Supporting information:

Metadata analysis of persistent organic pollutants in national pools of human milk in support of the Stockholm Convention implementation

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1 Number of pools and assignment to metadata

Table S 1: Assignment of national pools by country for income (as GNI in USD *per* capita and year and WBC) and population density (as PopDen in inhabitants *per* km² and PD_Code)

Region, Country	Min of GNI	Max of GNI	Min of PopDen	Max of PopDen
Africa	**580**	**25 460**	**12**	**623**
MAR	7 700 2_LM	7 700 2_LM	82 PD_25-90	82 PD_25-90
CIV	2 530 2_LM	4 550 2_LM	65 PD_25-90	73 PD_25-90
COD	580 1_L	1 030 1_L	28 PD_25-90	36 PD_25-90
DJI	3 650 2_LM	3 650 2_LM	37 PD_25-90	37 PD_25-90
EGY	6 080 2_LM	11 820 2_LM	70 PD_25-90	101 PD_90-200
ETH	1 210 1_L	2 300 1_L	93 PD_90-200	99 PD_90-200
GHA	2 780 1_L	5 540 2_LM	106 PD_90-200	134 PD_90-200
KEN	2 140 1_L	4 570 2 140	72 PD_25-90	92 PD_90-200
MLI	1 650 1_L	2 330 1_L	12 PD<25	16 PD<25
MUS	14 990 3_UM	25 460 3_UM	614 PD_330-2000	623 PD_330-2000
NER	1 140 1_L	1 200 1_L	14 PD<25	16 PD<25
NGA	3 970 1_L	5 180 2_LM	165 PD_90-200	221 PD_200-330
SDN	2 370 1_L	2 370 1_L	18 PD<25	18 PD<25
SEN	2 580 1_L	3 300 2_LM	64 PD_25-90	82 PD_25-90
TGO	1 140 1_L	2 010 1_L	118 PD_90-200	142 PD_90-200
TUN	11 410 2_LM	11 410 2_LM	75 PD_25-90	75 PD_25-90
TZA	2 810 2_LM	2 810 2_LM	65 PD_25-90	65 PD_25-90

Region, Country	Min of GNI	Max of GNI	Min of PopDen	Max of PopDen
UGA	1 990 1_L	2 110 1_L	157 PD_90-200	213 PD_200-330
ZMB	3 550 2_LM	3 550 2_LM	24 PD<25	24 PD<25
Asia	**860**	**47 250**	**2**	**6 641**
CHN	6 830 2_LM	10 200 3_UM	140 PD_90-200	143 PD_90-200
FJI	6 400 2_LM	13 090 2_LM	45 PD_25-90	49 PD_25-90
HKG	29 820 4_H	47 250 4_H	6 423 PD>2000	6 641 PD>2000
IDN	8 840 2_LM	8 840 2_LM	135 PD_90-200	135 PD_90-200
IND	3 890 2_LM	3 890 2_LM	410 PD_330-2000	410 PD_330-2000
JPN	19 720 4_H	19 720 4_H	335 PD_330-2000	335 PD_330-2000
KHM	4 310 2_LM	4 310 2_LM	93 PD_90-200	93 PD_90-200
KIR	2 430 2_LM	4 290 2_LM	116 PD_90-200	143 PD_90-200
KOR	29 950 4_H	29 950 4_H	506 PD_330-2000	506 PD_330-2000
MHL	3 950 2_LM	5 190 3_UM	314 PD_200-330	327 PD_200-330
MNG	11 160 2_LM	11 160 2_LM	2.0 PD<25	2.0 PD<25
NIU	5 800 2_LM	16 550 3_UM	6.2 PD<25	6.2 PD<25
PAK	2 130 1_L	2 130 1_L	148 PD_90-200	148 PD_90-200
PHL	4 010 2_LM	4 010 2_LM	273 PD_200-330	273 PD_200-330
PLW	16 200 3_UM	19 430 4_H	39 PD_25-90	39 PD_25-90
SLB	2 160 2_LM	2 740 2_LM	19 PD<25	24 PD<25
SYR	2 900 2_LM	2 900 2_LM	115 PD_90-200	115 PD_90-200
THA	4 250 2_LM	17 630 3_UM	106 PD_90-200	136 PD_90-200
TJK	2 640 1_L	2 640 1_L	53 PD_25-90	53 PD_25-90
TON	4 840 2_LM	4 840 2_LM	144 PD_90-200	144 PD_90-200
TUV	4 750 2_LM	4 750 2_LM	354 PD_330-2000	354 PD_330-2000
VNM	860 1_L	7 840 2_LM	196 PD_90-200	311 PD_200-330
VUT	3 260 2_LM	3 260 2_LM	24 PD<25	24 PD<25
WSM	5 440 3_UM	6 620 3_UM	66 PD_25-90	70 PD_25-90
CEE	**1 740**	**40 700**	**9**	**138**
ALB	1 740 2_LM	1 740 2_LM	119 PD_90-200	119 PD_90-200
BGR	6 970	17 470	67	72

Region, Country	Min of GNI	Max of GNI	Min of PopDen	Max of PopDen
	2_LM	3_UM	PD_25-90	PD_25-90
CZE	11 820	40 700	132	138
	2_LM	4_H	PD_90-200	PD_90-200
GEO	6 960	11 420	65	67
	2_LM	2_LM	PD_25-90	PD_25-90
HRV	5 640	21 860	76	85
	2_LM	4_H	PD_25-90	PD_25-90
HUN	7 390	17 230	112	118
	3_UM	3_UM	PD_90-200	PD_90-200
LTU	4 710	27 790	46	59
	2_LM	4_H	PD_25-90	PD_25-90
MDA	6 230	9 790	124	124
	2_LM	2_LM	PD_90-200	PD_90-200
ROU	6 490	20 560	87	96
	2_LM	3_UM	PD_25-90	PD_90-200
RUS	6 800	7 260	8.9	9.1
	2_LM	2_LM	PD<25	PD<25
SVK	7 520	32 040	110	113
	2_LM	4_H	PD_90-200	PD_90-200
UKR	4 550	6 350	84	90
	1_L	2_LM	PD_25-90	PD_90-200
GRULAC	**2 280**	**24 550**	**3**	**667**
ARG	22 090	22 090	16	16
	22 090	22 090	PD<25	PD<25
ATG	20 480	24 550	194	219
	4_H	4_H	PD_90-200	PD_200-330
BRA	8 960	14 670	21	24
	3_UM	3_UM	PD<25	PD<25
BRB	15 320	15 730	656	667
	4_H	4_H	PD_330-2000	PD_330-2000
CHL	15 220	19 110	22	23
	3_UM	3_UM	PD<25	PD<25
COL	15 260	15 260	45	45
	3_UM	3_UM	PD_25-90	PD_25-90
CUB	21 200	21 200	105	105
	3_UM	3_UM	PD_90-200	PD_90-200
ECU	11 500	11 500	70	70
	3_UM	3_UM	PD_25-90	PD_25-90
HTI	2 280	2 910	328	388
	1_L	1_L	PD_200-330	PD_330-2000
JAM	7 870	9 590	261	271
	3_UM	3_UM	PD_200-330	PD_200-330
MEX	16 260	19 210	60	64
	3_UM	3_UM	PD_25-90	PD_25-90
PER	9 700	12 820	23	25
	3_UM	3_UM	PD<25	PD<25
SUR	15 170	15 170	3.5	3.5
	3_UM	3_UM	PD<25	PD<25
URY	14 960	22 850	19	20
	3_UM	4_H	PD<25	PD<25
WEOG	**14 650**	**69 500**	**3**	**501**
AUS	27 990	44 760	2.6	3.0
	4_H	4_H	PD<25	PD<25
AUT	19 510	52 680	92	106
	4_H	4_H	PD_90-200	PD_90-200
BEL	18 700	46 850	290	372
	4_H	4_H	PD_200-330	PD_330-2000

Region, Country	Min of GNI	Max of GNI	Min of PopDen	Max of PopDen
CAN	19 000 4_H	20 000 4_H	2.9 PD<25	3.1 PD<25
CHE	54 270 4_H	67 820 4_H	196 PD_90-200	212 PD_200-330
CYP	28 310 4_H	28 310 4_H	113 PD_90-200	113 PD_90-200
DEU	19 630 4_H	58 110 4_H	223 PD_200-330	238 PD_200-330
DNK	17 580 4_H	19 160 4_H	121 PD_90-200	122 PD_90-200
ESP	14 650 4_H	24 100 4_H	78 PD_25-90	83 PD_25-90
FIN	16 530 4_H	37 900 4_H	16 PD<25	17 PD<25
GBR	17 350 4_H	18 370 4_H	235 PD_200-330	238 PD_200-330
IRL	27 830 4_H	69 500 4_H	56 PD_25-90	72 PD_25-90
ISR	31 030 4_H	31 030 4_H	366 PD_330-2000	366 PD_330-2000
ITA	27 960 4_H	27 960 4_H	194 PD_90-200	194 PD_90-200
LUX	49 410 4_H	63 080 4_H	184 PD_90-200	195 PD_90-200
NLD	19 000 4_H	49 110 4_H	434 PD_330-2000	501 PD_330-2000
NOR	17 900 4_H	54 130 4_H	11 PD<25	13 PD<25
NZL	20 290 4_H	31 220 4_H	15 PD<25	17 PD<25
SWE	19 880 4_H	56 950 4_H	20 PD<25	25.2 PD_25-90
USA	23 640 4_H	39 760 4_H	26 PD_25-90	32 PD_25-90
Grand Total	580	69 500	2.0	6 641

