

Welfare considerations in cetacean bycatch

ACCOBAMS-ASCOBANS Joint Bycatch Working Group

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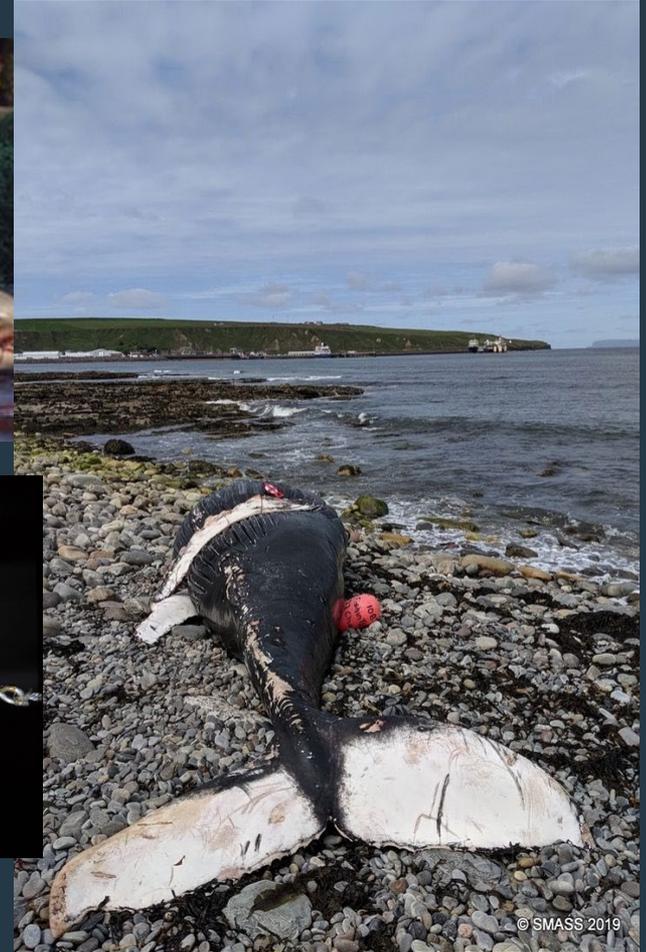
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WHALE AND
DOLPHIN
CONSERVATION

WDC

Welfare contribution to effective conservation actions



Harbour porpoise in gillnet © WDC, northern fulmar © RSPB; grey seal @ BDMLR
common dolphin on deck © WDC, humpback whale in creel © SMASS

Bycatch injuries that lead to death

The Animal Welfare Implications of Cetacean Deaths in Fisheries



Carl D. Soulsbury, Graziella Iossa and Stephen Harris
2008

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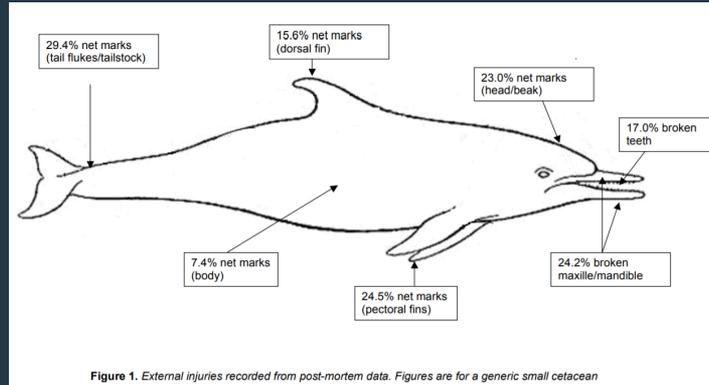


Figure 1. External injuries recorded from post-mortem data. Figures are for a generic small cetacean

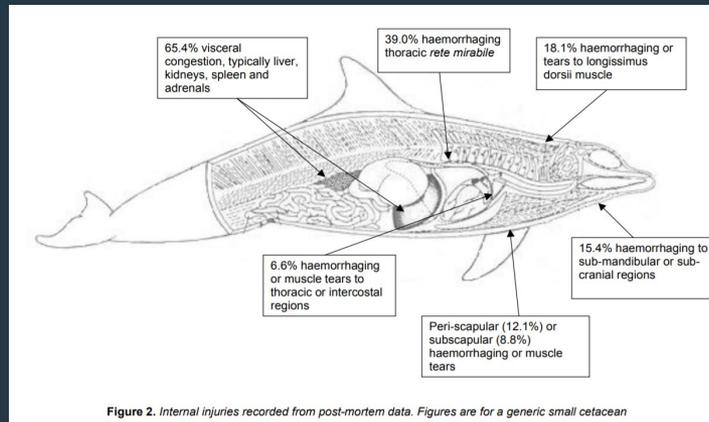
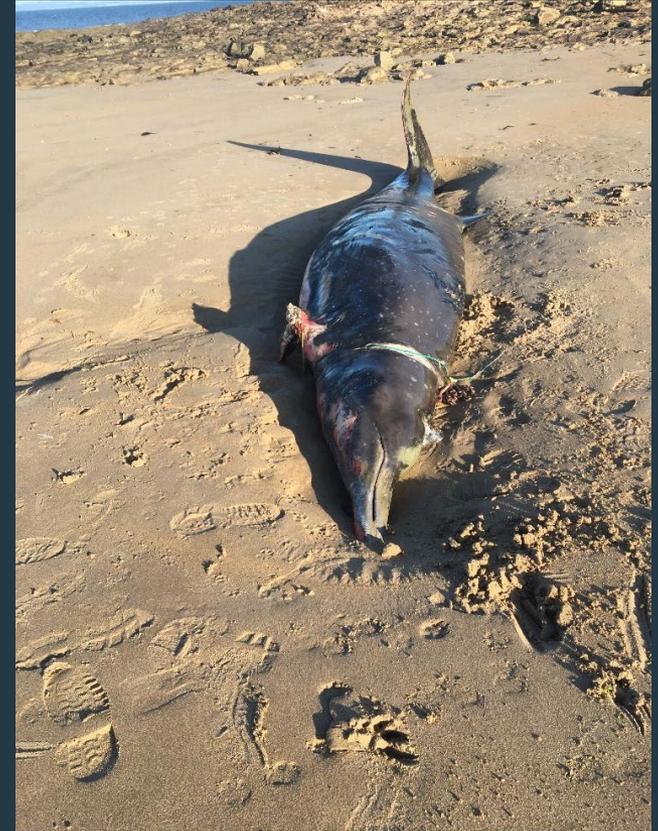


