



ISPRA

Istituto Superiore per la Protezione
e la Ricerca Ambientale



Sistema Nazionale
per la Protezione
dell'Ambiente

SUPPLEMENTARY MATERIAL A

INTENTIONALLY KILLED BIRDS PER DECADE AND MONTH AND SPATIAL DISTRIBUTION OF INTENTIONAL KILLING BEFORE AND AFTER THE ENTRY INTO FORCE OF THE EU BIRDS DIRECTIVE IN THE EU28 COUNTRIES

AUSTRIA

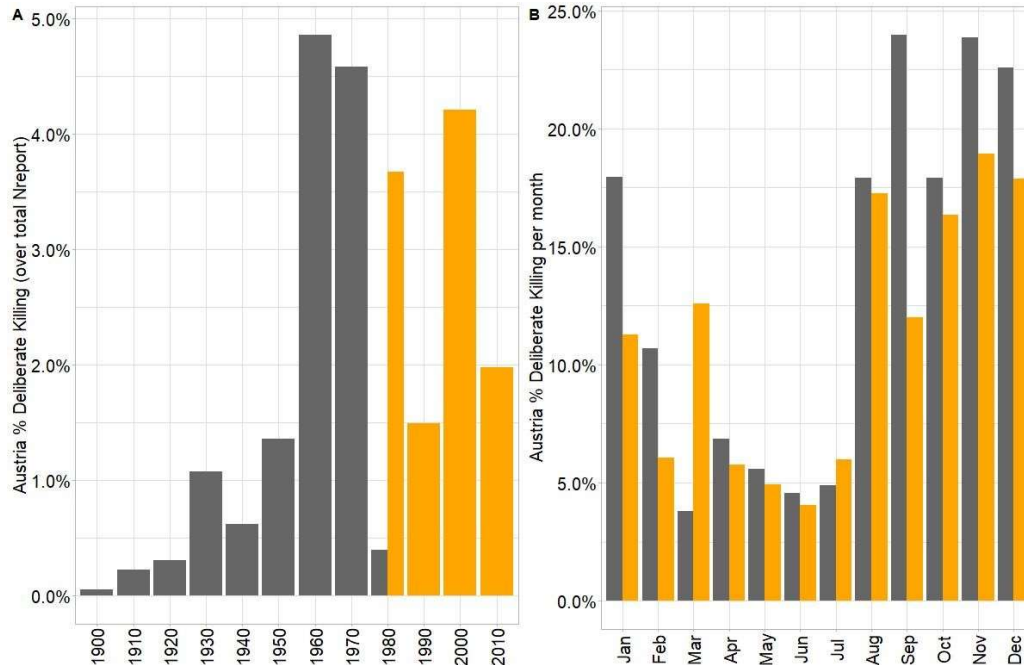


Figure S1: Percentage of all intentionally killed birds vs total reported as dead in Austria per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

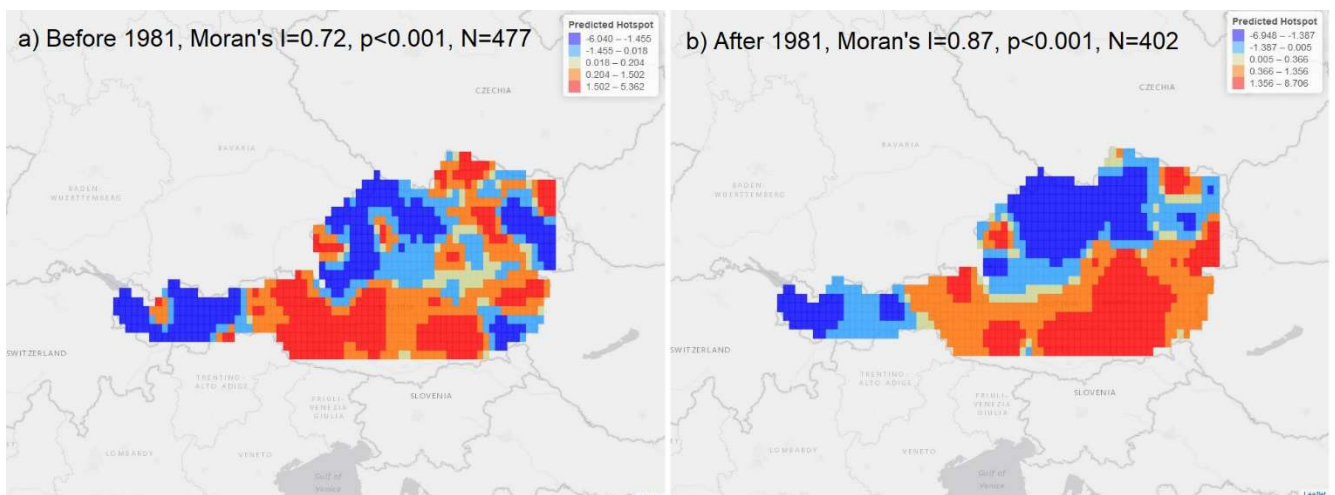


Figure S2: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Austria. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

BELGIUM

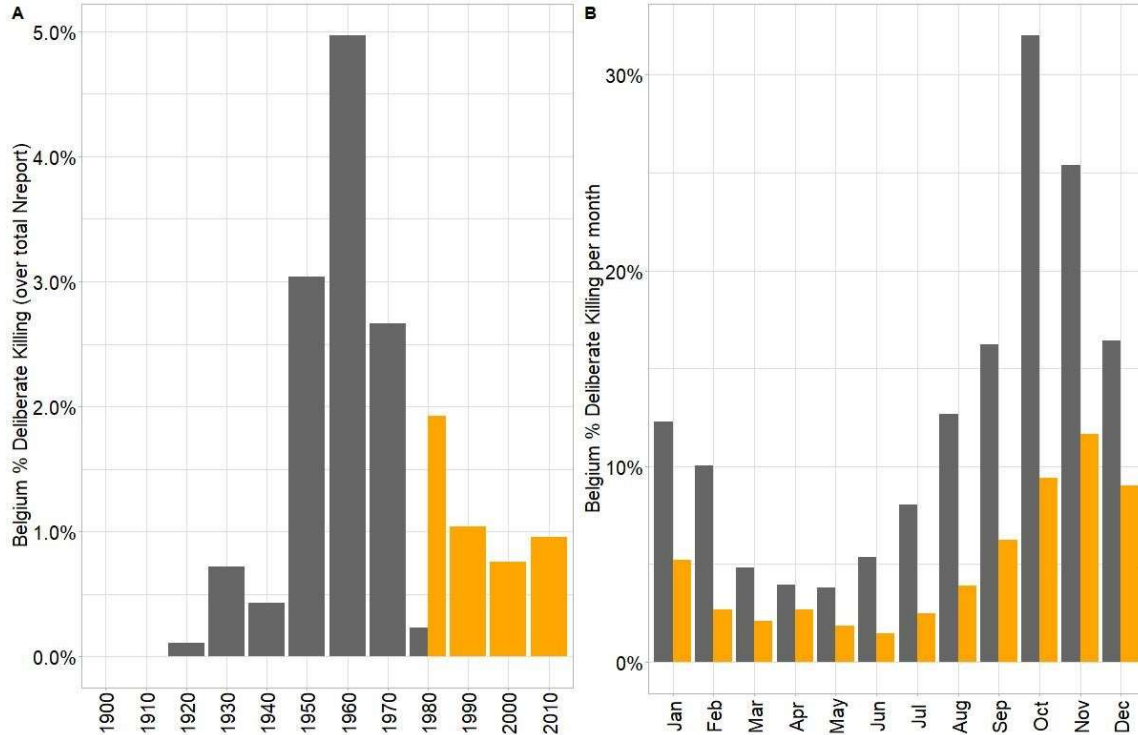


Figure S3: Percentage of all intentionally killed birds vs total reported as dead in Belgium per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

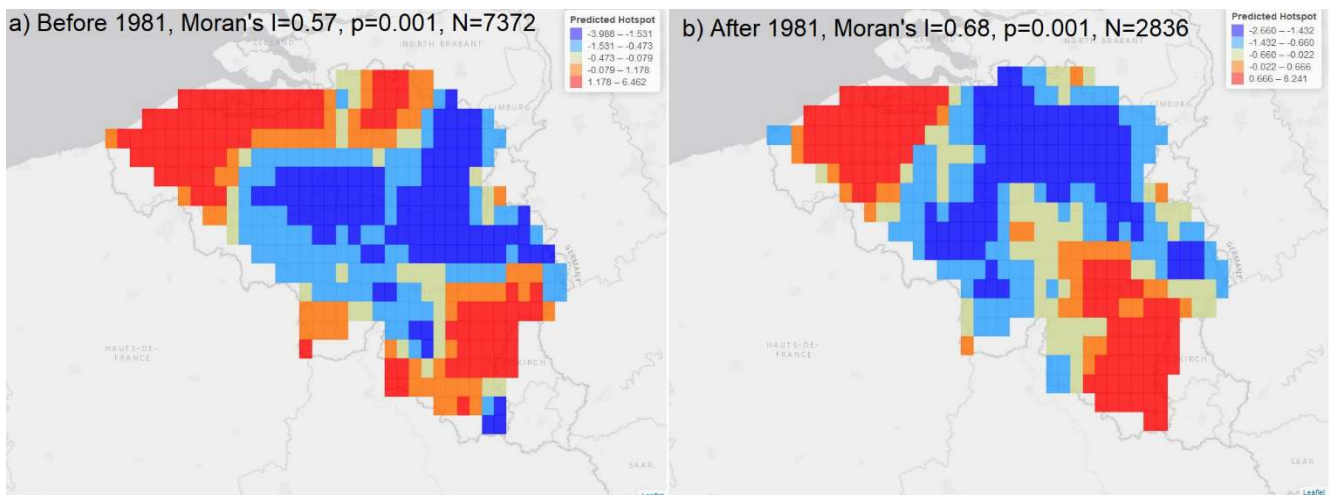


Figure S4: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Belgium. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

BULGARIA

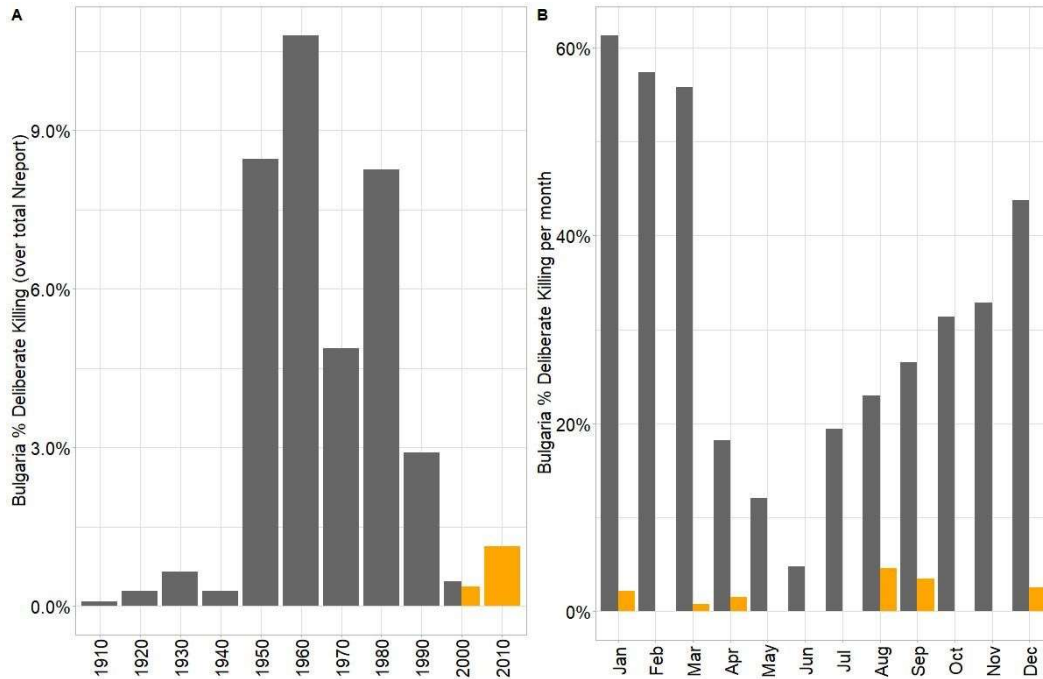


Figure S5: Percentage of all intentionally killed birds vs total reported as dead in Bulgaria per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

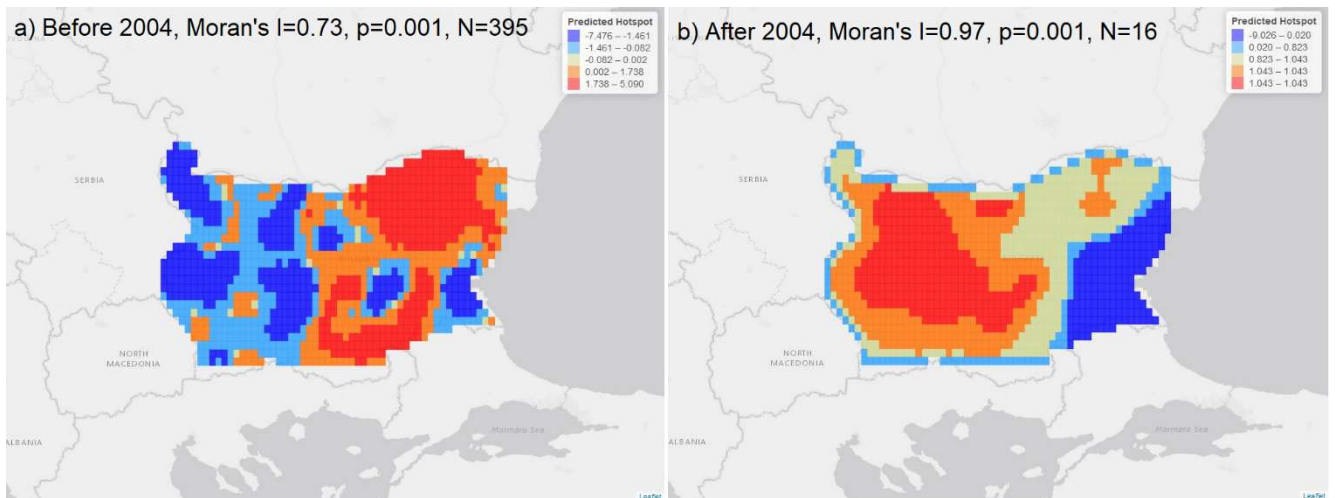


Figure S6: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Bulgaria. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified

CROATIA

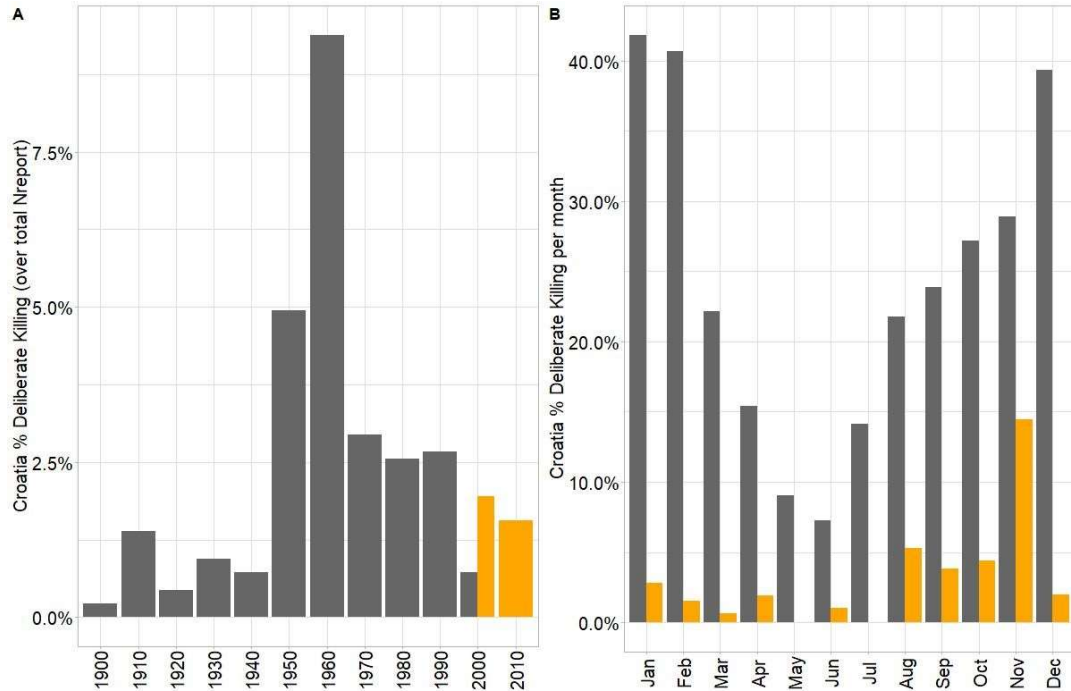


Figure S7: Percentage of all intentionally killed birds vs total reported as dead in Croatia per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

