Identification of high-risk areas for harbour porpoise *Phocoena phocoena* bycatch using remote electronic monitoring and satellite telemetry data

The bycatch of harbour porpoise *Phocoena phocoena* is an issue of major concern for fisheries management and for porpoise conservation. We used high-resolution spatial and temporal data on porpoise abundance and fishing effort from the Danish Skagerrak Sea to identify areas with potentially higher and lower risk of porpoise bycatch. From May 2010 to April 2011, 4 commercial gillnet vessels were equipped with remote electronic monitoring (REM) systems. The REM system recorded time, GPS position and closed-circuit television (CCTV) footage of all gillnet hauls. REM data were used to identify fishing grounds, quantify fishing effort and document harbour porpoise bycatch. Movement data from 66 harbour porpoises equipped with satellite transmitters from 1997 to 2012 were used to model population density. A simple model was constructed to investigate the relationship between the response (number of individuals caught) and porpoise density and fishing effort described by net soak time, net string length and target species. Results showed that a model including both porpoise density and fishing effort data predicted bycatch better than models containing only one factor. We therefore conclude that porpoise telemetry or REM data allow for identification of areas of potential high and low bycatch risk, and better predictions are obtained when combining the 2 sources of data. The final model can thus be used as a tool to identify areas of bycatch risk.

**General information**

Publication status: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources, Section for Monitoring and Data, Aarhus University, University of St Andrews
Contributors: Kindt-Larsen, L., Berg, C. W., Tougaard, J., Sørensen, T. K., Geitner, K., Northridge, S., Sveegaard, S., Larsen, F.
Pages: 261-271
Publication date: 2016
Peer-reviewed: Yes

**Publication information**

Journal: Marine Ecology - Progress Series
Volume: 555
ISSN (Print): 0171-8630
Ratings:
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Impact factor 2.292
Web of Science (2016): Indexed yes
Original language: English
DOIs: 10.3354/meps11806
Source: Findit
Source ID: 2305975930
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review