Supplementary Information for:

Per- and polyfluoroalkyl substances (PFAS) in the egg of peregrine falcon (*Falco peregrinus*) populations in West England, United Kingdom

(Published in *Ecotoxicology*)

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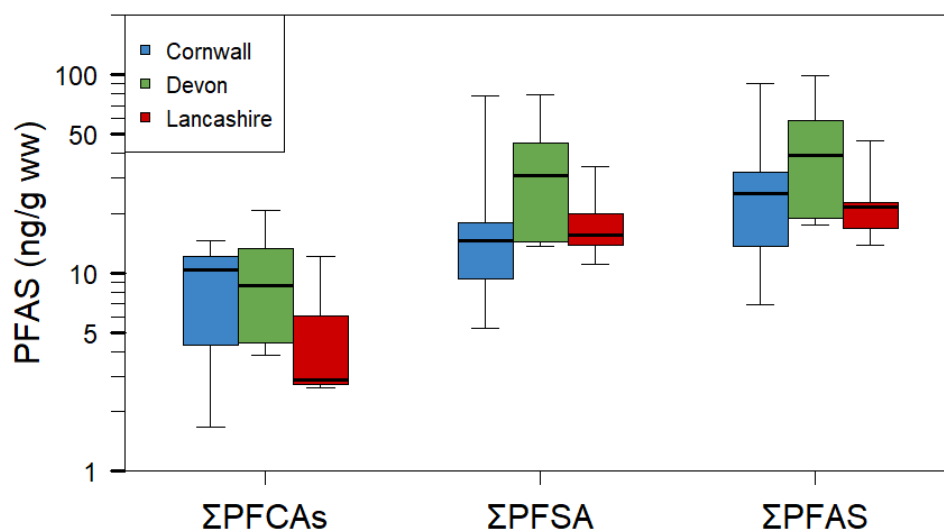
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(a) *(b)* *(c)* *(d)*
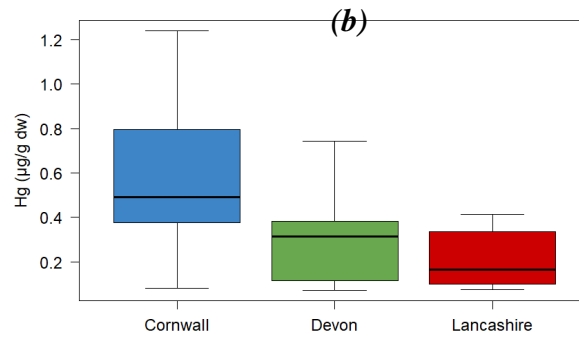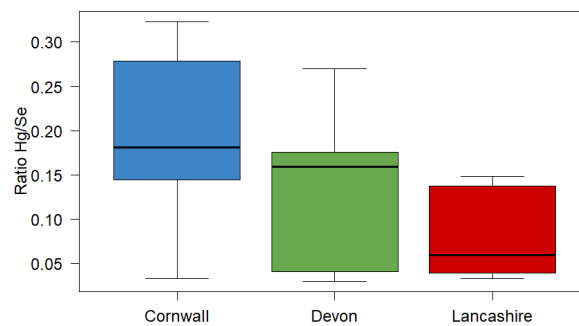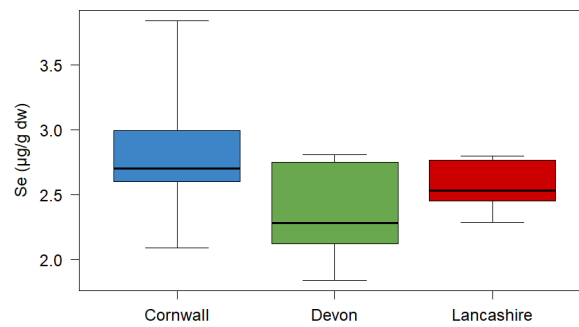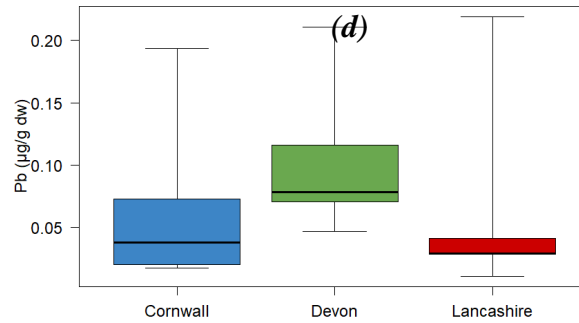
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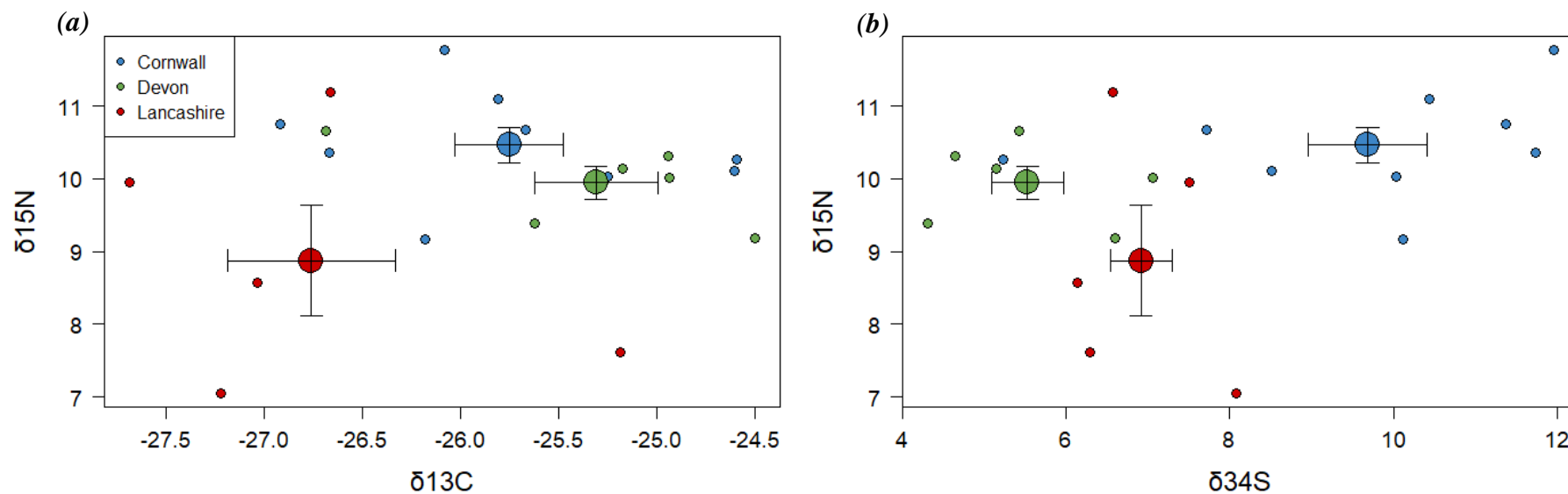
