Report Title

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a, b, c, d, e, f, g, h

This version was compiled on June 1, 2025

executive summary

enso | great barrier reef | gbr | ocean temperature

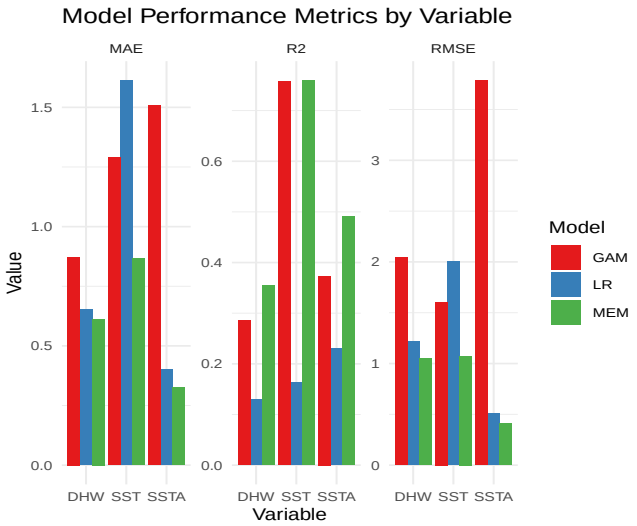
Formatting stuff

if (Fabricius, 2000), use (Fabricius, 2000)
if (Kayanne, 2016), use (Kayanne, 2016)
(refer to **Appendix Fig.x.** for <>)
(refer to **Fig.x.**)
#

Introduction

Methods

Results



Discussion

Contributions

Charley Johnson

Chengxi Duan

Fiona Li Finding and collating scientific literature over the semester to help develop the research question. Editing and formatting both the report and the presentation slides/script. Presented the introduction, background and aims for the presentation. Worked on the executive summary, background and aims. Assisted Oscar, Charley and Imane with the discussion.

Hussain Karimi

Imane Lattab

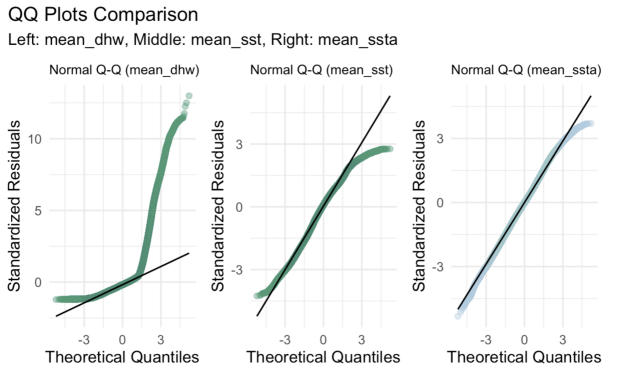
Kunlei Zhang

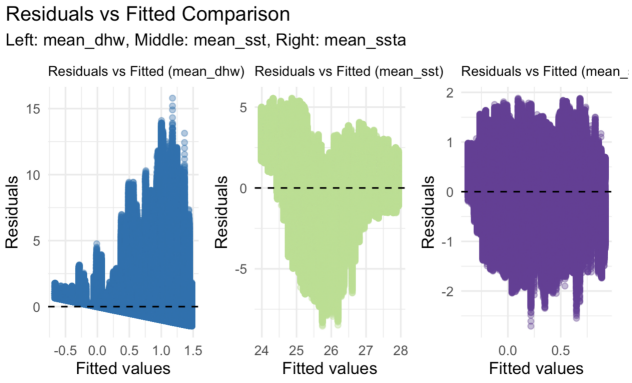
Oscar Lo Lu

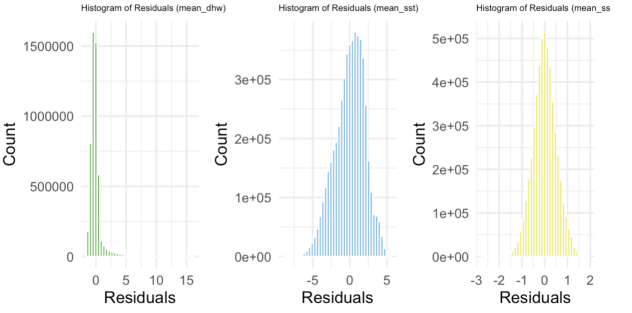
Tingzhao Dai

Appendix

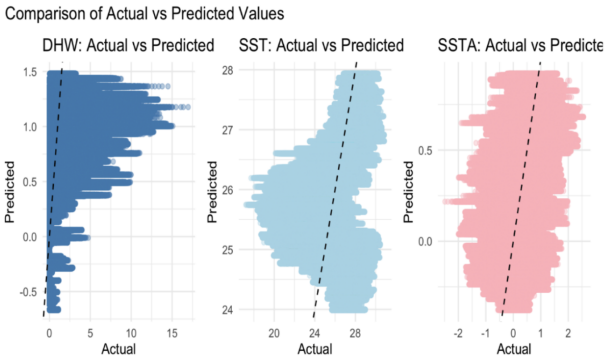
Appendix: V: Linear Regression Assumption Checking.







Appendix W: Linear Regression Predicted vs Actual.



Appendix X: Global GAM Model Summaries.

Table: Smooth Terms for GAM (DHW)

edf	F	p.value	term
6.867	36.004	0.000	s(soi_anomaly)
8.905	66.803	0.000	s(year)
8.177	161.333	0.000	s(month)
1.218	0.733	0.344	ti(soi_anomaly):shelfI
1.001	1.331	0.249	ti(soi_anomaly):shelfM
1.000	1.349	0.246	ti(soi_anomaly):shelfO
15.675	121.842	0.000	ti(soi_anomaly,year)
76.393	36.669	0.000	ti(soi_anomaly,month)

Table: Smooth Terms for GAM (SST)

edf	F	p.value	term
6.966	23.320	0.000	s(soi_anomaly)
8.957	120.096	0.000	s(year)
9.598	263.824	0.000	s(month)
1.002	2.561	0.109	ti(soi_anomaly):shelfI
1.002	2.353	0.125	ti(soi_anomaly):shelfM
3.561	16.385	0.000	ti(soi_anomaly):shelfO
14.481	19.844	0.000	ti(soi_anomaly,year)
60.950	14.057	0.000	ti(soi_anomaly,month)

Table: Smooth Terms for GAM (SSTA)

edf	F	p.value	term
7.419	113.082	0.000	s(soi_anomaly)
8.985	405.180	0.000	s(year)
9.775	139.813	0.000	s(month)
2.810	5.806	0.000	ti(soi_anomaly):shelfI
1.000	11.492	0.001	ti(soi_anomaly):shelfM
1.147	8.409	0.002	ti(soi_anomaly):shelfO
15.780	66.586	0.000	ti(soi_anomaly,year)

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| 89.329| 122.515|   0.000|ti(soi_anomaly,month)   |
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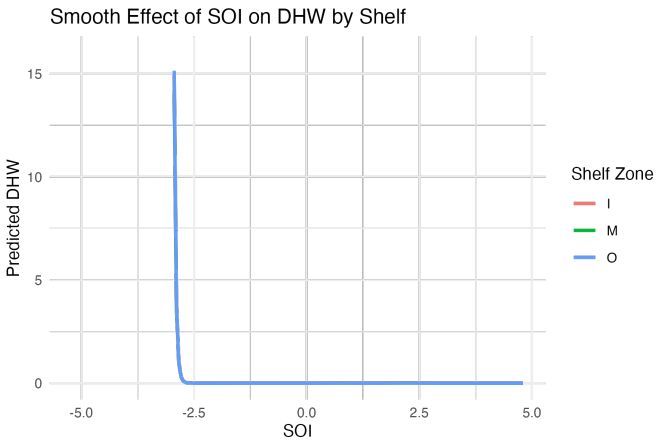
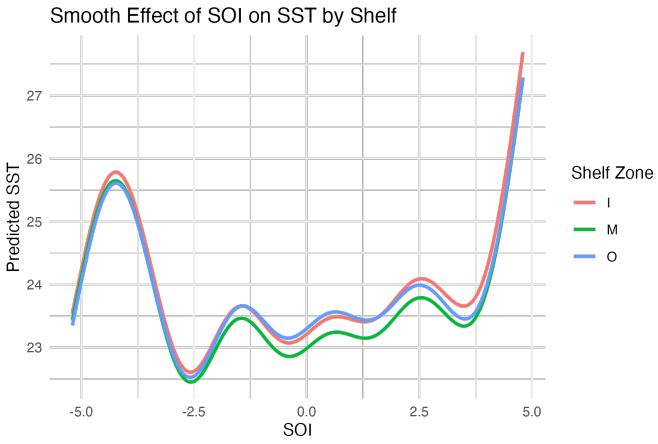
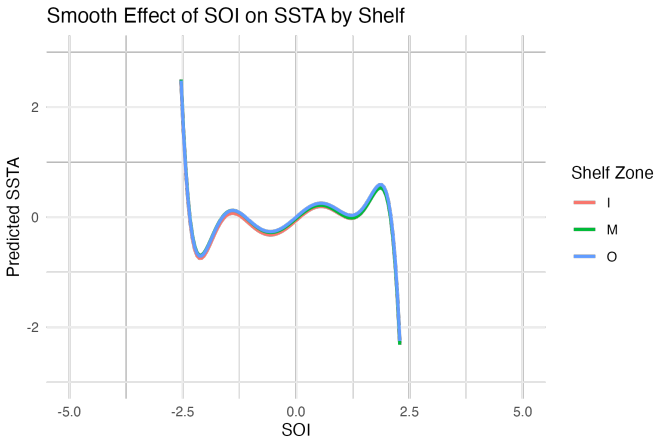
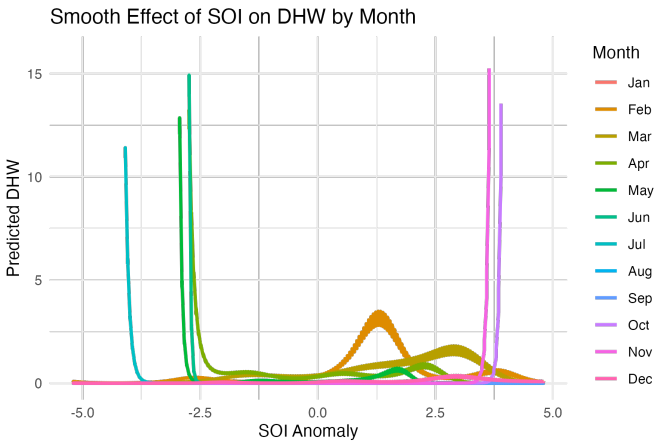
Appendix Y: Global GAM 'SOI' Smoothed Functions by 'Shelf'.

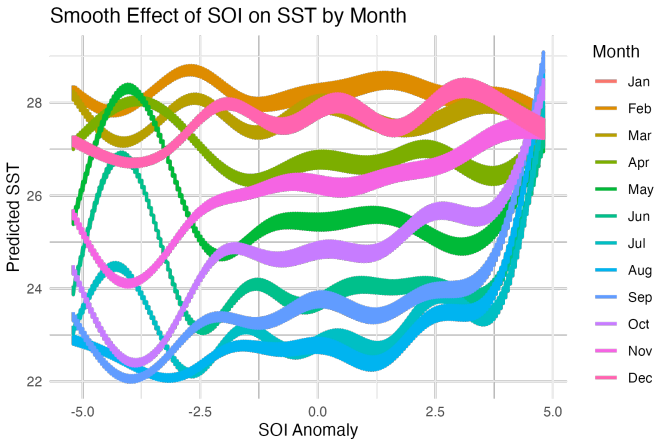


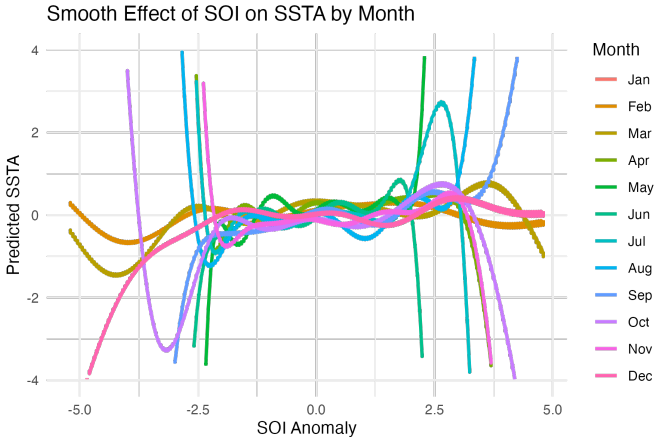




Appendix Z: Global GAM 'SOI' Smoothed Functions by 'Month'.







References

Fabricius K (2000). "Biodiversity on the Great Barrier Reef: Large-Scale Patterns and Turbidity-Related Local Loss of Soft Coral Taxa." In *CRC Press eBooks*, pp. 147–164. CRC Press. doi:10.1201/9781420041675-14. URL https://doi.org/10.1201/9781420041675-14.

Kayanne H (2016). "Validation of degree heating weeks as a coral bleaching index in the northwestern Pacific." *Coral Reefs*, **36**(1), 63–70. doi:10.1007/s00338-016-1524-y. URL https://doi.org/10.1007/s00338-016-1524-y.