

# Supplementary materials

Table S1: Niche parameters calculated with the OMI analysis for 50 taxonomic unit (Tax. Unit). The parameters are the inertia, the marginality (OMI), the tolerance (Tol) and the residual tolerance (Rtol). The  $P$  values were calculated with 1000 permutations

Group	Tax.Unit	Inertia	OMI	Tol	Rtol	$P$ value	
Diatoms	Aste	8.537	0.018	0.821	7.697	<b>0.005</b>	
	Baci	8.399	0.106	3.549	4.744	<b>0.015</b>	
	Bact	8.388	0.338	2.442	5.608	<b>0.001</b>	
	Cera	8.175	0.015	2.426	5.734	<b>0.027</b>	
	Chae	8.04	0.001	1.116	6.924	0.21	
	Cosc	7.885	0.013	0.74	7.132	0.084	
	Cyli	8.052	0.001	0.665	7.386	0.178	
	Dact	7.854	0.014	1.012	6.828	<b>0.026</b>	
	Dipl	7.739	0.055	1.768	5.916	<b>0.029</b>	
	Dity	7.937	0.015	2.028	5.894	<b>0.003</b>	
	Euca	7.725	0.062	3.485	4.177	<b>0.001</b>	
	Guin	7.941	0.007	3.059	4.875	<b>0.002</b>	
	Navi	8.12	0.001	1.04	7.08	0.784	
	Heli	8.781	0.05	1.246	7.485	0.148	
	Laud	7.962	0.01	1.419	6.533	0.081	
	Lept	7.99	0.015	3.109	4.865	<b>0.001</b>	
	Lith	7.979	0.105	1.824	6.05	<b>0.003</b>	
	Melo	8.152	0.05	0.718	7.384	0.087	
	Meun	8.629	0.069	1.579	6.981	<b>0.003</b>	
	Odon	8.102	0.005	1.545	6.552	0.107	
	Para	8.238	0.004	0.87	7.363	<b>0.004</b>	
	Plag	7.708	0.033	3.096	4.58	<b>0.002</b>	
	Pleu	8.097	0.014	3.161	4.922	<b>0.001</b>	
	Pseu	8.031	0.008	3.007	5.016	<b>0.001</b>	
	Rhap	8.623	0.06	0.776	7.787	<b>0.001</b>	
	Rhiz	7.989	0.004	2.552	5.433	<b>0.024</b>	
	Scen	7.154	0.051	0.661	6.442	<b>0.026</b>	
	Skel	7.796	0.004	2.357	5.435	<b>0.039</b>	
	Thal	7.948	0.001	1.554	6.393	0.062	
	Thall	7.95	0.002	2.755	5.193	0.197	
	Dinoflagellates	Amph	8.499	0.124	1.78	6.595	<b>0.001</b>
		Alex	7.19	0.078	2.323	4.789	<b>0.005</b>
Cerau		8.597	0.06	2.381	6.157	<b>0.003</b>	
Dino		8.033	0.085	2.579	5.368	<b>0.001</b>	
DiPr		8.031	0.041	2.929	5.062	<b>0.003</b>	
Gony		8.052	0.176	2.449	5.426	<b>0.001</b>	
Gymn		8.077	0.009	2.551	5.517	<b>0.001</b>	
Hete		7.854	0.031	2.225	5.598	<b>0.002</b>	
Lepi		7.413	0.113	2.241	5.059	<b>0.023</b>	
Kare		7.794	0.05	1.943	5.802	0.176	
Kato		7.837	0.057	1.922	5.858	<b>0.001</b>	
Poly		8.368	0.012	1.7	6.656	0.644	
Prot		7.884	0.017	3.475	4.392	<b>0.001</b>	
Pror		7.898	0.026	2.96	4.912	<b>0.001</b>	
Scri		8.927	0.021	1.256	7.65	0.137	
Toro		8.137	0.082	1.406	6.649	<b>0.001</b>	
Euglenophyte	Eugl	7.986	0.005	0.546	7.435	0.108	
Haptophyte	Phae	7.886	0.048	1.303	6.534	<b>0.01</b>	
Pyramimonadale	Pyra	7.412	0.143	1.405	5.865	<b>0.004</b>	
Silicoflagellates	Dict	8.017	0.013	1.569	6.435	<b>0.025</b>	

Table S2: Subniche parameters of all taxonomic units (Tax.Unit) under the two subsets ( $K_L$  and  $K_H$ ) of *Alexandrium minutum* and *Lepidodinium chlorophorum*. The parameters are the inertia, the marginality (WitOMIG) and tolerance (TOL) and the residual tolerance (Rtol). For code see Table 1. All subniches were significant ( $P < 0.05$ ). The none occurrence of a taxa is represent by -.

