Arctic marine ecosystems in a rapidly changing environment: The importance of connections to lower-latitude systems

Connections of arctic ecosystems with lower latitudes provides both challenges for ecosystem change as well as sources of resiliency. Recent and large climatic and oceanographic changes in the Arctic such as the declining summer sea ice extent have driven shifts in timing of ecosystem processes, loss of habitat for marine mammals and other ice associated fauna, and opened the Arctic for greater anthropogenic use. Interannual variability in oceanographic characteristics has been strong in recent years, resulting in major shifts of pelagic fauna spatially and temporally while warming of waters may allow movement northward of fishes as well. Given the current climatic trajectories, continuing change can be expected. Yet at the same time, the linkages of the Arctic with lower latitude ecosystems increases resiliencies through advection northward of nutrients, carbon, and invertebrate fauna serving as prey resources for critical mammalian resources. Thus, understanding connections among ecosystems and sources of resiliencies will provide greater insights into management of arctic resources and enable better predictions of long term change.

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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