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THE ENVIRONMENTAL FACTORS AFFECTING POWER POLE-RELATED MARKING BEHAVIOUR BY BROWN BEARS IN GREECE

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Brown bears (*Ursus arctos*) survive in the western and Mediterranean parts of Europe in small and fragmented populations and are in urgent need of effective conservation measures. In Greece, brown bears reach their southernmost European distribution and exist in two disjunct population nuclei. In the larger population in the Pindos mountains, bears have been noted to mark power poles by biting, clawing and rubbing. The environmental factors influencing this behaviour were studied in July/August 2005 using line transects of power poles. In the Grevena and Nestorio area of the Pindos mountains in the western population nucleus of the species we examined 162 and 175 respectively. In the Rhodope mountains, in the eastern population nucleus, 146 poles were examined. The environmental factors considered included the dominant forest habitat, dominant crops, landscape position, visibility and other disturbance from human activity and the presence of debris around the pole or tar on the pole. Decision tree analysis of the environmental factors surrounding sampled poles reveals that the behaviour is influenced by habitat type, the presence of a food source and disturbance from human populations, with bears in the Pindos mountains more likely to mark poles in optimal foraging habitat away from human disturbance. Bears in the smaller Rhodope population also exhibit power pole marking behaviour but far less frequently than in the Pindos population, despite similar environmental conditions. It is therefore suggested that this behaviour (though apparently multi-functional) may be density dependant and have a function as a territorial marker. The results of this study provide valuable new insights into the ecology of the marking behaviour of brown bears and address one of the main shortcomings identified when using power pole-related marking behaviour in order to document the presence of the species in Greece.