Table S 2: Number of national pools in each period grouped according to income (WBC) and population density (PD_Code)

	1985-1989 (N=16)	1990-1994 (N=19)	2000-2004 (N=27)	2005-2009 (N=35)	2010-2014 (N=41)	2015-2019 (N=51)	Overall (N=189)
WBC							
1_L	1	1	2	9	4	7	24 (12.7%)
2_LM	2	7	6	9	13	17	54 (28.6%)
3_UM	1	1	5	7	14	13	41 (21.7%)
4_H	12	10	14	10	10	14	70 (37.0%)
PD_Code							
PD1<25	4	4	7	7	13	11	46 (24.3%)
PD2_25-90	2	3	8	7	12	15	47 (24.9%)
PD3_90-200	5	8	6	16	8	12	55 (29.1%)
PD4_200-330	3	3	3	0	2	9	20 (10.6%)
PD5_330-2000	2	1	2	4	6	4	19 (10.1%)
PD6>2000	0	0	1	1	0	0	2 (1.1%)

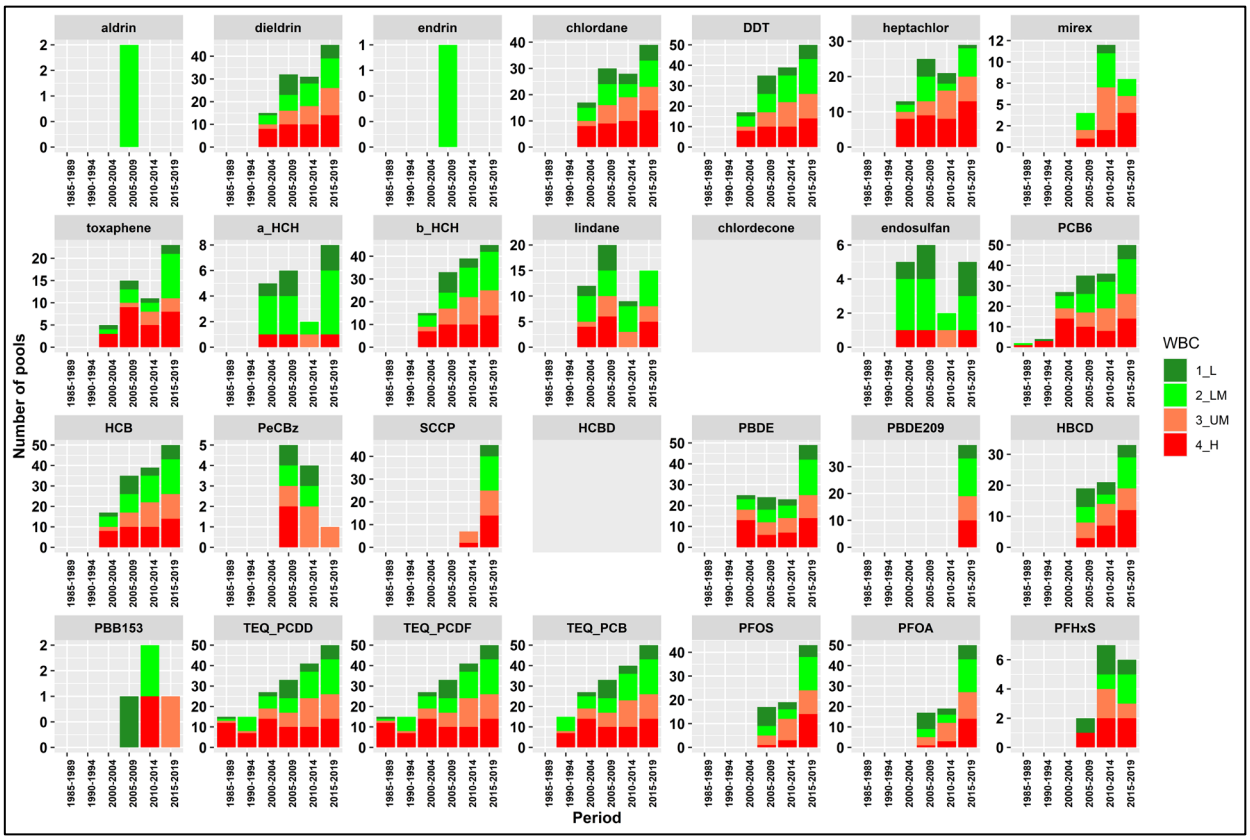


Figure S 1: Detection frequency of POPs in national pools from each period and by POP and colored by WBC

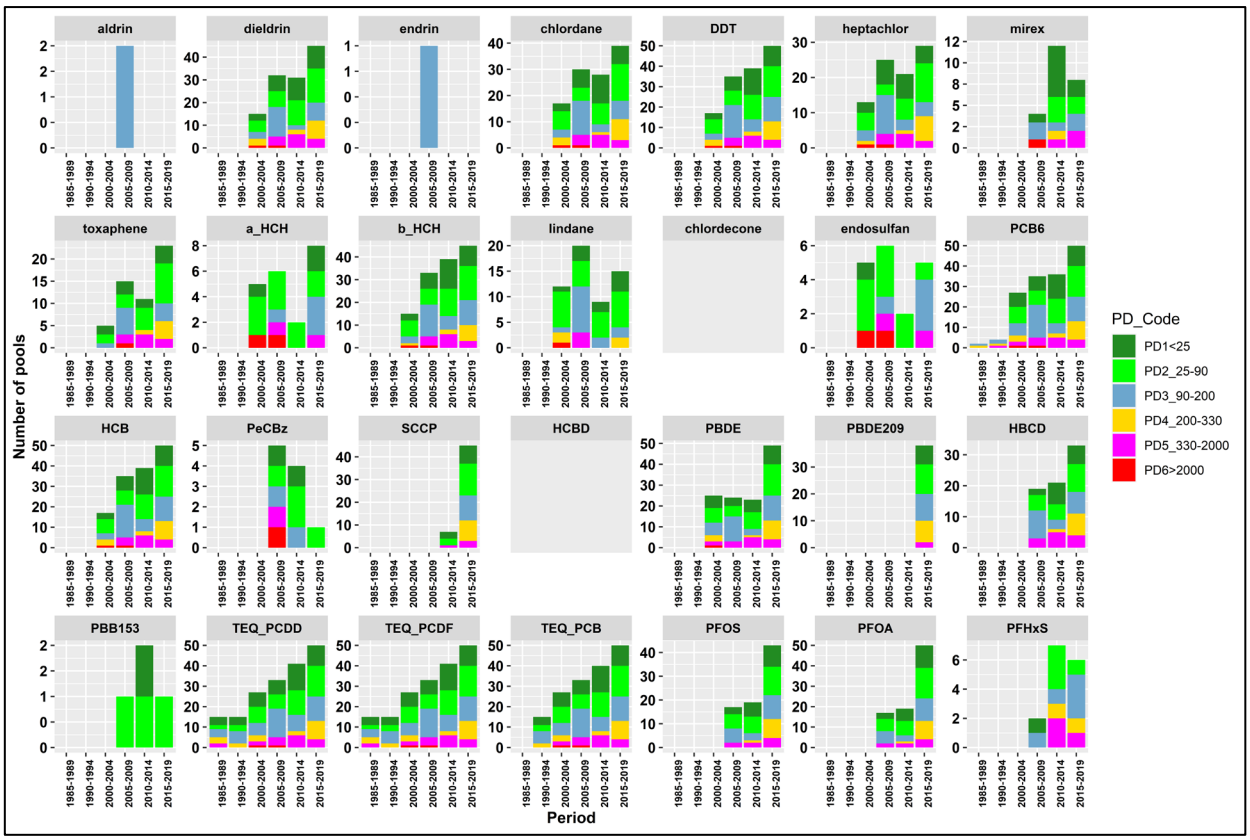


Figure S 2: Detection frequency of POPs in national pools from each period and by POP and colored by PD_Code

2 Summary of quantitative results

Table S 3: Descriptive statistics for measured POPs grouped according to the WBC. Amounts in ng/g lipid for most POPs, pg TEQ/g lipid for dl-POPs, and pg/g f.w. for PFAS

