

Supplementary material:

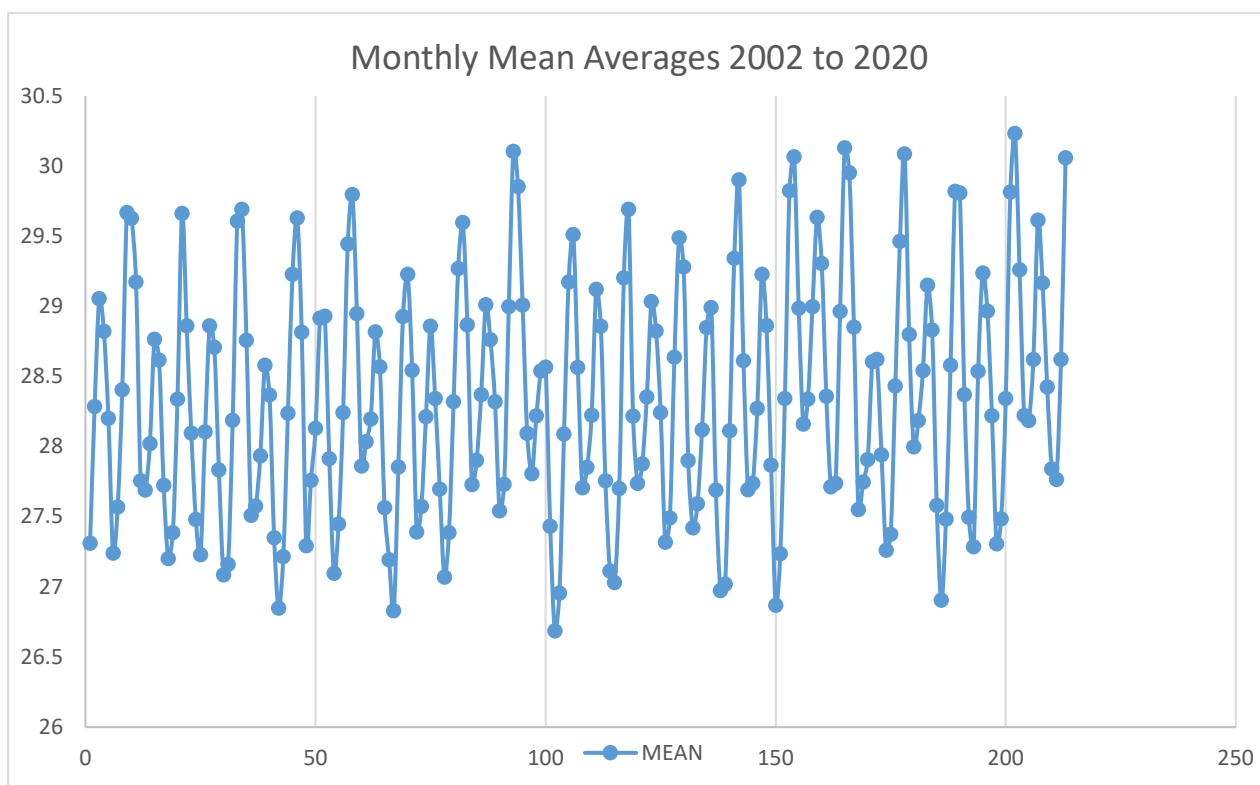


Figure S1. Monthly SST mean values

