1 VEDLEGG 1. APPENDIX A-D. VINDVAL – REIN OG VINDKRAFT. SLUTTRAPPORT UIO/NMBU

Dette vedlegget er skrevet på engelsk fordi engelsk er «arbeidsspråk» innen statistisk metode og analyse. Enkelte tabeller og figurer har norsk tekst fordi de opprinnelig var tilrettelagt for bruk i hovedrapporten. Dette gjelder også for den punktvise detaljerte gjennomgangen av driftsmønsteret til . Tabeller og figurer inneholder supplerende informasjon, men de mest relevante figurer og tabeller finnes i hovedrapporten. Informasjonen her kan oversettes ved behov i endelig versjon.

Appendix A: Summary of Methods

Reindeer data

We used GPS data monitored for long periods in three areas:

- Rákkočearru: 3-hours interval GPS data over 8 years (2011-2019)
- Fosen: 3 hours interval GPS data over 11 years (2008-2020)
- Ildgruben: 2 hours interval GPS data over 8 years (2011-2020).

Prior to data analyses we cleaned the data and removed erroneous GPS-fixes and also removed fixes below two-hour intervals. All data when the animals were within fenced pens, or when herders forgot to turn the GPS-collars off after removing them from animals, were removed. We also excluded data two days before they were in the fenced pens and data two days after reindeer were herded into the study area to remove time when reindeer were affected by herding and gathering. In some cases, there were data missing; when only 4 or less consecutive positions were missing, we extrapolated the coordinates based on the time interval and the coordinates before/after.

Reindeer area use maps (BBMM and KDE) and home ranges

In all the three areas we used periodic and yearly reindeer area use maps to illustrate illustrate spatiotemporal variability and also to define seasonally available areas to the reindeer. We mainly utilized Brownian Bridge Movement Model (BBMM, Horne et al. 2007) and Kernel density estimation (KDE, Worton 1989). Both approaches are widely used in home-range estimations (e.g. Johnson 1980; Worton 1989; Horne et al. 2007). In this report, we used BBMM (at 99, 95 , 50 and 25% levels) to map area use of reindeer in Rákkočearru and 99% KDE in Fosen and Ildgruben study areas. Similar to Plante et al. (2018), We chose these methods to define seasonal ranges because they reflect the actual habitat used more precisely than MCP (Maximum convex polygon).

Depending on the nature of data in each area, we evaluated habitat use of reindeer using BA-design (i.e. before, during and after the infrastructure construction (e.g. Bartzke et al. 2014, Flydal et al. 2019, Smokorowski and Randall 2017) at two spatial scales (landscape and individual home range) because individual and landscape-level characteristics influence habitat selection differently (e.g. Johnson et al. 2005, Johnson 1980, Laforge et al. 2015). Information from the herders was also important when deciding to analyze data at these two scales and the seasons. The type of seasons vary depending on the study areas.

Resource selection functions (RSFs) and step selection functions (SSF)
We evaluated reindeer habitat use using resource selection functions (RSF; Manly et al. 2002) (before, during and after wind farm/power line operations, the periods vary/depends on the nature of data and infrastructure under study in each area) by fitting logistic regression with generalized linear mixed model (GLMM) in R (Bates et al. 2014). The RSFs were done at two levels, i.e. at Johnson's (1980) landscape and individual home ranges in Rákkočearru and Fosen areas.

Rákkočearru: In this area, the target infrastructure is a windfarm and wee used both landscape and individual home ranges. At the landscape scale level (landscape home range; Johnson 1980), we generated an equal number of random points with the real GPS-positions for each season within the entire study area. This means that the entire study area was defined as available for each individual every year. Within the individual home range (indvidual home range; Johnson 1980), we analyzed data on the yearly individual level. We generated an equal number of random points to the real GPS-points within each individual yearly seasonal 99 % BBMM home range (Horne et al. 2007) to define the available area for each individual. We then evaluated habitat use of reindeer using BA-design (i.e. before, during and after wind farm construction).

Fosen*:* In this area, the target infrastructures are a wind farm in Roan area and a 420-kV power line across three area (Blåheia, North and Roan). We used both RSF and step selection function (SSF). At the landscape scale level (landscape home range; Johnson 1980), we generated an equal number of random points with the real GPS-positions for each season within the Roan area. This means that the entire Roan area was defined as available for each individual every year (see Fig. 1) and then fitted RSF models for each season including other habitat and infrastructure covariates.

Within the individual home range (indvidual home range; Johnson 1980), we used individual reindeer year to identify available habitat. At this scale, we used step selection function (SSFs) to determine what is available to reindeer at observed locations taking into account the movement patterns of all individuals in the population (Thurfjell et al. 2014, Viejou et al. 2018) using regular 3 hour time interval. We first determined the true steps using the used locations (i.e. the Euclidean distance between two consecutive fixes). We then randomly assigned ten available steps beginning at the start point of each used step. Endpoints for the ten available steps were defined by drawing pairs of turn angles and step lengths from the empirical distributions. The mean (± SD) true step length within roan was 287.23 ± 518.92 (early winter and 363.10 ± 1006.93 (late winter). When we found more than 1 day gap for each individual years, we treated as two individual years (it may also be more than 2 individuals if there is more than one gap). We used the "true steps" as used and the "random steps" as available for each individual and fitted RSF models including other covariates (vegetation types, elevation, slope aspect, distance to windfarm roads, and other infrastructures) similar to the landscape home range.

Ildgruben: In this area, we after data and the target infrastructure is 420 kV power line across three ridges. Here, we used the landscape approach using the three ridges (Mofjellet, Storfjellet and Rostafjellet) and applied RSF to evaluate the effect of the power line.

Other Methods used

General Additive Models (GAM): Many data in the environmental sciences do not fit simple linear models and are best described by fitting non-linear relationships. Generalised Additive Models (GAMs) are commonly used and uses smoothness parameter that is commonly used to control the flexibility of the curves to the data (Hastie 1992). In order to illustrate data closer to the power lines in Fosen and Ildgruben, we used GAM fitted curves using the Vegan package in R.

Simple linear models: For some summarized data types such as proportions (e.g. calving site locations, in view versus out of view), we used simple linear models. We also evaluated the proportion of reindeer locations in Roan compared to the whole Fosen area before, during and after construction of Roan WF during early and late winter seasons. The proportion is calculated as number of GPS location within roan divided by the total number of locations in Fosen area during that season. We also evaluated the proportion across years within each period for each season. We also compared the percentage of GPS-positions in-view (at 87m and 146 m) between periods in relation to distance from the WF for each season using linear model. We also compared calving site locations in Rákkočearru using simple linear models.

Residence time (RT): We used the "Residence Time (RT) method" (Barraquand and Benhamou 2008) to identify calving sites that are used intensively for a short period in Rákkočearru Calving sites were identified by analyzing periods of increased RT values during the months of May and June. RT was computed for each individual female reindeer using 3 h constant step duration between GPS locations, similar to Panzacchi et al. (2013) and Colman et al. (2015). We generated RT values with a virtual radius circling each GPS location set to 50, 100, 200, 300, 400, or 500m and found the most consistent change in RT values for reindeer during spring with a 200 m radius. Animals with a large peak RT value were considered to have calved and the absence of a peak indicated that the animal did not calve (for further details see Colman et al.
2015).

NDVI: In Rákkočearru, we also extracted NDVI (Normalized difference vegetation index) for the study period using MODIS HDF data. We utilized the NDVI from the Moderate Resolution Imaging Spectroradiometer (MODIS) receiver using the novel "R" package MODIStsp (Busetto and Ranghetti 2016) to correlate with plant phenology attributes, particularly during spring season. The NDVI measures the greenness of the vegetation and is thus a tool for estimating spatiotemporal variation in forage quality (Bischof et al. 2012, Hebblewhite et al. 2008, Pettorelli et al. 2005). For each reindeer GPS position, we constructed a yearly NDVI time series based on the 16-day satellite images available (pixel size 250×250 m). The time series was constructed and processed according to Bischof et al. (2012).

Habitat and infrastructure variables: In all the study areas, we used ArcGis version 10.7.1 to generate minimum distance to infrastructures (wind farm, power lines, roads, etc.) used and extract habitat variables (e.g. elevation, slope, aspect.),. To control for landscape features and pasture conditions, we extracted elevation, slope and aspect for each data point from topographic data provided by Norge Digitalt (pixel size 25 × 25 m) and 25 vegetation types provided by NORUT (Landsat TM/ETM+, pixel size 30 × 30 m, available at https://norut.no/) for each data point.We classified the 25 vegetation/habitat types into 5 or 6 grups depending on the nature of each study area and based on different seasonal functionality as grazing habitat (Gaare and Skogland 1975).

Qualitative/descriptive analyses: We used qualitative descriptions to understand how herders' experiences relates with effects found based on GPS data analyses. We also used descriptive statistics to understand the nature of data prior to conducting advanced statistical modeling.

All analyses were done in R version 3.6.2 (R Core Team 2019).

Appendix B: Rákkočearru

Driftsmønsteret til Rákkonjárga reinbeitedistrikt er gjengitt i detalj punktvis under basert på informasjon fra distriktet (F. Utsi, pers. komm.).

- I løpet av april drives reinen fra vinterbeitene ved Finskegrensen nordover til barmarksbeitene. I et normalår blir de drevet helt frem til Kongsfjorddalen og så sluppet fri der. Deretter trekker dyrene videre nordover på vestsiden av Kongsfjorden og runder Rákkočearru ved Kjølneset (enkelte mindre flokker kan også trekke over selve platået, eventuelt på sørsiden). Noen dyr kan bli igjen på vestsiden av Kongsfjorddalen, men disse blir samlet rett før kalving i begynnelsen av mai og drevet opp mot Risfjorddalen hvor de blir sluppet og ofte trekker videre selv. Enkelte år kan dyrene også drives helt opp mot Berlevåg på vestsiden av Rákkočearru (i løpet av studiet skjedde dette kun våren 2016).
- Dyrene sprer seg gradvis og benytter i stor grad lavereliggende områdene langs kysten og i ulike daler både øst og vest for Berlevåg helt i begynnelsen av barmarkssesongen, og kalvingen skjer relativt spredd, fra rett sør for Berlevåg i nord og helt til Gulgodalen i sør. En del dyr kan også kalve på østsiden av Rákkočearru (spesielt de som blir drevet opp mot Risfjordalen rett før kalving kan kalve på østsiden av Rákkočearru).
- Etter kalvingen er dyrene spredd i de nordlige delene av området, og trekker lenger og lenger opp i terrenget jo varmere det blir utover sommeren. Opp mot Rákkočearru er det da en del mindre beitelommer som strekker seg nesten helt opp til platået, som blir benyttet og er viktige (bl.a. langs mindre bekkedrag, vann og små myrområder).
- Ved bruk av høytliggende beitelommer kan også noen dyr trekke over selve platået. Eventuelt rundt platået oppunder «steinur-grensa». Dette fører til at dyrene rekker over og rundt Rákkočearru i et slags «sirkeltrekk», og både østsiden og vestsiden av platået blir benyttet igjennom sommeren. Dyrene kan bevege seg begge veier, dvs. de kan passere Kjølneset fra øst til vest, og fra vest til øst. Dyrene kan også krysse selve platået, vanligvis i områdene rett på sørsiden av dagens vindkraftverk, eventuelt rett på sørsiden av platået, fra øst til vest, og fra vest til øst.
- I slutten av juli og begynnelsen av august begynner en del av dyrene å trekke sørover igjen, og kalvemerkinga skjer ved merke/slaktegjerdet ved Stjernevatnet vanligvis i august og september etter hvert som dyrene kommer sørover.
- Enkelte år kan dyrene presse på sørover igjen tidligere (fra ca. 20. juli) og da kan man begynne med kalvemerking allerede i slutten av juli (det foretas også noe slakt i forbindelse med kalvemerkinga i september, men hovedslaktingen skjer etter brunsten). Etter hvert som dyrene kommer igjennom slakteanlegget blir de sluppet ut på sørsiden av Fylkesvei 890.
- I slutten av august samles de dyrene som er igjen i de nordlige områdene og som ikke har kommet sørover av seg selv. Dette antallet kan variere fra år til år, men ligger vanligvis mellom 500 og 1500.
- Når alle dyrene har vært gjennom gjerdet, blir de samlet på sørsiden av Fylkesvei 890 og drevet nordover igjen, til områdene rundt Molvika, noen ganger helt opp mot Berlevåg. Dette er for å kunne utnytte barmarksbeitene best mulig. Det har kun vært svært sjeldent, kanskje 2-3 ganger de siste 30 årene, at dette driftsmønsteret ikke har blitt fulgt (pga. snøen kom tidlig). Ved å føre dyrene tilbake nord blir tråkket mot vinterbeitene sterkere på senhøsten.
- Etter at dyrene har blitt sluppet i den nordlige enden av distriktet om høsten, blir de værende her under brunsten, dvs. fra ca. 25. september til 10. oktober. Deretter trekker dyrene tilbake sørover av seg selv, vanligvis via Gulgodalen, Lille Molvika og Mielkevaggi (ca. 80-90 % av flokken). Enkelte småflokker kan komme så seint sørover som i november.
- I andre halvdel av oktober skjer hovedslaktingen ved Stjernevatnet, og de dyrene som ikke blir slaktet blir sluppet ut igjen på sørsiden av riksvei 890 og blir der frem til drivet mot vinterbeitene

lenger sør. Man slakter da ut 2000-2500 dyr, primært eldre simler, gjeldbukker og kalv (kalven dier helt frem til brunsten og derfor venter man med å slakte til etter brunsten).

- Slakten skjer over 14 dager. Ved å slakte såpass mange dyr i oktober, blir det også mindre beitetrykk på seinhøstbeitet (sør for studieområdet). Restslaktinga tas på Seidafjellet.
- Samling av «etterslengere» som fortsatt befinner seg på nordsiden av riksveien skjer vanligvis i november, og alle dyrene er ute av studieområdet i løpet av november.
- Vinterslakt og skilling skjer ved Seidafjellet i slutten av november/begynnelsen av desember. Etter vinterslakten blir dyrene drevet videre ned til vinterbeitene ved Finskegrensen/Polmakdalen (en del dyr trekker sørover av seg selv). Om Tanaelven er frosset kan de drives over til vestsiden av Tanaelva og videre til Maskkevarri. Den detaljerte bruken avhenger av beiteressursene det enkelte år, men begge sidene av Tanaelva blir brukt hvert år.
- Antall dyr i distriktet har vært relativt stabilt i hele studieperioden (se Tabell 1 under).
- Tapene har også vært relativt stabile i hele perioden, med unntak av 2014 og 2017 hvor beiteforholdene om våren var spesielt dårlige og rovdyrtapene var spesielt store (B1).
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Tabell B1 Driftsdata for Rákkonjárga reinbeitedistrikt (Reindriftsforvaltningen 2020)

År	**2010/ 2011**	**2011/ 2012**	**2012/ 2013**	**2013/ 2014**	**2014/ 2015**	**2015/ 2016**	**2016/ 2017**	**2017/ 2018**	**2018/ 2019**	**2019/2020**
Reintall pr. 31.mars	3 404	3 974	3 829	3 755	3 707	3 930	3 717	3 855	3743	3686
Tap av kalv/simle /okse	202 / 263 / 41	203 / 159 / 66	450 / 313 / 117	223 / 168 / 32	761 / 142 / 110	210 / 137 / 51	256 / 251 / 48	1195 / 281 / 79	176 / 142 / 44	-
Slaktevekter simle >2 år	32,5	33,0	32,4	34,2	35,6	36,3	35,8	37,3	34,9	-
Slaktevekter kalv	22,2	22,1	21,1	22.0	20.7	23,3	23,7	20,2	21,7	-

Table B2 Estimates of reindeer resource selection (RSF models) at the landscape home range (i.e. within the summer range) in relation to distance from wind farm before, during and after construction in spring, summer and autumn seasons from 2012-2019 in Finnmark, Norway.

