

Table S1. Site information and slopes of pH trends for minimum and maximum data for 302 monitoring sites.

File Number	Prefecture	Site name	Longitude	Latitude	Slope for minimum data	Slope for maximum data
0162201	Hokkaido	Nemuro Coast	145.571	43.279	-2.78E-03	-1.77E-03
0162202			145.582	43.279	-4.02E-03	-9.65E-04
0260202	Aomori	Dai2kogyo Bay	141.509	40.550	1.01E-03	4.32E-03
0460801	Miyagi	Onagawa Bay	141.461	38.437	-2.65E-03	-5.74E-03
0460901			141.477	38.438	-1.10E-03	-2.67E-03
0461051		Sendai Bay	141.021	38.270	9.42E-04	-2.30E-04
0461053			141.029	38.271	0.00E+00	-4.50E-03
0461055			141.011	38.271	4.31E-03	2.53E-04
0461101			141.037	38.259	-9.77E-04	-5.95E-03
0461102			141.017	38.244	-1.65E-03	-5.33E-03
0461103			141.058	38.275	-2.38E-03	-1.42E-03
0461151			141.057	38.269	-9.31E-04	-4.14E-03
0461152			141.026	38.253	-2.64E-04	-3.86E-03
0461201			141.073	38.289	-2.63E-03	-2.30E-04
0461202			141.058	38.265	-1.52E-03	1.52E-03
0461203			141.058	38.265	-1.52E-03	1.52E-03
0461251			141.066	38.268	-2.18E-04	-2.44E-03
0461252			141.051	38.251	-1.09E-03	-3.19E-03
0461254			141.006	38.219	-1.19E-03	-4.71E-03
0461255			140.999	38.210	-6.20E-04	-3.13E-03
0461256			141.034	38.249	-1.11E-03	-4.30E-03
0461257			141.024	38.240	-2.53E-04	-4.62E-03
0461258			141.016	38.229	-1.00E-03	-3.40E-03
0461501		Ninokura Coast	140.959	38.097	-2.96E-03	-9.19E-04
0560101	Akita	Toga-hinan Bay	139.713	39.953	-1.15E-03	-1.22E-03
0760701	Fukushima	Yotsukura Bay	140.999	37.109	6.66E-04	-8.73E-04
0760801		Toyomagyo Bay	140.979	36.994	1.15E-04	-1.03E-03
0760802			140.981	37.009	-7.12E-04	-2.39E-03
0760901		Ena Bay	140.960	36.968	4.37E-04	-1.38E-04
0861601	Ibaraki	Joban Coast	140.688	35.922	3.91E-04	-5.28E-04
1260101	Chiba	Chiba Bay	140.061	35.605	1.14E-03	-1.98E-03
1261001		Tokyo Bay	139.907	35.488	-9.19E-05	5.97E-04
1261101			139.780	35.288	3.13E-03	1.84E-04
1261151			139.823	35.137	1.13E-03	-1.13E-03
1261152			139.827	35.088	7.47E-04	-2.78E-03
1261153			139.807	35.057	5.86E-04	-1.33E-03
1261154			139.817	35.023	1.61E-04	-1.84E-03
1261155			139.847	35.003	-2.30E-05	-1.61E-03
1261157			139.793	34.983	6.89E-04	-2.62E-03
1560502	Niigata	Ryotsu Bay	138.446	38.083	-3.88E-03	-5.06E-03
1560801		Yahiko-Yoneyama Coast	138.870	37.851	-3.02E-03	-3.72E-03
1560854			138.719	37.584	-4.37E-03	-2.23E-03
1561001		Nishikubichi Coast	138.097	37.179	-9.54E-04	-1.52E-03
1561101			138.438	38.083	-3.77E-03	-2.87E-03
2260401	Shizuoka	Okusuruga Bay	138.632	35.012	1.75E-03	6.30E-03
