Macrophyte biophysical parameters - Products
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DATA

Boat-based surveys in Kis-Balaton wetland (16-18 July 2014) and Mantua lakes system (26 June and 23 September 2014) for canopy biophysical parameters estimation:
- 19 macrophyte beds of submerged, floating and emergent macrophyte species;
- macrophyte spectral reflectance samples acquired in situ using field spectroradiometers;
- macrophyte fractional cover, LAI and above water biomass data collected in situ (and processed in lab (dried in oven at 70°C for 24 h)).

Spectral reflectance data derived from airborne hyperspectral APEX images acquired over Kis-Balaton wetland (19 July 2014) and Mantua lakes system (27 September 2014).

METHODOLOGY

Macrophyte canopy biophysical parameters modelling:
- based on semi-empirical regression, exploiting spectral vegetation indices sensitive to vegetation structure and density;
- spectral vegetation index scoring the highest $R^2$ with each canopy parameter measured in situ was used for estimation through linear regression.

The calibrated models for deriving macrophyte biophysical mapping products (LAI and Dry biomass) are:

$$\text{LAI (m}^2\text{ m}^{-2}) = 0.56(\text{MTCI}) + 0.27$$

$$\text{D Biom (kg m}^{-2}) = 0.17(\text{MTCI}) + 0.03$$

(MTCI = $\rho_{754} - \rho_{709}$ $\rho_{709} + \rho_{681}$) (Dash & Curran, 2004)

PRODUCTS – Macrophyte LAI and Dry Biomass maps for Mantua and Kis-Balaton sites

REFERENCES


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