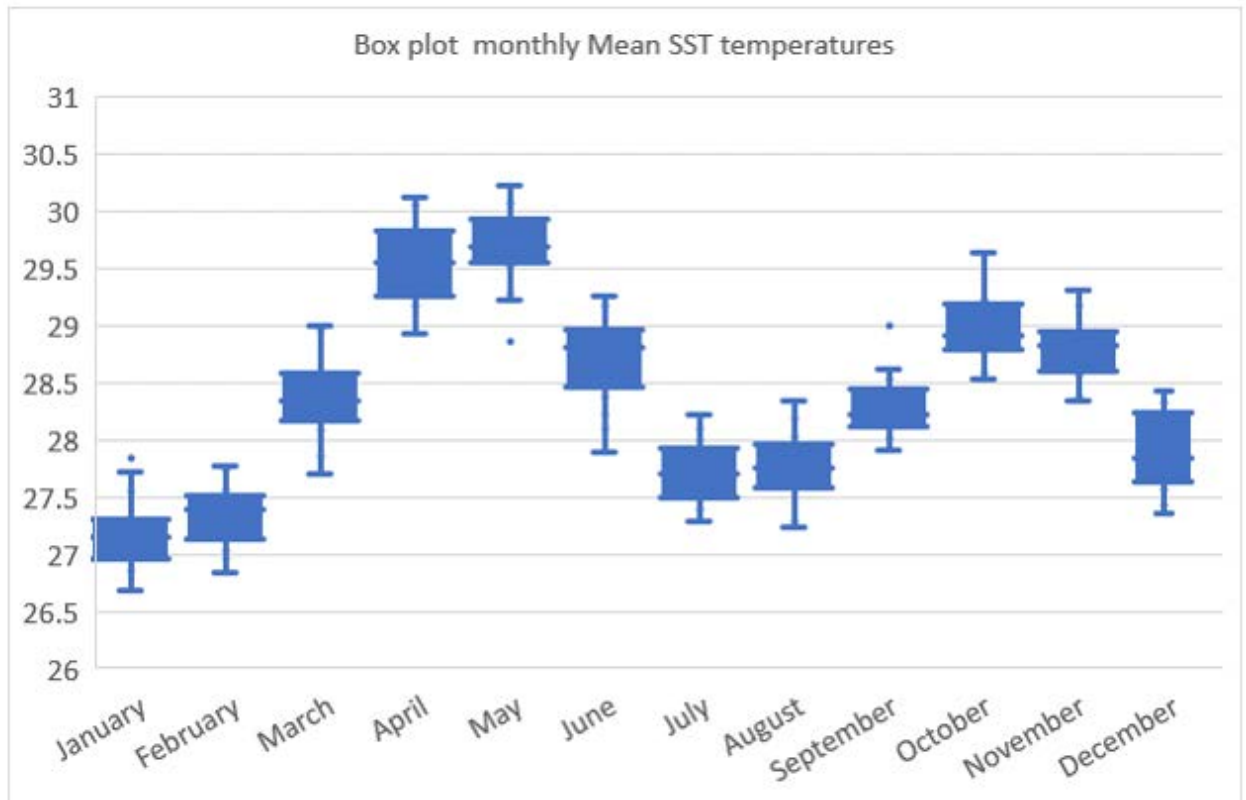
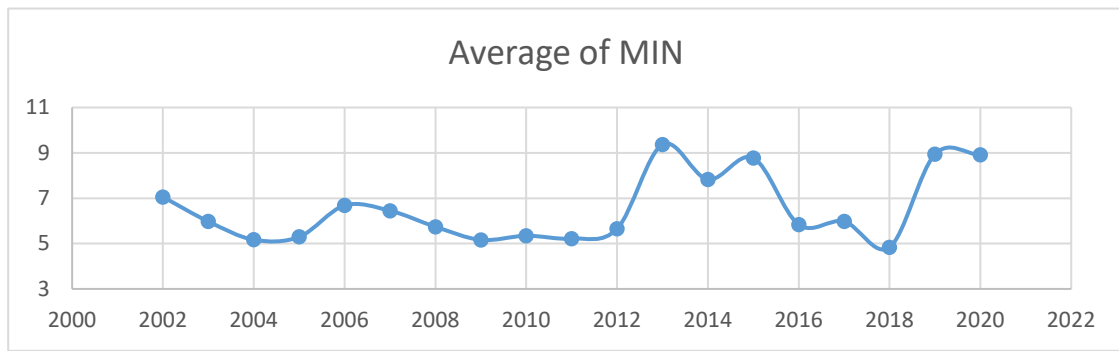
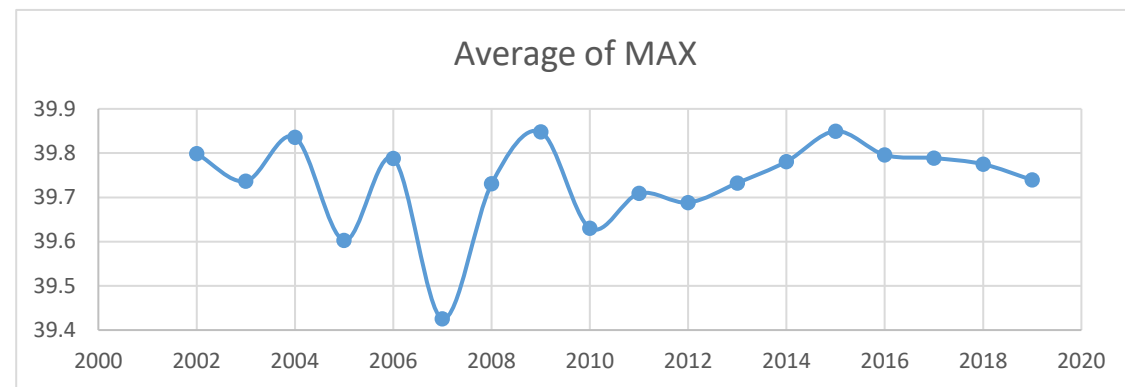