2260404		Nishi-Suruga Bay	138.711	35.068	2.16E-03	6.14E-03
2261401			138.477	34.953	3.31E-03	4.07E-03
2261402			138.424	34.935	1.37E-03	2.41E-03
2261802		Izu Coast	139.079	35.094	5.86E-04	1.38E-04
2261803			139.087	35.047	1.52E-03	9.42E-04
2261804			139.087	35.057	3.79E-04	7.12E-04
2261805			139.104	34.973	1.13E-03	1.15E-03
2360504	Aichi	Ise Bay	136.880	34.620	4.02E-04	-5.93E-03
2460701	Mie	Ago Bay	136.822	34.303	3.14E-03	-2.05E-03
2760401	Osaka	Osaka Bay	135.239	34.475	-5.55E-03	-9.42E-03
2760501		Wakayama Coast	135.172	34.427	-4.52E-03	-9.35E-03
2860101	Hyogo	Harima Coast	134.995	34.640	7.58E-04	-3.88E-03
2860201			134.846	34.708	1.52E-03	-2.14E-03
2860601			134.686	34.766	5.28E-04	6.66E-04
2861101			134.887	34.675	-2.64E-04	-4.53E-03
2861102			134.841	34.683	-2.99E-04	-4.14E-03

2861152			134.744	34.754	-8.16E-04	-7.15E-03
2861201			135.000	34.633	-1.71E-03	-4.78E-03
2861301			134.942	34.646	-2.09E-03	-4.41E-03
2861302			134.808	34.648	-2.33E-03	-5.70E-03
2861303			134.686	34.730	-1.64E-03	-7.44E-03
2861354			134.608	34.733	-5.17E-04	-4.02E-03
2861801			135.087	34.583	-2.62E-03	-4.02E-03
2861802			135.112	34.533	-2.00E-03	-6.50E-03
2861901		Sumoto Bay	134.900	34.342	7.05E-03	1.98E-03
2862001			134.903	34.342	-2.60E-03	-5.33E-03
2862301		Harima-nada	134.368	34.700	-3.18E-03	-6.34E-03
2862353			134.467	34.750	-3.01E-03	-7.84E-03
2862357			134.373	34.725	9.77E-04	-4.69E-03
2862601		Tsuyama Coast	134.908	34.565	-1.44E-03	-4.34E-03
2862602			134.817	34.488	-1.80E-03	-7.12E-03
2862603			134.698	34.343	-1.80E-03	-7.88E-03
2862604			134.693	34.226	-2.73E-03	-3.79E-03
2862605			134.867	34.208	-1.77E-03	-6.07E-03
3060101	Wakayama	Shimotsu Bay	135.125	34.234	2.46E-03	3.35E-03
3060301			135.134	34.215	6.71E-03	6.87E-03
3060401			135.199	34.148	3.26E-03	1.82E-03
3060501			135.137	34.116	1.57E-03	5.97E-04
3060701			135.101	34.095	4.48E-04	-6.43E-04
3060804			135.124	34.212	3.27E-03	1.68E-03
3060807			135.119	34.125	8.04E-04	-1.47E-03
3060851			135.069	34.256	3.13E-03	1.06E-03
3060854			135.117	34.222	4.25E-04	1.61E-03
3060855			135.138	34.193	9.65E-04	-7.58E-04
3061001		Miwazaki Coast	135.979	33.672	3.87E-03	2.40E-03
3061101			135.984	33.671	4.60E-05	1.08E-03
3061301		Wakayama Coast	135.182	34.169	1.45E-03	-2.30E-05
3061501		Yuasawa Bay	135.161	34.032	7.01E-04	1.91E-03
3061502			135.149	34.042	1.62E-03	2.83E-03
3061503			135.149	34.025	3.33E-04	1.57E-03
3061504			135.090	33.953	4.12E-03	1.56E-03
3061505			135.080	33.952	5.28E-03	1.95E-03
