



Short communication

Implications of new technical measures regulation for cetacean bycatch in European waters

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ARTICLE INFO

Keywords:

Fisheries
Conservation
Welfare
Europe
Incidental capture
Cetacean

ABSTRACT

For decades, cetacean bycatch has been a major conservation and welfare concern in the European Union with high numbers of harbour porpoises, dolphins and whales dying each year. Despite binding legal requirements to monitor and reduce bycatch, cetacean bycatch monitoring has been insufficient in most fisheries and areas to generate reliable estimates of bycatch rate. Measures to reduce bycatch have been limited and not always directed at the most problematic fisheries. EU cetacean bycatch legislation (Council Regulation (EC) No. 812/2004) was repealed and replaced by a new Regulation, *Regulation on the conservation of fishery resources and the protection of marine ecosystems through technical measures (2019/1241)*. Whilst some improvements have been made in the new Regulation, scientific advice of the ICES Bycatch Working Group (ICES WGBYC), and other expert regional bodies, such as ASCOBANS and ACCOBAMS, were not incorporated explicitly and some measures in the adopted Technical Measures Regulation weaken both the provisions of the existing cetacean bycatch legislation and the Commission's original proposal. The bycatch measures adopted for cetaceans are not sufficient to mitigate bycatch effectively in European waters. Management solutions to reduce bycatch are identified and a number of general recommendations towards development of national and regional management plans, implementation and enforcement to that end are made.

1. Introduction

For decades, cetacean bycatch has been a major conservation and welfare concern in the European Union with high numbers of harbour porpoises, dolphins and whales dying each year. Despite binding legal requirements to reduce and monitor bycatch, cetacean bycatch monitoring has been insufficient in most fisheries and areas to generate reliable estimates of bycatch rate [1–6]. Measures to reduce bycatch have been limited and not always directed at the most problematic fisheries.

EU cetacean bycatch legislation (Council Regulation (EC) No. 812/2004) has been found to have significant weaknesses [4,6–11] and in April 2019 the European Parliament plenary voted for Regulation 812/2004 to be repealed, and approved a new replacement Regulation,

Regulation on the conservation of fishery resources and the protection of marine ecosystems through technical measures (2019/1241) (hereafter referred to as the *Technical Conservation Measures (Technical Measures Regulation)*).¹ The Technical Measures Regulation combines about 30 pieces of fisheries conservation legislation that determine the conditions under which fishermen may fish, including the incidental catches of cetaceans in fisheries (previously covered by Regulation 812/2004).

Whilst undergoing amendment, the draft Technical Measures Regulation provided the opportunity to improve bycatch mitigation requirements and to help safeguard European cetacean populations. However, whilst some improvements have been made, it is believed that this opportunity to tackle bycatch comprehensively and effectively has been missed. Rather than providing the critically needed strengthening of the European Commission's proposal² adopted in March 2016, based

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on the scientific advice of the ICES Bycatch Working Group, and other expert regional bodies, such as ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas) and ACCOBAMS (Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area), some of the measures in the adopted Technical Measures Regulation weaken both the provisions of the previous cetacean bycatch legislation and the Commission's original proposal. We believe that the bycatch measures adopted for cetaceans are not sufficient to mitigate bycatch effectively in European waters.

Based on the authors' assessment of previous versus new bycatch measures in European law and the application of technical bycatch mitigation measures, the key strengths and weaknesses of the Technical Measures Regulation, adopted by European Parliament Plenary vote, are identified here.

1.1. Technical measures in the new regulation that might strengthen European bycatch mitigation

Firstly, the Regulation includes an explicit obligation to ensure bycatch of sensitive species is minimised and where possible eliminated (Article 3); which is consistent with the ASCOBANS aspiration towards zero bycatch.

The Regulation includes a requirement for new or updated technical measures to be applied at the regional level to high risk fisheries and to be at least equivalent to the existing measures with regards to achieving these objectives, and the obligation for Member States to submit joint recommendations for new or updated measures within a clear timeframe (Article 18), as well as additional criteria to be met by such measures (Articles 20–26).

It includes a requirement for Member States to provide information on the effectiveness of existing mitigation measures and monitoring arrangements with respect to bycatch of sensitive species, including cetaceans, seabirds and sea turtles, and to submit joint recommendations for additional mitigation measures for the reduction of incidental catches of these species (Annex XIII).

The measures provide a legal basis to address cetacean bycatch in other ways. For example, they allow for 'the creation of real-time closures in conjunction with moving-on provisions as an additional measure for the protection of sensitive species (Article 19)'.