Figure S2. Inter-Annual variation of 19 years statistics, (Box plots of min, max, mean and range values) of sea surface temperature in the north Indian Ocean

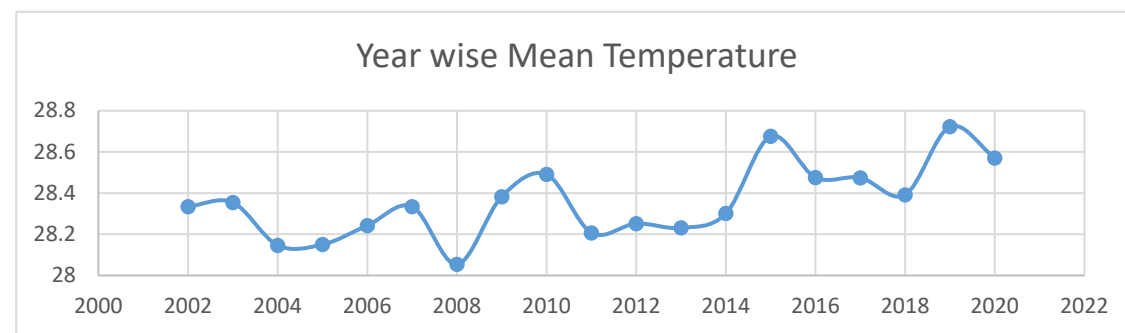
(a)



(b)



(c)



(d)

