



Southeast Ocean and Coastal Acidification Network

# SOUTHEAST OCEAN AND COASTAL ACIDIFICATION NETWORK

Scott Noakes, University of Georgia

2:00pm – 2:30pm





# Agenda

- Overview of SOCCAN
- SOCCAN Mission Statement
- SOCCAN Steering Committee
- SOCCAN Executive Committee
- State of the Science Webinars
- Archived Webinars
- Upcoming Webinars
- SOCCAN Listserv



# Overview of SOCCAN

- Pre-Planning meeting:
  - June 25, 2014 at Hollings Marine Laboratory
  - 15 invited to “scoping” meeting
- Modeled after NECAN and C-CAN
  - Northeast Coastal Acidification Network (NECAN)
  - California Current Acidification Network (C-CAN)
- Goal: Support and encourage discussions on ocean and coastal acidification in the Southeast region.
- Region: North Carolina to Florida

# Mission Statement

SOCAN will increase our baseline knowledge and understanding of the effects of coastal and ocean acidification throughout the Southeast region, where the precise effects are largely unknown.

- SOCAN provides an open forum for understanding and addressing coastal and ocean acidification
- SOCAN represents various stakeholders (interdisciplinary scientists, resource managers, business and industry and others, including local, state and federal interests)
- SOCAN's Region: North Carolina to Florida

With support from SECOORA, SOCAN will:

1. synthesize and disseminate scientific information relevant to species and ecosystems that could be affected by acidification;
2. identify knowledge gaps;
3. set regional priorities for monitoring and research;
4. collaborate in the development of a SE regional acidification monitoring network;
5. encourage and support scientific research collaborations and data sharing; and
6. respond to stakeholder needs, as appropriate.



# Steering Committee

## OA Research

- Wei-Jun Cai, The University of Delaware
- Lou Burnett, College of Charleston
- Leticia Barbero, NOAA/AOML
- M. Dennis Hanisak, FAU Harbor Branch
- Geoffrey I. Scott, University of South Carolina
- Zackary Johnson, Duke University
- Denise M. Sanger, SC Department of Natural Resources
- Astrid Schnetzer, North Carolina State University

## Conservation and Management

- Billy D. Causey, NOAA Office of National Marine Sanctuaries
- J. Kevin Craig, National Marine Fisheries Service
- M. Richard DeVoe, S.C. Sea Grant Consortium
- George Sedberry, NOAA Office of National Marine Sanctuaries

## OA Buoys

- Scott Noakes, University of Georgia

## Other Stakeholders

- William S. Fisher, U.S. Environmental Protection Agency
- Rua S. Mordecai, U.S. Fish & Wildlife Service
- Kimberly K. Yates, U.S. Geological Survey
- Jay Styron, Carolina Mariculture Co.
- John C. McGovern, National Marine Fisheries Service
- Libby Jewett, NOAA Ocean Acidification Program
- Debra Hernandez, SECOORA
- Terri Kirby Hathaway, NC Sea Grant
- Charlie Phillips, Phillips Seafood and Sapleo Sea Farms
- Paula Keener, NOAA's Office of Ocean Exploration & Research



# Executive Committee



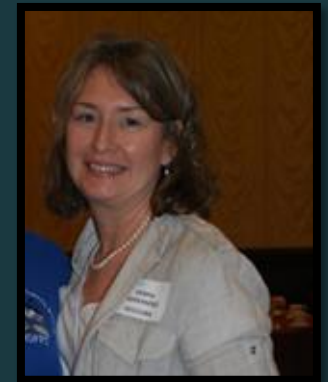
Libby Jewett,  
*NOAA OAP*



Kim Yates,  
*USGS*



Geoffrey Scott,  
*University of  
South Carolina*



Debra  
Hernandez,  
*SECOORA*



# State of Science Webinar Series

The series will lay a foundation for the state of ocean acidification science in the Southeast region.

- Hosted on Tuesday, 12pm EDT
- ~every 2 weeks
- Archived on website: [www.secoora.org/socan\\_webinars](http://www.secoora.org/socan_webinars)



# Archived Webinars



## **"A Far-field View of Ocean Acidification in the South Atlantic Bight"**

Presenter: Rik Wanninkhof, NOAA/AOML

Date: March 10, 2015

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## **"Estuarine Acidification: A Conceptual Discussion with Examples"**

Presenter: Wei-Jun Cai, University of Delaware

Date: March 18, 2015

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## **"Understanding Larval Bivalve Responses to Ocean Acidification"**

Presenter: George Waldbusser, Oregon State University

Date: April 7, 2015





# Archived Webinars Cont.



## **"Effects of Elevated CO<sub>2</sub> on the Early Life-Stages of Marine Fishes and Potential Consequences of Ocean Acidification"**

Presenter: R. Christopher Chambers, NOAA Northeast Fisheries Science Center

Date: April 21, 2015

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## **"Crumbling Coral: Cold-water Reefs in the Acidic Northeast Pacific and their Implications for Other Regions of the USA"**

Presenters: Leslie Wickes and Peter Etnoyer, NOAA's National Center for Coastal Ocean Science