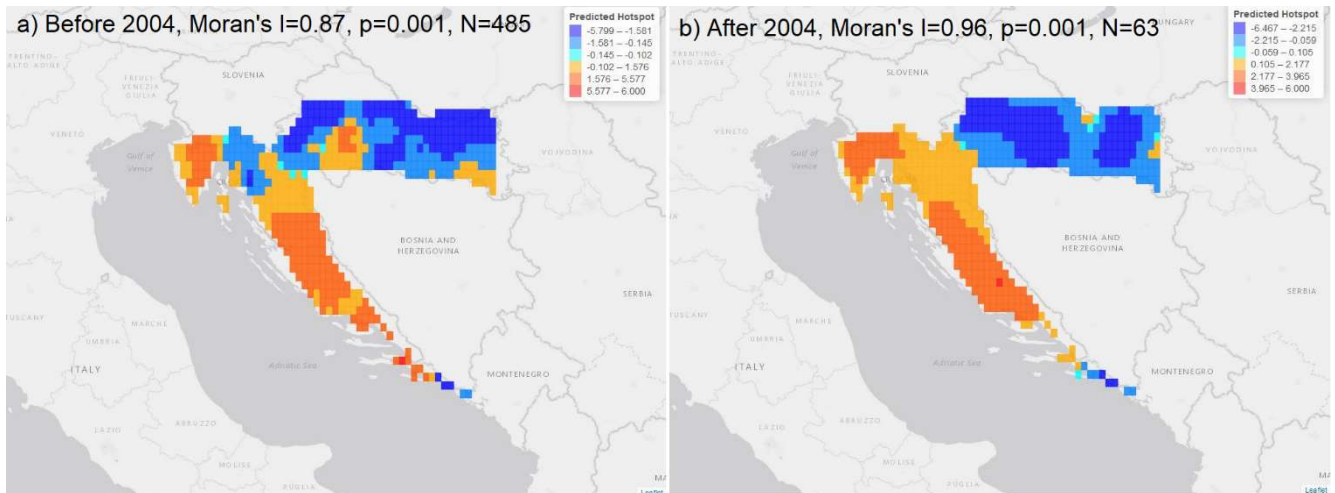


Figure S8: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Croatia. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified

CYPRUS

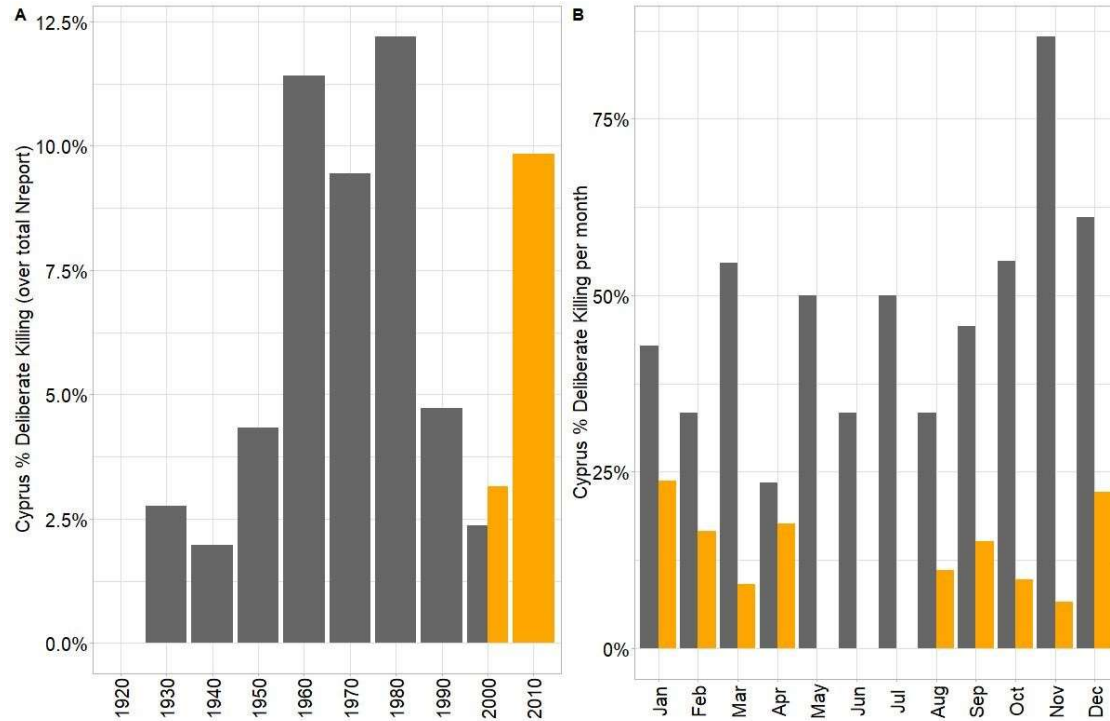


Figure S9: Percentage of all intentionally killed birds vs total reported as dead in Cyprus per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

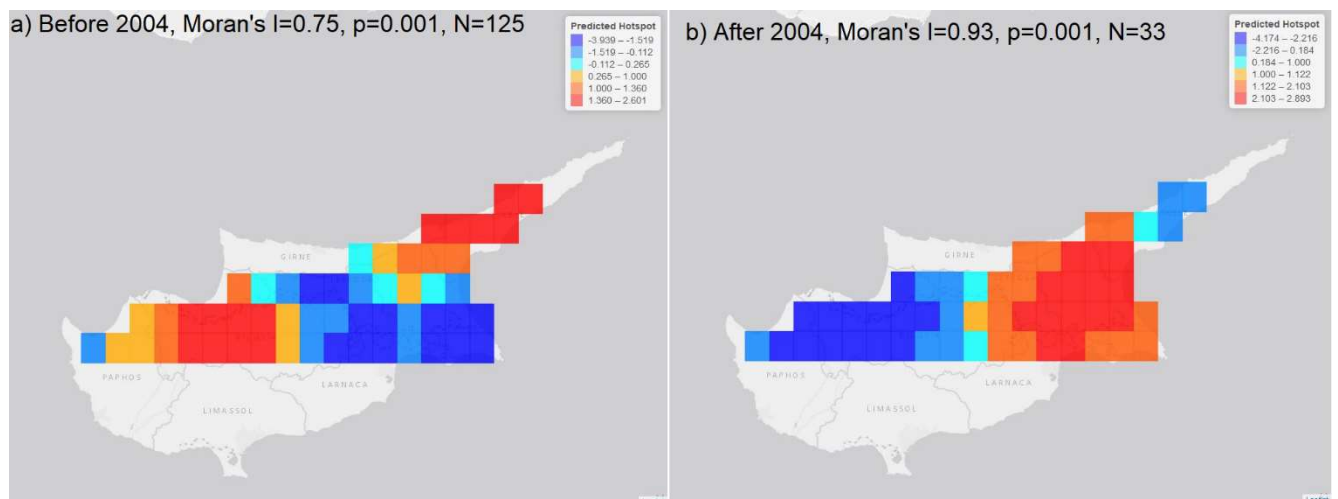


Figure S10: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Cyprus. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified

CZECH REPUBLIC

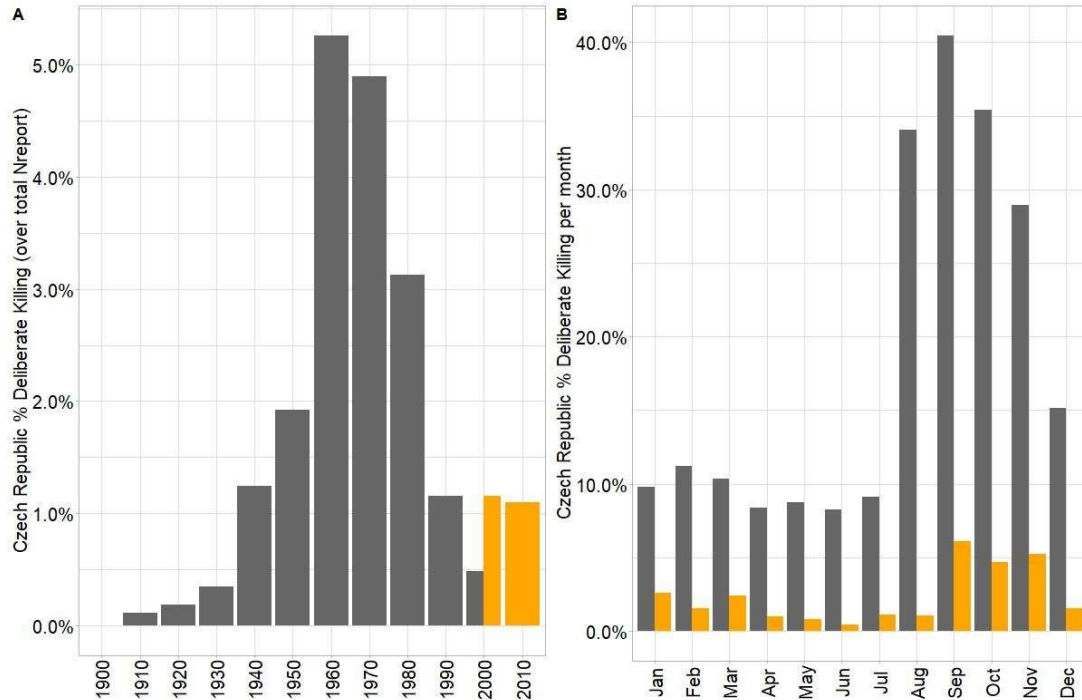


Figure S11: Percentage of all intentionally killed birds vs total reported as dead in Czech Republic per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

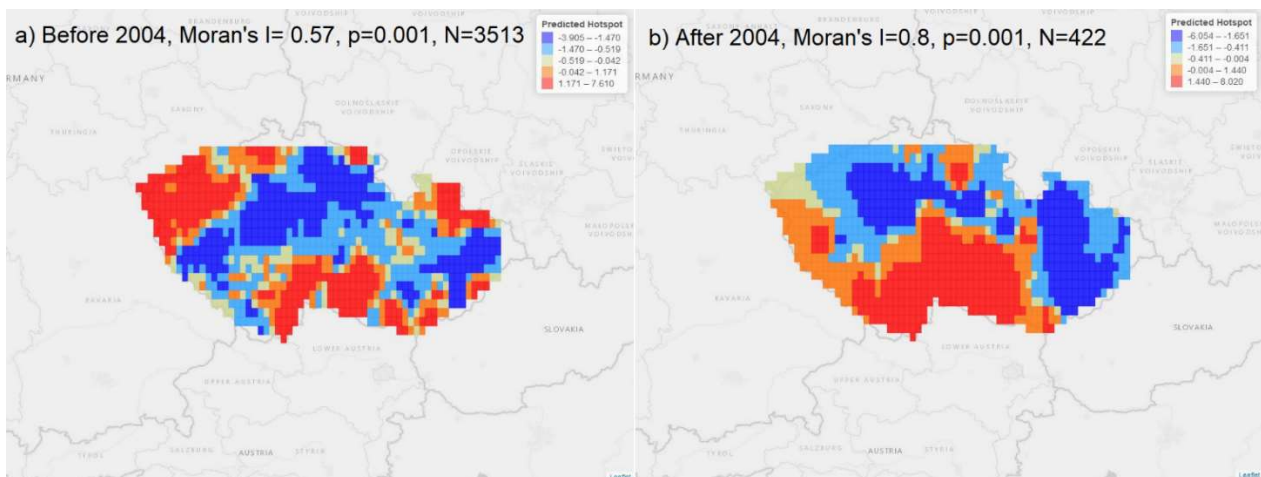


Figure S12: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Czech Republic. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified

DENMARK

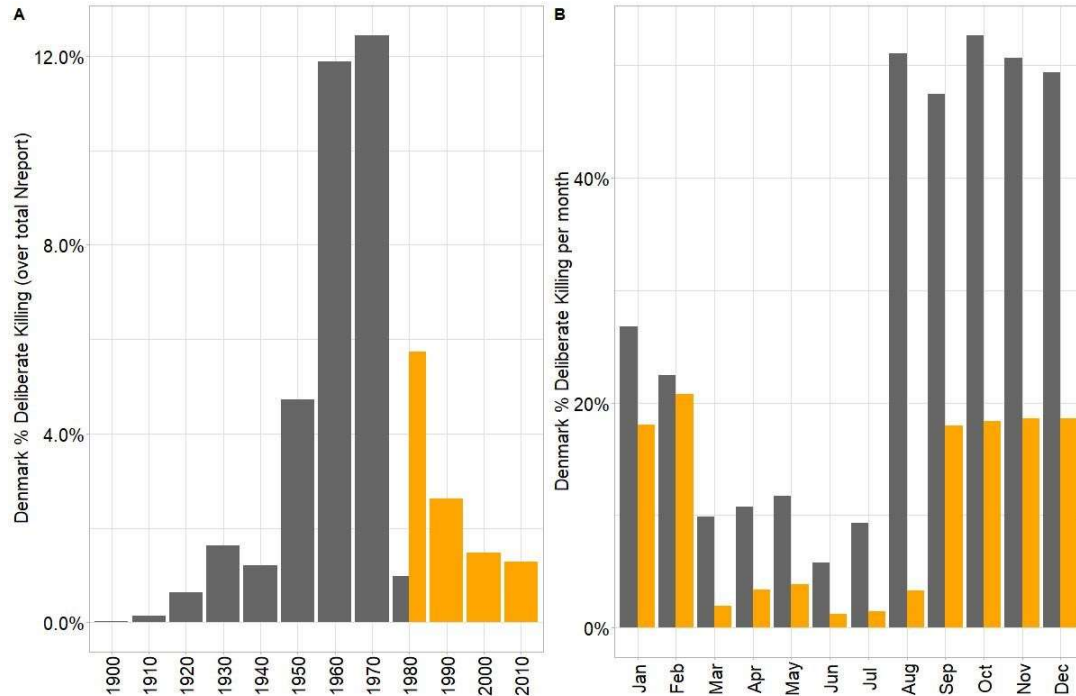


Figure S13: Percentage of all intentionally killed birds vs total reported as dead in Denmark per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

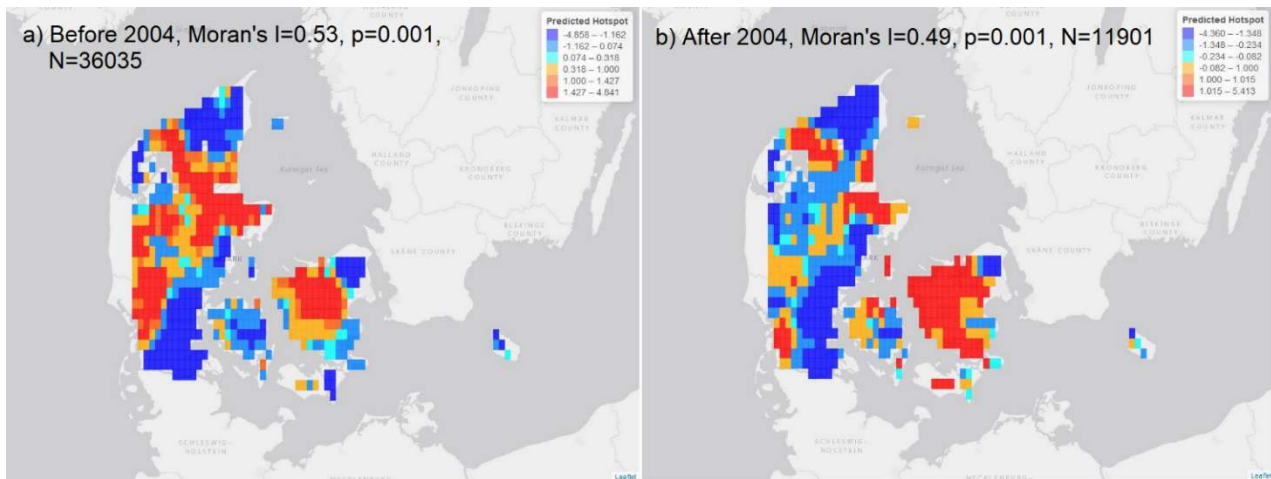


Figure S14: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Denmark. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified

ESTONIA

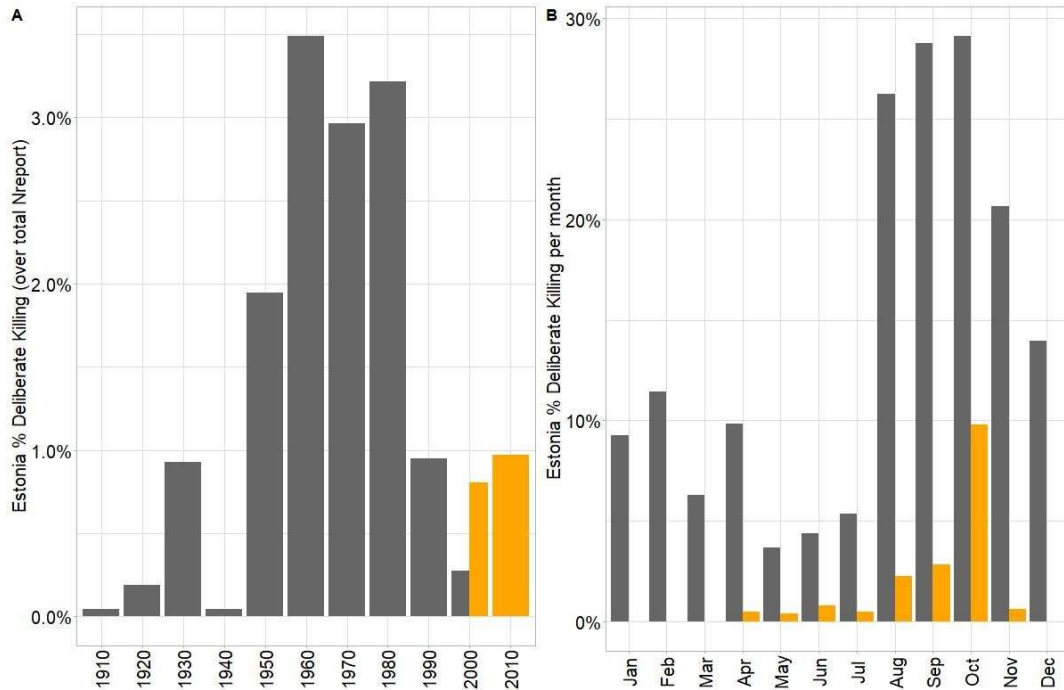


Figure S15: Percentage of all intentionally killed birds vs total reported as dead in Estonia per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

