

[Estimación de ocupación de *Leopardus guigna* mediante cámaras trampa en la Araucanía del sur de Chile]

(Estimating occupancy of *Leopardus guigna* from camera trap data in the Araucania of Southern Chile)

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Leopardus guigna is one of the world's smallest cats. Its IUCN conservation status is "Vulnerable, with a declining population trend". In Chile, it has recently been classified as "Rare and data deficient". Habitat loss and retribution killing are considered the main conservation threats. Our study area in the Araucanía district of southern Chile, represents the northern limit of the temperate rainforest in Chile (39°15'S, 71°48'W). During spring-summer 2008/2009, 25 camera trap sites (™Trailmaster Inc.) were deployed in the study area, spaced at least 2km apart. The study recorded a total of 2080 trapping days during the season. We used the software PRESENCE™ 2.2 (USGS-PWRC) to estimate occupancy (psi) and detection (p) probability for continuous forest (CF) (n=16 sites), fragments (F) (<20há; n=9) and both in combination. The analysis covers 9 sampling occasions made up of 10-day units. Landscape variables - distance to main rivers and roads; altitude; and human settlement density surrounding the camera (within 1km radius) - were used as covariates for logistic regression. For forest fragments, we also included rodent capture success rate as an index of relative prey abundance. Akaike Information Criterion (AIC) values were used to rank candidate models. The simplest model for all sites (i.e. constant model) estimated values of psi 0.47±0.169 S.E. and p 0.131±0.05 S.E. Applying the same model, CF showed similar psi than F (CF psi 0.52±0.28S.E., p 0.097±0.06S.E.; F psi 0.45±0.24S.E., p 0.17±0.08S.E.), suggesting that fragments should be considered valuable habitat. In all scenarios, models that allowed psi to change with one variable showed

higher ranking than the constant model, suggesting that the inclusion of covariates in the model selection procedure improved model fit. We explore relationships between covariates and ψ for the orientation of conservation management guidelines in our study area.