

Assessing the impact of land use management on the hydrodynamic behavior of vegetated water bodies colonized by riparian weed species

MARIANO CRIMALDI and **Giuseppe Francesco Cesare LAMA**

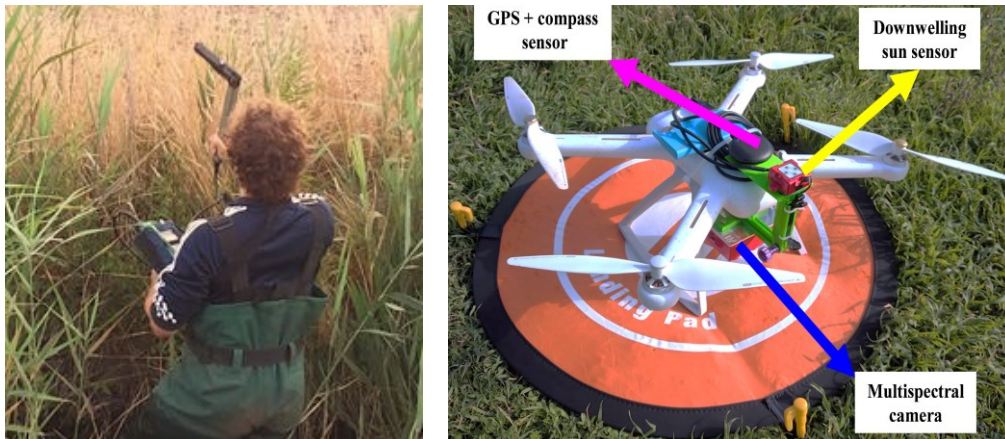
University of Naples Federico II - giuseppefrancescocesare.lama@unina.it



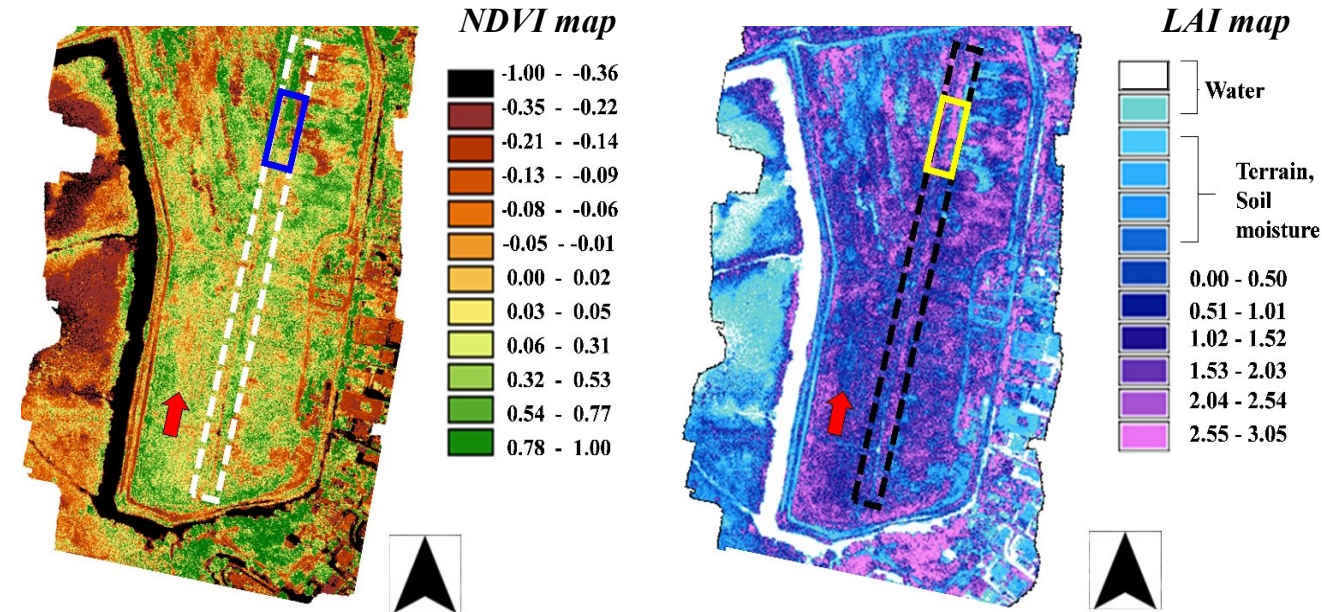
Ecohydraulic monitoring

Optical ground-based measurements and digital processing of Multispectral Unmanned Aerial Vehicle (UAV)-acquired images of *Phragmites australis* beds were performed to characterize the riparian vegetation cover developing along the vegetated reclamation channel examined in this study.

The two different methods were compared aiming at obtaining a direct correlation between Normalized Difference Vegetation Index (NDVI) and Leaf Area Index (LAI) of reed beds.



Ground- and UAV-based riparian vegetation measurements



Water flow dynamics traits of vegetated flows

The preliminary Leaf Area Index (LAI) mapping of the investigated vegetated reclamation channel well demonstrated the good level of correlation exhibited by NDVI and LAI itself in riparian vegetation. The outcomes of the present study will be employed for the prediction of the mean and turbulent main features corresponding to the whole reclamation channel under different scenarios or riparian vegetation management.