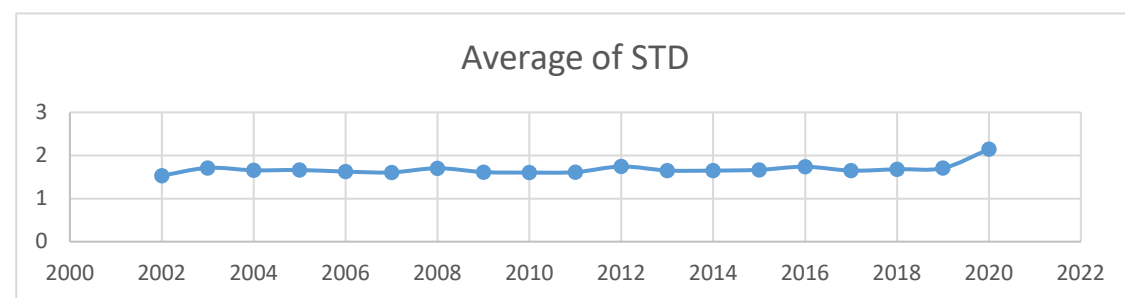


Figure S3. Yearly variation with Min, Max, Mean and St Deviation 2002 to 2022

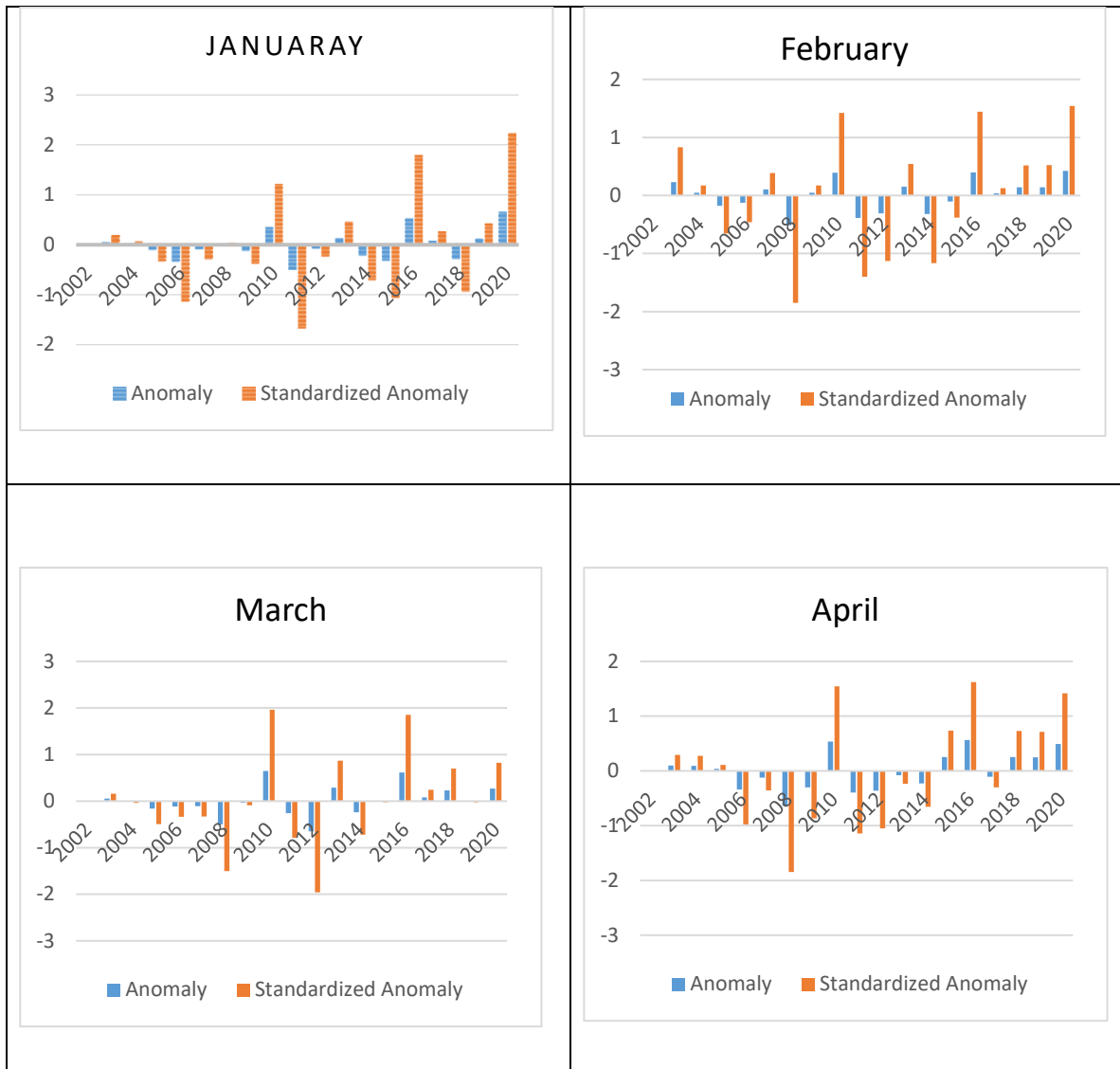


Figure S4. Monthly Comparison of SST Anomaly and SST Normalized Anomaly January to April

