

Supplementary Material S1: Collision parameters discussed in the literature.

Various solutions to avoid whale collision are discussed in the literature. These studies are rarely as complete as the one we can find on land studies, e.g., on car-wildlife collisions. Indeed, if recurrent parameters are discussed in the literature, they are rarely discussed at the same time. A bibliometric analysis was performed to highlight the lack of an interdisciplinary approach in whale collision literature.

Method

Selection of Articles

The following rules were applied to the analysis:

- 1) Selected articles only related to the collisions. Multi-threat articles were excluded.
- 2) The attribution of a parameter to an article was made if an article brought new information to the subject about this parameter. Exceptions were made when new information was brought to a parameter using old information from another parameter originating from another article. In this case, the two parameters were attributed to the article because of the interdisciplinary approach.
- 3) The time scope of the study was from January 2000 to March 2018.

Selection of parameters

PARAMETER CODE	PARAMETER	DEFINITION	EXAMPLES
P1	Collision assessment	Parameter includes articles studying the actual risk of collision, either through ship traffic vs. whale density models or through the assessment of the number of deaths (e.g., stranding) or injured whales (through photo-identification).	[1–3]
P2	Solutions/Control Measures (RCM)	Parameter includes articles studying the implementation of a solution to avoid whales collision. Any article discussing (and not just mentioning) a solution can belong in this parameter, even if they do not provide information on the other parameters (P1, P3, P4, P5, P6)	[4–6]
P3	Risk reduction	Parameter includes articles studying the risk reduction of an RCM.	[7–9]
P4	Cost and Benefit	Parameter includes articles studying the cost and benefit of an RCM.	[10–12]
P5	Voluntary or mandatory	Includes articles studying the voluntary or mandatory implementation of a RCM.	[13–15]
P6	Compliance	Articles studying the compliance or the willingness to act of the shipping industry.	[16–18]

Results

Selected articles

A total of 222 articles were extracted from the Scopus database. Each article was studied in order to identify their contribution to the parameters. Some relevant “grey literature” were added. Given the broad scope of key-words chosen and the strict rules of the study, the false positive rate was high (45%) and only 99 articles were included for analysis.

Connectivity between parameters

Of the 99 articles selected, nearly half address only one parameter. The proportion of articles addressing 2 or 3 parameters is also high. On the contrary, articles that address more than 3 parameters are in the minority (10%).

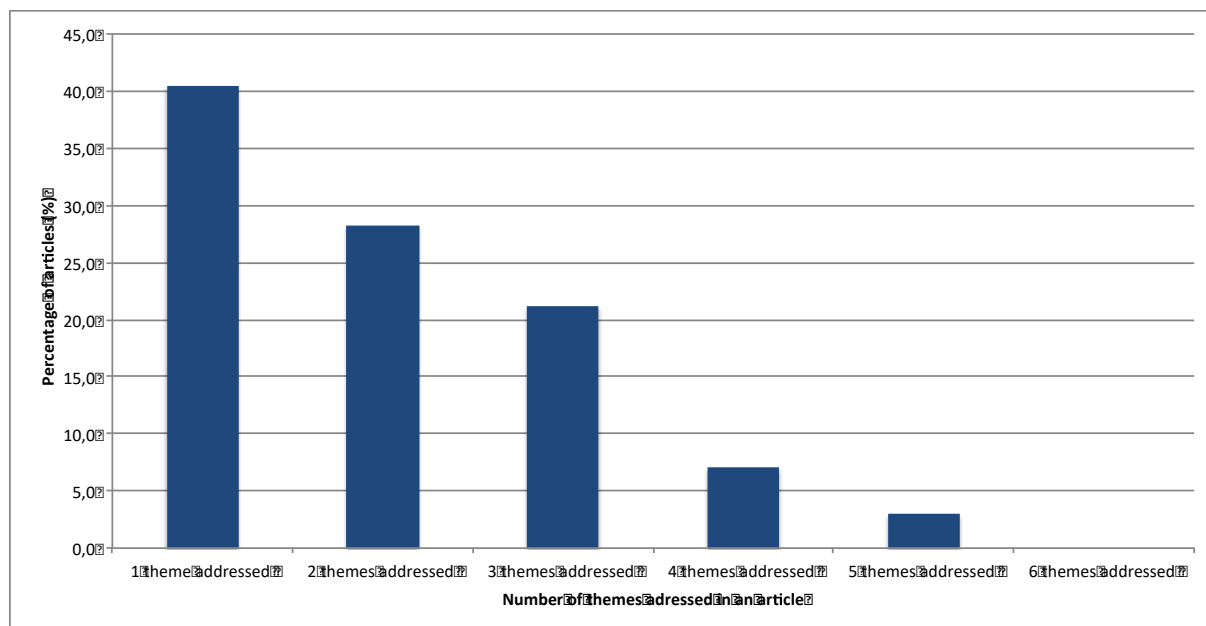


Figure S1: Proportion of themes processed in the literature. *No color should be used in print*

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