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# Oceanographic and topographic controls on macrobenthic distributions in the Chukchi Sea

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Large climatological, environmental and oceanographic shifts are having great effects in the Arctic including shallow waters of the northeastern Chukchi Sea, Alaska. The number of ice-free days is increasing, the extents of summer ice cover declining and biological communities are responding. While pelagic-benthic coupling is a major determinant for production, there are significant deviations from expected macrobenthic characteristics driven by other mechanisms including topographic control over water circulation and are potential sources of long-term change. Water from the Bering Sea flows northward through Bering Strait into the Chukchi Sea advecting organic carbon northward and contributing to the ecological characteristics of the Arctic Ocean. Water exits the shelf in part via Barrow Canyon. Increased biomass near the head of the canyon reflects increased transport of carbon as food for suspension feeders as compared to higher proportions of deposit-feeding organisms offshore. Benthic-feeding marine mammals relying on crustaceans utilize nearshore resources while mammals relying on other resources feed offshore. Changes in the flow of water through the area may be sources for future change as interactions between circulation, seafloor and coastline topography and biological processes appear to be drive spatial variations in benthic resources and are related to increased production in benthic hotspots.

## Biography

Arny L Blanchard is a Benthic Ecologist and Biostatistician with the Institute of Marine Science, University of Alaska Fairbanks and is involved in marine studies throughout Alaska's waters from Prince William Sound to the Beaufort Sea. His research is focused on the spatial and temporal changes of marine communities and assessment of human disturbance in the environment. He currently manages the Port Valdez Environmental Studies Program and the benthic component of the Chukchi Sea Environmental Studies Program in northeastern Chukchi Sea and contributes to the Alaska Monitoring and Assessment Program.

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