

**FO04ES**

824004

## Fossil dunes of Can Marroig-Punta de Sa Pedrera

### Location



Municipality: Sant Francesc de Formentera

U.T.M. Coordinates  
(31N ETRS89):

X: 360611  
Y: 4288126



### Difficulty and duration



10 min

1 2 3

### Access

Go along the PM-820 road that joins Port de la Savina and Sant Francesc de Formentera. Take the deviation towards Can Marroig (also Port - Salè) and follow the signs.

### Principal interest

Stratigraphic

### Secondary interest

Sedimentological, paleontological

## Description of the locality

On the oldest materials of Formentera (Late Miocene) a great variety of Quaternary sediments is deposited. Among these the fossil dunes stand out, formed by a type of rock that is technically called aeolianite but has the well-known common name of *marès*. In the sector between Can Marroig and Punta de Sa Pedrera the most characteristic outcrops can be seen.



View of a cliff between Can Marroig and Punta de Sa Pedrera formed by dunes and paleosols.

This type of site, common in the Balearic Islands, originated during the Pleistocene period, during a very productive moment of formation of dunes.

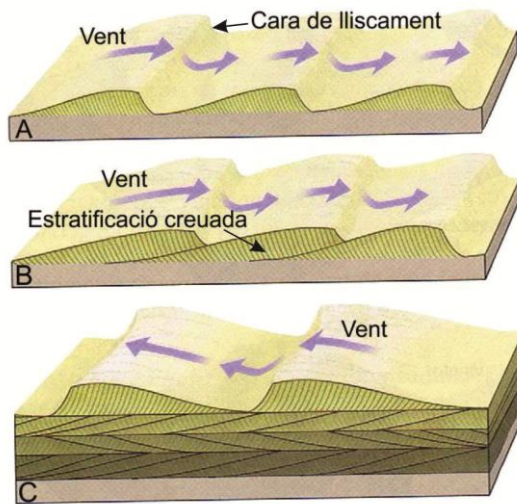
This high level of production results from the drop of sea level because of the important glacial periods that affected the Earth at that time. The drop in the sea level left large areas of the sea bottom exposed to the air. The dominant winds of the time caused the sand to move and form the dune fields which are now fossilised.

The dunes, over an extended period of time, were deposited one on top of another, favouring the intercalation of red silt layers corresponding to the fossilised soils formed during the most humid and warm periods. The latter are named paleosols.

In the Balearic Islands, the materials comprising the aeolianites are mainly formed by small fragments of mollusc shells and microfossils (usually foraminifers) that live in the Posidonia seagrass fields. Therefore, the existence of dunes and beaches on our coast is a fact that is strongly linked to the existence of marine communities associated with the just cited marine plant.

As animal shells are made from calcium carbonate, the aeolianites of the Balearic Islands are also made from this same compound.

The sedimentation of the dunes is due to the wind that drags the sand and accumulates it in specific places.



As the wind makes directional changes, the grains of sand gradually accumulate and create layers of sand that deposit according to the wind direction.

Cross-stratification is formed from grains of sand accumulating on the sliding face. Changes in wind direction complicate this cross-lamination.

Representation of the formation of cross-lamination. Modified from Tarbuck E. J. & Lutgens F. K., 2005.

The area is not particularly diverse in fossils identifiable with the naked eye, although there is a type that can be easily observed at some points: the rhizocretions. These are basically moulds of the plant roots that populate the dunes when they are active. They can be identified by their typical tube shape.



Rhizocretions: general view (left) and detailed view (right).

Due to its high value as a construction material, and because it is a rock easy to cut and relatively hard, the marès in the area has been exploited in numerous quarries. Their walls show the stratigraphy of the fossil dunes, although the natural wind-sculpted walls can also be seen.





Left: Natural geological cut in the marès dunes. Right: Artificial cut, corresponding to a quarry wall.

### For more information

IGME. Mapa Geológico de España. Formentera. Instituto Geológico y Minero de España. 47 pp, 2 maps.

Mata LLeonard, R. & Roig Munar, X; 2016. *Eivissa i Formentera: camins i pedres. Descoberta geològica i geomorfològica*. Axial Natura. 218 pp.

### Recommendations

Suitable clothing and footwear is recommended. The SGI can be visited all year. If visiting in the summer, do not miss the opportunity to visit some of the island's beaches.