



Relations between biomass and Vegetation Indices of halophytic plants in Venice salt marshes

L. Modenese (1), **M. Camuffo** (1), E. Belluco (2), A. Marani (1) and M. Marani (2)

(1) Dept. Environmental Sciences-Ca' Foscari University, Dorsoduro 2137, Venice Italy (2)
International Center for Hydrology 'D. Tonini' and Dept. IMAGE, University of Padova, Italy

A wide literature exists linking Vegetation Indexes derived from spectral observations to plant biomass, especially in agricultural and forest studies. However, little work is available in tidal environments, and particularly for salt marshes, which are characterized by complex vegetation distributions embedding essential information on the eco-geomorphic processes determining the dynamics of intertidal systems. This contribution aims at linking above-ground biomass to different vegetation indices (RVI, SAVI, NDVI), making use of field spectral and vegetation observations. To this end, spectral and biomass data for several species in different study salt marshes within the Venice lagoon have been acquired in the field during periods of maximum vegetation development (summer). Observations were mostly performed in mono-specific vegetated areas and different plant densities were sampled to cover a range of biomass values. Several spectral signatures were acquired within each observation area by a hand-held radiometer (GER1500) together with accurate GPS (centimetric accuracy) measurements. Vegetation was then harvested and its above-ground biomass was later determined in the laboratory. The results show that NDVI, among the indexes considered, is characterized by the highest correlation with above-ground biomass. The relationships between NDVI and biomass are then explicitly determined for each plant species.