AOML KEYNOTES

NOAA's Atlantic Oceanographic and Meteorological Laboratory

October - December 2025 Publication

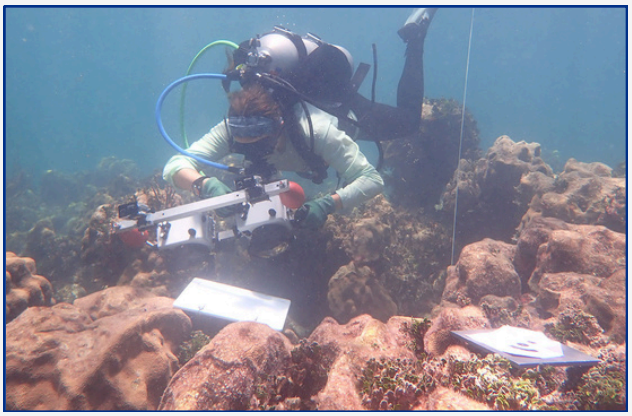
RECENT NEWS

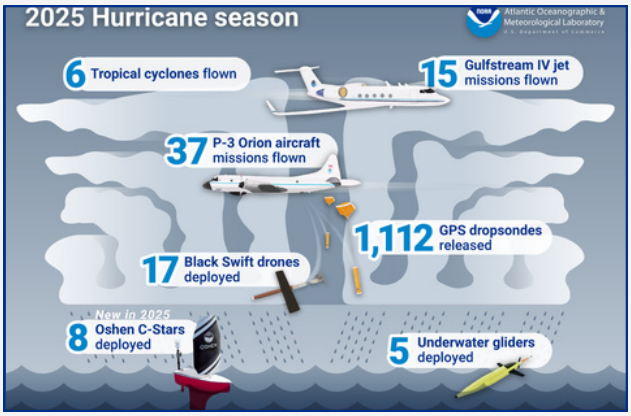
EXTENDING FORECASTS FOR EXTREME EVENTS

NOAA has significant interest in extending the forecast lead times for extreme weather events by advancing forecasting capabilities. Forecast windows are currently too short, often only giving residents a few days' notice. Scientists are working towards extending these forecasts with the goal of predicting extreme events to 2-4 weeks lead times known as "sub-seasonal" or even 3-6 months known as "seasonal" timescales. Continue Reading

USING PHOTOGRAMMETRY TO MONITOR CORAL REEF INFRASTRUCTURE AT UNPRECEDENTED SCALE

The AOML coral team has demonstrated how photogrammetry-based techniques enable them to monitor the persistence and structural complexity of coral reef habitats at an unprecedented scale. They introduced a novel method that integrates high-resolution 2D and 3D models of reef communities to quantify reef habitat growth or loss over time. Continue Reading





BREAKING RECORDS IN THE SKY AND SEA: 2025 HURRICANE SEASON WRAP-UP

Throughout this record-breaking season, scientists at AOML conducted innovative research on tropical cyclones that will improve forecasting accuracy, enhance understanding of storm behavior, and strengthen preparedness efforts for communities. From 55 hurricane hunter missions and months of ocean observations, our data improved forecasts and fueled critical research studies. Continue Reading

AOML PRESENTS: 12 DAYS OF RESEARCH

As 2025 came to an end, AOML proudly presented a recap of some of our research accomplishments, creative tools, and significant impacts. Enjoy our "12 days of research" series where we highlight the vital work AOML is conducting to protect life, property, and our natural resources. Continue Reading.

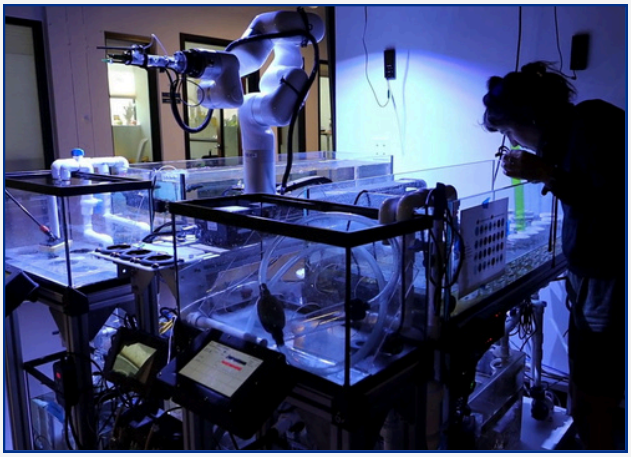
RECENT NEWS

INSIDE THE STORM: MEET THE NOAA TEAM BEHIND HURRICANE RESEARCH

When a hurricane forms, NOAA scientists are ready, collecting and interacting with data that contributes to advancing hurricane forecasts through models, technology, and hurricane flights. Meet some of the NOAA staff who are a part of the team dedicated to understanding and advancing hurricane science. Continue Reading.

