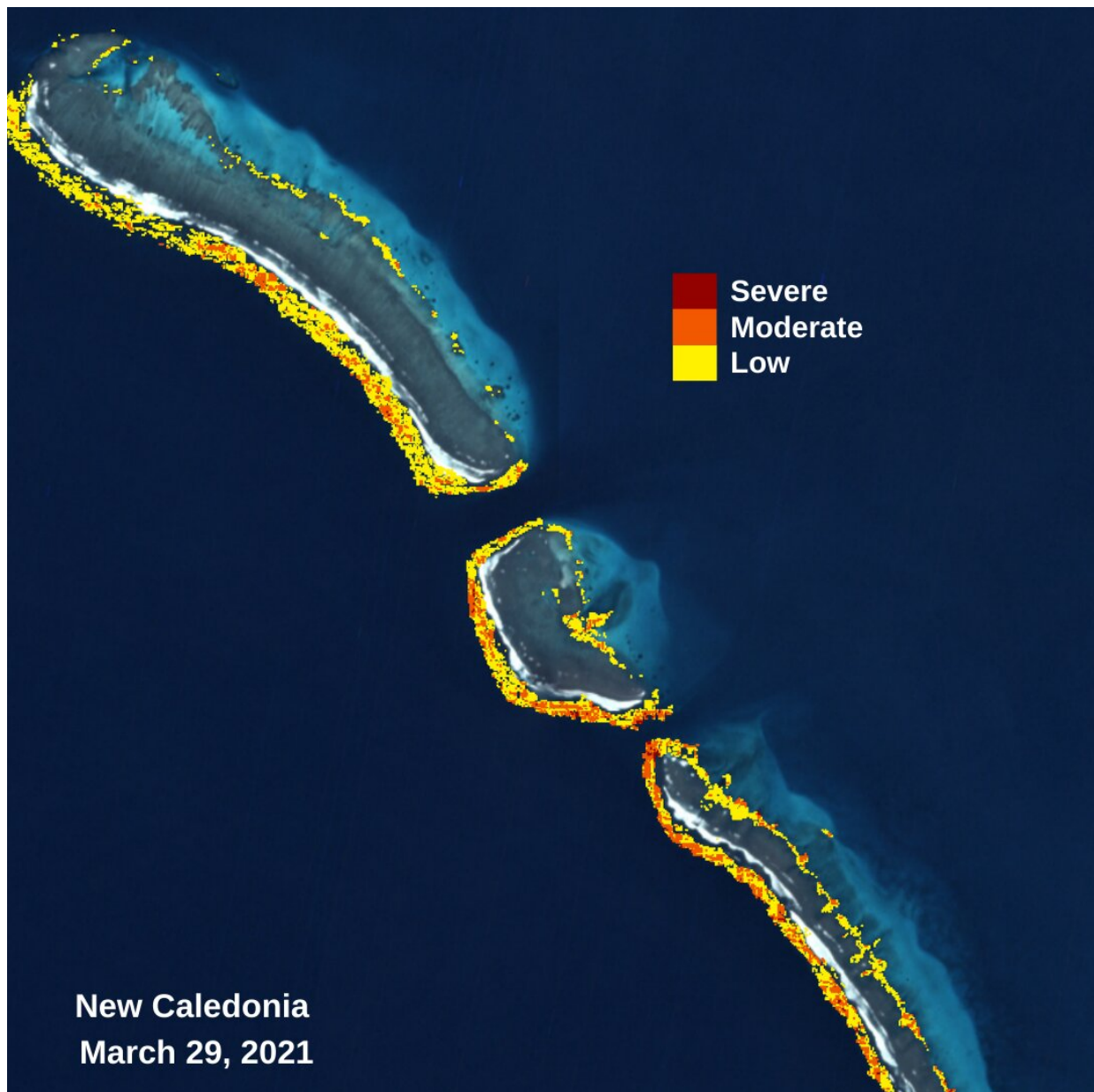


World's first, satellite-based monitoring system goes global to help save coral reefs

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Close Up of The Allen Coral Atlas Platform Showing Bleaching in New Caledonia on 5/29/21. Credit: Allen Coral Atlas

