Essential Fish Habitat project status report

Reporting date: September 15, 2010

Project number: 7

Title: Assessing the physical and temporal aspects of spawning pollock habitat utilization in Shelikof Strait, Gulf of Alaska (Year 2)

PIs: Kevin Bailey and Kung-sik Chan

Funding year: 2010

Funding amount: $34,446

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

Completion date: July 2010.

Reporting: Four manuscripts are attached, 2 are directly related to the project and are both published in Marine Ecology Progress series, and two were offshoots of the project, one in published in Fisheries Oceanography and the other in Marine Ecology progress series, are attached.
Results: We used general additive models to show that the spatial extent of occupation of spawning habitat as reflected by egg distribution is influenced by biological and harvest related parameters and by environmental factors. As spawning biomass declines, the egg distribution shrinks at its periphery. Increasing transport results in a dislocation of eggs, and increasing temperature is related to an expansion of egg distribution further up Shelikof Strait. In another model, which we believe represents a conceptual breakthrough, we used a time series of the hatchdate distributions of larval pollock, to uncover the role of population age structure (and by implication, the effect of harvesting), biomass levels and environment on the timing of spawning.