

INTERNATIONAL ASSOCIATION OF ANTARCTICA TOUR OPERATORS

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IAATO is a member organization founded in 1991 to advocate and promote the practice of safe and environmentally responsible private-sector travel to the Antarctic.

IAATO 2019 ~ Cape Town

Proposal for Whale Strike Mitigation Measures for the 2019-20 Season

Background

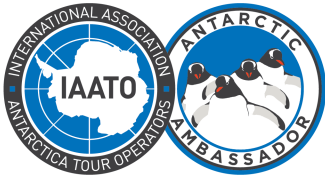
During the 20th century, unchecked commercial whaling dramatically reduced whale populations throughout the Southern Ocean, driving many species to the brink of extinction. The international community has long since recognised the importance of protecting whales in the Southern Ocean, with the International Whaling Commission (IWC) specifically prohibiting commercial whaling through a moratorium on commercial whaling in 1982 and the establishment of the Southern Ocean Whale Sanctuary in 1994.¹

The Southern Ocean is critical habitat for most of the southern hemisphere's great whale populations. Critical habitats for whales include areas used for feeding, breeding, raising offspring, socialising and migrating. They are areas "essential for day-to-day survival, as well as for maintaining a healthy population growth rate".³

Nearly all humpback whale populations in the southern hemisphere are recovering, some at rates near their biological maximum. While there is a great need to update the estimated abundance of humpback whales around the Antarctic Peninsula, there is little doubt that their numbers have been increasing quickly based on molecular genetic data and recent information on increased pregnancy rates of females.²

This is great news. From an IAATO perspective, the enjoyment of whales is just one of many reasons that people travel to the Antarctic. However, increasing numbers could present a challenge for the IAATO fleet. Death or injury to whales from vessel strike is one of the primary threats to whale populations worldwide. This is a result of vessels and whales co-occurring in 'high-risk areas', identified by the IWC as being areas where there are high concentrations of whales (e.g known aggregation areas for feeding or breeding), or where there are high volumes of shipping (e.g. shipping lanes or port areas)⁴. IAATO vessels have reported nine ship strikes since 2001.

It is both an Antarctic Treaty System and IAATO requirement that IAATO activities have less than a minor or transitory impact on the Antarctic environment. IAATO is a trusted and valued Antarctic stakeholder thanks to its demonstrated commitment to safe, environmentally responsible travel. Concerns about the impact of Antarctic shipping on



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whales, including in the context of tourism growth, have been raised at the Antarctic Treaty Consultative Meeting, by the science community and NGOs. Further, the spotlight on our industry is stronger than ever; reputational damage resulting from any negative publicity about IAATO's impact on whales will bring the industry into question.

IAATO needs to take a decisive stance now to not only protect the environment in which we operate, but also the reputation of our special industry.

Proposal history

At IAATO 2018, Ted Cheeseman (Happywhale/Cheesemans' Ecology Safaris) proposed that, from January through May on the Antarctic Peninsula, IAATO adopt a voluntary speed limit of 10 knots(kn) while traveling in the whale-rich areas of the Gerlache Strait and surrounding navigable waters. Ted stressed in his presentation to members that the single biggest thing IAATO can do to reduce risk to whales is to plan to operate at a maximum of 10kn while in the most densely populated waters of the Antarctic Peninsula.

Why 10kn? According to Vanderlaan and Taggart (2007)⁵, the probability of a collision causing a whale's death increases rapidly and in a non-linear manner as vessel speed increases; between the speeds of 9 and 20kn, the probability of collision causing a whale's death rises from 20 to 100 percent, respectively. 10kn is the speed limit adopted for mandatory limits on the US East Coast for conservation of endangered North Atlantic Right Whale.



