



Scientists Confirm Global Coral Bleaching Event for 2015

Bleaching reports in the Caribbean lead to announcement for only the third time in recorded history

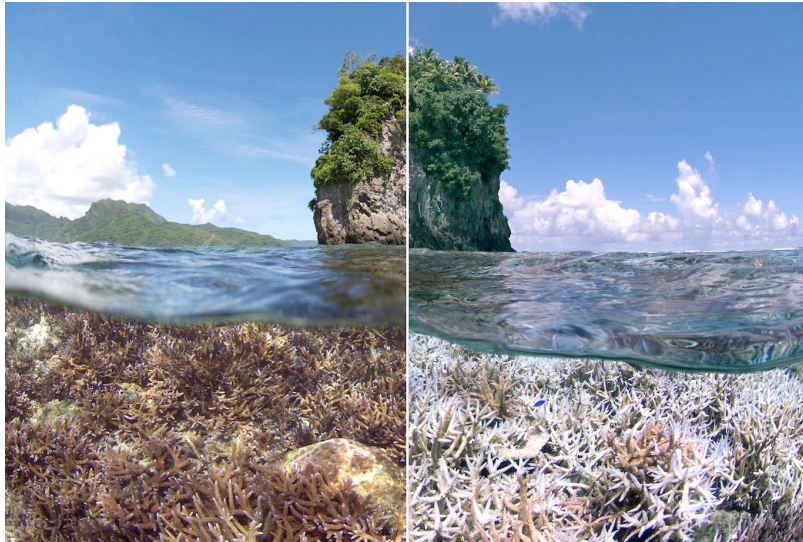


Image: XL Catlin Seaview Survey

October 8, 2015 – A consortium of ocean scientists, reef mappers and community-based monitoring teams, including the National Oceanic and Atmospheric Administration (NOAA), XL Catlin Seaview Survey, The University of Queensland, and Reef Check, today confirmed a “global coral bleaching event” is underway. Increased ocean temperatures due to climate change, combined with the warming effects of an El Niño pattern and a Pacific warm water mass referred to as “The Blob”, are driving temperatures to record levels and threatening to severely deplete the coral reef ecosystems that support fish habitats, shoreline protection and coastal economies.

The announced global coral bleaching event, only the third of its kind in recorded history, is expected to impact approximately 38% of the world’s coral reefs by the end of this year and kill over 12,000 square kilometers (4,633 square miles) of reefs, according to NOAA. Although reefs represent less than 0.1 percent of the world’s ocean floor, they help support approximately 25 percent of all marine species. As a result, the livelihoods of 500 million people and income worth over \$30 billion are at stake.

A summary of these findings, as well as new information about coral bleaching and never before seen high-resolution imagery, has been specially developed to explain the event:

<http://www.globalcoralbleaching.org/>.

The declaration of the 2015-16 global coral bleaching event was confirmed by NOAA after its [bleaching predictions](#) were verified by scientists and citizen scientists in the Atlantic/Caribbean basin including rapid response surveying teams from the [XL Catlin Seaview Survey](#), The University of Queensland and [Reef Check](#). These reports added to the growing list of reports in the Pacific and Indian Oceans.

Warming Causing Ocean Ecosystem Destruction

Oceans absorb approximately 93 percent of the increase in the earth's heat from climate change, making them one of the most visual indicators of the issue – particularly when change is revealed through dramatic episodes like global coral bleaching. During a bleaching event, corals expel the golden-brown algae that grow within their body tissue, exposing their white skeletons—hence the term “bleaching.” If the ocean temperature remains higher than the seasonal norm for a number of weeks the corals can die *en masse*, causing the loss of some corals that may be decades to centuries old.

Bleaching can transform healthy coral reefs into reefs dominated by other organisms such as seaweeds. This can take decades to reverse and will only happen if conditions become hospitable for corals again.