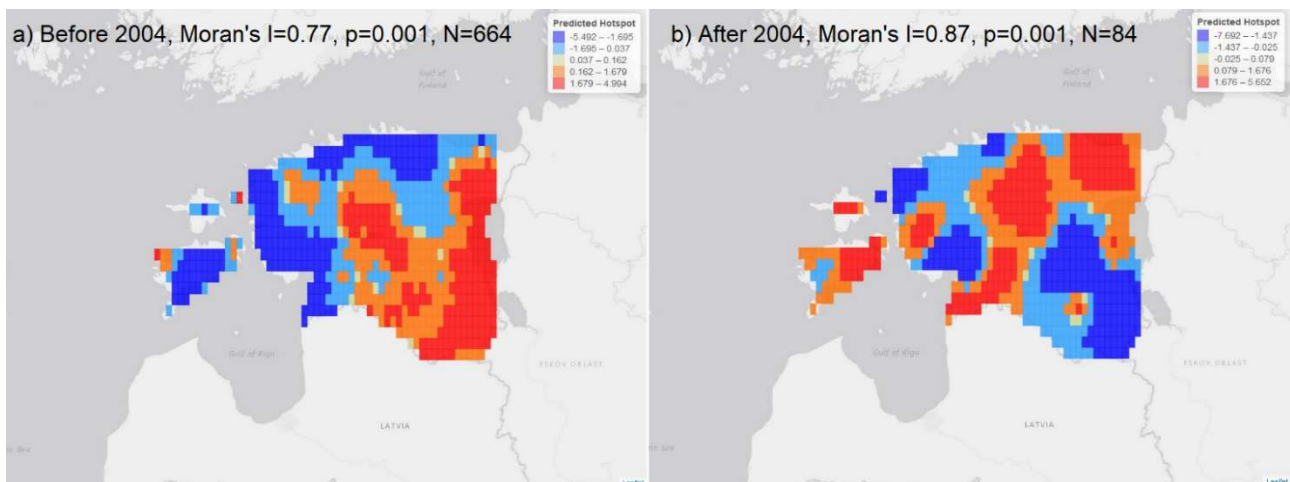


Figure S16: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Estonia. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

FINLAND

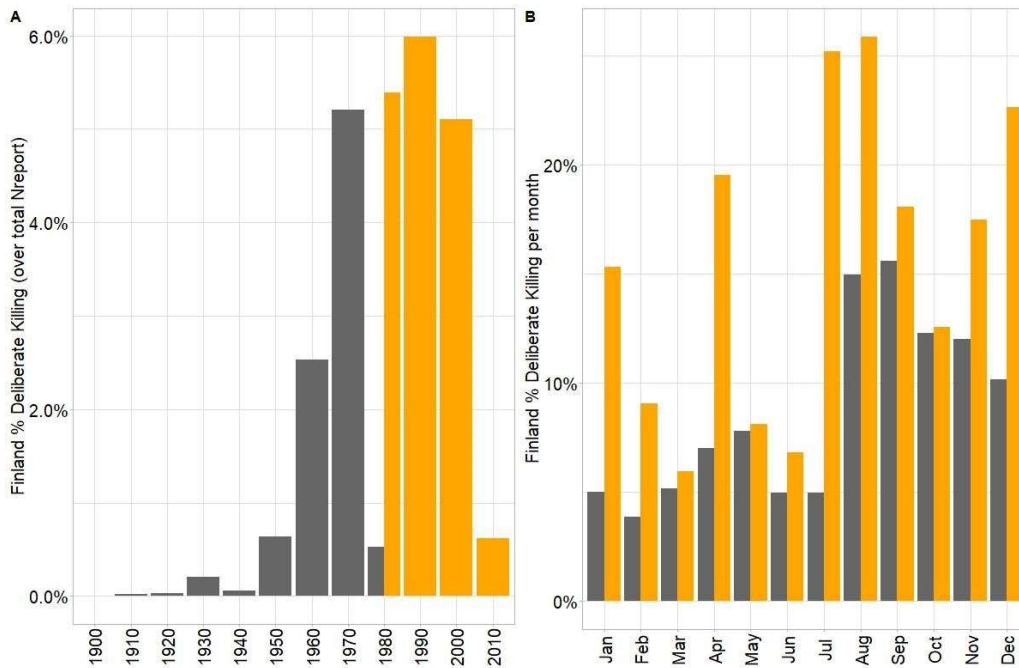


Figure S17: Percentage of all intentionally killed birds vs total reported as dead in Finland per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

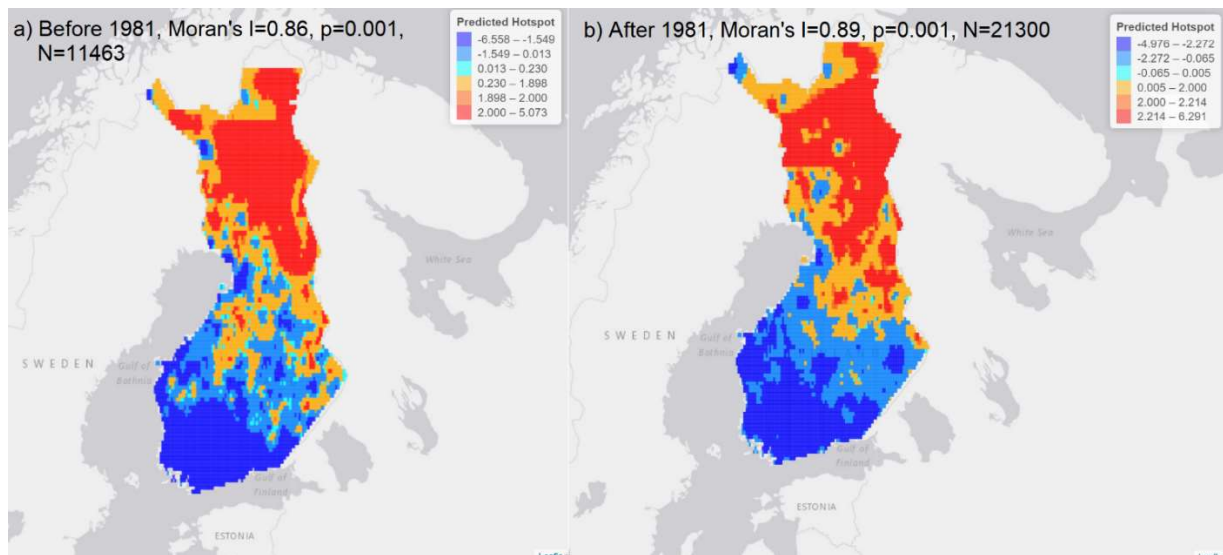


Figure S18: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Finland. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

FRANCE

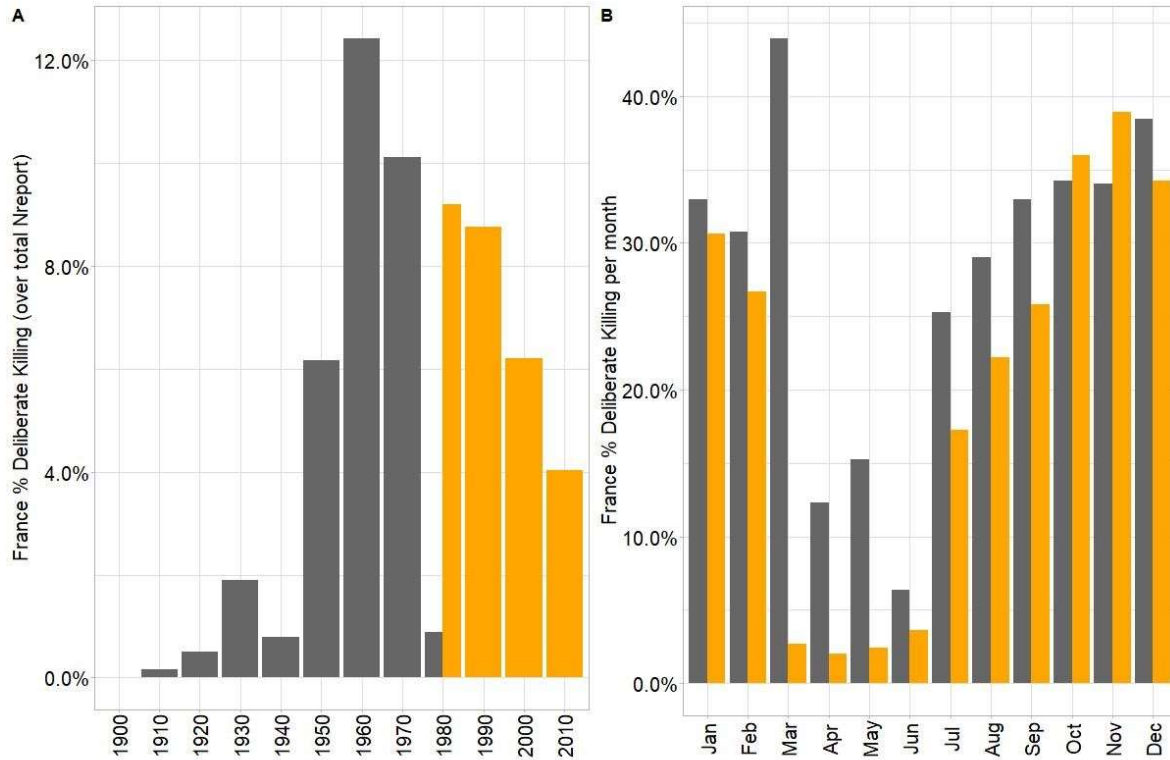


Figure S19: Percentage of all intentionally killed birds vs total reported as dead in France per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

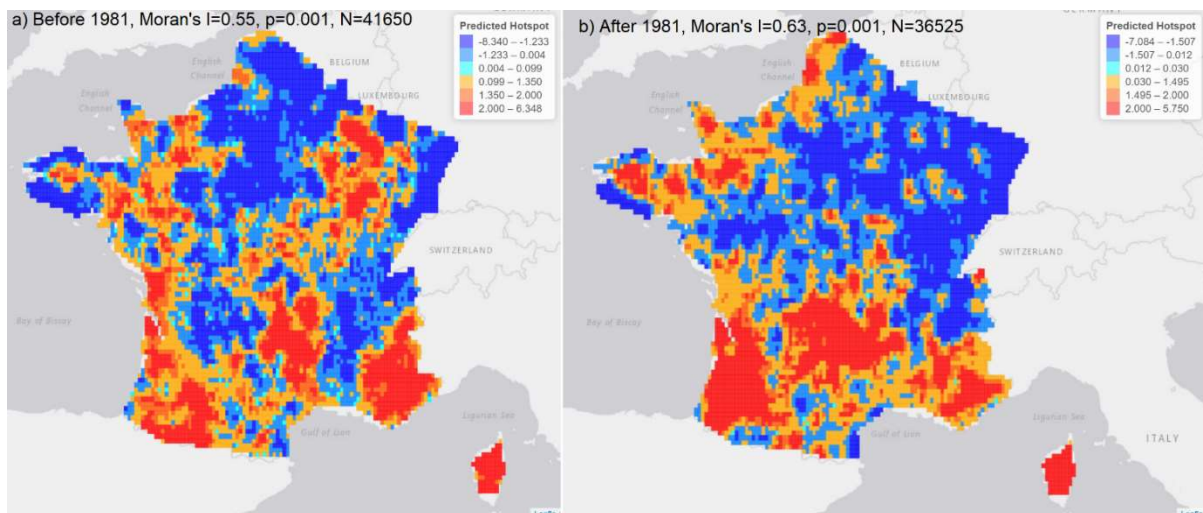


Figure S20: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in France. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

GERMANY

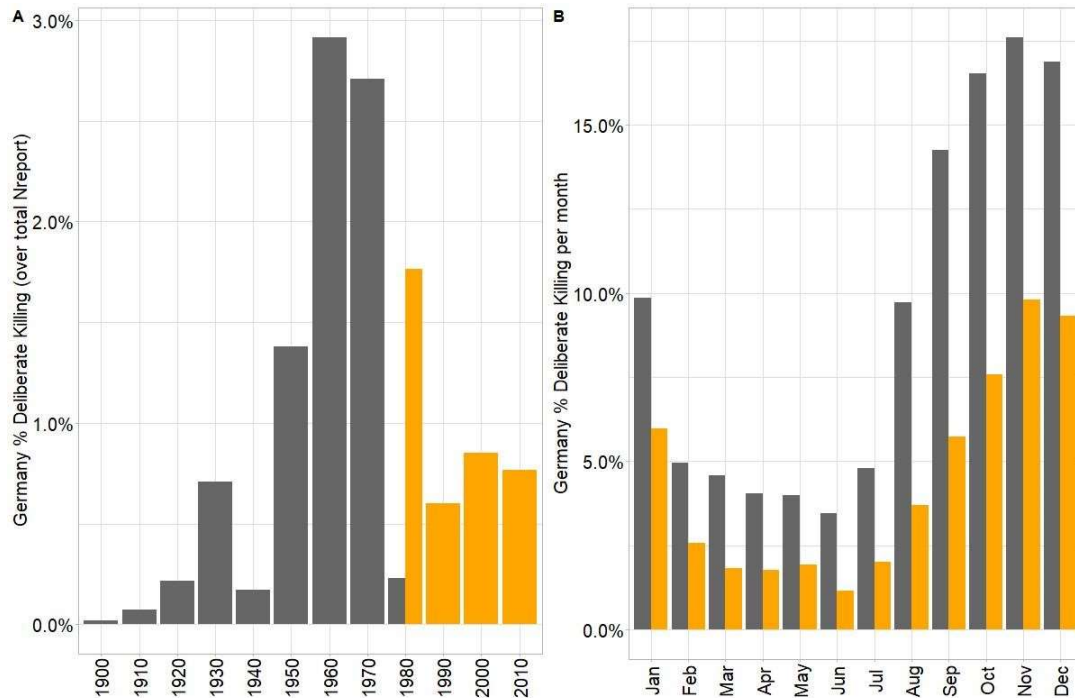


Figure S21: Percentage of all intentionally killed birds vs total reported as dead in Germany per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

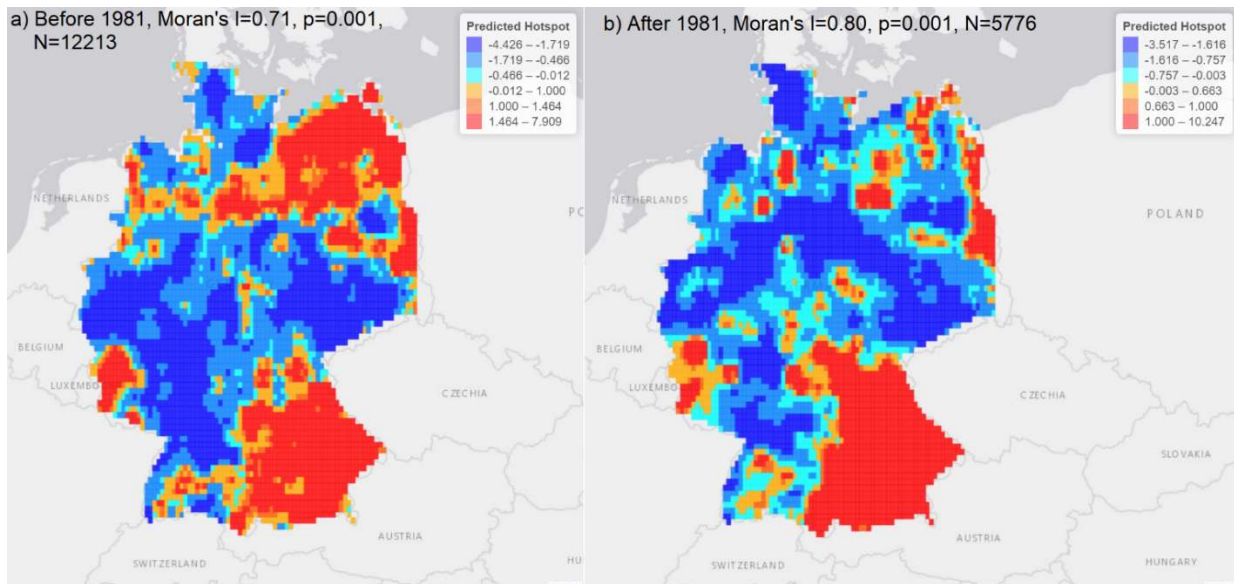


Figure S22: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Germany. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

