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Use of SPOT 5 for mapping seagrasses: An application to *Posidonia oceanica*

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Abstract

The SPOT 5 satellite was launched in May 2002; it provides multispectral imagery with a spatial resolution of 10 m and fused imagery with a spatial resolution of 2.5 m. These types of satellite imagery were used for mapping beds of *Posidonia oceanica* in the Mediterranean Sea, where it is a dominant species forming monospecific beds in a structurally simple environment (four classes: sand, photophilous algae on rock, patchy seagrass beds and continuous seagrass beds). Supervised classifications by depth range were made of both types of image. A direct comparison of overall accuracy between SPOT 2.5 m and SPOT 10 m revealed that this tool provided accurate mapping in both cases (between 73% and 96% accuracy). Although SPOT 2.5 m provides lower overall accuracy than SPOT 10 m, it is a very useful tool for the mapping of *P. oceanica*, as it allows the patchiness of the formations to be better taken into account. The opportunity to use a reliability scale, which takes into account the effects of extrinsic factors on the processing of the images, confirmed the usefulness of the option of using a reduced pixel size in order to obtain an improved match between the results from mapping and field observations.

Keywords: SPOT 5; Accuracy; Scale of reliability; Seagrass; *Posidonia oceanica*

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