

APPENDIX

Appendix A: Estimated diver abundance trend and total number of wind farms built every year during the spring season.

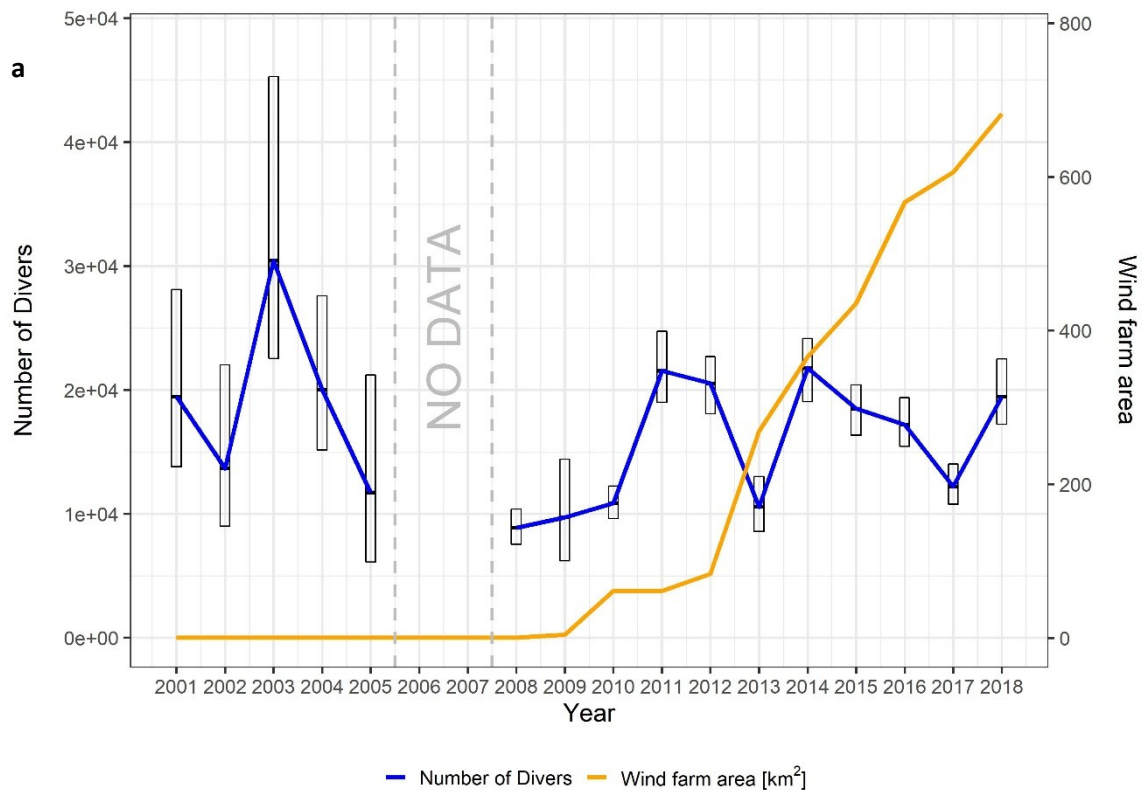
Table A-1 Differences between survey techniques obtained from the model describing the relative detection rate compared to the “HiDef” technique. Results for the visual method are shown after distance sampling correction.

Method	Median	SD	Q 0.025	Q 0.975
DAISI	-0.1	0.08	-0.26	0.06
APEM	-0.4	0.21	-0.82	0.01
VISUAL	-0.22	0.05	-0.31	-0.13

Table A-2 Posterior mean and 95% credible interval for the estimated annual abundance of divers (number of individuals) during the spring season for the German EEZ and for the main concentration area (MCA).

Year	German EEZ		MCA	
	Mean	95% CI	Mean	95% CI
2001	19,468	13,810 – 28,106	12,015	8,084 – 19,400
2002	13,675	9,007 – 22,027	7,224	5,373 – 9,583
2003	30,423	22,535 – 45,285	23,955	16,172 – 34,340
2004	20,034	15,154 – 27,582	12,077	8,874 – 17,999
2005	11,728	6,121 – 21,191	6,327	1,945 – 13,886
2008	8,870	7,534 – 10,369	5,467	4,540 – 6,679
2009	9,723	6,219 – 14,411	5,463	2,477 – 10,637
2010	10,858	9,621 – 12,226	6,941	5,958 – 8,244

2011	21,537	19,005 – 24,740	10,772	9,243 – 12,669
2012	20,547	18,066 – 22,688	10,926	9,247 – 12,800
2013	10,570	8,590 – 13,010	4,705	3,657 – 6,320
2014	21,757	19,047 – 24,157	12,068	10,330 – 13,848
2015	18,501	16,347 – 20,406	10,064	8,726 – 11,560
2016	17,202	15,440 – 19,379	13,149	11,594 – 15,524
2017	12,201	10,771 – 14,003	7,672	6,549 – 8,910
2018	19,437	17,213 – 22,502	11,881	10,132 – 13,607
Average	16,659		10,044	