Subset	Group	Tax.Unit	<i>Alexandrium minutum</i>				<i>Lepidodinium chlorophorum</i>				
			Inertia	WitOMIG	Tol	Rtol	Inertia	WitOMIG	Tol	Rtol	
$K_L$	Diatoms	Aste	8.849	0.076	1.173	7.601	15.597	0.801	5.776	9.02	
		Baci	8.042	0.17	3.295	4.577	12.078	2.409	1.019	8.651	
		Bact	9.524	0.28	1.476	7.767	6.792	1.088	1.382	4.323	
		Cera	8.53	0.045	1.734	6.751	6.731	0.271	1.011	5.449	
		Dact	8.297	0.029	1.439	6.829	6.522	0.291	0.469	5.761	
		Dipl	8.201	0.096	1.028	7.076	8.126	0.5	1.171	6.455	
		Dity	8.114	0.015	0.942	7.157	10.105	0.239	1.377	8.489	
		Euca	7.962	0.065	0.747	7.15	7.34	0.563	0.946	5.831	
		Guin	8.208	0.01	1.383	6.815	6.447	0.285	0.447	5.715	
		Lept	8.332	0.013	1.128	7.191	7.059	0.154	0.403	6.502	
		Lith	7.737	0.086	0.588	7.063	9.703	1.342	3.251	5.11	
		Meun	9.665	0.182	1.543	7.94	6.313	0.273	1.15	4.889	
		Para	8.502	0.016	1.32	7.166	9.074	0.161	0.984	7.928	
		Plag	8.548	0.161	3.5	4.887	9.106	0.236	1.169	7.7	
		Pleu	8.509	0.02	2.566	5.923	9.682	0.22	0.922	8.54	
		Pseu	8.383	0.013	0.744	7.626	8.957	0.173	0.867	7.918	
		Rhap	9.404	0.117	1.056	8.231	17.05	2.693	2.14	12.217	
		Rhiz	8.241	0.009	2.205	6.028	6.879	0.19	0.416	6.274	
		Scen	7.553	0.127	1.827	5.599	9.521	1.347	0.322	7.851	
		Skel	8.05	0.004	0.737	7.309	10.638	0.159	2.355	8.124	
	Dinoflagellates	Amph	9.845	0.26	1.652	7.934	18.252	2.813	7.119	8.321	
		Alex	7.773	0.032	0.816	6.925	6.568	0.884	0.741	4.943	
		Cerau	9.088	0.065	2.647	6.375	9.852	1.446	1.812	6.593	
		Dino	8.631	0.108	1.554	6.969	7.808	0.517	2.448	4.843	
		DiPr	8.7	0.042	1.421	7.237	16.393	2.691	4.319	9.383	
		Gony	8.995	0.195	1.77	7.029	18.646	1.469	8.631	8.547	
		Gymn	8.454	0.017	1.325	7.112	9.056	0.106	1.475	7.475	
		Hete	8.502	0.088	1.484	6.93	7.402	0.206	0.873	6.323	
		Lepi	8.328	0.13	1.069	7.128	10.838	0.324	1.994	8.521	
		Kato	8.149	0.06	2.31	5.78	6.27	0.817	1.507	3.946	
	Haptophyte Pyramimonadale Silicoflagellates	Prot	8.166	0.027	2.459	5.68	8.793	0.218	0.944	7.631	
		Pror	8.322	0.03	1.548	6.744	10.249	0.351	1.158	8.74	
		Toro	9.126	0.079	1.081	7.966	5.971	1.245	1.026	3.701	
		Phae	8.856	0.08	1.188	7.588	6.02	1.486	0.487	4.046	
Pyra		7.804	0.163	0.921	6.719	5.49	0.384	0.248	4.858		
Dict		7.727	0.031	2.257	5.439	7.022	0.363	1.034	5.625		
$K_H$	Diatoms	Bact	-	-	-	-	7.158	3.669	1.433	2.056	
		Cera	5.139	0.657	0.429	4.053	8.972	1.307	3.517	4.149	
		Dact	5.204	1.032	1.416	2.757	11.983	1.505	0.268	10.211	
		Dity	4.504	1.742	1.11	1.652	9.197	0.458	3.698	5.042	
		Euca	-	-	-	-	8.734	6.552	1.034	1.149	
		Guin	5.388	1.047	1.462	2.879	8.772	0.368	1.417	6.987	
		Lept	5.078	1.222	1.099	2.757	8.722	0.48	1.887	6.355	
		Lith	4.575	4.451	0.002	0.122	5.84	2.106	1.411	2.323	
		Para	5.29	2.349	1.612	1.329	-	-	-	-	
		Plag	3.713	0.905	0.617	2.191	6.676	0.277	0.663	5.736	
		Pleu	6.414	1.431	1.28	3.703	9.019	0.381	2.19	6.448	
		Pseu	4.807	0.73	1.087	2.991	9.915	0.886	3.019	6.011	
		Rhiz	4.89	0.63	0.789	3.47	9.611	0.469	2.661	6.481	
		Skel	4.767	0.483	0.341	3.944	8.558	0.39	2.877	5.29	
		Dinoflagellates	Amph	6.447	0.871	0.44	5.136	-	-	-	-
			Alex	4.724	2.791	0.591	1.342	12.427	4.098	0.822	7.508
			Cerau	5.403	1.843	1.159	2.401	9.449	0.289	0.608	8.551
			Dino	6.053	1.817	0.025	4.211	9.682	0.57	0.75	8.362
			DiPr	5.365	0.848	0.441	4.076	13.471	2.114	5.029	6.328
			Gony	5.158	2.664	1.167	1.327	3.987	2.987	0.421	0.579
	Gymn		5.365	0.393	0.661	4.311	8.21	0.327	1.388	6.495	
	Hete		5.661	0.741	2.074	2.846	11.03	2.54	4.895	3.595	
	Lepi		5.178	0.753	0.066	4.359	8.886	0.597	0.91	7.379	
	Kato		5.746	0.896	0.163	4.687	-	-	-	-	
	Pyramimonadale Silicoflagellates	Prot	4.944	0.749	1.341	2.853	9.465	0.822	2.529	6.113	
		Pror	5.901	0.58	0.124	5.197	9.306	0.446	1.793	7.067	
		Toro	5.167	2.967	0.644	1.556	-	-	-	-	
		Pyra	6.735	5.763	0.005	0.968	10.933	9.986	0.199	0.749	
		Dict	5.483	0.604	1.811	3.068	6.948	0.678	0.795	5.475	

