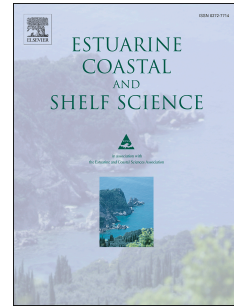


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Spatial assessment of intertidal seagrass meadows using optical imaging systems and a lightweight drone

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1 **Spatial assessment of intertidal seagrass meadows using**
2 **optical imaging systems and a lightweight drone**

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16
17 **Abstract**

18 Seagrass ecosystems are highly sensitive to environmental change. They are also in global decline and
19 under threat from a variety of anthropogenic factors. There is now an urgency to establish robust
20 monitoring methodologies so that changes in seagrass abundance and distribution in these sensitive
21 coastal environments can be understood. Typical monitoring approaches have included remote sensing
22 from satellites and airborne platforms, ground based ecological surveys and snorkel/scuba surveys. These
23 techniques can suffer from temporal and spatial inconsistency, or are very localised making it hard to
24 assess seagrass meadows in a structured manner. Here we present a novel technique using a lightweight
25 (sub 7 kg) drone and consumer grade cameras to produce very high spatial resolution (~4 mm pixel⁻¹)

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