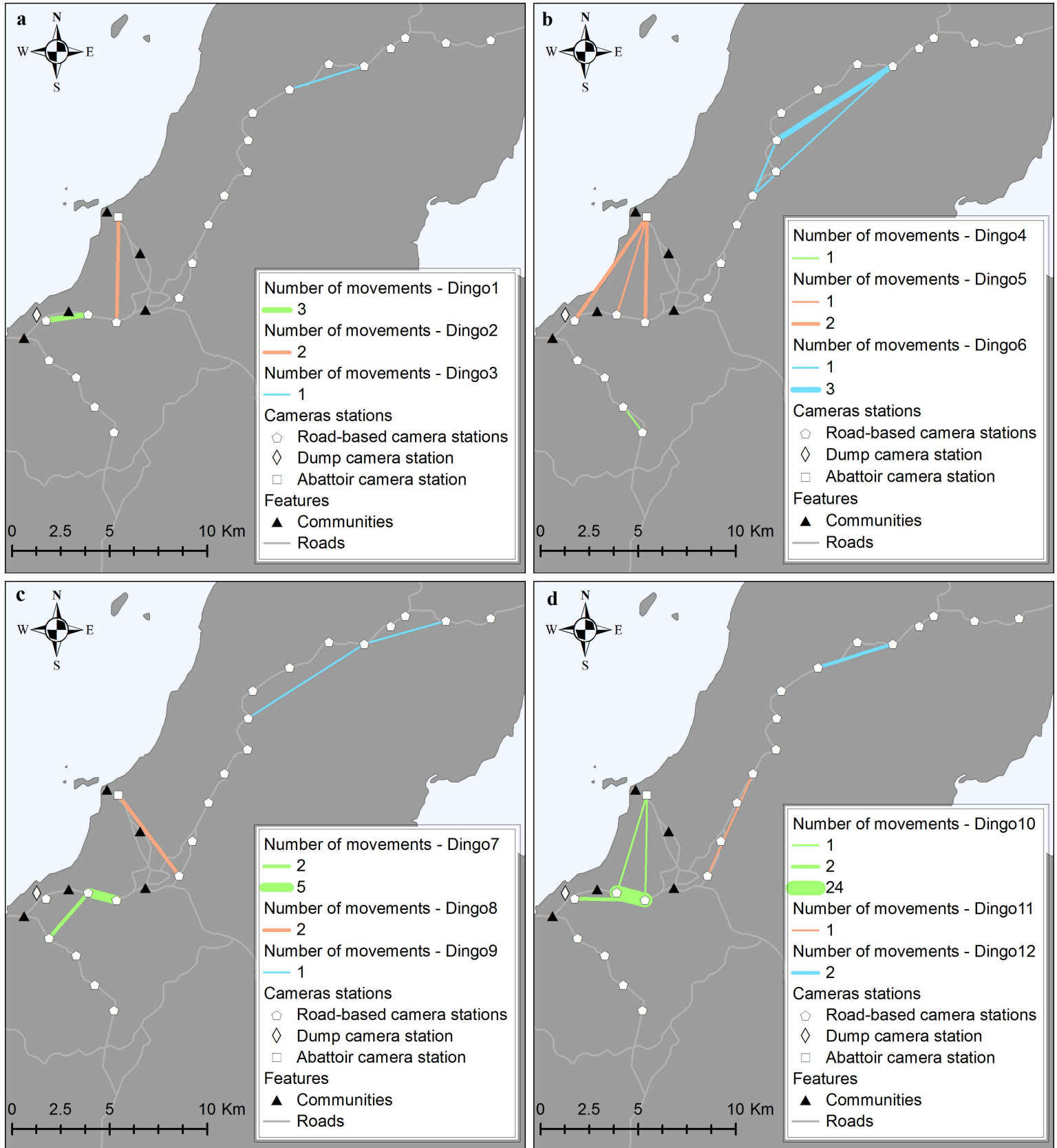
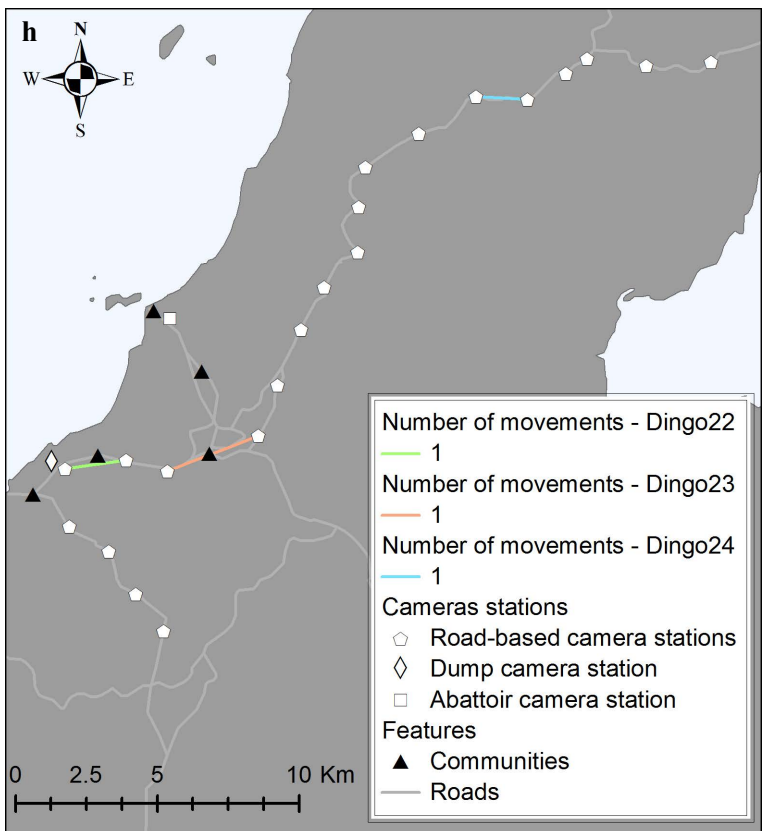
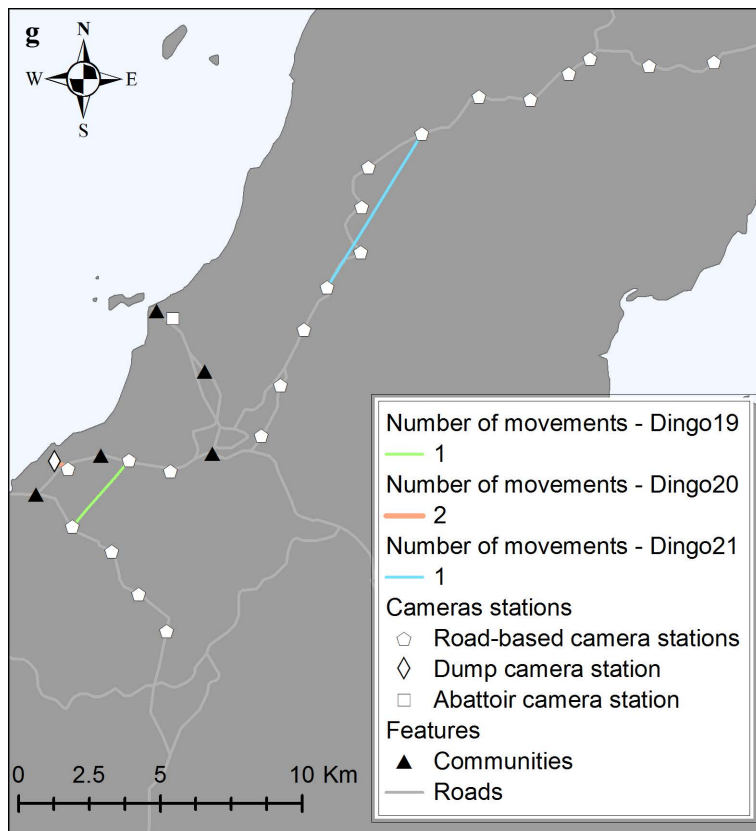
