

# NOAA's Engagement with U.S. CLIVAR

**Richard D. Rosen, Ph.D.**

Acting Director

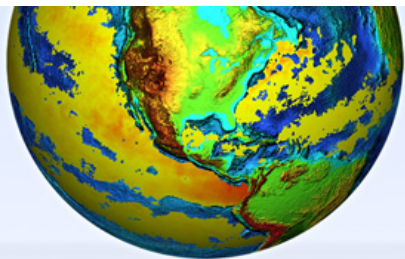
NOAA/OAR Climate Program Office



U.S. CLIVAR Summit

Annapolis, MD

9 - 11 July 2013



## NOAA Strategic Plan

improved scientific understanding  
assessments of impacts to inform decisions  
climate services to support mitigation, adaptation  
a climate literate public

### CLIMATE ADAPTATION & MITIGATION

improved scientific understanding  
assessments identify impacts, inform decisions  
mitigation, adaptation choices supported  
a climate literate public

#### CLIMATE ADAPTATION & MITIGATION

#### NOAA'S VISION OF THE FUTURE:

#### RESILIENT ECOSYSTEMS, COMMUNITIES & ECONOMIES

Healthy ecosystems, communities, and economies  
that are resilient in the face of change

#### RESILIENT COASTAL COMMUNITIES & ECONOMIES

resilient coastal communities  
ocean and coastal planning, management  
safe, sound, efficient marine transportation  
improved coastal water quality  
safe, sound arctic access, management

#### WEATHER READY NATION

healthy people, communities  
productive, efficient economy

#### HEALTHY OCEANS

improved understanding of ecosystems  
recovered, healthy species  
healthy habitats sustain resources, communities  
sustainable fisheries, safe seafood

educated public  
for informed  
environmental  
decisions

integrated  
services for  
evolving  
demands of  
regional  
stakeholders

international  
partnerships  
and policy  
leadership

a holistic  
understanding  
of the earth  
system through  
research

accurate,  
reliable data  
from integrated  
earth  
observations

an integrated  
environmental  
modeling  
system

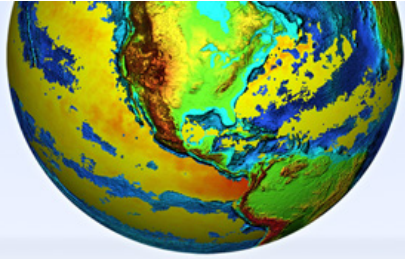
modern information technology

diverse, evolving workforce

modern, safe, sustainable facilities

a high performing organization

ORGANIZATION & ADMINISTRATION ENTERPRISE



# Climate Goal Strategy

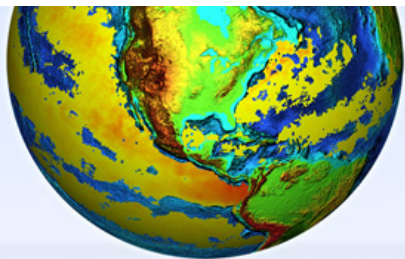
## NOAA Strategic Plan

**Climate Goal: An informed society anticipating and responding to climate and its impacts**

**Climate Goal Strategic Plan Objectives:**

1. Improved scientific understanding of the changing climate system and its impacts
2. Assessments of current and future states of the climate system that identify potential impacts and inform science, service, and stewardship decisions
3. Mitigation and adaptation efforts supported by sustained, reliable, and timely climate services
4. A climate-literate public that understands its vulnerabilities to a changing climate and makes informed decisions





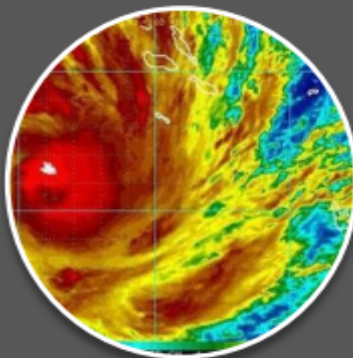
# NOAA Line Offices



National Weather Service (NWS)



Oceanic and Atmospheric Research (OAR)



National Environmental, Satellite, Data, & Information Service (NESDIS)



National Ocean Service (NOS)