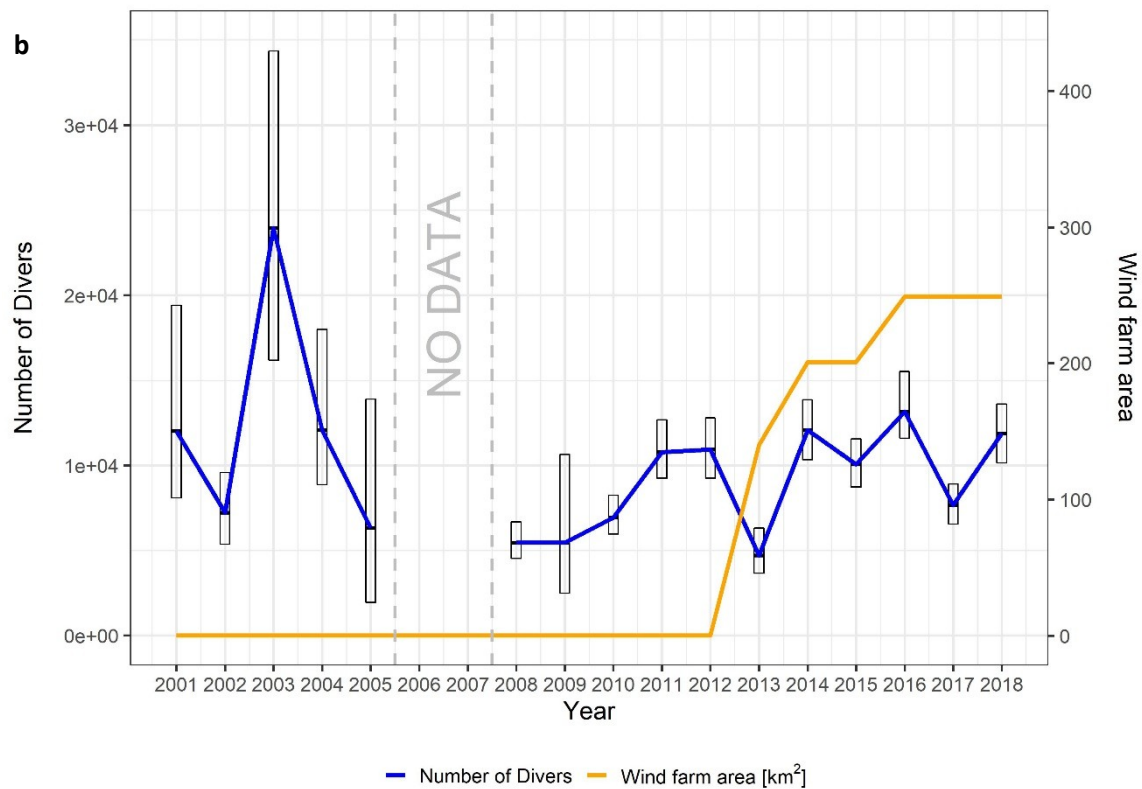
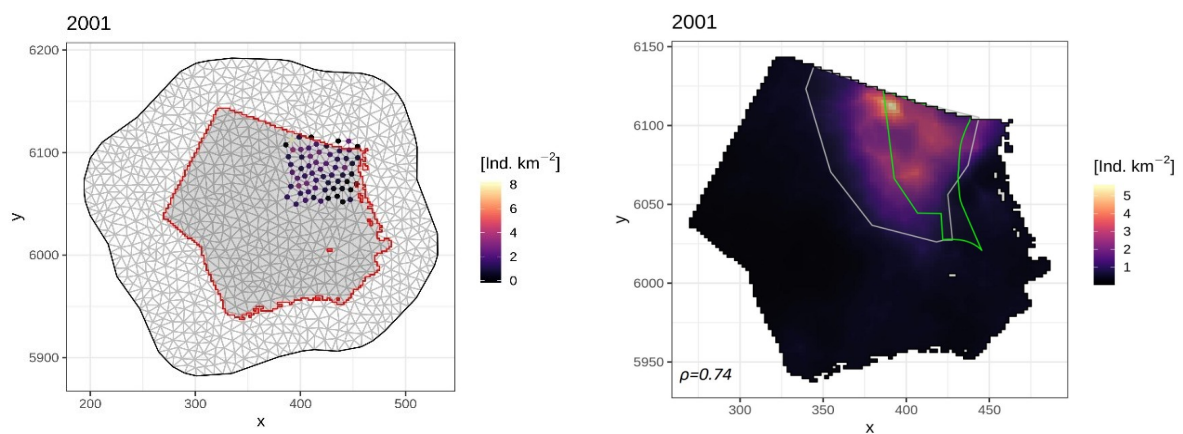
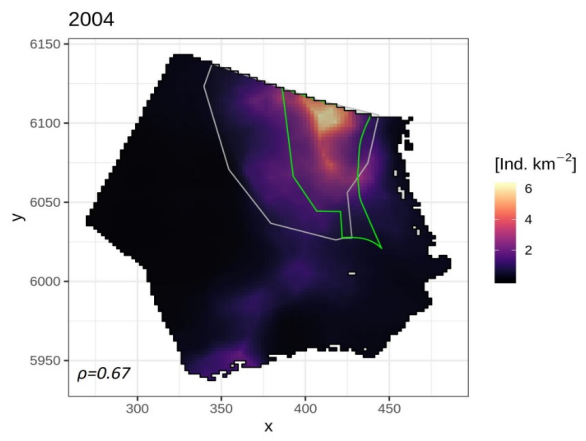
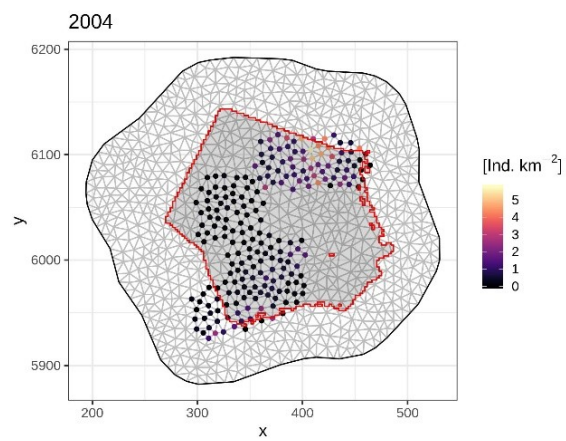
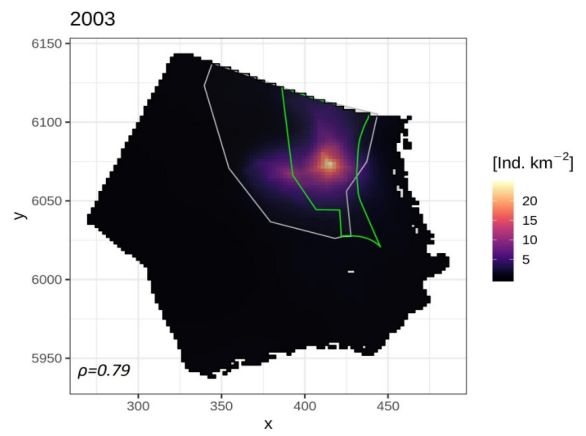
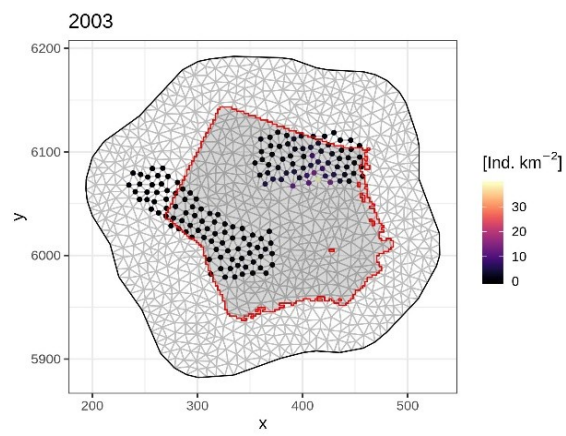
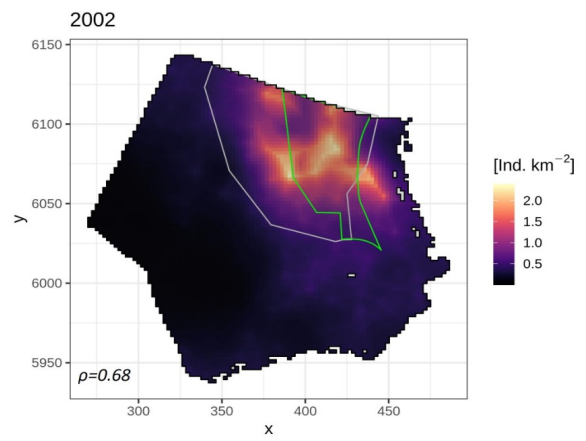