Effects	Spring				Summer				Autumn			
	Estimate	SE	Z value	P value	Estimate	SE	Z value	P value	Estimate	SE	Z value	P value
Intercept	2.117	0.044	48.562	<0.001	0.308	0.040	7.648	<0.001	0.456	0.058	7.816	<0.001
Rocks, glaciers & snow patch	-2.238	0.036	-61.850	<0.001	-0.747	0.035	-21.056	<0.001	-0.688	0.055	-12.592	<0.001
Heath	-1.502	0.037	-40.188	<0.001	-0.090	0.035	-2.544	0.011	-0.131	0.055	-2.401	0.016
Other ridges*	-1.476	0.038	-38.878	<0.001	0.015	0.036	0.408	0.683	-0.109	0.055	-1.961	0.050
Others**	-1.642	0.038	-42.694	<0.001	-0.489	0.037	-13.170	<0.001	-0.749	0.058	-13.007	<0.001
During	-0.018	0.033	-0.535	0.593	0.181	0.030	6.068	<0.001	0.383	0.049	7.799	<0.001
After	0.052	0.032	1.634	0.102	-0.045	0.026	-1.725	0.084	0.208	0.034	6.180	<0.001
Distance from wind farm	-1.853	0.030	-62.777	<0.001	0.217	0.016	13.205	<0.001	0.243	0.018	13.435	<0.001
Distance from wind farm^2	-1.471	0.028	-52.821	<0.001	0.141	0.015	9.364	<0.001	0.071	0.018	3.943	<0.001
NDVI	1.048	0.027	39.058	<0.001								
Elevation					-0.332	0.007	-44.779	<0.001	-0.350	0.012	-29.916	<0.001
Slope	0.057	0.005	10.533	<0.001	-0.244	0.006	-39.558	<0.001	-0.222	0.010	-23.202	<0.001
Aspect	0.096	0.005	18.057	<0.001	-0.039	0.006	-6.558	<0.001	0.023	0.009	2.409	0.016
During × Distance from wind farm	1.202	0.037	32.610	<0.001	-0.139	0.021	-6.590	<0.001	1.206	0.049	24.537	<0.001
During × Distance from wind farm^2	0.717	0.037	19.572	<0.001	-0.101	0.020	-5.117	<0.001	-0.813	0.041	-19.862	<0.001
After × Distance from wind farm	1.512	0.031	49.482	<0.001	-0.292	0.018	-16.069	<0.001	0.296	0.022	13.714	<0.001
After × Distance from wind farm^2	0.998	0.029	34.827	<0.001	0.074	0.017	4.340	<0.001	-0.239	0.022	-10.694	<0.001

^{2} Represent a squared term. * Other ridges refers to “grass and wood rush ridge, ridge with heath, and lichen moor”. ** Others refers to “conifer forest, marsh, cultivated land, towns, and unclassified/shadow. “Lichen and deciduous forest” used as a reference for the habitat type categorical variable, and “before” was used as a reference for period. For details on the habitat types, see Table S1.

Table B3 Estimates of reindeer resource selection (RSF models) at the individual home range (i.e., individual home range within seasonal range) in relation to distance from wind farm before, during and after construction in spring, summer and autumn seasons from 2011-2019 in Finnmark, Norway.

	Spring				Summer				Autumn			
Effects	Estimate	SE	Z value	P value	Estimate	SE	Z value	P value	Estimate	SE	Z value	P value
Intercept	0.973	0.030	32.702	<0.001	0.133	0.043	3.076	0.002	0.065	0.053	1.236	0.217
Rocks, glaciers & snow patch	-0.975	0.028	-35.426	<0.001	-0.546	0.036	-15.122	<0.001	-0.266	0.049	-5.377	<0.001
Heath	-0.724	0.028	-26.312	<0.001	-0.124	0.036	-3.482	<0.001	-0.069	0.048	-1.422	0.155
Other ridges*	-0.649	0.028	-22.975	<0.001	-0.037	0.036	-1.020	0.308	0.019	0.050	0.389	0.698
Others**	-1.189	0.028	-42.464	<0.001	-0.609	0.037	-16.340	<0.001	-0.641	0.051	-12.503	<0.001
During	-0.200	0.023	-8.709	<0.001	0.218	0.035	6.246	<0.001	0.210	0.052	4.005	<0.001
After	-0.103	0.016	-6.277	<0.001	0.135	0.031	4.425	<0.001	0.038	0.033	1.143	0.253
Distance from windfarm	-0.155	0.011	-14.041	<0.001	-0.159	0.022	-7.137	<0.001	-0.092	0.019	-4.999	<0.001
Distance from windfarm^2	-0.177	0.010	-18.038	<0.001	0.272	0.016	17.348	<0.001	0.129	0.018	7.154	<0.001
NDVI	0.038	0.023	1.625	0.104								
Elevation	-0.145	0.006	-24.468	<0.001	-0.253	0.007	-34.721	<0.001	-0.095	0.012	-8.088	<0.001
Slope	-0.121	0.005	-25.146	<0.001	-0.124	0.006	-20.489	<0.001	-0.124	0.010	-12.542	<0.001
Aspect	0.070	0.005	14.477	<0.001	-0.089	0.006	-14.736	<0.001	-0.022	0.010	-2.209	0.027
During × Distance from windfarm	0.306	0.020	15.297	<0.001	0.174	0.028	6.241	<0.001	-0.442	0.071	-6.182	<0.001
During × Distance from wind farm^2	0.229	0.015	15.665	<0.001	-0.199	0.020	-9.708	<0.001	0.114	0.054	2.121	0.034
After × Distance from wind farm	0.240	0.013	18.401	<0.001	0.138	0.024	5.681	<0.001	0.036	0.023	1.605	0.109
After × Distance from wind farm^2	0.179	0.010	17.060	<0.001	-0.157	0.018	-8.925	<0.001	0.011	0.023	0.486	0.627

^{2} Represent a squared term. * Other ridges refers to "grass and wood rush ridge, ridge with heath, and lichen moor". ** Others refers to "conifer forest, marsh, cultivated land, towns, and unclassified/shadow. "Lichen and deciduous forest" used as a reference for the habitat type categorical variable, and "before" was used as a reference for period. For details on the habitat types, see Table S1.

Table B4 Estimates of reindeer resource selection (RSF models) at the landscape home range (i.e. within the summer range) in relation to distance from wind farm, vin-view vs. out-view before, during and after construction in spring, summer and autumn seasons from 2012-2019 in Finnmark, Norway.

Effects	Vår				Sommer				Høst			
	Estimate	SE	Z value	P value	Estimate	SE	Z value	P value	Estimate	SE	Z value	P value
Intercept	1.085	0.062	17.570	< 0.001	0.009	0.058	0.157	0.876	0.509	0.072	7.022	< 0.001
Rocks, glaciers & snow patch	-2.102	0.035	-60.189	< 0.001	-0.774	0.036	-21.738	< 0.001	-0.718	0.055	-13.157	< 0.001
Heath	-1.417	0.036	-39.272	< 0.001	-0.106	0.035	-2.999	0.003	-0.182	0.054	-3.337	0.001
Other ridges*	-1.402	0.037	-38.221	< 0.001	-0.004	0.036	-0.111	0.912	-0.164	0.055	-2.962	0.003
Others**	-1.559	0.037	-41.903	< 0.001	-0.509	0.037	-13.675	< 0.001	-0.756	0.058	-13.139	< 0.001
Out-view	0.943	0.050	19.008	< 0.001	0.393	0.051	7.714	< 0.001	-0.099	0.058	-1.713	0.087
During	0.447	0.069	6.439	< 0.001	0.150	0.059	2.527	0.012	0.734	0.108	6.785	< 0.001
After	0.866	0.057	15.292	< 0.001	0.029	0.052	0.546	0.585	0.290	0.061	4.718	< 0.001
Distance from wind farm	-4.241	0.128	-33.195	< 0.001	-0.042	0.053	-0.791	0.429	-0.562	0.086	-6.538	< 0.001
Distance from wind farm^2	-2.861	0.084	-33.862	< 0.001	-0.039	0.056	-0.698	0.485	-0.613	0.070	-8.727	< 0.001
NDVI	0.921	0.027	34.180	< 0.001								
Elevation					-0.272	0.008	-34.952	< 0.001	-0.267	0.012	-22.089	< 0.001
Slope	0.024	0.005	4.403	< 0.001	-0.255	0.006	-40.906	< 0.001	-0.203	0.010	-21.135	< 0.001
Aspect	0.080	0.005	14.891	< 0.001	-0.061	0.006	-10.141	< 0.001	0.007	0.010	0.727	0.467
Out-view × During	-0.444	0.072	-6.128	< 0.001	0.010	0.065	0.147	0.883	-0.314	0.118	-2.667	0.008
Out-view × After	-0.823	0.054	-15.277	< 0.001	-0.153	0.057	-2.672	0.008	-0.126	0.069	-1.827	0.068
Out-view × Distance from wind farm	2.611	0.131	19.964	< 0.001	0.112	0.057	1.947	0.052	0.711	0.088	8.064	0
During × Distance from wind farm	2.901	0.150	19.322	< 0.001	-0.318	0.072	-4.441	< 0.001	1.997	0.155	12.891	< 0.001
After × Distance from wind farm	3.041	0.132	23.109	< 0.001	-0.338	0.060	-5.629	< 0.001	0.250	0.100	2.491	0.013
Out-view × Distance from wind farm^2	1.687	0.092	18.402	< 0.001	0.252	0.060	4.225	< 0.001	0.801	0.074	10.773	< 0.001
During × Distance from wind farm^2	1.774	0.108	16.468	< 0.001	-0.070	0.073	-0.967	0.333	-1.771	0.234	-7.575	< 0.001
After × Distance from wind farm^2	1.546	0.089	17.360	< 0.001	0.086	0.063	1.376	0.169	-0.276	0.085	-3.241	0.001
Out-view × During × Distance from wind farm	-1.968	0.155	-12.712	< 0.001	0.264	0.077	3.416	0.001	-0.978	0.165	-5.927	< 0.001
Out-view × After × Distance from wind farm	-1.837	0.135	-13.618	< 0.001	0.046	0.065	0.711	0.477	0.067	0.104	0.641	0.521
Out-view × During × Distance from wind farm^2	-1.173	0.116	-10.071	< 0.001	-0.066	0.077	-0.859	0.391	1.053	0.238	4.419	< 0.001
Out-view × After × Distance from wind farm^2	-0.715	0.096	-7.423	< 0.001	0.025	0.066	0.374	0.709	0.056	0.090	0.620	0.535

^{2} Represent a squared term. * Other ridges refers to “grass and wood rush ridge, ridge with heath, and lichen moor”. ** Others refers to “conifer forest, marsh, cultivated land, towns, and unclassified/shadow. “Lichen and deciduous forest” used as a reference for the habitat type categorical variable, and “before” was used as a reference for period. For details on the habitat types, see Table S1.

Table B5 Vegetation types and classification into five main groups in Rákkonjárga

Vegetation class	Vegetation type	Main groups
1	Coniferous forest - dense tree layer	Others
2	Coniferous and mixed forests - open tree layer	Others
3	Deciduous forest	Lichen and deciduous forest
4	Low herb deciduous forest	Lichen and deciduous forest
5	Tall herb and fern forest	Lichen and deciduous forest
6	Blueberry and small fern birch forest	Lichen and deciduous forest
7	Crowberry birch forest	Lichen and deciduous forest
8	Lichen rich birch forest	Lichen and deciduous forest
9	Tussock bog with low herbs	Others
10	Bog with tall herbs	Others
11	Swamp with open plant cover	Others
12	Exposed ridge and rock, impediment	Rocks, snow patches and glaciers
13	Grass and wood rush ridge	Other ridges
14	Ridge with heather	Other ridges
15	Lichen moor	Other ridges
16	Lichen ridge, leeward side	Heath
17	Heather moor with low bushes	Heath
18	Herb rich meadow	Heath
19	Grass and dwarf willow snow bed	Rocks, snow patches and glaciers
20	Extreme snow beds	Rocks, snow patches and glaciers
21	Glacier and snow covered soil	Rocks, snow patches and glaciers
22	Lake	Others
23	Cultivated fields	Others
24	Town and populated areas	Others
25	Un-classified/ shadow	Others

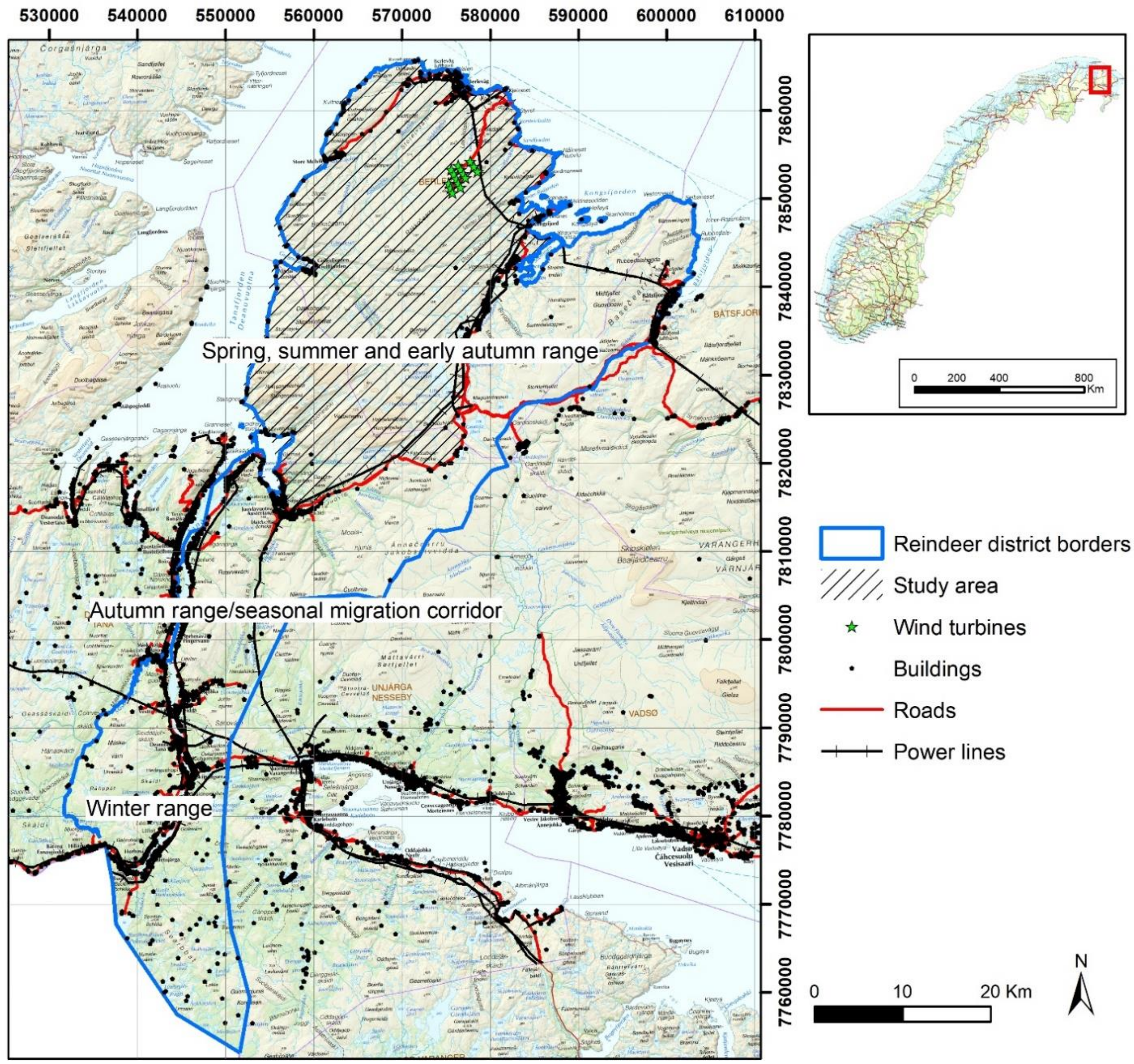


Fig B1 Map of Rákkonjárga reindeer district showing the study area, seasonal ranges and migration routes, Varanger peninsula, Finnmark, Northern Norway.