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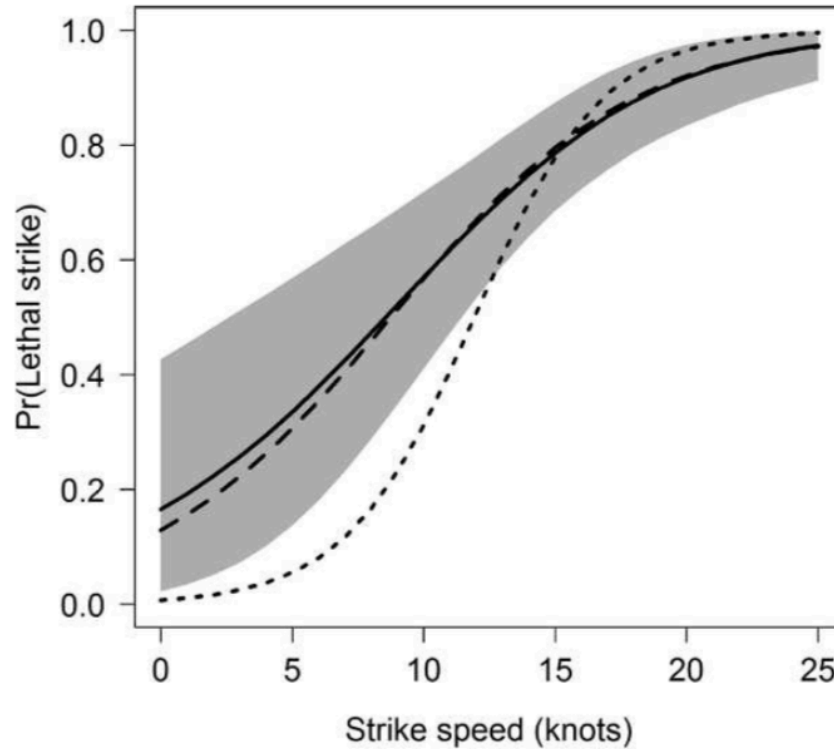
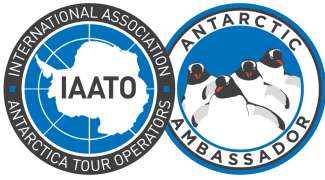


Fig. 3. Probability of a lethal whale strike given strike speed. The dashed line gives predictions from a logistic regression, the solid line gives posterior mean estimates from a Bayesian implementation of probit regression, and the dotted line gives logistic regression estimates reported by Vanderlaan and Taggart (2007). The gray area represents a 95% credible interval from the Bayesian analysis.

Below is a map of a proposed time-area vessel speed restriction.

You can also find Ted's annotated power point presented from IAATO 2018 here:
<http://bit.ly/2ldrMdg>)