GREECE

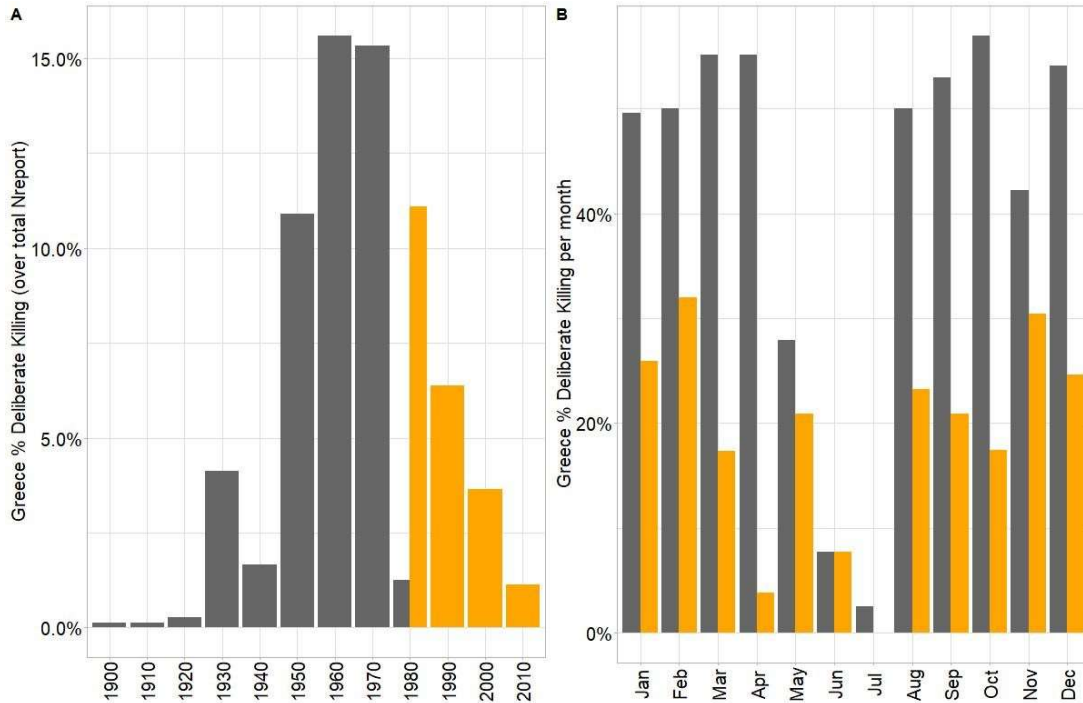


Figure S23: Percentage of all intentionally killed birds vs total reported as dead in Greece per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

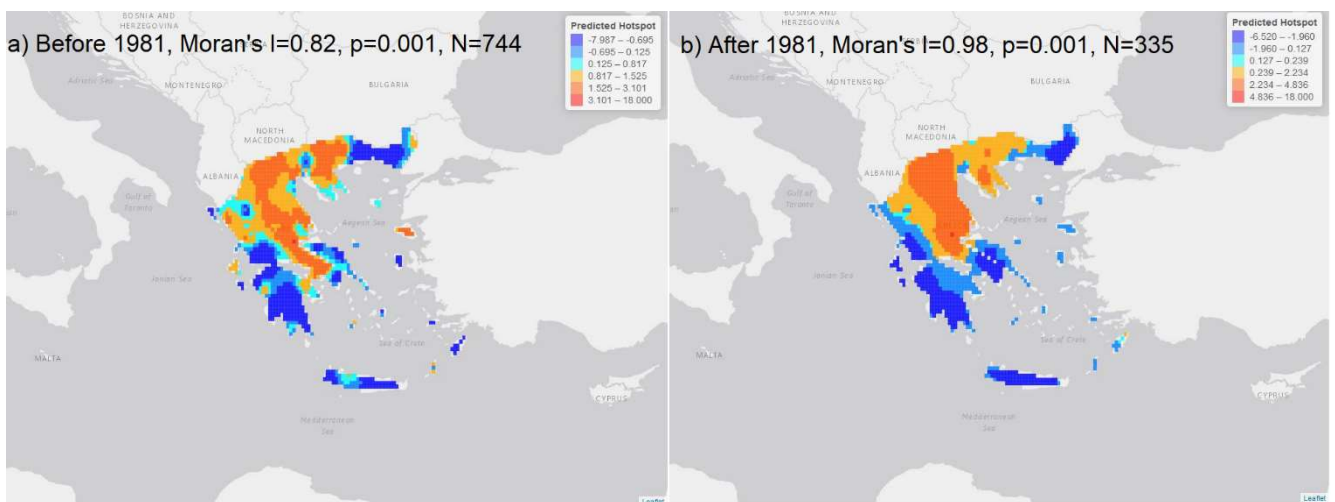


Figure S24: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Greece. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

HUNGARY

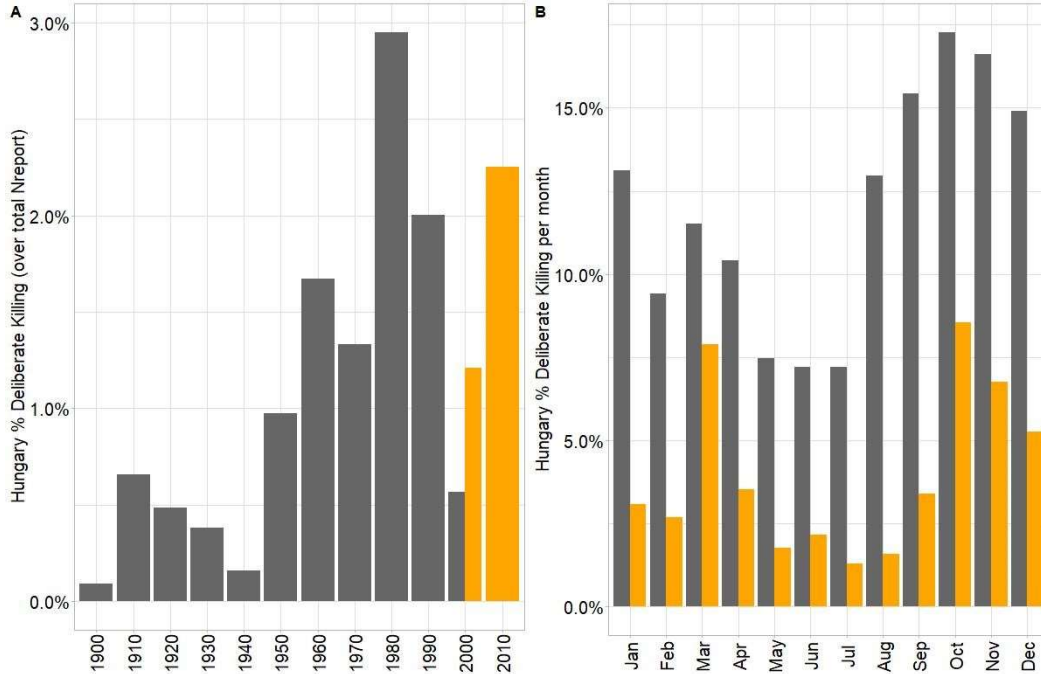


Figure S25: Percentage of all intentionally killed birds vs total reported as dead in Hungary per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

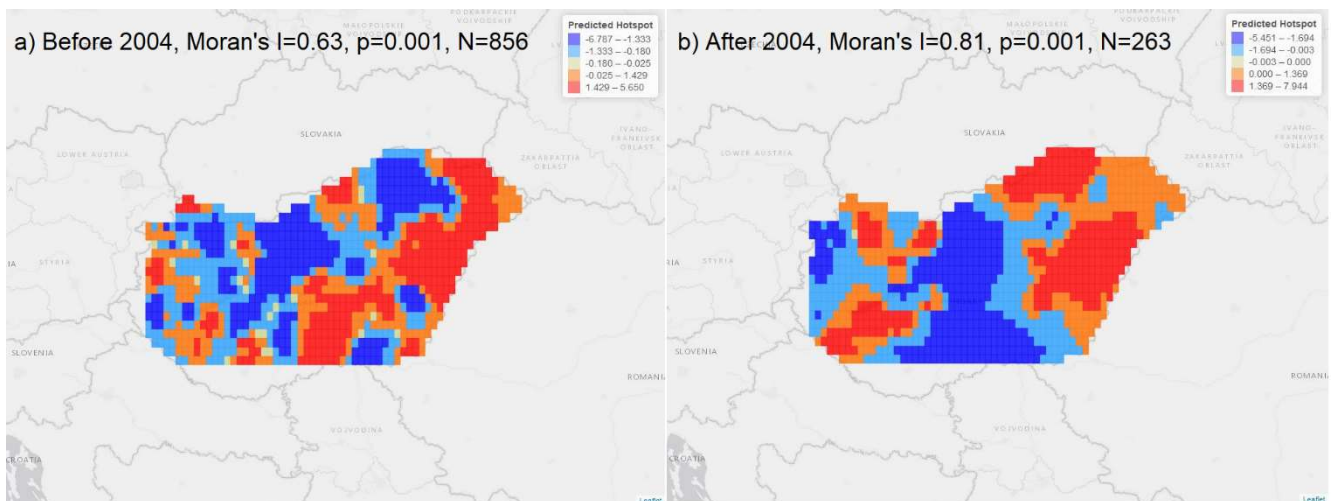


Figure S26: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Hungary. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

IRELAND

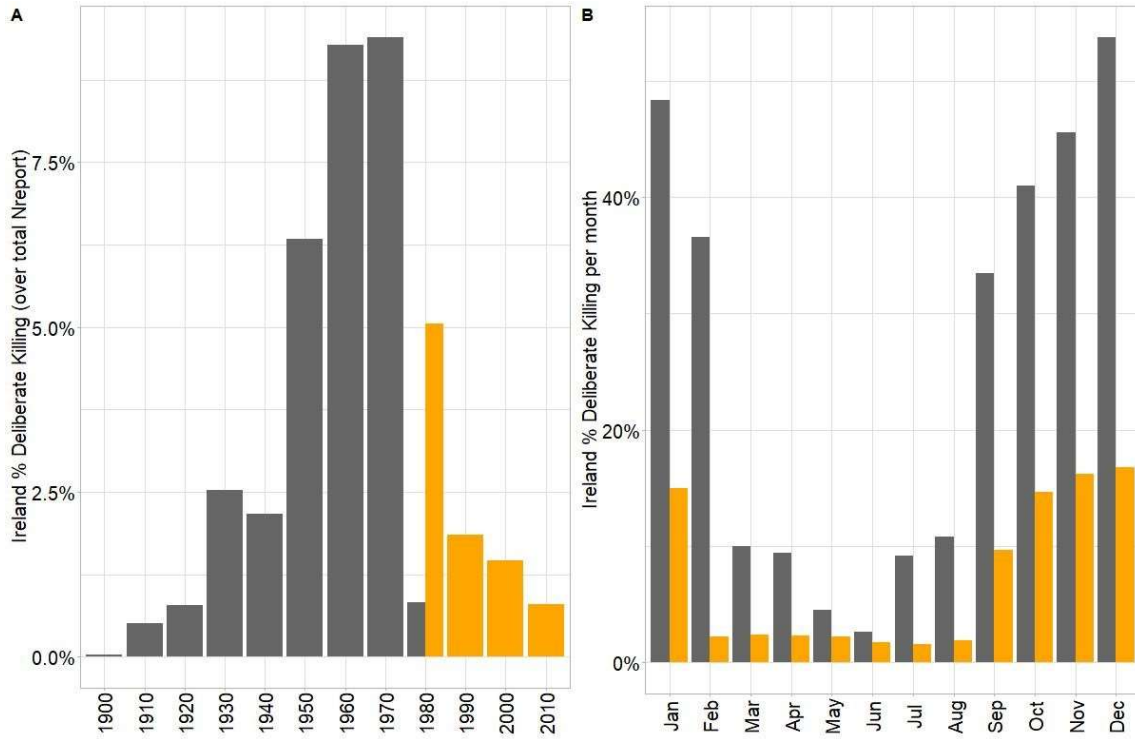


Figure S27: Percentage of all intentionally killed birds vs total reported as dead in Ireland per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

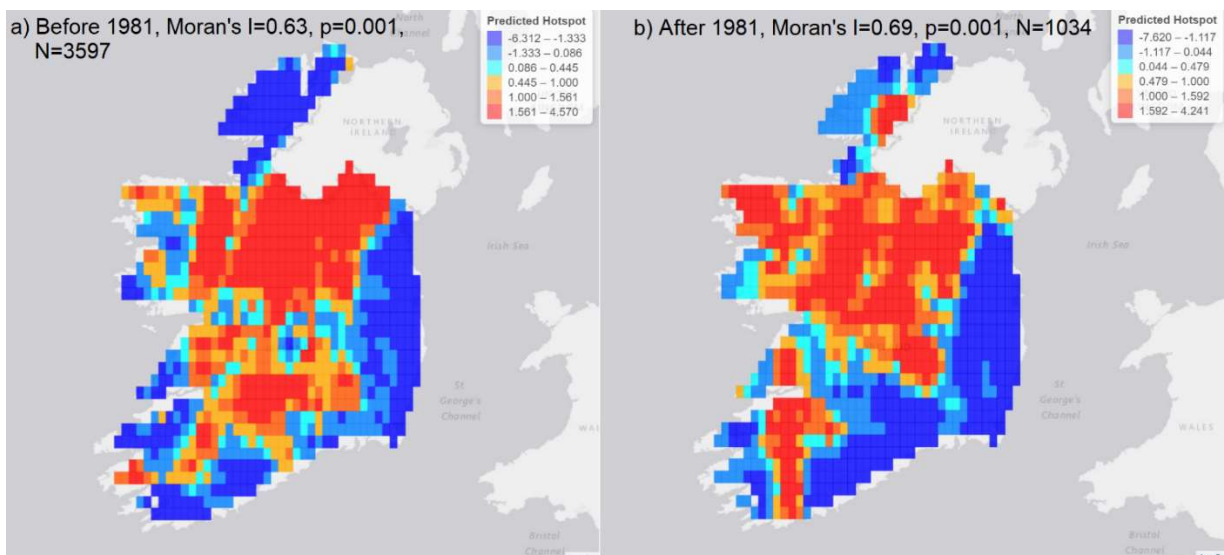


Figure S28: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Ireland. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

ITALY

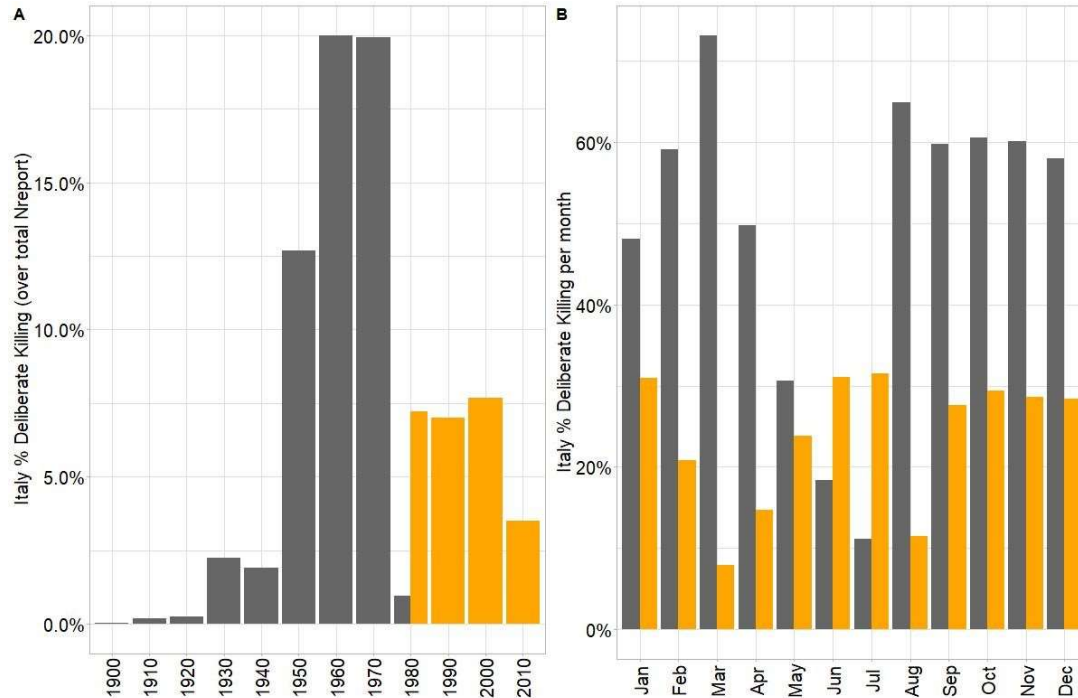


Figure S29: Percentage of all intentionally killed birds vs total reported as dead in Italy per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

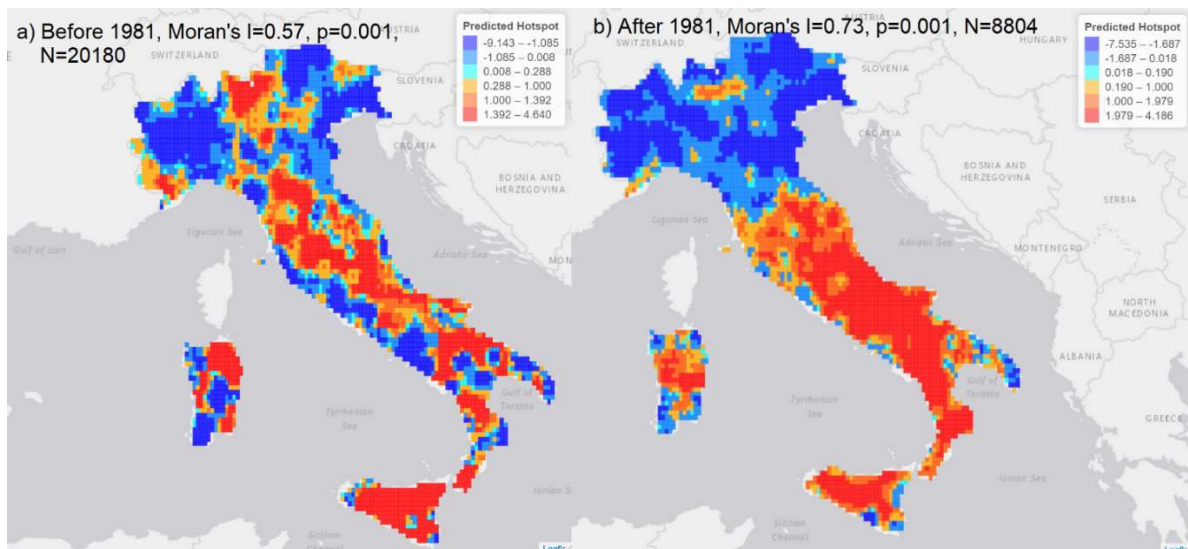


Figure S30: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Italy. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

