

**Maine Ocean Acidification Meeting**  
**9:00 am - 4:30 pm on January 16, 2014**  
**Governor Hill Mansion, 136 State St., Augusta**

*Hosted by the Island Institute with support from the Maine Outdoor Heritage Fund, Maine Sea Grant, Maine Coastal Program, and Sustainable Fisheries Partnership*

**Executive Summary**

The Island Institute (with support from the Maine Outdoor Heritage Fund, Maine Sea Grant, Maine Coastal Program, and Sustainable Fisheries Partnership) hosted a full-day meeting on confronting ocean acidification in Maine on January 16, 2014. We had nearly 70 participants, including fishermen, shellfish harvesters, aquaculturists, scientists, legislators, state agencies staff, representatives from conservation and water quality organizations, and others in fields impacted by OA. The group heard presentations on the science of ocean acidification, concerns from stakeholders, national, regional, and state efforts underway to tackle OA, and some potential mitigation and adaptation strategies. During a final breakout session, we identified key concerns, questions, and knowledge gaps, as well as prioritized target audiences for raising awareness in the state. Some of the most common areas of concern from participants included our lack of knowledge about OA impacts on commercially important species, particularly lobster, and the potential socioeconomic consequences. Other concerns included impacts on the base of the food chain, the role of polluted runoff in exacerbating coastal acidification, how OA will interact with other changes like rising sea water temperatures, and how to raise visibility to an invisible problem.

**Key Points from Presentations:**

*-many speaker presentations are posted at [www.islandinstitute.org/OceanAcidification](http://www.islandinstitute.org/OceanAcidification)*

- rate of change in ocean chemistry is faster than anything we've seen; today is not the baseline- 150 years ago was the baseline; 100-150% increase in acidity by the year 2100
- the Gulf of Maine (GoM) is particularly susceptible to OA because the water is cold, the fresh water coming in is poorly buffered; and there is strong seasonal productivity and mixing
- human activities fertilize the coastal ocean and increase its acidity—if ocean acidification is “the other CO<sub>2</sub> problem”, coastal acidification is “the other eutrophication problem”
- OA is not happening in a vacuum, but rather with other changes in temp, O<sub>2</sub>, freshwater input
- OA impacts on hard clams, oyster, bay scallops include increased mortality and slower growth
- oyster hatcheries in Maine are seeing lower pH after large runoff events; need more monitoring
- the impacts of OA on lobsters are unknown; this could have huge socioeconomic consequences
- in 2012, WA state had a governor appointed, 28 member, 8 month long Blue Ribbon Commission on OA; results included science and strategic response reports with recommendations and legislative action
- there is a bill in the Maine legislature to form an expert commission to look into OA in Maine
- NECAN is hosting OA science webinars and will host a synthesis meeting in Portsmouth in April
- towns can apply pulverized shells to mudflats to buffer mud and improve conditions for clams
- seagrasses can provide local scale buffering in nearshore waters to mitigate coastal acidification

**Summary of Final Breakout Discussion:**

***Areas of concerns in terms of implications for Maine businesses and stakeholders:***

- socioeconomic impacts- lobster, shrimp, shellfish, tourism and other important parts of the coastal economy
- have an ecosystem view, rather than just species specific response- need for lab and field studies

- important to separate atmospheric and terrestrial sources of OA
- agricultural runoff, nitrogen and other types of runoff
- clam and green crab interactions
- important to have shellfish industry on board
- new policies to regulate rockweed and effects on OA

***Knowledge gaps and key questions after listening to the meeting presentations:***

- OA impacts on commercially important species, particularly lobsters (larval stages and adults)
- OA impacts on bottom of the food chain and bait fish
- synergistic impacts of OA and other climate related changes
- what is the natural variability species of interest are already facing?
- lack of historical data - not sure what the baseline is
- impacts of coastal processes (freshwater and nutrient input)- more nearshore monitoring
- quantifying the benefits of nutrient reduction to demonstrate that one action can have multiple benefits
- changing predator prey dynamics
- are lab studies reflective of what is actually happening?
- how will resident species shift?
- how is green crab removal of eel grass impacting coastal acidification?
- how to prioritize efforts?
- mitigation strategies- clam beds, growing seaweed?
- how do we translate advanced science to public?
- how do we make an invisible problem, visible?
- how to best allocate time and money to this problem?
- how much will this cost?
- how will this be resourced?
  - can ME have an affect on state and national level?
- what do representatives think of this going to federal level?

***Priority target audiences for outreach and raising awareness-*** empowering people is key!

- DMR
- policy makers- state and fed
- fishermen, shellfish harvesters and growers, fishing communities (Fishermen's Forum)
- small Maine farming communities, MOFGA and other agricultural groups
- land trusts (private and industrial)
- watershed and homeowners associations
- wood harvesting operations and fertilizer businesses
- funding agencies
- students
- Maine Food Strategy and similar groups
- town councils and other local groups
- whale watching and tourism sector

**Appendices:** downloadable at [www.islandinstitute.org/OceanAcidification](http://www.islandinstitute.org/OceanAcidification)

- these include the meeting agenda, participant list, and notes from presentations

**Next Steps:**

- Share results of the meeting and the OA video including presentation at Fishermen's Forum on March 1
- Maine OA working group moves issues forward in Maine and coordinates with NECAN