Supplementary Information Fig. 3 *Scatter plots representing the relationships between δ15N and δ13C (a) and between δ15N and δ34S (b) in peregrine eggs. Each small point represents stable isotope values of each egg. Counties are distinguished by colours (blue: Cornwall; green: Devon; red: Lancashire). Larger points and bars represent the mean value and the standard error of the mean by county.*
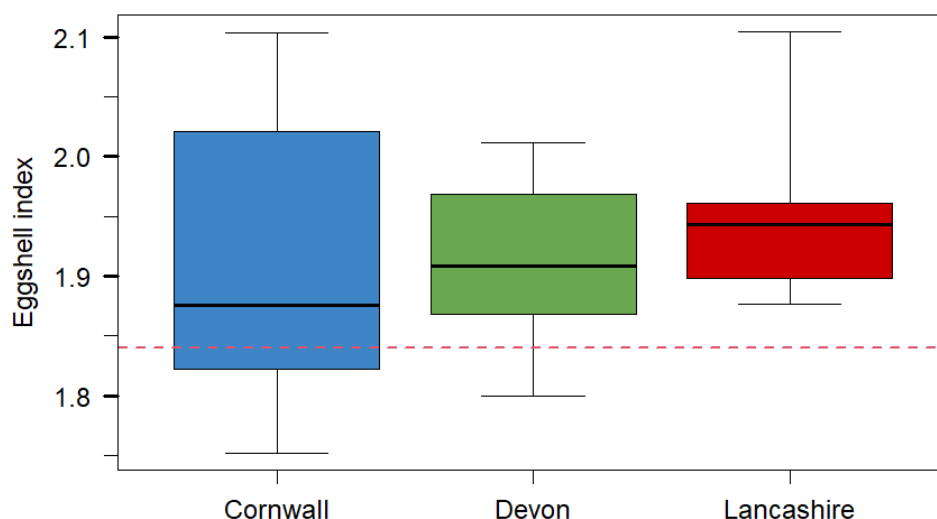
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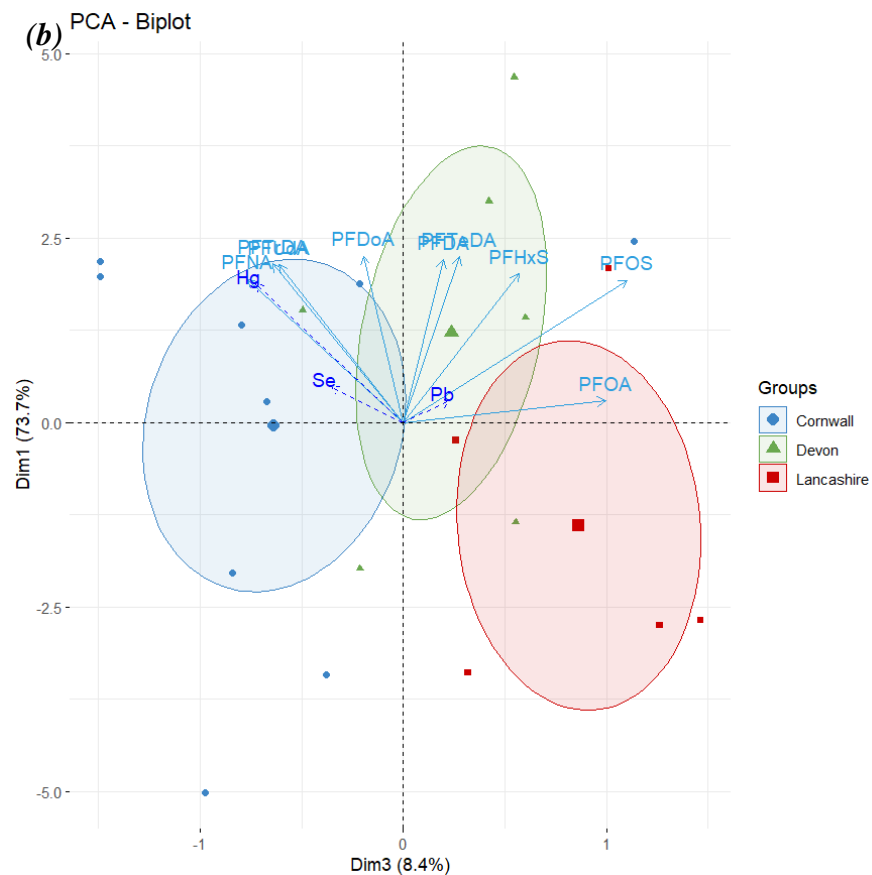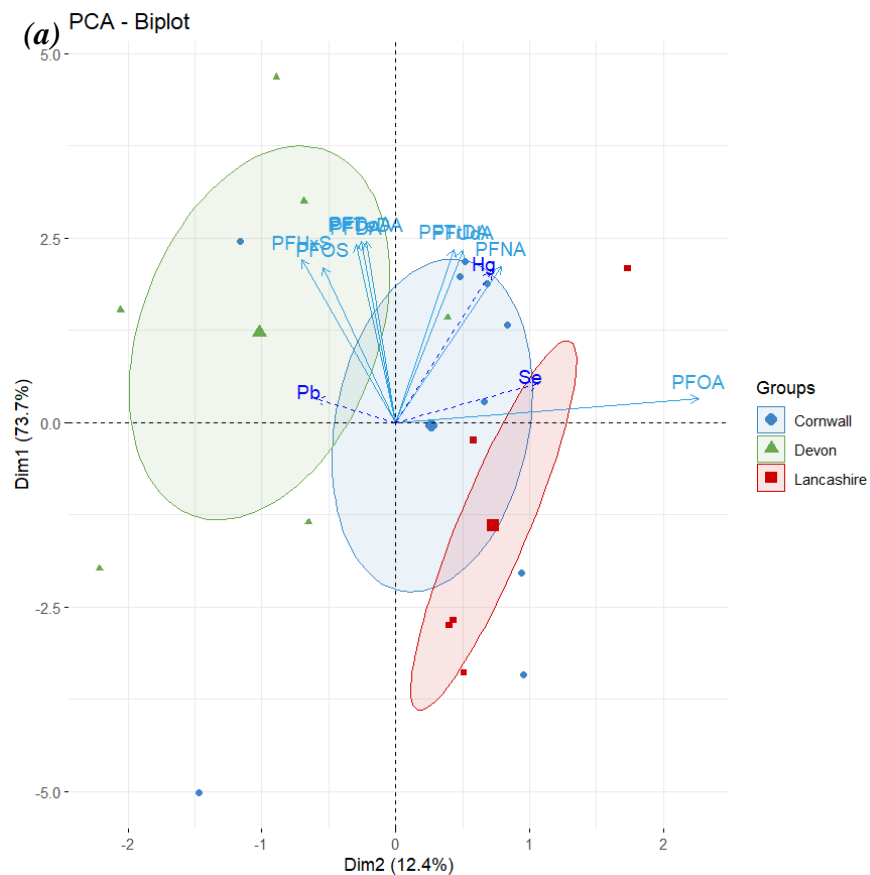
Supplementary Information Fig. 5 *Principal component analysis (PCA) on PFAS residues in 20 eggs of peregrine from the UK. (a): biplot for the first and second principal axes; (b) biplot for the first and third principal axes. Concentrations of Hg, Pb, and Se are 'a posteriori' projected on each biplot and represented by dotted arrows. The three counties are represented by different colours and shapes of dots. Confidence ellipses for the centroid of each county are also projected on the biplots. All contaminant concentrations were logarithmically transformed because of their skewed distribution.*