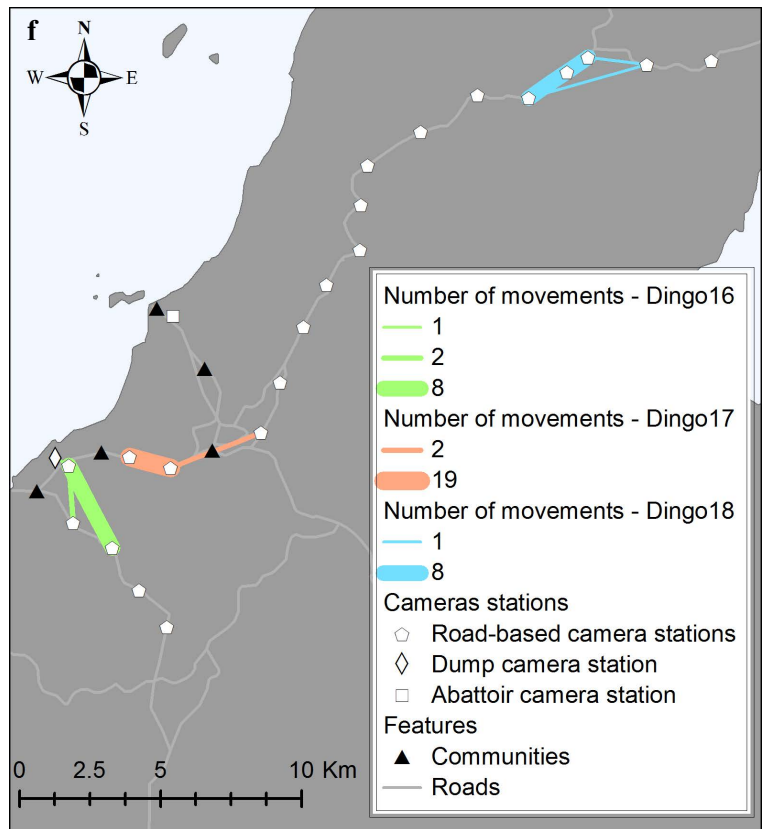
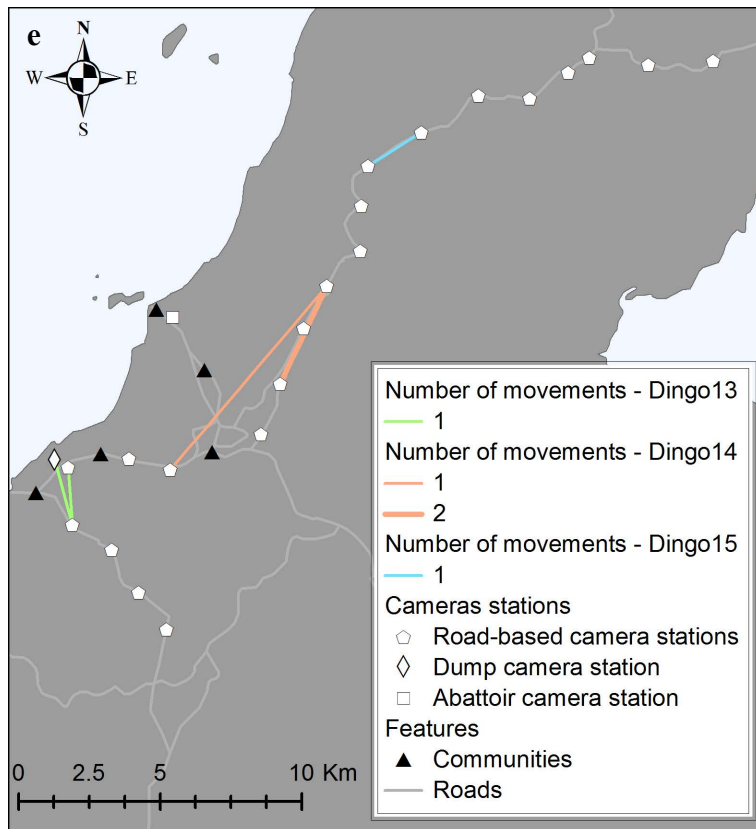