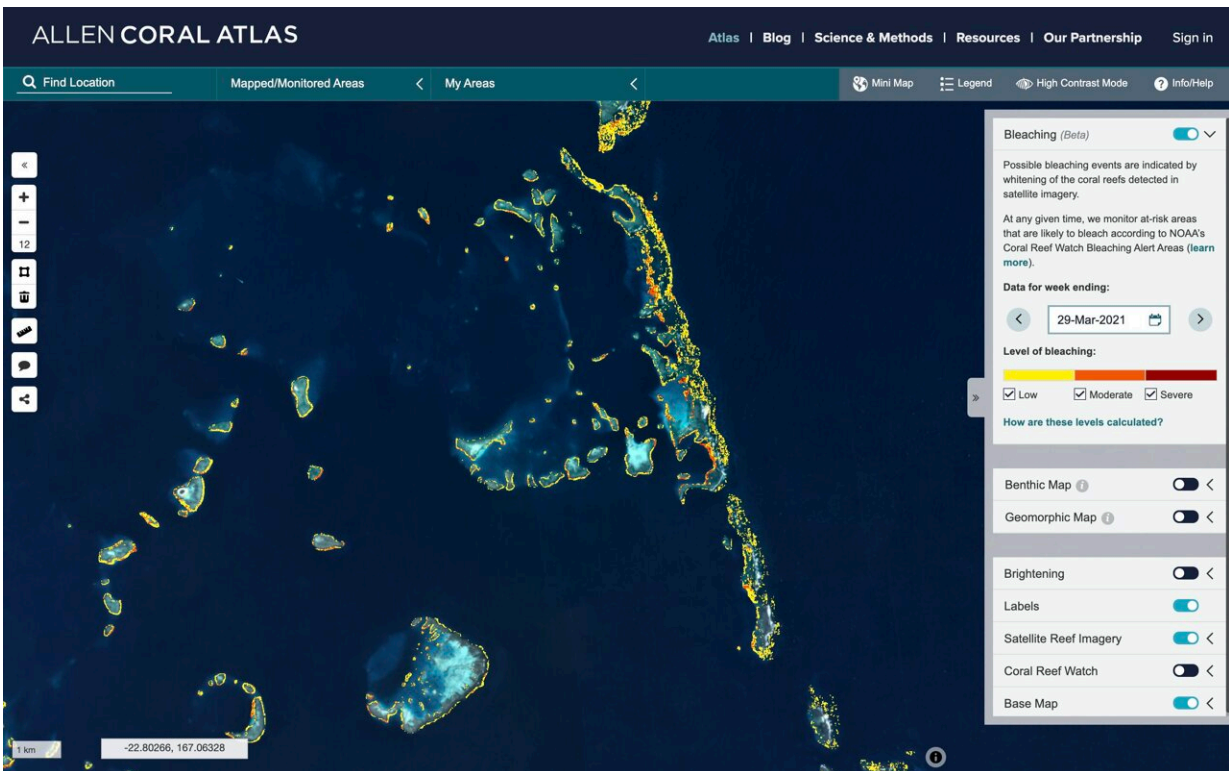
The current prognosis for our world's coral reefs is bleak. With ever warming, more polluted and acidic oceans, models predict that 70% to 90% of coral reefs will be lost by 2050. To date, there has not been a global system in place to monitor coral reefs under the stresses that may lead to their deaths. But scientists now have a tool to monitor the global health of coral reefs, bringing new hope to conservation efforts.

Today, the Allen Coral Atlas released the world's first, [real-time](#), satellite-based global coral [reef](#) bleaching monitoring system. Combined with the Atlas' reef extent and composition maps, scheduled for completion in July, the full suite of mapping and monitoring tools of the Allen Coral Atlas Monitoring System provides a comprehensive and unprecedented picture of changes to [coral reefs](#) over time, giving scientists, decision and policymakers and the reef management community critically important information urgently needed for rapid response and conservation.

"Our ability to monitor changes in coral reef conditions has always been a clear but challenging requirement to drive decisions on where to apply our best restorative and protective strategies," said Professor Greg Asner, managing director of the Allen Coral Atlas, and director of Arizona State University's (ASU) Center for Global Discovery and Conservation Science. "The new Atlas Monitoring System is a major step in our effort to bring eyes to the reef at a global scale and yet with extraordinary detail needed for progressive reef interventions."

The satellite eyes on the world's reefs detect variations in reef brightness by using high-resolution satellite imagery powered by an advanced

algorithm indicating whether reefs are under stress or resilient to marine heatwaves. Researchers, conservationists, policy-makers and others who use the monitoring system platform can observe where corals are bleaching throughout the world, ranging from no bleaching to severe.



Allen Coral Atlas Platform Showing Bleaching in New Caledonia on 5/29/21. Credit: Allen Coral Atlas

"This monitoring capability will help us to see, for the first time, where and to what extent [coral bleaching](#) is likely to be occurring as well as where it isn't bleaching so we can identify resilient reefs," commented Paulina Gerstner, program director for the Allen Coral Atlas. "The system is the outcome of years of effort involving our ecologists, remote

sensing scientists, software engineers and many others."

ASU's Center for Global Discovery and Conservation Science successfully piloted a [beta version](#) of the Atlas Monitoring System in Hawaii during the 2019 Pacific Ocean heatwave. The beta version revealed bleaching "hotspots" spread across the Hawaiian Islands that went undetected by more traditional field-based methods. This provided greater context for understanding the progression of coral bleaching and helped to target mitigation efforts to reduce secondary stressors on threatened corals. Studies have shown that if secondary stressors are reduced before, during and after bleaching events, corals are more likely to survive.

The beta version also allowed Asner and his team to identify hardier heat-resistant coral species for use in future coral reef restoration efforts. As ocean warming events are more likely to become much more frequent due to climate change, the Atlas' ability to provide full coverage of coral disturbance in real-time will play a key role in helping conservation scientists and [policy-makers](#) to better identify declining species and scale-up restoration efforts where they are needed.

"It's important for people to understand that this is just the first global version of our monitoring system. We intend to improve and expand it to include a broader range of impacts on reefs such as land-sea pollutants and sediments," said Asner. "This first, truly global reef [monitoring](#) system is simply a drop in the bucket for what is to come."

More information: allencoralatlas.org/

Provided by Arizona State University

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