Supporting Information Table 1 Name, abbreviation, CAS number and limit of quantification value (LoQ; ng g⁻¹ wet weight), and recovery rate of each PFAS compound measured in this study. The recovery rate is given only for the ¹³C labelled standards (PFBA, PFHxA, PFHxS, PFOA, PFNA, PFOS, PFDA, PFUdA, PFDOA, and PFTeDA)

PFAS		CAS Number	LoQ (*ng/g ww*)	Recovery rate	
Abbreviation	Name			Mean	Range
PFBA	Perfluorobutanoate	456-22-4	0.08	81%	73-93%
PFPeA	Perfluoropentanoate	5989-64-0	0.08	-	-
PFBS	Perfluorobutane sulfonate	375-73-5	0.02	-	-
PFHxA	Perfluorohexanoate	307-24-4	0.02	81%	70-89%
PFHpA	Perfluoroheptanoate	375-85-9	0.02	-	-
PFHxS	Perfluorohexane sulfonate	355-46-4	0.02	83%	71-99%
PFOA	Perfluorooctanoate	335-93-3	0.02	82%	69-97%
PFNA	Perfluorononanoate	444-03-1	0.02	83%	73-93%
PFOS	Perfluorooctane sulfonate	2795-39-3	0.02	88%	73-98%
PFDA	Perfluorodecanoate	335-76-2	0.02	85%	71-111%
PFUdA	Perfluoroundecanoate	2058-94-8	0.05	94%	63-120%
PFDS	Perfluorodecane sulfonate	335-77-3	0.02	-	-
PFDoA	Perfluorododecanoate	307-55-1	0.02	84%	61-118%
PFTrDA	Perfluorotridecanoate	72629-94-8	0.02	-	-
PFTeDA	Perfluorotetradecanoate	376-06-7	0.02	78%	60-107%
PFHxDA	perfluorohexadecanoate	67905-19-5	0.02	-	-
PFODA	Perfluorooctadecanoic acid	16517-11-6	0.05	-	-
PFOSA	Perfluorooctane sulfonamide	754-91-6	0.02	-	-