	L (N=24)	LM (N=54)	UM (N=41)	H (N=70)	Overall (N=189)
aldrin					
Mean (SD)	0	0.203 (0.974)	0	0	0.0632 (0.548)
Median [Min, Max]	0 [0, 0]	0 [0, 5.67]	0 [0, 0]	0 [0, 0]	0 [0, 5.67]
dieldrin					
Mean (SD)	3.79 (7.99)	1.44 (1.41)	1.92 (2.13)	3.67 (3.14)	2.58 (3.90)
Median [Min, Max]	1.42 [0, 37.8]	1.13 [0, 6.56]	1.72 [0, 11.7]	2.59 [0.530, 16.8]	1.74 [0, 37.8]
endrin					
Mean (SD)	0	0.341 (2.26)	0	0	0.106 (1.26)
Median [Min, Max]	0 [0, 0]	0 [0, 15.0]	0 [0, 0]	0 [0, 0]	0 [0, 15.0]
chlordane					
Mean (SD)	2.93 (3.64)	1.74 (2.98)	1.82 (2.16)	4.01 (3.08)	2.62 (3.09)
Median [Min, Max]	1.38 [0, 13.2]	0.890 [0, 17.5]	1.56 [0, 10.0]	3.32 [0, 13.5]	1.60 [0, 17.5]
DDT					
Mean (SD)	2340 (4860)	638 (819)	426 (441)	218 (323)	729 (2080)
Median [Min, Max]	751 [97.7, 22300]	390 [17.4, 4320]	313 [30.5, 1740]	141 [29.9, 1970]	260 [17.4, 22300]
heptachlor					
Mean (SD)	0.710 (1.06)	0.706 (2.03)	1.08 (2.60)	1.95 (1.78)	1.16 (2.05)
Median [Min, Max]	0 [0, 3.63]	0 [0, 12.5]	0.565 [0, 14.7]	1.44 [0, 8.75]	0.565 [0, 14.7]
mirex					
Mean (SD)	0.0347 (0.155)	0.290 (0.766)	0.845 (2.02)	0.214 (0.576)	0.368 (1.17)
Median [Min, Max]	0 [0, 0.693]	0 [0, 3.40]	0 [0, 9.80]	0 [0, 2.94]	0 [0, 9.80]
toxaphene					
Mean (SD)	1.10 (3.49)	1.01 (1.75)	0.571 (1.68)	1.66 (2.89)	1.12 (2.46)
Median [Min, Max]	0 [0, 16.2]	0 [0, 8.06]	0 [0, 7.96]	0.903 [0, 15.9]	0 [0, 16.2]
α-HCH					
Mean (SD)	0.535 (1.44)	0.829 (2.14)	0.0375 (0.215)	0.0650 (0.235)	0.366 (1.36)
Median [Min, Max]	0 [0, 5.50]	0 [0, 10.5]	0 [0, 1.24]	0 [0, 1.00]	0 [0, 10.5]
β-HCH					
Mean (SD)	30.7 (73.7)	50.6 (148)	20.2 (64.4)	52.2 (211)	40.6 (147)
Median [Min, Max]	2.65 [0, 279]	4.14 [0.569, 845]	5.27 [0, 375]	8.90 [1.29, 1340]	5.47 [0, 1340]
lindane					
Mean (SD)	1.85 (4.23)	1.23 (1.85)	0.582 (1.01)	1.04 (2.56)	1.12 (2.47)
Median [Min, Max]	0 [0, 16.0]	0.551 [0, 8.00]	0 [0, 3.50]	0 [0, 13.0]	0 [0, 16.0]
chlordecone					
Mean (SD)	0	0	0	0	0
Median [Min, Max]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]
endosulfan					
Mean (SD)	0.535 (1.44)	0.554 (1.74)	0.0375 (0.215)	0.0634 (0.233)	0.280 (1.14)
Median	0	0	0	0	0

	L (N=24)	LM (N=54)	UM (N=41)	H (N=70)	Overall (N=189)
[Min, Max]	[0, 5.50]	[0, 10.5]	[0, 1.24]	[0, 1.00]	[0, 10.5]
PCB_6					
Mean (SD)	27.0 (27.7)	26.9 (35.0)	67.4 (141)	99.9 (127)	59.8 (106)
Median [Min, Max]	21.1 [0.897, 127]	14.1 [2.47, 177]	16.4 [3.00, 630]	48.4 [8.61, 765]	23.4 [0.897, 765]
HCB					
Mean (SD)	5.68 (15.1)	12.1 (24.6)	10.8 (16.3)	14.1 (12.8)	11.4 (18.3)
Median [Min, Max]	2.45 [0.970, 73.3]	3.66 [1.26, 154]	4.33 [1.14, 76.0]	10.4 [2.70, 73.1]	5.33 [0.970, 154]
PeCBz					
Mean (SD)	0.0678 (0.199)	0.0436 (0.174)	0.124 (0.315)	0.0502 (0.181)	0.0709 (0.224)
Median [Min, Max]	0 [0, 0.680]	0 [0, 0.853]	0 [0, 1.16]	0 [0, 0.700]	0 [0, 1.16]
HCBD					
Mean (SD)	0	0	0	0	0
Median [Min, Max]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]
SCCP					
Mean (SD)	55.1 (13.7)	86.4 (47.6)	57.8 (44.3)	36.5 (24.0)	59.2 (42.0)
Median [Min, Max]	50.2 [39.8, 70.0]	77.0 [12.9, 188]	42.3 [17.1, 175]	32.1 [10.0, 101]	48.3 [10.0, 188]
PBDE					
Mean (SD)	0.572 (1.40)	0.357 (0.675)	0.669 (2.03)	1.07 (3.87)	0.694 (2.50)
Median [Min, Max]	0.123 [0, 6.10]	0.147 [0, 3.20]	0.111 [0.0392, 11.0]	0.287 [0.0324, 24.7]	0.163 [0, 24.7]
PBDE209					
Mean (SD)	0.171 (0.0790)	0.398 (0.501)	1.16 (1.94)	0.604 (0.730)	0.617 (1.11)
Median [Min, Max]	0.156 [0.0896, 0.303]	0.195 [0.132, 1.62]	0.234 [0, 5.92]	0.269 [0.0939, 2.40]	0.205 [0, 5.92]
PBB153					
Mean (SD)	0.0528 (0.224)	0.0566 (0.305)	0.0621 (0.323)	0.0556 (0.289)	0.0571 (0.288)
Median [Min, Max]	0 [0, 0.950]	0 [0, 1.64]	0 [0, 1.68]	0 [0, 1.50]	0 [0, 1.68]
HBCD					
Mean (SD)	0.388 (0.376)	0.810 (1.65)	1.64 (3.06)	1.16 (1.29)	1.05 (1.97)
Median [Min, Max]	0.325 [0, 1.34]	0.300 [0, 8.00]	0.570 [0, 15.0]	0.635 [0, 5.60]	0.500 [0, 15.0]
TEQ_PCDD					
Mean (SD)	3.33 (4.06)	3.51 (3.03)	2.74 (1.60)	6.99 (6.64)	4.60 (4.97)
Median [Min, Max]	1.78 [0.565, 17.4]	2.54 [0.936, 17.4]	2.43 [0.955, 8.56]	4.27 [1.22, 33.2]	2.75 [0.565, 33.2]
TEQ_PCDF					
Mean (SD)	1.12 (0.922)	1.94 (1.94)	1.47 (0.932)	3.16 (2.67)	2.18 (2.14)
Median [Min, Max]	0.919 [0.367, 4.13]	1.12 [0.386, 9.48]	1.09 [0.333, 3.75]	2.05 [0.578, 13.5]	1.38 [0.333, 13.5]
TEQ_PCB					
Mean (SD)	2.00 (2.18)	3.11 (3.04)	2.22 (2.00)	3.78 (2.84)	2.98 (2.72)
Median [Min, Max]	1.43 [0.271, 10.6]	1.89 [0.460, 16.2]	1.56 [0, 8.70]	2.71 [0.552, 12.9]	2.00 [0, 16.2]
PFOS					
Mean (SD)	16.9 (10.1)	29.1 (42.3)	25.0 (20.4)	24.6 (12.5)	24.4 (26.0)
Median [Min, Max]	17.1 [0, 38.1]	16.4 [0, 212]	22.3 [0, 83.3]	19.7 [9.49, 51.4]	18.9 [0, 212]
PFOA					
Mean (SD)	19.1 (12.1)	18.2 (9.40)	22.6 (11.4)	29.6 (11.6)	22.1 (11.7)
Median [Min, Max]	17.0 [6.20, 63.4]	15.2 [8.62, 48.8]	22.4 [7.81, 61.5]	31.0 [13.1, 57.8]	18.6 [6.20, 63.4]

	L (N=24)	LM (N=54)	UM (N=41)	H (N=70)	Overall (N=189)
PFHxS					
Mean (SD)	3.10 (8.35)	5.27 (22.7)	1.00 (3.02)	2.59 (4.86)	2.96 (12.8)
Median [Min, Max]	0 [0, 34.8]	0 [0, 111]	0 [0, 12.9]	0 [0, 17.4]	0 [0, 111]

Table S 4: Descriptive statistics for measured POPs grouped according to population density. Amounts in ng/g lipid for most POPs, pg TEQ/g lipid for dl-POPs, and pg/g f.w. for PFAS Empty cells indicate that there was no sample for analysis for the respective parameter. NA = not applicable, *e.g.*, there was only one value and therefore, no SD. "0" indicates measurement(s) below the LOQ

