

TECHNICAL REPORT

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Project Title: Characterization of the habitat and human impact on dolphin ranges of Aragua coast, Venezuela. Proposal for a Management Plan for the Protection of the Coast.

Project Summary: In 2019 a photo-identification study on *Tursiops truncatus* and *Stenella frontalis* was resumed by the EGCL-IVIC on the Aragua coast. Surprisingly, a decline in *S. frontalis* sightings was found compared to 2004-2008. This decline raised concern among the villages that rely on this ecosystem for their livelihoods, and motivated our laboratory to apply for SMM funding to conduct oceanographic habitat research, a study of the anthropogenic habitat pressure and a historical study of the fisheries and to create, for the first time, a Coastal Protection Management Plan to help preserve these umbrella species, their habitat, and sympatric threatened species.

Activities carried out:

- 1) The 42 field trips were carried out according to the planned schedule.
- 2) Seven biology students were trained in sampling techniques in the sea.
- 3) For technical reasons it was not possible to measure heavy metals because the equipment was damaged; the rest of the parameters were measured throughout the study.
- 4) The presence of: boats and fishing gear ($n= 215$), solid and liquid wastes ($n= 30$), cetaceans ($n= 25$), whale sharks ($n= 15$) and seabirds ($n=24$) was recorded. From this information will derive the food and fisheries areas (MPC and FK).
- 5) Three workshops were held, one in Cuyagua, one in Cata and one for Ocumare and El Playón.
- 6) 75 surveys were conducted, at a rate of 25 per village.
- 7) The management plan is being designed with the inputs from the workshops, the surveys and later with the analyses. We project that we will be delivering it by mid-2024.
- 8) We plan to submit the papers in October 2024.

Results:

- 1) Data to build the Coastal Protection Management Plan is available and being designed.
- 2) Six students with experience in data collection.
- 3) No *Stenella frontalis* presence was recorded.
- 4) Although detailed information from the surveys will be shown in a publication, we can advance that there is a relative coincidence between two peaks of primary productivity, two peaks of sardine and herring fishing, and the absence of *Stenella frontalis*.
- 5) The above mentioned villages received prior training and outlines of expected results in order for them to understand why we collected values for the above mentioned parameters.

Conclusions:


- This study provided insight into the proximate cause of the displacement of resident *Stenella frontalis* herds.
- We believe that the depletion of small pelagic fishes displaced the mentioned species and we will publish about it in 2023.

- The combination of scientific knowledge with fishing knowledge is very useful for the study of the habitat and its species.

- From the above, fishermen and villagers have a greater knowledge of the dynamics of the coastal habitat and has increased the value of conservation.

Acknowledgements:

I greatly appreciate the help of the SMM to complement this study and I beg apologies for the delay in the delivery of the report but a new infection with Covid-19 left neurological sequelae that forced me to a prolonged rest.



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