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[Assessment of marine litter through remote sensing: recent approaches and future goals.](#)

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Abstract: This bibliographic review provides an overview of techniques used to detect marine litter using remote sensing. The review classified studies in terms of platform (satellite, aircrafts, drones), sensors (passive or active), spectral (visible, infrared, microwaves), spatial resolution (minor than 1 to >30 m), type and size (macroplastics, microplastics), or classification methodology (sighting, photointerpretation, supervised). Most studies applied satellite information to address marine litter using multi- and hyper- spectral optical sensors. The correspondence analysis on analyzed variables exhibited that aircrafts with high spatial resolution (minor than 3 m) with optical sensors ($\lambda = 400$ to 2500 nm) seem to be the most optimum combination to target marine litter, while satellites carrying Synthetic Aperture Radar (SAR) sensors ($\lambda = 3.1$ to 5.6 cm) may detect sea-slicks associated to surfactants that might contain high concentration of microplastics. Gaps indicate that future goals in marine litter detection should be addressed with platforms including optical and SAR sensors.

Keywords: Marine plastic litter, Remote sensing, Sea-slicks, Optical sensors, SAR