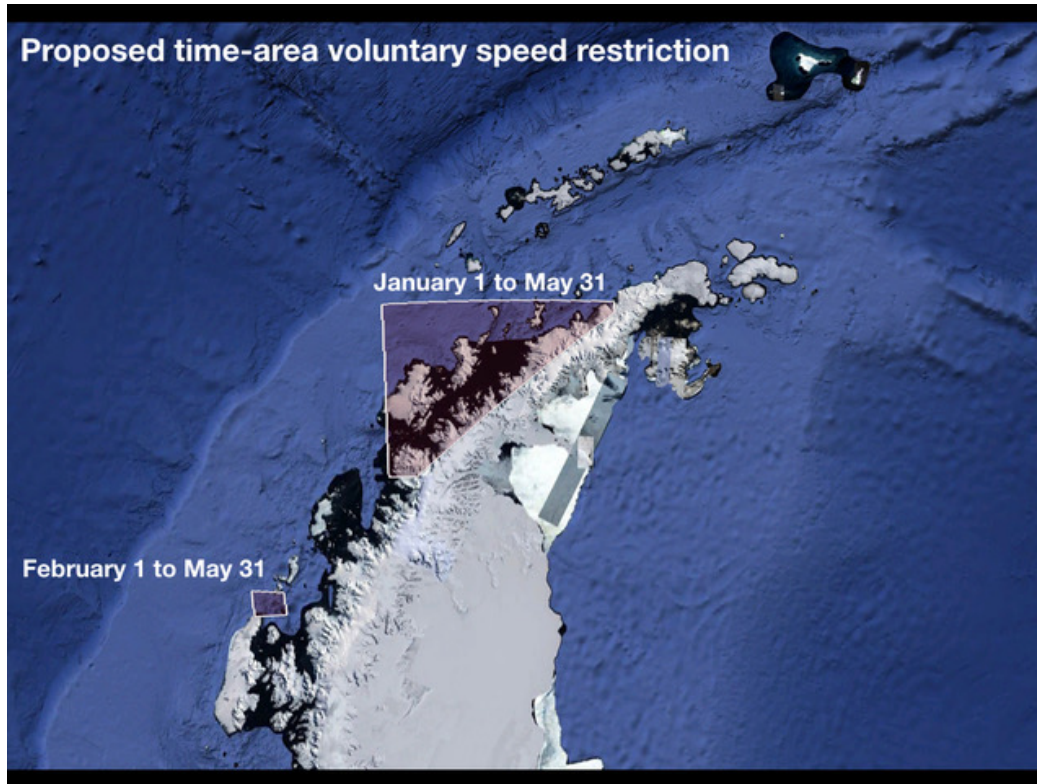
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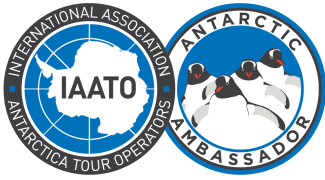
Citing unknown operational impacts and lack of information to make an informed decision at IAATO 2018, the decided path forward was to invite Operators to voluntarily take part in the proposed whale strike mitigation action. This would allow for more information to be collected, and for Operators to assess this proposal and how it might affect their operations in the Antarctic. The Operators who did take part were then to report back to Ted and IAATO as to whether the speed limit was operationally feasible. Three IAATO Operators took part in the study during the 2018-19 season and reported back they saw no change to what they could offer on their itineraries by moving at the proposed 10kn. Of note, however, is that the Operators who volunteered already mainly operated their vessels at approximately 10kn while in Antarctica, regardless of this proposal.

Proposal for 2019-20 Season

For the 2019-20 season, IAATO Operators are asked to commit to one of the following:

1. A 10kn speed restriction within the Geofenced time-area proposed.

*This excludes emergency or other extenuating circumstances.



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OR for IAATO Operators who have a whale strike mitigation training program:

2. An extra watchman on the bridge for the sole purpose of being on whale lookout within the Geofenced time-area proposed. Appropriate records of this action must be recorded in the ship's log.

Whilst this is a voluntary measure, it is expected all IAATO Operators will participate by taking one of these two actions during the 2019-20 season.

IAATO must take action now if we are to mitigate the likelihood and severity of ship strikes without setting up a situation of conflict between our operational success and the safety of the Antarctic environment. By acting now, we demonstrate to Treaty Nations and the greater public that IAATO is a role model for self-regulation and protecting the Antarctic environment.

References:

¹Friedlaender, A. et al (2018). Whales of the Antarctic Peninsula: Science and conservation for the 21st century.

² Lavery, T. (2014). Whales sustain fisheries : Blue whales stimulate primary production in the Southern Ocean.
doi:10.1111/mms.12108

³ Roman, J. et al (2014). Whales as marine ecosystem engineers. Front. Ecol. Environ.12, 377–385 (2014).

⁴. Cates, K, et al (2017). Strategic Plan to Mitigate the Impacts of Ship Strikes on Cetacean Populations: 2017-2020. <https://iwc.int/ship-strikes>

⁵ Vanderlaan, S et al (2007). Vessel Collisions with Whales: The probability of lethal injury based on vessel speed.
https://www.greateratlantic.fisheries.noaa.gov/protected/shipstrike/publications/vanderlaan_and_taggart_2007_speed.pdf



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Related Articles:

UN: Reducing ship strikes to vulnerable whales

<https://oceanconference.un.org/commitments/?id=21408>

Whales of the Antarctic Peninsula: Science and Conservation for the 21st Century

http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_ucsc_antarcticwhales_report2018_web_1_1_1.pdf