

Landscape dynamics in endangered cork oak woodlands in Southwestern Portugal (1958–2005)

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Abstract Cork oak landscape dynamics were assessed over a 47-year period (1958–2005) in an endangered region of southwest Portugal using a GIS approach. The area of cork oak woodlands was maintained during this period, but shifts due to land abandonment were evident leading to transformation of cork oak agriculture areas into woodlands and of cork oak woodlands into shrublands (average yearly change rates of 0.6 and 0.1%, respectively). The multi-temporal landscape analyses showed that expansion and regression rates of cork oak forests were similar (15 and 16 ha year⁻¹, respectively). The main factor determining oak woodlands expansion and regression was related to land-use changes, but slope, aspect and soil type were also significant factors. The substitution of agriculture lands and oak woodlands by shrublands has a determining role in periods of disturbance and recovery of these Mediterranean ecosystems.

Keywords *Quercus suber* L. · Cork oak forest dynamics · Montado ecosystem · Landscape analysis

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