The FY23 National Oceanographic Partnership Program (NOPP) Marine Carbon Dioxide Removal funding opportunity supports 17 projects that advance marine carbon dioxide removal research.

Project PI: Andreas Andersson, Scripps Institution of Oceanography

Satoshi Mitarai, Okinawa Institute of Science and Technology (OIST)
Loretta Roberson, Marine Biological Laboratory (MBL)
Reggie Spaulding, Sunburst Sensors
Adrienne Sutton, NOAA Pacific Marine Environmental Lab

Carbon capture and ocean acidification mitigation potential by seaweed farms in tropical and subtropical coastal environments

Award amount: $1,451,575

Funding source(s): NOAA Ocean Acidification Program and NOPP
IRA funding? No

Project duration: 3 years
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Project PI: Andrew Dickson, Scripps Institution of Oceanography

Dr. Robert Richardson, Pacific Rim Design & Development
Dr. Nina Bednaršek, Oregon State University Cooperative Institute for Marine Resources Studies
Dr. Richard A. Feely, NOAA Pacific Marine Environmental Laboratory

Assessing chemical and biological implications of alkalinity enhancement using carbonate salts obtained from captured CO2 to mitigate negative effects of ocean acidification and enable mCDR

Award amount: $995,891

Funding source(s): NOAA

IRA funding? Yes

Project duration: 3 year
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Project PI: Burke Hales, Oregon State University

Yvette Spitz, Oregon State University
Kelsey Stoerzinger, Oregon State University
George Waldbusser, Oregon State University
Dick Feely, NOAA Pacific Marine Environmental Laboratory
Simone Alin, NOAA Pacific Marine Environmental Laboratory

Electrolysis-driven weathering of basic minerals for long-term ocean buffering and CO2 reduction

Award amount: $2,000,000

IRA funding? No

Funding source(s):
Department of Energy Office of Fossil Energy and Carbon Management, Water Power Technologies Office

Project duration: 3 years
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Project PI: Dennis McGillicuddy, Woods Hole Oceanographic Institute

Ken Buesseler, Woods Hole Oceanographic Institute
John Dunne, NOAA Geophysical Fluid Dynamics Laboratory
Kristen Krumhardt, National Center For Atmospheric Research
Matthew Long, National Center For Atmospheric Research
Weifeng (Gordon) Zhang, Woods Hole Oceanographic Institute
Charles Stock, NOAA Geophysical Fluid Dynamics Laboratory

Multiscale observing system simulation experiments for iron fertilization in the Southern Ocean, Equatorial Pacific, and Northeast Pacific

Award amount: $1,983,731
IRA funding? No

Funding source(s): NOAA Global Ocean Monitoring and Observing (GOMO), NOAA Ocean Acidification Program (OAP), National Science Foundation

Project duration: 3 years
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Project PI: Jaime Palter, University of Rhode Island

Jason Grear, Environmental Protection Agency
David Ho, University of Hawai'i, Manoa
Robert Pockalny, University of Rhode Island
Rebecca Robinson, University of Rhode Island
Samantha Siedlecki, University of Connecticut
Hongjie Wang, University of Rhode Island

An opportunity to study Ocean Alkalinity Enhancement, CDR, and ecosystem impacts through coastal liming

Award amount: $1,538,452
IRA funding? Yes

Funding source(s): NOAA

Project duration: 3 years
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Project PI: Kevin Kroeger, United States Geological Survey

Grace Andrews, Vesta Corporation
Sophia Fox, National Park Service
Shannon Meseck, NOAA National Marine Fisheries Service
Timothy Smith, National Park Service
Robert Sohn, Woods Hole Oceanographic Institute
Nathaniel Walworth, Vesta Corporation
Aleck Wang, Woods Hole Oceanographic Institute

Tidal wetlands as a low pH environment for accelerated and scalable olivine dissolution

Award amount: $1,895,531

IRA funding? Yes

Funding source(s): NOAA

Project duration: 4 years
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Project PI: Adam Subhas, Woods Hole Oceanographic Institution

Kay Bidle, Rutgers University
Kimberlee Thamatrakoln, Rutgers University

Assessing the laboratory and field responses of diatoms and coccolithophores to ocean alkalinity enhancement

Award amount: $1,026,045

IRA funding? Yes

Funding source(s): NOAA

Project duration: 3 years
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Project PI: Laura Haynes, Vassar College

Jennifer Fehrenbacher, Oregon State University
Emily Osborne, NOAA Atlantic Meteorological Laboratory

Determining the Influence of Ocean Alkalinity Enhancement on Foraminifera Calcification, Distribution, and CaCO3 Production

Award amount: $510,359

IRA funding? Yes

Funding source(s): NOAA

Project duration: 3 years
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Project PI: Melissa Meléndez, University of Hawai'i, Manoa