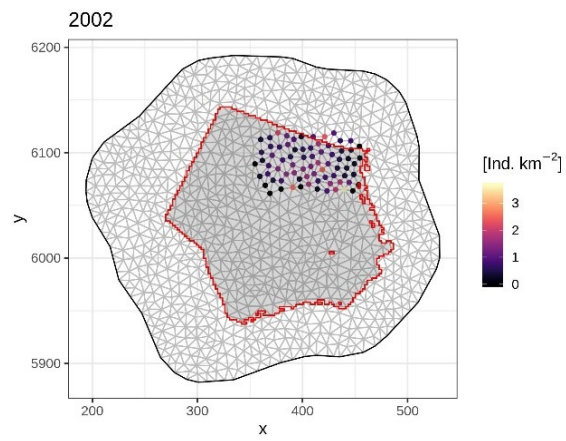
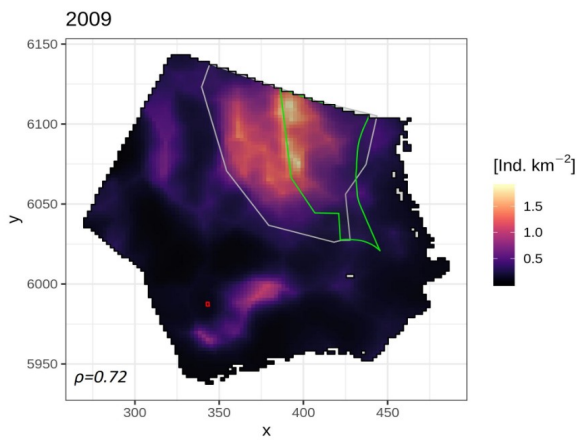
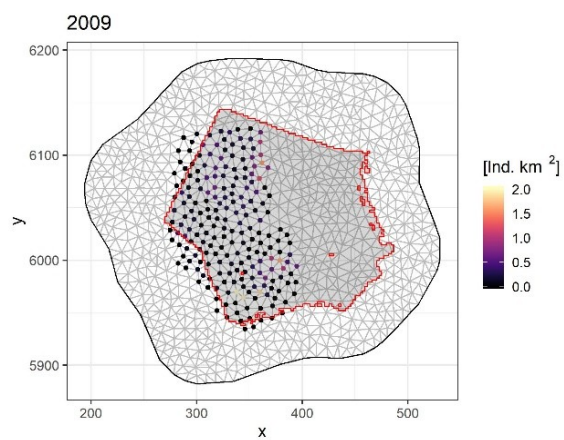
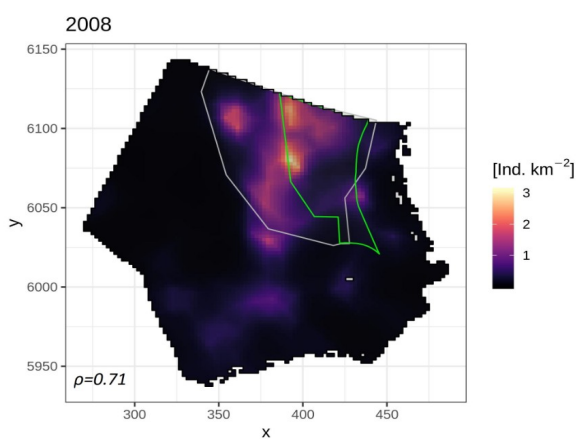
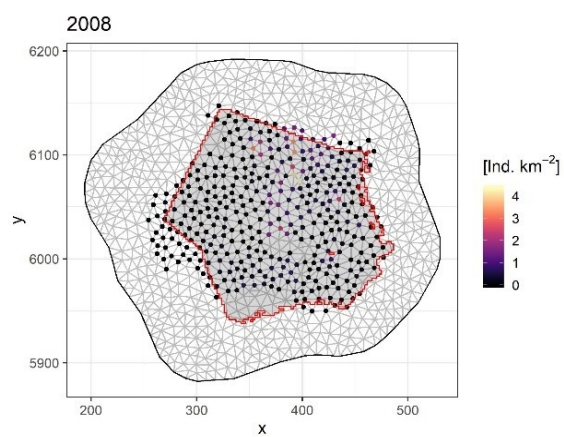
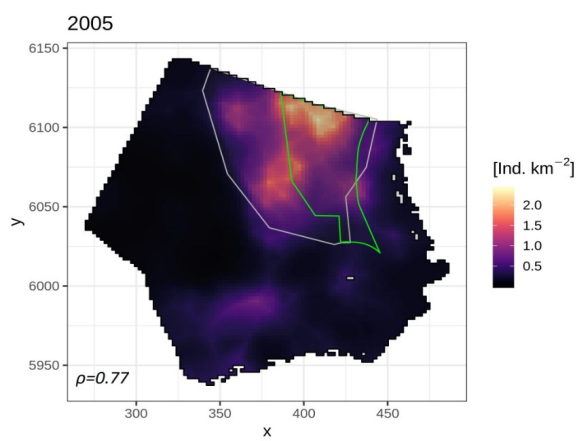
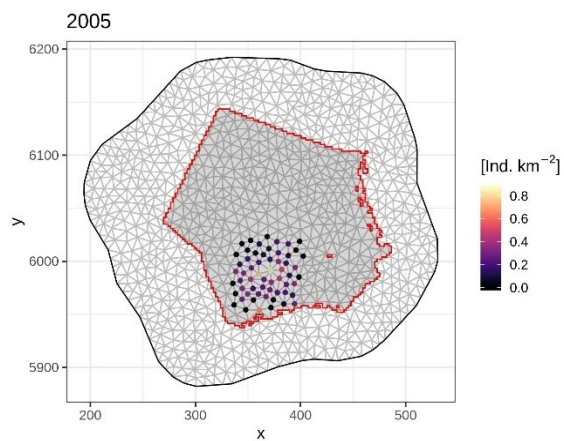


