

# First legal protection applied by the Autonomous Community of Valencia based on geoheritage assessment: the K/Pg boundary at Agost (Alicante, Spain)

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Despite its internationally-recognized scientific relevance (e.g., Sorensen, 2012), the legal protection of the K/Pg boundary site at Agost (SE of Spain) (fig. 1a) was not promoted until June 2018 (Natural Monument by the Law 11/1994 of Natural Protected Areas of the Autonomous Community of Valencia). Most of the scientific studies (more than 80 references on July 2017) of the Agost site were carried out on a few outcrops, but the rest of the area is poorly known. This geosite is included in the Spanish Inventory of Sites of Geological Interest as “PT003 Clay Bed of the K/T Boundary at Agost” (<http://info.igme.es/ielig/>), and it is Geosite KT003 of the Spanish inventory of geological sites of international relevance (García-Cortés, 2008).

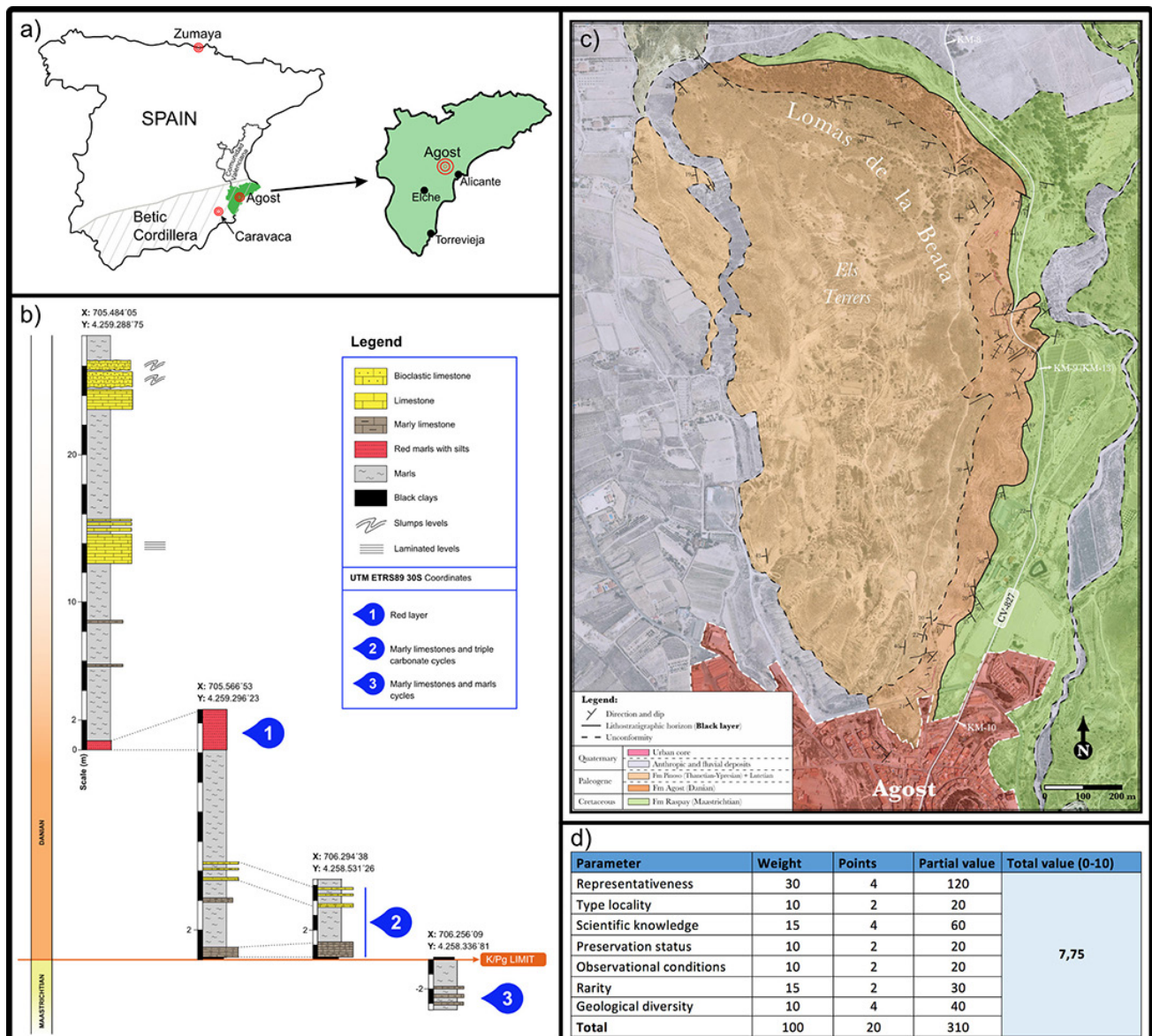


Figure 1 - General location of the geosite “PT003 Clay Bed of the K/T Boundary at Agost” (a). Lithostratigraphic criteria used to identify the K/Pg boundary in the field (b). Geological map of Lomas de la Beata, north of Agost locality, where the K/Pg boundary is located (c). Assessment of the scientific interest of this geosite based on the IELIG methodology (García-Cortés et al., 2019) (d).

The collaboration between different administrations and entities (Regional Government of Valencia, Municipality of Agost, Department of Earth Sciences and Environment of the University of Alicante, Cidarís Foundation, and GeaLand Patrimonio S.L.) in 2017 enabled the development of a project focused on the legal protection of this geosite (Fierro et al., 2017). During the project, we carried out a geoheritage report, an assessment of the scientific interest of the outcrop, and fieldwork for the detailed mapping of the K/Pg boundary. The assessment of the scientific interest has been based on the methodology developed for the Spanish Inventory of Sites of Geological Interest (IELIG: acronym in Spanish) (García-Cortés et al., 2019). Bibliographic, lithostratigraphic and biostratigraphic criteria have been used for mapping and outlining the outcrop. Fig. 1b shows several markers used for the location of the K/Pg boundary at Agost. In addition, we also used biostratigraphic criteria based on planktonic foraminifera of levigated marls and on biostratigraphic research published about the site (e.g., Arenillas et al., 2004; Molina et al., 2004). We obtained a detailed geological map of the area using units previously described for the Eastern Prebetic (Martín-Chivelet, 1994; Chacón & Martín-Chivelet, 2005) (Fig. 1c). Furthermore, the assessment of the scientific interest of the site gave a value of 7.75 out of a maximum of 10, which implies a “very high” value for this parameter (Fig. 1d).

Last but not least, the scientific information derived from all these geological studies was used to set up the basis for the legal protection of the site. As a result of all this work, developed within the framework of the FOPALI Strategic Plan of the Cidarís Foundation, the national geosite PT003 and Global Geosite KT003 of the K/Pg Boundary at Agost is the first area declared Natural Monument in the province of Alicante based on geological criteria (designation approved, formal declaration process in press; Press Clipping of the Communication Cabinet of the Autonomous Community of Valencia from April 3rd, 2020, [www.agroambient.gva.es](http://www.agroambient.gva.es)). The future of the Agost geosite now depends on the management of research, preservation and outreach.

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