Recommended Actions
Research and Monitoring

4 strategies, 14 actions

Strategy 7.1 — Understand status and trends of ocean acidification in Washington's marine waters.

***Action 7.1.1* —** Establish an expanded and sustained ocean acidification monitoring network to measure trends in local acidification conditions, and for a subset of locations, to collect time series of coupled physical, chemical, and biological data. *[KEA]*

***Action 7.1.2* —** Develop predictive relationships for indicators of ocean acidification (pH and aragonite).

***Action 7.1.3* —** Support development of new technologies for monitoring ocean acidification.

Strategy 7.2 *— Identify factors and estimate the relative contribution of each factor to ocean acidification in Washington's marine waters.*

Action 7.2.1 — Quantify key anthropogenic (human-generated) and natural processes that contribute to acidification based on estimates of sources, sinks, and transfer rates for carbon and nitrogen. *[KEA]*

Action 7.2.2 — Develop new models or refine existing models to include biogeochemical processes of importance to ocean acidification.

Strategy 7.3 *— Characterize biological responses of local species to acidification and associated stressors.*

Action 7.3.1 — Determine the association between seawater chemistry, sediment chemistry, and shellfish viability in hatcheries and in the natural environment. *[KEA]*

Action 7.3.2 — Determine the responses of marine species and strains to ocean acidification to help guide management strategies for wild populations and culture practices in hatcheries and on farms.

Action 7.3.3 - Conduct laboratory studies to assess the direct effects of ocean acidification on Washington's species and ecosystems. *[KEA]*

Action 7.3.4 — Conduct studies to determine biological response to ocean acidification in combination with other stressors.

Action 7.3.5 - Undertake field studies to characterize the effects of ocean acidification on local species.

Strategy 7.4 — Build capabilities for short-term forecasting and long-term prediction of acidification.

Action 7.4.1 **-** Establish ability to make short-term forecasts of corrosive conditions for application to shellfish hatcheries, growing areas, and other areas of concern. *[KEA]*

Action 7.4.2 **-** Enhance ability to predict the long-term future status of carbon chemistry and pH in Washington waters by creating models to project ecological responses to predicted ocean acidification conditions.

Action 7.4.3 **-** Enhance ability to model the response of organisms and populations to ocean acidification to improve our understanding of biological responses.

Action 7.4.4 **-** Perform an integrated assessment of ocean acidification impacts in Washington State.

Related “Big Picture” Issues

Research and Monitoring (Ch 7)

- None submitted, although continued work between R&M and A&R groups (and within R&M group) expected
- Planned changes to Action 7.1.1 (in relation to 6.2.1/2)