## Supplementary Information

Spatial mark-resight models to estimate feral pig population density. Jiménez J., Higuero R., Charre-Medellin J.F., Acevedo P.

**Supplemental S3:** Derivations of *S* from  $\sigma$  for both Spatial Mark-Resight models for an unknown number of marked individuals (SMR-UM) and Spatial Mark-Resight models for a known number of marked individuals (SMR-KM) approaches. Marked individuals are a random sample from *S*, and we need to define the state-space, which includes the resighting array plus a sufficient buffer to include all animals potentially exposed to this array, and uniformly mark individuals throughout *S*. The buffer size is selected as a function of  $\lambda_0$  and  $\sigma$ . For SMR-KM we used 750 m, and for SMR-UN, we used 1500 m.