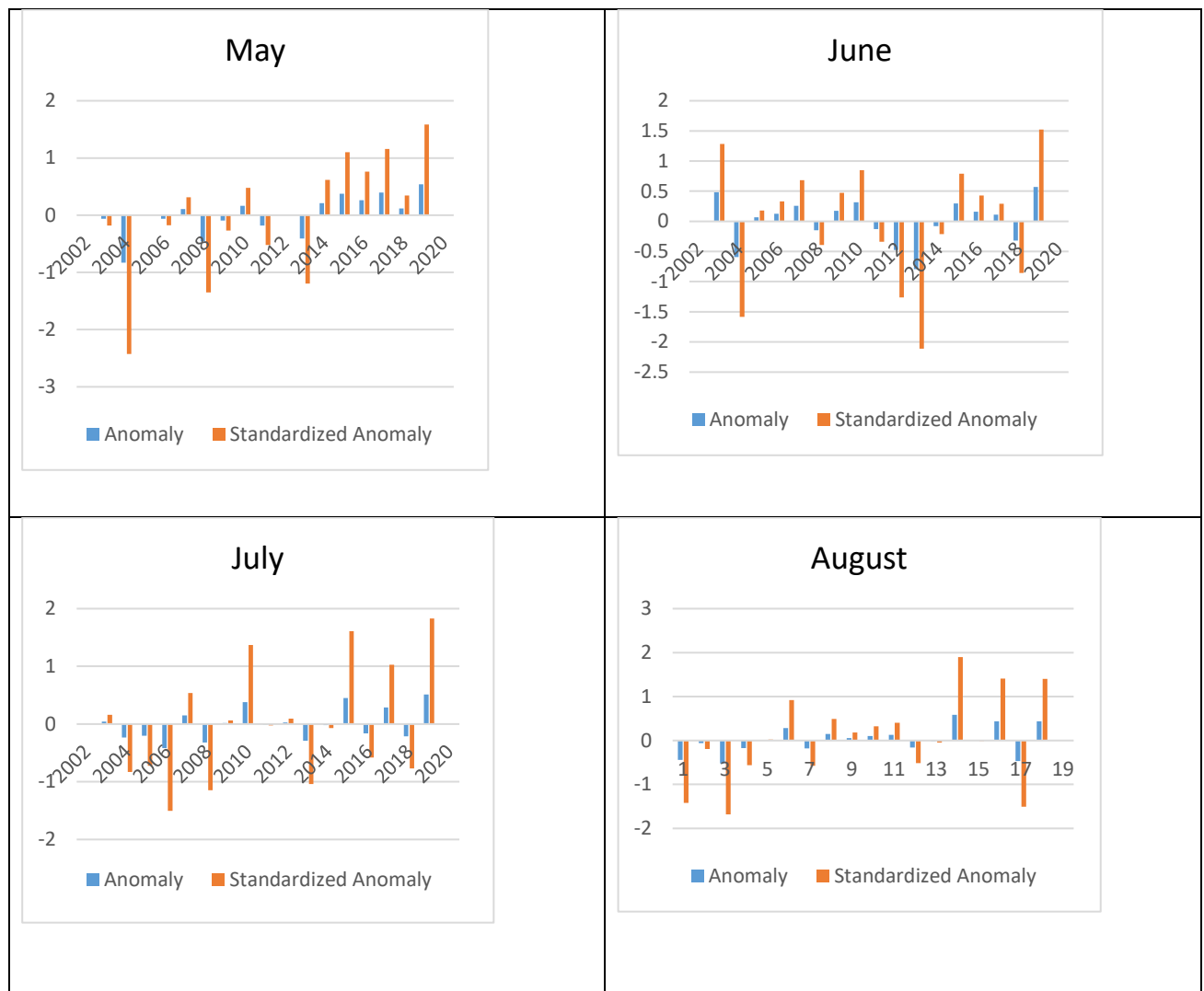


Figure S5. Monthly Comparison of SST Anomaly and SST Normalized Anomaly May to August