3061551			135.173	34.032	-6.33E-03	2.22E-03
3061801		Tanaba Bay	135.373	33.717	4.96E-03	2.80E-03
3061802			135.359	33.706	5.91E-03	3.10E-03
3061851			135.383	33.706	5.80E-03	4.92E-03
3062001		Katsuura Bay	135.935	33.607	4.94E-04	-1.91E-03
3062054			135.948	33.615	2.18E-03	-7.81E-04
3360101	Okayama	Mizushima Bay	133.745	34.484	3.19E-03	1.03E-03
3360154			133.739	34.508	8.95E-03	4.85E-03
3360301		Tashima Bay	133.664	34.477	3.29E-03	4.09E-03
3360302			133.715	34.472	3.33E-03	3.13E-03
3360303			133.759	34.449	3.62E-03	2.25E-03
3360352		Others	133.625	34.473	2.17E-03	4.23E-03
3360353			133.691	34.470	2.09E-03	4.39E-03
3360451			133.776	34.434	2.88E-03	2.57E-03
3360453			133.651	34.423	1.92E-03	2.34E-03
3360454			133.731	34.428	1.98E-03	2.87E-03
3360455			133.610	34.386	-3.54E-03	-3.06E-03
3360704		Kojima Bay	134.007	34.529	-1.91E-03	-3.58E-03
3360753			134.041	34.558	7.47E-04	-4.39E-03
3360801		Ushimado Coast	134.186	34.641	-2.59E-03	-3.26E-03
3360802			134.160	34.587	-1.06E-03	-4.11E-03
3360851			134.151	34.607	-2.62E-03	-4.32E-03
3360901		Harima-nada	134.231	34.657	-2.37E-03	-2.78E-03
3360902			134.294	34.674	-2.98E-03	-3.15E-03
3360903			134.365	34.703	-3.25E-03	-4.27E-03
3360953			134.261	34.645	-2.34E-03	-4.50E-03
3360956			134.232	34.639	-1.22E-03	-4.25E-03
3361004		Bisansseto	133.839	34.437	3.02E-03	3.13E-03
3361057			133.550	34.353	-2.90E-03	-2.50E-03
3361058			133.831	34.458	2.78E-03	3.81E-03

3361060			133.947	34.456	-2.44E-03	-4.87E-03
3361061			133.961	34.487	-3.46E-03	-4.83E-03
3361062			133.989	34.515	-2.32E-03	-4.89E-03
3361063			133.856	34.457	2.07E-03	3.61E-03
3361064			133.856	34.431	2.55E-03	2.78E-03
3460606	Hiroshima	Kure Coast	132.606	34.211	-2.18E-03	-1.36E-03
3460703		Akitsu-Yasuura Coast	132.824	34.294	-1.18E-03	1.02E-03
3460704			132.848	34.273	-1.15E-03	2.46E-03
3460705			132.780	34.274	-6.89E-04	4.37E-04
3460706			132.706	34.227	-7.81E-04	-1.64E-03
3461001		Hiuchi-nada	132.910	34.309	-4.60E-05	-9.54E-04
3461002			133.037	34.322	3.96E-03	1.06E-03
3461003			133.093	34.367	4.46E-03	2.00E-03
3461004			133.144	34.380	3.81E-03	6.09E-04
3461005			133.223	34.346	1.72E-03	5.28E-04
3461006			133.318	34.346	3.39E-03	1.88E-03
3461402		Hiroshima Bay	132.342	34.256	-4.37E-03	9.88E-04
3461456			132.315	34.199	-6.10E-03	-3.08E-03
3461803			132.379	34.310	-3.75E-03	4.37E-03
3560801	Yamaguchi	Ube-Onoda Coast	131.239	33.942	-1.03E-03	-6.20E-03
3561202			131.197	33.924	-1.05E-03	-6.09E-03
3561203			131.158	33.970	-2.88E-03	-4.60E-03
