

Methods to examine fisheries ecology in Lease Sale 193 in the Chukchi Sea

Brenda L. Norcross and Brenda A. Holladay

Institute of Marine Science, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks



Liparis sp. (snailfish)



Polar eelpout



Slender eelblenny



Arctic cod



Arctic staghorn sculpin & shorthorn sculpin



Bering flounder

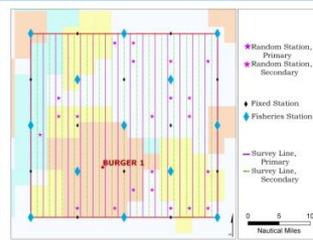
The northeast Chukchi Sea from Point Hope to Barrow was recently leased for oil and gas exploration. To provide a recent assessment for use in detecting changes and distinguishing between anthropogenic effects and natural variation in fish composition, habitat use, and trophic ecology, in 2009 ConocoPhillips Alaska, Inc. (CPAI) and Shell Exploration and Production Company (SEPCO) added a fisheries ecology component to their integrated ecosystem program begun in 2008. Other components of this ecosystem program include collections of epibenthos, benthic infauna, zooplankton, and observations of primary productivity, physical oceanographic, acoustics, seabirds and marine mammals. The fisheries project scope will document the present distribution and abundance of fishes in the Klondike and Burger areas and trophically relate those fishes throughout the northeast Chukchi Sea ecosystem.

Understanding potential effects of change on fish stocks can be aided by the collection, identification and quantification of fishes encompassing a range of species and life stages. During summer and fall 2009, we assessed seasonal fisheries ecology in the Klondike and Burger prospects within the northeastern Chukchi Sea, two areas in which there has been little scientific sampling for fish. This study will provide a current high resolution temporal and spatial assessment of fishes. We are examining the maximum age of fishes, size at age, prey taxa composing diet, trophic level of those prey, and trophic level of the fishes, all of which are known to differ seasonally and spatially for fishes in other areas. The 2009 collections in the northeast Chukchi Sea will allow us to assess distribution and diet composition of demersal and midwater fishes, provide an initial estimate of the importance of fisheries ecology prior to oil and gas development, and to provide a basis for documenting changes.

Demersal fish collections- Plumb staff beam trawl (7 mm mesh, 4 mm codend liner)

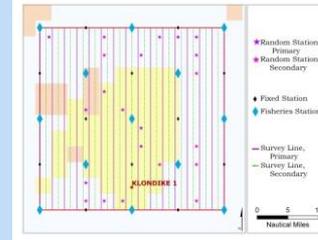


Klondike Study Area n=13 Fish Sites

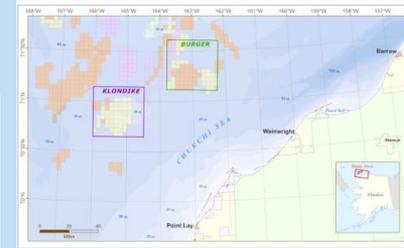


Sample sites

Burger Study Area n=13 Fish Sites



Lease Sale 193 2009 Chukchi Baseline Studies Program



Seasonal sampling

WW0902
WW0904

14 - 29 August 2009
25 Sept - 10 Oct 2009

summer
fall



Pelagic fish collections- Isaacs-Kidd Midwater Trawl (3 mm mesh)