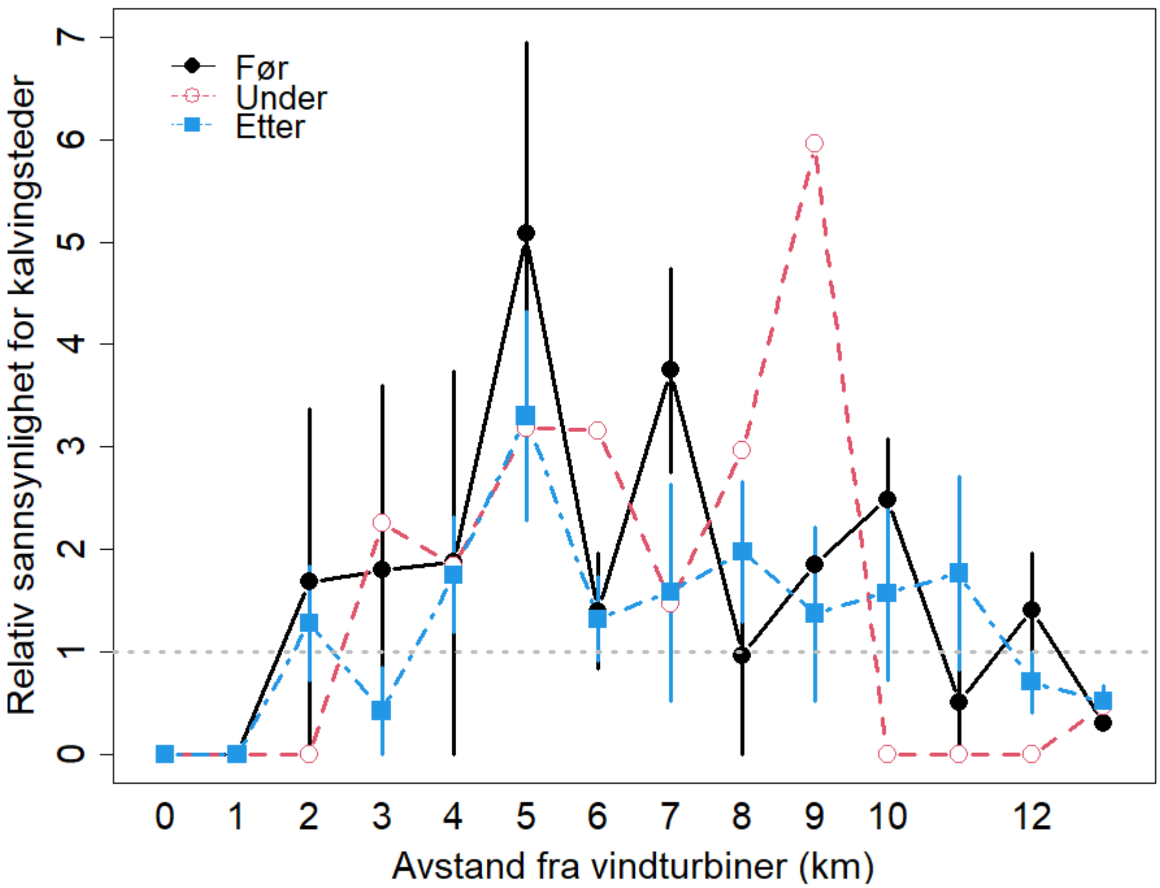


Fig B2 Relative probability of calving site locations per unit area in relation to distance intervals from WF before, during and after construction. The horizontal dotted line is a reference line representing expected probability of per unit area. The relative proportion is calculated by dividing the real proportion by the relative area at each distance interval.

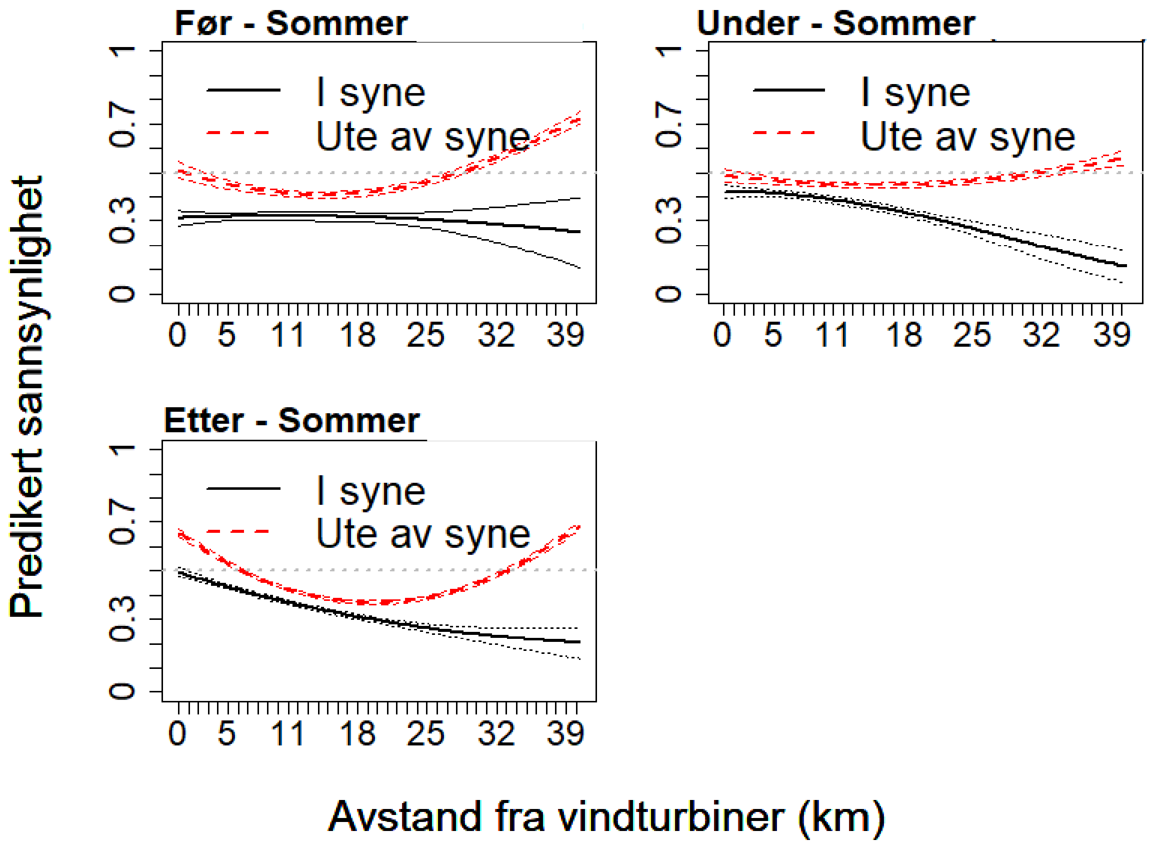
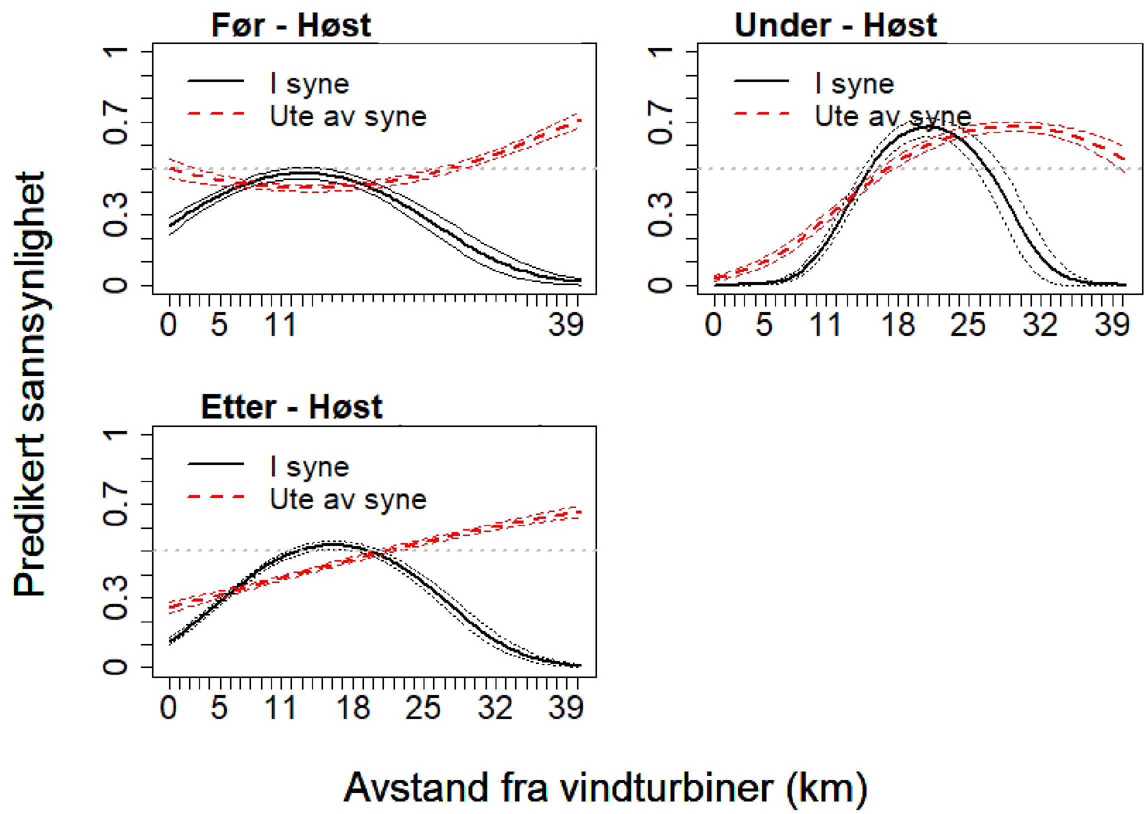


Fig B3 Bruk av områder i syne vs. ute av syne for minst 1 vindturbin om sommeren, før-, under- og etter anleggsperioden. Hvis kurven er over 0,5 så er det mer dyr her enn forventet ut ifra tilfeldighetene. Tilsvarende figur for våren er vist i hovedrapporten.



Figur B4 Bruk av områder i syne vs. ute av syne for minst 1 vindturbin om høsten, før-, under- og etter anleggsperioden. Hvis kurven er over 0,5 så er det mer dyr her enn forventet ut ifra tilfeldighetene. Tilsvarende figur for våren er vist i hovedrapporten.

Appendix C: Fosen

Table C1 Estimates of reindeer resource selection (RSF models) at the landscape home range before, during and after construction of Roan wind farm in early (1 Nov – 31 Jan) and late (1 Feb – 30 Apr) seasons from 2001-2020 in Roan, Fosen North, Norway. "Deciduous woodland and lichen forest" vegetation type was used as reference level for vegetation type (see Table S1 regarding classification). "Before" was used as a reference for the development phases. The continuous variables were scaled except for aspect. Individual reindeer year was used as random factor to account for variations.

Effects	Tidlig vinter				Sen vinter			
	Estimat	SE	Z-verdi	P-verdi	Estimat	SE	Z-verdi	P-verdi
Intercept	-0.461	0.036	-12.841	< 0.001	-0.036	0.044	-0.810	0.418
Glaciers, snow patch and rocks	0.539	0.037	14.381	< 0.001	0.280	0.051	5.438	< 0.001
Heath	0.715	0.026	27.297	< 0.001	0.427	0.035	12.067	< 0.001
Marshes	0.625	0.030	20.813	< 0.001	0.371	0.041	8.989	< 0.001
Other ridges	0.846	0.029	29.465	< 0.001	0.474	0.039	12.047	< 0.001
Others	-0.393	0.044	-8.872	< 0.001	-0.755	0.062	-12.136	< 0.001
During	-1.056	0.124	-8.487	< 0.001	-0.184	0.109	-1.696	0.090
After	-0.149	0.119	-1.253	0.210	-1.081	0.240	-4.502	< 0.001
WF road	-0.784	0.012	-63.575	< 0.001	-0.485	0.017	-28.326	< 0.001
I(WF road^2)	-0.280	0.014	-20.126	< 0.001	-0.468	0.018	-25.737	< 0.001
New power line	0.004	0.011	0.409	0.682	0.184	0.015	12.120	< 0.001
I(new power line^2)	-0.028	0.011	-2.511	0.012	0.035	0.016	2.155	0.031
Buildings with public roads	0.076	0.013	5.855	< 0.001	0.217	0.019	11.379	< 0.001
Buildings with private roads	-0.154	0.013	-11.745	< 0.001	-0.162	0.019	-8.534	< 0.001
Cabins	-0.033	0.010	-3.231	0.001	0.115	0.015	7.843	< 0.001
Trails	0.075	0.012	6.512	< 0.001	0.030	0.016	1.866	0.062
Elevation	0.641	0.015	43.904	< 0.001	0.548	0.020	27.367	< 0.001
Slope	-0.239	0.009	-25.468	< 0.001	-0.227	0.013	-17.492	< 0.001
Cosine aspect	-0.024	0.011	-2.112	0.040	-0.092	0.016	-5.855	< 0.001
During: WF road	-0.903	0.082	-10.986	< 0.001	0.965	0.049	19.874	< 0.001
After: WF road	0.708	0.046	15.447	< 0.001	1.280	0.161	7.975	< 0.001
During: New power line	1.423	0.056	25.196	< 0.001	0.233	0.043	5.369	< 0.001
After: New power line	0.996	0.040	24.601	< 0.001	1.572	0.213	7.374	< 0.001

Table C2 Estimates of reindeer resource section (RSF models) at the individual home range before, during and after construction of Roan wind farm in early (1 Nov – 31 Jan) and late (1 Feb – 30 Apr) seasons from 2001-2020 in Roan, Fosen North, Norway. "Deciduous woodland and lichen forest" vegetation type was used as reference level for vegetation type (see Table S1 regarding classification). "Before" was used as a reference for the development phases. The continuous variables were scaled except for aspect. Individual reindeer year was used as random factor to account for variations.

Effects	Tidlig vinter				Sen vinter			
	Estimat	SE	Z-verdi	P-verdi	Estimat	SE	Z-verdi	P-verdi
Intercept	-2.708	0.019	-143.861	< 0.001	0.147	0.036	4.091	< 0.001
Glaciers, snow patch and rocks	0.252	0.026	9.821	< 0.001	0.276	0.025	10.833	< 0.001
Heath	0.370	0.019	19.485	< 0.001	0.217	0.029	7.445	< 0.001
Marshes	0.352	0.021	16.531	< 0.001	0.284	0.028	10.309	< 0.001
Other ridges	0.437	0.020	21.751	< 0.001	-0.455	0.052	-8.780	< 0.001
Others	-0.268	0.036	-7.424	< 0.001	-0.025	0.035	-0.718	0.473
During	-0.038	0.044	-0.850	0.400	0.075	0.139	0.540	0.589
After	-0.039	0.035	-1.107	0.268	-0.033	0.009	-3.635	< 0.001
WF road	-0.047	0.007	-7.090	< 0.001	0.061	0.009	6.564	< 0.001
I(WF road^2)	0.039	0.006	6.526	< 0.001	0.054	0.009	5.855	< 0.001
New power line	0.075	0.007	11.285	< 0.001	0.069	0.009	7.675	< 0.001
I(new power line^2)	0.042	0.006	7.411	< 0.001	-0.081	0.010	-8.365	< 0.001
Buildings with private roads	-0.072	0.007	-10.814	< 0.001	0.023	0.008	2.704	0.007
Cabins	0.016	0.006	2.727	0.006	0.153	0.010	14.527	< 0.001
Trails	-0.028	0.007	-3.735	< 0.001	-0.176	0.009	-19.367	< 0.001
Elevation	0.128	0.007	18.307	< 0.001	-0.087	0.010	-8.434	< 0.001
Slope	-0.184	0.006	-29.736	< 0.001	-0.052	0.031	-1.691	0.091
Cosine aspect	-0.051	0.007	-7.160	< 0.001	-0.107	0.091	-1.177	0.239
During: WF road	-0.057	0.038	-1.487	0.137	0.147	0.036	4.091	< 0.001
After: WF road	-0.045	0.025	-1.833	0.067	0.276	0.025	10.833	< 0.001
During: New power line	0.009	0.036	0.259	0.796	0.217	0.029	7.445	< 0.001
After: New power line	0.041	0.026	1.591	0.112	0.284	0.028	10.309	< 0.001

Table C3: Estimates of reindeer resource selection (RSF models) in relation to 420kV power line in three areas in Fosen. Individual reindeer year was used as random factor to account for variations.