	PD1<25 (N=46)	PD2_25-90 (N=47)	PD3_90-200 (N=55)	PD4_200-330 (N=20)	PD5_330-2000 (N=19)	PD6>2000 (N=2)	Overall (N=189)
aldrin							
Mean (SD)	0	0	0.24 (1.06)	0	0	0	0.06 (0.55)
Median [Min, Max]	0 [0, 0]	0 [0, 0]	0 [0, 5.67]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 5.67]
dieldrin							
Mean (SD)	2.99 (3.56)	3.19 (5.93)	1.59 (1.85)	1.69 (1.25)	3.48 (2.68)	1.87 (0.18)	2.58 (3.90)
Median [Min, Max]	1.93 [0, 16.8]	1.81 [0, 37.8]	1.34 [0, 8.00]	1.33 [0, 4.50]	2.64 [0.50, 7.58]	1.87 [1.74, 2.00]	1.74 [0, 37.8]
endrin							
Mean (SD)	0	0	0.41 (2.47)	0	0	0	0.11 (1.26)
Median [Min, Max]	0 [0, 0]	0 [0, 0]	0 [0, 15.0]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 15.0]
chlordane							
Mean (SD)	2.48 (2.84)	3.02 (4.01)	2.02 (2.59)	2.23 (2.01)	3.14 (2.29)	6.85 (3.04)	2.62 (3.09)
Median [Min, Max]	1.60 [0, 13.2]	1.43 [0, 17.5]	1.27 [0, 11.3]	1.95 [0, 6.25]	3.39 [0, 8.02]	6.85 [4.70, 9.00]	1.60 [0, 17.5]
DDT							
Mean (SD)	632 (866)	587 (1180)	1170 (3730)	343 (691)	491 (784)	1450 (725)	729 (2080)
Median [Min, Max]	313 [29.9, 4320]	342 [44.0, 7640]	292 [17.4, 22300]	95.3 [30.5, 2540]	151 [79.3, 2760]	1450 [941, 1970]	260 [17.4, 22300]
heptachlor							
Mean (SD)	0.91 (1.08)	1.56 (3.07)	0.93 (1.63)	0.73 (0.96)	1.73 (1.88)	0.58 (0.597)	1.16 (2.05)
Median [Min, Max]	0.62 [0, 3.97]	0.56 [0, 14.7]	0.55 [0, 8.75]	0.54 [0, 3.44]	1.20 [0, 5.56]	0.58 [0.16, 1.00]	0.57 [0, 14.7]
mirex							
Mean (SD)	0.99 (2.11)	0.09 (0.22)	0.25 (0.77)	0.15 (0.49)	0.14 (0.27)	1.48 (NA)	0.37 (1.17)
Median [Min, Max]	0 [0, 9.80]	0 [0, 0.90]	0 [0, 3.40]	0 [0, 1.63]	0 [0, 0.69]	1.48 [1.48, 1.48]	0 [0, 9.80]
toxaphene							
Mean (SD)	1.65 (3.53)	1.32 (2.87)	0.74 (1.32)	0.59 (1.04)	0.77 (0.96)	0.75 (1.06)	1.12 (2.46)
Median [Min, Max]	0 [0, 15.9]	0 [0, 16.2]	0 [0, 4.06]	0 [0, 3.32]	0.31 [0, 2.39]	0.751 [0, 1.50]	0 [0, 16.2]
α-HCH							
Mean (SD)	0.38 (1.55)	0.46 (1.15)	0.17 (0.64)	0	0.81 (2.80)	0.94 (0.08)	0.37 (1.36)
Median [Min, Max]	0 [0, 8.60]	0 [0, 5.50]	0 [0, 3.59]	0 [0, 0]	0 [0, 10.5]	0.94 [0.89, 1.00]	0 [0, 10.5]
β-HCH							
Mean (SD)	15.2 (27.1)	36.6 (78.4)	27.8 (82.4)	3.37 (4.69)	67.5 (224)	822 (733)	40.6 (147)
Median [Min, Max]	6.39 [0, 153]	6.48 [0.53, 375]	4.09 [0, 476]	2.20 [0, 17.1]	6.29 [0, 845]	822 [303, 1340]	5.47 [0, 1340]
lindane							
Mean (SD)	0.60 (1.44)	1.91 (3.31)	0.96 (2.43)	1.27 (2.50)	0.34 (0.83)	0.75 (1.06)	1.12 (2.47)
Median [Min, Max]	0 [0, 7.11]	0.97 [0, 16.0]	0 [0, 13.0]	0 [0, 8.00]	0 [0, 2.99]	0.75 [0, 1.50]	0 [0, 16.0]
chlordecone							
Mean (SD)	0	0	0	0	0		0
Median [Min, Max]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]		0 [0, 0]

endosulfan							
Mean (SD)	0.05 (0.26)	0.45 (1.15)	0.17 (0.64)	0	0.81 (2.80)	0.94 (0.08)	0.28 (1.14)
Median [Min, Max]	0 [0, 1.50]	0 [0, 5.50]	0 [0, 3.59]	0 [0, 0]	0 [0, 10.5]	0.94 [0.89, 1.00]	0 [0, 10.5]
PCB_6							
Mean (SD)	32.5 (37.7)	39.3 (48.0)	87.7 (135)	104 (202)	61.6 (78.8)	31.6 (13.8)	59.8 (106)
Median [Min, Max]	18.2 [2.55, 146]	25.6 [3.00, 264]	30.3 [0.90, 630]	25.0 [2.46, 765]	22.4 [4.75, 253]	31.6 [21.9, 41.4]	23.4 [0.90, 765]
HCB							
Mean (SD)	7.53 (9.17)	10.6 (16.0)	18.5 (28.7)	7.15 (7.78)	6.03 (3.98)	25.7 (1.68)	11.4 (18.3)
Median [Min, Max]	4.33 [1.14, 43.3]	6.14 [1.26, 73.3]	6.61 [1.38, 154]	4.08 [1.67, 31.9]	4.81 [0.97, 15.0]	25.7 [24.5, 26.9]	5.33 [0.97, 154]
PeCBz							
Mean (SD)	0.07 (0.229)	0.0882 (0.25)	0.06 (0.199)	0	0.07 (0.246)	0.66 (NA)	0.07 (0.22)
Median [Min, Max]	0 [0, 0.90]	0 [0, 1.16]	0 [0, 0.70]	0 [0, 0]	0 [0, 0.85]	0.66 [0.66, 0.66]	0 [0, 1.16]
HCBD							
Mean (SD)	0	0	0	0	0		0
Median [Min, Max]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]		0 [0, 0]
SCCP							
Mean (SD)	72.5 (46.8)	57.6 (40.6)	56.8 (52.5)	43.9 (28.8)	70.4 (31.1)		59.2 (42.0)
Median [Min, Max]	69.0 [17.1, 164]	44.0 [20.0, 175]	39.8 [12.9, 188]	45.8 [10.0, 89.0]	66.0 [38.3, 111]	]	48.3 [10.0, 188]
PBDE							
Mean (SD)	0.377 (0.52)	1.01 (4.09)	0.305 (0.63)	1.41 (2.95)	0.757 (1.57)	0.27 (NA)	0.69 (2.50)
Median [Min, Max]	0.18 [0.03, 2.45]	0.12 [0, 24.7]	0.11 [0, 3.20]	0.29 [0.05, 11.0]	0.27 [0.05, 6.10]	0.27 [0.27, 0.27]	0.16 [0, 24.7]
PBDE209							
Mean (SD)	0.74 (0.86)	0.61 (0.99)	0.22 (0.15)	0.99 (2.01)	0.69 (0.667)		0.62 (1.11)
Median [Min, Max]	0.29 [0, 2.40]	0.17 [0.10, 3.31]	0.17 [0.09, 0.57]	0.19 [0.11, 5.92]	0.69 [0.22, 1.16]		0.21 [0, 5.92]
PBB153							
Mean (SD)	0.06 (0.31)	0.14 (0.45)	0	0	0	0 (NA)	0.06 (0.29)
Median [Min, Max]	0 [0, 1.50]	0 [0, 1.68]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 0]	0 [0, 1.68]
HBCD							
Mean (SD)	0.97 (1.60)	1.30 (2.89)	1.23 (1.86)	0.46 (0.372)	0.68 (0.53)		1.05 (1.97)
Median [Min, Max]	0.46 [0, 5.50]	0.36 [0, 15.0]	0.59 [0, 8.00]	0.49 [0, 1.30]	0.55 [0.17, 2.00]		0.50 [0, 15.0]
TEQ_PCDD							
Mean (SD)	4.18 (3.86)	4.17 (3.42)	3.65 (3.23)	7.51 (8.59)	6.39 (8.16)	4.44 (0.62)	4.60 (4.97)
Median [Min, Max]	2.67 [0.94, 16.9]	2.86 [1.19, 14.7]	2.65 [0.57, 17.4]	2.58 [0.87, 26.4]	2.66 [0.89, 33.2]	4.44 [4.00, 4.87]	2.75 [0.57, 33.2]
TEQ_PCDF							
Mean (SD)	1.85 (1.52)	1.83 (1.71)	2.25 (1.74)	3.19 (3.95)	2.68 (2.73)	2.25 (0.18)	2.18 (2.14)
Median [Min, Max]	1.12 [0.33, 6.95]	1.34 [0.42, 9.48]	1.71 [0.41, 7.63]	1.29 [0.37, 13.5]	1.53 [0.37, 8.95]	2.25 [2.13, 2.38]	1.38 [0.33, 13.5]
TEQ_PCB							
Mean (SD)	2.48 (2.40)	3.03 (2.93)	3.64 (3.15)	2.43 (1.96)	2.73 (2.21)	3.14 (0.152)	2.98 (2.72)
Median [Min, Max]	1.71 [0.46, 12.9]	2.47 [0.47, 16.2]	2.25 [0, 12.9]	1.87 [0.35, 8.37]	2.16 [0.55, 7.71]	3.14 [3.04, 3.25]	2.00 [0, 16.2]
PFOS							
Mean (SD)	22.6 (17.5)	20.5 (17.1)	33.1 (45.0)	21.4 (15.3)	23.9 (11.9)		24.4 (26.0)
Median [Min, Max]	19.0 [0, 65.3]	16.7 [0, 83.3]	21.0 [0, 212]	17.1 [0, 51.4]	22.0 [12.0, 43.0]		18.9 [0, 212]
PFOA							
Mean (SD)	19.8 (12.3)	21.3 (9.13)	26.3 (14.4)	17.9 (7.42)	25.1 (14.0)		22.1 (11.7)
Median [Min, Max]	16.1 [7.81, 61.5]	17.6 [8.68, 37.4]	24.6 [6.20, 63.4]	17.1 [8.37, 35.3]	19.8 [12.8, 57.8]		18.6 [6.20, 63.4]
PFHxS							
Mean (SD)	0.378 (1.69)	1.50 (4.20)	7.01 (24.7)	1.43 (3.08)	6.36 (12.0)		2.96 (12.8)
Median [Min, Max]	0 [0, 7.56]	0 [0, 17.4]	0 [0, 111]	0 [0, 8.49]	0 [0, 34.8]		0 [0, 111]

2.1 Correlations

2.1.1 By year

OCPs: Kruskal-Wallis chi-squared = 62.4, df = 17, p-value = 4.2×10^{-7}. The differences between years were significant but there were not enough 'x' observations to make pairwise assessment.

indPOPs: Kruskal-Wallis chi-squared = 99.6, df = 20, p-value = 1.5×10^{-12}. The differences between years were significant and a pairwise assessment gave 36 pairs having significant differences. These occurred mainly in the years 2001 and 2002 (N=11 and N=8, resp.) but not in 1987 when only PCB_6 were measured.

dl-POPs: Kruskal-Wallis chi-squared = 261, df = 20, p-value < 2.2×10^{-16}. The differences between years were significant and a pairwise assessment gave 93 pairs having significant differences. Details showed that the pairwise differences especially the early years were significantly different from other years; and with increasing years, the number of significantly different p-values decreased. For example: for 1987, all p-values were <0.05 (N=20), for 1992, there were 17 p-values <0.05, 14 for 2001, and 8 for 2002. For the more recent years, there were only few significant differences among them.

BFRs: Kruskal-Wallis chi-squared = 26.256, df = 17, p-value = 0.070. The differences between years were not significant.

PFAS: Kruskal-Wallis chi-squared = 25.67, df = 10, p-value = 0.004. The differences between years were significant but there were not enough 'x' observations to make pairwise assessment.

2.1.2 By income

OCPs: Kruskal-Wallis chi-squared = 12.337, df = 3, p-value = 0.006. Results were significantly different. Pairwise assessment showed that all pools belonging to the high-income group (H) were significantly different from L (p=0.032), LM (p=0.032), and UM (p=0.010).

indPOPs: Kruskal-Wallis chi-squared = 16.8, df = 3, p-value = 0.0008 Results were significantly different. Pairwise assessment showed that all pools belonging to the high-income group (H) were significantly different from L (p=0.005), LM (p=0.005), and UM (p=0.008).

dl-POPs: Kruskal-Wallis chi-squared = 67.123, df = 3, p-value = 1.8×10^{-14}. Results were significantly different. Pairwise assessment showed that all pools belonging to the high-income group (H) were significantly different from L (p=2.9×10^{-10}), LM (p=8.0×10^{-7}), and UM (p=9.0×10^{-10}). In addition, the low-income group pools were significantly different from the LM group (p=0.0035).

BFRs: Kruskal-Wallis chi-squared = 7.104, df = 3, p-value = 0.069. Results were not significantly different.

PFAS: Kruskal-Wallis chi-squared = 4.8558, df = 3, p-value = 0.18. Results were not significantly different.

2.1.3 By population density

Significance tests on population density only showed a statistically significant difference for the OCP measurements (p=0.021). For the pairwise assessment, only the Hongkong samples (PD>2000) were significantly different from PD_90-200 and PD_200-330 (p=0.046 for both). For the other POPs groups the p-values were very high, between p=0.42 and p=0.85.

3 Correlations for POP with time, GNI, and population density

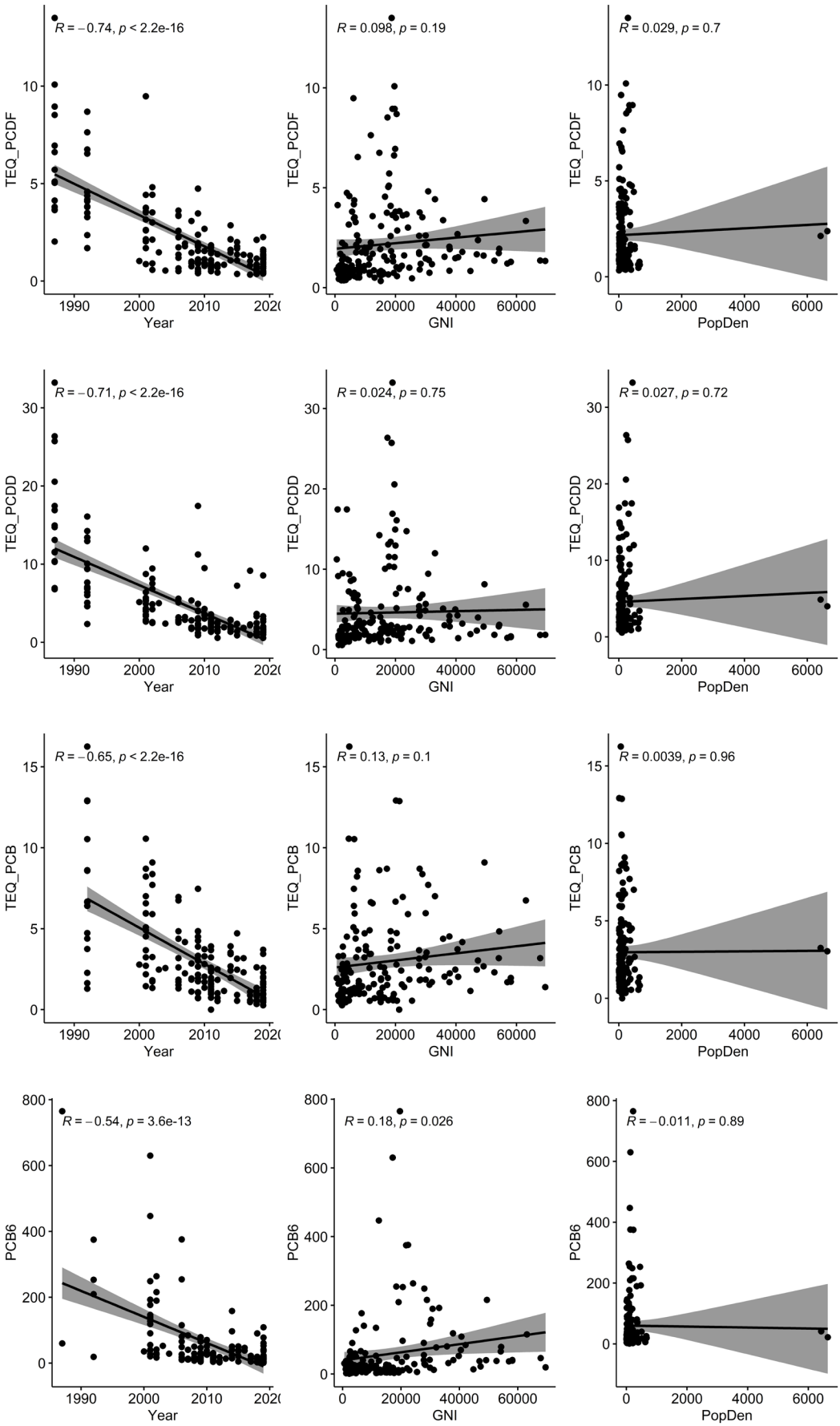
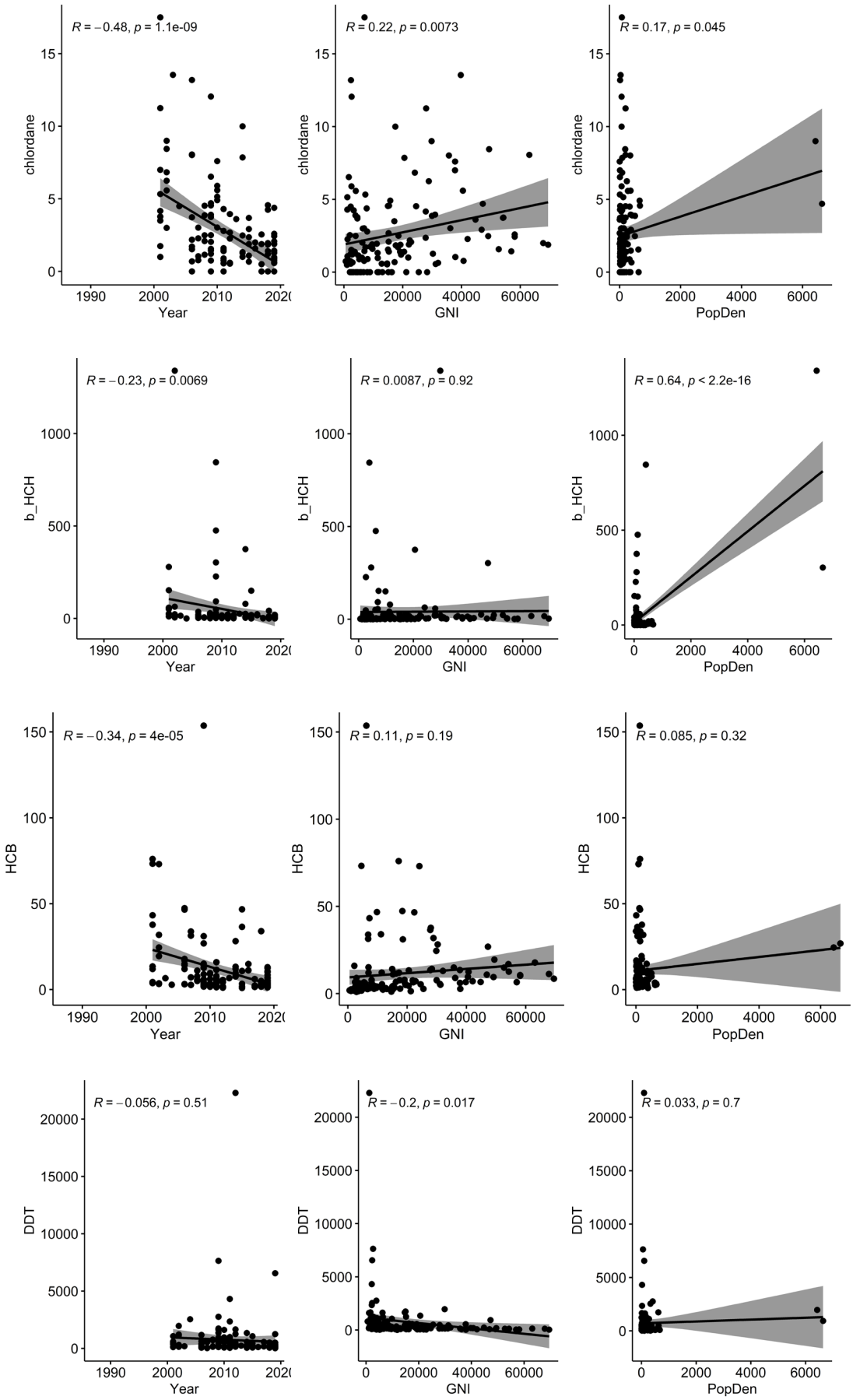
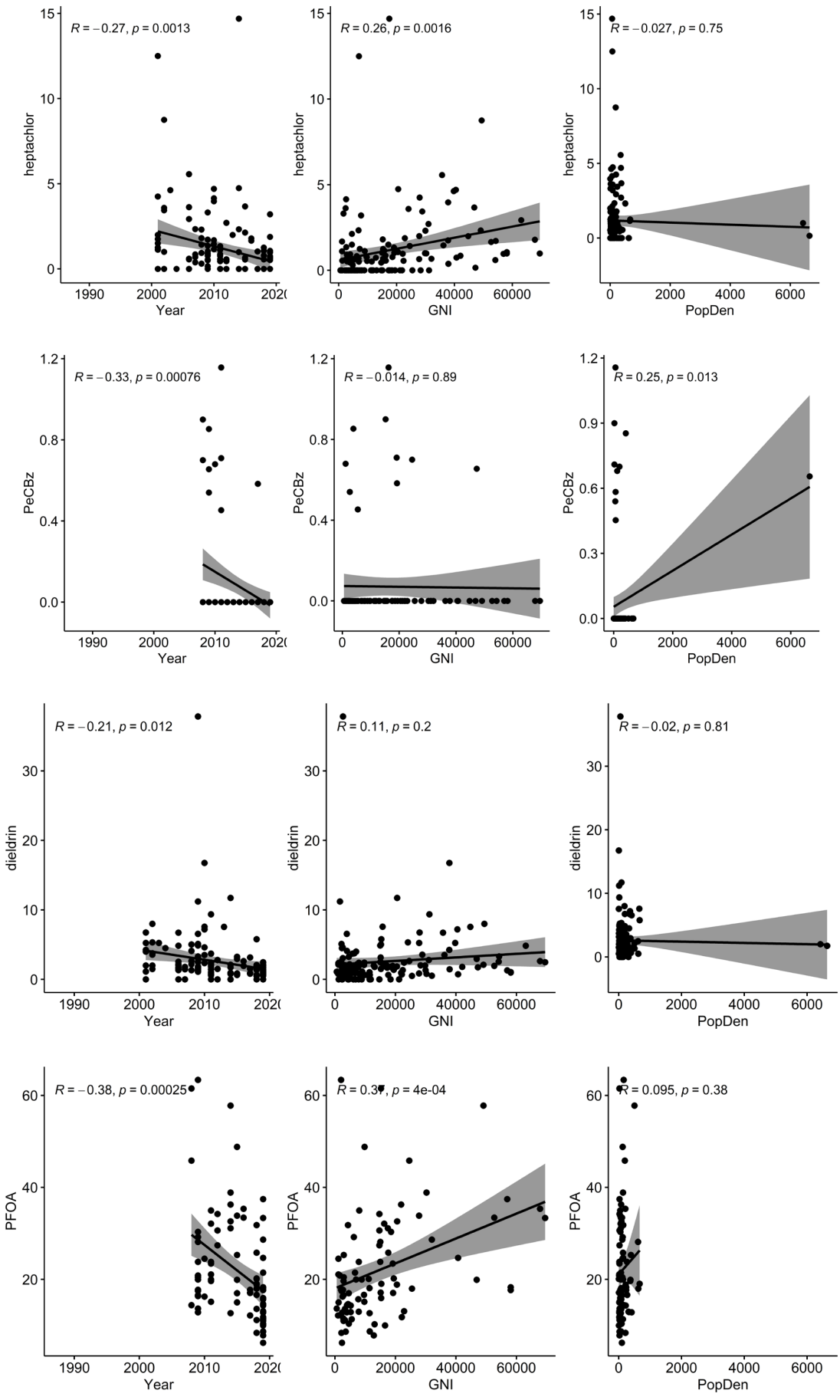
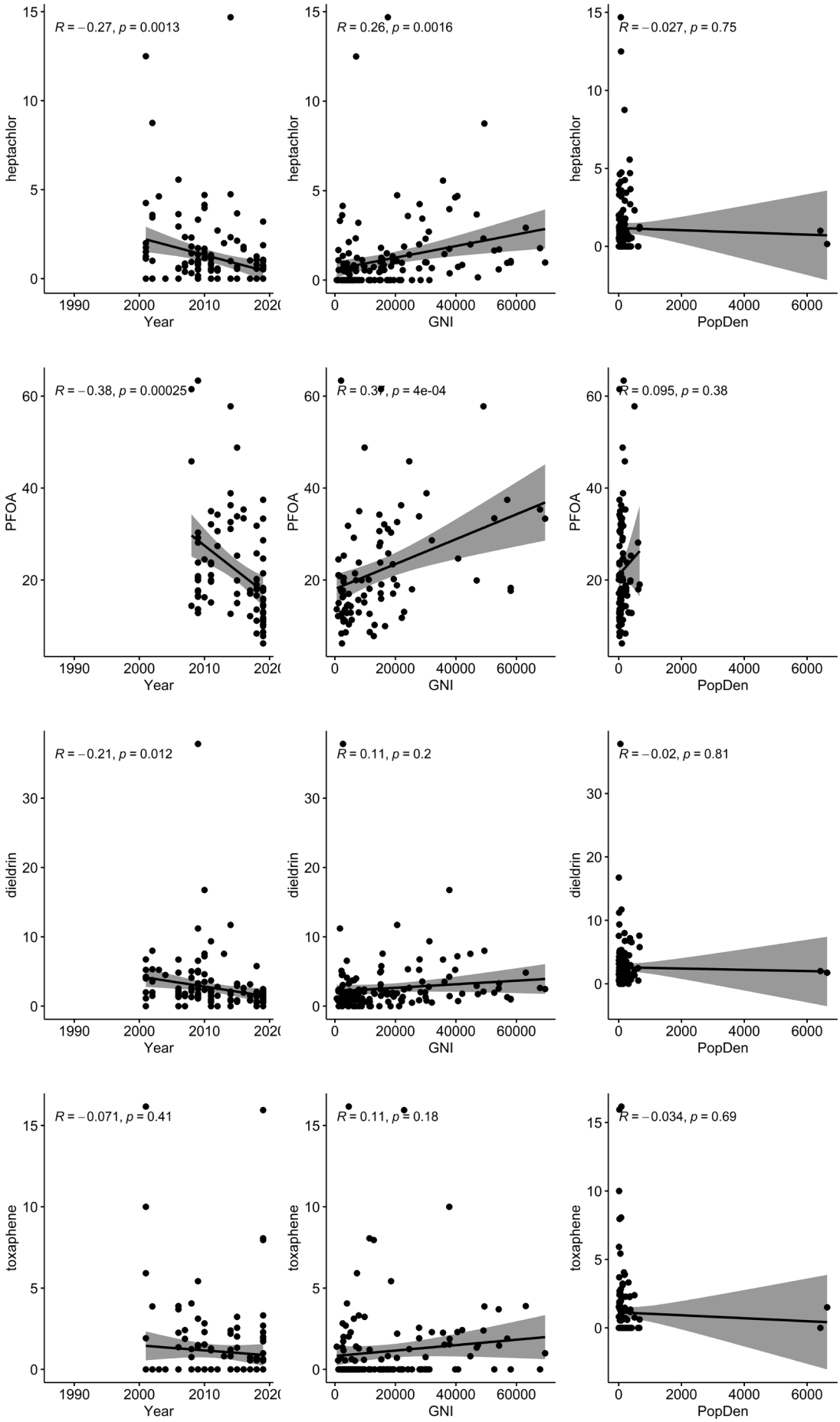
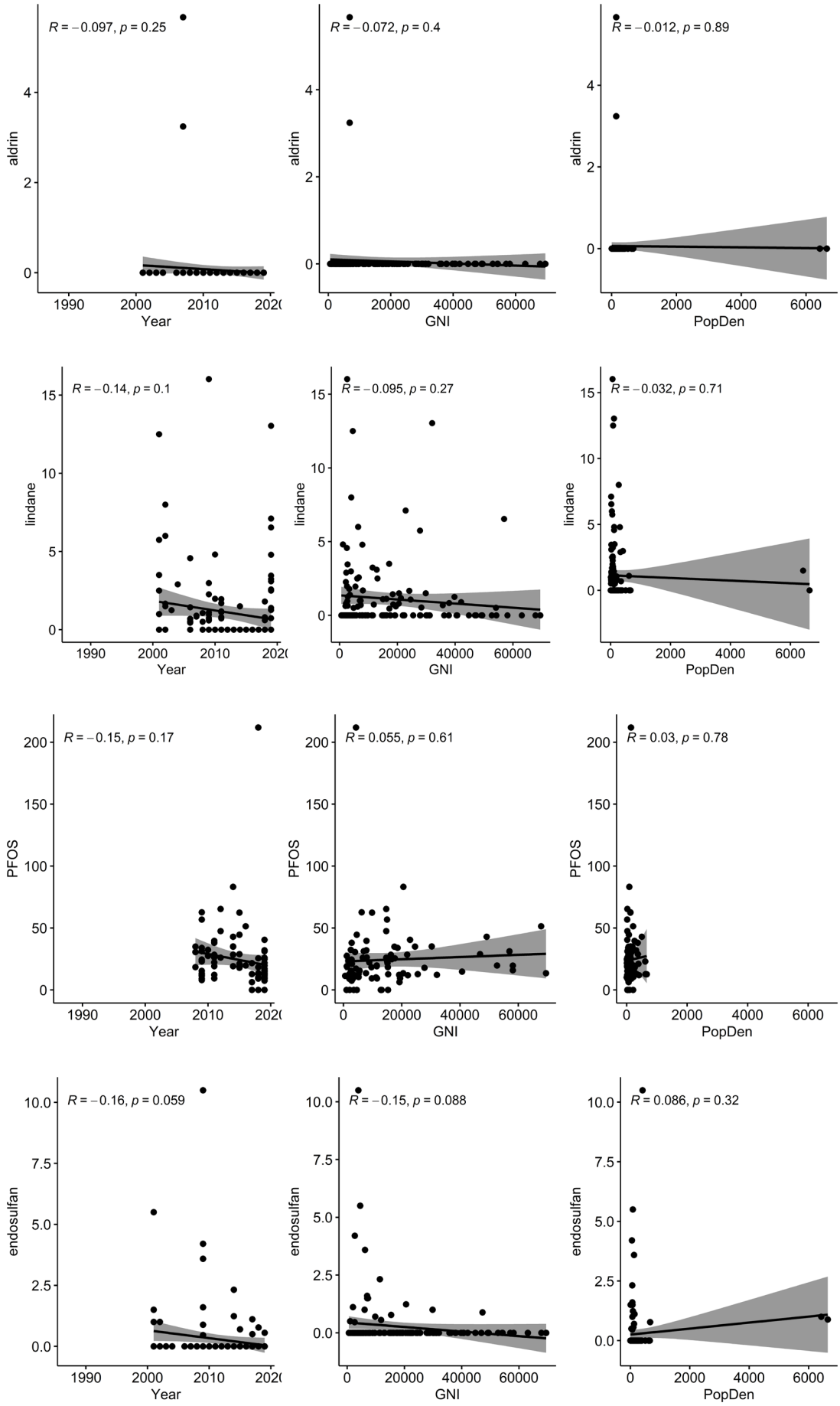