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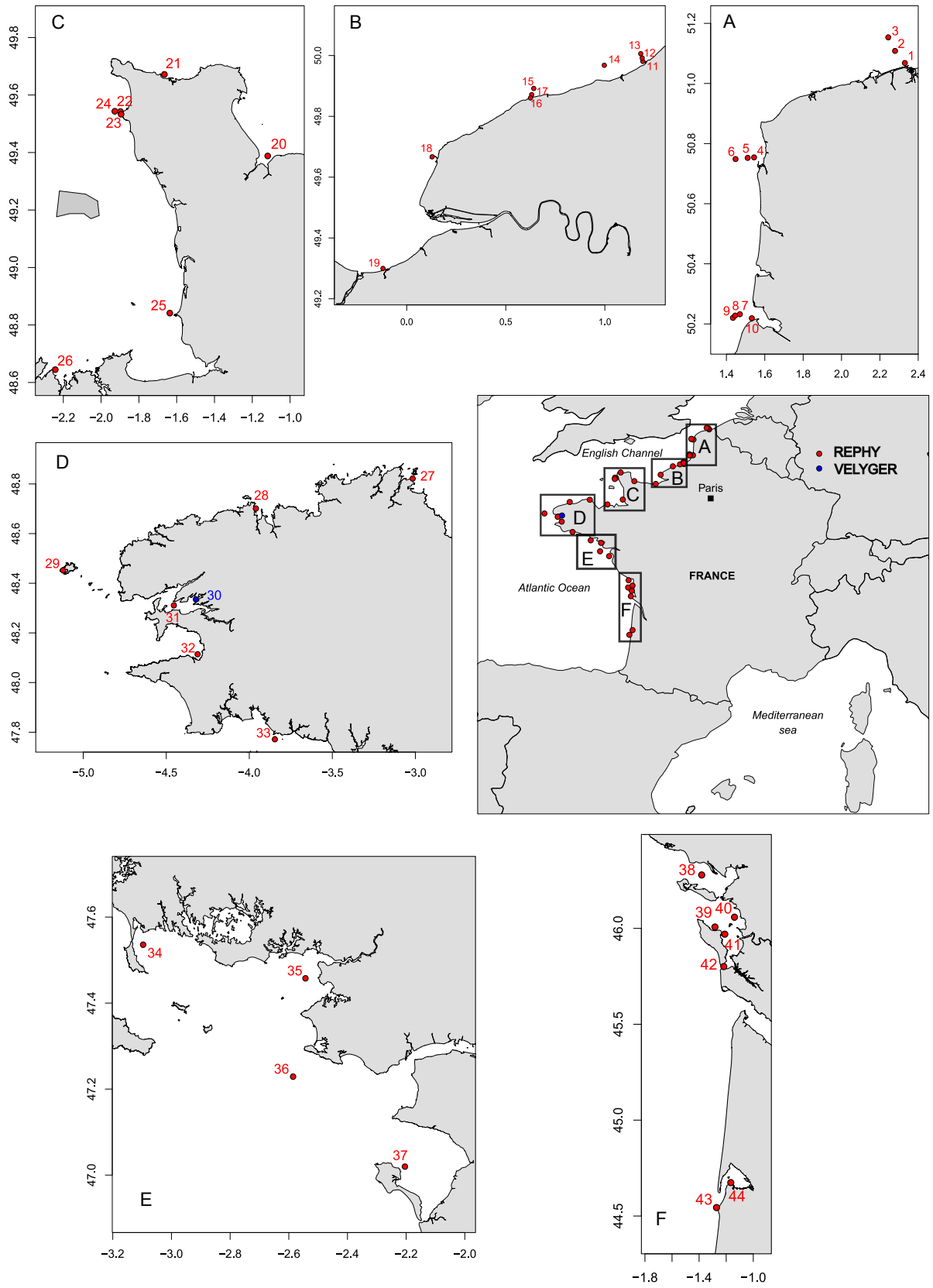


