

We have made substantial progress towards 20,000 marine species extinction risk assessments. In 2017, the total number of species on the Red List exceeded 91,000 and marine representation is approaching 13,000 species. This includes 8,700 species of marine fishes, nearly half of the most biodiverse group of vertebrates. Training and assessment workshops were held in Siargao, Philippines; California, USA; Zanzibar, Tanzania; and Arizona, USA; providing the tools and practical experience to apply the Red List methodology to more than 120 participants.


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We are compiling the first reassessment of a complete marine family, the groupers, delivering an essential index of changes in extinction risk through time and the effects of targeted conservation and management. We also expect the process will highlight smaller, traditionally lower-value, groupers experiencing recent increases in fishing pressure in some areas (such as southeast Asia), where commercial exploitation of larger, traditionally targeted groupers is no longer viable.

We are also paving the ground for more active participation by the zoo and aquarium community in the IUCN Red List process by facilitating two-way exchanges of knowledge and expertise. The first partnership, with The Deep Aquarium in the UK, resulted in the support of a marine Red List Officer. The role of this position is three-fold: contribute to key marine Red List assessment projects; develop further partnerships with zoos and aquariums based on his experience; and support outreach initiatives at The Deep regarding marine conservation.

*Substantial progress has been made, but action is urgently needed in the face of many threats marine biodiversity, including overexploitation, habitat destruction and climate change. We thank all of those who have supported our efforts in 2017, and look forward to supporting marine biodiversity conservation in 2018.*

# PUBLICATIONS & PRESENTATIONS

Our work has been broadly publicized to scientists, conservationists, managers and others at conferences and through peer-reviewed literature. For example, members of the MBU team presented our work at two conferences in 2017.

## 27 PEER-REVIEWED PUBLICATIONS SINCE 2006

## 2 PEER-REVIEWED PUBLICATIONS IN 2017

**Fernandes et al. (2017) Coherent assessments of Europe's marine fishes show regional divergence and megafauna loss.** *Nature Ecology & Evolution.*
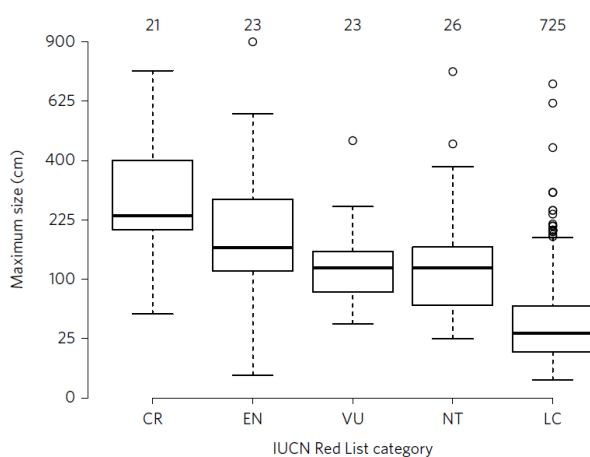
*Boxplot of Red List category vs. size.*

We found that bigger fishes (> 1.5 m) are more at risk than smaller species. Furthermore, regional Red List assessments for European marine fishes compared favorably with stock status evaluations carried out independently. No species classified as threatened were considered sustainably exploited. Geographically, most Mediterranean stocks are overfished while most of those in northern Europe are not.

**Polidoro et al. (2017) The status of marine biodiversity in the Eastern Central Atlantic.** *Aquatic Conservation: Marine and Freshwater Ecosystems*

Approximately 8% (range 7-22%) of all marine species assessed in the ECA are threatened. Fisheries and overexploitation are major threats in the region, with87% of threatened species across all taxonomic groups affected by both large- and small-scale targeted fisheries, excessive capture as by-catch, or unsustainable harvest.
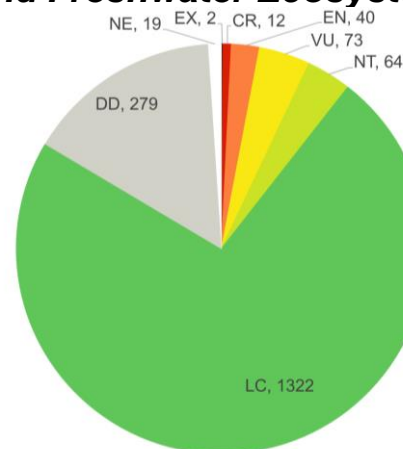
*Status of marine biodiversity in the ECA.*

# BEYOND THE ASSESSMENTS

Of course, the assessments are not the end goal in and of themselves. If the assessments do not actually help improve the status of the species, then the process is merely documentation. It is instead essential that the assessments feed into policy and management decisions and guide scientific research, such that the overall status of marine biodiversity improves.

One way by which we have taken our work beyond the assessments is the application of the new Key Biodiversity Area (KBA) criteria to marine species. KBAs highlight geographic areas essential to preserve biodiversity. Based on 1,000+ marine vertebrates of the Greater Caribbean, we identified nearly 100 unique KBAs, including many sites not previously known for their contribution to marine biodiversity.
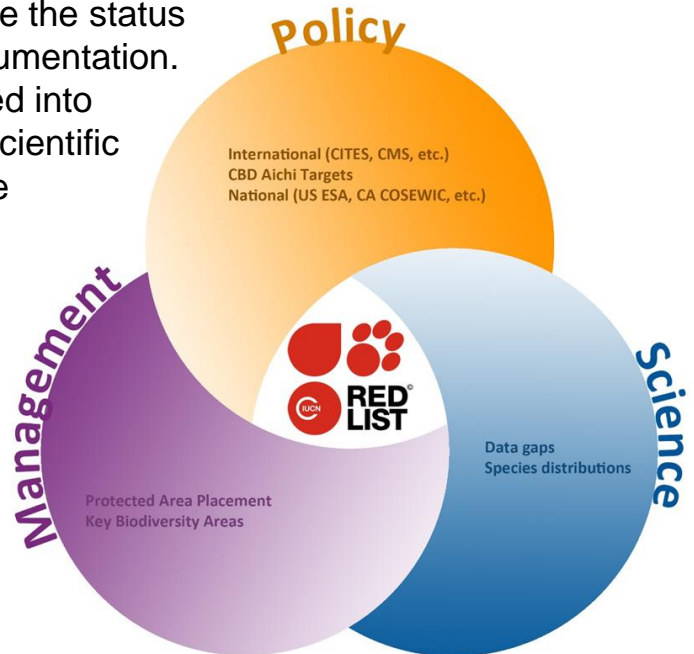
*Ways in which the Red List can inform science, policy and management.*

# ACKNOWLEDGEMENTS