Essential Fish Habitat project status report

Reporting date: October 31, 2012

Project number: 2009-12

Title: Utilization of nearshore habitat by fishes in Nushagak and Togiak Bays (Bristol Bay)

PI: Olav A. Ormseth (AFSC/REFM)

Funding year: 2009

Funding amount: $68,000

Status: ☒ Complete ☐ Incomplete, on schedule ☐ Incomplete, behind schedule

Planned completion date if incomplete: N/A

Reporting: Have the project results been reported?

Yes. A draft NOAA Tech memo (attached) has been completed and is in review with Dan Cooper, Tom Hurst, and Sandra Lowe of the AFSC. Although there will likely be at least one journal article based on this project, this Tech memo serves as the main reporting vehicle for the results of the survey.

Results: What is the most important result of the study?

Below are the conclusions stated in the Tech Memo:

1) Habitats varied between Nushagak Bay and the Togiak area. Substrates in Nushagak Bay consisted only of sand and gravel, while Togiak area substrates varied from sand to rock. Vegetation (kelp and eelgrass) occurred only in the Togiak area. Waters in Nushagak Bay were warmer and less saline than those in the Togiak area.

2) Crangonid shrimps and rainbow smelt *Osmerus mordax* were the most ubiquitous and abundant species in the surveyed area.

3) Most of the fishes captured appeared to be young-of-the-year or juvenile life stages.

4) Species composition and community diversity indices varied substantially among hauls, subareas, and locales. While slightly more species were encountered in the Togiak area, diversity and evenness were higher in Nushagak Bay.

5) The abundance and mean size of species was more strongly related to geographic location than to temperature or salinity, although broad differences in water column characteristics among locations likely influenced the spatial distribution of species.

6) Nushagak Bay experiences dramatic changes in temperature and particularly salinity over the course of a tidal cycle. The degree and nature of these changes varies with location inside the bay.

7) Substantial variability in habitat and fauna exists at both of the main spatial scales examined during this study.