By 31 December 2020, and every third year thereafter, the Commission should report to the European Parliament and to the Council on the implementation of the Technical Measures Regulation, on the basis of information supplied by Member States and the relevant Advisory Councils and following evaluation by the Scientific, Technical and Economic Committee for Fisheries (STECF). That report should assess the extent to which technical measures both at regional level and at Union level have contributed to achieving the objectives and reaching the targets of this Regulation. Sensitive species bycatch will be a component of the first review.

1.2. Technical measures that seem likely to weaken European bycatch mitigation

The agreed target thresholds for tackling bycatch of sensitive species are not clearly defined in the regulation, referring to managing species to levels agreed under Union legislation. Current population monitoring and monitoring of bycatch is inadequate to obtain robust estimates for individual bycatch rates for each cetacean population. As such, it is difficult to demonstrate the level of impact, and it is particularly difficult to demonstrate where bycatch within a particular fishery is having a population level effect even if thresholds have been set for affected species. This uncertainty in the data appears to provide Member States with the opportunity to continue to avoid taking necessary mitigation action.

The agreed process for adopting new or updated measures through

regionalisation depends on Member States reaching unanimous agreement when submitting a joint recommendation. This means that if no such agreement is reached or Member States do not take the initiative to propose effective measures, nothing will change, and the new framework will fail to meet its objectives, so its success will depend heavily on the level of ambition demonstrated by the Member States. Further, joint recommendations are somewhat undermined by a more generic statement in the main text of the regulation: "Member States should have the possibility to develop joint recommendations for appropriate technical measures that differ from these baselines in accordance with the regionalisation process set out in Regulation (EU) No 1380/2013, based on scientific evidence". We note that joint recommendations regarding fisheries regulations have been notoriously difficult to achieve so far, and mostly have resulted in the adoption of the weakest recommendation of the involved Member States. On the other hand, the Regulation ensures regional appropriateness and not the historic one size fits all. The Commission can step in and bring forward proposals if it considers insufficient progress is being made. The STECF will review joint recommendation proposals before they are finalised.

Annex XIII (2) states 'Member States shall take the necessary steps to collect scientific data on incidental catches of sensitive species' and there are further monitoring requirements under the EU Data Collection Framework (DCF). However the previous requirement for dedicated observer schemes on some types of vessels in some regions, under regulation 812/2004, has been lost.

There is no requirement under 2019/1241 for Member States to report on the implementation of measures, whereas annual reporting was required under regulation 812/2004. Monitoring under the DCF has implications on the quality of data collected. The quality of data on cetacean bycatch will be reduced as observers are expected to multi-task and will likely prioritise data collection on target commercial fish species. This could have significant negative implications on the availability of robust annual data to compile population-based bycatch risk assessments.³ Independent scientific evaluation of Member State implementation of bycatch legislation is essential.

1.3. Proposals that could have enhanced bycatch mitigation but that were not taken Up

The Commission proposal to require the use of Acoustic Deterrent Devices (ADDs) in Area VIa (West of Scotland), ICES sub-areas VIII and IXa (South West waters), the Mediterranean and Black Seas was not taken up. Although robust mitigation measures beyond the use of ADDs should be applied as appropriate (see the discussion below in the section 'Identifying management solutions to reduce bycatch'), as it stands, this has resulted in an unbalanced approach to mitigation in different ocean basins.

European Parliament Amendments for the extension of bycatch mitigation measures to a more appropriate range of fishing gear types, including *static net, driftnet, pelagic trawl, high vertical opening trawl or other fisheries where monitoring identifies bycatch*, were not taken up.

A proposal to prohibit the deployment of gears known to have a high risk of cetacean bycatch, as appropriate (e.g. bottom set gillnet, driftnet, entangling net or high vertical opening trawl) without the use of proven mitigation technology, in line with the recommendations made by ASCOBANS to the European Commission in 2016 were not taken up.

There is a general obligation to 'minimise, and where possible, eliminate' bycatch in the new regulation, but no details are provided as to how to achieve that, in order to allow for regionally appropriate approaches. The primary obligation to set standards is now left to individual Member States, and given the current inadequate level of monitoring, it remains near impossible to determine whether any mitigation measures in place are working. Given the current poor track

³ <https://www.ices.dk/community/groups/Pages/WGBYC.aspx>

record for the implementation of bycatch measures, Member States have demonstrated moderate-poor implementation of regulation 812/2004 [4–6,9–11]. This is of some concern. Now that the Technical Measures legislation has been adopted, it can only be implemented effectively if the European Member States provide relevant joint solutions as soon as possible, in particular with regard to the bycatch of marine mammals, seabirds and marine turtles.

