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TITLE: Plastic Accumulation in the North Atlantic Subtropical Gyre

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ABSTRACT:

Plastic marine pollution is a major environmental concern, yet a quantitative description of the scope of this problem in the open ocean is lacking. Here, we present a time series of plastic content at the surface of the western North Atlantic Ocean and Caribbean Sea from 1986 to 2008. More than 60% of 6136 surface plankton net tows collected buoyant plastic pieces, typically millimeters in size. The highest concentration of plastic debris was observed in subtropical latitudes and associated with the observed large-scale convergence in surface currents predicted by Ekman dynamics. Despite a rapid increase in plastic production and disposal during this time period, no trend in plastic concentration was observed in the region of highest accumulation.

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