



Making progress on Washington State Blue Ribbon Panel Recommendations on Ocean Acidification

Education and Outreach

March 2015

Chapter 8 of the Washington State Blue Ribbon Panel on Ocean Acidification (OA) identifies recommendations to increase awareness and understanding of OA. It calls for seven actions within two strategies:

- **Strategy 8.1** Share information showing that ocean acidification is a real and recognized problem in Washington State
- **Strategy 8.2** Increase ocean acidification literacy

The following table highlights accomplishments towards implementing these actions.

Note: KEA stands for Key Early Actions.

Action	Action Title	Accomplishments	Partners	Funding
Action 8.1.1	Identify key findings for use by the Governor, Panel members, and others who will act as ambassadors on ocean acidification. <i>[KEA]</i>	Held House Environment committee work session on OA in 2015	MRAC	
		Developed a report on OA activities in Washington state presented to Washington State Legislature and the Governor	MRAC	
		Developed OA science one pagers for Washington State Legislators	MRAC	
		Developed OA Fact Sheet and translated into six languages	NOAA PMEL, Washington Sea Grant, Woods Hole, Oceanographic Institute, international partners	Sea Grant funding



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Action 8.1.2	Increase understanding of ocean acidification among key stakeholders, targeted audiences and local communities to help implement the Panel's recommendations. <i>[KEA]</i>	Organized seven local outreach forums on OA in 2013-14; two additional forums planned in spring/summer 2015	NW Straits Commission	PSP/NOAA funding
		Produced OA fact sheet on specific actions underway by NWSC in support of BRP recommendations		
		Launched new OA project page on NWSC web site: http://www.nwstraits.org/our-work/ocean-acidification/		
		Supported OA outreach by Jefferson, Skagit and Clallam Marine Resource Committees at annual outdoor festivals		
		Staffed OA outreach booths at public events	Suquamish Tribe	\$15,000 EPA
		Organized regular meetings of local and regional resource managers, scientists, and policy makers	NOAA NWFSC	
		Stimulated media coverage of OA	Global Ocean Health	
		Trained journalists and teachers to effectively communicate about OA	Metcalf Institute, NOAA	
		Developed OA outreach tools, including: print materials, website, and bi-weekly OA news updates	Suquamish Tribe, Global Ocean Health, MRAC	
		Presented on OA to students, the general public, culinary professionals, etc.	Washington Sea Grant	
		Presented on local actions to combat and mitigate OA at various outreach forums	Puget Sound Restoration Fund	
Launching (April 2015) new OA webpage as part of Washington Sea Grant website	Washington Sea Grant			



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Action 8.1.3	Build a network of engaged shellfish growers, tribes, and fishermen to share information on ocean acidification with key groups. <i>[KEA]</i>			
Action 8.1.4	Provide a forum for agricultural, business, and other stakeholders to engage with coastal resource users and managers in developing and implementing solutions. <i>[KEA]</i>			
Action 8.2.1	Develop, adapt, and use curricula on ocean acidification in K-12, and higher education.	Launched an online OA Curriculum Collection, developed by crosswalking the Principals of Ocean Literacy and Climate Literacy, NOAA's 20 OA facts and Next Generation Science Standards with a teacher-developed framework of ocean acidification literacy. National group of OA teachers (assembled by Jason Hodin) is reviewing the curriculum.	Suquamish Tribe, Washington Sea Grant, UW APL, science teachers, NOAA K-12 OA Education and Communication working group	\$20,000 from US Fish and Wildlife, Suquamish Tribe, plus Washington Sea Grant staff time
		Curriculum available at: http://www.oacurriculumcollection.org/		
		Coordinating with developers of OA materials on aligning with the Next Generation Science Standards		
		Incorporated OA lessons into elementary school science kits	Suquamish Tribe, Olympic Educational Service District	\$3,000 from US Fish and Wildlife



