

Marine Carbon Dioxide Removal

NOAA Research efforts and future directions

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NOAA OCEAN ACIDIFICATION PROGRAM





APRIL 20, 2023

FACT SHEET: President Biden to Catalyze Global Climate Action through the Major Economies Forum on Energy and Climate

Executive Order 14008 of January 27, 2021

Tackling the Climate Crisis at Home and Abroad



EXECUTIVE OFFICE OF THE PRESIDENT
WASHINGTON, D.C. 20503



M-21-32

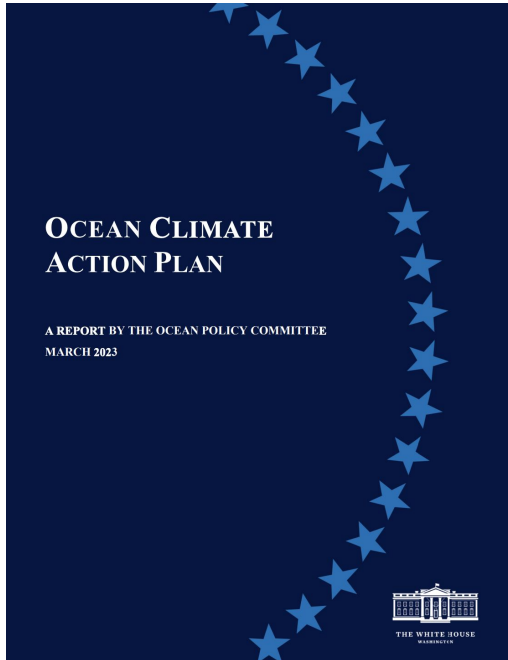
MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: SHALANDA D. YOUNG *Shalanda D. Young*
ACTING DIRECTOR
OFFICE OF MANAGEMENT AND BUDGET

DR. ERIC S. LANDER *Eric S. Lander*
DIRECTOR
OFFICE OF SCIENCE AND TECHNOLOGY POLICY

SUBJECT: Multi-Agency Research and Development Priorities for the FY 2023 Budget

The USG mCDR Fast Track Action Committee



The goal:
The FTAC will develop a research plan on mCDR

NOAA's role:
NOAA is co-chairing the FTAC with the White House Office of Science Technology and Policy



FTAC FRN



What is NOAA's Role?

NOAA potential mCDR assets are across the agency and are described in:



Overview of Current NOAA Assets

Observing Networks

Global and local ocean and atmospheric observing; tech development

Modeling, Scaling, and Projection of CDR Pathways

Earth system and process study models

Environmental Impacts

Ecosystem system monitoring, ecosystem modeling, laboratory research

Decision Support

Data management, marine spatial planning, aquaculture research, collaborative and conservation research

Investing in research and infrastructure, however current resources and infrastructure are not sufficient for scaling mCDR approaches

NOAA's mCDR research portfolio

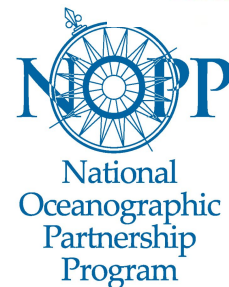
Leveraging National Oceanographic Partnership Program (NOPP)

FY2023 portfolio: 17 mCDR projects (\$24.3M)

- Includes \$14M in Inflation Reduction Act Funding
- 47 Institutions and 79 Principal Investigators

FY2022 portfolio: EASE OA (\$1.05M)

- Electrochemical Acid Sequestration to Ease Ocean Acidification
- Partnership between PNNL, University of Washington, PMEL, and Ebb Carbon



<https://oceanacidification.noaa.gov/project-search>

<https://oceanacidification.noaa.gov/fy23-nopp-mcdr-awards/>

mCDR Pls

UC San Diego



Oregon State University



RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY

AMERICAN
UNIVERSITY
WASHINGTON, D.C.

UNIVERSITY OF
DELAWARE

PMEL
Pacific Marine Environmental Laboratory

1865 THE UNIVERSITY OF
MAINE

ASU
Arizona State
University



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IRVINE

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CENTER FOR ENVIRONMENTAL SCIENCE

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[C] Worthy

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NOAA
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NREL
NATIONAL RENEWABLE ENERGY LABORATORY

NCAR

PLANETARY

RODA



VESTA

SHINING SEA
FISHERIES CONSULTING

Sunburst
Sensors

PACIFIC RIM
DESIGN & DEVELOPMENT INC.
MISSION: CLEAR AIR

ebb
carbon

MBARI
Monterey Bay Aquarium
Research Institute

What is next?

- NOAA is directly involved in the FTAC (co-chair and member)
- NOAA formalizing relationships with multiple agencies on mCDR
- NOAA views their role in Earth System Observing as critical to determine if CDR is a valid and responsible climate solution
 - NOAA is currently drafting an implementation plan to discuss concrete actions to engage in the mCDR space
 - NOAA implementation plan will be closely related to the NOAA Research Strategy