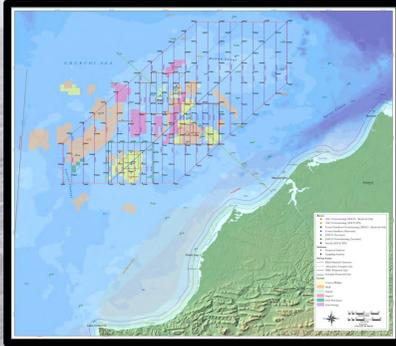


# 2011 Fish and Invertebrate Trawl Surveys in the Chukchi Sea Environmental Studies Program

Scott E. Goodman, Jeffrey A. June, Kyle L. Antonelis  
Natural Resources Consultants, Inc. – Seattle, WA

## Study Area



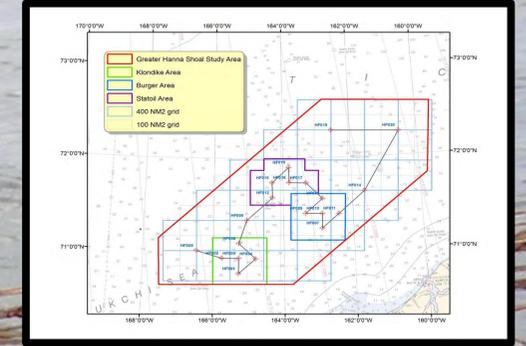
NRC, Inc. conducted trawl surveys in 2011 to assess the abundance of fish and invertebrate resources in oil and gas lease areas in the northeastern Chukchi Sea as part of CESP.

## Survey Trawls and Vessel



The survey deployed pelagic and bottom trawls within a study area ~11,000 NM<sup>2</sup> in area, with higher sampling effort focused on three study-area boxes (oil lease blocks) located near Hanna Shoal between Pt. Barrow and Pt. Lay. A 60-ft steel trawler conducted pelagic trawling at 19 stations on 24–28 August, followed by bottom trawling at 19 stations on 29–31 August.

## Trawl Stations



The survey of fish and invertebrate resources was completed in the northeastern Chukchi Sea from 24–31 August 2011.

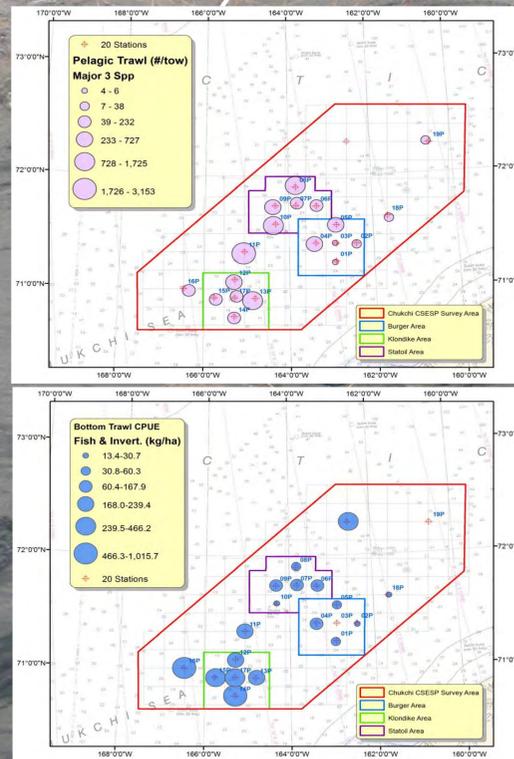
## Fish Catches



The five most abundant fish species captured in both gear types were Pacific sand lance, Arctic cod, unidentified eelblennies, capelin and shorthorn sculpin. Pacific sand lance and Arctic cod alone were greater than 75% of the total fish catch. Other fish species captured included saffron cod, Bering wolffish, fish doctor, unidentified larval flatfish, Bering flounder, Hamecon and others. Nearly all fish caught were very small with only 3 individuals greater than 100 mm.



## Survey Results



The density of fish and invertebrates was higher in the southwestern and central parts of the study area than in the northeastern part of the study area. Pelagic trawl catches were less diverse than were bottom trawl catches. High densities of snow crab, especially in the southwestern part of the study area, were the only significant catches from the bottom trawl with current potential commercial value. Nearly all captured fish were < 100 mm in size. Estimates of total abundance and biomass of fish species encountered in the 2011 fish surveys were low and are similar to or lower than other surveys conducted in or near the northeastern Chukchi Sea study area, and are considerably lower than catch rates for surveys in adjacent areas (Arctic Ocean, northern Bering Sea). In addition, species diversity appears to be low, and individuals in catch were small and below normal sizes for commercial exploitation.

## Invertebrate Catches



Excluding brittle stars (which were too numerous to count) the five most abundant invertebrate catches were snow crabs, unidentified hermit crabs, unidentified snails, Arctic lyre crabs, and a pelagic amphipod. Snow crab hermit crab alone accounted for more than 50% of the catch. Jellyfish (unidentified species) represented the most biomass in pelagic trawl catches (>700kg). Other invertebrate catch included blue king crab, several shrimp species, several mollusc species, several star species, and scallop, urchin and sea cucumber species.

CESP 2011 Fisheries Surveys were -  
conducted by:



sponsored by:

