National Agricultural Research Foundation
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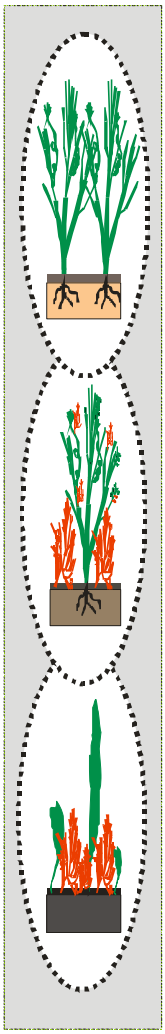
Transitional states in transitional & coastal waters



Identifying mechanisms & developing indicators of habitat or water quality shifts

Kavala, Greece, June 1st-2nd, 2006

Programme, Abstracts

Workshop on

Transitional states in transitional & coastal waters:
Identifying mechanisms & developing indicators of habitat or water quality shifts

Programme, Abstracts

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Το Συμπόσιο οργανώνεται υπό την αιγίδα της: Νομαρχίας Καβάλας, του Γεωτεχνικού Επιμελητηρίου-Παράρτημα Ανατολικής Μακεδονίας, του Δήμου Κεραμωτής και του Αγροτικού Αλιευτικού Συνεταιρισμού Ιχθυοτροφείων Νομού Καβάλας

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AN APPROACH TO MEDITERRANEAN LAGOON TYPOLOGY FROM PATTERNS OF MACRO-INVERTEBRATE DISTRIBUTION

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Categorization of natural phenomena has always been a practical need for human societies and a theoretical challenge for science. River mouths and lagoons, otherwise known as transitional waters (TW) being ecotones between freshwater, marine and terrestrial ecosystems, have always prompted the need of being categorized into operational types from both the scientific and applied points of view. Here, we approach the classification of transitional water ecosystems into ecosystem types by testing the classification schemes proposed so far with a species abundance data-base on the macrozoobenthos built up with a common field research for the INTERREG IIIB project TWReferenceNET. A sub-set of the DB was utilized for the present study, as referred to 11 lagoon ecosystems occurring in 4 countries (Albania, Bulgaria, Italy and Romania). Globally the selected DB had 49184 records pertaining to 212 taxa. Two features of the macrozoobenthic guilds were considered here: species composition and taxonomic richness. Species composition was extremely heterogeneous among ecosystems. 87% of taxa occurred only at 1 or 2 lagoons out of the 11 considered. Taxonomic richness was much less variable, ranging from 14 to 66 taxa. None of the classification schemes proposed so far were significant drivers of the species composition variability observed in the studied ecosystems. At different levels of data simplifications, temperature and biogeographical distribution of the study sites were the only significant predictors of species composition, but temperature explained only 40% of the dissimilarity among lagoons. Taxonomic richness was also only poorly explained by most classification schemes on the full used data set. Water depth was the only significant predictor, supporting an ecosystem niche approach. However, when simplifying the data set for some outliers, most of taxonomic richness variation resulted explained by lagoon surface and water salinity. Lagoon surface was already proposed one of the most significant niche dimension in an ecosystem niche approach. In conclusion, the complexity of the macrozoobenthic guilds of transitional water was emphasized by the DB resulting from TWReferenceNET. Following this complexity, two conclusions can reached: 1. an ecosystem niche approach seems to be the most compelling classification scheme of transitional water typology and, 2. lagoon area was supported as a major niche dimension in transitional water ecosystems, according to the island biogeography theory.