



## Monaco's Member Report - Presentation

### Presented by Monaco

The Principality of Monaco has red corals but does not have coral reefs. However, Monaco conducts research programs in line with ICRI activities and supports its international initiatives.

The Scientific Centre of Monaco undertakes fundamental research on coral reef ecosystems. The objective is to establish the biological basis of the sensitivity and resilience of coral ecosystems under global environmental changes, using a multidisciplinary approach. This Institute appears to be at the 4<sup>th</sup> global rank for its number of publications on coral topic.

I would like to share with you two examples of conclusions recently published based on laboratory experiments performed on microcolonies of corals.

**The first one**, addresses global warming of seawater. We know that under thermal stress, coral colonies experience a drastic decrease in photosynthetic and calcification rates, leading to bleaching. In nature, these events are often associated with nutrient depletion in seawater surface. Experimental results indicated that an increase in nitrogen availability helps corals in maintaining photosynthetic and calcification rates. This might be contributing to coral resilience to thermal stress.

**The second example** addresses ocean acidification and its impact on coral reefs as large marine calcifiers. In vivo studies on coral calcifying cells show that corals are able to maintain their intracellular pH when exposed to some degree of seawater acidification. This suggests that reef corals may be able to mitigate, to some extent, the effects of ocean acidification.

The Scientific Centre of Monaco is also part of the International Research Group (GDRI) on Biodiversity and Coral Reefs participating in the European project BEST, to evaluate the economic value of coral reefs in the framework of global change issues.

It should be noted that a group of 12 persons of the Scientific Centre of Monaco participated in the 12<sup>th</sup> International Coral reef Symposium » (Cairns, Australia, July 2012) and conducted 3 mini Symposia on "Coral Physiology and energetics", "Mechanisms of calcification" and "Economic valuation and market-based conservation".

**Among the Governmental actions:** the Government of the Principality of Monaco is supporting the Eastern Pacific Tropical Marine Corridor (CMAR) through bilateral cooperation with Costa Rica and Colombia (currently hosting the Secretariat). Monaco is also supporting the organization of three side events by ICRI at the third International Marine Protected Areas Congress held next week, in Marseille, in France. I hope to see you there.