ACCOBAMS SURVEY INITIATIVE DATA REQUEST FORM

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REQUESTED ASI DATA:

- targeted species/object (ex. cetaceans, marine litter.)
- type of data (raw data, processed data, metadata, charts,..)
- zone and blocks of interest (ex. Adriatic sea, blocks 1-6, etc..)

Targeted species are all species of cetaceans, for all surveyed areas. What I need is final estimates of abundances, so I mostly need raw data. However, I'll use also raw data to be able to compute ratios of observation per species for estimates of undetermined species (for instance common dolphin/striped dolphin).

TITLE OF INTENDED RESEARCH WITH ASI DATA

Role of marine mammals in nutrient flows and carbon storage

SUMMARY OF THE RESEARCH PROJECT AND OBJECTIVES

The former title is the subject of my PhD. My goal is to estimate the quantity of nutrient that are excreted by cetaceans populations in broad-scale ecosystems (e.g. the Mediterranean and the North-East Atlantic, using SCANS III estimates). The idea is to do the exercise for contrasted ecosystems where large scale distance sampling surveys have been conducted, including both temperate and tropical areas. We also want to include estimates of the amount of carbon that may be stored at a definite time, in living cetaceans.

INTENDED USE OF ASI DATA, INCLUDING METHOD

We use a bioenergetic model to estimate daily needs and consumption of individuals. These quantities are then transformed in quantities of nutrients ingested thanks to prey composition data, and by applying a factor of assimilation/excretion we estimate the quantities of nutrients that are excreted. This is then applied to whole populations thanks to populations abundance estimates.

PROPONENT'S REFERENCES ON SIMILAR ANALYSES

Lavery, T. J., Roudnew, B., Gill, P., Seymour, J., Seuront, L., Johnson, G., Mitchell, J. G., & Smetacek, V. (2010). Iron defecation by sperm whales stimulates carbon export in the Southern Ocean. *Proceedings of the Royal Society B: Biological Sciences*, *277*(1699), 3527–3531. https://doi.org/10.1098/rspb.2010.0863

Lavery, T. J., Roudnew, B., Seymour, J., Mitchell, J. G., Smetacek, V., & Nicol, S. (2014). Whales sustain fisheries: Blue whales stimulate primary production in the Southern Ocean. *Marine Mammal Science*, *30*(3), 888–904. https://doi.org/10.1111/mms.12108

Roman, J., & McCarthy, J. J. (2010). The whale pump: Marine mammals enhance primary productivity in a coastal basin. *PLoS ONE*, *5*(10). https://doi.org/10.1371/journal.pone.0013255

Roman, J., Nevins, J., Altabet, M., Koopman, H., & McCarthy, J. (2016). Endangered right whales enhance primary productivity in the bay of fundy. *PLoS ONE*, *11*(6), 1–14. https://doi.org/10.1371/journal.pone.0156553

EXPECTED OUTPUTS (IE. POSTER, PAPER IN JOURNAL XX, CONFERENCE, MANAGEMENT …)

We intend to publish our results in a scientific journal but we did not identify a specific journal yet. We also wish to intend conferences, the closest one being the SMM2021, with either an oral presentation or a poster.

CALENDAR/TIME FRAME OF RESEARCH

This chapter of my PhD research should be done by the end of 2021.

PROPOSED COLLABORATION WITH ACCOBAMS (ie acknowledgment, contribution to papers, co-authorship, etc.)

Accobams will be acknowledged and reports with used estimates of abundances will be cited in all public outputs.