C-CAN

California Current Acidification Network

C-CAN Steering Committee

Debbie Aseltine-Neilson	California Department of Fish & Game
Alan Barton / Sue Cudd	Whiskey Creek Hatchery, OR
Andrew Dickson	University of California, San Diego
Richard Feely	NOAA Pacific Marine Environmental Lab
Gretchen Hofmann	University of California, Santa Barbara
Ian Jefferds	Penn Cove Shellfish, WA
Teri King	Washington Sea Grant
Chris Langdon	Oregon State University
*Skyli McAfee	California Ocean Science Trust
Jan Newton	University of Washington – NANOOS
Diane Pleschner-Steele	California Wetfish Producers Association
Bruce Steele	California sea urchin diver
*Steve Weisberg	Southern California Coastal Water Research Project

* New co-chairs of C-CAN

Find more about C-CAN at
http://c-can.msi.ucsb.edu

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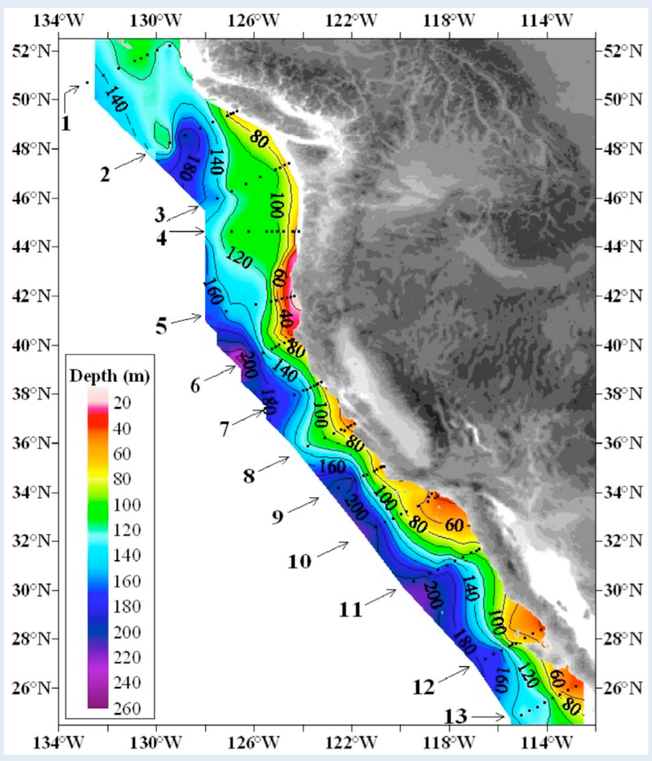
GORDON AND BETTY MOORE FOUNDATION

What is C-CAN?

C-CAN is an *ad hoc* collaboration of academic scientists, commercial fishing and aquaculture interests together with state and federal resource managers who came together in an effort to better understand the drivers of ocean acidification along the US West Coast, and its likely impacts on organisms along the coast. It grew out of a workshop held inCosta Mesa, CA in July 2010 to talk about *Ocean Acidification Impacts on Shellfish.*



Distribution of the depths along the US West Coast where the saturation state of aragonite falls to less than one.
(Feely et al., 2008)

Initial focus

Articulating a strategy for the development of a regional observing network along the US West coast, that is able to provide a description of the local seawater composition adequate to inform co-located biological studies of ocean acidification, and which – when taken together with data from other locations – could form a picture of the regional variability that organisms are currently exposed to.

(1) Agreed that measurements are required that enable the aragonite saturation state of seawater to be determined with an overall uncertainty of ±0.2, and that also enable a complete description of the seawater CO_2 system – including $p(CO_2)$ and pH.

(2) Agreed that the regional associations of IOOS could provide an appropriate data handling and dissemination mechanism for this C-CAN *network*.

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The Pacific oyster, *Crassostrea gigas*, shows negative correlation to naturally elevated carbon dioxide levels: Implications for near-term ocean acidification effects

Alan Barton,[a] Burke Hales,[b,*] George G. Waldbusser,[b] Chris Langdon,[c] and Richard A. Feely[d]

[a] Pacific Coast Shellfish Grower's Association, Emerald Isle, North Carolina
[b] College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, Oregon
[c] Department of Fisheries and Wildlife and Coastal Marine Experiment Station, Oregon State University, Newport, Oregon
[d] Pacific Marine Environmental Laboratory, National Oceanic and Atmospheric Administration, Seattle, Washington

Abstract

We report results from an oyster hatchery on the Oregon coast, where intake waters experienced variable carbonate chemistry (aragonite saturation state < 0.8 to > 3.2; pH < 7.6 to > 8.2) in the early summer of 2009. Both larval production and midstage growth (~ 120 to ~ 150 μm) of the oyster *Crassostrea gigas* were significantly negatively correlated with the aragonite saturation state of waters in which larval oysters were spawned and reared for the first 48 h of life. The effects of the initial spawning conditions did not have a significant effect on early-stage growth (growth from D-hinge stage to ~ 120 μm), suggesting a delayed effect of water chemistry on larval development.

C-CAN's initial goals

With funding from the Gordon and Betty Moore Foundation, C-CAN organized a series of three workshops to develop a road map for integrating ocean acidification activities on the US West Coast, ensuring balanced participation of academic, governmental, and commercial stakeholders.

We had a total of three workshops over a 15 month period to discuss appropriate strategies for this. These attracted a wide range of C-CAN stakeholders to each discussion. Details of these discussions can be found on the C-CAN website.

Moving into the future

Need explicit guidance for potential participants (at a variety of levels of expertise) as to how best to make such such measurements.

(A) What available instruments can achieve these goals?

(B) How should they be used? (Methods / Training)

(C) How should the resulting data be reported?

(D) What *data synthesis* will increase its value to users?

C-CAN is working (together with others) to document this information and to plan (and seek support) for the necessary training and other essential infrastructure.

C-CAN as a model for other regions

The extensive communication and collaboration between participants from a variety of stakeholder groups has attracted interest as a potential model for regional ocean acidification partnerships.