Figure S1  
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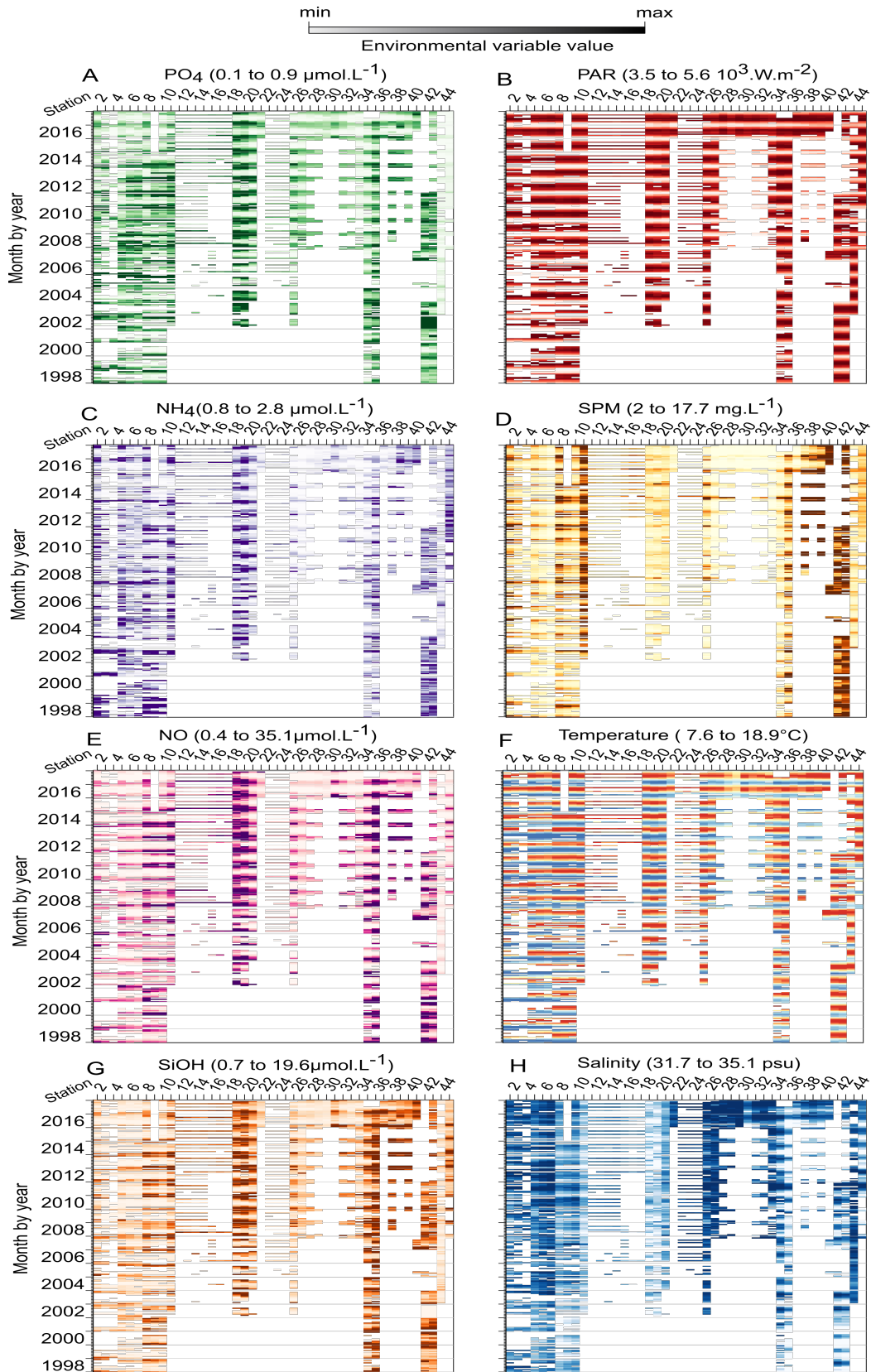