Seasond	Effects	Blåheia				Nord				Roan			
		Estimat	SE	Z-verdi	P-verdi	Estimat	SE	Z-verdi	P-verdi	Estimat	SE	Z-verdi	P-verdi
Tidlig vinter	Intercept	-0.089	0.03	-2.95	0.003	0.068	0.035	1.955	0.051	0.018	0.021	0.867	0.386
	Under	0.034	0.04	0.851	0.395	-0.152	0.081	-1.868	0.062	-0.227	0.109	-2.075	0.038
	Etter	-0.021	0.079	-0.262	0.793	-1.159	0.145	-8.017	< 0.001				
	Avstand fra kraftledning	-0.212	0.02	-10.804	< 0.001	0.068	0.024	2.856	0.004	-0.033	0.011	-3.025	0.002
	Avstand fra kraftledning^2	0.081	0.019	4.375	< 0.001	-0.044	0.024	-1.844	0.065	-0.096	0.012	-8.131	< 0.001
	Høyde	0.335	0.017	19.742	< 0.001	0.666	0.025	27.069	< 0.001	1.866	0.023	80.511	< 0.001
	Under: Avstand fra kraftledning	-0.015	0.038	-0.391	0.695	-0.726	0.073	-9.986	< 0.001	0.107	0.094	1.136	0.256
	Etter: Avstand fra kraftledning	-0.363	0.076	-4.798	< 0.001	1.545	0.143	10.832	< 0.001				
Sen vinter	Intercept	0.175	0.02	8.8	< 0.001	0.036	0.018	1.979	0.048	-0.166	0.034	-4.832	< 0.001
	Under	-0.04	0.031	-1.289	0.197	-0.028	0.041	-0.671	0.502				
	Etter	0.063	0.036	1.745	0.081	-0.012	0.043	-0.274	0.784				
	Avstand fra kraftledning	-0.218	0.014	-15.205	< 0.001	0.131	0.013	10.05	< 0.001	0.085	0.016	5.276	< 0.001
	Avstand fra kraftledning^2	-0.179	0.013	-13.777	< 0.001	-0.033	0.013	-2.526	0.012	0.059	0.018	3.292	0.001
	Høyde	0.438	0.013	34.993	< 0.001	0.198	0.012	16.301	< 0.001	1.965	0.043	45.785	< 0.001
	Under: Avstand fra kraftledning	0.008	0.03	0.271	0.786	0.164	0.045	3.652	< 0.001				
	Etter: Avstand fra kraftledning	0.093	0.036	2.604	0.009	0.003	0.042	0.076	0.94				
Vår	Intercept	0.091	0.02	4.506	< 0.001	-0.157	0.052	-3.051	0.002	0.26	0.135	1.928	0.054
	Under	-0.147	0.042	-3.497	< 0.001	-0.036	0.172	-0.21	0.834				
	Etter	-0.273	0.093	-2.928	0.003	-0.039	0.065	-0.602	0.547				
	Avstand fra kraftledning	-0.218	0.014	-15.51	< 0.001	0.08	0.044	1.841	0.066	-0.775	0.114	-6.808	< 0.001
	Avstand fra kraftledning^2	-0.098	0.015	-6.678	< 0.001	0.142	0.037	3.87	< 0.001	-0.5	0.12	-4.164	< 0.001
	Høyde	0.541	0.014	38.01	< 0.001	0.56	0.036	15.51	< 0.001	1.485	0.139	10.72	< 0.001
	Under: Avstand fra kraftledning	0.617	0.043	14.442	< 0.001	0.914	0.196	4.669	< 0.001				
	Etter: Avstand fra kraftledning	0.77	0.105	7.305	< 0.001	-0.334	0.064	-5.252	< 0.001				
Sommer/Høst	Intercept	0.007	0.026	0.288	0.774	-0.159	0.028	-5.61	< 0.001	0.214	0.033	6.545	< 0.001
	Under	-0.107	0.039	-2.731	0.006	-0.01	0.053	-0.18	0.857	-0.17	0.085	-2	0.046
	Etter	0.055	0.045	1.206	0.228	-0.087	0.06	-1.459	0.145				
	Avstand fra kraftledning	0.09	0.016	5.576	< 0.001	-0.156	0.017	-9.055	< 0.001	-0.179	0.019	-9.196	< 0.001
	Avstand fra kraftledning^2	-0.031	0.014	-2.238	0.025	0.167	0.016	10.334	< 0.001	-0.408	0.019	-21.985	< 0.001
	Høyde	0.953	0.015	62.295	< 0.001	0.875	0.017	50.849	< 0.001	3.279	0.056	58.251	< 0.001
	Under: Avstand fra kraftledning	-0.11	0.029	-3.758	< 0.001	0.066	0.04	1.661	0.097	-0.24	0.069	-3.487	< 0.001
	Etter: Avstand fra kraftledning	0.048	0.034	1.416	0.157	-0.301	0.037	-8.179	< 0.001				

Table C4 Vegetation types and classification into six main groups in Fosen, Norway

Vegetation class	Vegetation type	Main groups
0	Coniferous forest - dense tree layer	Lichen and deciduous forest
1	Coniferous forest - dense tree layer	Lichen and deciduous forest
2	Coniferous and mixed forests - open tree layer	Lichen and deciduous forest
3	Deciduous forest	Lichen and deciduous forest
4	Low herb deciduous forest	Lichen and deciduous forest
5	Tall herb and fern forest	Lichen and deciduous forest
6	Blueberry and small fern birch forest	Lichen and deciduous forest
7	Crowberry birch forest	Lichen and deciduous forest
8	Lichen rich birch forest	Lichen and deciduous forest
9	Tussock bog with low herbs	Marshes
10	Bog with tall herbs	Marshes
11	Swamp with open plant cover	Marshes
12	Exposed ridge and rock, impediment	Rocks, snow patches and glaciers
13	Grass and wood rush ridge	Other ridges
14	Ridge with heather	Other ridges
15	Lichen moor	Other ridges
16	Lichen ridge, leeward side	Heath
17	Heather moor with low bushes	Heath
18	Herb rich meadow	Heath
19	Grass and dwarf willow snow bed	Rocks, snow patches and glaciers
20	Extreme snow beds	Rocks, snow patches and glaciers
21	Glacier and snow covered soil	Rocks, snow patches and glaciers
22	Lake	Others
23	Cultivated fields	Others
24	Town and populated areas	Others
25	Un-classified/ shadow	Others

Table C5: Percentages of GPS-locations in three-areas for 5 seasons in Fosen.

1	Område	Års												
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Vår	Blåheia		1.000	0.899	0.934	0.999	0.884	0.777	0.737	0.643	**0.833**	**0.865**	0.878	0.861
	Nord		0.000	0.000	0.064	0.001	0.116	0.223	0.210	0.305	**0.167**	0.135	0.122	0.125
	Roan		0.000	0.100	0.002	0.000	0.000	0.000	0.053	**0.052**	**0.000**	**0.000**	0.000	0.014
Sommer	Blåheia	0.580	0.967	1.000	0.849	0.977	0.839	0.795	0.709	0.703	**0.870**	**0.873**	0.883	0.828
	Nord	0.420	0.033	0.000	0.151	0.023	0.161	0.205	0.237	**0.258**	**0.130**	0.127	0.117	0.164
	Roan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.054	**0.039**	**0.000**	**0.000**	0.000	0.008
Høst	Blåheia	0.700	0.807	0.864	0.501	0.592	0.507	0.753	0.615	0.641	**0.810**	0.705	0.813	0.672
	Nord	0.248	0.092	0.014	0.300	0.178	0.254	0.202	0.353	**0.359**	**0.148**	0.203	0.187	0.229
	Roan	0.052	0.102	0.122	0.199	0.230	0.239	0.045	0.032	**0.000**	**0.042**	**0.093**	0.000	0.099
Tidlig vinter	Blåheia	0.272	0.468	0.281	0.311	0.133	0.129	0.420	0.420	0.510	**0.864**	0.273	0.727	0.378
	Nord	0.418	0.181	0.385	0.202	0.277	0.224	0.190	0.312	**0.352**	**0.129**	0.511	0.273	0.285
	Roan	0.310	0.351	0.334	0.486	0.590	0.647	0.390	0.269	**0.138**	**0.007**	**0.215**	0.000	0.337
Sen vinter	Blåheia	0.388	0.179	0.254	0.190	0.070	0.236	0.430	0.110	**0.472**	**0.764**	0.600	0.423	0.314
	Nord	0.561	0.635	0.664	0.531	0.901	0.416	0.307	0.747	**0.369**	**0.236**	0.379	0.577	0.538
	Roan	0.051	0.186	0.082	0.279	0.029	0.348	0.263	0.143	**0.160**	**0.000**	**0.021**	**0.000**	0.147

Note: Bolded values indicate the construction per

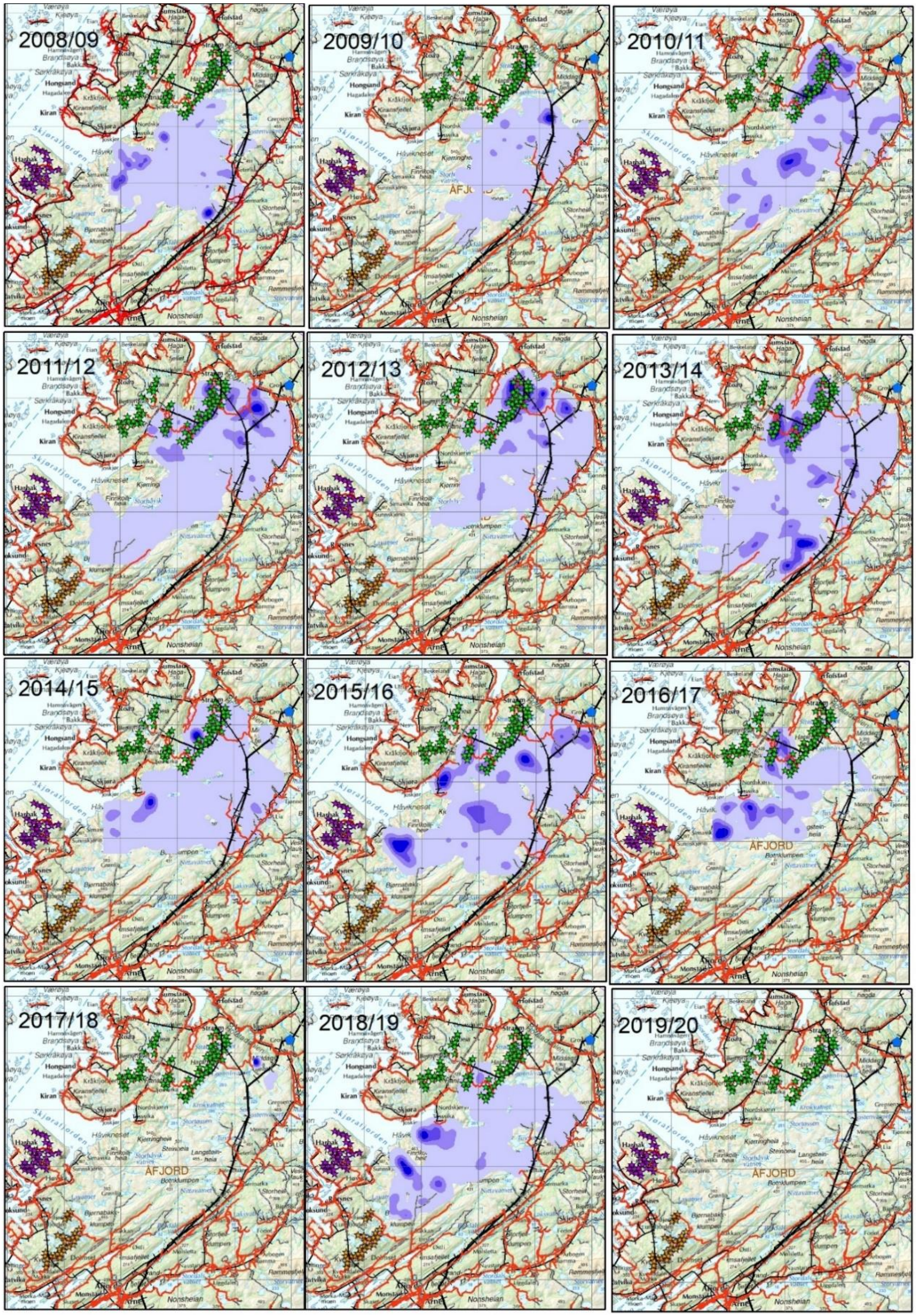


Fig C1 Arealbrukskart (99 % KDE) som viser reinens bruk av studieområdet for alle studieårene. Kartet gjelder for tidlig vinter (1 Nov-31 Jan) i Roan vinterbeiter.

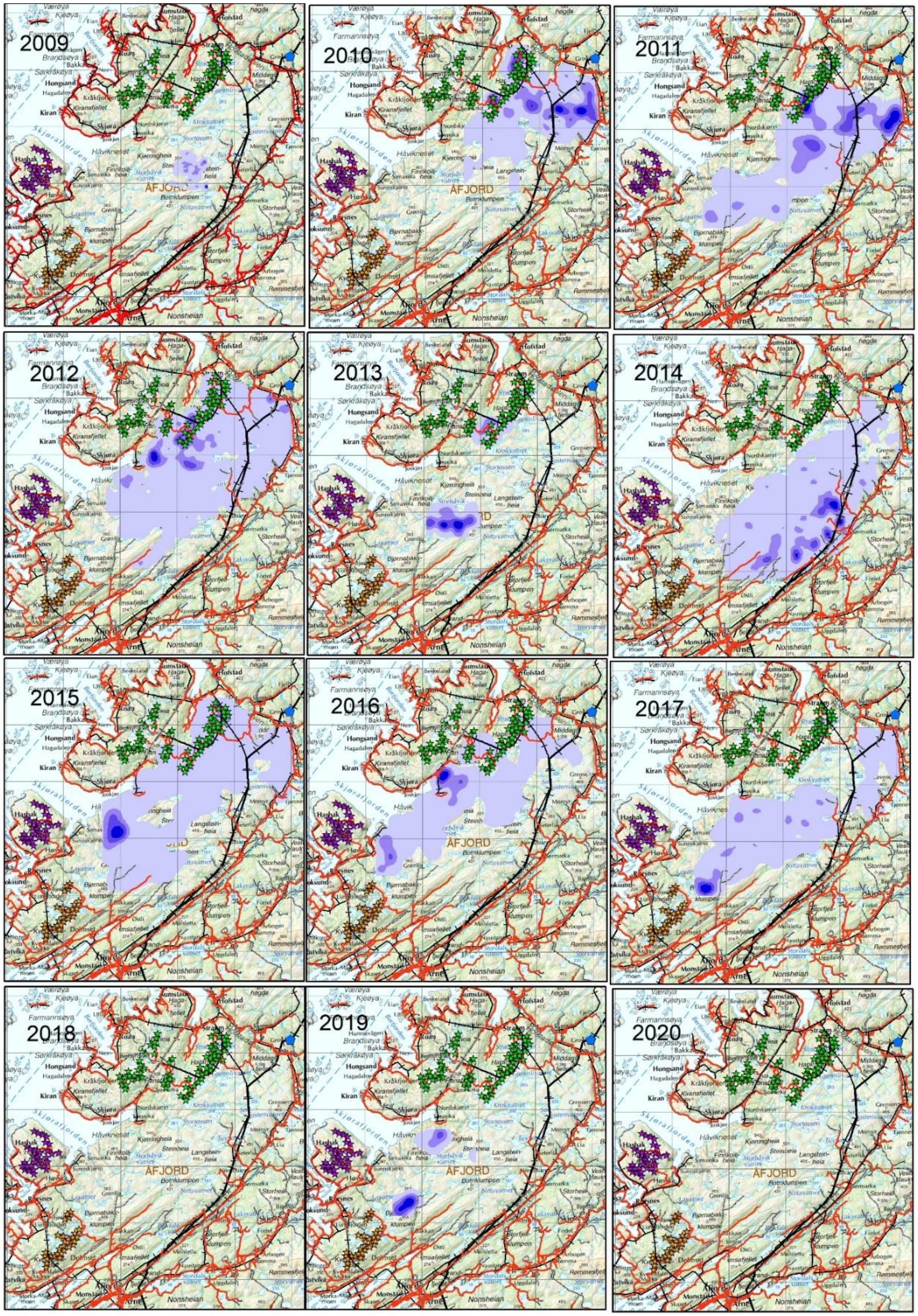


Fig C2 Arealbrukskart (99 % KDE) som viser reinens bruk av av studieområdet for alle studieårene. Kartet gjelder for sen vinter (1 Feb-30 Apr) i Roan vinterbeiter.

