
FOREWORD

Special issue on selected contributions from the 7th Iberian Conference on Coastal Geomorphology (JGEOLIT2013), Oviedo (Spain)

JGEOLIT is a meeting point for researchers and professionals who investigate the sedimentological and geomorphological processes that shape the coast. The 7th Iberian Conference on Coastal Geomorphology (JGEOLIT2013) was organized by the University of Oviedo and the Geological Society of Spain.

PRELIMINARY FRAMEWORK

The Seventh Iberian Conference on Coastal Geomorphology continued the previous initiatives to debate further contributions of the increasingly larger group of researchers who have the coast as their study area. This framework for scientific discussion was initiated in Cádiz in 2000, and has been celebrated in different cities along the Spanish coast, gathering a large family of professionals who present the scientific progress made every two years. The success of the previous conference in Tarragona (2011) became a challenge; the difficult task is to improve or enhance each past edition, showing how the interest in the various disciplines involved in the study of the coast is growing.

On the other hand, the configuration and features of the Asturian coast led to new approaches to morphology, dynamics, sedimentation and management of a coast full of different examples where coexist, within of approximately 200km in length: cliffs, estuaries, pocket beaches, coves and spectacular limestone cliffs with globally unique morphologies.

The topics covered in this edition were: oceanography, coastal morphology, coastal processes, cliffs, dune fields, sandy and/or shingle beaches, estuaries/tidal rivers/deltas, techniques for coastal research, sea level rise, anthropogenic modifications of the coasts, coastal heritage and coastal management. This allowed the collection of 52 scientific contributions (Flor-Blanco *et al.*, 2013): 37 oral presentations, 11 posters and 4

conferences. Four renowned research professors were invited to give interesting lectures, ranging from the erosion in Mexico (Trenhaile *et al.* 2013) by Dr. Alan Trenhaile (Windsor University, Canada); investigations developed in the sublittoral fringe of Cadiz in southern Spain (Morales and Lozano, 2013) by Dr. Juan Antonio Morales (University of Huelva); the interaction between coastal and shelf areas (Alcántara-Carrió *et al.* 2013) by Dr. Javier Alcántara (University of Sao Paulo, Brazil); and the asturian Jurassic heritage in northern Spain (García-Ramos, 2013), Dr. José Carlos García-Ramos (Scientific Director of the Jurassic Museum of Asturias) showed the main characteristic of one of the best paleontological sites of dinosaur footprints and other remains of this age.

Another incentive for this type of conference is the possibility of local researchers showing examples of the shoreline of the region where the event is held. In this case, the fieldtrip was developed in a section of 65km between the towns of Buelna and Villaviciosa (NE Asturias, Spain), covering a wide range of environments and morphological units; also a review of the dynamics and sedimentation of the Asturian coast was made (Flor and Flor-Blanco, 2013). The first sector allowed visiting coastal erosion surfaces, in which have been differentiated up to 11 different levels of *rasas* (Flor and Flor-Blanco, 2014). Besides, a stretch of karstified coastline was visited to see some singular worldwide morphologies such as sinkholes, internal beaches and an estuary, as well as other more common features as landslides, caves, archs, uvalas, bays and beaches (Fig. 1 A and B). The second part of the fieldtrip focused more on working models, historical development and management in estuaries such as Ribadesella and the Holocene outcrops of Espasa beach (Fig. 1C). Finally, in the Villaviciosa estuary, recognized as a Partial Nature Reserve, a management model was presented (Fig.1 D). The outside area of this estuary has been extensively modified by human activities throughout the twentieth century; and due to construction in its mouth of two jetties, the dunes experienced net progradation over 200m in a

