**Supplementary material**

Electrocution risk for the endangered Crowned Solitary Eagle and other birds in semiarid landscapes of central Argentina

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Appendix S1. Analysis of bird electrocution data in La Pampa province, central Argentina from November 2011 to December 2012, following Kemper et al. (2013) statistical approaches.

This methodology consists in contrasting observed mortality data against a Poisson distribution.

We calculated the probability of electrocution ($μ$) as the number of birds recorded at each pylon if each pylon had an equal likelihood of electrocuting a bird.

$$μ=\frac{Total dead birds}{Total pylons}$$

With this value, we estimated the expected frequency of birds’ electrocution on each pylon design as:

$$λ\_{i}=μ x pylons\_{i}$$

Where pylonsi is the number of pylons of each design. Then we built the Poisson distribution:

$$poisson=\frac{e^{-λ}λ^{x}}{x!}$$

Where x represents the Poisson random variable, in our case, the number of electrocuted birds.

When the observed frequency of electrocution was less than the expected the P value associated was calculated as

$$\sum\_{}^{}P\left(x\right)+P\left(x-1\right)+…+P\left(0\right)$$

When the observed frequency of electrocution was greater than the expected the P value associated was calculated as

$$\sum\_{}^{}P\left(x\right)+P\left(x+1\right)+…+P\left(x+\infty \right)$$

Table S1. Deviation of observed bird electrocution fatalities (obs) from expected (exp) per pylon design, based on the frequency of pylons surveyed in central Argentina.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pylon design** | **Number of Pylons** | **Obs.** | **Exp.** | ***P*** |
| D1 | 2736 | 5 | 29.83 | 2.17E-08 |
| D2 | 28 | 2 | 0.31 | 0.038 |
| D3 | 15 | 0 | 0.16 | 0.849 |
| D4 | 29 | 0 | 0.32 | 0.729 |
| D5 | 67 | 1 | 0.73 | 0.518 |
| D6 | 69 | 6 | 0.75 | 1.33E-04 |
| D7 | 20 | 0 | 0.22 | 0.804 |
| D8 | 134 | 17 | 1.46 | 4.48E-13 |
| D9 | 20 | 3 | 0.22 | 0.001 |
| Total | 3118 | 34 |   |   |