

S2 Table. Time of sampling phytoplankton life stage investigated with surface field and remotely sensed chlorophyll.

DBO1	Station	Sample DOY	Surface Pheo	Surface Chl	Pheo Portion	RS Category
2013	SLIP-1	195	0.07	0.13	0.33	NaN
	SLIP-3	195	0.05	0.11	0.31	NaN
	SLIP-5	195	0.04	0.10	0.29	NaN
	SLIP-4	195	0.06	0.18	0.24	NaN
2014	SLIP-1	195	0.04	0.07	0.36	NB
	SLIP-2	195	0.05	0.12	0.29	NB
	SLIP-3	195	0.04	0.06	0.40	NaN
	SLIP-5	196	0.02	0.04	0.33	NaN
	SLIP-4	196	0.03	0.07	0.30	NaN
2015	SLIP-1	195	0.08	0.06	0.57	NaN
	SLIP-2	195	0.09	0.10	0.47	NaN
	SLIP-3	195	0.09	0.07	0.56	NaN
	SLIP-5	196	0.66	1.55	0.30	NB
	SLIP-4	196	0.06	0.01	0.86	NaN
2016	SLIP-1	194	0.05	0.16	0.23	EB
	SLIP-2	195	0.03	0.17	0.15	NaN
	SLIP-3	195	0.03	0.08	0.29	NB
	SLIP-5	195	0.04	0.14	0.20	NB
	SLIP-4	195	0.02	0.09	0.19	NaN
2017	SLIP-1	195	0.04	0.16	0.21	EB
	SLIP-2	195	0.07	0.25	0.21	EB
	SLIP-3	195	0.08	0.22	0.26	NaN
	SLIP-5	196	0.06	0.21	0.22	NB
	SLIP-4	196	0.04	0.08	0.33	NaN
2018	SLIP-1	197	0.10	0.27	0.27	NaN
	SLIP-2	197	0.14	0.30	0.32	NaN

	SLIP-3	197	0.12	0.21	0.35	NaN
	SLIP-5	198	0.19	0.36	0.34	NaN
	SLIP-4	198	0.21	0.37	0.36	NB
2019	SLIP-1	195	0.11	0.41	0.21	EB
	SLIP-2	195	0.20	0.82	0.19	EB
	SLIP-3	195	0.09	0.33	0.20	NaN
	SLIP-5	195	0.10	0.36	0.22	NB
	SLIP-4	195	0.06	0.20	0.23	NB

DBO2	Station	Sample DOY	Surface Pheo	Surface Chl	Pheo Portion	RS Category
2013	UTBS-5	196	0.08	0.13	0.38	NB
	UTBS-4	196	0.31	0.51	0.38	PB
	UTBS-2	196	0.27	0.36	0.43	EB
2014	BCL-6A	196	0.19	0.53	0.26	EB
	UTBS-5	197	0.80	0.61	0.57	PB
	UTBS-2	197	0.29	1.26	0.19	NaN
	UTBS-4	197	0.81	2.03	0.29	PB
	UTBS-1	197	0.54	1.43	0.27	EB
2015	BCL-6A	196	0.57	0.44	0.56	PB
	UTBS-5	196	0.76	0.57	0.57	EB
	UTBS-2	197	2.35	2.20	0.52	NB
	UTBS-4	197	1.24	0.92	0.57	NaN
	UTBS-1	197	1.21	1.19	0.50	NaN
2016	BCL-6A	195	0.10	0.20	0.33	NB
	BCL-6C	196	0.30	0.24	0.55	EB
	UTBS-5	196	0.12	0.33	0.27	EB
	UTBS-2	196	0.13	0.31	0.30	EB

	UTBS-2A	196	0.07	0.30	0.20	NaN
	DBO2.7	196	0.13	0.37	0.26	NaN
	UTBS-1	196	1.21	0.77	0.61	EB
	UTBS-4	197	0.07	0.30	0.19	EB
2017	BCL-6A	196	0.11	0.21	0.34	EB
	BCL-6C	196	0.19	0.81	0.19	NaN
	UTBS-5	197	0.24	0.49	0.33	EB
	UTBS-2	197	0.24	1.43	0.15	EB
	UTBS-2A	197	0.19	0.24	0.45	NaN
	DBO2.7	197	0.36	2.05	0.15	NaN
	UTBS-1	197	0.25	0.63	0.29	PB
2018	BCL-6A	198	0.12	0.25	0.33	NB
	BCL-6C	199	0.64	3.03	0.18	EB
	UTBS-5	199	0.38	1.41	0.21	EB
	UTBS-2	199	1.40	6.44	0.18	EB
	UTBS-2A	199	0.39	0.85	0.32	NaN
	DBO2.7	199	0.30	0.51	0.37	NaN
	UTBS-1	199	0.94	5.08	0.16	EB
UTBS-4	199	0.97	5.29	0.16	EB	
2019	BCL-6A	196	0.21	0.69	0.23	EB

Sampled surface chlorophyll, pheophytin, the associated portion of pheophytin relative to combined pheophytin and chlorophyll concentrations, and the classified life stage of the bloom according to satellite remotely sensed phenology at the DBO1 (top) and DBO2 (bottom) stations. For the remotely sensed life stage categories, NaN = Not enough cloud-free satellite observations available to resolve annual phenology, EB = Early Bloom, PB = Post Bloom, NB = No Bloom. Surface chlorophyll and pheophytin are in units $\mu\text{g/L}$.