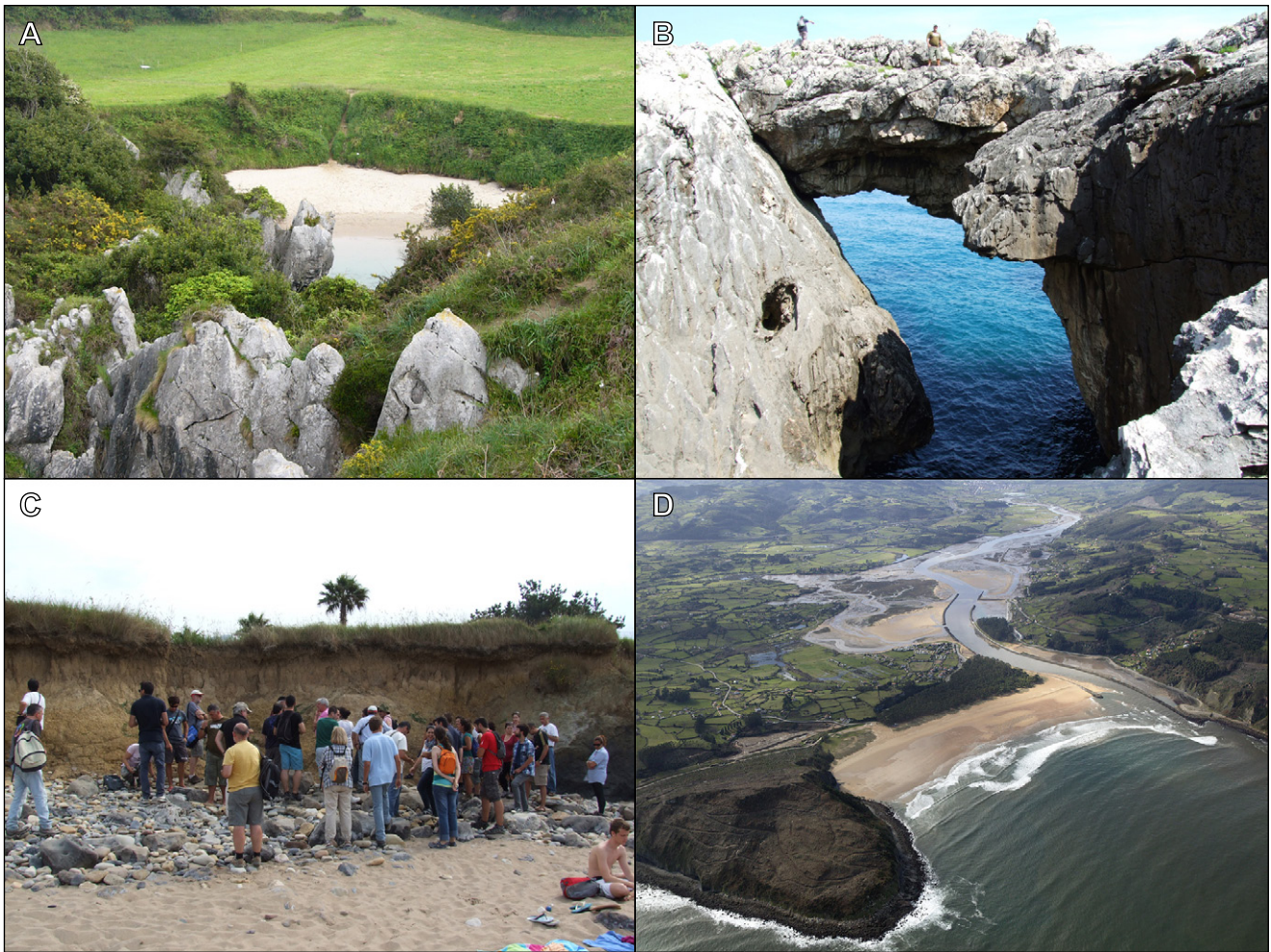


FIGURE 1. A) Internal beach of Gulpiyuri (Natural Monument); B) Arch in the Natural Monument of Cobijeru; C) La Espasa beach containing an Holocene raised sand beach (upper brown level); D) Oblique view of Rodiles beach/dune system (Villaviciosa estuary).

few decades (Flor-Blanco *et al.* 2015). In addition, the morphosedimentary and dynamic model was explained, and also the consequences of the gradual sea level rise were commented.