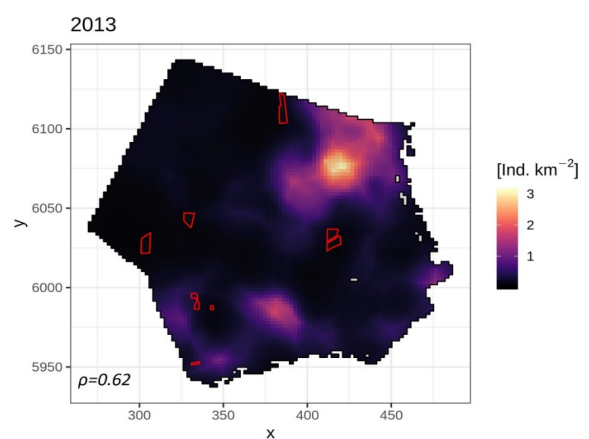
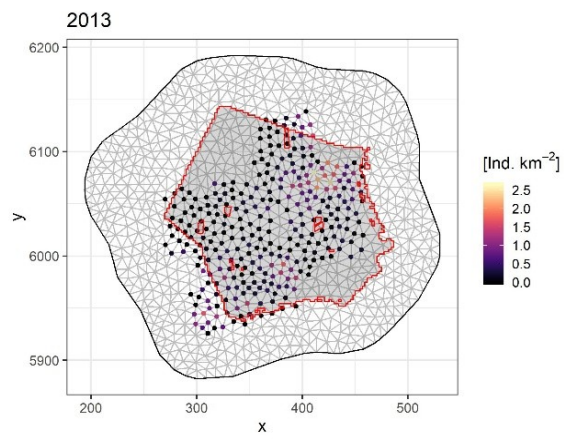
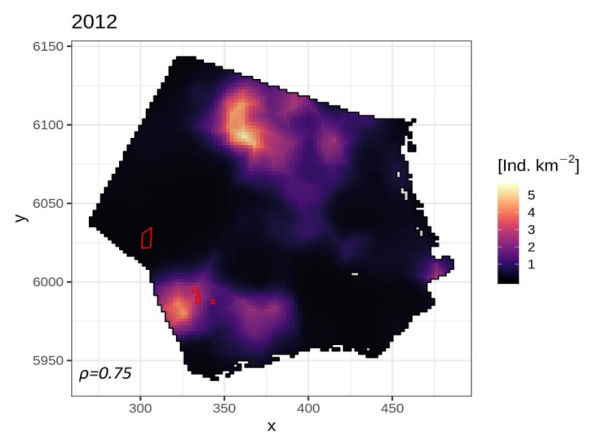
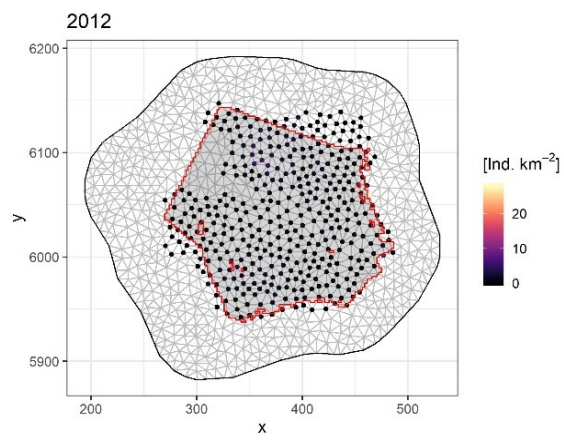
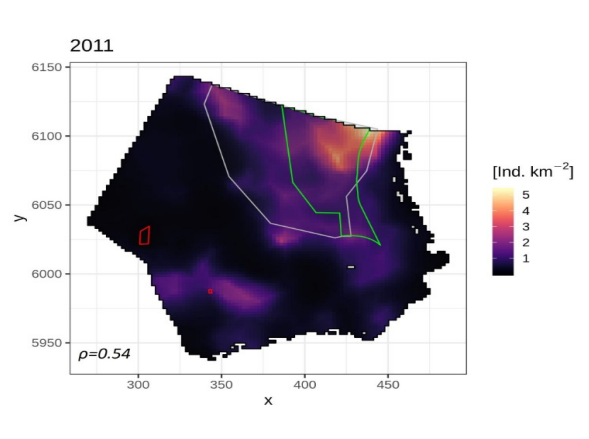
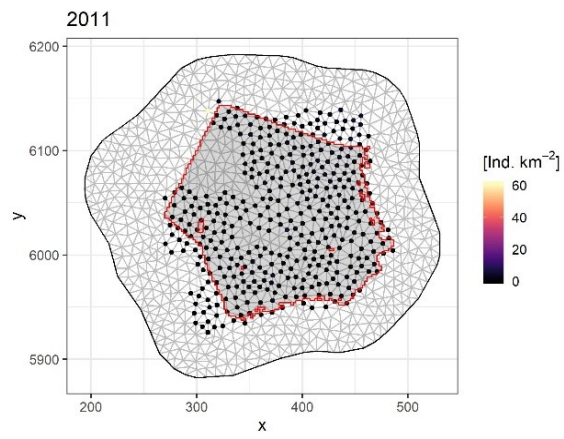
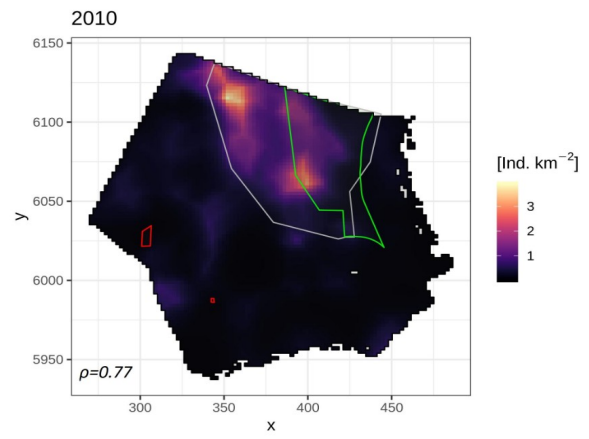
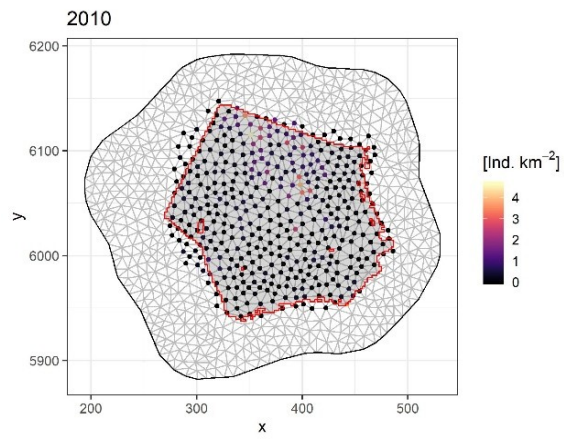
Figure A-1. Estimated diver abundance trend and total number of wind farms built every year during spring for the whole studied area (a); and for the diver main concentration area (b). Error-bars show 95 % credible intervals given by the model.