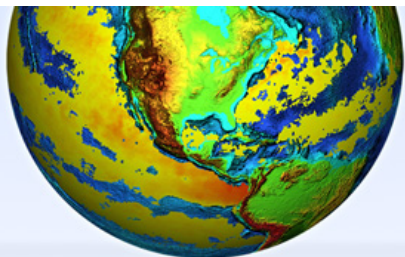


National Marine Fisheries Service (NMFS)

**SCIENCE**

**SERVICE**

**STEWARDSHIP**



# Climate Goal

AA Climate Goal Board  
Robert Detrick, OAR [Champion]  
NESDIS  
NWS  
NOS  
NMFS  
PPI

Climate Goal Strategy Lead  
Director, CPO



## Objectives

Improved Scientific  
Understanding

Assessment Services

Mitigation and Adaptation  
Services

Climate Literacy

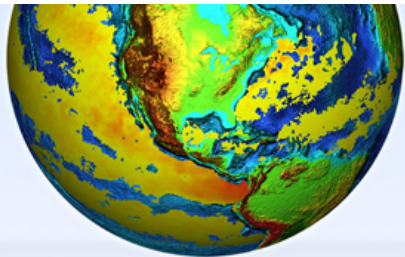
## Societal Challenge Projects

Sustainability of  
Marine  
Ecosystems

Coasts and  
Climate  
Resilience

Climate Impacts  
on Water  
Resources

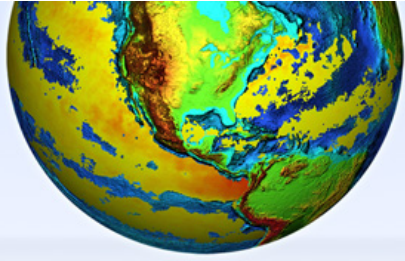
Weather and  
Climate  
Extremes



## NOAA Climate Program Office ([www.cpo.noaa.gov/cpo\\_pa/](http://www.cpo.noaa.gov/cpo_pa/))

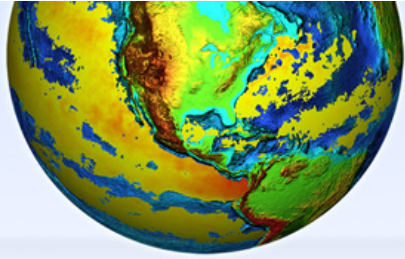
**Richard D. Rosen, Acting Director** (Note: Wayne Higgins will become Director on July 28, 2013)

- **Climate Observations and Monitoring (COM)** - designs, deploys, and maintains an integrated global network of oceanic and atmospheric observing instruments to produce continuous records and analyses of a range of ocean and atmosphere parameters. **Lead: David Legler**
- **Earth System Science (ESS)** – provides process-level understanding of the climate system through observation, modeling, analysis, and field studies to support the development of improved climate models and predictions in support of NOAA's mission. **Lead: Jim Todd**
- **Modeling, Analysis, Predictions, and Projections (MAPP)** – aims to enhance the capability to predict and project variability and change in Earth's climate system; focusing on the coupling, integration, and application of Earth system models and analyses. **Acting Lead: Annarita Mariotti**
- **Climate and Societal Interaction (CSI)** – provides leadership in developing interdisciplinary science and services, including assessments, for application in climate-sensitive sectors and regions. **Lead: Roger Pulwarty**



# Recent U.S. CLIVAR Activities Supported by NOAA

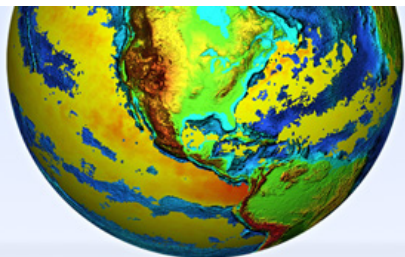
- Process Studies
  - Past: EPIC, NAME, VOCALS
  - Current: DYNAMO, AMOC, CPTs
- Modeling
  - CMEP 1 & 2, CMIP5
  - IASCLIP (Intra-Americas Study of Climate Processes)
- Sustained Ocean Observations
  - Argo, Tropical moored array (e.g., TAO), and many others



