



CORRESPONDENCE

Plastic Ingestion by a Leatherback Turtle *Dermochelys coriacea* from the Azores (NE Atlantic)

JOÃO P. BARREIROS *, JOÃO BARCELOS

Departamento de Ciências Agrárias, Universidade dos Açores, 9701-851 Angra do Heroísmo, Portugal

Plastic debris occur in considerable quantities throughout the world's oceans (Dufault and Whitehead, 1994). These items may impact many marine species such as sea turtles, birds and mammals (Wilber, 1987; Laist, 1997). Ingestion of plastic debris is known from at least 27 species of cetaceans (Laist, 1997, Baird and Hooker, in press), seabirds (Spear *et al.*, 1995) and sea-turtles (Bjørndal *et al.*, 1994). Here we report on a case of plastic ingestion by an adult female of the leatherback sea-turtle, *Dermochelys coriacea*, that was accidentally caught off the southern coast of Terceira island (Azores).

On the 1st of September 2000, an adult female *Dermochelys coriacea* was accidentally caught by a swordfish long-line and died while being hauled aboard. The specimen's total weight was 254 kg and its carapace length was of 144 cm. The accident occurred 32 nautical miles south-southeast off Terceira island (Azores). The body was frozen for post-mortem analysis.

The specimen was in perfect condition, with no external lesions, except for the long-line markings around its neck and forelimbs. A full necropsy revealed a healthy animal with no gross pathology in any thoracic or abdominal organ systems. Both stomach and intestines were empty of food items. In the anterior part of the intestine, however, six pieces of soft plastic were found, together with a hard plastic belt and a small hard plastic cap. No obvious necrosis or other pathology was detected and the intestine was not occluded.

While this plastic did not cause any apparent harm to the specimen that was in obvious good health, had it lived longer, the plastic items, specially the harder ones, could have caused severe ulcerative processes and, eventually, tissue necrosis. It is known that the occurrence of

plastic and other unusual items in marine animals may cause severe damage and eventually lead to death (see Wilber, 1987; Grammentz, 1988), which is most important when dealing with threatened and endangered species such as *D. coriacea* (see Spotila *et al.*, 2000).

We believe that cases of plastic ingestion are strongly underestimated in the Azores, since many specimens are not made available to post-mortem analysis. In fact, oceanic debris are often found both floating offshore and stranded over the coasts. Plastic debris in Azorean waters is mainly produced on land. Monitoring marine mammals, seabirds and sea-turtles that are stranded or accidentally caught will inevitably lead to more cases of plastic ingestion, eventually much more serious than the one reported here.

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- Baird, R. W. and Hooker, K. (in press) Ingestion of plastic and unusual prey by a juvenile harbour porpoise. *Marine Pollution Bulletin*.
- Bjørndal, K. A., Boltén, A. B. and Lagueux, C. J. (1994) Ingestion of marine debris by juvenile sea turtles in coastal Florida habitats. *Marine Pollution Bulletin* **28** (3), 154–158.
- Dufault, S. and Whitehead, H. (1994) Floating marine pollution in 'the Gully' on the continental slope, Nova Scotia, Canada. *Marine Pollution Bulletin* **28**, 489–493.
- Grammentz, D. (1988) Involvement of loggerhead turtle with the plastic, metal and hydrocarbon pollution in the central Mediterranean. *Marine Pollution Bulletin* **19** (1), 11–13.
- Laist, D. W. (1997) Impacts of marine debris: entanglement of marine life in marine debris including a comprehensive list of species with entanglement and ingestion records. In *Marine Debris: Sources, Impacts, and Solutions*, eds. J. M. Coe and D. B. Rogers, pp. 99–139. Springer-Verlag, New York.
- Spear, L. B., Ainley, D. G. and Ribic, C. A. (1995) Incidence of plastic in seabirds from the Tropical Pacific, 1984–91: Relation with distribution of species, sex, age, season, year and body weight. *Marine Environmental Research* **40** (2), 123–146.

*Corresponding author. Fax: +351-295-332605.

E-mail address: jpedro@angra.uac.pt (J.P. Barreiros).

Spotila, J. R., Reina, R. D., Steyermark, A. C., Plotkin, P. T. and Paladino, F. V. (2000) Pacific leatherback turtles face extinction. *Nature* **405** (6786), 529-530.

Wilber, R. J. (1987) Plastic in the North Atlantic. *Oceanus* **30** (3), 61-68.
