GOALS	RECOMMENDATIONS	Action to Date	Future Action
1. Invest in Maine's Capacity to Monitor and Investigate the Effects of Ocean Acidification and Determine Impacts of Ocean Acidification on Commercially-Important Species and the Mechanisms Behind Those Impacts	*1.1. Enhance monitoring and create a database sufficient to support the development of regulatory and non-regulatory approaches to reduce and limit nutrients and organic carbon from sources that are contributing significantly to acidification of Maine's marine waters. Enhanced monitoring should begin in one or more pilot estuaries where impacts are presently occurring.*		
	1.2. Expand monitoring of ocean acidification to establish its natural variability and to detect trends in water chemistry and related biological responses.	Total alkalinity, pH, and dissolved inorganic carbon samples were collected at 5 stations in the Damariscotta River Estuary bi-weekly between May and September of 2018. Other parameters collected included temperature, salinity, chlorophyll *a* and dissolved oxygen. pH was collected hourly between roughly April – November 2015-2019 at a LOBO buoy in the upper	

		Damariscotta, and also mid river for 2015 and 2016. Other parameters included temperature, salinity, dissolved, oxygen, chlorophyll a, nitrate, CDOM, turbidity, current speed, and Photosynthetically active radiation (PAR) Partial pressure of carbon dioxide was also collected hourly between August and October 2017 on the buoy in the upper Damariscotta River. LOBO buoys were also located in the following places/times: June – November 2016: Saco Bay (2 locations) April – November 2017: New Meadows River (2 locations), and Bagaduce River (1 location) April- November 2018: Cobscook Bay (2 locations), Machias Bay (1 location)	
	1.3. Develop new tools with which to assess and understand acidification and its impacts in Maine waters.		

	1.4. Determine the causes and relative importance of acidification in the waters and sediments of Maine.		**Kate Liberti's research focuses on identifying carbonate chemistry drivers in the Damariscotta River oyster growing area and the potential impacts on oyster growth.**
	1.5. Identify the impacts of acidified waters and sediments on Maine's commercial species.		
2. Reduce	*2.1. Strengthen coordination and continue participation with existing national, state, and regional initiatives regarding the reduction of atmospheric*		

Emissions of Carbon Dioxide	*CO_2 levels.*		
	2.2. Encourage key leaders and policymakers to synchronize in establishing a comprehensive and unified strategy to reduce carbon dioxide emissions.		
	2.3. Expand actions at the state and local levels that may help in reducing CO_2 emissions.		

3. Identify and Reduce Local Land-Based Nutrient Loading and, Organic Carbon Contributions to Ocean Acidification and Freshwater Runoff by Strengthening and Augmenting Existing Pollution Reduction Efforts and Making Groundwater Recharge a Land Use Priority.	*3.1. Identify and reduce nutrient loading and organic carbon from point source and nonpoint discharges determined to cause or contribute to ocean acidification.*		
	3.2. Assess the need for water quality criteria relevant to ocean acidification.		
	3.3. Ensure that state staff and other practitioners are working with the best information and most effective technology.		

	3.4. Investigate incentive programs for pollution and freshwater runoff reduction.		
	3.5. Support and reinforce current planning efforts and programs that address the impacts of nutrients and organic carbon and freshwater runoff into coastal waters.		
	3.6. Enhance education and outreach programs that provide landowners with information about best practices for reduction of nutrient pollution.		

4. Increase Maine's Capacity to Mitigate, Remediate and Adapt to the Impacts of Ocean Acidification	*4.1. Preserve, enhance and manage a sustainable harvest of kelp, rockweed and native algae in bivalve areas and adjacent shoreline, and preserve and enhance eelgrass beds.*		
	4.2. Encourage bivalve production to support healthy marine waters.		
	4.3. Spread shells or other forms of calcium carbonate ($CaCO_3$)in bivalve areas to remediate impacts of local acidification.		
	4.4. Increase the capacity of the fishing and aquaculture industries to adapt to ocean acidification.		

	4.5. Identify refuges and acidification hotspots to prioritize protection and remediation efforts.		
	4.6. Encourage the enhancement and creation of research hatcheries.		

5. Inform Stakeholders, the Public, and Decision-Makers about Ocean Acidification in Maine and Empower Them to Take Action.	*5.1. In addition to providing the commission's report, its key findings should be communicated to the Governor, Maine's legislative leaders, Maine's Congressional delegation, the press and the general public in a series of briefings by commission members.*		
	5.2. Continue efforts to increase the understanding of ocean acidification among key stakeholders, targeted audiences and local communities to help implement the commission's recommendations.		

	5.3. Enhance the existing communication network of engaged stakeholders, state agency representatives and the research community.		
	5.4. Develop, adapt and use curricula on ocean acidification in K-12 schools and institutes of higher education and increase interdisciplinary university programs to equip young leaders with the skills to find solutions to complex multidisciplinary problems such as ocean acidification.		

6. Maintain a Sustainable and Coordinated Focus on Ocean Acidification.	*6.1. Create an on-going ocean acidification council.*		