1.4. Identifying management solutions to reduce bycatch

ASCOBANS and the International Whaling Commission (IWC) Scientific Committee have identified the failings in European laws, and solutions to protect cetaceans in European waters from bycatch, most recently in the ASCOBANS common dolphin action plan [12] and IWC Scientific Committee report [13]. A legal complaint focused on the breaches of Article 12 of the EU Habitats Directive by 15 Member States and two further documents requesting ‘emergency measures’ under Articles 11(4) and 12 of the Common Fisheries Policy for the North East Atlantic common dolphin and Baltic Proper harbour porpoise were formally submitted to the European Commission by conservation and welfare charities in July 2019. These documents identified the management failings of Member States and the required solutions to tackle cetacean bycatch. ICES experts provided formal advice [14] to the European Commission in response to the NGO emergency measures request, in May 2020. Subsequently, the Commission announced steps to be taken against France, Spain and Sweden in their July 2020 Infringement Package⁴ for non-compliance with Habitats Directive (Council Directive 92/43/EEC) requirements, and the Commission has stated that action against other Member States is being considered, in correspondence to the lead author. Engagement has been initiated by the Commission with Member States and through Regional Advisory Groups to deal with the emergency measures requests through joint recommendations (DG MARE, personal communication). The new EU Environment Commissioner, Virginijus Sinkevičius, has committed to fully applying the EU Habitats Directive and Common Fisheries Policy in addressing cetacean and other species bycatch.⁵

Working in partnership with fishers and fisheries stakeholders is central to successful bycatch mitigation efforts. Fishers do not want to catch cetaceans, but they may need to be convinced about the value of providing accurate data on bycatch and for implementing management approaches particularly when there is a cost involved and when monitoring and mitigation measures may impact on their daily work. Ongoing stakeholder outreach and collaboration at grassroots level are central to successful efforts to assess and reduce bycatch. Member States need to apply adequate resources to enable the achievement of meaningful bycatch reductions.

A review of existing cetacean bycatch mitigation methods was recently undertaken, covering methods such as reduction of fishing effort, closed areas, ADDs, fishing gear modifications and alternative gears and reducing gear loss (or gear discarding) [15]. While ADDs have been the principal method stipulated by EU legislation, it is crucial that mitigation does not solely rely on ADDs, as these are not proven to be effective for many species and only apply to certain gear types. Furthermore, they may exclude animals from habitats upon which they critically depend. Hence, there should be continual development of alternative gear and species and gear-specific mitigation as appropriate and, importantly, ongoing monitoring of the efficacy of all mitigation methods applied, including to understand issues surrounding habituation. Where measures do not result in reductions in bycatch, Member States should introduce additional or alternative mitigation, or spatial-temporal measures, based on scientific advice.

Robust mitigation is needed to continually reduce cetacean bycatch

in European waters. We urge that a toolbox of mitigation approaches be developed, coordinated, and implemented through regional fora, and at the European Member State level, working closely with cetacean and fisheries experts.

2. Conclusions & recommendations

Current measures to protect cetaceans in European waters from bycatch are inadequate in themselves, and they are poorly implemented (e.g. [1–5]), as most recently detailed in a scientific review of regulation 812/2004 [6].

As a matter of urgency, Member States need to implement scientifically robust management measures to continually reduce bycatch, with enforcement and assessment of effectiveness and compliance. This is the highest priority for those fisheries identified as having a likely population level impact and, in turn, will reduce the number of individuals suffering welfare impacts. To meet the requirements of regulation 2019/1241 to ‘minimise and where possible eliminate’ sensitive species bycatch, prevention of bycatch should include all measures known to be effective.

As a priority, management plans and measures are urgently required for the following populations:

- Harbour porpoise: Baltic Proper [17], Iberian Peninsula [18], Celtic Sea [18], English Channel [19], Black Sea [20]
- Common dolphin: Bay of Biscay, Celtic Sea [21]
- Bottlenose dolphin: Andalusia [11]
- Humpback and minke whale: Scottish waters [22]
- Strait of Gibraltar orca [23].
- Mediterranean sperm whale (Notarbartolo di Sciarra, personal communication).

Additionally, Member States need to implement scientifically robust bycatch monitoring schemes to include mandatory monitoring covering a predetermined percentage of the fleet using dedicated independent observers and/or electronic monitoring (REM), regardless of vessel size. Curtis and Caretta [16] caution that rare species interactions may not be documented in many observer programmes and should be anticipated through a complementary risk assessment approach. More detailed monitoring of fishing effort (including calculated areas swept by trawls and/or soak durations for specified lengths of nets); mandatory reporting of all bycatch by fishers; and monitoring and mitigation enforcement in all EU waters, and where the EU fleet operates elsewhere, are urgently required.

