Coral Reef Emergency: 2,600 Scientists Call for Worldwide Rescue

Adapted from Environment News Service

Coral reefs worldwide are being destroyed by changes in ocean temperature and chemistry faster than at any time since the last reef crisis 55 million years ago, thousands of marine scientists warned in a joint statement on July 9 from Cairns, Australia.

“The future of coral reefs isn’t a marine version of tree-hugging but a central problem for humanity,” said Jeremy Jackson, a senior scientist emeritus at the Smithsonian Tropical Research Institute in Panama and recipient of the 2012 Darwin Medal.

Speaking at a coral reef symposium in Cairns held only once every four years, Jackson said, “What’s good for reefs is also critically important for people and we should wake up to that fact.”

Jackson was among 2,600 of the world’s top marine researchers at the 12th International Coral Reef Symposium who released an unprecedented “Consensus Statement on Climate Change and Coral Reefs.”

By consensus the scientists are urging a worldwide effort to overcome growing threats to coral ecosystems and to the livelihoods of millions of people who depend on them. It calls for measures to head off the escalating damage from rising sea temperatures that cause coral bleaching, ocean acidification, overfishing and pollution from the land. Coral bleaching occurs when high water temperatures cause corals to expel their symbiotic algae; if prolonged or severe, it can kill the corals.

Jackson told delegates that in the Caribbean Sea, 75-85 percent of the coral cover has been lost in the last 35 years. Even the Great Barrier Reef, the world’s best-protected reef ecosystem, has lost half its coral cover in the past 50 years, he said.

Climate change is pushing that decline and causing increased droughts, agricultural failure and sea level rise at increasingly faster rates that implies huge problems for societies, the scientists warn. Coral reefs provide food and livelihood for tens of millions of coastal inhabitants around the world and function as natural breakwaters for waves and storms. Reefs provide an estimated $170 to $375 billion in goods and services globally each year.

The consensus statement says that by the end of this century, emissions of the greenhouse gas carbon dioxide at the current rate will warm sea surface temperatures by at least 2-3°C (3.6-5.4°F), raise sea-level by as much as 1.7 meters (5.7 feet), reduce ocean pH from 8.1 to less than 7.9 by dissolving additional carbon dioxide from the atmosphere in seawater, and increase storm frequency and/or intensity.

“There is a window of opportunity for the world to act on climate change – but it is closing rapidly,” said Terry Hughes, director of the Australian Research Council Centre of Excellence for Coral Reef Studies at James Cook University in Cairns.

Smithsonian-Mason School of Conservation Graduate/Professional Training Courses

The newly renamed Smithsonian-Mason School of Conservation, a partnership between George Mason University and the Smithsonian Conservation Biology Institute (SCBI), is proud to announce their Fall 2012/Spring 2013 course schedule. The School is now offering more courses than ever before, in a wide range of topics, all focused on training in different aspects of biodiversity conservation, from effective conservation leadership, to technical tools in statistics and field sampling. All courses are currently either 1- or 2-week intensive residential courses and they will be held in a brand-new, sustainably-built Academic Center on the grounds of SCBI in Front Royal, Virginia. Most courses
can be taken either for graduate credit or continuing education units. For more information, visit http://conservation-training.si.edu or e-mail SCBItraining@si.edu

**Applied Climate Change**
*October 15-26, 2012*
This course provides an overview of the knowledge, tools and resources needed to become more effective leaders and managers in adapting to climate change. Participants will develop practical skills through lectures, case studies, field assignments, study tours, and computer-based analyses. A field study tour of the Virginia Region provides an opportunity for viewing real-life climate change adaptation measures for water, biodiversity and the agricultural, tourism and wine industries.

**Spatial Ecology, Geospatial Analysis & Remote Sensing**
*October 29-November 9, 2012*
Learn to use GIS tools to address conservation research problems, quantifying effects of human-induced global changes on wildlife and biodiversity. Hands-on lab exercises (e.g. land cover mapping; home range analysis; modeling habitat selection; mapping species distributions) use remote sensing data and SCBI field surveys to monitor global changes, assess impacts on wildlife, and develop mitigating strategies.

**Effective Conservation Leadership**
*November 4-10, 2012*
This course provides an unparalleled professional development experience. Conservation practitioners, as well as students at the outset of their careers, become more effective leaders and managers through case studies and hands-on exploration of the leadership skills practiced in many professional fields. This course will apply effective leadership and communication skills and techniques to environmental and conservation issues.

**Designing and Implementing a Biodiversity Action Plan for Conservation and Development**
*December 3-7, 2012*
Learn strategies for developing and implementing a biodiversity action plan, particularly as they relate to companies involved in natural resource extraction or industrial development; international examples applied at the national and site specific levels to manage and conserve habitats and species will be a focus. Learn how BAPs relate to other development projects, such as the Environmental and Social Impact Assessments, how they improve biological knowledge and information, and the role of education and conservation programs.

**Statistics for Ecology and Conservation Biology**
*March 3-14, 2013*
Gain in-depth knowledge of analysis techniques for cutting-edge ecological research, employing R: classical regression models; mixed models; generalized linear models; generalized additive models; how to deal with the limitations of real datasets; and conservation-specific approaches.

**Estimating Animal Abundance and Occupancy**
*April 1-12, 2013*
The course is designed to provide a strong theoretical and analytical background to both graduate students and professionals in distance sampling, mark-recapture, and occupancy modeling techniques, with a strong focus on the practical use of field data in the programs DISTANCE, MARK and PRESENCE.

**Species Monitoring & Conservation: Terrestrial Mammals**
*April 29-May 10, 2013*
This course teaches current techniques in assessment and monitoring of wild mammal populations, including bats. Participants learn principles of study design; current field assessment methods; data analysis techniques including MARK and DISTANCE software; application of monitoring data to decision-making and population management; and collection and preparation of museum voucher specimens.

**Current Literature**


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