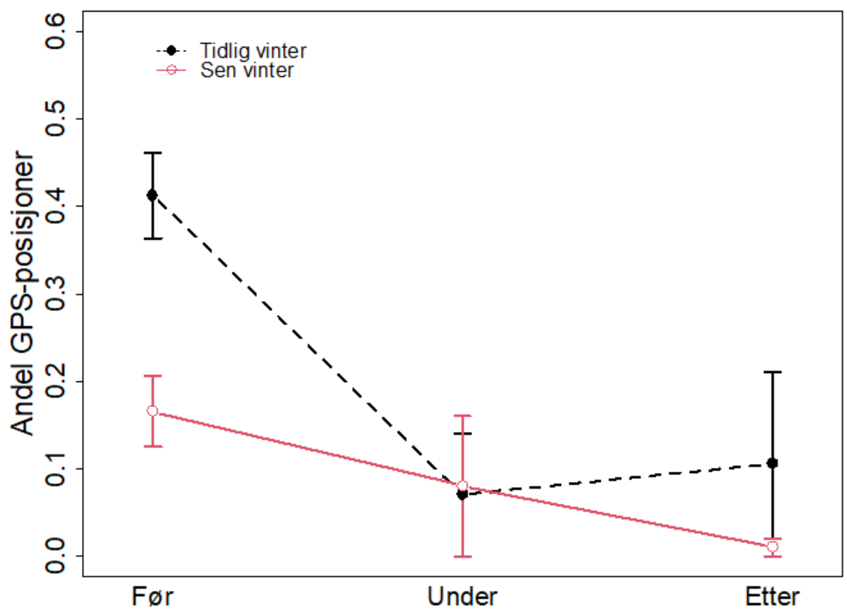


Fig C3: Andel av dyrene innenfor Fosen Nord som oppholder seg I vinterbeitene vest for Fylkesvei 715, før- under- og etter utbyggingen av Roan vindkraftverk, tidlig (1 nov-31 jan) og sen vinter (1 feb-30 Apr). Andelen er beregnet fra antall GPS-lokasjoner innenfor Roan vinterbeiter/totalt antall GPS-lokasjoner innenfor hele reinbeitedistriktet den enkelte periode.

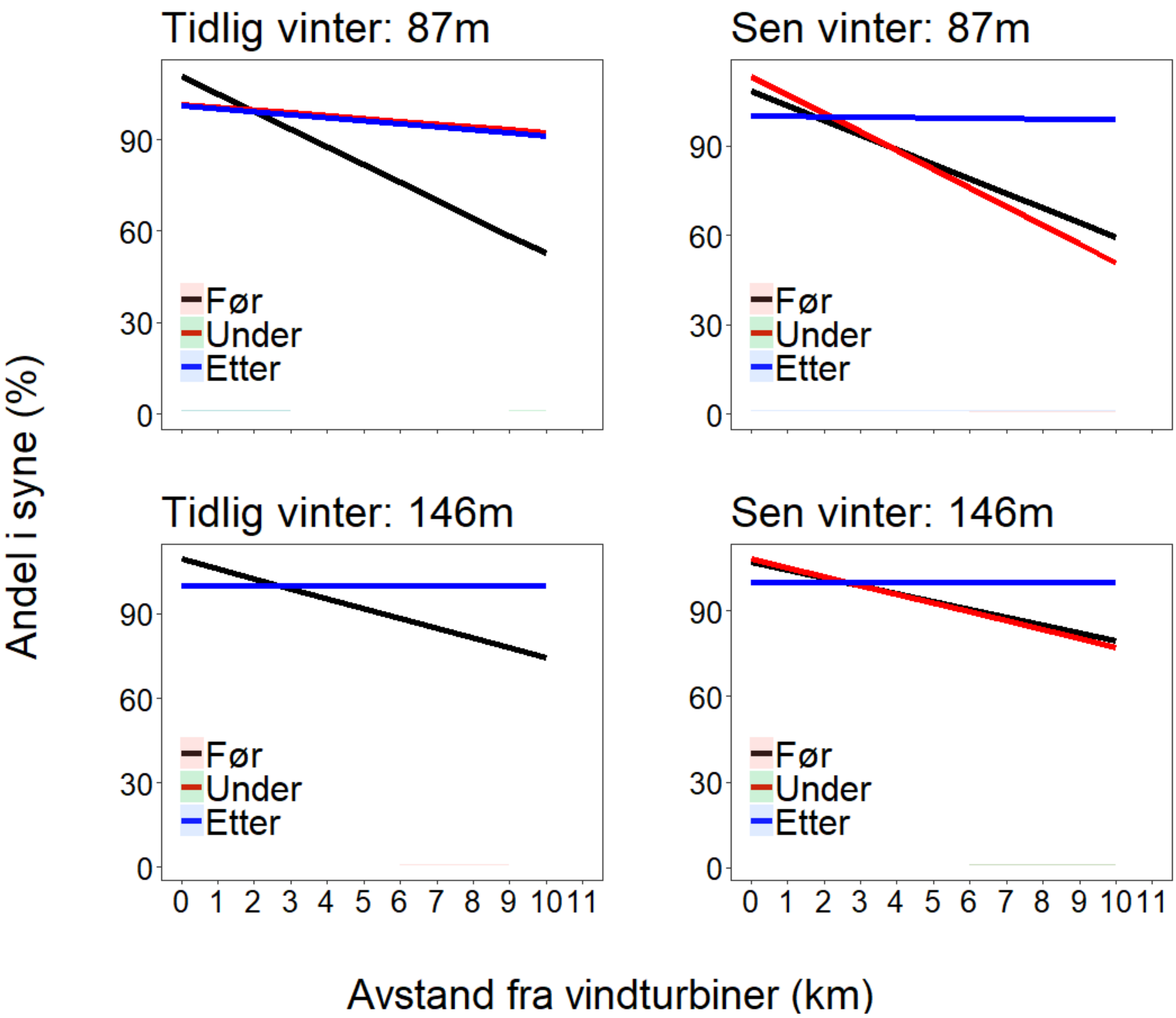


Fig C4 Prosentandeler av "i syne", under og etter anleggsperioden for Roan vindkraftverk.

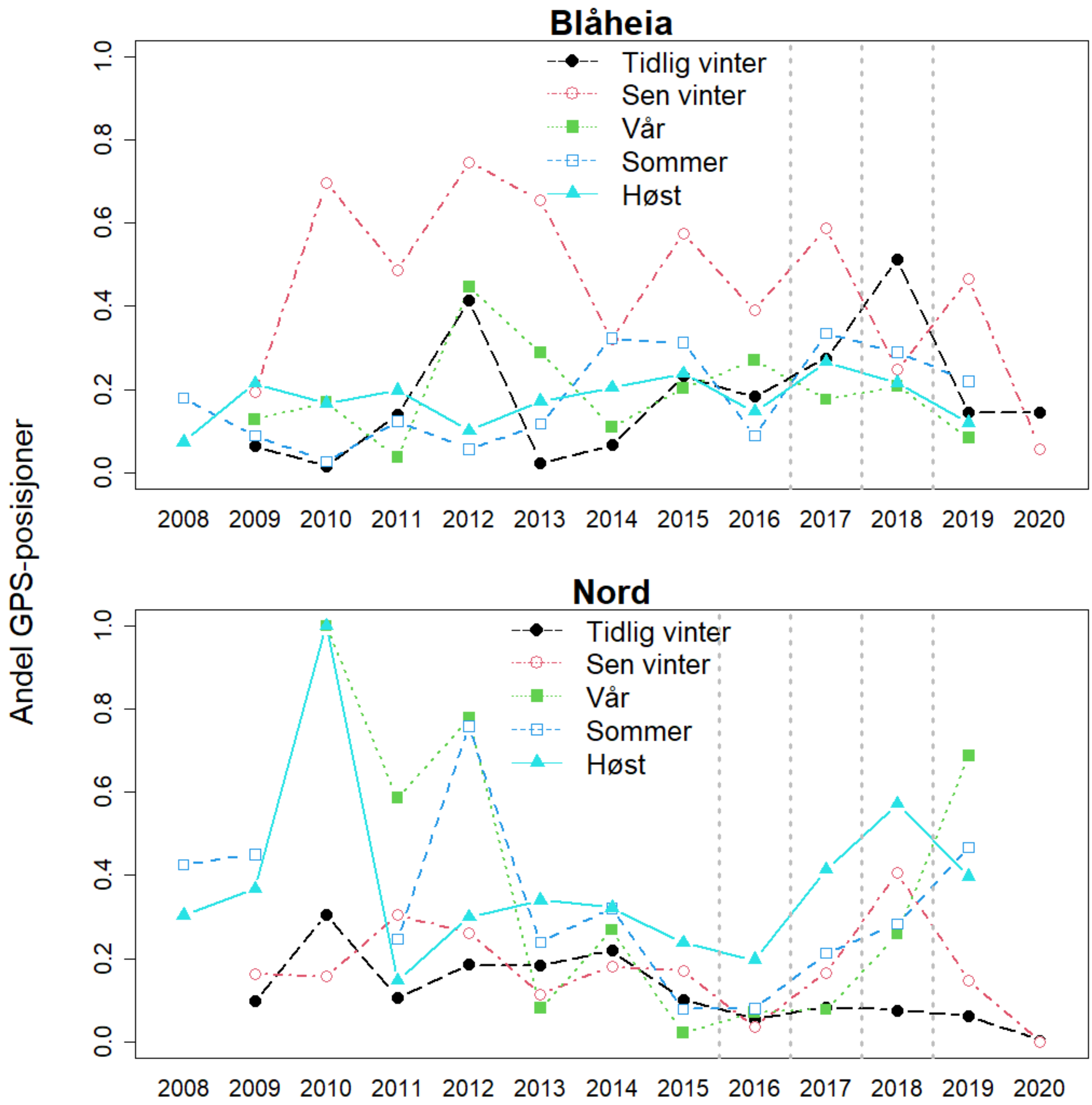
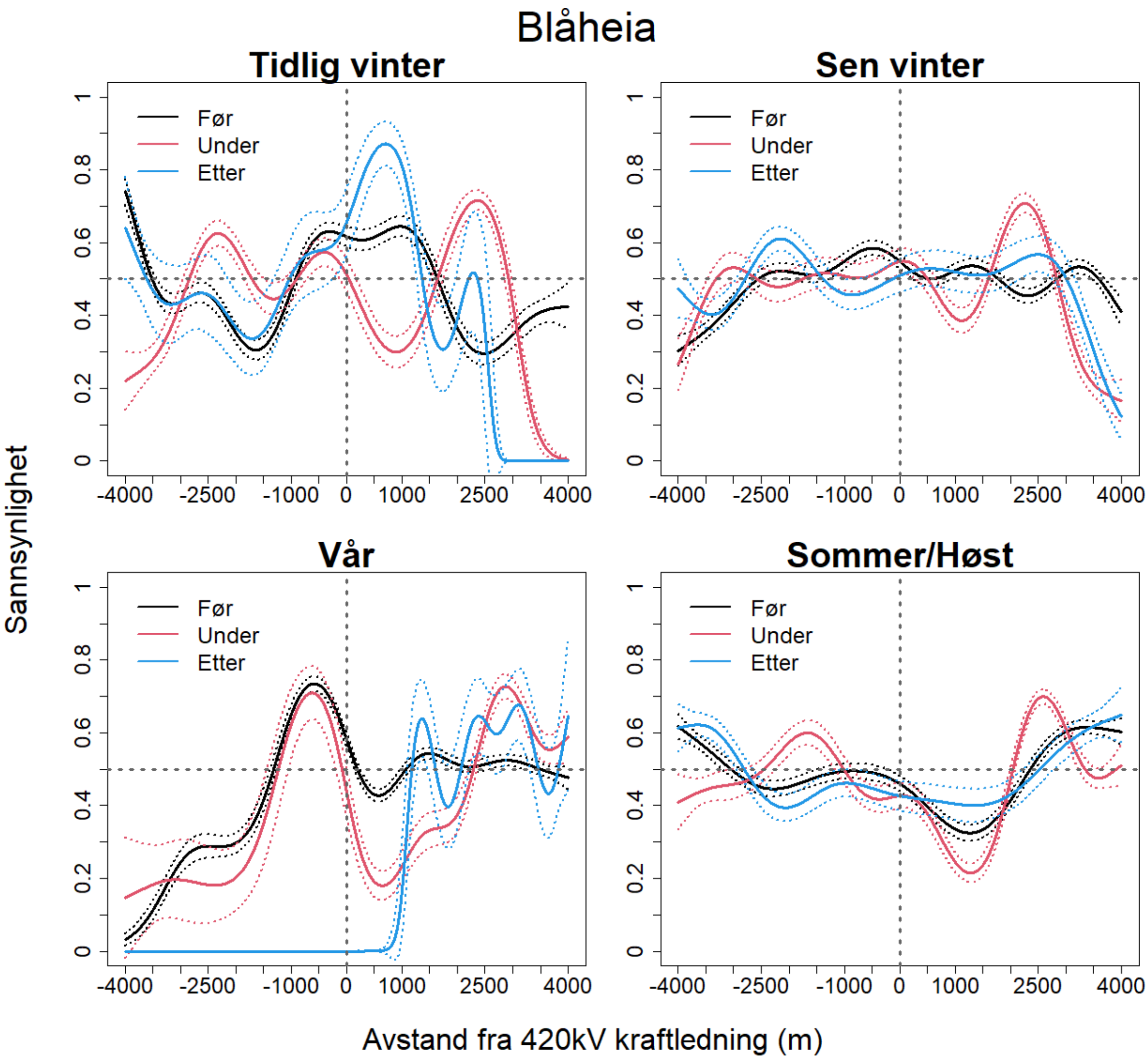


Fig C5 Andel av dyr innenfor 4 km fra kraftledningen vs totalt innenfor henholdsvis Blåheia-området (beitene som ligger sør og øst for Fylkesvei 715), og totalt innenfor området som ligger nord for fylkesvei 715. Stiplete linjer i figuren avgrenser perioder for anleggsarbeid (se Tabell C5)

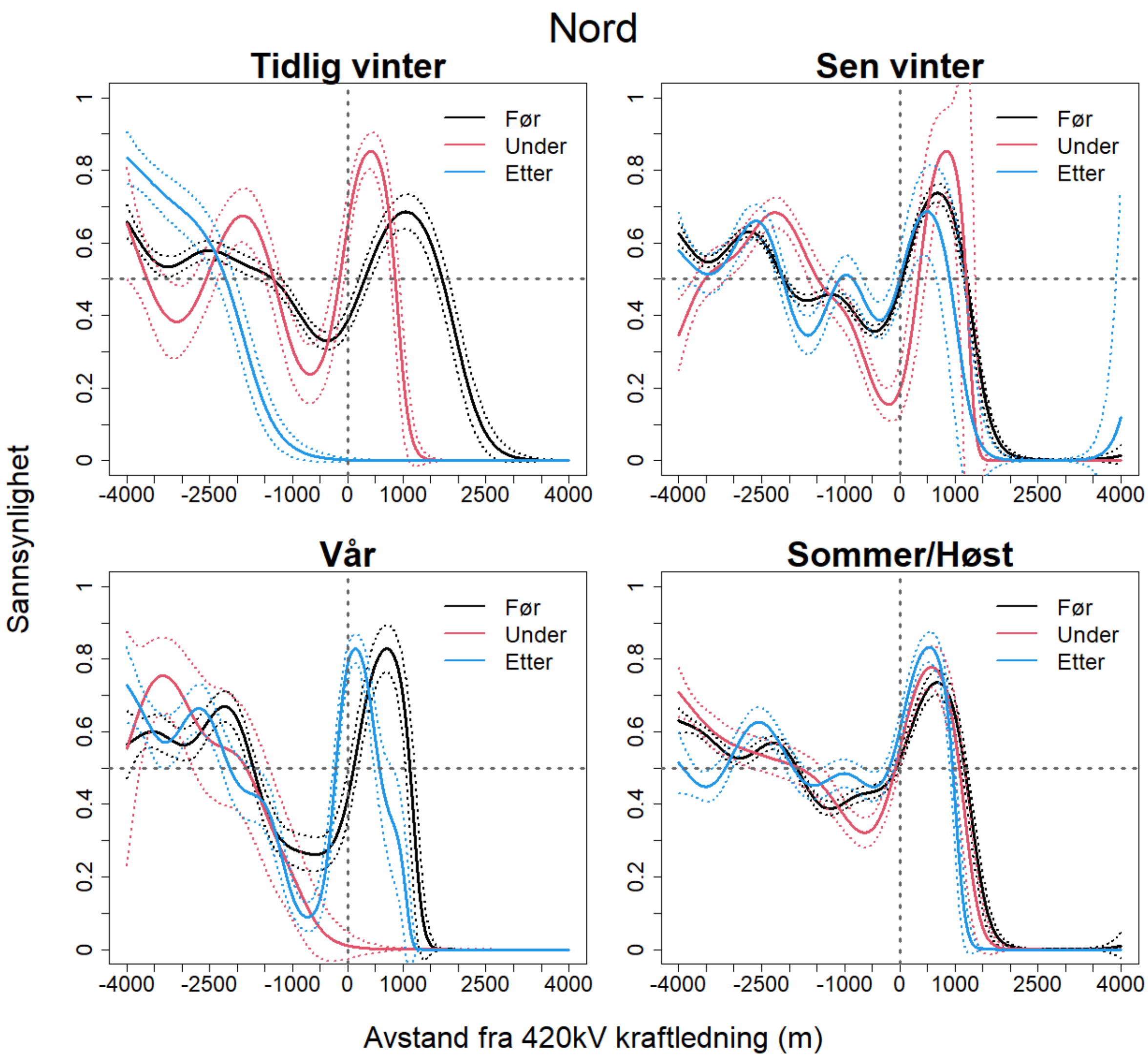
Barrierevirkninger knyttet til 420 kV-ledningen

