MarXiv Summary

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Fine-scale fisheries co-management through cooperative acoustic surveys.

The authors describe a method of collaborative fisheries management offering both fine temporal- and spatial-scale resolution which was trialed in Alaska's Aleutian Islands walleye pollock fishery. In this fishery, scientists, locals, and industry are highly-engaged and already involved in a co-management process set forth by the North Pacific Fishery Management Council. This methodology involves fishers using off-the-shelf commercial echosounders to conduct acoustic surveys in small areas to enhance existing fisheries data (such as estimates of total catch from fisheries observers) in an effort to allow more harvest without affecting nearby threatened species.

Acoustic surveys are useful for species like walleye pollock and other mid-water species with detectable acoustic signatures. Fisheries targeting bottom-dwelling species or those without swim bladders would not benefit from this methodology.

Acoustic surveys run by local fisheries were able to collect high-quality acoustic data at a lower cost than Federal ships. Rough seas can lead to missing data as air bubbles interfere with the technology, however. Comparisons between specialized research vessels and fishing vessels showed acoustic sample loss of 0.1% vs. 4.5%, respectively, although the authors note this difference was unlikely to impact results. Acoustic data were used to obtain biomass estimates and information on species distribution during surveys run for seven days. The lower costs of operating fishery vessels as opposed to research ships can allow for more fine-scale observations, targeting smaller areas that fishers are interested in, while avoiding areas where fishing could impact threatened species or vulnerable ecosystems.

This is a summary of:
Exploring local fishery management through cooperative acoustic surveys in the Aleutian Islands

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