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## THE POST-TYRRHENIAN EVOLUTION IN SARDINIA: EVIDENCE FROM EBIDOZZI PALAEOVALLEY (ARGENTIERA, NORTH-WESTERN SARDINIA, ITALY)

**ABSTRACT:** GINESU S., DERUDAS A., ENZO S., SECCHI F. & SIAS S., *The post-Tyrrhenian evolution in Sardinia: evidence from Ebidozzi palaeo-valley (Argentiera, north-western Sardinia, Italy)*. (IT ISSN 0391-9838, 2009).

Analyses of selected samples coming from a well exposed plio-pleistocenic stratigraphic section located along the coastline of northwestern Sardinia, allow us to evaluate the recent geomorphological evolution of a sector belonging to an ancient valley infilled by sedimentary deposits, mainly of continental environment. The palaeovalley filling has been favored by erosional processes in post-Tyrrhenian regression times under climate exchange recorded during Holocene. The occurrence of halite mineral phase in the studied stratigraphic sequence, suggests the prolonged occurrence of salt environments during the early phase of post-Tyrrhenian regression before the begin of an aeolian regime. Assuming a uniform erosive process for the last 80 Ka, we evaluate its the efficiency on the basis of the volume of deposits infilling the investigated palaeovalley. The obtained deposition rate is about 0.5 m<sup>3</sup>/year.

**KEY WORDS:** Coast evolution, Aeolian deposits, Tyrrhenian-Holocene, Sardinia, Italy.

**RIASSUNTO:** GINESU S., DERUDAS A., ENZO S., SECCHI F. & SIAS S., *L'evoluzione geomorfologica post-Tirreniana in Sardegna: evidenze dalla paleovalle di Ebidozzi (Argentiera, Sardegna nord-occidentale)*. (IT ISSN 0391-9838, 2009).

Il rilevamento di dettaglio di una sezione stratigrafica localizzata lungo la costa nord-occidentale della Sardegna, opportunamente corredato da analisi minero-petrografiche di campioni rappresentativi, ha permesso di valutare l'evoluzione geomorfologica recente di un'antica paleovalle colmata da una successione dominata da depositi di ambiente continentale. Il riempimento della paleovalle è favorito da processi erosionali riferibili a cambi climatici concomitanti con la regressione post-Tirreniana.

La presenza di halite fra le fasi minerali osservate in alcuni campioni della sezione stratigrafica investigata, suggerisce la persistenza di ambienti a forte salinità riferibili ad una fase precoce della regressione prima del-

l'instaurarsi di un regime dominato da processi eolici. Assumendo che i processi erosivi siano stati piuttosto uniformi negli ultimo 80 Ka, la sezione stratigrafica investigata permette di valutare la persistenza dell'erosione sulla base del volume di depositi che hanno colmato la paleovalle di Ebidozzi. La velocità di colmamento così ottenuta si attesta attorno a 0.5 m<sup>3</sup>/anno.

**TERMINI CHIAVE:** Evoluzione della costa, Depositi eolici, Tirreniano, Olocene, Sardegna.

### INTRODUCTION

The investigated area is located along the western coastline of the Nurra region (northwestern Sardinia, Italy), from the Porto Palmas bay (*Pischina Salidda*) to *Punta de lu Pisanu* (fig.1). From a morphological point of view this region shows a relief not exceeding 240 m in height, with regular slopes to the sea. The hydrographic network is made by creeks because of the distribution of the main watershed line near to the coastline. Significantly, one can observe the different trend of river system among the internal sea slopes, suggesting the existence of palaeo-morphologies. On account of different geological and morphological characters, in the Nurra region we distinguish the Argentiera zone that represents the northern part and takes the name from the mining district of Argentiera, now abandoned. At the present time, this region is characterized by very low density of population reaching the higher incidence by tourist presence in the summer season. The territory is exploited by a limited sour-pastoral activity.

Published papers are mainly devoted to the Palaeozoic basement or to the Mesozoic covers that constitute the main geological features of the region. Despite of their considerable thickness and extension, little information is available on Plio-Pleistocene covers. The occurrence of a

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