Figure 2. Internal injuries recorded from post-mortem data. Figures are for a generic small cetacean



Poor welfare is more than physical injuries suffered

- In addition to physical compromise - pain, reduced capacity through being 'sick', debilitated, emaciated
- Stress can lead to organ & cardiac injury/damage (Cowan and Curry, 2002)
- Removal of key individuals may cause breakdowns in social structure



Implications of social & behavioural factors

- Multiple factors act in concert to inhibit recovery of odontocete pops
- Social disruption, loss of social knowledge (lost wisdom), fragmentation of social units (e.g. allomaternal care) are nonlinear & unpredictable
- “Exploitation has effects beyond the dynamics of individual removals”
- “Lack of strong recovery in heavily exploited odontocete populations indicates that management should be more precautionary”
- Cautionary point interaction between poor welfare & impact on pops.
- Long-term impacts to changes in social structure?



Handling of bycaught cetaceans



- Reduce immediate mortality
- Minimise injury that results in delayed mortality
- Reduce stress that can lead to death

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ESR Special: Marine vertebrate bycatch: problems and solutions

REVIEW

Safe handling practices to increase post-capture survival of cetaceans, sea turtles, seabirds, sharks, and billfish in tuna fisheries

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ABSTRACT: Incidental capture of marine animals in fishing gear may cause immediate or delayed mortality due to injury. Increasing post-capture survival of these species is very important to reducing the widespread impacts of bycatch, particularly on protected and threatened populations. In this paper, we review recent literature on safe handling of sea turtles, cetaceans, seabirds, sharks, and billfish and summarize the most effective measures for improving survivability of these species after interactions with gillnet, pelagic longline, and purse seine gear. We also review the current tuna Regional Fishery Management Organization (RFMO) measures on safe handling and release to identify gaps in implementation of safe handling practices. Strategies that increase post-capture survival of marine species can be grouped into 3 primary categories: reducing immediate mortality, minimizing injury that results in delayed mortality, and reducing stress that can lead to death. Routine training of fishermen on safe handling practices greatly improves the effectiveness of these measures. When bycatch does occur, the strategies to increase post-release survival become key for protecting vulnerable marine populations. This review highlights the most successful strategies that can be adopted by the RFMOs to improve the effectiveness of their safe handling practices.

GUIDELINES FOR THE SAFE AND HUMANE HANDLING AND RELEASE OF BYCAUGHT SMALL CETACEANS FROM FISHING GEAR

CMS Technical Series Publication No. 43



Intervention success: post-release survival?

- One quarter of cetaceans from historical and contemporary cetacean entanglement records from Australia's EEZ reported to have survived entanglement, through intervention or self-release from fishing gear (Tulloch et al., 2020)
- Developing diagnostic tools - criteria to assess bycatch: findings related to drowning, contact with or hauling of the net, disentanglement of bycaught animals (de Quirós et al., 2017; IJsseldijk et al., 2020)
- Dolphins that were hauled out alive suffered additional trauma during handling, and some that were released alive, became stranded and died because of the interaction (Puig Lozano et al., 2020)

Intervention success: post-release survival?

- Little is known about post-release physiology, reproduction & survivorship
- How many cetaceans are released alive?
- How many of those released suffer poor welfare? how many will thrive?
- Poor welfare alone is a concern and numbers needs to be better understood
- Potential scale of those released alive but in poor welfare might have a bearing on population conservation

Tuna purse seine fishing & bycatch in the ETP

- 100,000s spotted & spinner dolphins bycaught yr → <1000
- Less dolphins are killed
- Still chased, set on & released
- Individuals interact 2-50x per year
- No evidence of population recovery
- Uncertainty about cryptic impacts: mother calf pair separation, lowered birth rates from disrupted mating systems, increased predation
- Effects go beyond bycatch alone (Gerrodette & Forcada, 2005)



Are we underestimating bycatch impacts?

- Use diagnostic tools as standard practice
- Understand and account for sub-lethal impacts
- Animal welfare measurements can be made to allow better understanding of wider impacts
- Address bycatch more rapidly when considering welfare than when considering conservation alone



ASCOBANS bycatch conservation objective

“the general aim should be to minimise (i.e. to ultimately reduce to zero) anthropogenic removals within some yet-to-be-specified time frame, and that intermediate target levels should be set” (Res.3.3 and Res.5.5)



- Bycatch ‘targets’ better described as *limits*
- No bycatch should be allowed to exceed the limit
- Bycatch measures should be required below this limit
- In this way, we can deal with welfare & population concerns

Conclusions & recommendations

- Bycatch would not be acceptable if it were happening on land: consumers, retailers
- Welfare standards would benefit industry
- Welfare assessment: 5 domains (e.g. IWC, 2016)
- Welfare should be part of decision making
- Poor welfare alone is a concern and needs to be better reported
- Potential scale of those released alive but in poor welfare and impacts for conspecifics might have a bearing on population conservation
- Measures are required below any limit to continually reduce bycatch
- Given all the unknowns, precaution is needed

Thank you!



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