OCEAN POLLUTION

Remote sensing plastics

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Plastic pollution is a large and growing problem for the world's oceans. These petroleum-derived materials degrade slowly, threatening marine life and ecosystem processes. Plastic particles often coalesce into notorious patches in the upper 0.5 metres of ocean water, but the distribution of these patches on the marine surface and over time is unclear.

Shungudzemwoyo Garaba, of the University of Oldenburg, in Germany, and colleagues tested whether remote sensing using airborne infrared imagery could distinguish plastics in real-world conditions. Flying 400 m over the 'Great Pacific Garbage Patch', they recorded the position, size, colour and type (such as container or fishing net) of plastic pieces and used the 30 largest within each type to identify spectral features characteristic of plastics. They first identified plastics visually from airborne 'true colour' camera images and then geolocated them in the infrared images. They confirmed prior observations that marine plastics have a characteristic infrared signature, absorbing light at ~1,215 and ~1,732 nm. Such airborne remote sensing could help to locate ocean plastic pollution and provide an intermediate step while satellite sensing is better developed.

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