

Monitoring of gully erosion in the Central Ebro Basin by large-scale aerial photography taken from a remotely controlled blimp.

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Monitoring of gully erosion in the Central Ebro Basin by large-scale aerial photography taken from a remotely controlled blimp

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Abstract

Large deep gullies (Span. *barrancos*) are some of the most important sediment sources in the semi-arid environment of the Central Ebro Basin. They are incised into the Quaternary valley bottoms (Span. *vales*), which are characteristic landforms in this area. In the research project EPRODESERT (Evaluation of Processes Leading to Land Degradation and Desertification under Extensified Farming Systems), the development of a large *barranco* system is being investigated by different methods, including documentation and monitoring by aerial photography.

Geomorphological forms and processes, such as sheet wash, rill and gully erosion, cannot be documented sufficiently by conventional remote sensing methods. Spatial and Loading [MathJax]/jax/output/SVG/jax.js as well as of conventional aerial photography do

not correspond to the scale and dynamics of geomorphological processes.

With a specially designed hot-air blimp as a sensor platform, large-scale aerial photographs were obtained from the Barranco de las Lenas specifically aimed at the scientific demands (very high spatial and temporal resolution). The development of the gully is documented and its dynamics are evaluated by a sequence of six aerial photographs taken between 1995 and 1998.



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## Keywords

Gully erosion; Monitoring; Large-scale aerial photography; Blimp system; Central Ebro Basin

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