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Title: *Pacific Marine Arctic Regional Synthesis (PacMARS)*

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The Pacific Marine Arctic Regional Synthesis (PacMARS) is a research synthesis effort underwritten by the North Pacific Marine Research Institute in the United States to assemble by mid-year 2013 up-to-date written documentation that contributes to understanding the Pacific-influenced coastal-to-basin ecosystem of the Arctic Ocean. Our study area extends from Saint Lawrence Island in the northern Bering Sea through Bering Strait into the Chukchi and Beaufort Seas into the Arctic Basin and our objective is to compile the best available knowledge from peer-reviewed natural and social sciences, local communities, and less readily available knowledge sources. As seasonal sea ice declines in much of the Arctic, having reached record minima in 2012, oil and gas exploration is increasing as is ship traffic using Bering Strait. Within this context of environmental and likely socio-economic changes, wildlife populations and human communities are adjusting to these shifts in seasonal sea ice coverage and climatic warming that has been much more obvious than at lower latitudes. Subsistence hunting patterns in the Arctic are changing, and it is also clear that many organisms, from plankton to top predators, may be changing their migration and foraging patterns and productivity within the foodweb may be changing. The overall goal of PacMARS is to provide guidance for scientific research needs in the region, as well as to serve stakeholder needs for understanding this important ecosystem and its vulnerabilities. The PacMARS synthesis effort is structured to address the uncertainties in knowledge as well as to summarize what is already known. In addition to the experience of the PacMARS team members, we are seeking input from many other scientists, local residents, and other stakeholders in assembling the best current knowledge in a short time frame. The mechanisms for input into this process include a data workshop, open science meetings as well as community based meetings in Nome, Kotzebue and Barrow, Alaska to seek the participation and knowledge of the traditional Iñupiat and Saint Lawrence Island Yupik communities who have called this region home for millennia. Follow-up review of written synthesis products will provide additional



methods to gather together the best information on vulnerabilities, potential mitigation, and opportunities in the Arctic during a period of rapid environmental change. to design appropriate research initiatives to address knowledge uncertainties in the Pacific Arctic.