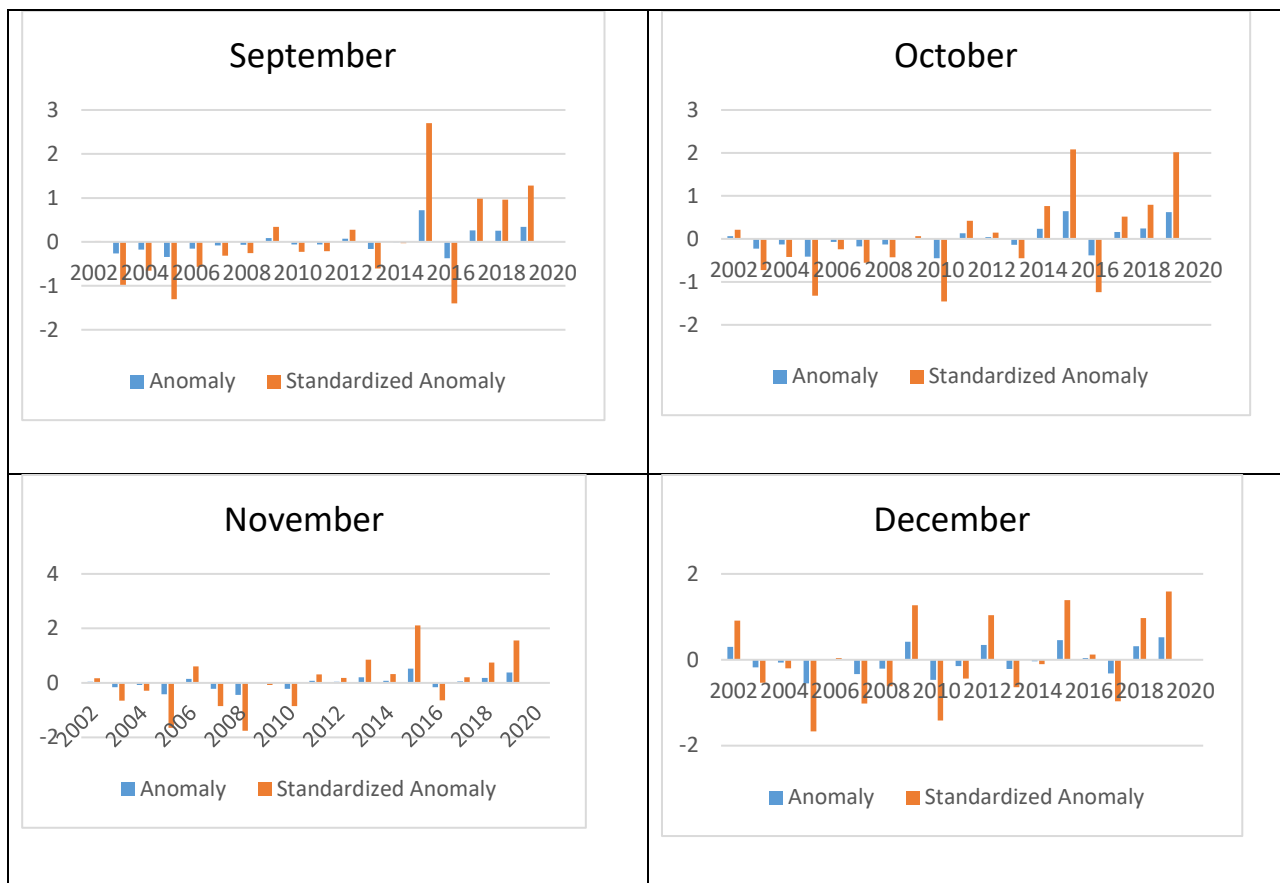


Figure S6. Monthly Comparison of SST Anomaly and SST Normalized Anomaly
September to December

