

Supplementary Data

Table S1. Data of phytoplankton abundance of Figure 7 (Page 10, lines 196-198)

Season	Year	Phytoplankton abundance (10 <sup>4</sup> cells/m <sup>3</sup> )	Standard derivation of phytoplankton abundance	Diatom abundance (10 <sup>4</sup> cells/m <sup>3</sup> )	Standard derivation of diatom abundance	Dinoflagellate abundance (10 <sup>4</sup> cells/m <sup>3</sup> )	Standard derivation of dinoflagellate abundance	Ratio of dinoflagellates to diatoms	Reference
	1959	56.51	249.28	56.09	247.54	0.42	1.74		Yang, 2016
	1959-1960	79.86							Fu et al., 2012
	1984-1985	31.25							Fu et al., 2012
	1986	5.79		4.88		0.91		3.27	Luan et al., 2020
	1998	1.29		0.87		0.42		0.52	Luan et al., 2020
spring	2001-2002	781.25							Fu et al., 2012
	2001	147.11	372.94	145.42	372.44	1.69	2.92		Yang, 2016
	2005	668.4							Xu., 2007
	2005	134.41		133.49		0.91		0.02	Luan et al., 2020
	2006-2007	277.78							Fu et al., 2012
	2011	270.00	660.00	268.00	657.00	1.40	3.10		Jiang et al., 2020

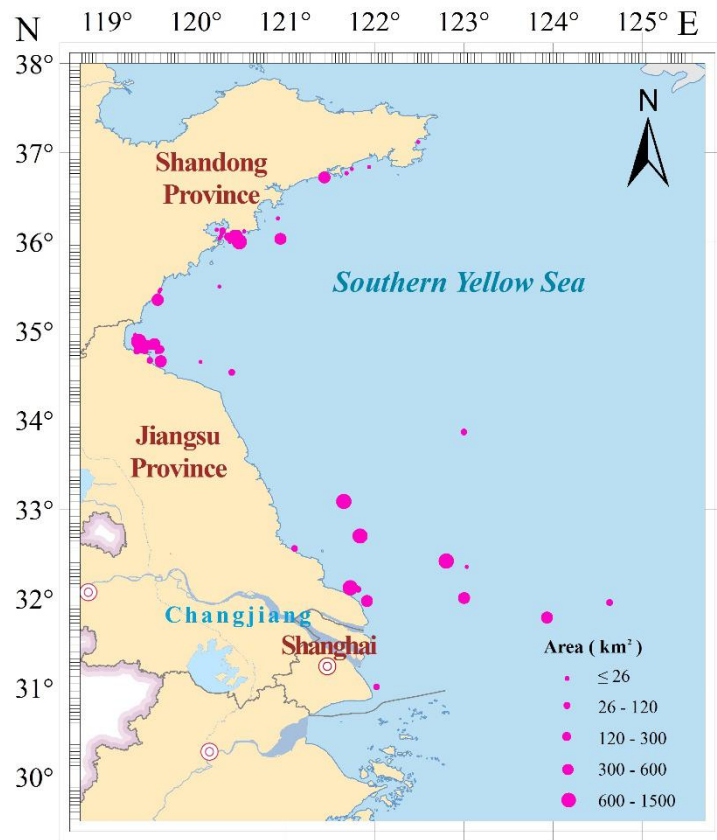
Season	Year	Phytoplankton abundance (10 <sup>4</sup> cells/m <sup>3</sup> )	Standard derivation of phytoplankton abundance	Diatom abundance (10 <sup>4</sup> cells/m <sup>3</sup> )	Standard derivation of diatom abundance	Dinoflagellate abundance (10 <sup>4</sup> cells/m <sup>3</sup> )	Standard derivation of dinoflagellate abundance	Ratio of dinoflagellates to diatoms	Reference
	2015	51.45		45.90		5.54		0.32	Luan et al., 2020
	1959	2.02	3.31						Yang, 2016
	1959-1960	357.64							Fu et al., 2012
	1984-1985	260.42							Fu et al., 2012
	1985	18.65		11.77		6.88		7.84	Luan et al., 2020
	2000	28.30		26.33		1.96		6.65	Luan et al., 2020
summer	2002	6.26	11.86						Yang, 2016
	2003	27.83	77.75						Yang, 2016
	2006-2007	63750.00							Fu et al., 2012
	2007	707.94		700.08		7.86		4.55	Luan et al., 2020
	2008	718.75							Fu et al., 2012
	2011	947.00	2393.00	843.00	2270.00	73.00	174.00		Jiang et al., 2020
	2012	6.16	5.05						Yang, 2016
	2013	18.73	46.68						Yang, 2016

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	2014	27.01		7.43		19.58		18.54	Luan et al., 2020
	1958	63.90	146.48	63.69	146.18	0.21	0.36		Yang, 2016
	1959-1960	24.31							Fu et al., 2012
	1984-1985	114.58							Fu et al., 2012
	1985-1986	135.42							Fu et al., 2012
	1985	128.62		127.63		0.98		0.11	Luan et al., 2020
autumn	2000	8.36		7.94		0.42		0.32	Luan et al., 2020
	2000	9.82	17.28						Yang, 2016
	2001-2002	34.72							Fu et al., 2012
	2006	90.03		86.31		3.72		2.01	Luan et al., 2020
	2006-2007	225.69							Fu et al., 2012
	2008	3.47							Fu et al., 2012
	2011	18.07	60.27	17.21	59.44	0.86	1.16		Yang, 2016

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	2011	130.00	378.00	38.00	69.00	7.80	29.00		Jiang et al., 2020
	2012	28.90	85.61	28.18	85.03	0.73	1.15		Yang, 2016
	2014	68.81		66.99		1.82		4.64	Luan et al., 2020
	1959-1960	444.44							Fu et al., 2012
	1984-1985	586.81							Fu et al., 2012
	1986	5.79		4.88		0.91		0.63	Luan et al., 2020
	1999	10.93		10.65		0.28		0.07	Luan et al., 2020
winter	2001-2002	13.89							Fu et al., 2012
	2006-2007	90.28							Fu et al., 2012
	2008	23.79		22.53		1.26		0.00	Luan et al., 2020
	2011	88.00	296.00	70.00	220.00	1.40	3.20		Jiang et al., 2020
	2015	64.95		64.39		0.56		0.09	Luan et al.,

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									<a href="#">2020</a>

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**Fig. S1. Map of red tide events in SYS from 1990-2019 (Page 15, line 239)**