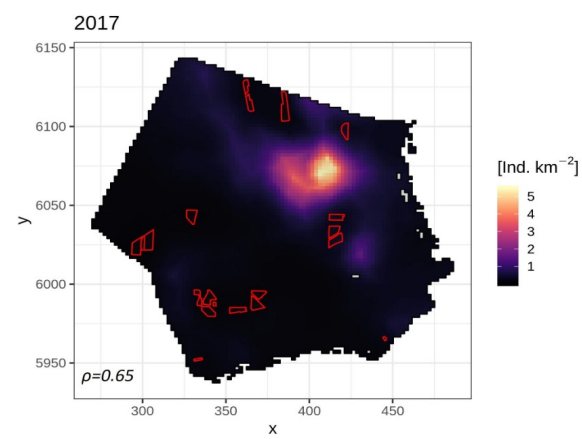
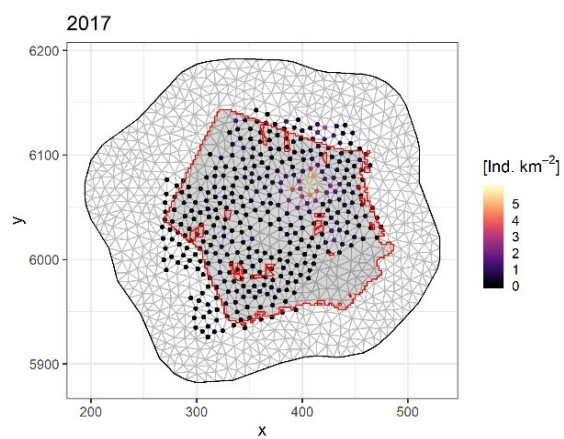
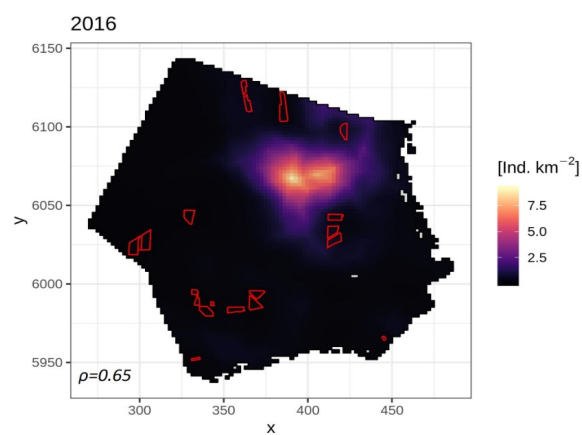
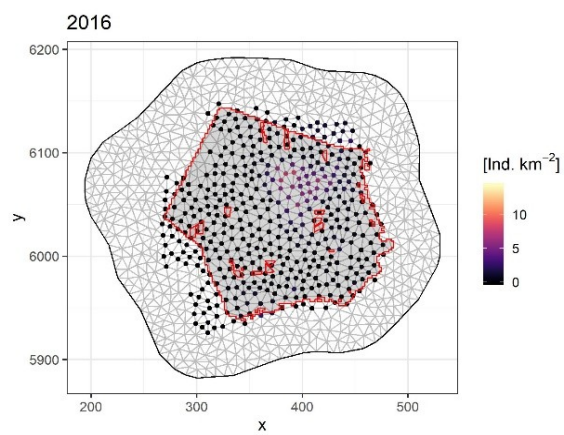
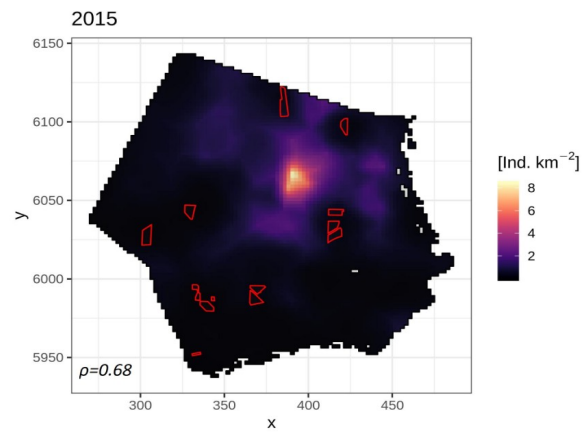
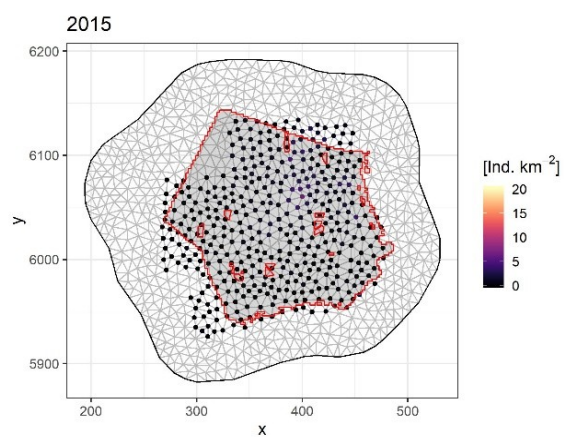
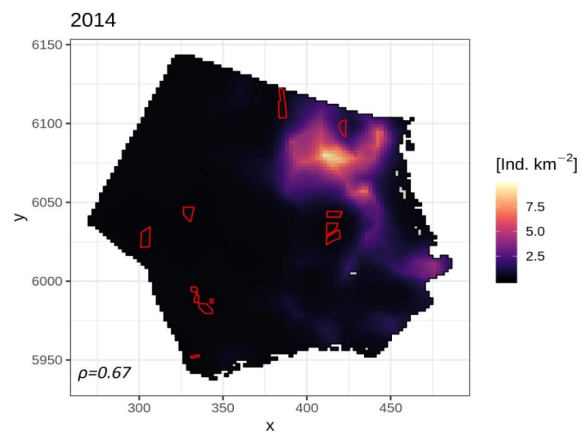
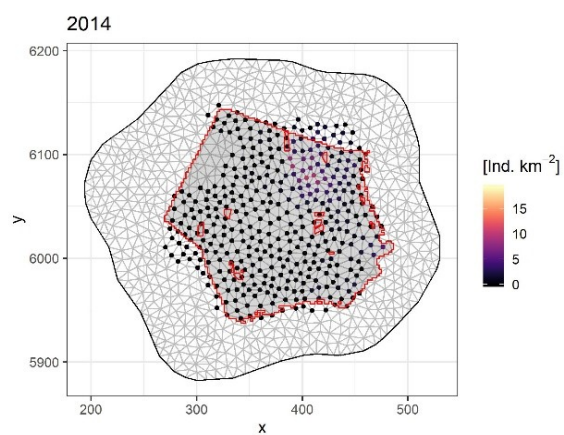
Appendix B: Estimated annual spatial distribution of divers for all the study area during the spring season.











