Supplementary Material S1. Supplementary material 1**:** SECR models for estimating leopard population densities. Models 2-11 compare detection and encounter rates to the Null Model (Model 1). Models 13-18 compare detection and encounter rates for animals with masked covariates to the Null Model for masked covariates (Model 12). Model comparison uses Akaike Information Criterion (AIC). σ denotes the detection scale factor, λ_0 denotes basal encounter rate, and '~ 1' indicates constant detection parameters. All full maximum likelihood models utilised a negative exponential detection function and a Poissan observation process for camera trap detections.

Supplementary Material S2. Summary of leopard culling events between 1974 -1994.

Supplementary Material S3. Mammalian species captured at the camera traps during survey 1 (S1) and survey 2 (S2).

Supplementary Material S4. Detection sites for Piketberg. Each phase summarises how many occasions leopards were detected, location of leopard detections and the individuals identified. Phase 1-3 are part of Survey 1, and Phase 4 – 6 form part of Survey 2.
Supplementary Material S5. Survey one leopard density habitat masks.

Supplementary Material S6. Survey two leopard density habitat masks.

Supplementary Materials S7. Review of the leopard density estimates in five provinces of South Africa