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Human impacts on Nitrogen and Phosphorus concentrations in the North Sea

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Appendices

Full tables of results for the statistical analysis from individual country nutrient emissions

Riverine Inputs - Phosphates

1990-1993								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	6.600	7.349	7.097	0.343	0.499	2	none	
Belgium	1.269	5.278	2.724	1.775	-0.518	2	none	
Denmark	0.043	0.596	0.182	0.276	0.259	2	none	
Germany	2.321	3.775	3.047	0.613	-0.231	2	none	
France	6.791	8.438	7.470	0.708	-0.155	2	none	
Norway	0.066	0.100	0.082	0.017	-0.297	2	none	
Netherlands	8.990	10.900	10.240	0.887	0.545	2	none	
Sweden	0.029	0.219	0.136	0.079	0.963	2	p < 0.05	⊗
1993-2000								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	7.235	11.451	8.564	1.689	0.850	6	p < 0.01	⊗
Belgium	1.269	3.528	2.146	0.734	0.288	6	none	
Denmark	0.044	0.198	0.114	0.052	0.517	6	p < 0.2	⊗
Germany	2.034	3.600	2.704	0.580	-0.873	6	p < 0.01	☺
France	5.717	7.591	6.561	0.644	-0.606	6	p < 0.2	☺
Norway	0.059	0.130	0.097	0.028	0.806	6	p < 0.02	⊗
Netherlands	8.501	12.574	10.380	1.397	-0.417	6	none	
Sweden	0.098	0.249	0.189	0.058	0.226	6	none	
2000-2011								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	2.646	25.072	7.165	6.318	-0.501	10	p < 0.1	☺
Belgium	1.401	2.366	1.707	0.348	-0.604	8	p < 0.1	☺
Denmark	0.078	0.184	0.130	0.035	0.586	6	p < 0.2	⊗
Germany	1.798	4.450	2.410	0.718	-0.390	10	none	
France	1.606	5.978	3.259	1.466	-0.942	10	p < 0.001	☺
Norway	0.052	0.194	0.134	0.049	0.061	10	none	
Netherlands	5.111	10.277	6.946	1.804	-0.593	9	p < 0.1	☺
Sweden	0.130	0.332	0.254	0.058	0.369	10	none	

Riverine Input- Nitrates

1990-1993								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	42.500	79.980	64.745	18.178	0.733	2	none	
Belgium	24.400	35.314	30.676	4.557	0.918	2	p < 0.1	⊗
Denmark	4.540	4.540	4.540	-	-	-	-	
Germany	118.200	170.400	149.050	23.587	0.627	2	none	
France	97.990	125.300	113.593	11.660	0.658	2	none	
Norway	8.309	11.505	9.852	1.510	-0.394	2	none	
Netherlands	212.000	281.200	243.850	36.738	0.848	2	p < 0.2	⊗
Sweden	1.540	21.010	15.660	9.454	0.823	2	p < 0.2	⊗
1993-2000								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	46.126	131.602	89.440	28.333	0.513	6	p < 0.1	⊗
Belgium	23.248	44.750	35.126	6.845	0.488	6	none	
Denmark	4.540	15.800	9.012	3.950	0.885	6	p < 0.01	⊗
Germany	141.200	262.800	179.780	40.840	-0.449	6	none	
France	74.348	242.378	172.799	60.174	0.396	6	none	
Norway	6.761	9.785	8.233	0.979	-0.353	6	none	
Netherlands	207.930	372.308	282.403	59.677	-0.320	6	none	
Sweden	11.680	25.970	20.964	5.260	0.227	6	none	
2000-2011								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	52.062	153.032	91.304	36.199	-0.434	10	p < 0.2	☺
Belgium	23.243	46.680	34.900	7.163	-0.501	8	p < 0.2	☺
Denmark	9.077	17.955	13.745	2.835	-0.302	10	none	
Germany	120.157	280.196	165.789	48.194	0.159	10	none	
France	106.742	248.393	164.801	46.796	-0.762	10	p < 0.01	☺
Norway	4.285	10.962	7.692	2.017	-0.110	10	none	
Netherlands	129.328	307.790	215.340	53.825	-0.465	9	p < 0.2	☺
Sweden	12.150	23.140	17.953	3.761	-0.313	10	none	