Keisha Bahr, Texas A&M Corpus Christi
Hannah Barkley, NOAA Pacific Islands Fisheries Science Center
Nick Hawco, University of Hawai'i, Manoa
Conall McNicholl, University of Hawai'i, Manoa
Lisa McManus, University of Hawai'i, Manoa
Christopher Sabine, University of Hawai'i, Manoa

Assessing the effects and risks of ocean alkalinity enhancement on the physiology, functionality, calcification, and mineralogy of corals and crustose coralline algae in the Pacific

Award amount: $1,999,835

IRA funding? No

Funding source(s): Department of Energy Office of Fossil Energy and Carbon Management

Project duration: 4 years
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Project PI: David Nicholson, Woods Hole Oceanographic Institution

Adam Subhas, Woods Hole Oceanographic Institution (WHOI)
Yui Takeshita, Monterey Bay Aquarium Research Institute (MBARI)
Robert Todd, Woods Hole Oceanographic Institution (WHOI)
Katherine Zaba, MRV Systems, LLC

Assessing Carbon Dioxide Removal and Ecosystem Response for an Ocean Alkalinity Enhancement Field Trial

Award amount: $1,877,644

IRA funding? Yes

Funding source(s): NOAA

Project duration: 3 years
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Project PI: David Ho, University of Hawaii

Danielle Bianchi, University of California Los Angeles
Matthew Eisaman, Ebb Carbon, Inc.
Alicia Karspeck, Convergent Research, LLC
Matthew Long, Convergent Research, LLC
James McWilliams, University of California Los Angeles
Sara Nawaz, American University
Mallory Ringham, Ebb Carbon, Inc.

Assessing efficacy of electrochemical ocean alkalinity enhancement at an existing outfall using tracer release experiments and oceanographic models

Award amount: $1,915,600

IRA funding? Yes

Funding source(s): NOAA, ClimateWorks Foundation

Project duration: 3 years
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Project PI: Jeremy Testa, University of Maryland Center for Environmental Science

Wei-Jun Cai, University of Delaware
Ming Li, University of Maryland Center for Environmental Sciences (UMCES)
Yuanyuan Xu, Planetary Technologies, Inc.

Quantifying the Efficacy of Wastewater Alkalinity Enhancement on mCDR and Acidification Mitigation in a Large Estuary

Award amount: $1,864,561

IRA funding? Yes

Funding source(s): NOAA

Project duration: 3 years
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Project PI: Kelly Kearney, University of Washington (CICOES)

Brendan Carter, University of Washington
Kristen Krumhardt, National Center For Atmospheric Research
Darren Pilcher, University of Washington

Biotic calcification impacts on marine carbon dioxide removal additionality

Award amount: $1,250,482

IRA funding? Yes

Funding source(s): NOAA

Project duration: 4 years
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Project PI: Cristina Schultz (Northeastern University) & Jessica Luo (NOAA GFDL)

Damien Brady, University of Maine, Walpole
Enrique Curchister, Rutgers University
Samantha Siedlecki, University of Connecticut
Charles Stock, NOAA Geophysical Fluid Dynamics Laboratory
Jeremy Testa, University of Maryland Center for Environmental Sciences (UMCES)

Developing a coupled benthic-pelagic biogeochemical model to evaluate the effectiveness of mCDR interventions

Award amount: $1,258,967

IRA funding? Yes

Funding source(s): NOAA

Project duration: 4 years
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Project PI: Fiona Hogan, Responsible Offshore Development Alliance

Roger Griffis, NOAA Office of Science and Technology (OST)
Sarah Schumann, Shining Sea Fisheries Consulting, LLC

Engaging U.S. Commercial Fishing Community to Develop Recommendations for Fishery-Sensitive mCDR Governance, Collaborative Research and Monitoring, and Outreach to Fishing Communities

Award amount: $99,591

IRA funding? No

Funding source(s): Office of Naval Research, ClimateWorks Foundation

Project duration: 2 years
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Project PI: Katherine Hornbostel, University of Pittsburgh

Matthew Green, Arizona State University
Mou Paul, National Renewable Energy Laboratory
Abhishek Roy, National Renewable Energy Laboratory
Jennifer Yang, University of California, Irvine

Coupling Desalination with Novel mCDR Membranes

Award amount: $1,403,802.00

IRA funding? No

Funding source(s): Office of Naval Research

Project duration: 2 years
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Project PI: Galen McKinley, Columbia University

Thea Hatlen Heimdal, Columbia University
Adrienne Sutton, NOAA Pacific Marine Environmental Laboratory

Data requirements for quantifying natural variability and the background ocean carbon sink in mCDR models

Award amount: $589,464.00
IRA funding? No
Funding source(s): National Science Foundation, NOAA Ocean Acidification Program
Project duration: 3 years
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