3561302			131.124	33.948	1.63E-03	-5.31E-03
3563301		Hibiki and Suo-nada	131.056	34.006	-3.38E-03	-3.45E-03
3563302			131.012	33.986	-1.21E-03	-1.47E-03
3563303			130.893	33.961	-1.91E-03	-8.96E-04
3563304			130.892	34.026	-1.80E-03	-4.14E-04
3563352			131.024	34.029	-2.61E-03	-1.59E-03
3563353			131.029	34.005	-2.62E-03	-4.46E-03
3563354			131.009	34.006	-2.56E-03	-3.31E-03
3563356			130.932	33.947	-1.40E-03	-1.24E-03
3563358			130.900	33.919	-2.99E-04	-9.88E-04
3563359			130.893	33.936	-1.49E-03	-7.58E-04
3563361			130.899	33.952	-9.88E-04	-1.24E-03
3563363			130.908	34.011	-1.84E-03	-1.06E-03
3563365			130.867	33.955	-1.42E-03	-7.35E-04
3563366			130.923	33.913	-1.19E-03	-1.22E-03
3563501		Hiroshima Bay	132.250	34.191	-2.14E-03	-5.93E-03
3660201	Tokushima	Tomioka Bay	134.599	34.008	5.40E-04	5.97E-04
3660301		Komatsushima Bay	134.608	33.998	-2.38E-03	-2.27E-03
3660601		Tsubakidomari Bay	134.712	33.835	-1.02E-03	-2.71E-03
3660602			134.727	33.838	-1.87E-03	-3.22E-04
3660701		Kennan Coast	134.757	33.797	-2.18E-04	-8.73E-04
3660702			134.537	33.673	-1.84E-04	-8.96E-04
3660703			134.367	33.543	-1.47E-03	-1.49E-03
3660801		Kenhoku Coast	134.483	34.265	-8.04E-05	-2.02E-03
3660802			134.593	34.265	-1.59E-03	-1.86E-03
3660803			134.597	34.210	-2.23E-03	-1.52E-03
3660804			134.667	34.200	-1.85E-03	-2.76E-04
3660902		Kisuido Coast	134.683	34.033	-5.97E-04	-2.94E-03
3660903			134.750	33.933	-1.18E-03	-1.61E-03
3760102	Kagawa	Bisenseto	133.944	34.432	-2.88E-03	-2.71E-03
3760103			134.076	34.371	-1.03E-03	-2.64E-03
3760104			133.997	34.377	-2.44E-03	-2.19E-03
3760105			133.874	34.367	-2.93E-03	-1.61E-03
3760106			133.778	34.321	-3.31E-03	-2.31E-03
3760107			133.703	34.278	-4.60E-04	-2.06E-03
3760108			133.578	34.280	-6.20E-04	-5.65E-03
3760402		Sakaide Bay	133.858	34.334	1.14E-03	3.68E-04
3760403			133.842	34.331	3.27E-03	7.81E-04
3760601		Hiuchi-nada	133.581	34.228	-6.62E-03	-1.03E-02
3760603			133.606	34.153	-3.49E-03	-8.48E-03
3760604			133.604	34.103	-3.50E-03	-7.24E-03
3760651			133.550	34.064	-1.48E-03	-8.16E-03
3760652			133.512	34.081	-8.50E-04	-8.09E-03
3760653			133.558	34.197	8.39E-04	-7.86E-03

3760654			133.610	34.073	-3.85E-03	-8.13E-03
3760703		Tosan Coast	134.288	34.301	-6.32E-04	-3.40E-03
3760705			134.114	34.392	-4.83E-04	-2.21E-03
3760706			134.276	34.454	-8.62E-04	-3.58E-03
3760707			134.311	34.438	-3.22E-04	-4.37E-03
3760709			134.351	34.447	-1.08E-03	-4.92E-03
3760710			134.216	34.549	3.22E-04	-4.14E-03