Finally, the objectives that were widely covered in this conference can be summarized in: a) meeting of professionals in the study of continental and marine coast; b) presentation of new scientific contributions developed between 2011 and 2013; c) interaction between researchers in order to encourage the creation of larger workgroups, interdisciplinary, and eligible for more ambitious research projects with exchange of personnel and technical equipment; d) presentation of studies to promote collaborations with the participating companies; e) explanation to the scientific community about some geomorphological features of the Asturian coast from different viewpoints (Fig. 2); f) finally, the consolidation of an attractive forum for professionals that set the guidelines for the future celebration of the 8th Conference on Coastal

Geomorphology to be held in July 2015 in Marbella (Andalusia).

SELECTED CONTRIBUTIONS

The seven papers in this special issue of *Geologica Acta* are based on presentations that were given at JGEOLIT2013. They provide a broad view of the different disciplines, geographical and geological, presented in the conference.

Casamayor *et al.* (2015) identify the factors in the recovery of tagged gravels through radio frequency identification (RFID) in the gravel beach of San Felipe (Gran Canaria Island, Spain). Two environmental factors were considered: the elevation of the tracer at the beach (the highest rate of recovery occurred above the berm), and the wave height (which showed no relation with the recovery rates).



FIGURE 2. Attendees of the conference fieldtrip at Rodiles beach (Villaviciosa).

Another research related to the applied coastal geomorphology is presented by Domínguez-Cuesta *et al.* (2015). They delimit the continental and marine terraces (known as *rasas*) in eastern Asturias (NW Spain) by standard techniques and quantitative analysis of the relief using GIS software. This method has been used and validated in areas not previously studied by other authors. They define 3 new levels of *rasas* formed on Paleozoic quartzites and limestones.

In mixed environments (marine and continental), Flor *et al.* (2015) propose a management system for the Villaviciosa Estuary (Asturias, NW Spain). It is affected by anthropogenic modifications, mainly in its mouth, despite being declared Partial Natural Reserve. Most modifications have consisted in channeling the end of the estuary. As a response to these modifications bedforms and mouth bars. These sedimentary deposits at the mouth complicate the navigation and the management of the environment. Dredging materials must not be discharged beyond the closing depth to prevent loss of sediments; also avoiding the construction of new jetties as was proposed in the past.

In Cádiz, south of the Iberian Peninsula, Gutiérrez-Mas and García-López (2015) studied the controlling factors of recent geomorphologic and depositional changes in the

mouth of Río San Pedro. The modifications have caused a very important retreat of the beaches and marshes, including a lateral displacement of the river channel towards the SE. Three different stages of evolution were established and the factors that might control the sedimentation such as the seismic activity, the tidal action and the sediment supply from nearby have been considered.

In the estuary of Río Piedras (Huelva, SW Spain), Morales *et al.* (2015) studied the bedforms in a mesotidal system. They used different techniques to define the behaviour of flows and the arrangement of bedforms over the tidal cycle in different conditions. The external areas of the inlet display the highest energy conditions, and are characterized by large bedforms with a regime dominated by the combined action of waves and tides where the sediment is continuously reworked. In the inner zones, fine particles are transported by tides and deposited in protected areas.

Navarro *et al.* (2015) investigated the wind-blown sediment in the highly mobile dune of Valdevaqueros in Cadiz (S Spain) using different instruments such as anemometers and sand traps in order to determine the theoretical sand transport. They have concluded that 90% of the wind-blown sand is transported within the first

20cm of the wind-sediment interface. The distribution of transport at different heights was studied using statistical analysis of various grain-size parameters.

Concerning the last paper, Trenhaile *et al.* (2015) studied the shore platform and the cliff notch transitions along La Paz Peninsula in Mexico. Numerous pins were cemented into the apex of each notch and transverse micro-erosion meter (TMEM) stations were installed on three platforms. During 2.5 years, they investigate both horizontal and vertical erosion ratios, relationship between notch height and exposure to wave action and the orientation and wave fetch of the site. The final results in the upper portion of the high intertidal zone show a slow tectonic uplift.

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