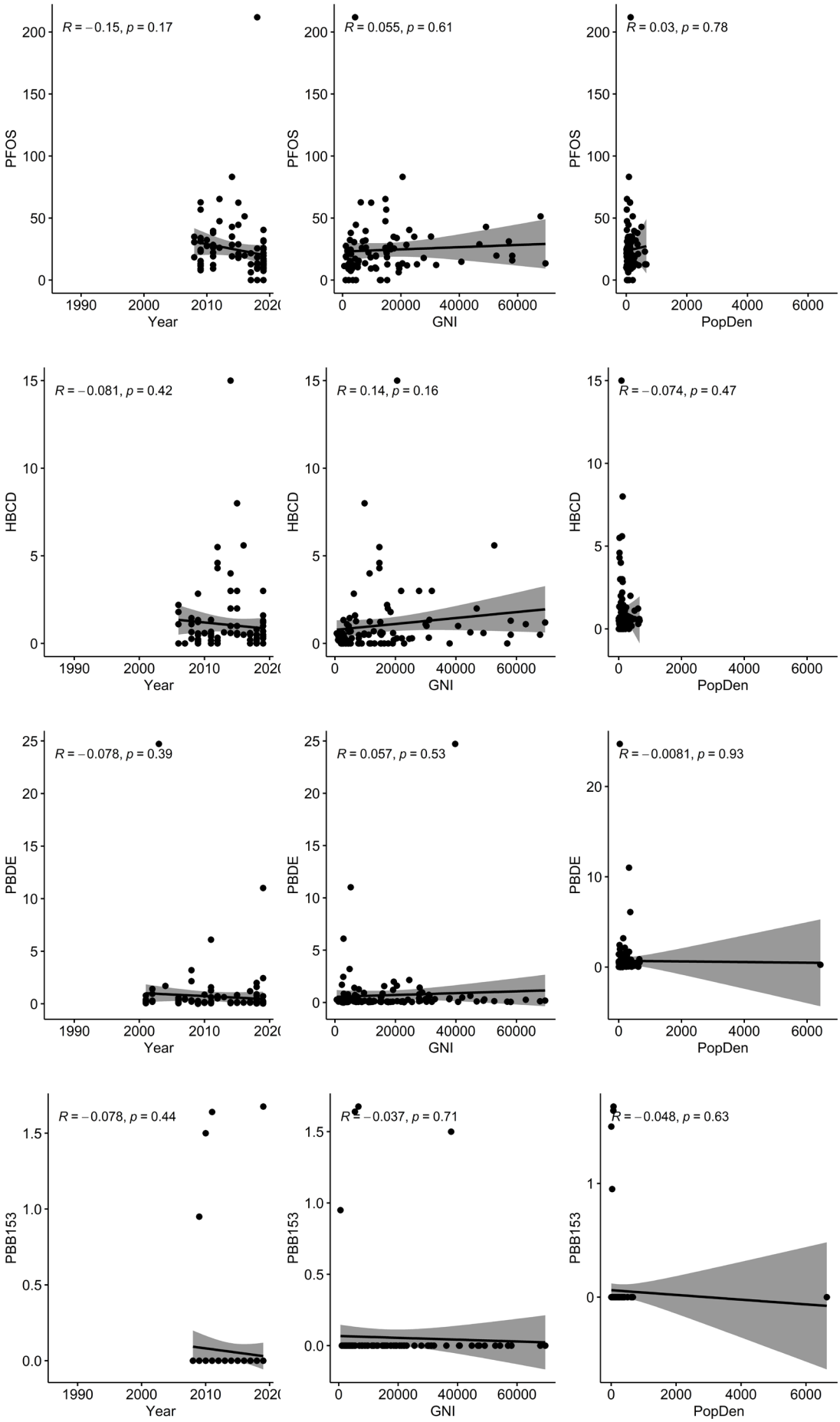
Figure S 3: Moderate negative but significant correlation between POP and time confirming downward trends towards recent years; amounts for PCDD, PCDF, dl-PCB are pg TEQ/g fat, for PCB_6 in ng/g fat.