Date: May 5, 2015



# Upcoming Webinars

**"Oceans Acidic and Low in Oxygen: Lessons from Estuarine Organism"** presented by Lou Burnett, College of Charleston

Date: Tuesday June 2, 2015

Time: 12:00pm ET

Link to register: <http://bit.ly/1c0PWRF>

**Abstract:**

Animals living in coastal and estuarine waters along the southern coast of the United States experience dramatic changes in water chemistry and, in particular, they experience carbon dioxide levels far above those predicted in 2100 for the open ocean. This webinar will review the responses of select marine organisms to elevated CO<sub>2</sub> showing some of the behavioral, immunological, and physiological responses. The changes organisms experience in CO<sub>2</sub> can occur because of their behavior in addition to their habitat. Furthermore, CO<sub>2</sub> in coastal waters is tightly linked to oxygen levels, such that during bouts of severe hypoxia waters become acidic. Organisms can adapt to hypoxia, but new evidence suggests that, at least in some crustaceans, adaptation to hypoxia is muted by elevated CO<sub>2</sub>.



*Lou Burnett, College of Charleston*



# Upcoming Webinars Cont.

**"Ocean acidification time-series mooring at Grays Reef National Marine Sanctuary"** presented by Scott Noakes, University of Georgia

Date: Tuesday June 16, 2015

Time: 12:00pm ET

Abstract:

Operation of the Grays Reef time-series mooring has been a multi-organization effort which has successfully collected high-resolution data since 2006. The mooring is located in the South Atlantic Bight offshore Georgia, USA and within the boundaries of Gray's Reef National Marine Sanctuary. It sits along the divide between the inner and middle shelf with water depths of 20 m. Water chemistry is primarily controlled by the middle shelf oceanic dynamics, but during heavy rain events, it can be affected by freshwater plumes coming from the numerous rivers along the Georgia and South Carolina coast. Temperature also plays a major role in the partial pressure of carbon dioxide ( $p\text{CO}_2$ ) variability with seasonal changes being apparent. During summer months, GRNMS acts as a  $\text{CO}_2$  source to the atmosphere while during winter months it is a  $\text{CO}_2$  sink. The benthic community at GRNMS has proven to be hardy enduring large seasonal swings of seawater  $\text{CO}_2$  and pH. Research planned for the sanctuary will be aimed at determining how these organisms cope with the seasonal changes and how they will adapt to rising seawater  $\text{CO}_2$  over time.



*Scott Noakes, University of Georgia*



# SOCAN Listserv

- 159 subscribed

Sign up today!

[http://secoora.org/socan\\_listserv](http://secoora.org/socan_listserv)

May 2015

Southeast Ocean and Coastal Acidification Network

**"Crumbling Coral: Cold-water Reefs in the Acidic Northeast Pacific and their Implications for Other Regions of the USA"**

Please join SOCAN for the next state-of-the-science webinar **Tuesday May 5, 12pm EDT**. It is titled "Crumbling Coral: Cold-water Reefs in the Acidic Northeast Pacific and their Implications for Other Regions of the USA" presented by Leslie Wickes and Peter Etnoyer, NOAA National Centers for Coastal Ocean Science Center for Coastal Environmental Health and Biomolecular Research. [Click here to access flyer.](#)

Leslie Wickes, NOAA National Centers for Coastal Ocean Science Center for Coastal Environmental Health and Biomolecular Research

**Abstract**  
Cold-water reefs are fragile, complex ecosystems that extend into the bathyal depths of the ocean, creating three-dimensional structure and habitat for deep-water invertebrates and fishes. The most prolific cold-water reef-building coral is *Lophelia pertusa*, which occurs at depths where aragonite saturation is three to four times lower than their shallow-water reef counterparts. The current study employed an unprecedented number of ROV dives (n=564, 2003-2014) to document the widespread distribution of a reef-building coral on the U.S. West Coast for the first time, providing empirical evidence of species survival but loss of reef integrity in the naturally acidified conditions. The study found that while *Lophelia* can persist in the corrosive waters, framework extent, linear extension and skeletal densities were greatly reduced

**SOCAN**  
Southeast Ocean and Coastal Acidification Network

**SOCAN WEBINARS**  
SOCAN is hosting a state-of-the-science webinar series on ocean acidification. These webinars are intended to create a dialogue among key stakeholder groups interested in ocean acidification to identify what is known, what isn't, and what research in other locales can be applied to better understand ocean acidification and its impacts in the Southeast US. The SOCAN Steering Committee will use information learned from the webinars to develop a state-of-the-science white paper on ocean acidification in the southeast. Webinars will be tentatively hosted every two weeks at 12pm EDT. Each webinar will be recorded and posted [HERE](#).

Pending speaker availability, a webinar will be hosted on the following dates at noon EDT:

- **May 5,** "Crumbling Coral: Cold-water Reefs in the Acidic Northeast Pacific and their Implications for Other Regions of the USA" presented by Leslie Wickes and Peter Etnoyer, NOAA National Centers for Coastal



# Questions?

[www.secoora.org/socan](http://www.secoora.org/socan)