Selv om vi ikke kunne dokumentere klare negative effekter på reinens habitatbruk relatert til 420 kV-ledningen innenfor 4 km avstand, kan negative responser forekomme innenfor en finere skala, eventuelt når reinen utsettes for direkte eksponering for ledningen. For å undersøke bruken på finere skala har vi gjort en supplerende analyse basert på GAM-modellering innenfor 4 km avstand på hver side av ledningen. Fordelen med denne modellen er at man kan få fram detaljerte kurver som viser sannsynligheten for bruk av arealer i ulik avstand til ledningen. I disse modellene er imidlertid ikke andre miljøfaktorer inkludert, så det er større usikkerhet forbundet med årsakssammenhengene. Figur C6 og C7 viser resultatene for Blåheia og Nord-området. Tilsvarende analyse for Roan har ikke data for perioden etter utbygging og anses derfor som mindre relevant (se Vedlegg 1). Oppsummert viser kurvene ingen klar reduksjon i sannsynligheten for bruk som kan relateres til anleggs- eller driftsfase for ledningen om vinteren, sommeren og høsten i Blåheia, og sommer/høst i Nord-området. For våren i Blåheia og Nord-området tidlig vinter har ikke reinen vært innenfor 1 km avstand til ledningen etter utbygging og sannsynligheten for bruk er estimert til 0. Hvis dette er en negativ virkning, skjer det altså unnvikelse på større skala. For Nord-området kan kurvene tyde på en intermediær negativ virkning (redusert sannsynlighet for bruk nær ledningen) i anleggsfasen sen vinter og vår, og det samme gjelder for våren i Blåheia. Stor variasjon i kurvene for GAM-fit, og manglende samsvar i resultatene for ulike sesonger i de to vinterbeiteområdene kan tyde på at det er tilfeldigheter som gjør utslag.

Det ble også forsøkt analyser over bevegelsesrate relatert til ledningen i Fosen, men kun ett år med data fra etterperioden gir et begrenset datamateriale slik at resultatene er desto mer usikre. Vi henviser til Ildgruben-studiet for en presentasjon av denne type analyser.



Figur C6. Sannsynlighet for bruk (GAM-fit) for Blåheia-området i periodene før, under og etter utbygging av 420 kV-ledningen. 95% konfidensintervall er vist med stiplete linjer.



Figur C7 Sannsynlighet for bruk (GAM-fit) for Nord-området i periodene før, under og etter utbygging av 420 kV-ledningen. 95% konfidensintervall er vist med stiplete linjer.

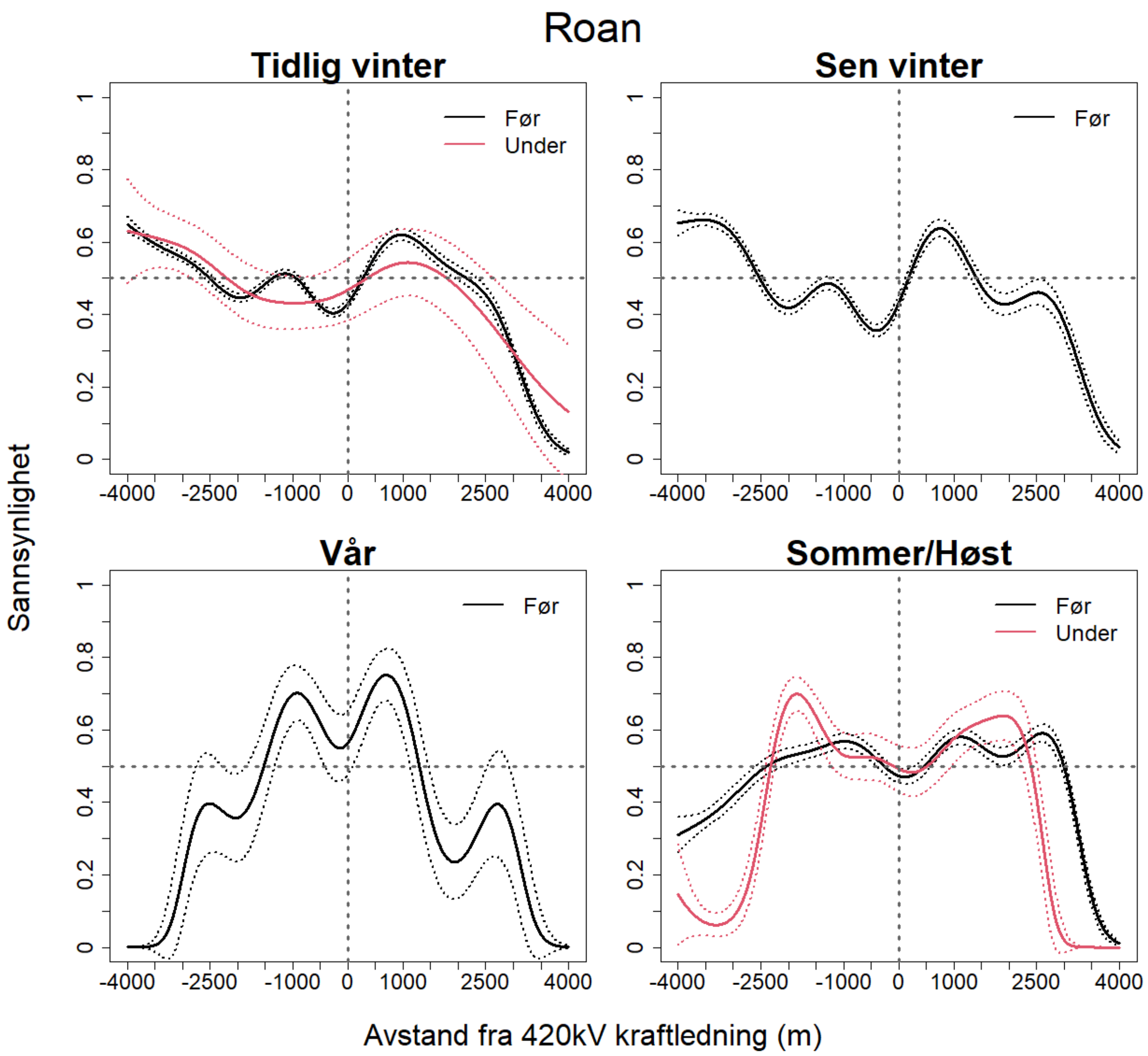


Fig C8 Sannsynlighet for bruk (GAM-fit) for Roan-området i periodene før og under utbygging av 420 kV-ledningen. 95% konfidensintervall er vist med stiplete linjer (det var ikke dyr i nærheten av ledningen i etterperioden)..

Appendix D: Ildgruben

Tabell D1 Estimater av reinsdyr ressursvalg (RSF-modell) i forhold til avstand til 420 kV kraftledning på 3 fjellrygger på intermediær skala, 4 km, innenfor Ildgruben. Individulet reinsdyrsår er brukt som tilfeldig faktor for å hensynta varisjon. Sommer er referansesesongen.

Effects	Mofjellet				Storfjellet				Rostafjellet			
	Estimat	SE	Z-verdi	P-verdi	Estimat	SE	Z-verdi	P-verdi	Estimat	SE	Z-verdi	P-verdi
Intercept	-0.050	0.033	-1.520	0.129	0.084	0.017	4.889	< 0.001	0.054	0.029	1.832	0.067
Vinter	0.015	0.040	0.374	0.709	0.007	0.022	0.302	0.763	-0.003	0.030	-0.084	0.933
Avstand fra 420kV kraftledning	0.129	0.020	6.499	< 0.001	-0.201	0.013	-15.310	< 0.001	0.025	0.025	1.016	0.310
Avstand fra 420kV kraft-ledning^2	-0.008	0.016	-0.475	0.635	-0.090	0.011	-7.917	< 0.001	-0.052	0.015	-3.459	0.001
Høyde	0.998	0.018	55.961	< 0.001	0.173	0.011	16.324	< 0.001	-0.010	0.014	-0.699	< 0.001
Vinter: Avstand fra 420kV kraft-ledning	-0.117	0.030	-3.897	< 0.001	0.159	0.022	7.257	< 0.001	0.005	0.029	0.184	0.854

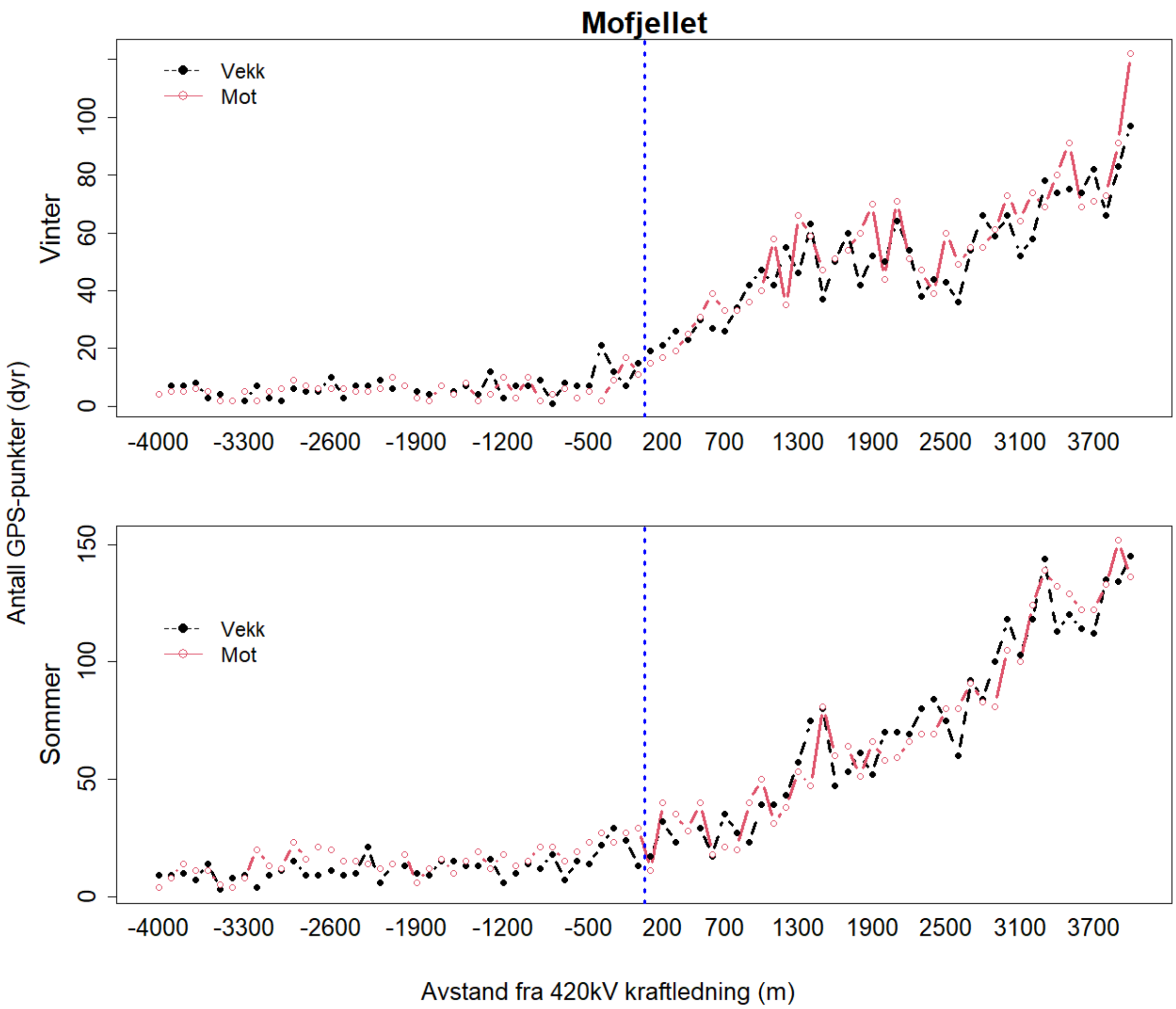


Fig D1 Distribution of GPS-locations (counts every 100 m each interval) within 4 km from power line in Mofjellet ridge, Ildgruben

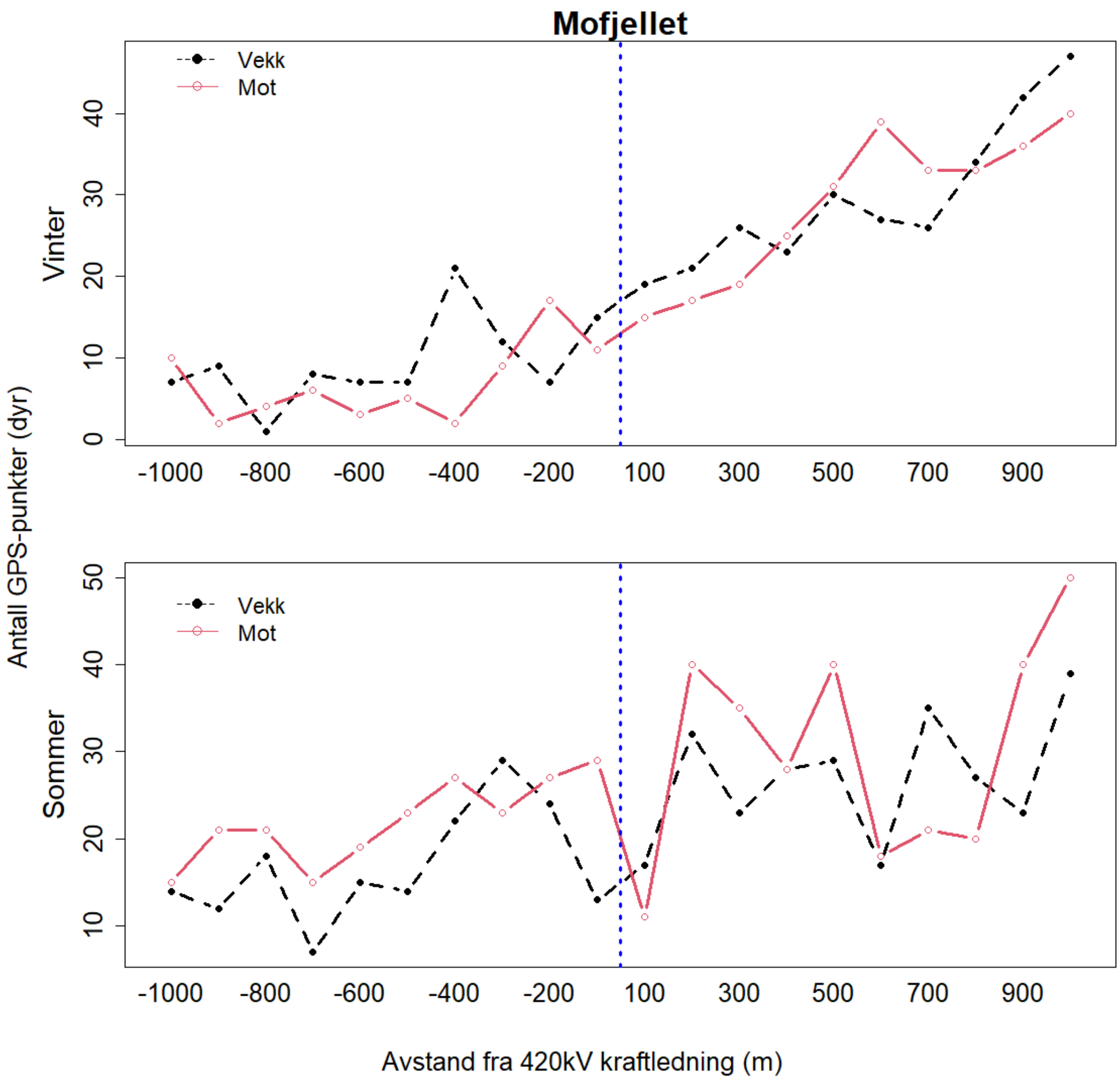


Fig D2 Distribution of GPS-locations (counts every 100 m each interval) within 1 km from power line in Mofjellet ridge, Ildgruben