Direct Discharge – Phosphates

1990-1993								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	4.447	6.700	5.790	1.006	-0.968	2	p < 0.05	☺
Denmark	0.019	0.100	0.062	0.039	-0.904	2	p < 0.1	☺
Germany	0.020	0.095	0.076	0.038	0.775	2	none	
Norway	0.222	0.230	0.224	0.004	0.775	2	none	
Netherlands	0.580	0.687	0.627	0.044	0.166	2	none	
Sweden	0.016	0.030	0.024	0.007	-0.944	2	p < 0.1	☺
1993-2000								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	4.365	5.268	4.780	0.314	-0.003	6	none	
Denmark	0.008	0.019	0.015	0.005	-0.947	2	p < 0.1	☺
Germany	0.085	0.096	0.089	0.005	-0.731	6	p < 0.05	☺
Norway	0.230	0.295	0.264	0.022	0.168	6	none	
Netherlands	0.621	0.621	0.621	-	-	-	-	
Sweden	0.006	0.052	0.025	0.014	-0.187	6	none	
2000-2011								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/⊗
UK	1.549	4.530	2.946	0.928	-0.909	10	p < 0.001	☺
Denmark	0.004	0.011	0.006	0.002	0.737	7	p < 0.02	⊗
Germany	0.061	0.086	0.078	0.008	-0.748	10	p < 0.01	☺
Norway	0.217	0.271	0.244	0.019	0.737	10	p < 0.01	⊗
Netherlands	-	-	-	-	-	-	-	
Sweden	0.020	0.030	0.025	0.007	-	-	-	

Direct Discharge - Nitrates

1990-1993								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/☹
UK	8.400	13.980	10.877	2.319	0.212	1	none	
Denmark	0.250	1.000	0.688	0.338	-0.975	2	p < 0.05	☺
Germany	2.120	2.723	2.322	0.347	-0.869	2	p < 0.2	☺
Norway	0.185	0.193	0.190	0.003	-0.961	2	p < 0.05	☺
Netherlands	0.530	1.063	0.864	0.255	0.943	2	p < 0.1	☹
Sweden	0.463	0.900	0.691	0.242	-0.912	2	p < 0.1	☺
1993-2000								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/☹
UK	8.251	10.268	9.220	0.662	-0.404	6	none	
Denmark	0.120	0.260	0.211	0.064	-0.882	2	p < 0.2	☺
Germany	1.920	3.312	2.178	0.461	0.388	6	none	
Norway	0.185	0.247	0.216	0.023	0.055	6	none	
Netherlands	1.063	1.750	1.414	0.236	0.735	5	p < 0.1	☹
Sweden	0.138	0.700	0.450	0.187	0.059	6	none	
2000-2011								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/☹
UK	8.345	10.888	9.453	0.758	-0.558	10	p < 0.1	☺
Denmark	0.070	0.105	0.090	0.011	0.252	7	none	
Germany	1.704	2.005	1.815	0.129	-0.056	10	none	
Norway	0.180	0.202	0.194	0.007	0.316	10	none	
Netherlands	1.067	1.758	1.302	0.242	-0.621	5	p < 0.2	☺
Sweden	0.200	0.300	0.250	0.071	-	-	-	