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Action 8.2.1	Develop, adapt, and use curricula on ocean acidification in K-12, and higher education (cont'd).	Tested and expanded OA curricula in Whatcom County Schools (5th grade) and Bainbridge High School	Puget Sound Restoration Fund, with Washington Sea Grant, Suquamish Tribe, Hirsch Consulting, Bainbridge Island STEM Program, Eagle Harbor High School, and Blaine Public Schools	\$70,000 from Alcoa Foundation \$110,000 from Whatcom Community Foundation \$40,100 from 3M Foundation
		Developed high-school lesson plans, experiments on the impacts of OA on oyster seed, and deployed an OA “discovery cart”	NOAA NWFSC, UW NFS GK-12 program, Seattle and San Juan Island public schools, Pacific Science Center	NOAA Education Grant
		Hosted Sharing Ocean Acidification Resources for Communicators and Educators (SOARCE) webinar series; Available at: http://oceanacidification.noaa.gov/AreasofFocus/EducationOutreach/SOARCEWebinarSeries.aspx	Washington Sea Grant (and out-of-state partners); coordinated (and funded) by NOAA OA Program	
		Developing OA outreach skills over 2014-2018	Seattle Aquarium	NOAA Environmental Literacy Grant
		Developed and held OA teaching trainings	NOAA NWFSC, Seattle Aquarium, South Sound GREEN, Ocean Inquiry Project & UW APL (NANOOS)	
		Included OA in UW Program on the Environment undergraduate courses	UW Seattle	
		Offered graduate classes on OA and methods in OA research	UW Friday Harbor Labs	



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Action 8.2.1	Develop, adapt, and use curricula on ocean acidification in K-12, and higher education (cont'd).	Provide OA research opportunities established for high school students and undergraduates	UW, NOAA, WWU, Evergreen, Seattle Public Schools	
		Developed an OA module for Adventuress cruises	Sound Experience	
		Received grant to conduct 2-week teacher workshops on ocean science and OA, with follow-up throughout the year	Olympic Educational Services District (OSED lead), Suquamish Tribe and UW Ocean, west sound STEM and many more	\$900,000 over 3 years Olympic STEM Pathways Partnership
		Applied for an EPA Environmental Education Grant that compiles best practices in indigenous learning and science and uses them to teach key ideas in ocean science and health issues, including OA	Suquamish Chief Kitsap Academy (Lead) OSPI, OESD, UW, Longhouse Media, NOAA OA and many others	Applied for \$88,000 over 2 years
		Developing grant proposal for teams of teachers to work with scientists and managers to align NOAA materials on OA and other anthropogenic impacts to marine ecosystems with the Next Generation Science Standards	UW (lead) Seattle Public Schools, Suquamish Tribe, and various agency staff	Applying for \$250,000-500,000 over 2-5 years
Action 8.2.2	Leverage existing education and outreach networks to disseminate key messages and build support for priority actions.	Trained staff and other facilities in the region on climate change interpretation including OA	Seattle Aquarium	
		Developed a hub for OA outreach based on recent science	Seattle Aquarium WOAC NOAA NWFSC	



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Action 8.2.3	Share knowledge on ocean acidification causes, consequences, and responses at state and regional symposiums, conferences, workshops, and other events.	Held sessions at conferences focused on OA, including: <ul style="list-style-type: none"> • <i>Novel Actions to Address Ocean Acidification in the Salish Sea</i> (Salish Sea Ecosystem Conference 2014) • OA panel (Salish Sea Ecosystem Conference 2014) • <i>Climate Change Impacts: Addressing Ocean Acidification and Sea Level Rise</i> (15th NWS Conference) • <i>Promoting Literacy on OA</i> (15th NWS Conference) • <i>Ocean and Climate Change: A spotlight on Local Response</i> (16th NWS Conference) 	Washington Sea Grant and Northwest Straits Commission, Seattle Aquarium, Puget Sound Restoration Fund	\$3,000 from US Fish and Wildlife
		Held science presentations on OA at international conferences and community events	NOAA NWFSC, Pacific Science Center	
		Organized and participated in 27 OA outreach events in 2012-2013 including workshops, seminars, conferences, hatchery tours, and summits	Global Ocean Heath	
		Held an all-day workshop on OA and sea level rise in 2014	Global Ocean Heath	