## Long-range Climate Research Interests Related to U.S. CLIVAR

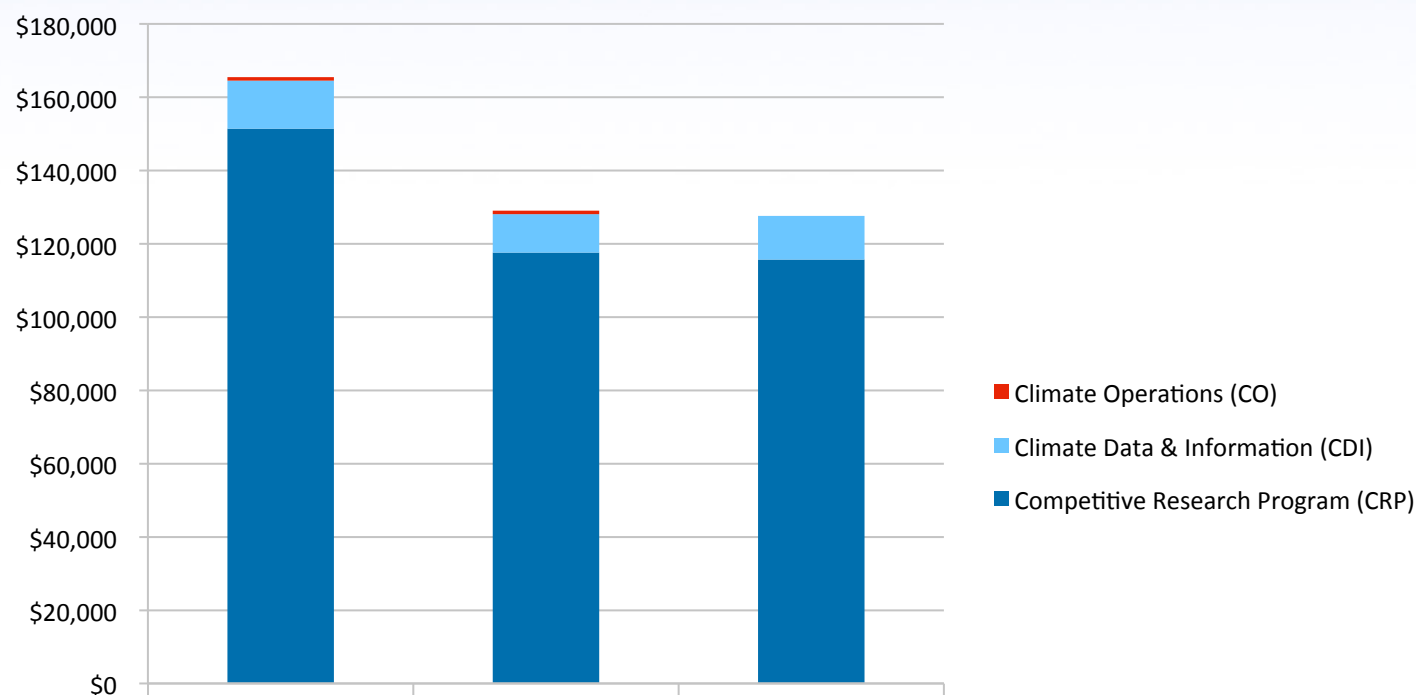
- Sustaining, evolving, and enhancing the ocean climate observing system (including the Arctic)
- Predictability, prediction, and projection: improve understanding of climate processes and their predictability, and their representation in models and prediction systems
- Climate re-analyses
- Observing system experiments and observing system simulation experiments
- Information to support decision-making on a regional scale



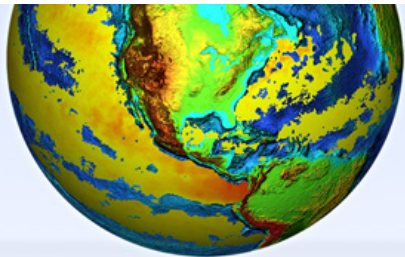


# Climate Program Office Budget

## Climate Program Office Appropriated Funding FY 2011- FY 2013 (\$000)



	FY 2011	FY 2012 with Reprogramming	FY 2013 Estimate
Climate Operations (CO)	\$911	\$908	\$0
Climate Data & Information (CDI)	\$13,049	\$10,406	\$12,125
Competitive Research Program (CRP)	\$151,491	\$117,685	\$115,628



