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Title: **Do Fishermen Bother With Bycatch Avoidance?: Evidence From The Eastern Bering Sea**

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Abstract: The incidental catch of non-targeted species is a significant issue in fisheries management. Most current approaches to bycatch control have viewed it as a purely technological problem; however, there is growing evidence that fishermen are able to control their bycatch, albeit at a cost, by their choice of where to fish.

To examine the propensity of fishermen to spatially determine their bycatch, we examine the bycatch of halibut in the multispecies head and gut fishery of the Eastern Bering Sea. Both bycatch and target species removals are governed through a system of seasonal multispecies quotas (enforced by fishery closures) that are commonly held by the fleet. Both economic theory and the history of the fishery suggest that this method of control fosters a race to bycatch in which the intrinsic value of a unit of bycatch avoidance is far too low relative to that desired under the rent-maximizing policy. This should result in foreshortened seasons and forced closures due to excessive bycatch rather than from the full exploitation of the target species' quota.

To examine these predictions, we augment a traditional random utility model of fishing location choice with measures of expected bycatch as well as the usual measures of expected revenues and steaming costs. We utilize six years of spatially and temporally disaggregated vessel-level data from the North Pacific Groundfish Observer Program to estimate the model. We are then able to estimate the implicit shadow value of bycatch to fishermen and conduct inference on its magnitude. Preliminary results suggest that the shadow value is indistinguishable from zero - a finding which concurs with our theoretical predictions for a fishery of this size. Finally, we assess the incentive effects of a voluntary bycatch avoidance system participated in by some fishermen by comparing the estimated shadow values before and after the program across participating and non-participating groups.