

Use of remote sensing for the characterization of the Mediterranean coastal environment – the case of *Posidonia oceanica*

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Abstract. The beds of *Posidonia oceanica*, a marine vascular plant species endemic to the Mediterranean, form a major Mediterranean marine ecosystem. These beds are well-developed along the sandy east coast of Corsica, where the continental shelf is wide and extends for ca. 100 km. The upper limit of this ecosystem has been mapped by means of a computer image processing technique using 1 / 20 000 colour photographs. One of the major problems for image processing in the marine environment is the impact of the water layer (of variable thickness and quality), which can result in variations of the spectral signature for a particular vegetation or bottom type. In an attempt to reduce the impact of this artefact, a processing technique that takes into account bathymetric factors has been tested. Cartographical data obtained for an area extending from Bastia to Solenzara are presented. In the vicinity of the mouths of coastal rivers, a systematic indentation of the upper limit of the seagrass beds has been revealed. On the basis of these results, local variations in the quality of the marine environment can be detected, in particular with regard to salinity, turbidity and/or the impact of sedimentation. The overall surface area of the *Posidonia oceanica* beds has also been calculated.

Keywords: Aerial photography; Continental shelf; Image processing; Mediterranean Sea; *Posidonia oceanica*; Surface.