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ANALYSIS: Plastics Ingestion Prevalence and Impacts in Florida Sea Turtles and Marine Mammals

Ocean Conservancy scientists have conducted an analysis of the data collected in their peer-reviewed paper, "A quantitative risk assessment framework for mortality due to macroplastic ingestion in seabirds, marine mammals, and sea turtles," to evaluate the prevalence and impacts of plastic ingestion on sea turtle and marine mammal species that live in Florida waters.

Florida Representation within the Dataset

- The database drew from 10,412 necropsies (animal autopsies) conducted globally, of which 6,835, or 66%, are species that can be found in Florida and Gulf waters
- Of the 1,306 turtles in the database, 1,205 (92%) are species that can be found in Florida (Kemp's ridley, loggerheads, green, hawksbill, and leatherbacks)
- Of the 7,569 individual marine mammals in the database, 5,570, or 74%, can be found in Florida, representing 17 of 31 species

Florida Sea Turtle Findings

- Of the 1,205 necropsied turtles representing species that can be found in Florida waters:
    - 558 (46%) had plastics in their digestive tracts at their time of death
    - 57 of those 558 (10%) died from ingesting that plastic

- Of these:
    - Five were Kemp's ridley turtles; all five had plastics in their digestive tracts at their time of death; one died from that plastic ingestion
    - 58 were loggerheads; 39 (67%) had plastics in their guts; 15 died of plastic ingestion
    - 1,107 were green turtles; 503 (45%) had plastics in their guts; 36 died from that plastic ingestion
    - 28 were hawksbill turtles; seven (25%) had plastics in their digestive tracts at their time of death; 5 died from that plastic ingestion
    - Seven were leatherbacks; four (57%) had plastics in their digestive tracts; none died as a result of that plastic ingestion

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Florida Manatee Findings

- The dataset included 4,950 manatees; 790 (16%) had plastics in their digestive tracts at their time of death; of those that had plastic in their gut, 30 (4%) died from that plastic ingestion
- For a 9-foot-long manatee, 212 cm^3 of soft plastic, like plastic bags, will kill 50% of manatees; this is approximately equivalent to one baseball's worth of plastics by volume

Other Florida Marine Mammal Findings

- Of the 5,570 necropsied marine mammals that can be found in Florida and Gulf waters, 847 (15%) had plastics in their guts at their time of death
    - 47 of these (6%) died directly from ingesting plastics
- Of these:
    - 187 were striped dolphins; six contained plastics in their guts; one died from that plastic
    - 82 were Atlantic spotted dolphins; 1 of the 82 had plastics in its guts and it died from that plastic
    - 66 were sperm whales; 21 contained plastics in their guts; six died from that plastic
    - 60 were bottlenose dolphins; five contained plastics in their guts; one died from that plastic
    - 55 were common dolphins; six contained plastics in their guts; none died of acute plastic ingestion impacts
    - 42 were short-finned pilot whales; none contained plastics in their guts
    - 35 were Pygmy sperm whales; two contained plastics in their guts; none died from acute plastic ingestion impacts
    - 34 were Cuvier's beaked whales; one had plastics in its guts and it died from that plastic ingestion
    - 28 were Risso's dolphins; four had plastics in their guts; and one died from ingesting that plastic
    - 22 were rough-toothed dolphins; three contained plastics in their guts; two died from that plastic