Dingo density estimates and movements in equatorial Australia: Spatially explicit mark-resight models

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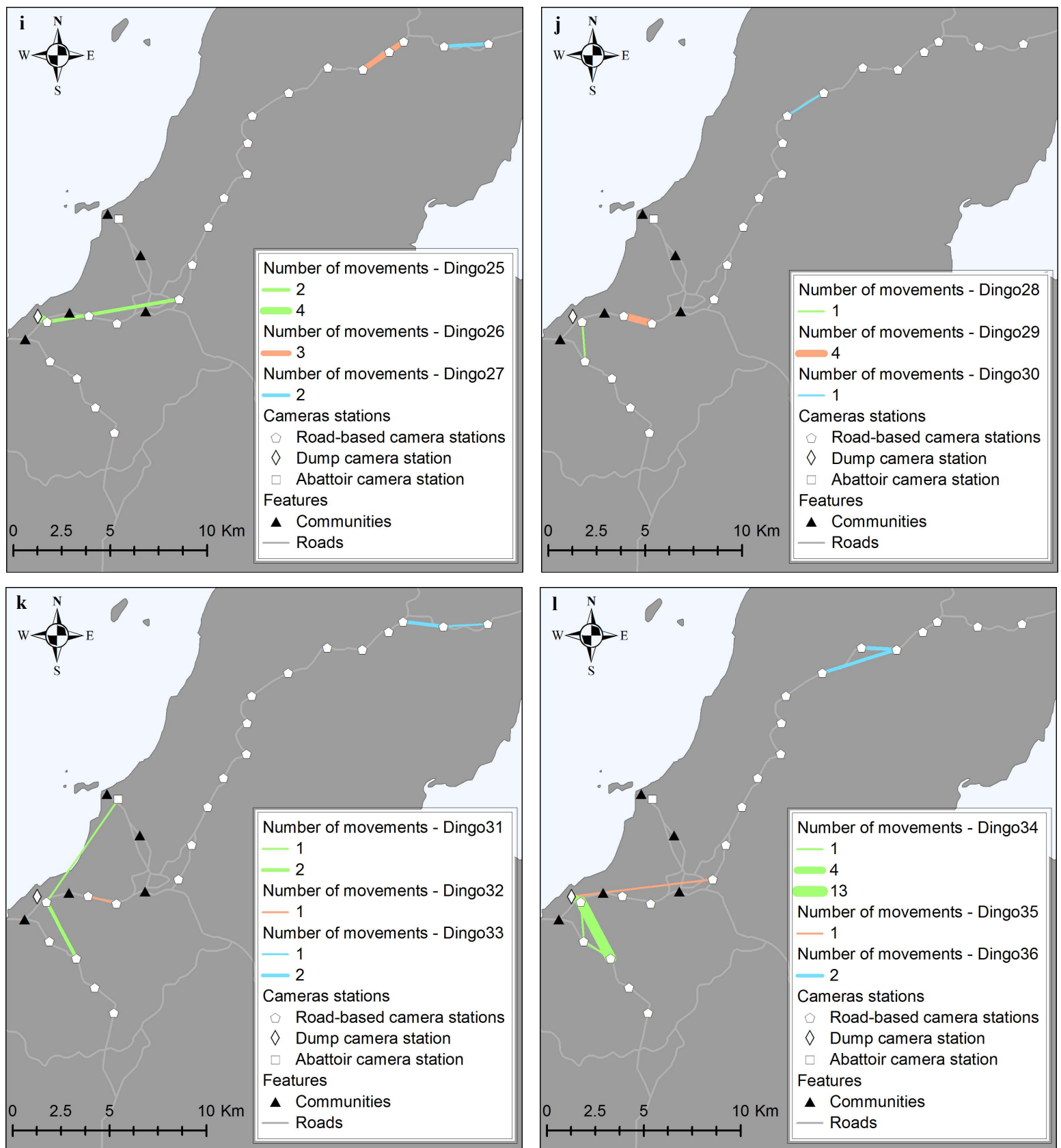