## **FY14 President's Budget: Increases for NOAA Climate** (partial list)

### **Global Ocean Observing System (GOOS) +\$4.0M**

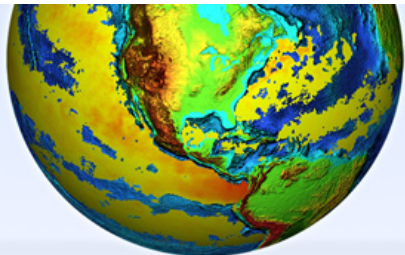
- Support critical ocean observations and analysis
- Support research on near-term changes in the rapidly changing Arctic
- Technology development and deployment of Deep Argo Floats to provide information on sea level rise and global energy balance

### **National Integrated Drought Information System (NIDIS) +\$1.5M**

- Support additional competitive research grants and contracts to develop and expand the Regional Drought Early Warning Information Systems (RDEWS) by providing focused drought impacts research and applications development to the Pacific Northwest, the Mid-West agricultural belt, and the Carolinas
- Develop ongoing drought information outlook products, such as information sheets on drought conditions that improve on the national drought monitor by emphasizing local conditions and impacts assessments, improving federal, state, and tribal planning

### **U.S. Global Change Research Program (USGCRP) - Improved Understanding of Earth Systems and Extremes, Thresholds, and Tipping Points +\$9.0M**

- Implement research and other activities in support of the USGCRP to expand NOAA's capabilities for improved understanding of carbon, extremes, and marine ecosystem tipping points.
  - Enhance the Carbon Observation and Analysis System (CAOS) within the North American Carbon Program
  - Improve the detection, understanding, explanation, and prediction of weather and climate extreme events to support adaptation and prepare society to anticipate and respond
  - Develop and apply Earth System Models (ESMs) and other tools for understanding where, when, and how marine ecosystems may reach critical "tipping points" that could significantly affect the thousands of communities whose economies depend on the seafood industry, coastal tourism and recreation, and other ocean-dependent industries



## **FY14 President's Budget: Increases for NOAA Climate** (partial list, cont'd.)

### **Improve Models and Predictions +\$6.5M**

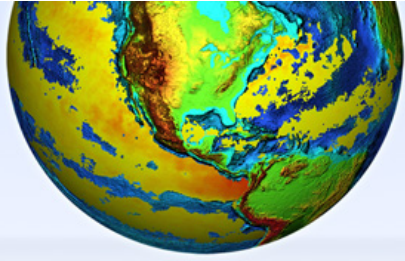
- NOAA and academic partners will provide a process-level understanding of the climate system through observation, modeling, analysis, and field studies to support the development of improved climate models.
- Advance the understanding of the global carbon cycle and the role of aerosols and chemically-active greenhouse gases in the global climate system

### **Earth System Modeling +\$7.0M**

- NOAA and academic partners will continue model development to reduce uncertainties in sea level rise projections, terrestrial carbon cycle and future biogeochemical feedbacks on climate; address gaps in the understanding of the Arctic climate system; and augment Decadal Climate Predictions and Abrupt Change.

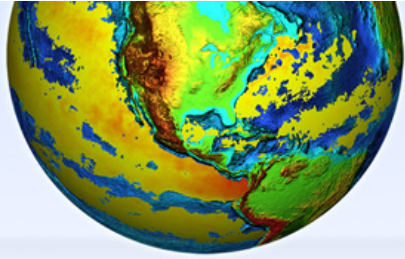
### **Climate Model Data Archive +\$1.6M**

- Further develop and implement archive and access capability for the next generation climate analyses currently running on supercomputers across NOAA and its collaborators (National Science Foundation, Department of Energy, and others)
- Convey key aspects of complex scientific data in a manner accessible to non-specialists and NOAA's climate information user communities



## U.S. CLIVAR: Providing Value to NOAA

- Organizes/coordinates the research community to establish requirements for scientific advancement and to identify gaps
- Helps coordinate interagency response to community research initiatives
- Helps organize the community after resources are allocated to deliver research results
- Helps link U.S. research to international research initiatives



## NOAA CPO FY14 Federal Funding Opportunity (FFO)

- FFO likely to be released next month
- There will be competitions under each of the CPO programs
- Please watch <http://www.cpo.noaa.gov/> for additional information on the FFO