

Unlimited by-catch limits recovery

We argue that government decisions to increase the social and economic benefits of fisheries will be ineffective without improvements in data-reporting practices and in regulations for targeted by-catches (see J. Casey et al. *Nature* **530**, 160; 2016).

Take the swordfish (*Xiphias gladius*), a target species in the Atlantic longline fishery with a strictly regulated low annual total allowable catch. The unregulated 'by-catch' consists mainly of shortfin mako (*Isurus oxyrinchus*) and blue sharks (*Prionace glauca*), whose fins and meat are commercially valuable. Similarities between the gutted carcasses of swordfish and mako, without heads or fins, mean that there is potential for illegal overfishing of a regulated species that can be logged as an unregulated species on landing.

Catches of shortfin mako typically comprise 3–13% of blue shark catches in the same longline or gill-net fishery (J. D. Stevens in *Sharks of the Open Ocean* Ch. 7, 90; Blackwell, 2008). Yet the 2008 mako landings of a European fleet were, on average, six times those of blue shark (unpublished data; available from D.W.S. and N.Q.). This implies that the excess 'mako' could have been a regulated species such as swordfish.

The scale of the problem may already have affected stock rebuilding. More-stringent surveillance of by-catch species by national regulatory authorities is essential for spotting such irregularities.

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