Supporting Information Table 2 *Statistics (minimum, median, mean, and maximum) (µg g^{-1} dry weight), limit of quantification (LoQ; µg g^{-1} dry weight), number of the samples under the limit of quantification (No. <LoQ), and recovery rates compared to the two certified reference materials (Dorm-3: a fish protein CRM; Dolt-5: a dogfish liver CRM) of 13 elements measured by ICP-MS in this study. Percentage recovery rates of the elements that were not certified in CRM are not reported. Statistics of the ratio Hg/Se are also added.*

		Chromium Cr	Iron Fe	Cobalt Co	Nickel Ni	Copper Cu	Zinc Zn	Arsenic As
LoQ (µg g^{-1} dw)	**Value**	0.018	0.867	0.002	0.002	0.018	0.867	0.006
	No. <LoQ	2	0	0	0	0	0	0
Statistics (µg g^{-1} dw)	**Minimum**	0.024	18.80	0.005	0.007	1.56	32.8	0.035
	Mean	0.073	74.90	0.011	0.078	2.34	47.1	0.114
	Median	0.046	74.50	0.010	0.049	2.28	47.4	0.082
	Maximum	0.265	109.00	0.021	0.264	3.84	60.7	0.610
Recovery rate (%)	**DORM-3**	96.5	98.1	-	109.3	106.5	110.8	104
	DOLT-5	-	100.3	107.4	-	100.3	103.8	100.4

		Selenium Se	Strontium Sr	Molybdenum Mo	Cadmium Cd	Lead Pb	Mercury Hg	Ratio Hg/Se
LoQ (µg g^{-1} dw)	**Value**	0.085	0.002	0.004	0.002	0.002	0.09	-
	No. <LoQ	0	0	0	19	0	0	-
Statistics (µg g^{-1} dw)	**Minimum**	1.84	0.089	0.048	-	0.011	0.071	0.030
	Mean	2.61	0.887	0.078	0.001	0.078	0.401	0.146
	Median	2.65	0.702	0.079	0.001	0.055	0.356	0.146
	Maximum	3.84	4.33	0.125	-	0.219	1.24	0.323
Recovery rate (%)	**DORM-3**	-	-	-	116.8	98.8	-	-
	DOLT-5	120.6	108.4	103.9	100.1	93.9	109.2	-

Reference

Ratcliffe, D.A., 1970. Changes Attributable to Pesticides in Egg Breakage Frequency and Eggshell Thickness in Some British Birds. J. Appl. Ecol. 7, 67–115. https://doi.org/10.2307/2401613