Essential Fish Habitat project status report

Reporting date: September 4, 2007
Project number: EFH Project 2006-08
Title: Essential Fish Habitat Requirements for Skate Nurseries
PIs: Gerald R. Hoff
Funding year: FY 2006
Funding amount: $78,000
Status: ☒ **Complete** ☐ **Incomplete, on schedule** ☐ **Incomplete, behind schedule**
Planned completion date if incomplete:

Reporting: Have the project results been reported? YES **If yes, where were the results** reported? My Ph.D. dissertation (University of Washington, School of Aquatic and Fishery Sciences). Also results are being prepared in three manuscripts for submission in the primary literature during fall of 2007.

Results: What is the most important result of the study?
The research in 2006 confirmed the distribution of two previously known skate nursery sites for the Alaska and Bering skates, and located two additional sites for the Alaska and Aleutian skates. Seven nurseries located to date all occurred along the upper slope of the eastern Bering Sea. The nurseries were small in area (<2 km^2) and occurred over a narrow depth range (from 150 to 375 meters) on generally flat sandy to muddy bottom with little bottom structure or attached biota. Many sites were associated with canyon areas and were generally located in the upper portion of canyon heads. Nurseries were highly productive, with >100,000 viable eggs/km^2 occurring in some sites. Newly deposited embryos experienced mortality from snail predators with evidence of higher predation rates at northern sites, and evidence of multiple predators present within a single nursery site. At all sites Pacific halibut and Pacific cod showed evidence of consumption of newly hatched skates.

Conclusions drawn from this research suggest the shelf slope interface is an important habitat for successful skate reproduction possibly due to ample food availability and relatively warm constant bottom temperatures. In general the upper slope habitat is important for skate egg deposition and embryo development. However, nursery areas do not appear to be utilized by juvenile and sub-adult individuals. Evidence suggests these stages move to either shallower shelf waters (Alaska skate) or deeper waters (Aleutian and Bering skates) soon after emergence from the egg case.