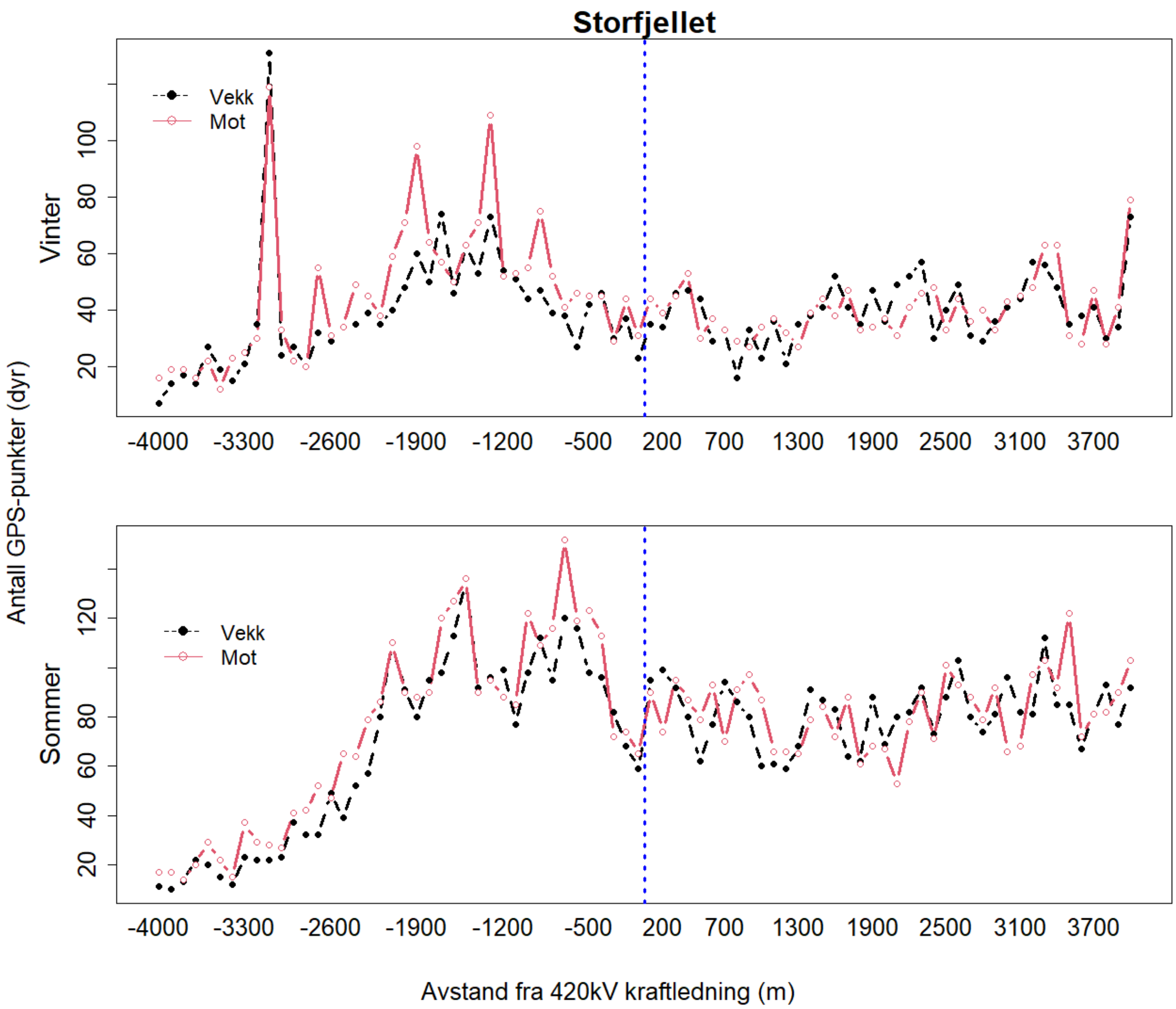


Fig D3 Distribution of GPS-locations (counts every 100 m each interval) within 4 km from power line in Storfjellet ridge, Ildgruben

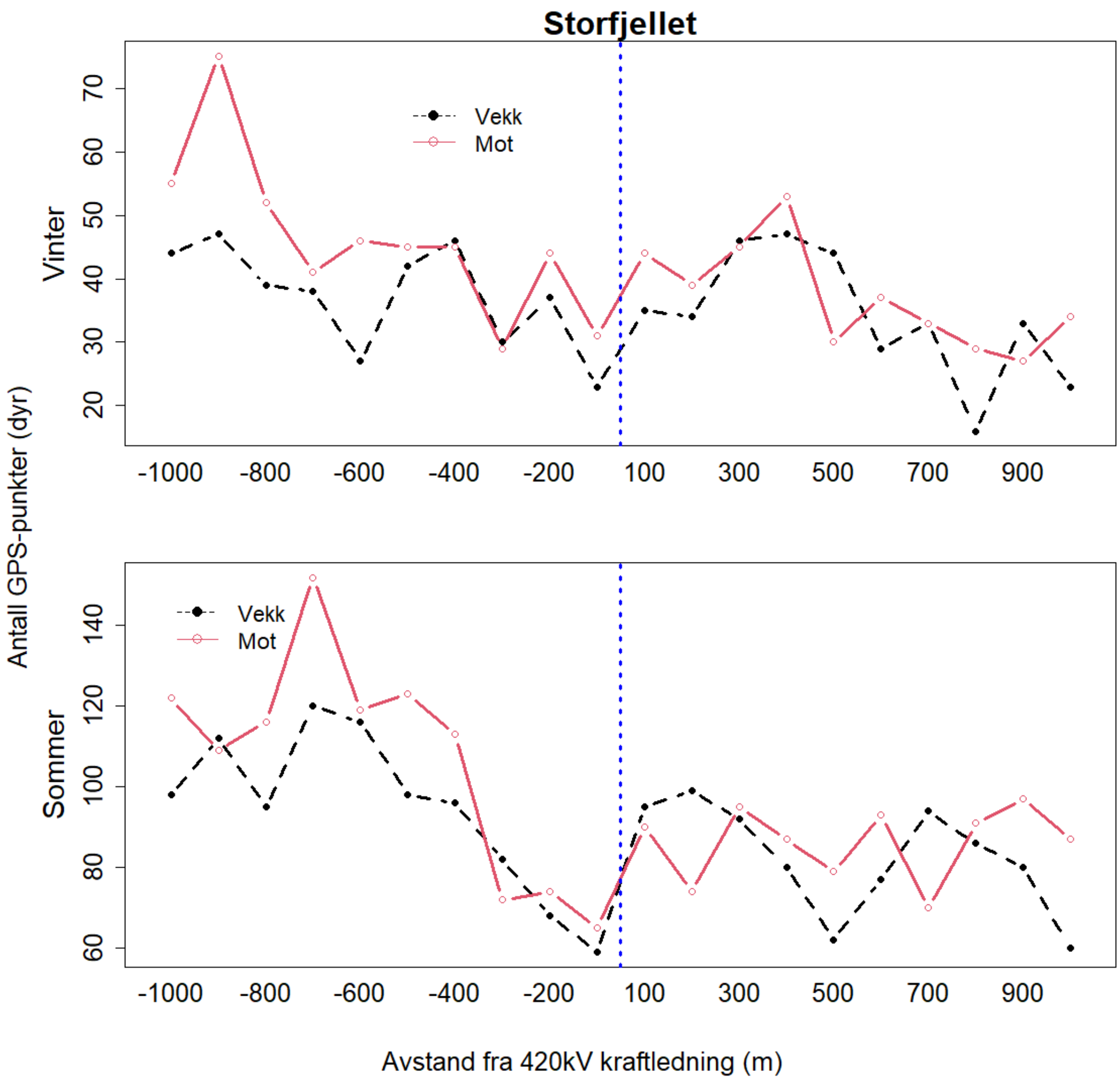


Fig D4 Distribution of GPS-locations (counts every 100 m each interval) within 1 km from power line in Storfjellet ridge, Ildgruben

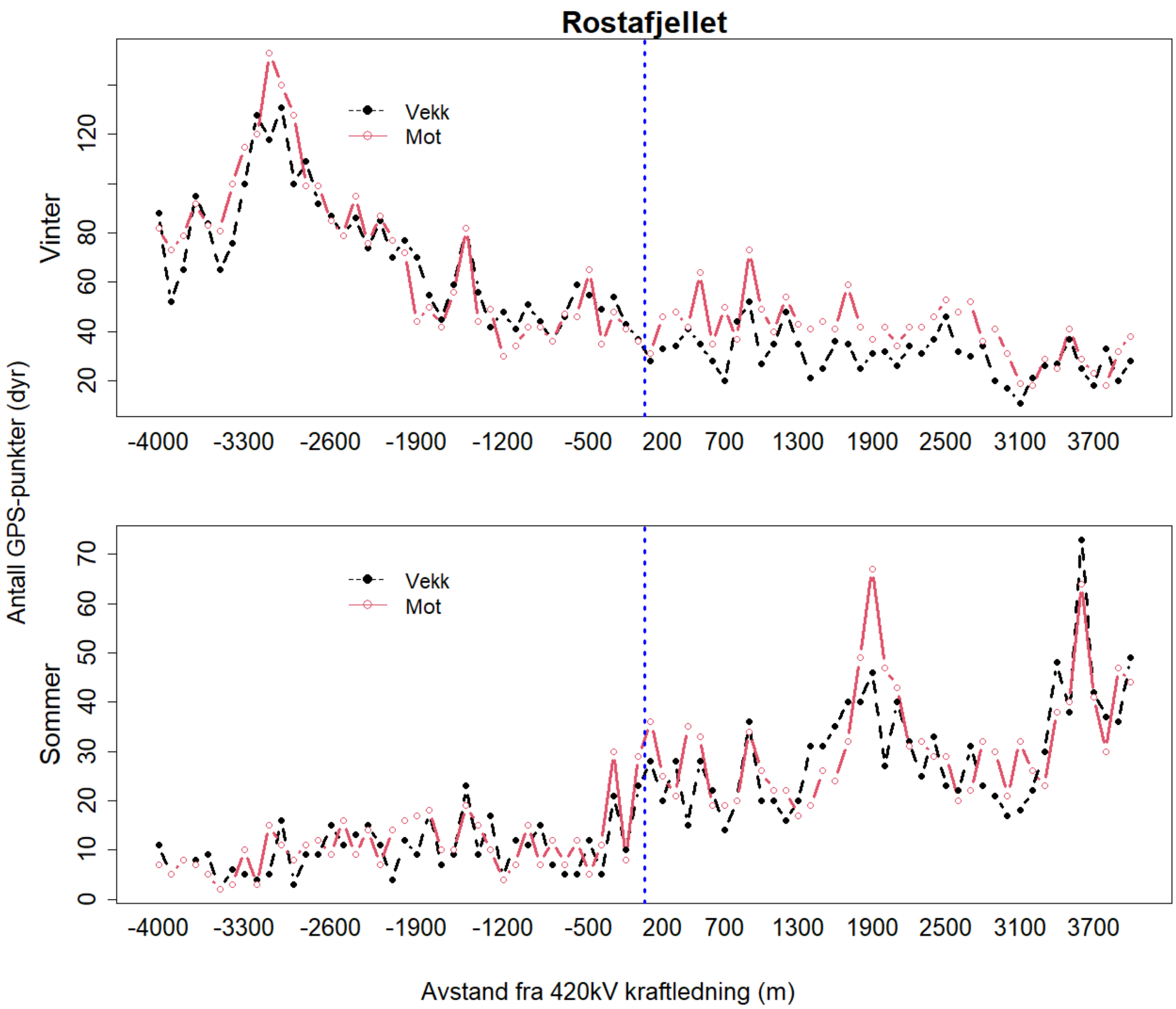


Fig D5 Distribution of GPS-locations (counts every 100 m each interval) within 4 km from power line in Rostafjellet ridge, Ildgruben

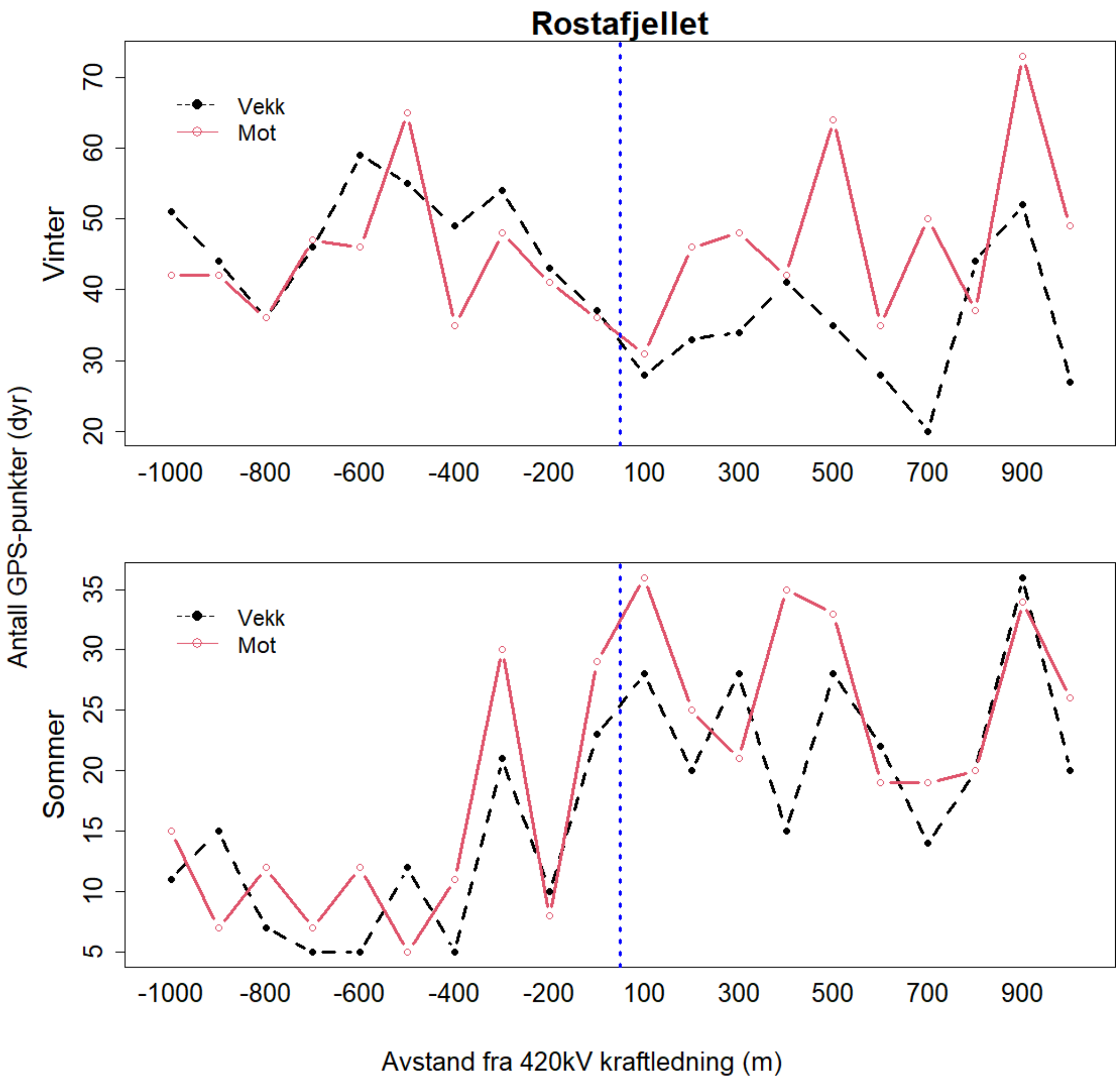


Fig D6 Distribution of GPS-locations (counts every 100 m each interval) within 1 km from power line in Rostafjellet ridge, Ildgruben

