



Ecological assessment of *Phragmites australis* wetlands using multi-season SPOT-5 scenes

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Résumé en anglais	<p>Ecologists and conservationists need accurate and replicable tools for monitoring wetland conditions in order to develop and implement adaptive management strategies efficiently. The Rhone Delta (Camargue) in southern France encloses 9200 ha of fragmented reed marshes actively managed for reed harvesting, waterfowl hunting or cattle grazing, and holding significant numbers of vulnerable European birds. We used multi-season SPOT-5 data in conjunction with ground survey to assess the predictive power of satellite imagery in modelling indicators of reed structure (height, diameter, density and cover of green/dry stems) relevant to ecosystem management and bird ecology. All indicators could be predicted accurately with a combination of bands (SWIR, NIR) and indices (SAVI, OSAVI, NDWI, DVI, DVW, MSI) issued from scenes of March, June, July, September or December and subtraction between these. All models were robust when validated with an independent set of satellite and field data. The high spatial resolution of SPOT-5 scenes (pixel of 10 × 10 m) permits the monitoring of detailed attributes characterizing the reed ecosystem across a large spatial extent, providing a scientifically-based, replicable tool for managers, stakeholders and decision-makers to follow wetland conditions in the short and long-term. Combined with models on the ecological requirements of vulnerable bird species, these tools can provide maps of potential species ranges at spatial extents that are relevant to ecosystem functioning and bird populations.</p>
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Liens

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