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Geoparks and sustainable development

ASPIRING GEOPARK OESTE IN PORTUGAL: SCIENTIFIC HIGHLIGHTS AND IMPORTANCE

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Since 2016 that the Museum of Lourinhã, in central west Portugal, and the Portuguese Forum of UNESCO Geoparks have been cooperating and debating together, in an effort that culminated in the signature at March 15th, 2018, of an agreement by five municipalities of Portugal for joint application to the Geopark UNESCO, as Aspiring Geopark Oeste - Jurassic Land. These municipalities, Óbidos, Peniche, Bombarral, Lourinhã and Torres Vedras, that bound the Aspiring Geopark Oeste comprise an area of the 680 km² mostly occupied by Jurassic outcrops (67%), 21% Early Cretaceous and 12% others units from Late Triassic to Quaternary, in a total of 20 geological formations or units, many of them with names after the Oeste localities, such as Lourinhã Formation, Bombarral Unit or Torres Vedras Group. The 61 km of Atlantic coast, often with sand beaches, are a popular destination for tourists and the extensive and spectacular geological outcrop exposures along the sea cliffs, many with dinosaur fossils that attract scientists and the scientific tourism around the world.

The richness and diversity of the Aspiring Geopark Oeste can be perceived by ten geological facts and figures: i) more than 40 geosites identified, ii) one GSSP golden-spike, at the base of the Toarcian, iii) more than 200 fossil sites (vertebrates and invertebrates), 41 of them in international databases, iv) 38 Ph.D. theses on the geology of the area, mostly in paleontology, v) 35 species of fossils with names dedicated the Oeste localities, such as the theropod dinosaur *Lourinhanosaurus* after Lourinhã, or the crinoid “*Pentacrinus*” *penichensis* after Peniche, vi) more than 200 scientific articles have been published, including in high-profile journals, and vii) two museums comprising a significant exhibition component in Paleontology, and at least two more spaces are planned, viii) 15 dinosaur species unique in the world, such as *Lusotitan* or *Miragaia*, ix) eight high-quality wide geological maps at scale 1:50000; and x) one of the most relevant Jurassic localities in the globe, with nearly continuous fossiliferous stratigraphic record of outcrops comprising all Jurassic, and ranging from Late Triassic to Early Cretaceous.

These numbers illustrate well the geological international importance and the scientific potential for aspiring territory to Geopark. The area is highly touristic and is the home for 158 thousand inhabitants that can benefit by the Geopark strategy for sustainability.