Bleak Outlook for Corals

Caused by an unusual warming of the Northern Hemisphere oceans, 2015 has now seen coral bleaching occurring in reefs in the northern Pacific, Indian, equatorial Pacific, and western Atlantic Oceans. Recorded for the first time in 1998 and again in 2010, global coral bleaching is designated when all three major ocean basins (Indian, Pacific, Atlantic) have recorded widespread bleaching episodes across multiple reefs spanning 100 kilometers (62 miles) or more.

The first two global bleaching events were observed as the result of a chain of warming events caused by El Niño cycles and increased ocean temperatures due to climate change. This year's widespread bleaching shows the same characteristics – warmer-than-usual water temperatures combined with what could potentially be the strongest El Niño ever recorded.

Coral bleaching in the Pacific Ocean began in mid-2014 and has not stopped since, moving around as warm conditions have enveloped different regions. Ongoing research from NOAA and The University of Queensland scientists, in collaboration with Reef Check volunteers, has found significant impacts on coral reefs in the Hawaiian Islands and Florida Keys.

At the same time, moderate impacts have also been documented across the northern Caribbean region – South East Florida, Cuba, Turks and Caicos, and Dominican Republic. This widespread bleaching event is occurring across multiple coral species at each affected reef. Thermal stress and bleaching are also triggering a greater incidence of coral diseases, which can be equally fatal for coral reef communities.

Similar to past global coral bleaching events, this year's phenomenon is greatly intensified by climate change and, with forecasts of the El Niño remaining strong until early 2016, the worst may be yet to come.

Activating the “Rapid Response” Team

During the previous global coral bleaching event of 1998, the world simply didn't have the technology, understanding or teams in place to reveal and record such events properly. However recent advancements in bleaching prediction and near-real-time satellite monitoring by NOAA has allowed the XL Catlin Seaview Survey and its University of Queensland partner to deploy a rapid response team to capture images of coral bleaching as it happened. By documenting the various stages of the bleaching process, XL Catlin Seaview Survey scientists from The University of Queensland are gathering in-depth insight into the marginal and cumulative impacts of this event and building on more than 20 years of data in published studies collected from bleaching episodes worldwide.

Primed for immediate deployment to locations where major coral bleaching is taking place, XL Catlin Seaview Survey's Rapid Response team uses their advanced [SVII](#) camera and other technologies to gather visual and quantitative data of bleaching. The revolutionary camera system is attached to an underwater scooter that takes about 1,000 high-resolution 360-degree underwater images across distances of up to 2 kilometers (1.2 miles) in a single dive – increasing the team's data-gathering efficiency 30-fold compared to previous methods. These images are added to the [XL Catlin Global Reef Record](#), an online research tool that allows scientists and resource managers to better analyze and monitor changes in the global reef ecosystems on a local, regional, and global level. The data collected will also help scientific research teams advance their understanding of coral recovery and support future restoration efforts.

The rapid response reef survey work is extended by Reef Check. Thanks to its global network of trained teams of volunteer citizen scientists, Reef Check plays a key role in assessing the health of the coral reefs across affected coral regions.

Quotes:

- “This is only the third time we’ve seen a global-scale bleaching event,” said Dr. Mark Eakin, NOAA Coral Reef Watch coordinator. “What really has us concerned is this event has been going on for over a year and is likely to last another year.” “As part of our efforts to increase awareness, we have been working closely with XL Catlin Seaview Survey to gather the data we need to better understand the extent of this bleaching event and how to effectively address it.”
- “Just like in 1998 and 2010, we’re observing bleaching on a global scale, which will cause massive loss of corals. With hundreds of millions of people relying on fisheries and reefs for sustenance, the repercussions of a global coral bleaching event could be potentially disastrous,” said Professor Ove Hoegh-Guldberg, the Survey’s chief scientist from the Global Change Institute at The University of Queensland. Professor Ove Hoegh-Guldberg continued, “Through accurate coral reef mapping, monitoring and recovery initiatives worldwide, we have been able to study and understand the destructive effects of coral bleaching. We are now continuing our efforts to support these activities and create the foundations for a truly global call for action to protect these vital ecosystems.”
- “By supporting our efforts with technology that helps us map where bleaching is occurring, we can facilitate the research necessary to understand this phenomenon and determine the impact climate change is having on reefs worldwide,” said Richard Vevers, executive director of XL Catlin Seaview Survey. “As bleaching becomes more widespread, we can learn how to better understand and determine which areas will be most affected and how to better prepare for and respond to these dramatic changes.”
- “A coral reef bleaching event at such scale will require significant coordination efforts from all the parties involved to ensure the quick collection of the data we need to assess the situation,” said Dr. Gregor Hodgson, founder and executive director of Reef Check. “Only by accurately monitoring and analyzing this data will we be able to devise effective plans to properly safeguard these natural wonders.”