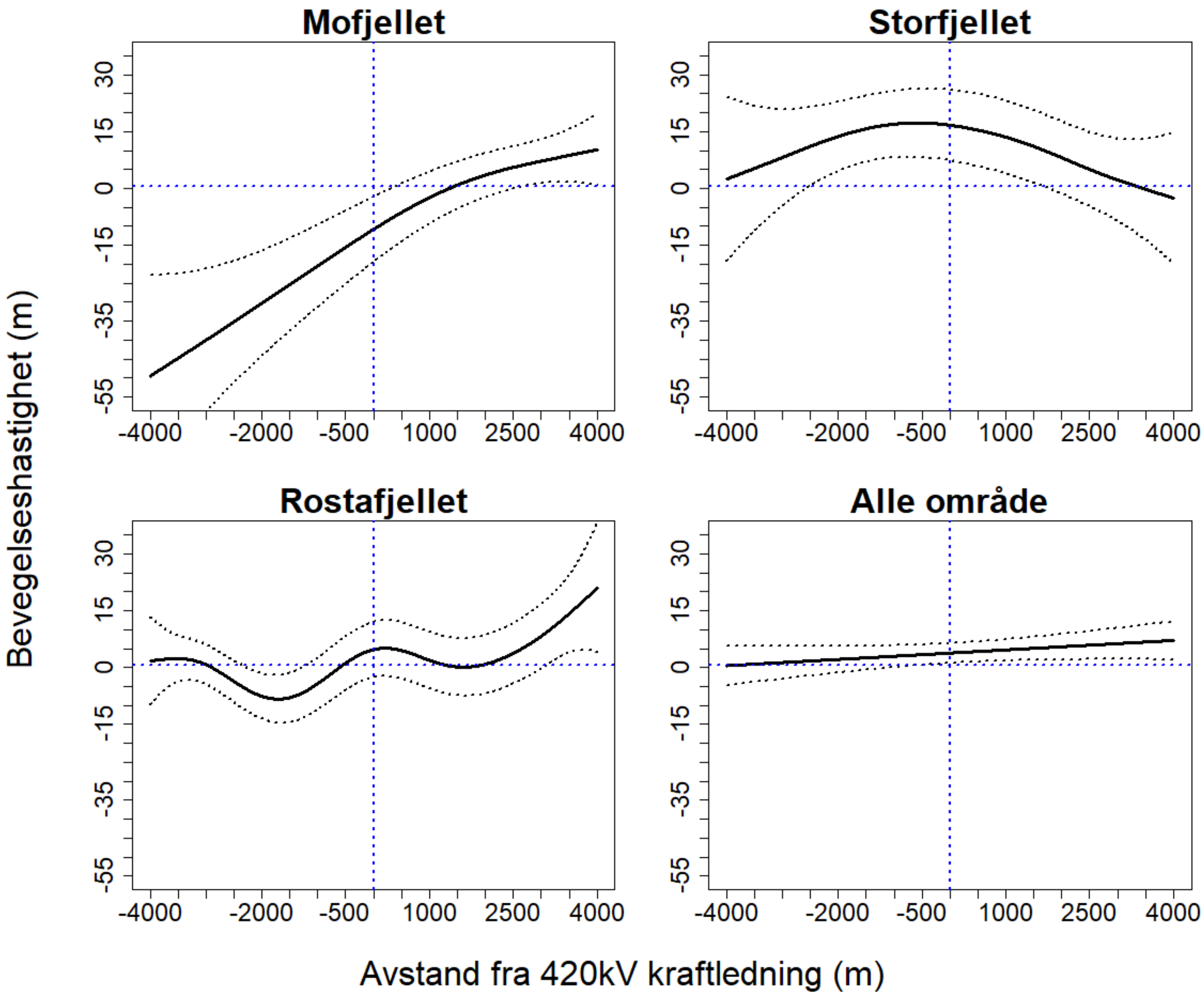


Fig D7 Movement rate (i.e.net speed, it has negative and positive values) in relation to 420 kV power line during winter season within 4 km in Ildgruben, based on GAM fit

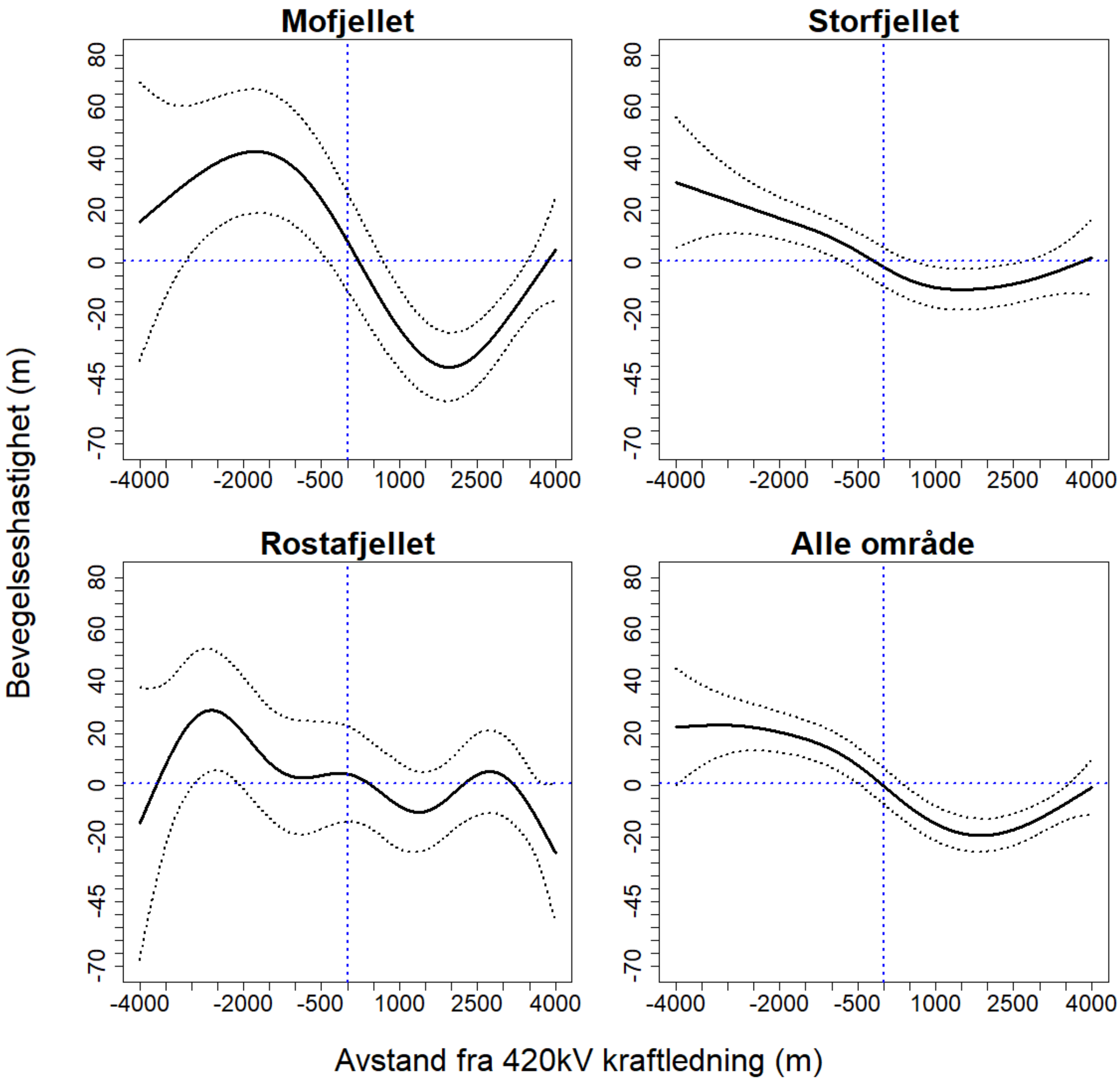


Fig D8 Movement rate (i.e.net speed, it has negative and positive values) in relation to power line during summer season within 4 km in Ildgruben, based on GAM fit

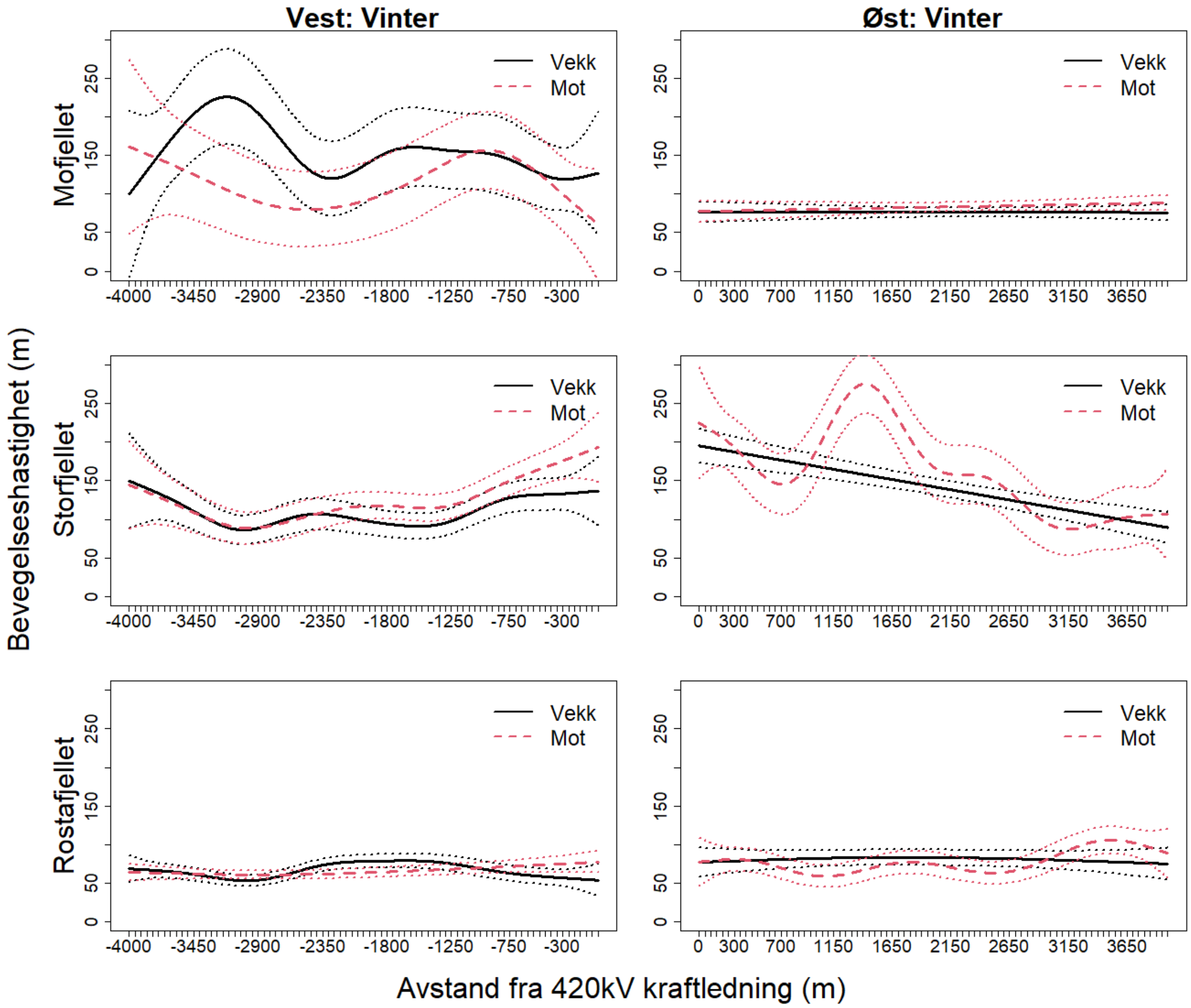


Fig D9 Movement rate away (vekk) and towards (mot) to 420 kV power line during winter season within 4 km in Ildgruben, based on GAM fit.

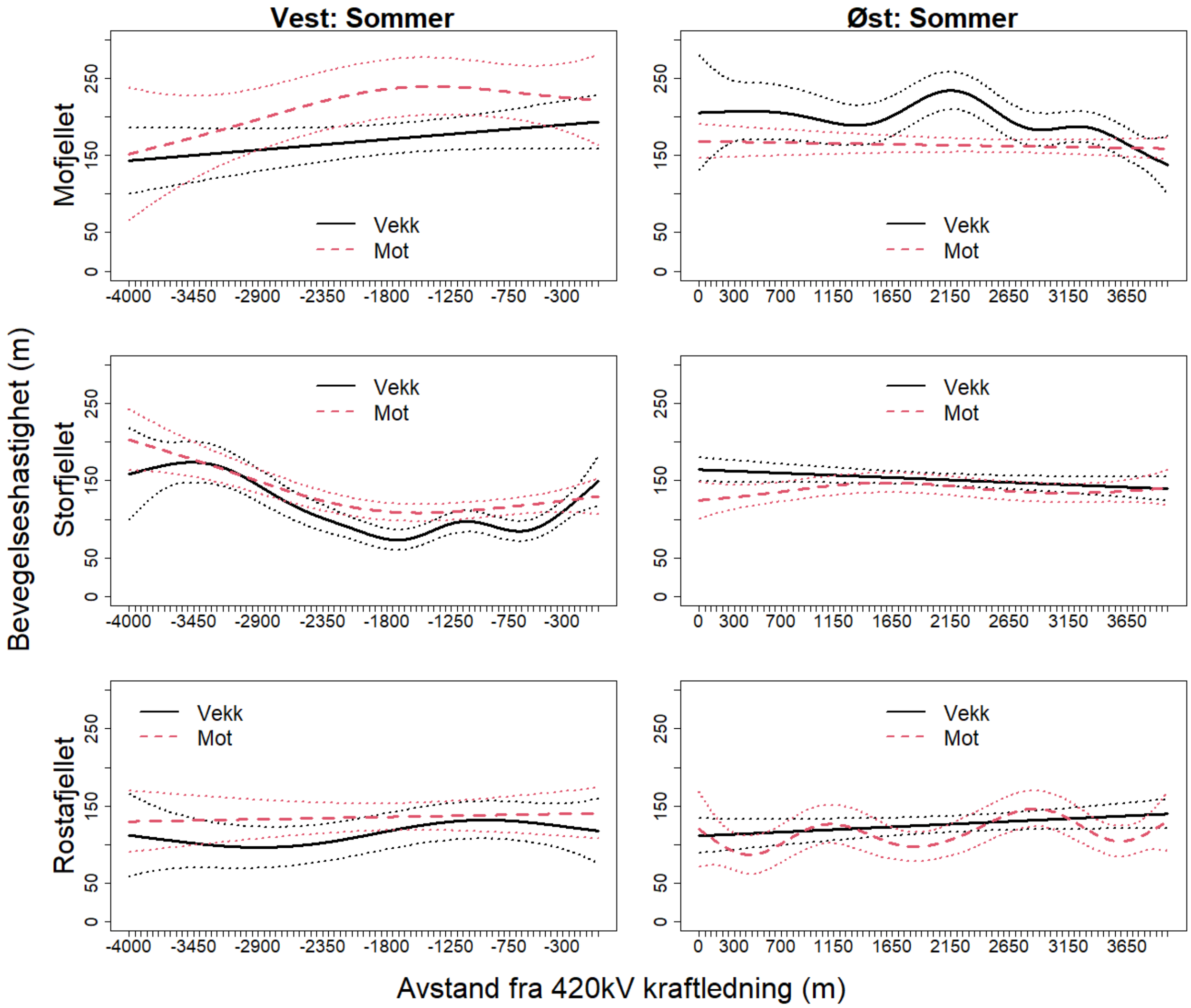


Fig D10 Movement rate away (vekk) and towards (mot) to 420 kV power line during summer season within 4 km in Ildgruben, based on GAM fit.