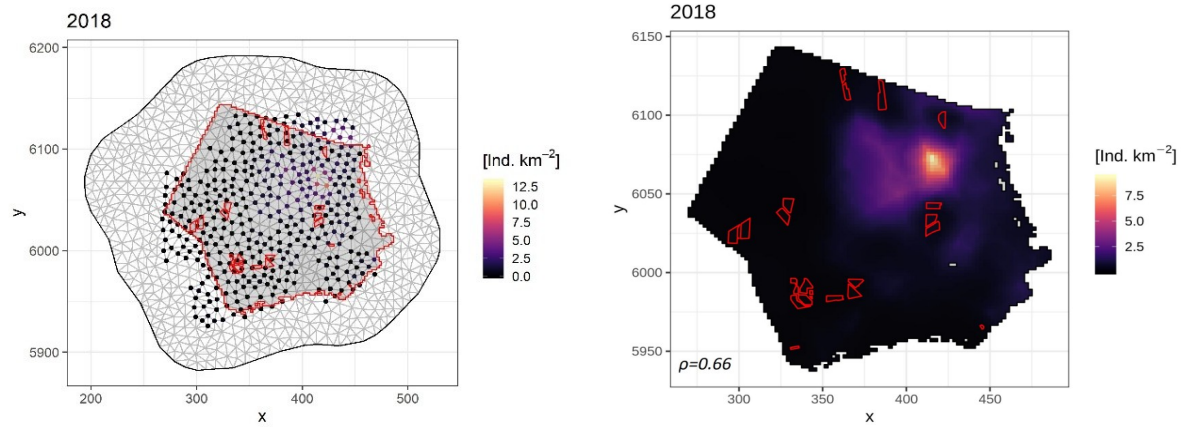
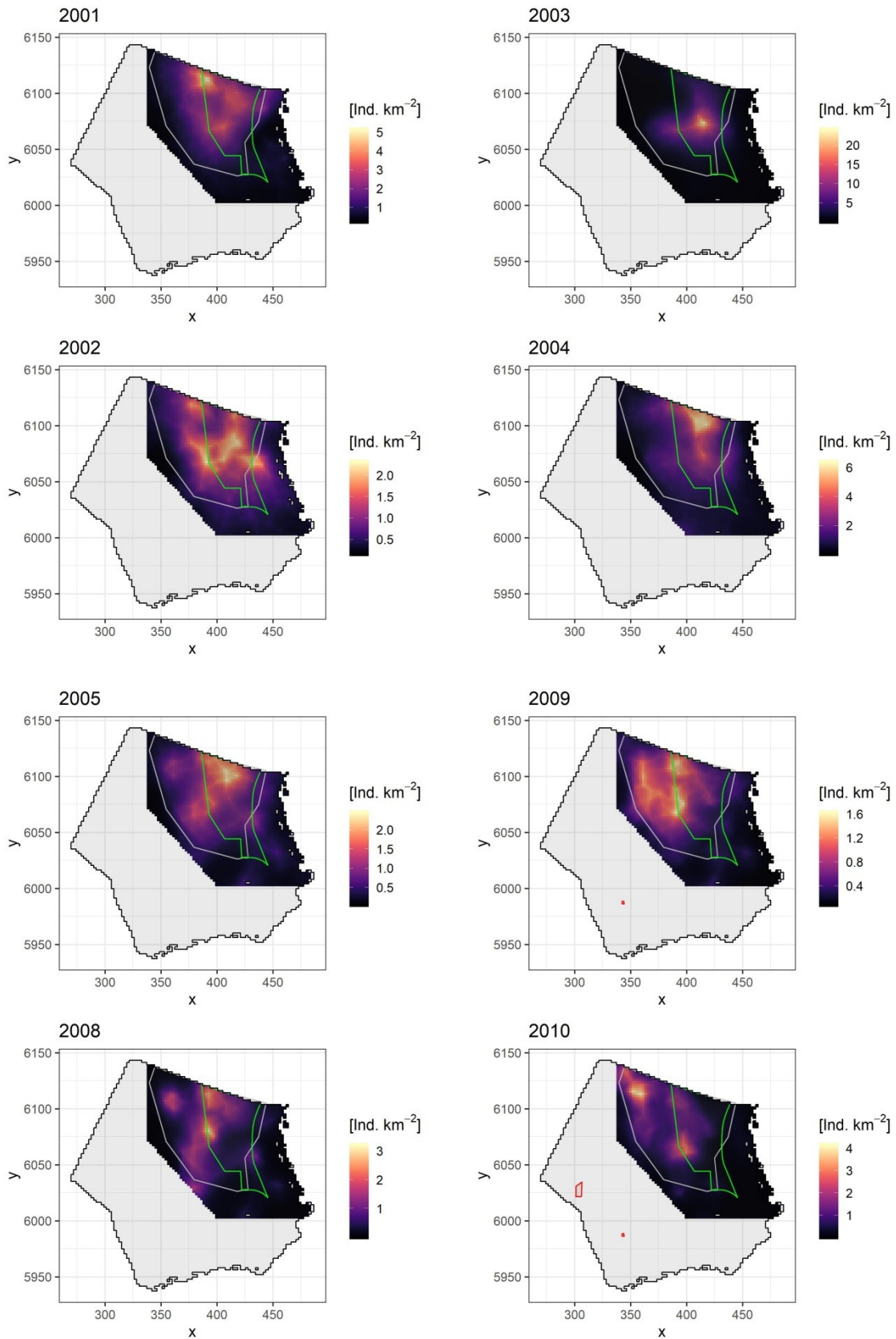


