



## **IUCN – The World Conservation Union Member’s report on activities to ICRI**

**Presented by IUCN Global Marine Programme**

### **Reporting period**

October 2005 – September 2006

### **Summary of Activities**

1. IUCN has established a Working Group on Tropical Marine Ecosystems to further the implementation of resilience principles in the management of coral reefs impacted by climate change, through a grant from McArthur Foundation. The objective of this Working Group is to use coral reefs as a model ecosystem to identify priority information gaps and issues to be addressed, provide a mechanism to focus scientific contributions from different leading research groups, and over the course of three years to synthesize the relevance of resilience to coral reefs and climate change
2. A two-year IUCN Global Marine Programme project on extending and expanding CORDIO activities in South Asia and the Andaman Sea was initiated in May, funded by the Finnish Ministry of Foreign Affairs. The project, entitled “Management of Climate Change Impacts on Coral Reefs and Coastal Ecosystems in Tsunami-affected Areas of the Andaman Sea and South Asia”, builds on previous CORDIO phases in South Asia as well as a set up-phase in the Andaman Seas funded by Sida in response to the Indian Ocean Tsunami.
3. Other activities by IUCN includes research projects in association with CORDIO, based out of Mombasa, Kenya; four projects on marine invasive species (baseline surveys, capacity building and awareness, MPAs and aquaculture); and support to ITMEMS. For more detailed activity descriptions see Annex I.
4. The 3<sup>rd</sup> IUCN World Conservation Congress Recommendation 3.100 on “Reef-fish spawning aggregations” is presented to the ICRI General Meeting in item [X.XX]

## Annex I: Detailed Activity Descriptions

### New Projects

Two key projects in the IUCN Global Marine Programme portfolio on coral reefs have been approved and implementation initiated:

- A three-year McArthur funded project entitled “Implementing resilience principles in the management of coral reefs impacted by climate change: IUCN Working Group on Tropical Marine Ecosystems”, initiated in April. The objective of this Working Group is to use coral reefs as a model ecosystem to: identify priority information gaps and issues to be addressed through parallel workshop and research tracks, provide a mechanism to focus scientific contributions from different leading research groups, and over the course of three years to synthesize the relevance of resilience to coral reefs and climate change. Upcoming meetings will be held in September 2006 in Bremen in association with ISRS, and in October 2006 in Cozumel during ITMEMS3. The first product under the project is a publication produced with TNC, reviewing and synthesizing knowledge and status of research on coral reef resilience and resistance to bleaching (Grimsditch GD and Salm RV 2006. Coral Reef Resilience and Resistance to Bleaching. IUCN, Gland, Switzerland. IUCN Resilience Science Group Working Paper Series - No 1). A similar publication on Management of Mangroves for Resilience to Climate change is being produced.
- A two-year IUCN Global Marine Programme project on extending and expanding CORDIO activities in South Asia and the Andaman Sea was initiated in May, funded by the Finnish Ministry of Foreign Affairs. Activities commenced with a review of the uptake of CORDIOs past results and outputs into national and regional policy formulation, to identify pathways of strengthening the use of available information to underpin policy and management. A Reef Resilience Workshop will be organized in collaboration with TNC, to be held in December 2006. The project will also support targeted research on reef resilience and climate change effects, and has a significant livelihoods-related component that will be implemented in partnership with the ICRAN/SACEP EU project 'Institutional Strengthening and Capacity Development for the Long-term Management and Conservation of MCPAs encompassing Coral Reefs in South Asia'

### Research Projects with CORDIO

Seasonal fluctuations in zooxanthellae densities in corals in the Mombasa Marine Park 1998-2006: This paper, to be presented at ISRS conference in Bremen in September 2006, analyses zooxanthellae density and mitotic index data for eleven species in Mombasa Marine Park from 1998 to 2006. Seasonal variations in environmental conditions have been shown to drive regular fluctuations in zooxanthellae. However, most studies have been carried out on corals at relatively high latitude, where seasonal variations are larger than at the equator. This low-latitude study found different patterns in zooxanthellae density fluctuations in different species: some, generally fast growing species, showed high zooxanthellae densities in the warmer northeast monsoon, while some slow growing species showed high zooxanthellae densities in the colder southeast monsoon. However the pattern was not universal, and some species showed no seasonal pattern.

Coral bleaching responses in different habitats: This field study compares bleaching responses in corals of three species (*Porites lutea*, *P. cylindrica*, and *Pocillopora damicornis*) in three distinct habitats (shallow lagoon, deeper lagoon, reef slope). Data from future bleaching events will be compared against baseline data. Variables to be studied includes coral colour, condition, zooxanthellae density, mitotic indices, chlorophyll levels and zooxanthellae clade type, as well as environmental parameters such as water temperature, PAR levels and water flow rates. The study will increase knowledge of how the environmental conditions of different habitats can affect the bleaching resistances of corals.

Coral Reef Resistance and Resilience Database: This literature database compiles literature on coral reef resistance and resilience to bleaching. It will be distributed as a scientific and a management tool, on-line as well as on CD depending on demand. A beta version of the database will be available by early 2007.

### *Alien Invasive Species*

IUCN Global Marine Programme is continuing its work on alien invasive species in tropical and reefal environments. A projects on invasive species baseline surveys and monitoring with related capacity building and awareness activities is being finalized in the Seychelles. Baseline surveys were also conducted in the Chagos Archipelago as part of the Chagos 2006 expedition in February-March 2006. Further baseline surveys are planned for Aldabra and surrounding areas in early 2007. A project on alien species in aquaculture is under implementation in Chile. A comprehensive outreach campaign has been developed and a report on considerations for responsible use was released in August 2006. Lastly, a project on invasive species in MPAs titled "Keep them out of paradise" is being initiated, focusing on challenges faced by MPA managers, tools available to prevent and mitigate invasions, and awareness-raising. The projects are supported by the Total Corporate Foundation.

### *Indian Ocean Tsunami*

IUCN issued a press release and a web story in conjunction with the launch of the report 'Status of Coral Reefs in Tsunami Affected Countries: 2005' and contributed to compiling the report, in particular through the Asia Regional Marine Programme and its partnership with CORDIO. IUCN also supported a Reefcheck-led assessment of tsunami and earthquake damages to coral reefs in Aceh, Indonesia. A report was published in January 2006.

### *ITMEMS 3*

IUCN is supporting the preparation of several themes and workshops for ITMEMS3, including e.g. reef resilience, human impacts on reefs, marine invasive species, sustainable tourism, disaster management, restoration and rehabilitation, and integrated and participatory strategies, through production of case studies and/or contributing to the organization of the meeting. IUCN and CORDIO are also supporting travel of at least 9 participants.