EMPLOYING 'OMICS TECHNIQUES TO EXAMINE CRUCIAL RESTORATION EFFORTS ACROSS THE MISSION: ICONIC REEFS

Scientists at AOML and CIMAS are employing advanced 'Omics techniques to holistically examine the effectiveness of ongoing efforts to restore coral reefs throughout the Florida Keys National Marine Sanctuary(FKNMS) under the ambitious Mission: Iconic Reefs initiative. In addition to traditional surveys, they are analyzing the free-floating genetic material shed by marine organisms into the environment, known as environmental DNA (eDNA). Continue Reading.



THE ROBOT AND THE REEF: CAN ENRICHED SEAWATER FAST-TRACK CORAL RESTORATION?

University of Miami Ph.D. student Kenzie Cooke is conducting research with the AOML Coral Program, exploring how alkalinity enrichment affects coral growth, skeletal density, and recruitment success. Is it possible that a higher pH may increase coral growth rate and skeletal density? Continue Reading.

WELCOME

Juner Etienne - *Administrative Assistant*

Welcome Juner Etienne who joins the front desk team. With a background in creative production, technical services, and leadership, he brings a people-first mindset to every project. He values clear communication, reliability, and thoughtful problem-solving. Grounded in faith and guided by purpose, Juner is committed to serving others well, strengthening communities, and delivering high-quality work rooted in care, professionalism, and genuine human connection.

Eric Peino - *Postdoctoral fellow*

Eric Peino, a new National Research Council (NRC) postdoctoral fellow, will be studying the role of the upper ocean in the modulation of tropical cyclone precipitation. Eric is a meteorologist specializing in precipitation remote sensing, with expertise in satellite and ground-based observations. He holds a Ph.D. in Physics from the University of Barcelona, Spain, where his research centered on the development and evaluation of satellite precipitation products, with emphasis on extreme weather. Through an integrated ocean–atmosphere perspective, his research aims to advance the use of observations and data-driven methodologies to better characterize rainfall processes and their implications for high-impact weather.

Rebecca Trinh - *Biological Oceanographer*

Rebecca joined NGI and the AOML 'Omics/Molecular and Computational Biodiversity group and will work on Gulf and Florida Keys projects to associate patterns in eDNA, remote sensing, and oceanographic parameters to improve understanding of ecological connectivity and biodiversity. Rebecca is biological oceanographer with extensive experience in formulating and conducting oceanographic field surveys, designing laboratory experiments, DNA extractions, time series analysis, and satellite imagery classification using traditional algorithms and artificial intelligence/machine learning methods. She received a BA in Ecology & Evolution and Marine Science from UC Berkeley and MA/MPhil and PhD in Biological Oceanography from Columbia University.

FAREWELL

Ulises Rivero - *Engineer*

We are sad to announce that Uli Rivero retired on Dec 31 after ***35 years of federal service***. Uli has demonstrated exceptional leadership, a deep commitment to advancing the next generation of engineers, and an unwavering dedication to excellence in his role. His technical contributions have been pivotal in advancing the goals of AOML's Physical Oceanography Division and enhancing discoveries by AOML scientists and the broader scientific community.

FAREWELL

Taylor Gill - *CIMAS Research Associate*

Taylor served as the Mission: Iconic Reefs Climate Monitoring Coordinator, playing a vital role in field and laboratory projects while overseeing the development of comprehensive environmental monitoring instrumentation that provide real-time ocean chemistry data.

Guo Lin - *CIMAS postdoctoral associate*

Guo's research focuses on applying emerging technology to hurricane observation and analyzing high-resolution aircraft data to improve turbulence characterization in hurricanes, evaluating the impact of Uncrewed Aircraft System (UAS) measurements, and identifying ways to enhance hurricane boundary layer parameterization. His new position is as Postdoctoral Scientist Studying Airborne Eddy Covariance Flux Measurements at the GFZ Helmholtz Centre for Geosciences in Potsdam, Germany.

Eric Mortenson - *Engineer*

Eric Mortenson has been working with the carbon group on analysis of shipboard atmospheric CO2 measurements and comparing them to two independent boundary layer CO2 datasets.

Genna Nordling - *CIMAS Communications Intern*

Genna conducted science communication research throughout a yearlong internship as part of her MPS degree in Marine Conservation from the University of Miami Rosenstiel School. Genna created the new Data Diaries video series, impactful social media posts, and informative web stories.

Francis Serrano - *Engineer*

Francis worked with 'Omics researchers at AOML to support the 'Omics-funded projects "Monitoring mission iconic reefs restoration using eDNA with SASe" and "Global eDNA partner-ships supporting Atlantic and global biodiversity monitoring."

Madison Soden - *CIMAS Research Associate*

December 5th marked Madi Soden's final day with AOML and CIMAS. We are grateful for Madi's contributions and the support that she provided to CNS, OCED, and the AOML Argo Program (OCED, PhOD) over her tenure. We wish her well in her future adventures.

Publications

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S.-K. Lee, D. Kim, H. Lopez, and F. Gomez. "Future shoaling of the AMOC and its impact on oceanic heat transport to the subpolar North Atlantic" Geophysical Research letters.