Essential Fish Habitat project status report

Reporting date: 9/05/2007

Project number: 2006-03

Title: Assessment of critical habitats for juvenile Pacific cod

PIs: Allan Stoner, Benjamin Laurel, Thomas Hurst, Alisa Abookire & Clifford Ryer

Funding year: FY 2006

Funding amount: $55,638

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

Planned completion date if incomplete:

Reporting: Have the project results been reported? If yes, where were the results reported?
Yes. The data have been reported in two manuscripts:

Laurel, B.J., A.W. Stoner, C.H. Ryer, T.P. Hurst and A.A.Abookire. 2007. Comparative habitat associations in juvenile Pacific cod and other gadids using seines, baited cameras and laboratory techniques. J. Exp. Mar. Biol. Ecol. (in press)

Stoner, A.W., Laurel, B.J. and T.P. Hurst. Using a baited cameras to assess relative abundance of juvenile Pacific cod: field and laboratory trials. J. Exp. Mar. Biol. Ecol. (in review)

Results: What is the most important result of the study?
1) 2006 appears to have been an unusually strong year for recruitment of age-0 Pacific cod to the Kodiak system. This is despite a very weak spawning season shown by poor winter fishing success. [Indeed, comparative data from 2007 reveal that 2006 was an exceptional year for Pacific cod recruitment to the 0-year class.]
2) A baited camera is a highly efficient system for observing and quantifying age-0 Pacific cod in habitats not easily sampled with traditional gear. Results from July collections show a direct correlation between numbers of cod observed in camera sets and seines. Data from expanded sampling in August will better test the relationship. The baited system is also a good tool for surveying predatory species. Experiments show that Pacific cod are most attracted to baits, while walleye pollock are weakly attracted.
3) Age-0 Pacific cod, saffron cod and walleye pollock occur in close proximity in the nearshore habitats of Kodiak. However, their occurrences in seagrass, *Laminaria* beds, and deeper sand/mud habitats vary inter-specifically, and the relationships shifted with time and fish size over the summer. In July, the cod species were closely associated with the macrophytes beds, and then expanded to unvegetated and deeper habitats in August.

4) In laboratory experiments age-0 Pacific cod did not demonstrate significant preference for habitats (sand, boulder, seagrass, kelp) except in the presence of a predator, when shelter-seeking was exhibited.