Essential Fish Habitat project status report

Reporting date: 10/31/2008

Project number: 2007-11A

Title: Biological parameters to estimate the recovery of disturbed benthic habitat in Alaska, study A: Coral growth

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Funding year: FY 2007

Funding amount: $45,000

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

Planned completion date if incomplete: October 31, 2008.

Reporting: Have the project results been reported? If yes, where were the results reported? The results are planned for presentation at the 4th International Symposium on Deep-sea Corals in December 2008 and a manuscript is in preparation.

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

Growth rate estimations were successful for bamboo corals but not for the gorgonian *Fanellia compressa*. Specimens of the latter species are currently being analyzed using C-13 and C-14 techniques by Dr. Tom Brown at the Center for Accelerator Mass Spectrometry (supplemental funding provided by the Alaska Regional Office – Habitat Conservation Division). Age and growth were determined for two bamboo corals (*Keratoisis* sp. B group and *Isidella* n. sp.) using lead-210 dating. The largest colony made available for this research was a *Keratoisis* sp. (B group) that measured 120 cm in height. Lead-radium dating provided an age of 116 ± 13 years with an average axial growth rate of 1.03 cm yr^{-1} (0.93-1.16 cm yr^{-1}, 2SE) for this colony. The *Isidella* n. sp. colony measured 72 cm in height and was aged at 53 ± 4 years; this colony grew most rapidly with a radial growth rate of 0.099 mm yr^{-1} and an average axial growth rate of 1.32 cm yr^{-1} (1.23-1.46 cm yr^{-1}, 2SE). Application of lead-210 dating to *Fanellia compressa* was not successful because measured lead-210 uptake was highly irregular at three points in the 67 cm colony; however, age was estimated at 47 to 57 years from growth zone counts in a skeletal cross section. Our findings of slow growth rates and high longevity compare favorably to those determined for bamboo corals from other regions of the Pacific Ocean and highlight the need for immediate conservation measures to protect these important members of deep-sea ecosystems.