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Global Coral Bleaching Microsite (includes Fact Sheets, Q&A, Animation, High-Resolution Images):

<http://www.globalcoralbleaching.org/>



Image: XL Catlin Seaview Survey

About the XL Catlin Seaview Survey

The XL Catlin Seaview Survey, a partnership between XL Catlin, The University of Queensland and Underwater Earth, is a pioneering scientific expedition revealing the impact of environmental changes on the world's coral reefs. The Survey aims to significantly expand the data available to scientists about global coral reef systems. The XL Catlin Seaview Survey is currently focusing on the Indian and Pacific Oceans, having previously completed pioneering scientific studies of the Coral Triangle, the Great Barrier Reef and the Caribbean. The images are captured in order to provide a vital scientific baseline study of the world's coral reefs. These images monitor change and reveal it to the world through Street View in Google Maps – in partnership with Google. More information about the XL Catlin Seaview Survey can be found here: xcatlinseaviewsurvey.com.

XL Catlin believes that insurers must take a leading role in improving the understanding of potential changes to our environment, changes that could affect how risks are managed in the future. XL Catlin's contribution is to sponsor independent, impartial research that is freely distributed to the world's scientific community.

You can also engage with the XL Catlin Seaview Survey and its 4 million followers on Google+ here: <https://plus.google.com/+CatlinSeaviewSurvey/posts>

About XL Catlin

XL Catlin is the global brand used by XL Group plc's (NYSE:XL) insurance and reinsurance companies which provide property, casualty, professional and specialty products to industrial, commercial and professional firms, insurance companies and other enterprises throughout the world. Clients look to XL Catlin for answers to their most complex risks and to help move their world forward. To learn more, visit xcatlin.com.

About NOAA

NOAA's mission is to understand and predict changes in climate, weather, oceans, and coasts, to share that knowledge and information with others, and to conserve and manage coastal and marine ecosystems and resources.

About the NOAA Coral Reef Watch

The NOAA Coral Reef Watch program's satellite data provide current reef environmental conditions to quickly identify areas at risk for coral bleaching, while its climate model-based outlooks provide managers with information on potential bleaching months in advance. The outlooks were developed jointly by NOAA's Satellite and Information Service and the National Centers for Environmental Prediction through funding from the Coral Reef Conservation Program and the Climate Program Office. For more information on coral bleaching and Coral Reef Watch's products, visit: <http://www.coralreefwatch.noaa.gov/>.

About The Global Change Institute

The [Global Change Institute](http://www.gci.uq.edu.au/) (GCI) at The University of Queensland (UQ), Australia, was established in 2010 as an independent source of game-changing research, ideas and advice for addressing the challenges of global change. GCI advances discovery, develops solutions and advocates responses that meet the challenges presented by climate change, technological innovation and population change. UQ is one of the world's premier teaching and research institutions. It is consistently ranked in the top 100 in four independent global rankings. With 50,700 students and 6,800 staff, UQ's teaching is informed by research, and spans six faculties and eight research institutes. <http://www.gci.uq.edu.au/>

About Reef Check

Founded in 1996, the Reef Check Foundation is an international nonprofit organization dedicated to conservation of two ecosystems: tropical coral reefs and California rocky reefs. Reef Check operates the only global coral reef monitoring program that is comprised of trained teams of volunteer citizen scientists in more than 90 countries and territories. <http://www.reefcheck.org/>

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