The Ocean Foundation’s International Ocean Acidification Initiative: A cross-cutting program to build capacity of scientists and legislators to understand and address the complex impacts of ocean acidification

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Our work is made possible by our partners
A Web of Effects

Direct Harvest
Shellfish harvesters, fishers, pearl farmers

Ecosystem Services
Physical protection, tourism income, cultural value

Business and Community Services
Services and infrastructure built on or made possible by the industry

Food and International Security
Provision or protein, stability through stable food supplies
The Ocean Foundation’s International Ocean Acidification Initiative

- **Monitor**: Observing how, where, and how quickly is change occurring
- **Analyze**: Studying how we are being affected now, and how will we be affected in the future
- **Engage**: Building partnerships and coalitions with stakeholders
- **Act**: Enacting legislation that mitigates ocean acidification and helps communities adapt
Why Monitor?

Increased Uncertainty  Monitoring  Stability
An Accessible Kit to Collect Weather-Quality Data (GOA-ON in a Box)

- Carbonate chemistry monitoring (Mandatory)
- Mechanisms (experimental manipulation)
- Monitoring biological impacts
Preliminary data from our kit recipients - 24 hours pH monitoring in the lagoon of Albion, Mauritius

The iSAMI automated pH measuring system was deployed together with a CTD diver in the back reef of Albion to monitor the change in pH for 24 hours.

The lowest pH was measured at around 06:00 in the morning and the highest was measured at 15:00.
Preliminary data from our kit recipients – measurements during training in Fiji

The first ever pH data collected in Suva Harbor, Fiji. The colored dots are from the three iSAMI pH sensors deployed, and the black dots are the pH values participants calculated by analyzing bottle samples in the lab. The close clustering of the data obtained from lab samples with the iSAMI readings show very high quality measurements being made by course participants.
A Toolkit for Policy-Makers

Tab 1: Promoting and Supporting Increased Science and Research Locally

- Formalized research centers.
  - Infrastructure for monitoring, data collection and data sharing.
  - Temporary commissions or task forces focused on ocean acidification.
  *consider inclusion of public/private collaborations

Washington (Executive order and budget appropriation)

Summary: In 2011, the Governor of Washington issued an executive order establishing a Blue Ribbon Panel on Ocean Acidification. The Panel consisted of leading tribal, state, federal and local policy makers; scientific experts; public opinion leaders; and industry representatives. The Panel was focused on documenting the current state of scientific knowledge, ways to advance scientific understanding of the effects of ocean acidification and recommended:

Tab 2: Coordinating Actions Between States/Regions/Nations

- Permanent entities to lead and coordinate action.
- Collaborative groups of stakeholders and policymakers locally and regionally.
*consider inclusion of public/private collaborations

California (legislation and memorandum of understanding between states)

Summary: A permanent Ocean Protection Council was created in 2004 by the California Ocean Protection Act (COPA). The Council was charged with multiple tasks centered around coordinating ocean-related state activities and improving the effectiveness of the state efforts to protect ocean resources. The Council in turn recommended the creation of the West Coast Ocean Acidification & Hypoxia Science Panel to help develop a better understanding of the impacts of ocean acidification.
Reach to date

Over 20 Countries
Scientists and policy makers from more than 20 countries have received training

Over 50 Scientists
More than 50 scientists have been trained and 11 GOA-ON in a Box kits have been deployed

Next Stop: Caribbean
Science and policy trainings will be held in the Caribbean and Latin America in January, 2019
How can you help?

- Sign up to be a mentor through GOA-ON’s Pier-2-Peer Program
- Join the conversation on the OA Information Exchange to help improve methods and reach of GOA-ON in a Box kits
- Help us deliver more kits by establishing partnerships with data-poor regions
- Point scientists in your region towards our trainings and scholarship opportunities
Thank You

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