NOAA and its partners invest in developing a global climate observing system to address community research, forecasting, and assessment needs, as well as enable decision-makers to monitor and respond to changes in the Earth system. While observing systems provide data, more than raw data is needed to realize the full value of these observations due to inherent variability, measurement uncertainty, or coverage gaps. The Climate Observations and Monitoring (COM) program within NOAA's Climate Program Office leverages NOAA's observations through supporting dataset development and analysis, and use-inspired product development.

Strategic Partnerships

Collaborative research competitions with other programs in the Climate Program Office allow for interdisciplinary science initiatives.

Partnerships across NOAA Research and other line offices help engage research communities across disciplines.

COM has a history of leveraging NOAA's vast observational and data assets

Competitively selected grant awards to 30+ universities and institutions (shown in graphic) bring specialized external expertise to NOAA, strengthening the use and value of NOAA's observations and data assets.

Recent Research Areas

Atmospheric Boundary Layer: Developing terrestrial-, marine-, and ice-atmosphere boundary layer datasets through collaborations between observations and modeling communities

Explaining Extreme Climate Events: Collaborative with CVP and MAPP programs, developing a rapid assessment capability to understand the causes and mechanisms of extreme events


Impacts During the COVID-19 Pandemic: Collaborative with AC4 program, quantifying the pandemic's impact on atmospheric composition through careful curation and analysis of existing measurements
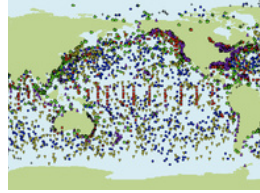

Oceans and Climate Monitoring: Collaborative with CVP and GOMO programs, innovative ocean dataset/product analysis and development to support the NOAA observing and climate modeling communities

Science for Sanctuaries: Collaborative with MAPP and CAFA programs, supporting climate-resilient marine ecosystem management and coastal protection.
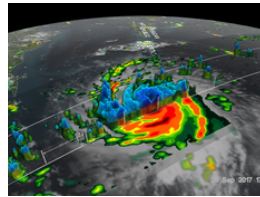
Precipitation-Related Datasets: Improving our ability to accurately capture the multi-scale nature of precipitation, aligns with NOAA's Precipitation Prediction Grand Challenge
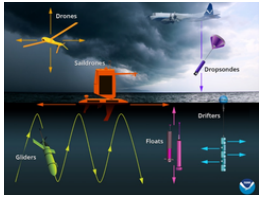
Uncrewed Systems Data for Climate Applications: Collaborative with ERB and AC4 programs, leveraging uncrewed systems data for climate applications.

Programs

AC4: Atmospheric Chemistry, Carbon Cycle, and Climate
CAFA: Climate and Fisheries Adaptation
CVP: Climate Variability and Predictability
ERB: Earth's Radiation Budget
GOMO: Global Ocean Monitoring and Observing
MAPP: Modeling, Analysis, Predictions, and Projections

Supporting NOAA Activities

- **NCEI Applied Research Center:** Supports foundational climate datasets and innovative research for assessments like the IPCC and National Climate Assessment

- **NCEI World Ocean database:** Maintains long-term climate indicators, supports models, and conducts climate diagnostics.

- **Climate Prediction Center (CPC) projects**: Enhances temperature and precipitation monitoring with improved resolution and data integration.

COM supports noncompetitive NOAA research to support climate data and applications