
Marine debris ingestion by odontocetes from southern Brazil

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Abstract

Understanding the impacts of marine litter on fauna is challenging, and for cetaceans the knowledge is scarce. This study aimed to verify the ingestion of marine debris by odontocetes found stranded in the south of Rio Grande do Sul state, Brazil. Between 2018 and 2022, 139 stomachs of six species were obtained during beach monitoring along the southern coast of Rio Grande do Sul (~360 km). The stomach contents were analyzed following conventional methods, and the debris found were quantified and classified according to material. Plastic items were analyzed by FTIR to identify polymer types. The overall Frequency of Occurrence (FO%) of ingestion was 33.8%, with 47 stomachs presenting debris. Specific FO%s of 20%, 33.3% and 44.9% were found respectively for *Steno bredanensis*, *Delphinus delphis* and *Pontoporia blainvillei*; *Tursiops* spp., *Pseudorca crassidens* and *Stenella* spp. showed no debris in their stomachs. *P. blainvillei*, a critically endangered species restricted to the Western South Atlantic, represented 70.5% of all stomachs analyzed, and 93.6% of all stomachs with residues. Litter ingestion by this species can be accidental and is possibly linked to its bottom foraging habit, where debris accumulates. Plastic represented 99.3% of the litter found in stomachs, and cloth (cotton string) 0.66%. The most abundant plastic polymer was polypropylene (PP) (40.9%), followed by polystyrene (PS) (20.1%) and polyamide (PA) (20.1%). PP and PS are commonly used in disposable packaging and are among the most abundant in the marine environment, which can increase their ingestion probability. PA is commonly used in the manufacture of nets and ropes used in fishing activities, which are common in the region. These results confirm the interaction between cetaceans and marine litter in South Brazil, and highlight the importance of properly managing litter to reduce its entry and impacts in the marine environment.

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