Figure B-1. Diver densities for the period 2001 - 2018 during spring. For every year, observed values at the integration points are shown on the left panels and posterior estimated densities are shown on the right panels. Red polygons indicate offshore wind farms already constructed at the beginning of each period. Diver main concentration area (BMU 2009) in grey and SPA Eastern German Bight in green are shown as reference. Note different scales for each plot.

As measure of model fit, the Spearman's rank correlation coefficient (ρ) between observed (left) and predicted (right) values for each year is also shown.

Appendix C: Estimated annual spatial distribution of divers for the northern and southern areas (as defined in Figure 1) during the spring season.



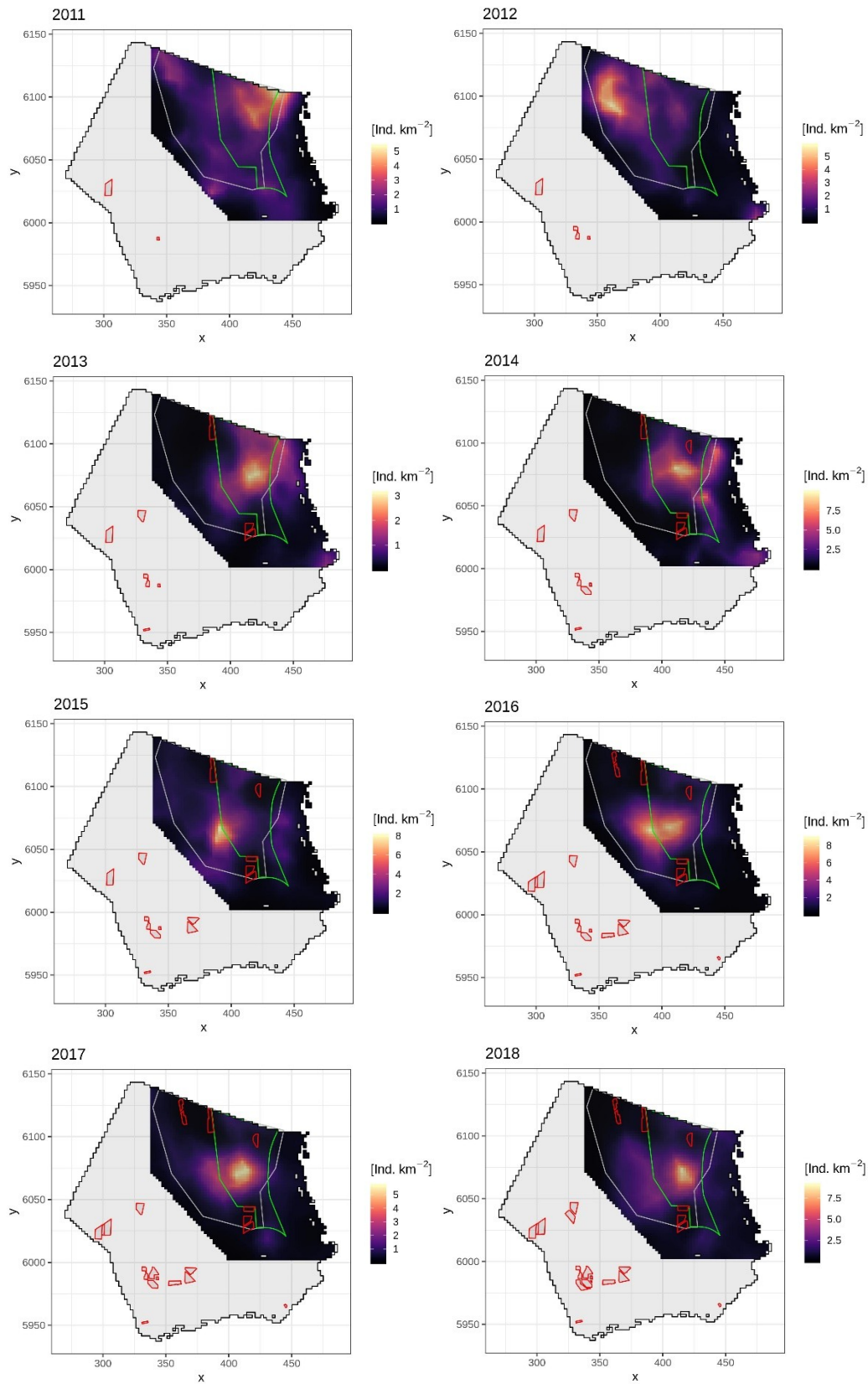
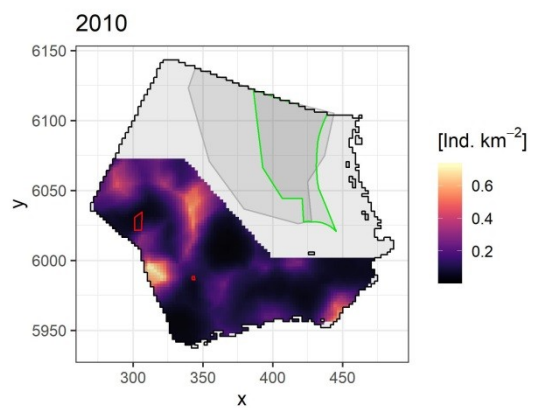
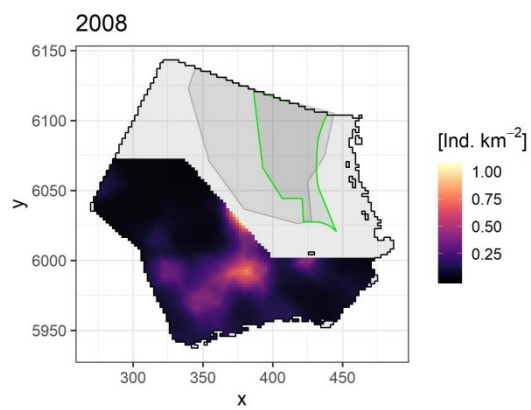
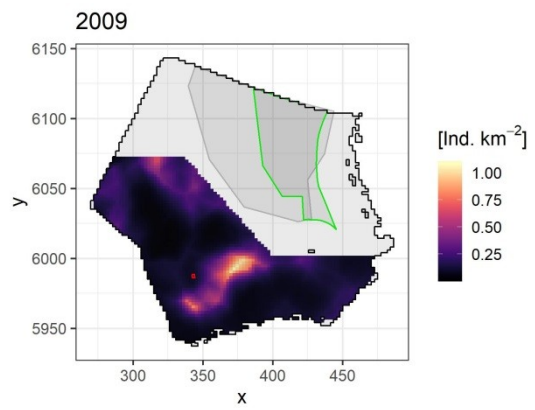
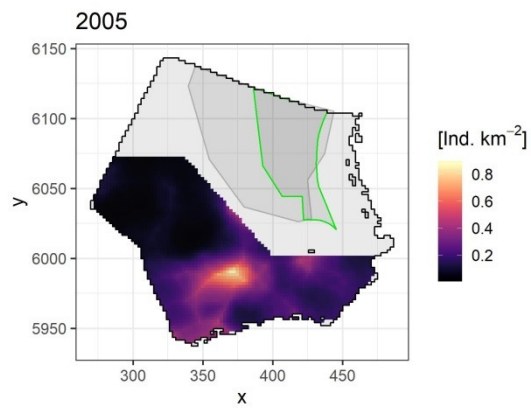
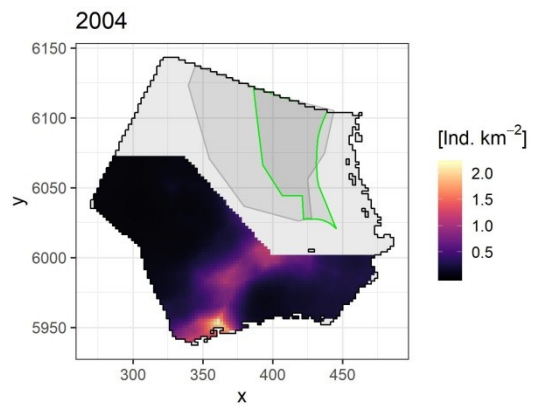
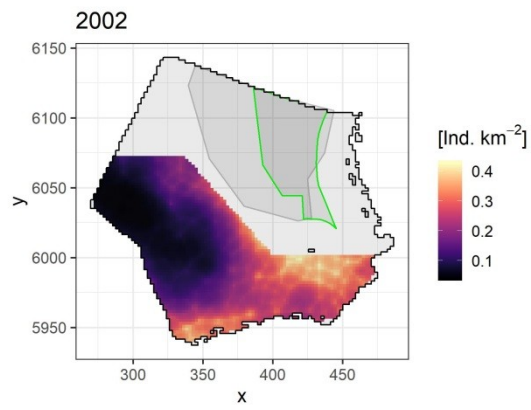
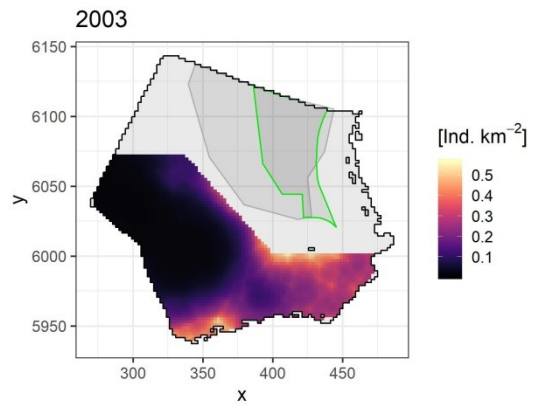
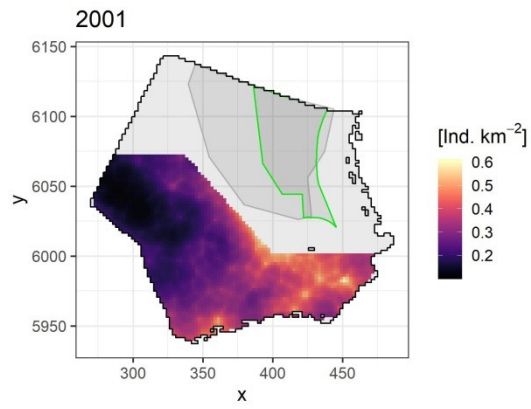


