Puma Puma concolor density estimation in the Mediterranean Andes of Chile

Guarda, N., Gálvez, N., Leichtle, J., Osorio, C., & Bonacic, C. (2017). Puma Puma concolor density estimation in the Mediterranean Andes of Chile. Oryx, 51(2), 263-267. <10.1017/S0030605315001301> Accessed 11 Jan 2021.

Abstract

Knowledge about the puma Puma concolor in the Mediterranean Andes of South America is scarce, with little information available about its distribution and ecology. The species has been hunted in the region for centuries and seems to be relegated to remote areas, where it still comes into conflict with rural communities. Camera-trap surveys have been used to estimate puma density across the species' distribution, and this is a relatively cost-effective approach to generate information about species abundance. We tested the performance of this method in the Andes of central Chile, where the rugged topography, unknown detection probability, and an expected low density make abundance estimation by other methods unreliable or expensive. Using a rotation of 17 camera-trap stations, for a total of 680 camera-days, we obtained 16 records of pumas and were able to identify four individuals in an effective sampling area of 628 km2 (1/2 mean maximum distance moved) or 1,518 km2 (mean maximum distance moved). Capture–recapture models estimated a minimum density of 0.3 ± SE 0.07 to 0.75 ± SE 0.17 adult pumas per 100 km2. This is the first estimate of the density of the puma in the Mediterranean Andes, and one of the lowest reported for the Neotropics. Although this low abundance does not necessarily imply a threat to the species, it suggests that the population is potentially vulnerable to threats such as illegal hunting. Our findings demonstrate that camera trapping is an effective technique in difficult field conditions and may be the most appropriate method to assess puma densities in this region..

Keywords

Camera trap, Chile, density, mean maximum distance moved, Mediterranean Andes, Puma concolor.