STECF [6] considers that the Regional Coordination Groups (RCGs) should set up a regional work plan under the DCF that ensures adequate coverage and monitoring of fisheries. This seems like a logical and transparent approach alongside national measures.

Fishing licences or permits should be suspended for vessels/fishers that deny access to dedicated observers or REM. Alternatively, vessels/fishers who comply with the obligation might receive a commercial incentive (e.g. to be allowed a higher quota, sell their catch at a higher price, or under some ‘transparent fisheries’ label).

Finally, and as a priority, Member States should be compelled to act. There is an urgent need for the enforcement of Member States’ legal requirements relating to cetacean bycatch that has been lacking to date. Robust enforcement of existing legislation would save many thousands of cetaceans every year.

Funding

The first author was funded by Whale and Dolphin Conservation.

CRedit authorship contribution statement

All authors were responsible for conceptualisation through the 3 year

⁴ https://ec.europa.eu/commission/presscorner/detail/en/inf_20_1212

⁵ https://ec.europa.eu/commission/presscorner/detail/en/statement_20_328

legislative process. The lead author produced the original draft of the manuscript, and co-authors provided review and editing to strengthen the manuscript.

Acknowledgements

With thanks to Jamie Rendell and Vincent Ridoux for comments on a draft manuscript and to two anonymous reviewers and the journal editor for comments that improved the submitted manuscript. Thanks also to Fiona Read for assistance with development of policy.