Atmospheric Concentration – NO₃

1990-1993								
Country	Min	Max	Mean	SD	Pearson, R value	DF (n-2)	Significance	☺/☹
UK	0.412	0.504	0.45725	0.048465624	0.460825681	2	none	
Belgium	-	-	-	-	-	-	-	
Denmark	0.634	1.007	0.74025	0.178621341	-0.266696549	2	none	
Germany	0.579	0.68	0.62925	0.04838302	0.205457559	2	none	
France	0.52	0.52	0.52	-	-	-	-	
Norway	0.47	0.57	0.527	0.044414712	0.587149765	2	none	
Netherlands	-	-	-	-	-	-	-	
Sweden	0.596	0.698	0.63575	0.044455033	-0.583713168	2	none	
1993-2000								
Country	Min	Max	Mean	SD	Pearson, R value	DF (n-2)	Significance	☺/☹
UK	0.377	0.577	0.46	0.062976186	-0.357468094	6	none	
Belgium	-	-	-	-	-	-	-	
Denmark	0.442	0.726	0.57625	0.086437013	-0.105931772	6	none	
Germany	0.556	0.741	0.626375	0.062552692	-0.162695582	6	none	
France	0.284	0.52	0.384187097	0.094612695	-0.918355074	2	p < 0.1	☺
Norway	0.431	0.55	0.491	0.046916339	-0.86146067	6	p < 0.01	☺
Netherlands	0.419	0.815	0.545571429	0.125912479	-0.373771703	6	none	
Sweden	0.459	0.633	0.555	0.060797086	-0.255167409	6	none	
2000-2011								
Country	Min	Max	Mean	SD	Pearson, R value	DF (n-2)	Significance	☺/☹
UK	0.292	0.53	0.428	0.059795105	-0.482809153	10	p < 0.2	☺
Belgium	0.301	0.519	0.385363636	0.063054378	-0.037297783	10	none	
Denmark	0.393	0.647	0.525916667	0.084546338	-0.574526213	10	p < 0.1	☺
Germany	0.368	0.653	0.475833333	0.091975128	-0.740165776	10	p < 0.01	☺
France	0.221	0.557	0.339266862	0.097402173	0.501663751	9	p < 0.1	☹
Norway	0.326	0.504	0.40575	0.056882854	-0.223622465	10	none	
Netherlands	0.338	0.511	0.391833333	0.047416593	-0.662557129	10	p < 0.02	☺
Sweden	0.354	0.575	0.450833333	0.061851484	-0.805920466	10	p < 0.01	☺

Atmospheric Concentration – NH₄

1990-1993								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	☺/☹
UK	0.46	0.666	0.53525	0.095601168	-0.619831812	2	none	
Belgium	-	-	-	-	-	-	-	
Denmark	0.65	1.068	0.8235	0.181513085	-0.97297691	2	p < 0.05	☺
Germany	0.55	0.648	0.5905	0.045887544	-0.106908728	2	none	
France	0.57	0.573	0.573	-	-	-	-	
Norway	0.44	0.51	0.47525	0.033658827	0.372046417	2	none	
Netherlands	-	-	-	-	-	-	-	
Sweden	0.56	0.639	0.59625	0.038767469	-0.875815593	2	p < 0.2	☺
1993-2000								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	
UK	0.394	0.898	0.5355	0.152811742	0.007251422	6	none	
Belgium	-	-	-	-	-	-	-	
Denmark	0.383	0.81	0.612625	0.134058556	0.447006284	6	none	
Germany	0.426	0.734	0.562875	0.095154667	-0.203179446	6	none	
France	0.225	0.573	0.3868	0.135774445	-0.813967307	2	p < 0.2	☺
Norway	0.341	0.51	0.429875	0.06478853	-0.855618827	6	p < 0.01	☺
Netherlands	0.66	1.427	0.916625	0.242704958	-0.163521859	6	none	
Sweden	0.382	0.615	0.502375	0.08214958	-0.351064795	6	none	
2000-2011								
Country	Min	Max	Mean	Standard Deviation	Pearson, R value	DF (n-2)	Significance	
UK	0.381	0.63	0.5045	0.063550266	-0.019837561	10	none	
Belgium	0.28	0.712	0.571454545	0.109295346	0.436147971	10	p < 0.2	☹
Denmark	0.541	0.942	0.67075	0.137022974	-0.480911047	10	p < 0.2	☺
Germany	0.372	0.729	0.52275	0.103788355	-0.250342742	10	none	
France	0.058	0.31	0.150545455	0.076519754	-0.089016256	9	none	
Norway	0.277	0.469	0.360416667	0.057490645	-0.044076238	10	none	
Netherlands	0.561	0.792	0.666416667	0.072033399	-0.375054089	10	none	
Sweden	0.372	0.666	0.50525	0.08886366	0.414961036	10	p < 0.2	☹