LATVIA

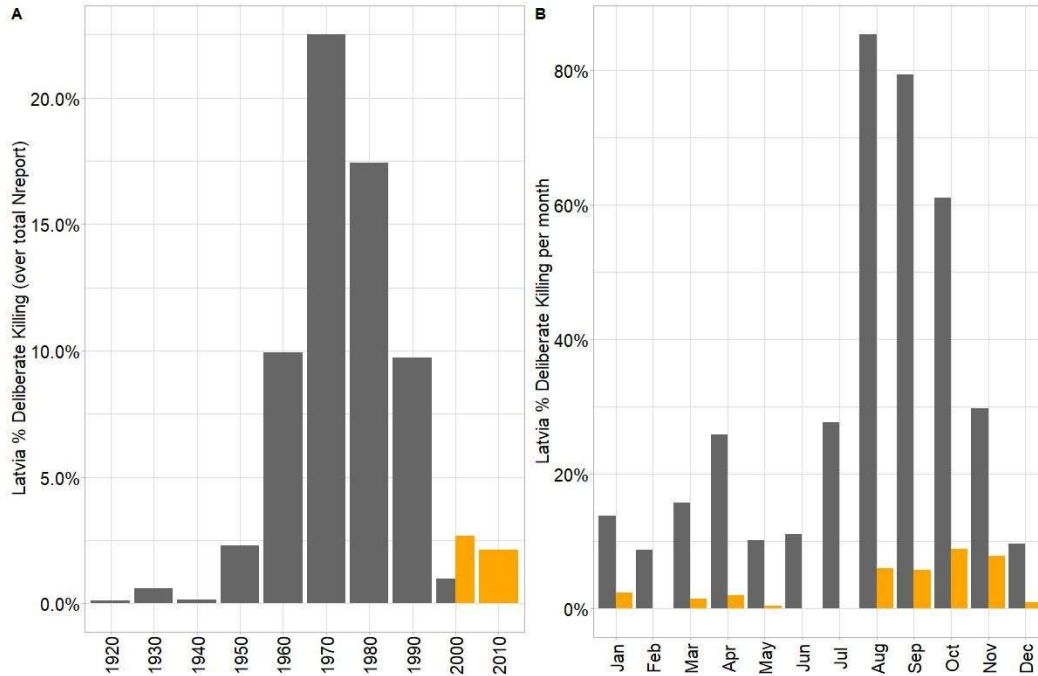


Figure S31: Percentage of all intentionally killed birds vs total reported as dead in Latvia per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

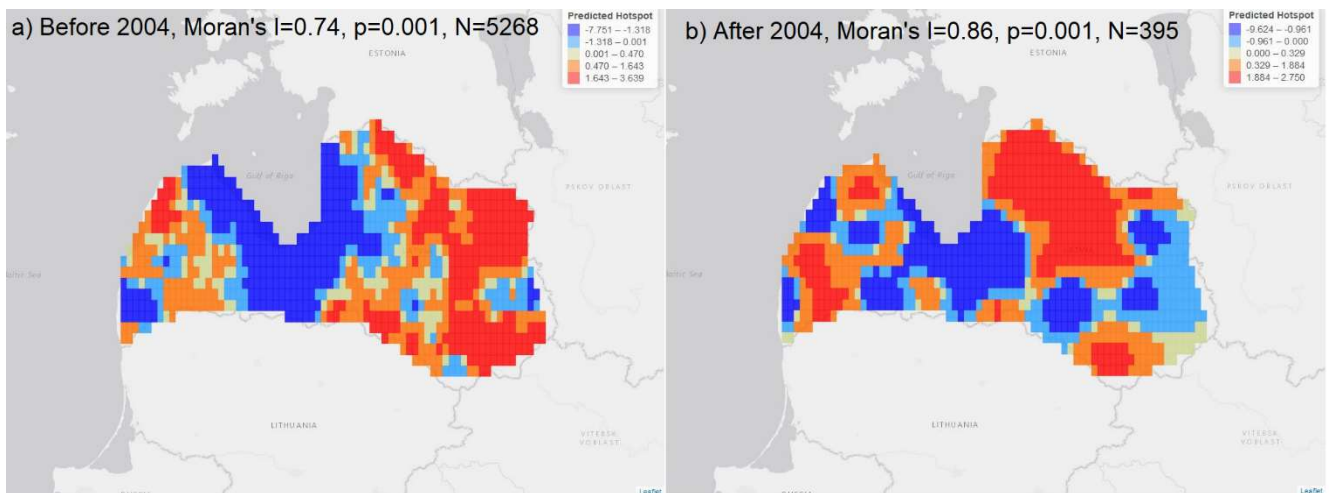


Figure S32: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Latvia. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

LITHUANIA

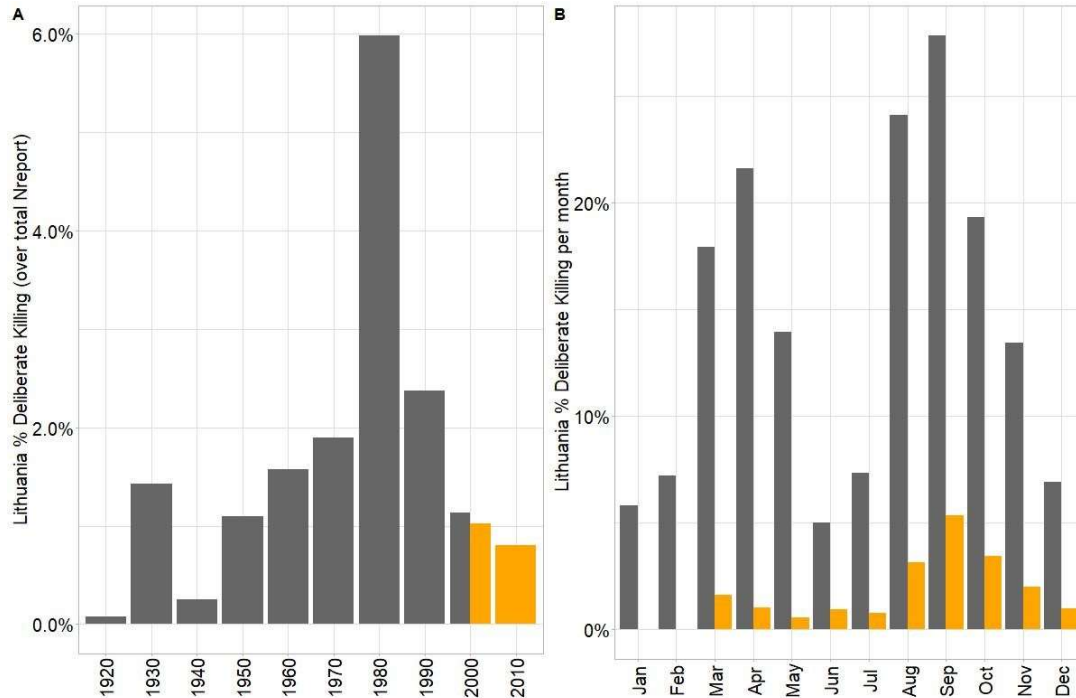


Figure S33: Percentage of all intentionally killed birds vs total reported as dead in Lithuania per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

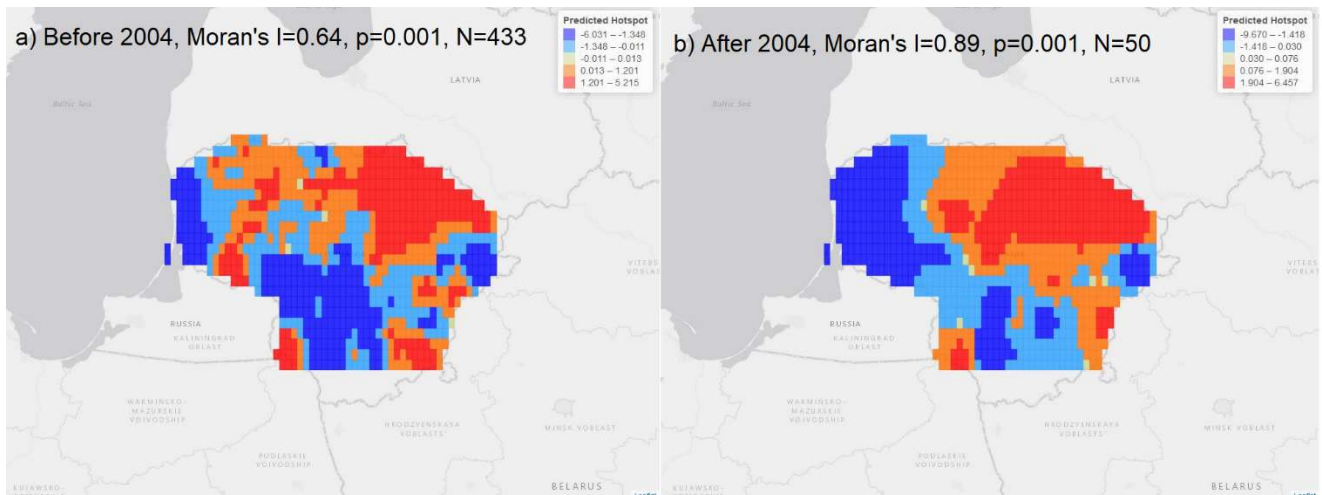


Figure S34: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Lithuania. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

LUXEMBOURG

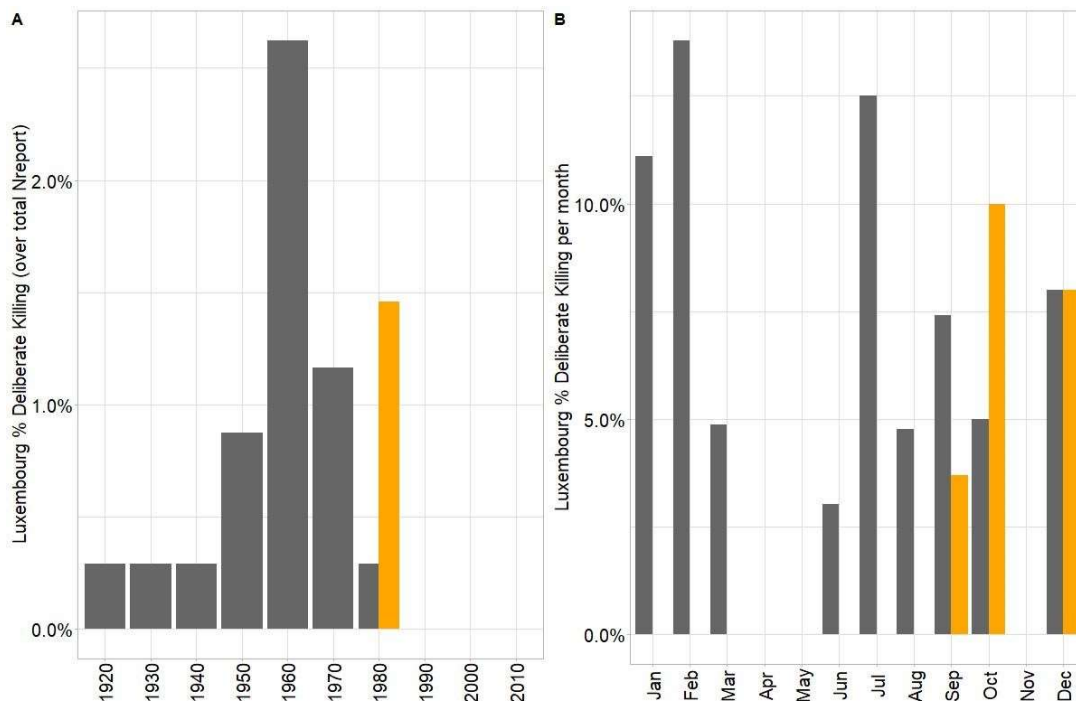


Figure S35: Percentage of all intentionally killed birds vs total reported as dead in Luxembourg per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

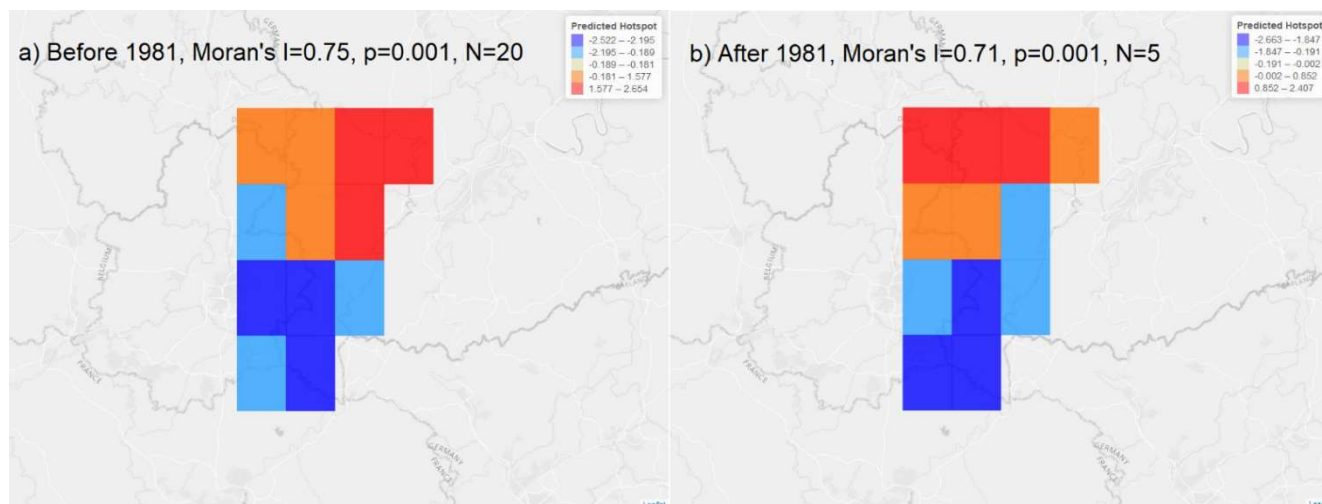


Figure S36: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Luxembourg. Moran's I , 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

MALTA

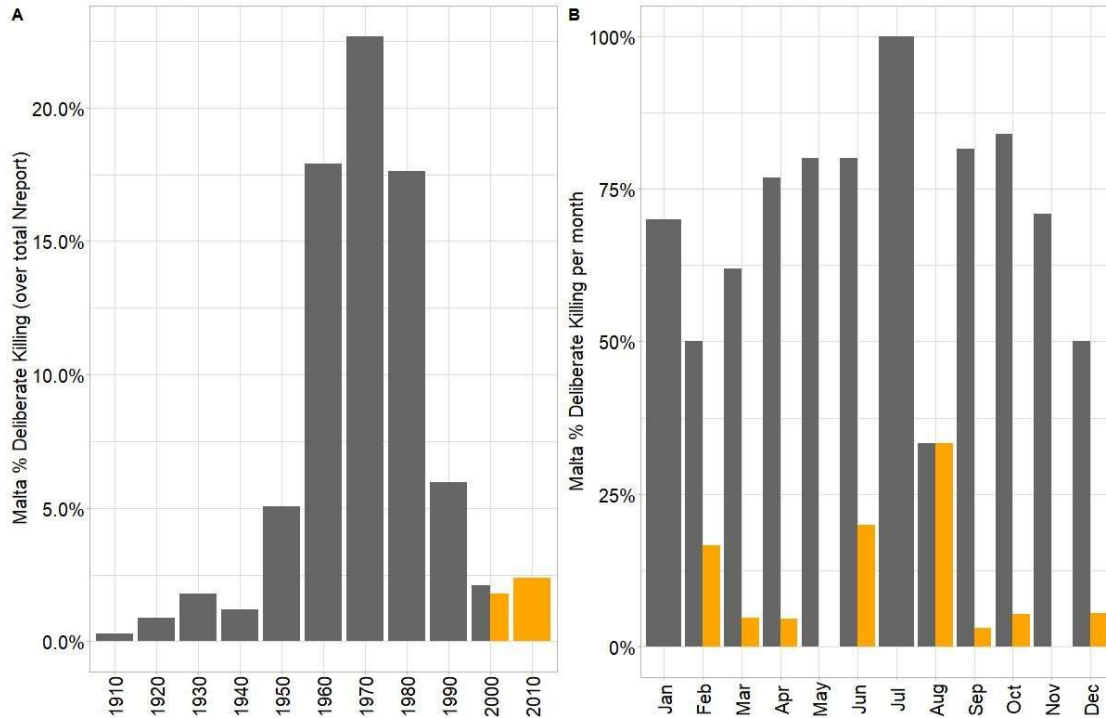


Figure S37: Percentage of all intentionally killed birds vs total reported as dead in Malta per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