References

- [1] ICES. Report of the Workshop to Evaluate Aspects of EC Regulation 812/2004 (WKREV812). (2011), 67 pp. Available online at: (http://www.ascobans.org/sites/default/files/document/ICES_WKREV812_final-updated_2011.pdf).
- [2] S. Northridge. An Overview of The State of Bycatch Monitoring and Mitigation Measures Being Implemented in European Fisheries. Paper Presented to the International Whaling Commission, SC/63/SM21 (2011).
- [3] G. Desportes. Interim Report on the Implementation of the ASCOBANS Conservation Plan for Harbour Porpoises – 6, with focus on progress in implementation of Action 2 and 4. ASCOBANS AC22/Doc. 2.2: 22–57, (2014), 38 pp.
- [4] ICES. Bycatch of Small Cetaceans and Other Marine Animals – Review of National Reports under Council Regulation (EC) No. 812/2004 and other information, (2016) Available online at: (https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/Protected_species_bycatch.pdf).
- [5] F.L. Read, P.G.H. Evans, S.J. Dolman. Cetacean bycatch Monitoring and Mitigation under EU Regulation in the Northeast Atlantic, North Sea and Baltic Sea. A WDC Report, (2017), 76 pages.
- [6] STECF. Scientific, Technical and Economic Committee for Fisheries (STECF) – 61st Plenary Meeting Report (PLEN-19–02). Publications Office of the European Union, Luxembourg, (2019), 105 pages.
- [7] European Commission. Communication from the Commission to the European Parliament and the Council-Cetacean incidental catches in Fisheries: report on the implementation of certain provisions of Council Regulation (EC) No 812/2004 and on a scientific assessment of the effects of using in particular gillnets, trammel nets and entangling nets on cetaceans in the Baltic Sea as requested through Council Regulation (EC) No 2187/2005, (2009), 9 pp. Available online at: (<http://eur-lex.europa.eu/procedure/EN/198455>).
- [8] European Commission. Communication from the Commission to the European Parliament and the Council on the Implementation of Certain Provisions of Council Regulation (EC) (No812/2004) Laying Down Measures Concerning Incidental Catches of Cetaceans in Fisheries and Amending Regulation (EC) (No88/98), (2011), 9 pp. Available online at: (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0578:FIN:EN:PDF>).
- [9] ICES. Request from EU Concerning Monitoring of bycatch of Cetaceans and other Protected Species, (2013), 4 pp. Available online at: (https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/Special%20requests/EU_bycatch%20of%20cetaceans%20and%20other%20protected%20species.pdf).
- [10] ICES. Bycatch of Small Cetaceans and Other Marine Animals – Review of National Reports under Council Regulation (EC) No. 812/2004 and other published documents, (2014), 8 pp. Available online at: (https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/Bycatch_of_small_cetaceans_and_other_marine_animals.pdf).
- [11] ICES. Bycatch of Small Cetaceans and Other Marine Animals – Review of National Reports under Council Regulation (EC) No. 812/2004 and other published documents, (2015). Available online at: (https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/Bycatch_of_PETS_Advice_2015.pdf).
- [12] ASCOBANS. Species Action Plan for the North-East Atlantic Common Dolphin (*Delphinus delphis*), 2019, 72 pages. Available online at: (https://www.ascobans.org/sites/default/files/document/ascobans_common-dolphin-sap_aug2019_0.pdf).
- [13] IWC. Report of the Scientific Committee. Annex G. Bycatch and Ship strikes, 2020, Available online at: (<https://archive.iwc.int/pages/view.php?ref=17766&k=>).
- [14] ICES.EU Request on Emergency Measures to Prevent bycatch of Common Dolphin (*Delphinus delphis*) and Baltic Proper Harbour Porpoise (*Phocoena phocoena*) in the Northeast Atlantic. ICES Special Request Advice, 2020, Available online at: (https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2020/Special_Requests/eu.2020.04.pdf). Last accessed on 17/7/2020.
- [15] R. Leaper, S. Calderan. Review of Methods Used to Reduce Risks of Cetacean Bycatch and Entanglements. Submitted to the Convention of Migratory Species 2017. UNEP/CMS/COP12/Inf.15, (2017), 28 pp. Available online at: (http://www.cms.int/sites/default/files/document/cms_cop12_inf.15_cetaceans-bycatch-mitigation_e.pdf).
- [16] K.A. Curtis, J.V. Carretta, ObsCovgTools: assessing observer coverage needed to document and estimate rare event bycatch, *Fish. Res.* 225 (2020), <https://doi.org/10.1016/j.fishres.2020.105493>.
- [17] R.L. Brownell, R.R. Reeves, A.J. Read, B.D. Smith, P.O. Thomas, K. Ralls, M. Amano, P. Berggren, A.M. Chit, T. Collins, R. Currey, M.L.L. Dolar, T. Genov, R. C. Hobbs, D. Krebs, H. Marsh, M. Zhigang, W.F. Perrin, S. Phay, L. Rojas-Bracho, G. E. Ryan, K.E.W. Sheldon, E. Slooten, B.L. Taylor, O. Vidal, W. Ding, T.S. Whitty, J. Y. Wang, Bycatch in gillnet fisheries threatens critically endangered small cetaceans and other aquatic megafauna, *Endanger. Species Res.* 40 (2019) 285–296, <https://doi.org/10.3354/esr00994>.
- [18] North Atlantic Marine Mammal Commission and the Norwegian Institute of Marine Research. *Report of Joint IMR/NAMMCO International Workshop on the Status of Harbour Porpoises in the North Atlantic*. Tromsø, Norway, 2019, Available online at: (https://nammco.no/wp-content/uploads/2020/03/finalreport_hpws_2018_rev2020.pdf).
- [19] S. Calderan, R. Leaper. Review of Harbour Porpoise bycatch in UK Waters and Recommendations for Management. A WWF report, 2019, Available online at: (https://www.wwf.org.uk/sites/default/files/2019-04/Review_of_harbour_porpoise_in_UK_waters_2019.pdf).
- [20] A. Birkun, S. Northridge, E. Willsted, F. James, C. Kilgour, M. Lander, G. Fitzgerald. Studies for carrying out the common fisheries policy: adverse fisheries impacts on cetacean populations in the Black Sea. Final report to the European Commission. European Commission, Brussels, 2015.
- [21] H. Peltier, M. Authier, R. Deaville, W. Dabin, P.D. Jepson, O. van Canneyt, P. Daniel, V. Ridoux, Small cetacean bycatch as estimated from stranding schemes: the common dolphin case in the northeast Atlantic, *Environ. Sci. Policy* 63 (2016) 7–18, <https://doi.org/10.1016/j.envsci.2016.05.004>.
- [22] E. MacLennan, R. Leaper, S.J. Dolman. Interim Report from the Scottish Entanglement Alliance (SEA) on Previously Undocumented Fatal Entanglements of Minke Whales (*Balaenoptera acutirostrata*) in Scottish inshore waters. Paper Presented to International Whaling Commission, SC/68A/HIM/02, 2019, Available online at: (https://archive.iwc.int/pages/view.php?search=&k=c42ed0962e&modal=&display=list&order=by=resourceid&offset=0&per_page=240&archive=&sort=DESC&restypes=&recentdaylimit=&foredit=&ref=12063).
- [23] H. Herr, P. Burkhardt-Holm, K. Heye, U. Siebert, J. Selling, Injuries, Malformations, and Epidermal Conditions in Cetaceans of the Strait of Gibraltar, *Aquat. Mamm.* 46 (2020) 215–235, <https://doi.org/10.1578/AM.46.2.2020.215>.