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Abstract: Ocean acidification (OA) describes the progressive decrease in the pH of seawater and other cascading chemical changes resulting from oceanic uptake of atmospheric carbon. These changes can have important implications for marine ecosystems, creating risk for commercial industries, subsistence communities, cultural practices, and recreation. Characterizing the extent of acidification and predicting the ramifications for marine and freshwater resources and ecosystem services are critical to national and international climate mitigation discussions and to local communities that rely on these resources. Based on critical grassroots connections between scientists, stakeholders and decision makers, “Knowledge-to-Action” networks for ocean acidification issues have formed at local, regional and international scales to take action. Here, we review three examples of North American groups elevating the issue of ocean acidification at these three levels. They each focus on developing practicable, implementable steps to mitigate causes, to adapt to unavoidable change, and to build resilience to changing ocean conditions in the marine environment and coastal communities. While these first steps represent critical efforts in protecting ecosystems and economies from the risks posed by ocean acidification, some challenges remain. Sensitivity and risk to OA varies by region, species and ecosystems; priorities for action can vary between multiple and conflicting partners; evidence-based strategies for OA risk mitigation are still in the early stages; and gaps remain between scientific research and actionable decision-maker support products. However, the scaled networks profiled here have proven to be adept at identifying and addressing these barriers to action. In the future, it will be critical to expand funding for food web impact studies and development of decision support tools, and to maintain the connections between scientists and marine resource users to build resilience to ocean acidification impacts.