Not possible to produce the blackspot map

POLAND

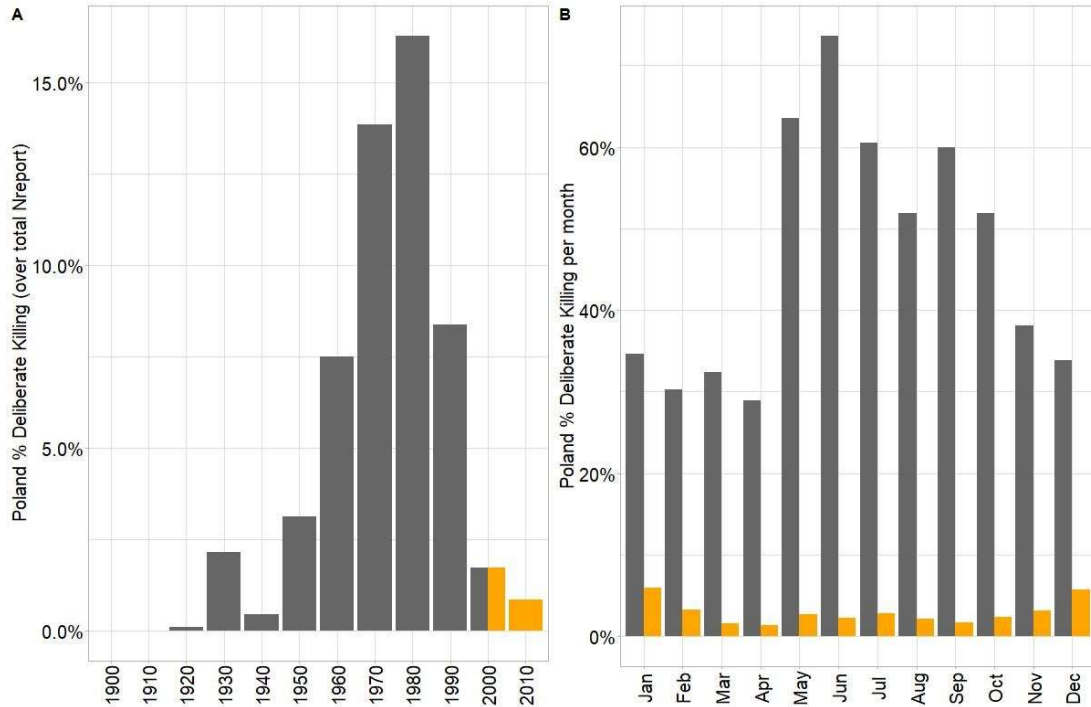


Figure S39: Percentage of all intentionally killed birds vs total reported as dead in Poland per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

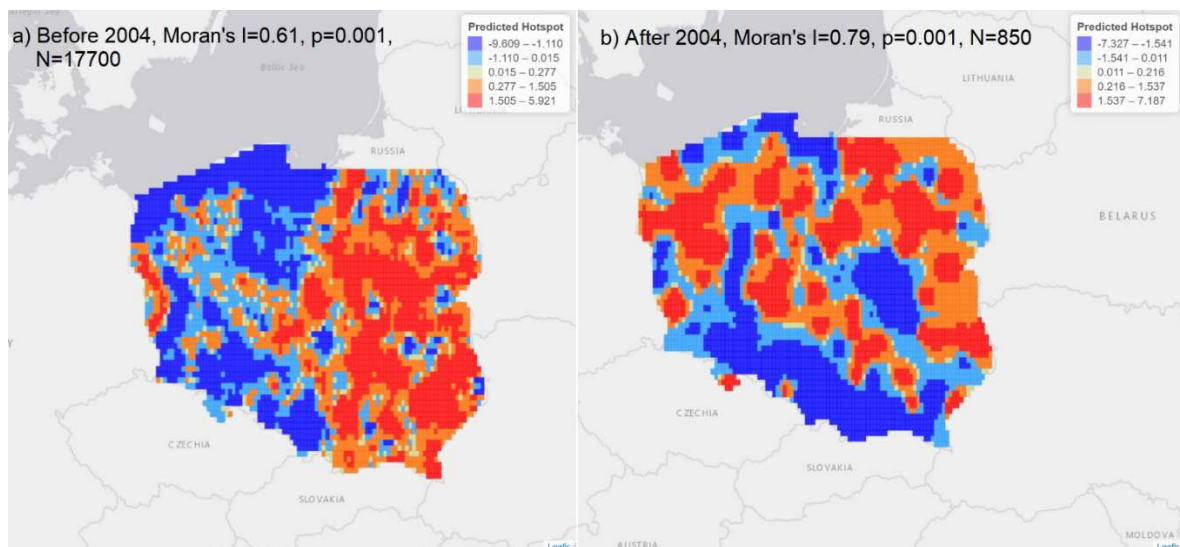


Figure S40: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Poland. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

PORTUGAL

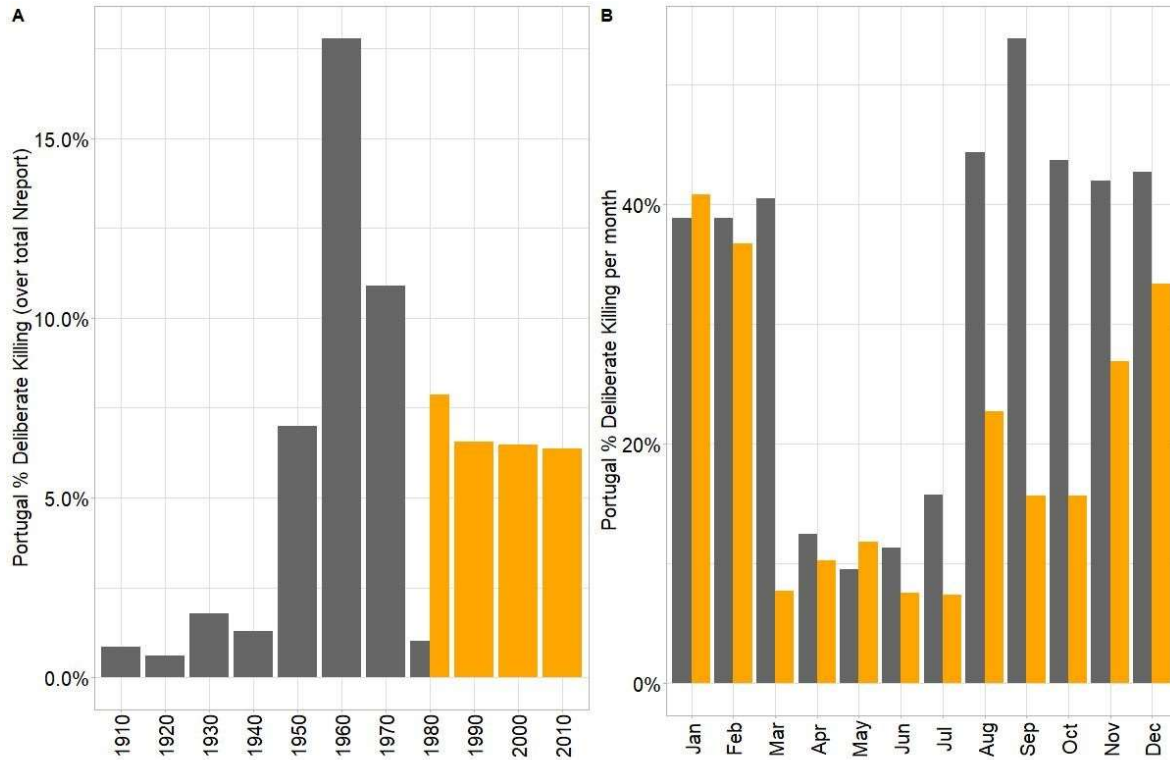


Figure S41: Percentage of all intentionally killed birds vs total reported as dead in Portugal per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

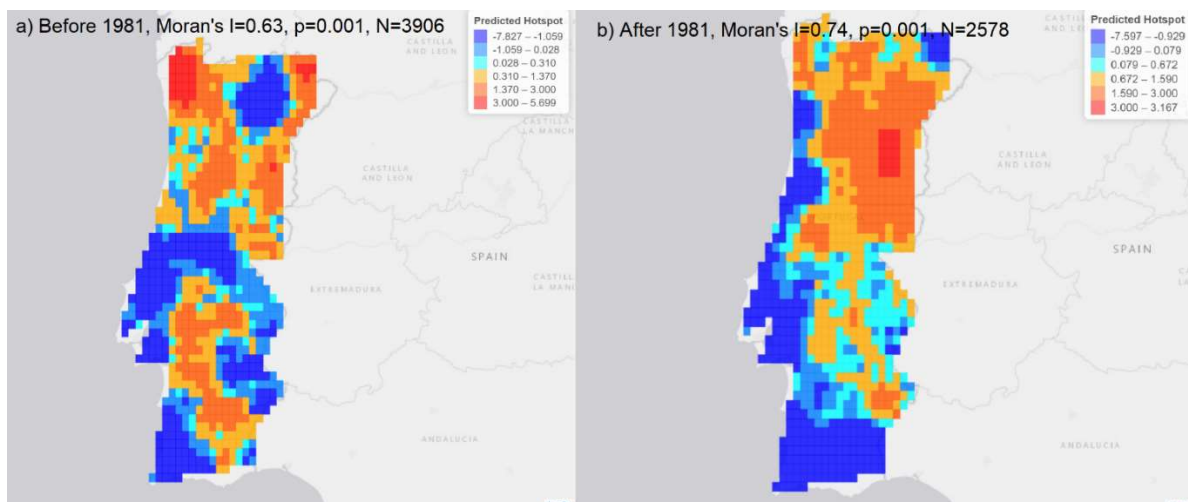


Figure S42: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Portugal. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

ROMANIA

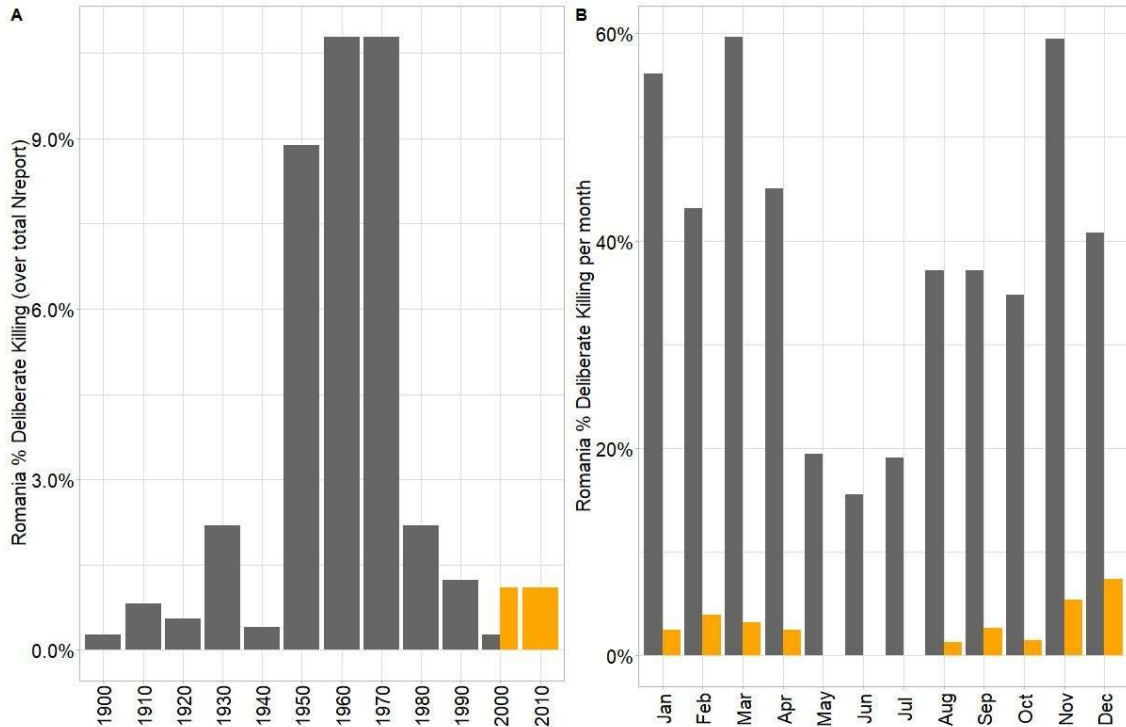


Figure S43: Percentage of all intentionally killed birds vs total reported as dead in Romania per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

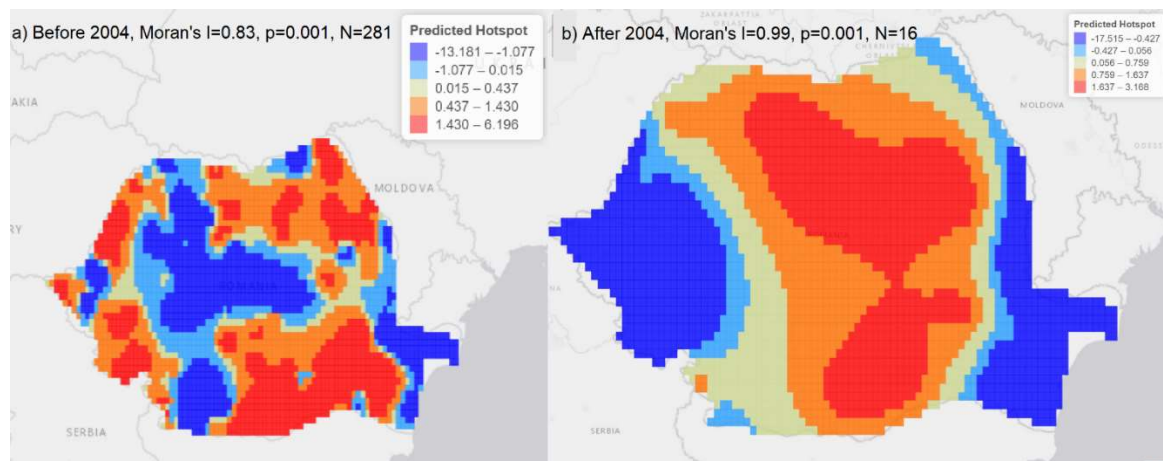


Figure S44: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Romania. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

SLOVAKIA

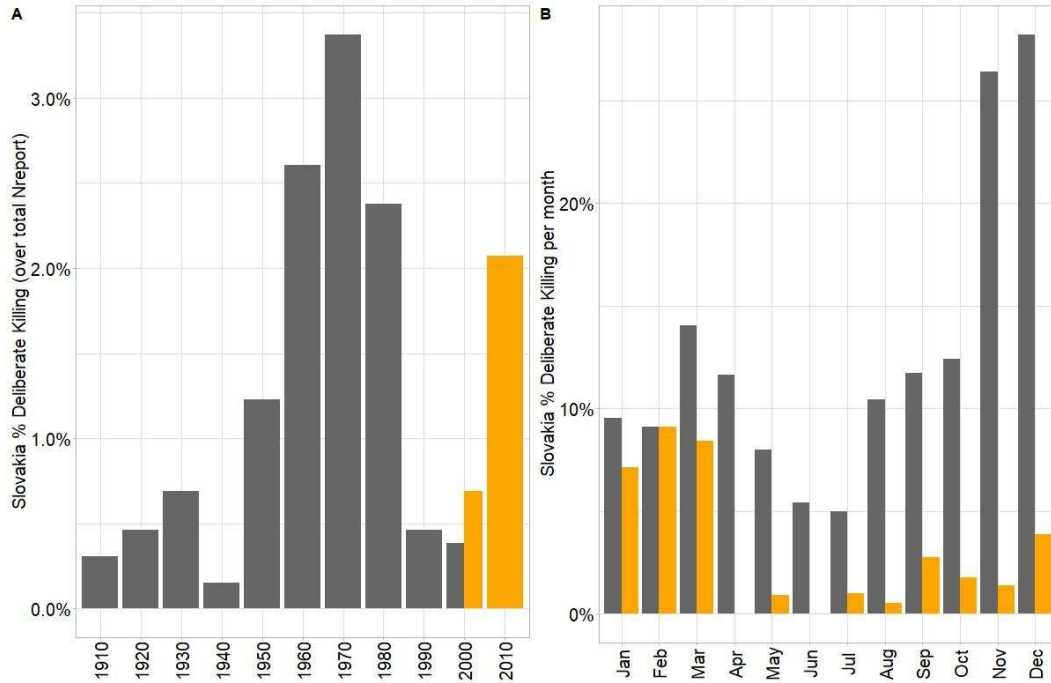


Figure S45: Percentage of all intentionally killed birds vs total reported as dead in Slovakia per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

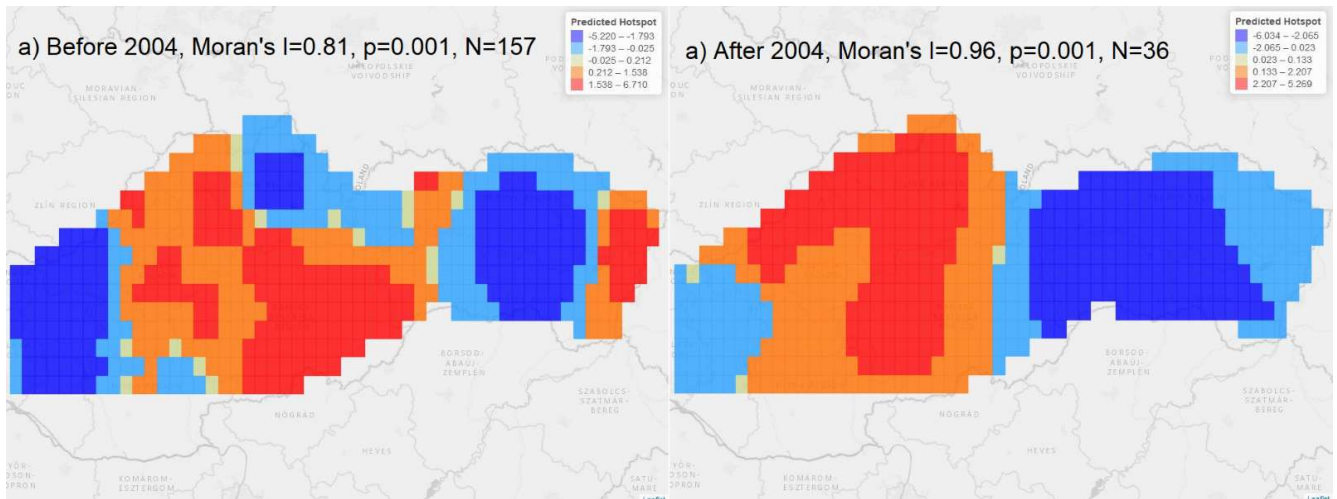


Figure S46: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Slovakia. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