Fig. S1 (a-l) Number of movements between camera stations for each moving marked individual dingo (n=36), based on captures from a camera-trap study conducted in the NPA of Queensland, Australia, from May 2016 to May 2017

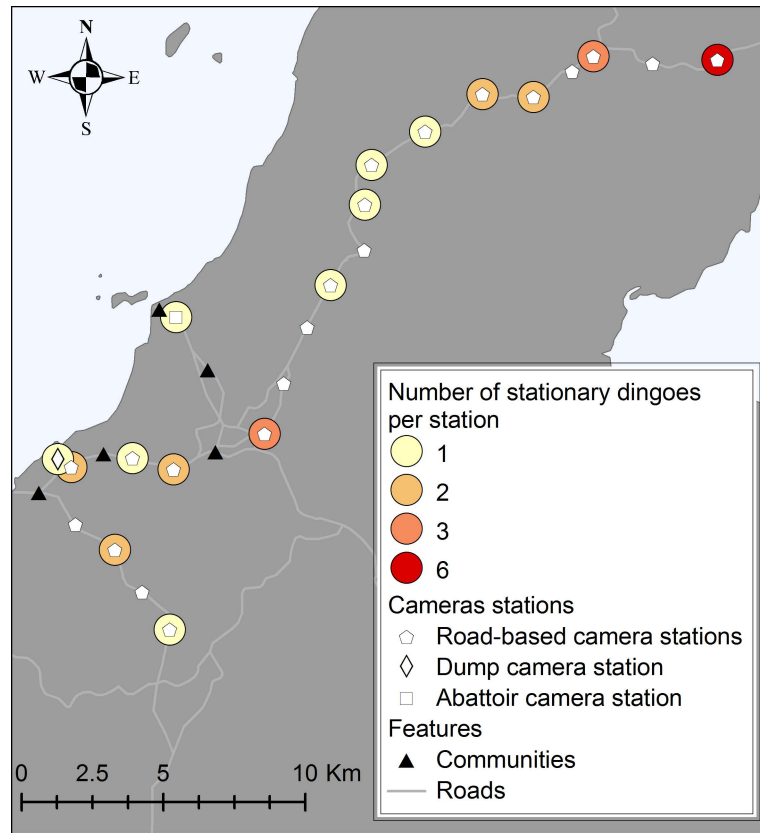


Fig. S2 Number of stationary dingoes per station (n=30), based on captures from a camera-trap study conducted in the NPA of Queensland, Australia, from May 2016 to May 2017

