



Beach morphodynamic parameters in the development of Rapid Environmental Assessment

R. Ivaldi, M. Demarte, and L. Surace

Istituto Idrografico della Marina, Passo Osservatorio 4, 16100 Genova, Italy, (e-mail roberta.ivaldi@alice.it / Fax +39 0102443364)

This paper presents some morphodynamic parameters of a beach of the Tuscan littoral (Marina di Grosseto - Tyrrhenian Sea) obtained from morphological and sedimentological surveys for the development of a Rapid Environmental Assessment (REA). This system is based on a simple analysis of semi-quantitative measurements of beach processes to identify environmental characteristics and problems and to determine subsequent intervention actions. Particular attention was given to the three-dimensional morphological variability of the subaerial beach as determined by the field work, which involved the use of rapid techniques such as GPS-RTK (Global Positioning System - Real Time Kinematics) system, with double frequency and high accuracy, and the simple Emery's method. The morphological and sedimentological data, combined with other survey information (for instance, the presence of coastal dunes and bars), made it possible to classify the beach as intermediate morphodynamic type. The collected data highlighted that this site is characterized by a homogeneous coastline, moderate human pressure, a medium-fine sandy beach, medium sediment consistency, gentle slope (about 5%), narrow beach face (30 m), bars, a shore bounded by vegetated dune ridges. These parameters indicate a stable-low energy beach with intermediate morphodynamic characteristics.