

FINAL REPORT. Occurrence, distribution and preliminary genetic status of cetaceans in The Guajira region, Colombian Caribbean.

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The goal of this study is to determine ecological and genetic status of cetaceans in The Guajira, in order to propose management plans for this area. The Guajira region in Colombia Caribbean holds a high biodiversity and stable marine ecosystems, due mainly by upwelling during all year, which it means food for all kind of animals. However, The Guajira it is an important economic area for local government to build ports to transport coal, which could have great impact on biodiversity. Although marine mammals are distributed along the entire Colombian Caribbean Coast, they are poorly known in this area, because the research effort has focused on Pacific areas like Málaga Bay and Gorgona Island. Due to ecological impacts related to coal mining, baseline information about marine mammals, as top predators, could be the key for conservation of this area. Here, we conducted a fieldtrip during the dry season on May 2015 in order to determine preliminary ecological and genetic status of cetaceans in The Guajira. In total we travelled 403 nautical miles, following 20 lineal transects of approximately 14 nautical miles in zigzag parallel to the shore, from 7 am until 5 pm. We had six sightings of four Delphinidae species: *Stenella frontalis*, *Steno bredanensis*, *Tursiops truncatus* and *Pseudorca crassidens*. We got seven skin samples from following species: *S. frontalis* (n=2), *S. bredanensis* (n=4) and *P. crassidens* (n=1). The last one was a body of a false killer whale of around 3.5 meters long. For each sample the DNA was extracted using the DNeasy kit (QIAGEN, Valencia, CA, USA), and a 650pb *D-loop* hypervariable portion of the *mtDNA CR* was amplified by the polymerase chain reaction (PCR), using two pairs of primers, t-Pro-whale M13Dlp1.5 and Dlp8G. For *S. bredanensis* we got four haplotypes, and preliminary genetic analysis using control region showed that individuals in The Guajira are more related to individuals in the Laguna de Chiriquí (Panama) and the South West Atlantic (Brazil). For *S. frontalis* we got two new unique haplotypes, and we conducted microsatellite analyses comparing samples from The Guajira with samples from Islas del Rosario (Colombia) Puerto Rico and Virgin Islands (n=9). Results showed that there is not population structure between Atlantic bottlenose dolphins from these locations, suggesting high genetic flow within populations in the Caribbean. For *P. crassidens* we conducted a barcoding analysis to confirm the species, and results using Surveillance and NCBI databases confirm the species as a false killer whale. Although the knowledge about cetaceans in the Colombian Caribbean is limited, the information gathered during these surveys support the assumption that The Guajira is a potential area for occurrence of cetaceans. However, most of species reported here is considered by IUCN as “Least Concern” or “Data Deficient”. Baseline information about marine mammals, as sentinels of health ecosystems, could be the key for conservation of this area. For this reason, it is necessary to continue this research in order to generate more baseline information needed to propose an adequate management plan for conserve not only the cetaceans but all biodiversity associated to their distribution range. I am indebted to Society for Marine Mammalogy and Universidad de los Andes for funding this study. Preliminary results of this research were submitted as abstracts for consideration to the 21st Biennial Conference on the Biology of Marine Mammals and the Symposium RIEMMCCA: Network of Aquatic Mammal Specialists of Central America and the Caribbean.