Figure C-1 Predicted densities for spring for the northern study area. Note varying scales for each phase/year. Red borders indicate wind farms under construction or in operation. Green line depicts border of SPA Eastern German Bight, grey line depicts main concentration area for divers as defined by BMU (2009).



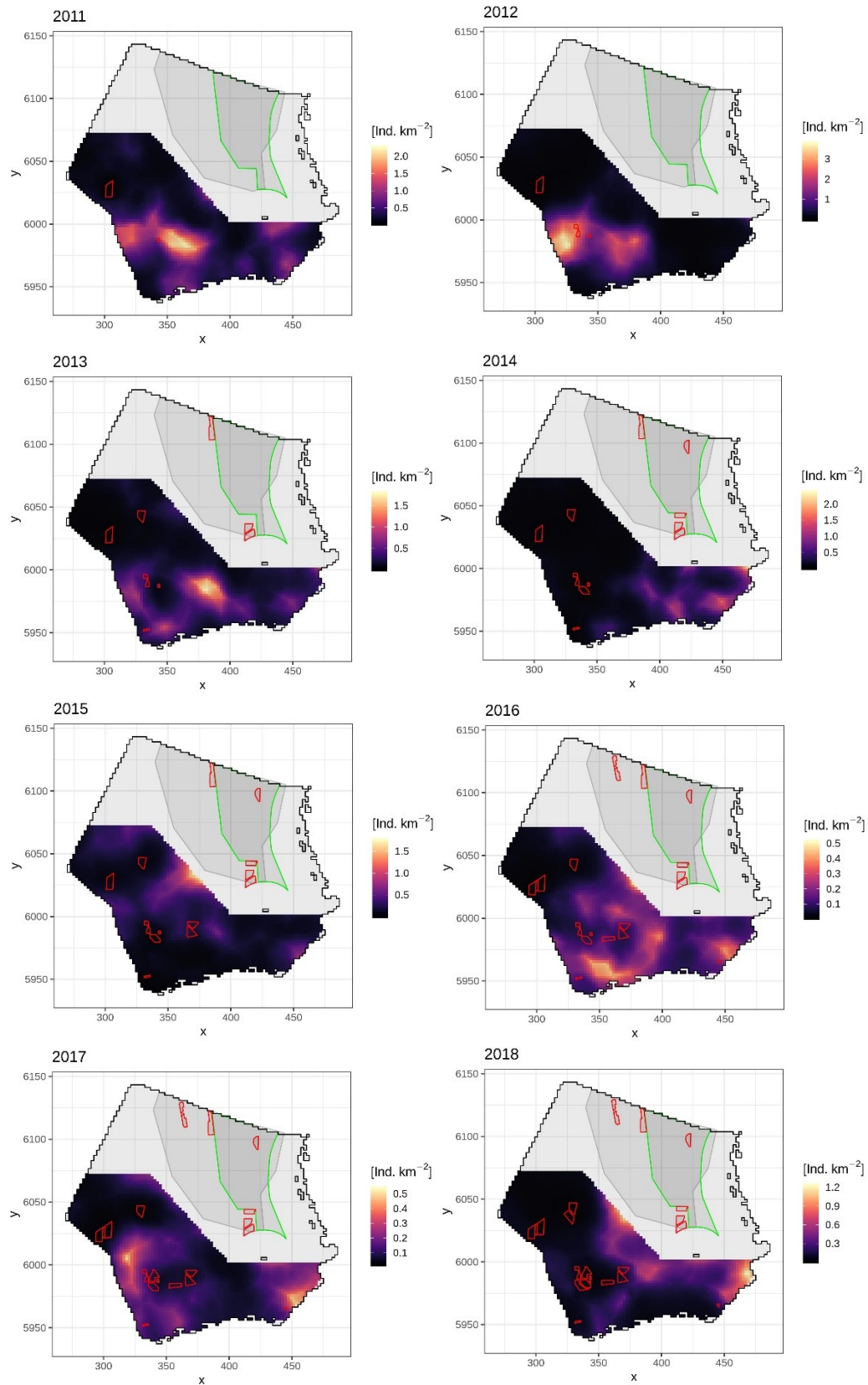


Figure C-2 Predicted densities for spring for the southern study area. Note varying scales for each phase/year. Red borders indicate wind farms under construction or in operation. Green line depicts border of SPA Eastern German Bight, grey line depicts main concentration area for divers as defined by BMU (2009).