3760711			134.148	34.497	1.38E-04	-2.11E-03
3760712			134.208	34.451	-6.43E-04	-3.35E-03
3860501	Ehime	Iyomishima-doi Coast	133.483	33.978	1.54E-03	-3.72E-03
3860502			133.450	33.989	-2.26E-03	-3.33E-03
3860504			133.474	33.990	-1.08E-03	-3.63E-03
3860505			133.436	33.996	-1.37E-03	-3.08E-03
3860801		Niihama Bay	133.294	33.979	-4.79E-03	-3.17E-03
3860901			133.267	33.981	-1.76E-03	-4.43E-03
3860902			133.246	33.968	-2.55E-03	-4.83E-03
3861001			133.381	33.986	-3.50E-03	-4.50E-03
3861002			133.364	33.983	-3.03E-03	-5.01E-03
3861003			133.336	33.989	-2.91E-03	-3.01E-03
3861005			133.267	33.989	-3.64E-03	-3.49E-03
3861701		Toyo Coast	133.117	33.942	7.70E-04	-2.92E-03
3861801			133.092	33.947	1.15E-03	-3.08E-03
3862001		Kawarazu-gyoko Bay	133.074	33.969	1.28E-03	-4.96E-03
3862807		Iyo-nada Coast	132.800	34.011	3.83E-03	-2.84E-03
3862809			132.767	33.950	1.29E-03	-3.42E-03
3862810			132.751	33.908	-1.37E-03	-6.11E-03
3862811			132.733	33.906	1.02E-03	-6.34E-03
3862812			132.705	33.889	-6.55E-04	-5.77E-03
3862813			132.707	33.867	4.60E-05	-4.80E-03
3862814			132.697	33.843	3.79E-04	-5.49E-03
3862815			132.689	33.833	-1.11E-03	-3.93E-03
3862816			132.686	33.814	2.56E-03	-5.84E-03
3862817			132.682	33.797	-1.15E-05	-2.05E-03
3862818			132.686	33.783	-1.19E-03	-1.72E-03
3862819			132.689	33.764	-1.21E-03	-4.60E-04
3862820			132.675	33.742	-5.06E-04	-2.62E-03
3862822			132.579	33.654	-8.62E-04	-1.40E-03
3862824			132.500	33.625	-1.72E-03	-2.69E-03
3862825			132.472	33.612	-2.07E-03	-2.76E-03
3862826			132.458	33.600	-3.06E-03	-4.09E-03
3862827			132.306	33.487	-1.06E-03	-2.44E-03
3862828			132.260	33.456	-1.07E-03	-3.63E-03
3862829			132.135	33.406	-2.36E-03	-2.64E-03
3863102		Uwajima Bay	132.225	33.417	-1.11E-03	-2.90E-03
3863103			132.304	33.469	-3.56E-04	-3.91E-03
3863104			132.352	33.482	-2.37E-03	-2.96E-03
3863105			132.355	33.478	-3.39E-03	-2.53E-03
3863108			132.382	33.449	-4.38E-03	-1.52E-03
3863109			132.415	33.455	-2.13E-03	-1.42E-03
3863110			132.400	33.449	-2.90E-03	-1.86E-03
3863111			132.413	33.372	1.03E-04	-2.23E-03
3863113			132.417	33.354	9.54E-04	-3.01E-03
3863126			132.474	33.030	-9.19E-05	1.84E-04
3863127			132.496	32.997	7.12E-04	-1.38E-04
3863130			132.528	32.938	-2.07E-04	8.73E-04
3863131			132.522	32.922	8.04E-04	1.19E-03
3863132			132.561	32.922	5.97E-04	-5.28E-04
3863133			132.580	32.929	-4.37E-04	6.89E-05
3863201		Hiuchi-nada	133.071	34.033	-3.13E-03	-5.15E-03
3863202			133.083	34.080	-5.35E-03	-6.09E-03