Table S1. SEMR multi-session models ranked based on Akaike Information Criteria corrected for small sample size (AICc), based on a camera-trap study to estimate density of a dingo population in the NPA of Queensland, Australia, monitored from May 2016 to May 2017.

Detection function	Effort adjustment	Density covariates	Detection covariates		Nb param	logLik	AIC _c	ΔAIC _c	w
			g0	sigma					
Step 1									
HN	N	N	N	N	4	-3193.8	6396.0	0	1.00
HHN	N	N	N	N	4	-3253.6	6515.5	119.5	0.00
Step 2									
HN	Effort 2	N	N	N	4	-3171.0	6350.2	0	1.00
HN	N	N	N	N	4	-3193.8	6396.0	45.8	0.00
HN	Effort 1	N	N	N	4	-3210.1	6428.4	78.2	0.00
Step 3									
HN	Effort 2	Habitat + Session	Site	Session	12	-3097.6	6222.0	0	1.00
HN	Effort 2	Habitat + Session	Site	N	9	-3114.7	6248.9	29.6	0.00
HN	Effort 2	Habitat + Session	N	Session	11	-3134.7	6293.6	71.6	0.00
HN	Effort 2	Habitat + Session	Nb cams	N	9	-3138.9	6297.3	75.4	0.00
HN	Effort 2	Habitat + Session	N	Season	9	-3140.3	6300.1	78.1	0.00
HN	Effort 2	Habitat + Session	Visibility	N	9	-3147.6	6314.7	92.7	0.00
HN	Effort 2	Habitat + Session	N	N	8	-3150.8	6318.8	96.8	0.00
HN	Effort 2	Habitat + Session	N	Habitat	9	-3150.7	6320.9	98.9	0.00
Step 4									
HN	Effort 2	Season	Site	Session	9	-3098.1	6215.7	0	0.40
HN	Effort 2	N	Site	Session	8	-3099.5	6216.3	0.6	0.30
HN	Effort 2	Habitat + Season	Site	Session	10	-3098.1	6218.1	2.4	0.12
HN	Effort 2	Habitat	Site	Session	9	-3099.5	6218.5	2.8	0.10
HN	Effort 2	Session	Site	Session	11	-3097.7	6219.6	3.9	0.06
HN	Effort 2	Habitat + Session	Site	Session	12	-3097.6	6222.0	6.3	0.02

Nb param = Number of parameters; logLik = Log likelihood value; w = weight of each model; HN = Half-Normal detection function; HHN = Hazard Half-Normal detection function; Effort 1 = Number of camera trap days; Effort 2 = ; Number of operational days; Habitat = 2-class spatial environment covariate; Site = 2-class station-specific covariate allowing the distinction of road-based from focal point stations; Session = Categorical session-specific covariate to explore differences between all 4 sessions; Season = 2-class season-specific covariate to explore differences between the dry season (sessions 1 and 2) and the wet season (sessions 3 and 4); Nb cams = Continuous station-specific covariate comprising the average number of active cameras, based on days with at least one active camera, for each station; Visibility = Continuous degree of visibility covariate, taking into account obstruction due to vegetation growth at each station and each occasion.

Table S2. Parameter estimates (density, sigma and $g0$) from the second top model of a spatially explicit multi-session mark–resight model, using a half-Normal detection function, for a dingo population in the NPA of Queensland, Australia, monitored from May 2016 to May 2017 (Session 1: May 9th – August 18th; Session 2: August 19th – November 16th; Session 3: November 17th – February 14th; Session 4: February 15th – May 15th).

	Mean	(95 % CI)
Parameter estimates of model		
Density (individuals per km ²)	0.141	(0.132-0.151)
Sigma (km)		
Session 1	1.14	(1.08-1.21)
Session 2	1.24	(1.15-1.34)
Session 3	1.11	(0.103-1.18)
Session 4	0.66	(0.60-0.72)
$g0$		
Focal point stations	0.132	(0.109-0.160)
Road-based stations	0.366	(0.311-0.423)