SLOVENIA

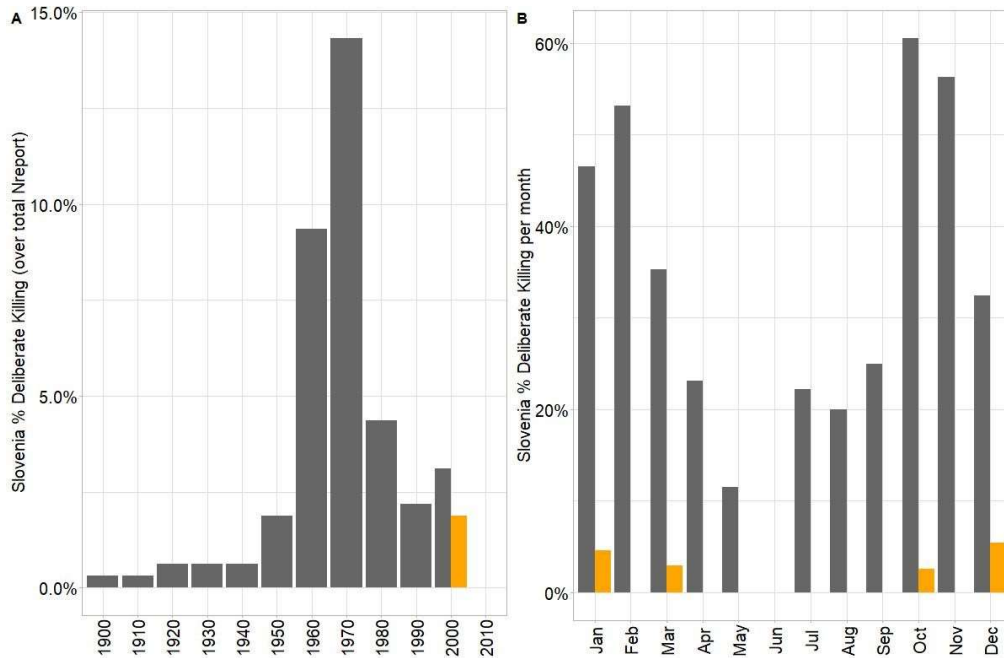


Figure S47: Percentage of all intentionally killed birds vs total reported as dead in Slovenia per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

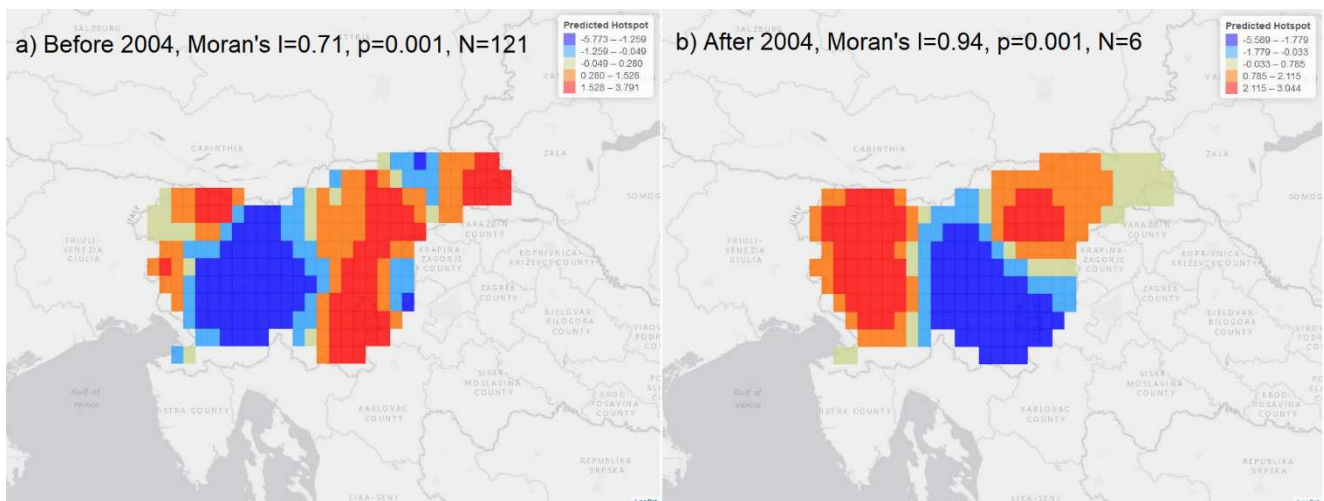


Figure S48: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Slovenia. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

SPAIN

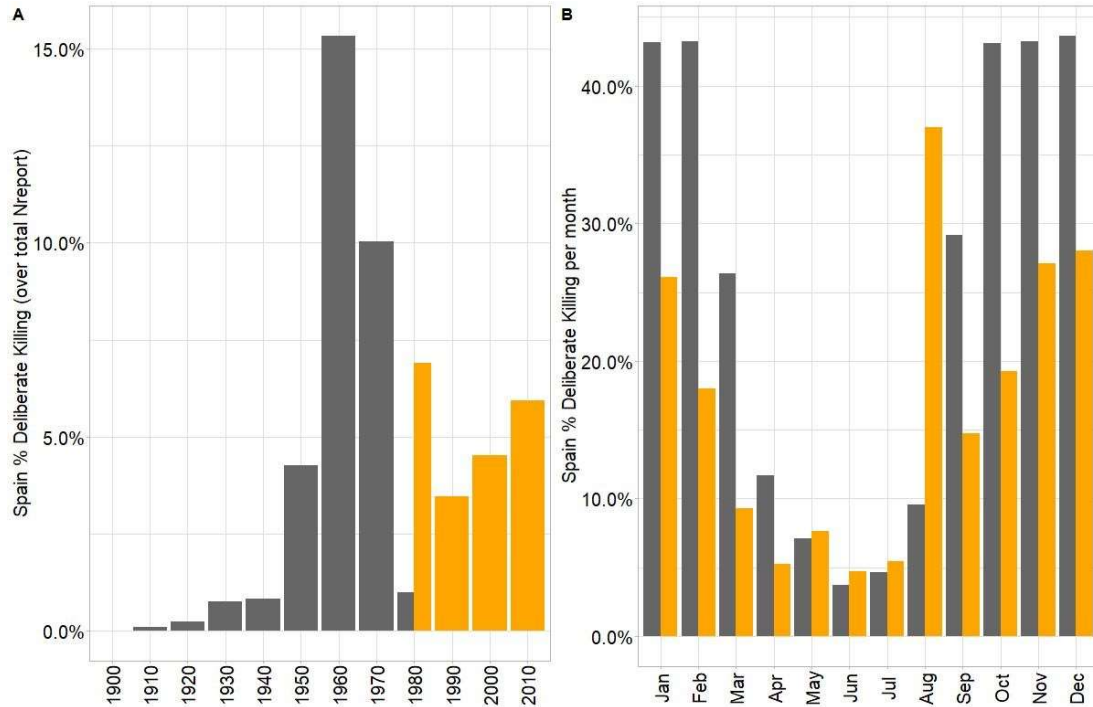


Figure S49: Percentage of all intentionally killed birds vs total reported as dead in Spain per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

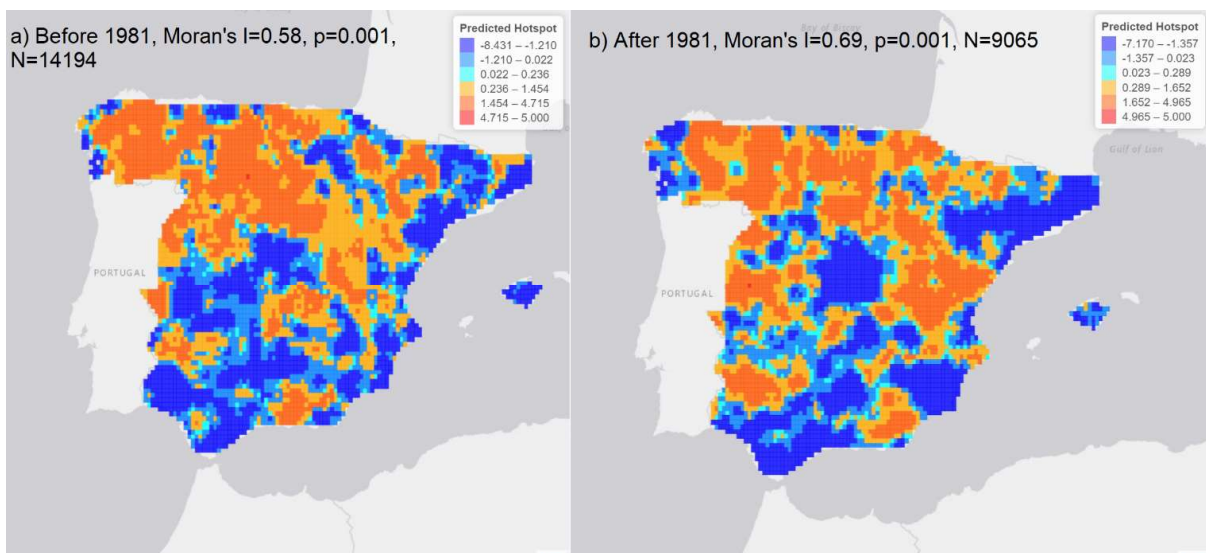


Figure S50: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Spain. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

SWEDEN

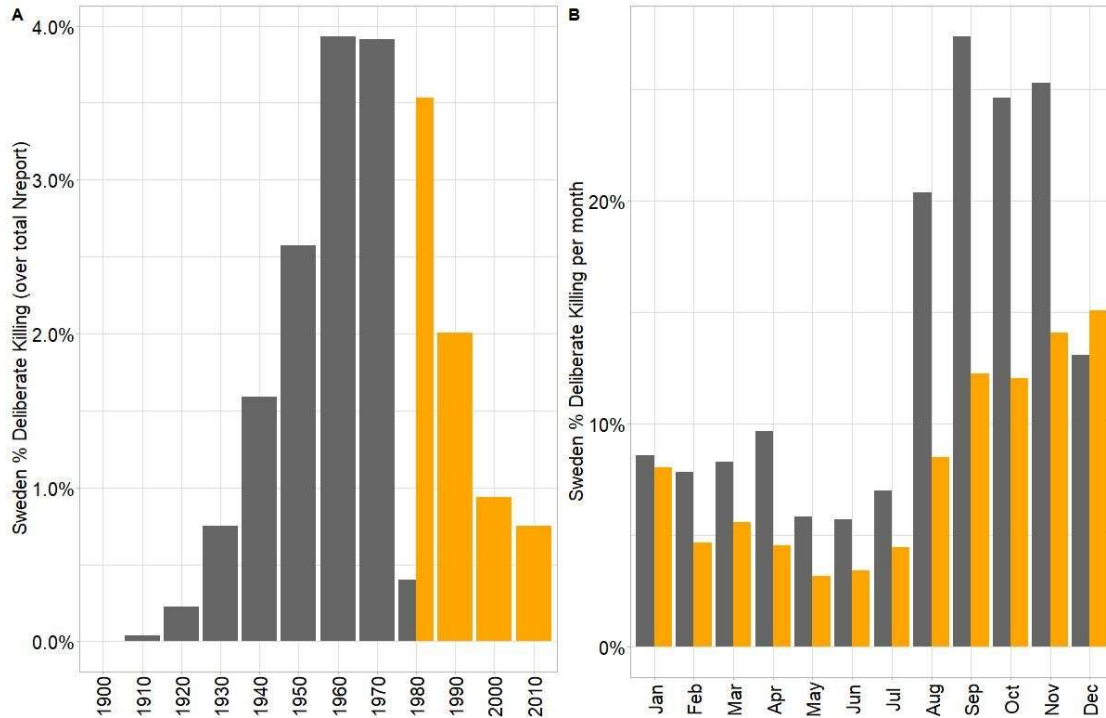


Figure S51: Percentage of all intentionally killed birds vs total reported as dead in Sweden per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

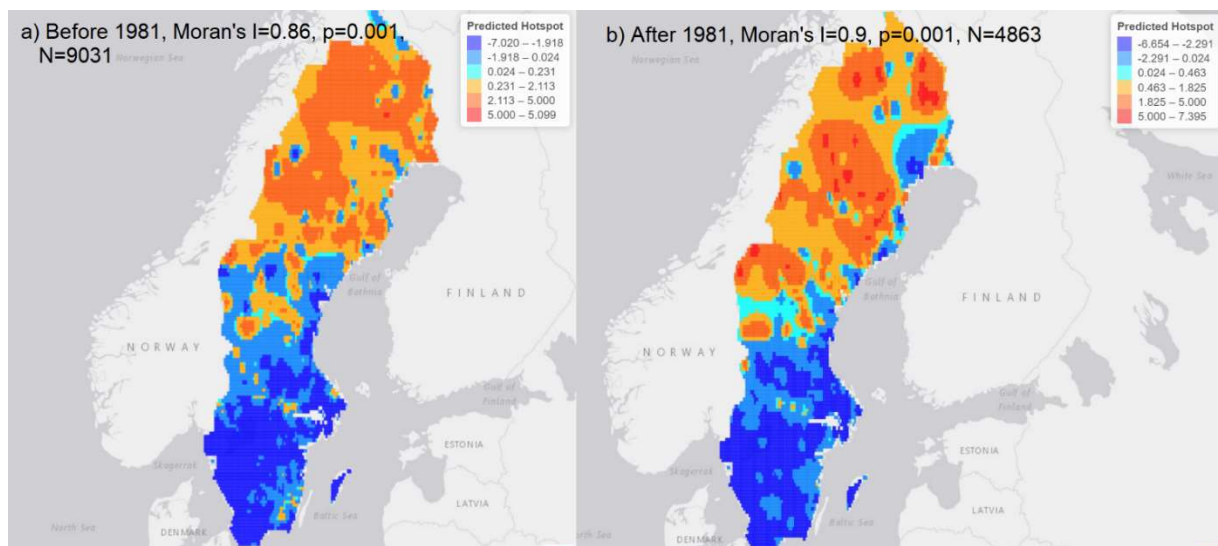


Figure S52: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in Sweden. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

The NETHERLANDS

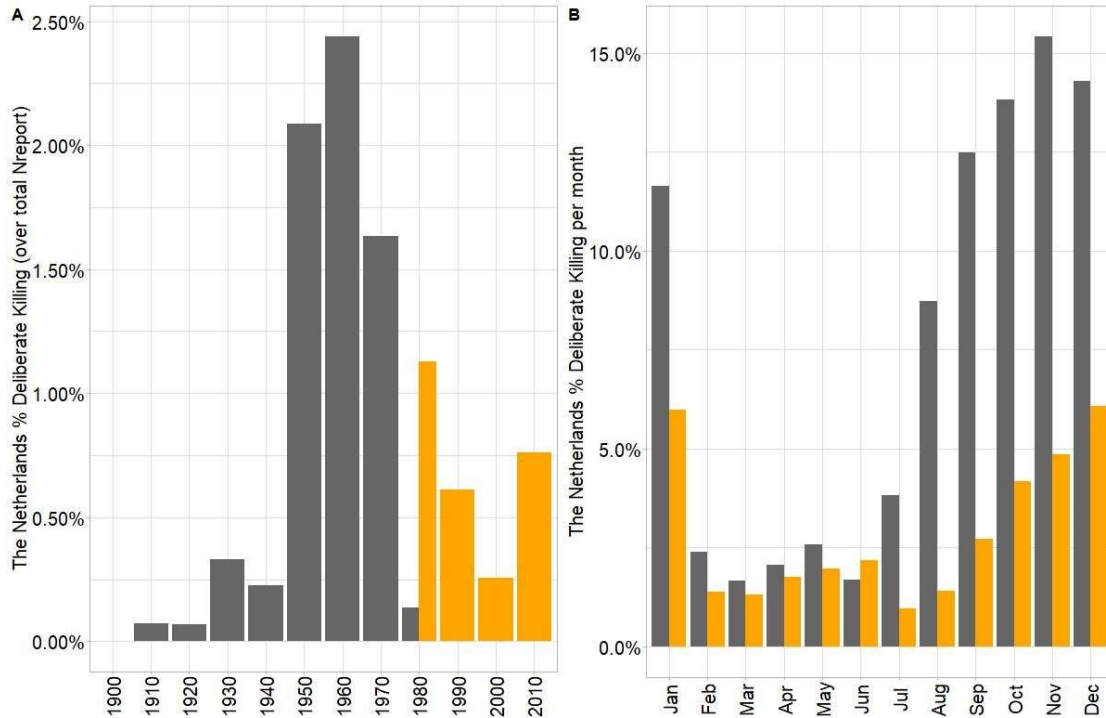


Figure S53: Percentage of all intentionally killed birds vs total reported as dead in The Netherlands per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

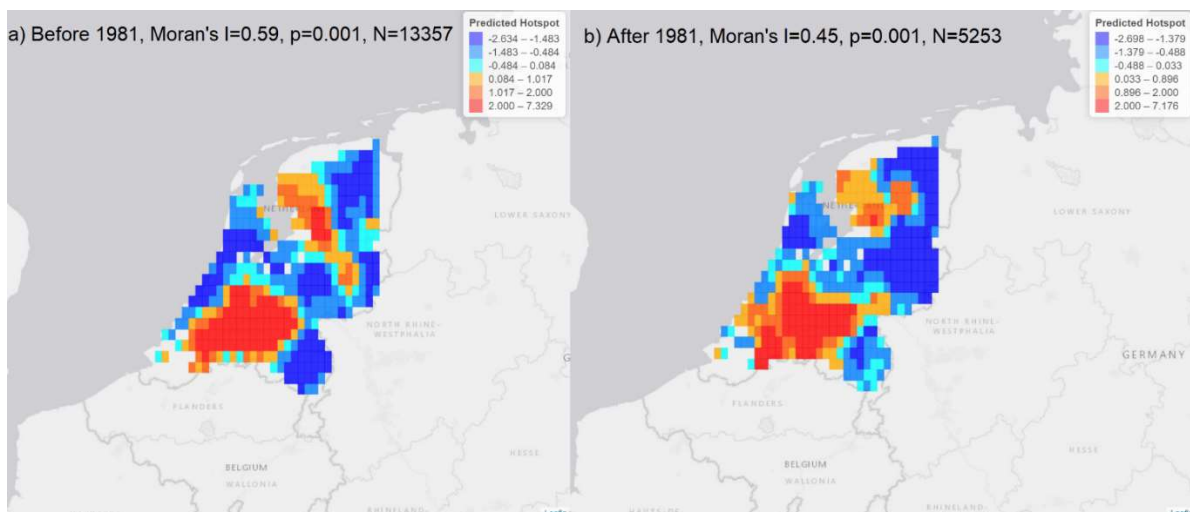


Figure S44: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in the Netherlands. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.