3863203			133.017	34.083	-5.09E-03	-6.27E-03
3863204			132.958	34.133	-4.73E-03	-5.33E-03
3863205			132.917	34.135	-5.38E-03	-5.70E-03
3960301	Kochi	Ashizurikaichuukouen	132.844	32.780	-2.88E-03	-9.28E-03
3960302			132.847	32.773	-3.66E-03	-9.44E-03
3960304			132.855	32.781	-4.10E-03	-8.41E-03

3960305			132.869	32.775	-3.90E-03	-8.10E-03
3960601		Sukumo Bay	132.705	32.907	1.25E-03	-2.92E-03
3960701			132.671	32.898	-2.41E-04	-5.74E-03
3960801		Nakato Coast	134.007	33.415	-4.16E-03	-1.41E-02
3960802			133.756	33.531	1.84E-04	-2.60E-03
3960901		Ashizuriuwakaikokuritsukouen	132.965	32.852	-2.95E-03	-7.63E-03
3960902			132.979	32.721	-4.99E-03	-1.08E-02
3960903			132.949	32.762	-4.66E-03	-8.39E-03
4160503	Saga	Imari Bay	129.821	33.316	2.47E-03	-1.70E-03
4260902	Nagasaki	Nagasaki Bay	129.849	32.721	1.38E-04	-3.45E-03
4261001			129.830	32.696	-7.47E-04	-2.62E-03
4261002			129.824	32.713	-1.14E-03	-3.03E-03
4261051			129.840	32.724	-1.05E-03	-4.55E-03
4261102		Haikiseto	129.753	33.139	-2.76E-04	-7.63E-03
4261253		Sasebo Bay	129.718	33.138	-1.55E-03	-4.83E-04
4261301			129.734	33.121	-1.83E-03	-4.80E-03
4261401		Omura Bay	129.794	33.035	-4.18E-03	-8.18E-03
4261404			129.788	33.079	-3.50E-03	-7.93E-03
4261405			129.864	33.057	-9.54E-04	-8.11E-03
4261407			129.921	32.955	-3.29E-03	-6.85E-03
4261408			129.920	32.937	-3.07E-03	-6.30E-03
4261409			129.946	32.900	-4.43E-03	-7.17E-03
4261412			129.957	32.869	-1.31E-03	-3.15E-03
4261413			129.865	32.852	-1.71E-03	-6.11E-03
4261415			129.842	32.846	-2.69E-03	-4.83E-03
4261417			129.749	33.017	-3.27E-03	-5.84E-03
4261501		Aba Bay	129.962	32.748	-1.21E-03	-2.71E-03
4261502			129.958	32.763	1.53E-03	-3.95E-03
4261551			129.974	32.761	-2.30E-05	-5.42E-03
4261601		Tsushima Coast	129.395	34.640	1.15E-03	8.27E-04
4261602			129.466	34.654	1.06E-03	-1.29E-03
4261604			129.302	34.301	9.88E-04	-1.24E-03
4261605			129.292	34.197	-4.83E-04	-1.38E-04
4261704		Iki Coast	129.756	33.810	-1.01E-02	-2.92E-03
4261801		Goshima Coast	129.109	32.986	-9.01E-03	-3.75E-03
4261802			129.056	32.980	-4.48E-03	-3.38E-03
4261804			129.031	32.892	-5.86E-03	-2.21E-03
4261805			129.061	32.846	-5.64E-03	-2.87E-03
4261904		Matsuura Coast	129.800	33.343	-3.71E-03	-9.88E-04
4262106		Seihikai Coast	129.638	32.938	-4.04E-03	-3.91E-03
4262109			129.813	32.656	-3.15E-03	-2.76E-03
4262111			129.816	32.683	-2.06E-03	-2.50E-03
4262201		Tacjobama Bay	129.785	32.586	-4.39E-03	-4.02E-03
4262203			129.918	32.705	-2.16E-03	-2.09E-03