Monitoring restored riparian vegetation: how can recent developments in remote sensing sciences help?

Riparian vegetation restoration projects require appropriate tools to monitor actions efficiency. On a large scale remote sensing approaches can provide continuous and detailed data to describe riparian vegetation. In this paper, we illustrated recent developments and perspectives for riparian vegetation monitoring purposes through three examples of image sources: Light Detection And Ranging (LiDAR), radar and Unmanned Aerial Vehicule (UAV) images. We notably focused on the potential of such images to provide 3D information for narrow strips of riparian vegetation with high temporal resolution to allow fine monitoring following restoration program. LiDAR data allows canopy structure identification with a high accuracy level and automatic classifications for heterogeneous riparian corridors. Radar images allow a good identification of riparian vegetation but also of the structure and phenology of vegetation through time with an analysis of the Shannon entropy of the signal. The UAV system used here is a very flexible approach that can easily provide RGB mosaic but also a local digital surface model with very high spatial resolution. Lastly, we discuss the advantages and limitations of each approach from an applied perspective, in terms of flexibility, resolution and technicality.

Auteurs du document : S. Dufour, I. Bernez, J. Betbeder, S. Corgne, L. Hubert-Moy, J. Nabucet, S. Rapinel, J. Sawtschuk, C. Trollé
Obtenir le document : EDP Sciences
Mots clés : remote sensing, riparian vegetation, UAV, LiDAR, radar, télédétection, végétation riveraine, UAV, LiDAR, radar
Date : 2013-09-11
Format : text/xml
Source : https://doi.org/10.1051/kmae/2013068
Langue : Anglais
Télécharger les documents : https://www.kmae-journal.org/10.1051/kmae/2013068/pdf
Permalien : https://www.documentation.eauetbiodiversite.fr/notice/monitoring-restored-riparian-vegetation-how-can-recent-developments-in-remote-sensing-sciences-help0