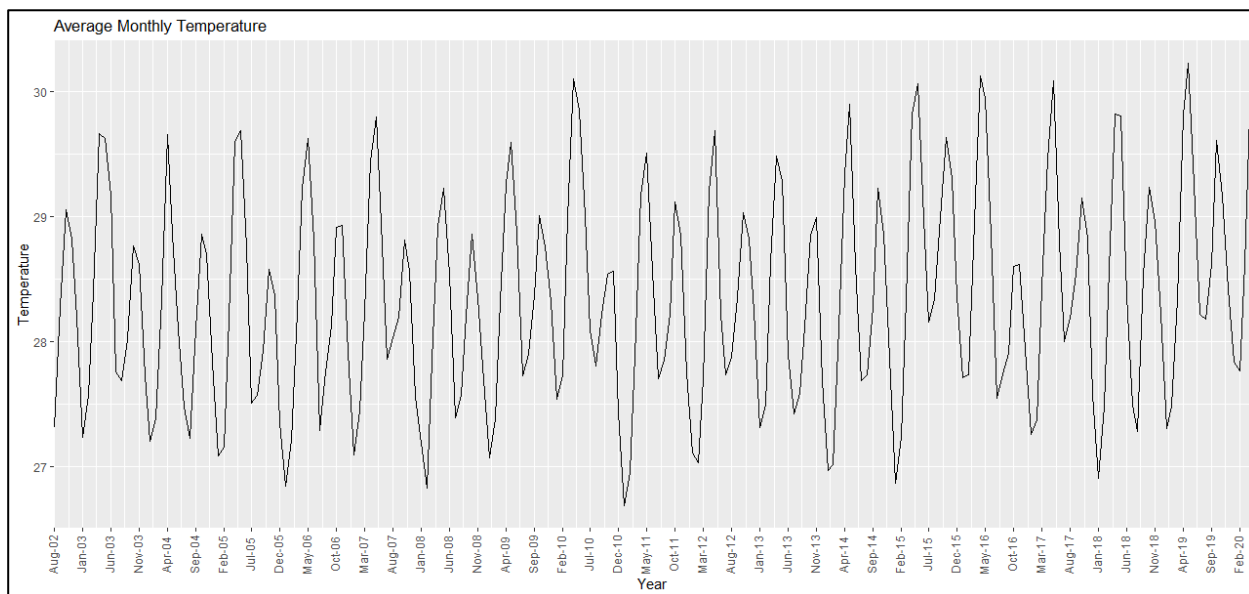


Figure S7. Average monthly temperature plot with coding

Table S1. Monthly Mean SST													
Year	Jan uar y	Febr uary	Mar ch	April	May	June	July	August	Sept embe r	Octo ber	Nove mber	Decem ber	Mean
2002								27.31	28.2 9	29.0 6	28.82	28.20	28.33
2003	27.2 4	27.57	28.4 0	29.67	29.63	29.17	27.76	27.69	28.0 2	28.7 7	28.62	27.72	28.35
2004	27.2 0	27.39	28.3 4	29.66	28.86	28.10	27.48	27.23	28.1 1	28.8 6	28.71	27.83	28.15
2005	27.0 8	27.16	28.1 9	29.61	29.69	28.76	27.51	27.58	27.9 3	28.5 8	28.37	27.35	28.15
2006	26.8 5	27.21	28.2 4	29.23	29.63	28.81	27.29	27.76	28.1 3	28.9 2	28.93	27.91	28.24
2007	27.1 0	27.45	28.2 4	29.45	29.80	28.95	27.86	28.03	28.2 0	28.8 2	28.57	27.56	28.33
2008	27.1 9	26.83	27.8 5	28.93	29.23	28.54	27.39	27.57	28.2 1	28.8 6	28.34	27.70	28.05
2009	27.0 7	27.39	28.3 2	29.27	29.60	28.87	27.73	27.90	28.3 7	29.0 1	28.76	28.32	28.38
2010	27.5 4	27.73	29.0 0	30.10	29.85	29.01	28.09	27.81	28.2 2	28.5 4	28.57	27.43	28.49
2011	26.6 9	26.95	28.0 9	29.17	29.51	28.56	27.71	27.85	28.2 2	29.1 2	28.86	27.76	28.21
2012	27.1 1	27.03	27.7 0	29.20	29.69	28.22	27.74	27.88	28.3 5	29.0 3	28.83	28.24	28.25
2013	27.3 2	27.49	28.6 4	29.49	29.28	27.90	27.42	27.59	28.1 2	28.8 5	28.99	27.69	28.23
2014	26.9 7	27.02	28.1 1	29.34	29.90	28.61	27.69	27.74	28.2 7	29.2 3	28.86	27.87	28.30
2015	26.8 7	27.24	28.3 4	29.82	30.07	28.99	28.16	28.34	29.0 0	29.6 3	29.31	28.36	28.68
2016	27.7 1	27.74	28.9 6	30.13	29.95	28.85	27.55	27.75	27.9 1	28.6 1	28.62	27.94	28.48
2017	27.2 6	27.38	28.4 3	29.46	30.09	28.80	28.00 38	28.19	28.5 4	29.1 5	28.83	27.58	28.48
2018	26.9 1	27.48	28.5 8	29.82	29.81	28.37	27.50	27.28	28.5 4	29.2 4	28.97	28.22	28.39

2019	27.3 1	27.48	28.3 4	29.82	30.23	29.26	28.22	28.18	28.6 2	29.6 1	29.17	28.42	28.72
2020	27.8 4	27.76	28.6 2	30.06	30.27	29.37	28.75	28.14	28.8 0	29.2 3	28.88	28.05	28.81
2021	27.1 4	27.35	28.6 4	29.80	29.77	28.67	28.13	27.98	28.4 2	28.9 1	28.59	28.01	28.45
2022	27.4 5	27.36	28.2 7										27.69
Average	27.1 9	27.35	28.3 7	29.58	29.73	28.73	27.79	27.79	28.3 1	29.0 0	28.78	27.91	28.34
Total of 29 deg +			1.00	19	18	4			1	8	2		

Table S2. Warmer months during study period August 2002
to March 2022.

Month	Years	Numbers
January	2009	1
March	2004, 2017	2
May	2009, 2013, 2017, 2018	4
June	2006, 2010, 2019	3
September	2002, 2004, 2012, 2014	4
October	2013	1
November	2016	1
December	2008, 2013, 2016	3

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Table S3: Hotter months MAX temperature near 40 °C		
Month	Numbers	Mean above 29 °C in Years
March	1	2010
April	18	2003, 2004, 2005, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020,2021
May	18	2003, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020,2021
June	4	2003, 2010, 2019,2020
September	1	2015
October	9	2002, 2008, 2014, 2015, 2014, 2015, 2017, 2018, 2019, 2020
November	2	2015, 2019
Total	53/236	22.45% are warmer months above 29 °C