R = −0.27, p = 0.0013
R = 0.26, p = 0.0016
R = −0.027, p = 0.75
heptachlor
R = −0.33, p = 0.00076
R = −0.014, p = 0.89
R = 0.25, p = 0.013
PeCBz
R = −0.21, p = 0.012
R = 0.11, p = 0.2
R = −0.02, p = 0.81
dieldrin
R = −0.38, p = 0.00025
R = 0.3, p = 4e-04
R = 0.095, p = 0.38
PFOA
Year
GNI
PopDen


R = −0.27, p = 0.0013
R = 0.26, p = 0.0016
R = −0.027, p = 0.75
heptachlor
R = −0.38, p = 0.00025
R = 0.37, p = 4e-04
R = 0.095, p = 0.38
PFOA
R = −0.21, p = 0.012
R = 0.11, p = 0.2
R = −0.02, p = 0.81
dieldrin
R = −0.071, p = 0.41
R = 0.11, p = 0.18
R = −0.034, p = 0.69
toxaphene
Year
GNI
PopDen


R = −0.097, p = 0.25
R = −0.072, p = 0.4
R = −0.012, p = 0.89
aldrin
Year
GNI
PopDen
R = −0.14, p = 0.1
R = −0.095, p = 0.27
R = −0.032, p = 0.71
lindane
R = −0.15, p = 0.17
R = 0.055, p = 0.61
R = 0.03, p = 0.78
PFOS
R = −0.16, p = 0.059
R = −0.15, p = 0.088
R = 0.086, p = 0.32
endosulfan


R = −0.15, p = 0.17
R = 0.055, p = 0.61
R = 0.03, p = 0.78
PFOS
Year
GNI
PopDen
R = −0.081, p = 0.42
R = 0.14, p = 0.16
R = −0.074, p = 0.47
HBCD
R = −0.078, p = 0.39
R = 0.057, p = 0.53
R = −0.0081, p = 0.93
PBDE
R = −0.078, p = 0.44
R = −0.037, p = 0.71
R = −0.048, p = 0.63
PBB153

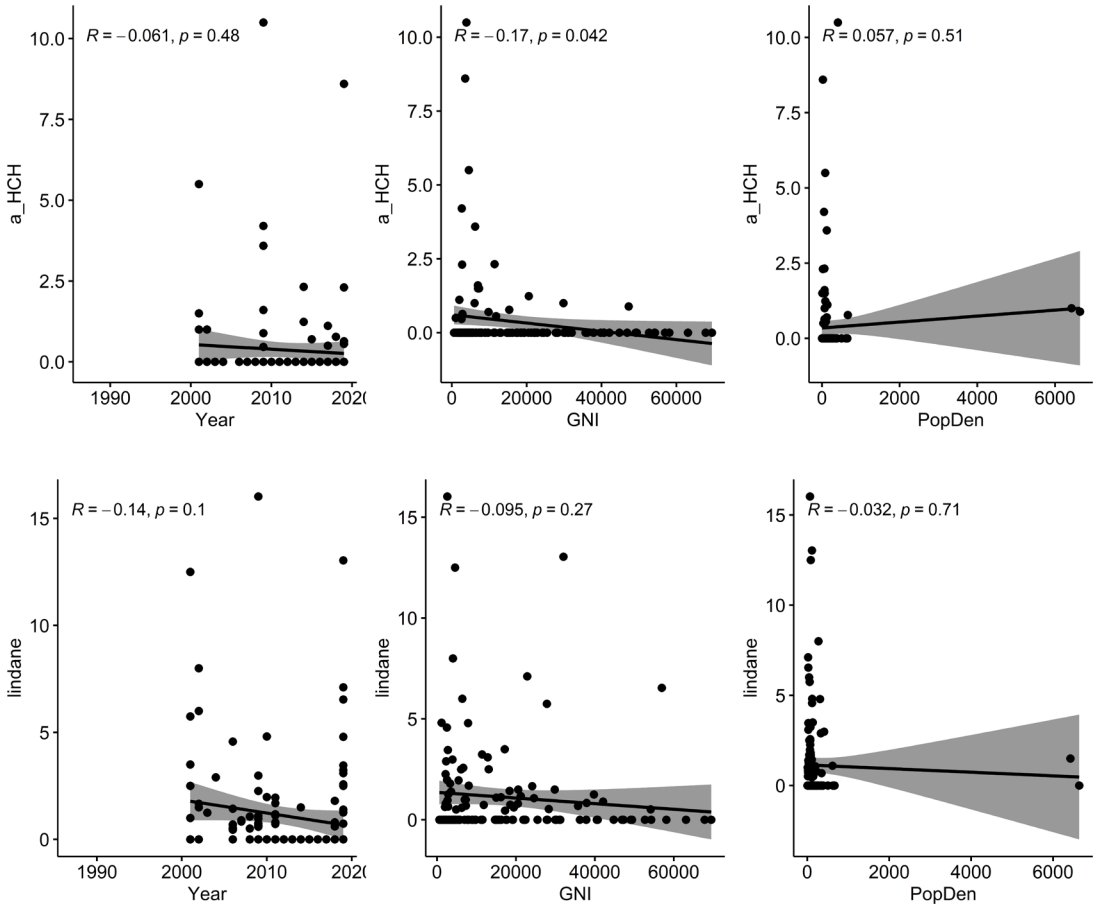
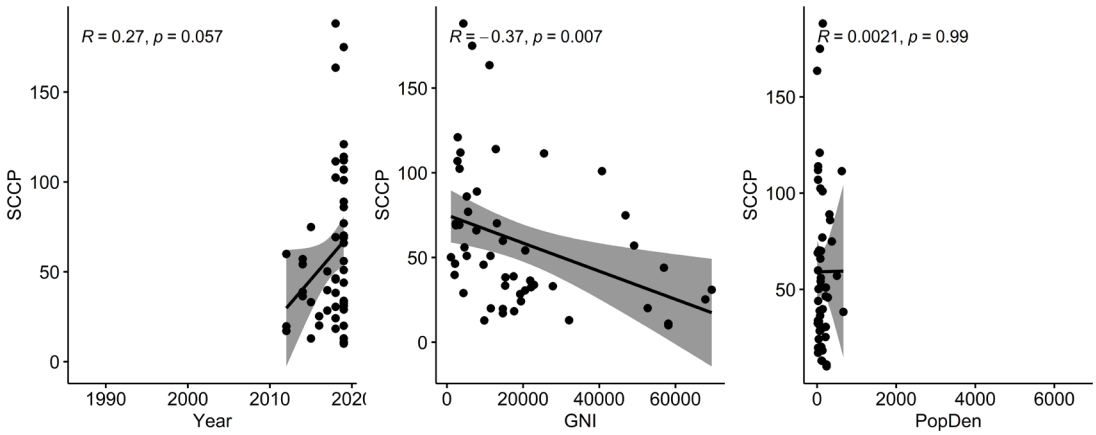


Figure S 4: No or weak negative correlation between POP and time confirming downward trends. POPs in the upper have p-values <0.05; amounts for in ng/g fat; PFOS and PFOA in pg/g f.w.



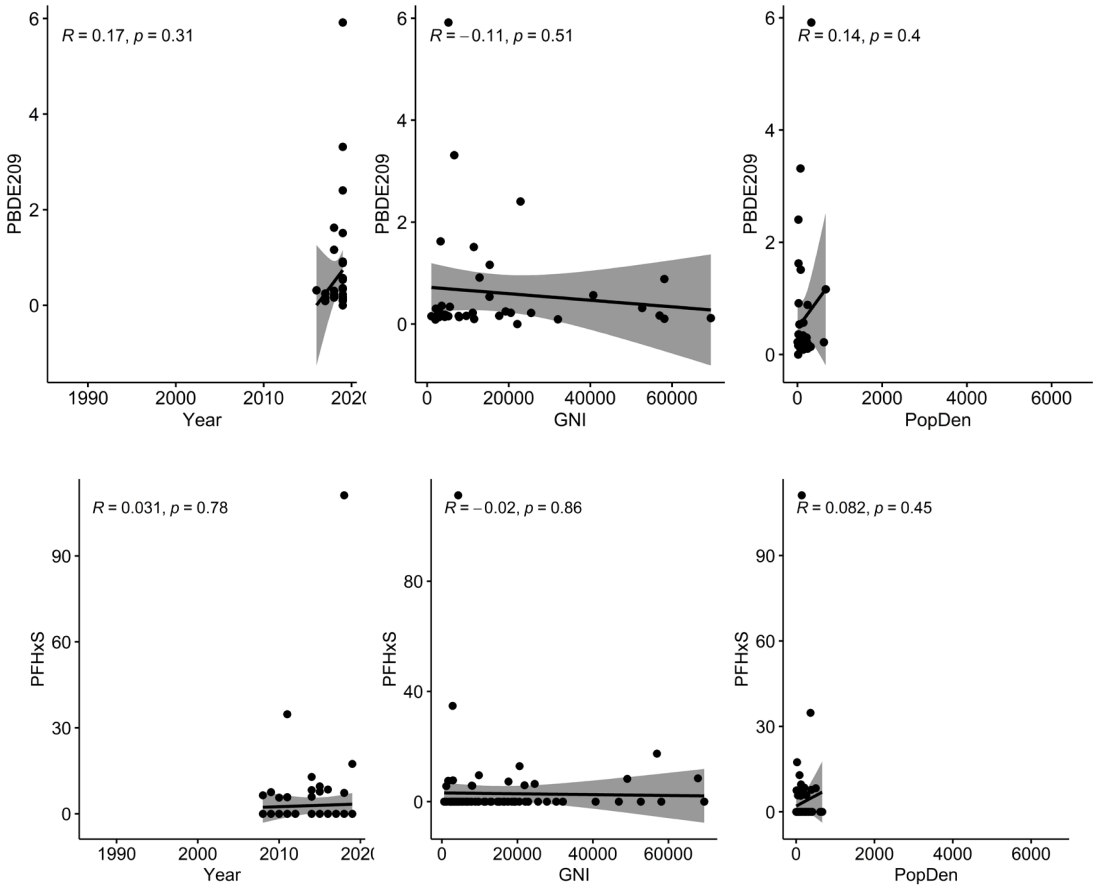


Figure S 5: very weak positive correlation between POP and time confirming upward trends towards recent year; none of these correlations is significant. Amounts for in ng/g fat; PFHXs in pg/g f.w.