Figure S2  
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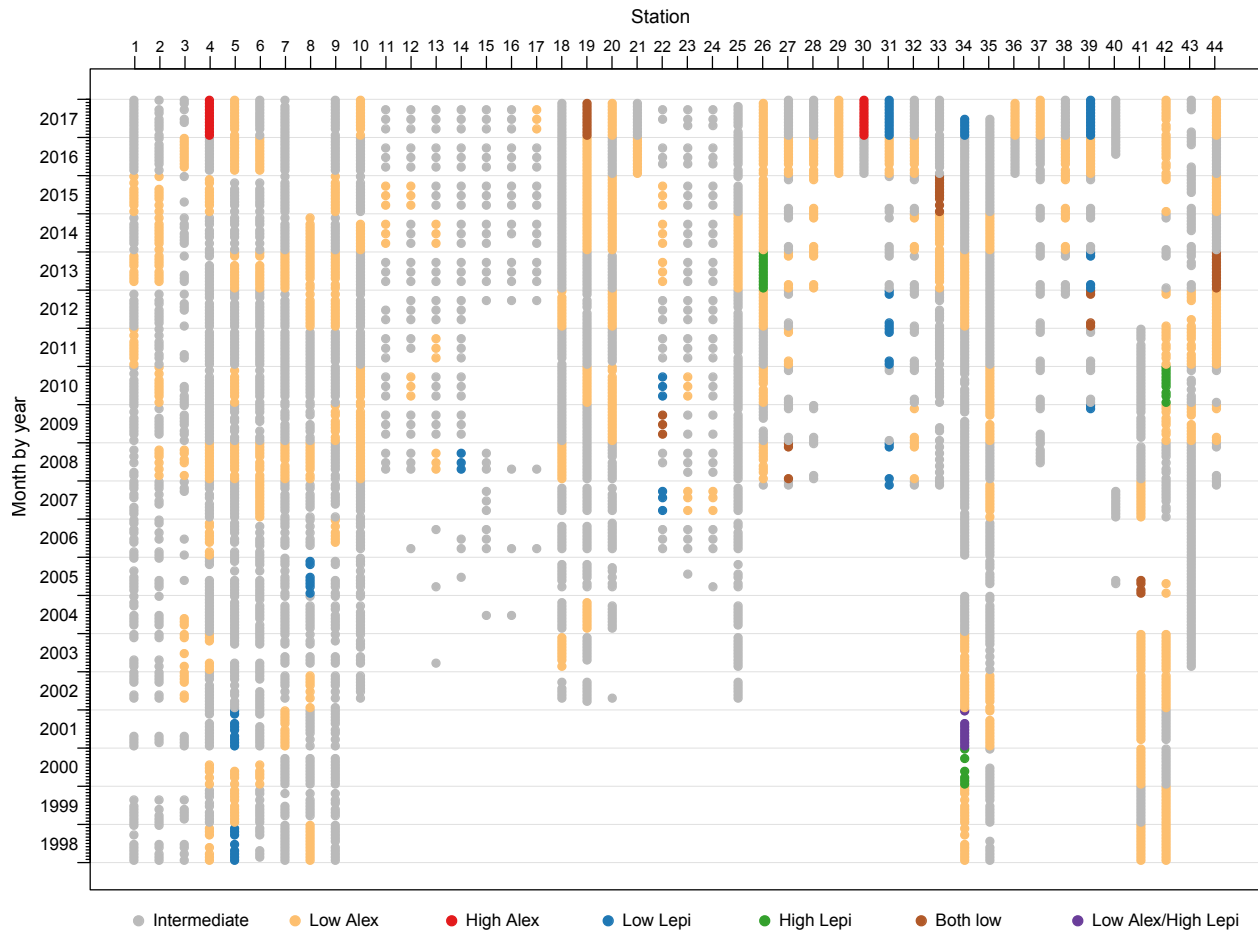


Figure S3

