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Reducing Marine Mammal Bycatch in Global Fisheries: *An economics approach*

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Abstract

The broader ecosystem impacts of fishing continue to present a challenge to scientists and resource managers around the world. Bycatch is of greatest concern for marine mammals, for which fishery bycatch and entanglement is the number one cause of direct mortality. Climate change will only add to the challenge, as marine species and fishing practices adapt to a changing environment, creating a dynamic pattern of overlap between fishing and species (both target and bycatch). Economists suggest policy instruments for reducing bycatch that move away from top-down, command-and-control measures (e.g. effort reduction, time/area closures, gear restrictions, bycatch quotas) towards an approach that creates incentives to reduce bycatch (e.g. transferable bycatch allowances, taxes, and other measures). The advantages of this flexible, incentive-oriented approach are even greater in a changing and increasingly variable environment, as regulatory measures would have to be adapted constantly to keep up with climate change. Unlike the regulatory process, individual operators in the fishery sector can make adjustments to their harvesting practices as soon as the incentives for such changes are apparent and inputs or operations can be modified. This paper explores policy measures that create economic incentives not only to reduce marine mammal bycatch, but also to increase compliance and induce technological advances by fishery operators. Economists also suggest exploration of direct economic incentives as have been used in other conservation programs, such as payments for economic services, in an approach that addresses marine mammal bycatch as part of a larger conservation strategy. Expanding the portfolio of mandatory and potentially, voluntary, measures to include novel approaches will provide a broader array of opportunities for successful stewardship of the marine environment.

Keywords
marine mammals, fisheries bycatch, economics, fishery management policy, incentive approach