

McHenry, E., O'Reilly, C., Sheerin, E., Kortland, K. and Lambin, X. 2016. Strong inference from transect sign surveys: combining spatial autocorrelation and misclassification occupancy models to quantify the detectability of a recovering carnivore. – Wildlife Biology doi: 10.2981/wlb.00146

Appendix 1

Survey site selection and detection map

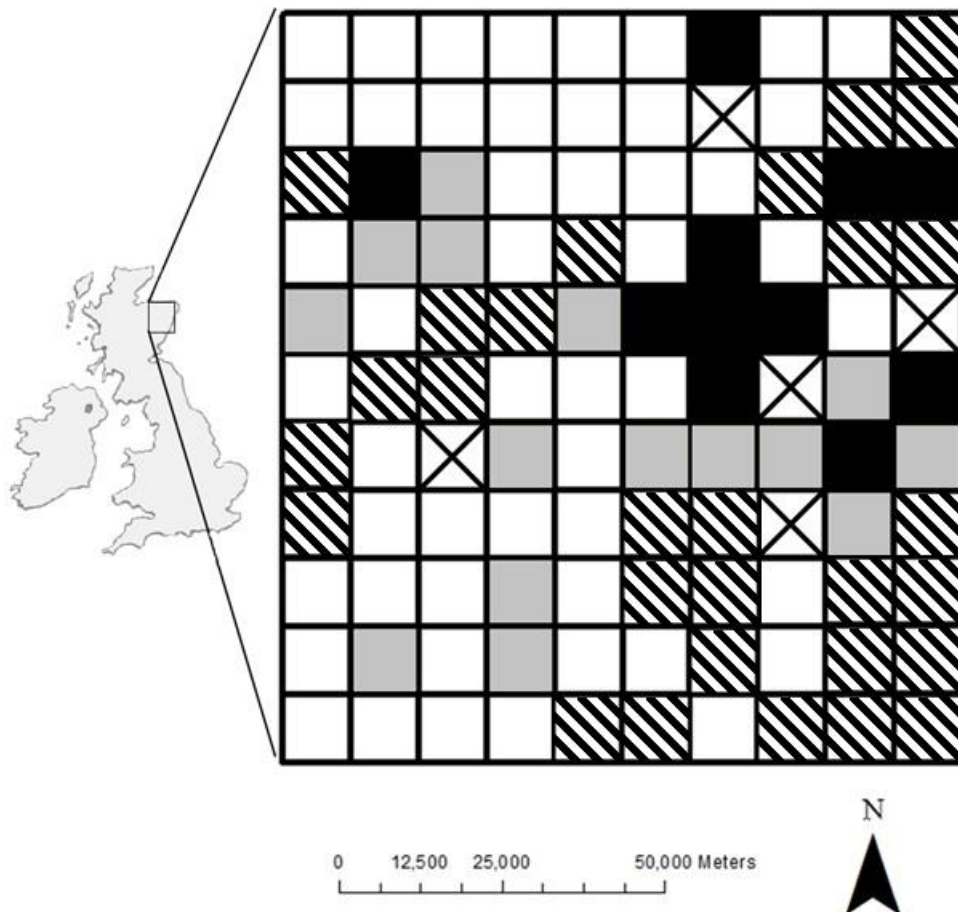


Figure A1. Hectads surveyed in the present study where: genetically verified pine marten scats were collected where pine marten had previously been recorded (Croose et al. 2013) (grey, $n = 15$); verified pine marten scats were collected that had no previous record of occupancy (X, $n = 5$); hectads where no verified scats were collected (black, $n = 11$) and hectads excluded a priori from the potential study area (striped, $n = 29$).

Supplementary information on misclassification occupancy models of pine marten scat detectability

Table A1. Parameter estimates for the false positive occupancy models. p_{11} is the probability of obtaining a detection at an occupied site, p_{10} is the probability obtaining an unconfirmed pine marten detection at a site not occupied by pine marten and b is the probability of detecting a DNA positive pine marten scat in a survey given that a detection occurred at the site.

Segment length (km)	p_{11}	(±SE)	95% CI	p_{10}	(±SE)	95%CI	b	(±SE)	95 % CI
0.1	0.09	0.01	0.07 - 0.11	0.00	0.00	0.00 - 1.00	0.46	0.05	0.62 - 0.95
0.2	0.15	0.02	0.12 - 0.19	0.26	0.06	0.16 - 0.38	0.65	0.06	0.62 - 0.94
0.3	0.21	0.02	0.17 - 0.27	0.39	0.08	0.25 - 0.55	0.66	0.06	0.64 - 0.90
0.4	0.26	0.03	0.21 - 0.32	0.40	0.09	0.24 - 0.59	0.68	0.06	0.55 - 0.88
0.5	0.32	0.04	0.25 - 0.40	0.57	0.11	0.37 - 0.76	0.67	0.07	0.51 - 0.80
0.6	0.39	0.04	0.31 - 0.48	0.58	0.12	0.34 - 0.78	0.61	0.08	0.49 - 0.82
0.7	0.44	0.05	0.35 - 0.54	0.62	0.19	0.25 - 0.89	0.65	0.08	0.48 - 0.82
0.8	0.48	0.05	0.38 - 0.58	0.59	0.14	0.32 - 0.81	0.73	0.08	0.56 - 0.85
0.9	0.52	0.05	0.42 - 0.63	0.63	0.16	0.30 - 0.87	0.67	0.09	0.48 - 0.78
1.0	0.58	0.06	0.46 - 0.68	0.66	0.19	0.27 - 0.91	0.67	0.09	0.45 - 0.75
1.1	0.59	0.06	0.47 - 0.70	1.00	0.00	0.00 - 1.00	0.67	0.08	0.53 - 0.79
1.2	0.62	0.06	0.49 - 0.74	0.81	0.16	0.35 - 0.97	0.75	0.09	0.55 - 0.78
1.3	0.66	0.06	0.53 - 0.77	1.00	0.00	0.00 - 1.00	0.80	0.07	0.52 - 0.77
1.4	0.69	0.07	0.55 - 0.80	0.80	0.19	0.27 - 0.98	0.83	0.08	0.52 - 0.76
1.5	0.73	0.07	0.58 - 0.84	0.80	0.21	0.23 - 0.98	0.85	0.08	0.36 - 0.57