

Abstract

# Spatial Models Predictive of “Seca” Risk in Extremadura. Applications at Regional and Local Scale in Protected Natural Areas <sup>†</sup>

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**Abstract:** Rangeland (known as Dehesas or Montados) is a characteristic ecosystem of the southwestern part of the Iberian Peninsula that occupies approximately 3.5 million ha, representing the most important agrosilvopastoral system in Europe. Nowadays, this situation is changing, being under circumstances of threat due to different aspects that are causing degradation of holm oaks and cork oaks throughout the Iberian Peninsula. These problems are of various kinds, accentuating the disease or syndrome of seca, tree death caused by *Phytophthora cinnamomi*. For the development of death susceptibility models, maximum entropy algorithms (MAXENT) were used, often widely used in ecological niche models. In the development of models, a wide range of variables (dependents and predictive), both climatic or bioclimatic, geological or soil, vegetation and economic and geographical characteristics were used. The study was carried out at two scales, the Autonomous Community of Extremadura in its entirety, and another more specific work scale, such as seca focus in protected natural areas within the Natura 2000 Network. The regional model showed a total of 1,179,639 ha prone to be affected by this condition, among which, 383,339 ha showed a high potential risk level of seca presence. These models, carried out at local scale in 4 polygons selected within the Natura 2000 Network, showed more than 70% of the land surface studied as areas with risk of suffering seca.

**Keywords:** *Phytophthora cinnamomi* rands; species distribution model; MAXENT; seca; *Quercus*



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