The UNITED KINGDOM

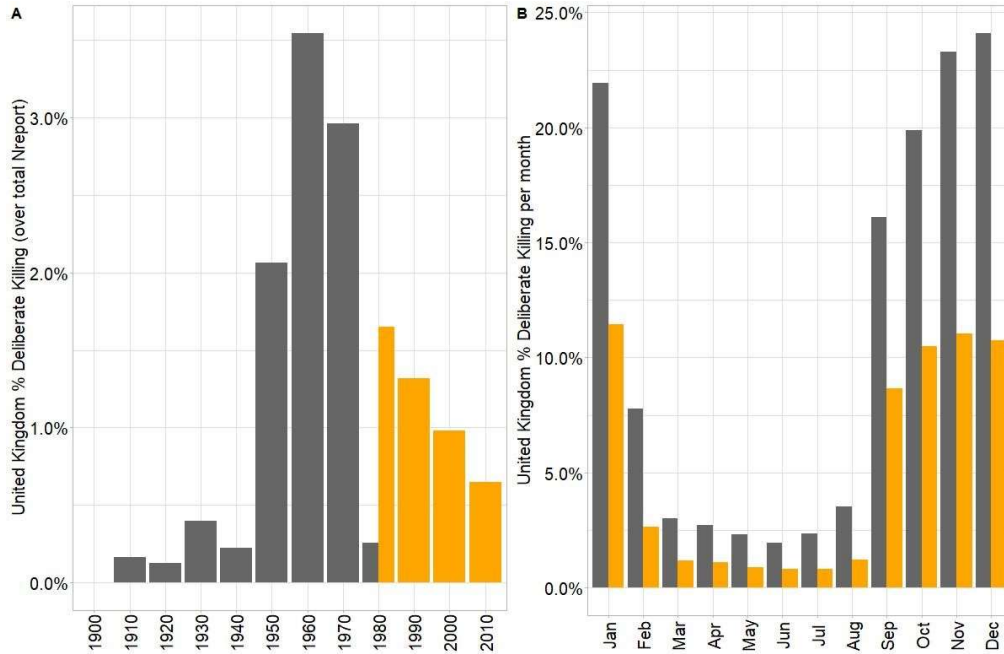


Figure S55: Percentage of all intentionally killed birds vs total reported as dead in the United Kingdom per decade (a) and month (b); grey (before) and yellow (after) the entry into force of the EU Directive.

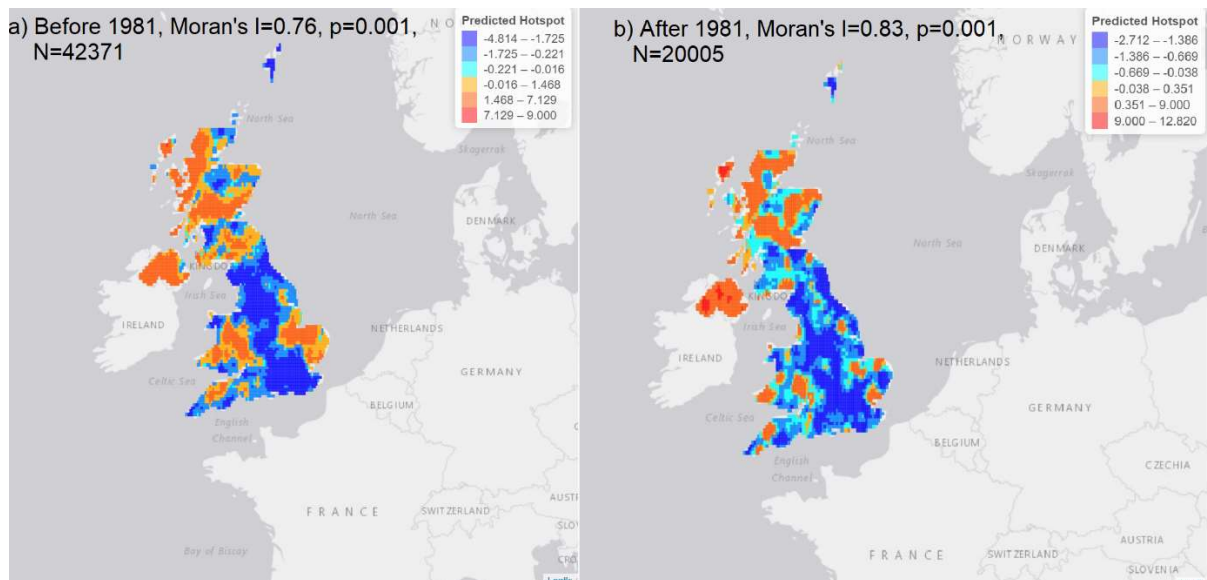


Figure S56: Visualization of the black and cold spots of intentional killing before (a) and after (b) the entry into force of the EU Directive of all species in the United Kingdom. Moran's I, 1000 Monte Carlo permutation test p value and sample size (N) before the interpolation in 0.1 pixel grid cell are specified.



ISPRA

Istituto Superiore per la Protezione
e la Ricerca Ambientale



Sistema Nazionale
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dell'Ambiente

SUPPLEMENTARY MATERIAL B

INTENTIONAL KILLING PER DECADE AND MONTH IN SELECTED GROUPS OF SPECIES

B. Intentional killing in selected groups of species

B.1 Birds of Prey

Decades	Intentional	Not intentional	% int
1900	23	3	0.88
1910	59	12	0.83
1920	214	56	0.79
1930	622	358	0.63
1940	587	351	0.63
1950	1820	1142	0.61
1960	2513	2383	0.51
1970	2061	6364	0.24
1980	2135	12218	0.15
1990	1007	14023	0.07
2000	660	12606	0.05
2010	414	10336	0.04

Table B.1.1: Summary of intentional, not intentional and percent of intentional killing (% int) of birds of prey per decade

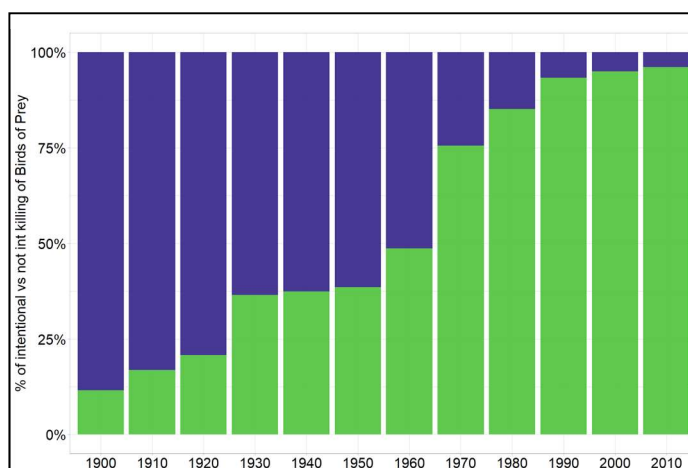


Figure B.1.1: Proportion of intentional (blue) vs not intentional (green) killing of birds of prey reported as dead per decade.

Month	Intentional	Not intentional	Percent
Jan	978	5193	0.16
Feb	838	5612	0.13
Mar	884	6846	0.11
Apr	777	6873	0.1
May	492	4572	0.1
Jun	320	3042	0.1
Jul	337	4209	0.07
Aug	1037	6246	0.14
Sep	2057	5028	0.29
Oct	1802	4087	0.31
Nov	1344	3870	0.26
Dec	1249	4274	0.23

Table B.1.2: Summary of intentional, not intentional and percent of intentional killing (% int) of birds of prey per month.

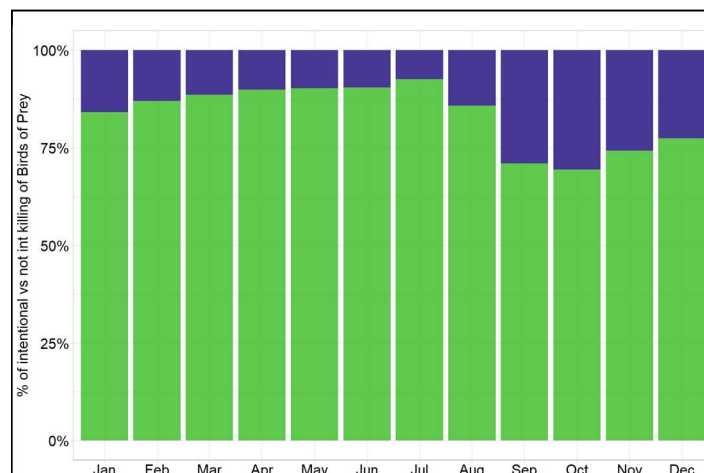


Figure B.1.2: Proportion of intentional (blue) vs not intentional (green) killing of birds of prey reported as dead per month.

B. Intentional killing in selected groups of species

B.2 Ducks

Decades	Intentional	Not intentional	Percent
1900	46	3	0.94
1910	248	8	0.97
1920	293	47	0.86
1930	1431	201	0.88
1940	1643	233	0.88
1950	17426	1816	0.91
1960	31667	5432	0.85
1970	26795	7186	0.79
1980	19775	8025	0.71
1990	9980	6052	0.62
2000	6182	3127	0.66
2010	6483	2091	0.76

Table B.2.1: Summary of intentional, not intentional and percent of intentional killing (% int) of Ducks per decade.

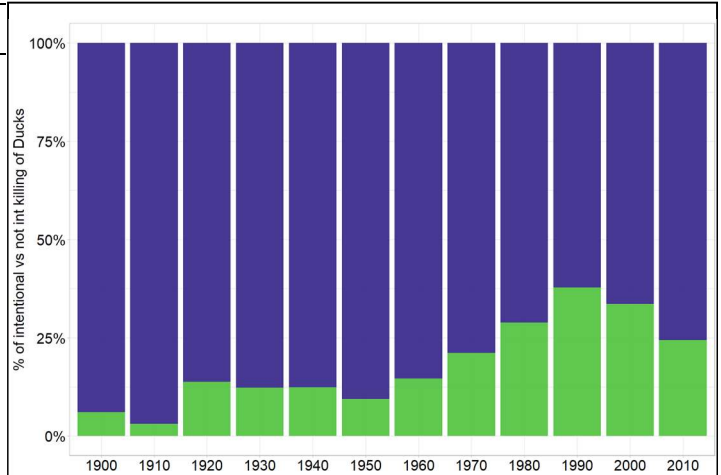


Figure B.2.1: Proportion of intentional (blue) vs not intentional (green) killing of Ducks reported as dead per decade.

Month	Intentional	Not intentional	Percent
Jan	18647	2699	0.87
Feb	6863	2429	0.74
Mar	1924	2820	0.41
Apr	759	3273	0.19
May	1055	5172	0.17
Jun	227	4199	0.05
Jul	1228	3070	0.29
Aug	17679	2614	0.87
Sep	18333	1988	0.90
Oct	19398	2031	0.91
Nov	17368	1801	0.91
Dec	18488	2125	0.90

Table B.2.2: Summary of intentional, not intentional and percent of intentional killing (% int) of Ducks per month.

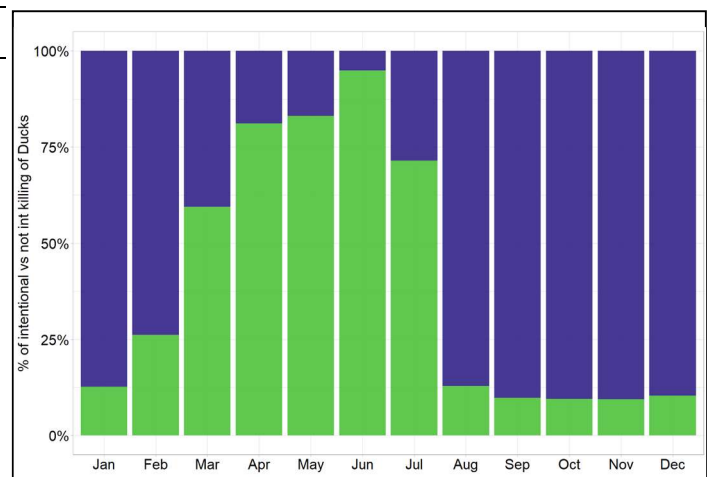


Figure B.2.2: Proportion of intentional (blue) vs not intentional (green) killing of Ducks reported as dead per month.

B. Intentional killing in selected groups of species

B.3 Herons and Egrets

Decades	Intentional	Not intentional	Percent
1900	12	0	1.00
1910	158	11	0.93
1920	176	55	0.76
1930	742	575	0.56
1940	347	257	0.57
1950	1003	922	0.52
1960	1590	1646	0.49
1970	1071	3042	0.26
1980	632	3492	0.15
1990	288	2041	0.12
2000	102	832	0.11
2010	15	500	0.03

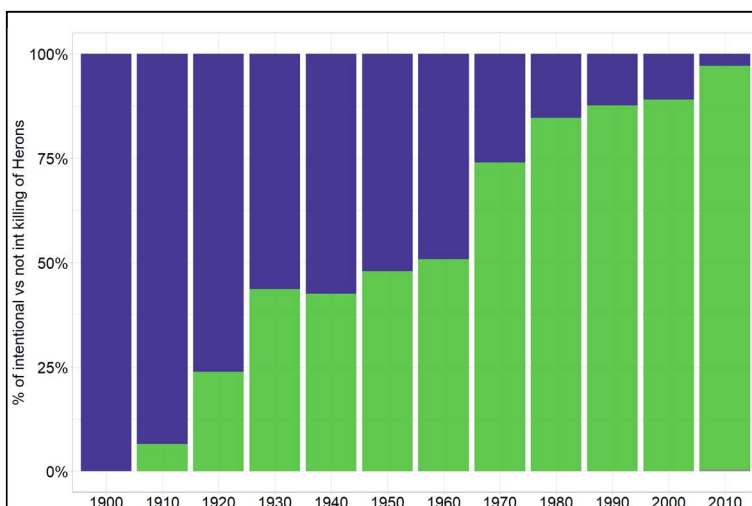


Table B.3.1: Summary of intentional, not intentional and percent of intentional killing (% int) of Herons and Egrets per decade.

Figure B.3.1: Proportion of intentional (blue) vs not intentional (green) killing of Herons and Egrets reported as dead per decade.

Month	Intentional	Not intentional	Percent
Jan	464	1776	0.21
Feb	310	1881	0.14
Mar	237	1500	0.14
Apr	163	959	0.15
May	134	852	0.14
Jun	160	713	0.18
Jul	577	1042	0.36
Aug	1122	1019	0.52
Sep	942	842	0.53
Oct	774	853	0.48
Nov	622	833	0.43
Dec	631	1103	0.36

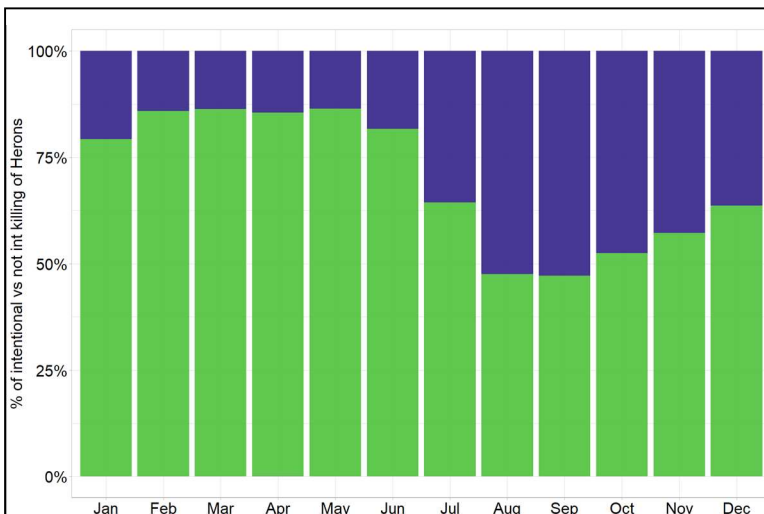


Table B.3.2: Summary of intentional, not intentional and percent of intentional killing (% int) of Herons and Egrets per month.

Figure B.3.2: Proportion of intentional (blue) vs not intentional (green) killing of Herons and Egrets reported as dead per month.