PACIFIC METEOROLOGICAL COUNCIL

Ocean temperature, Coral Bleaching and Sea level

[Zulfikar Begg (SPC), John Marra (NOAA) and Grant Smith (BoM]

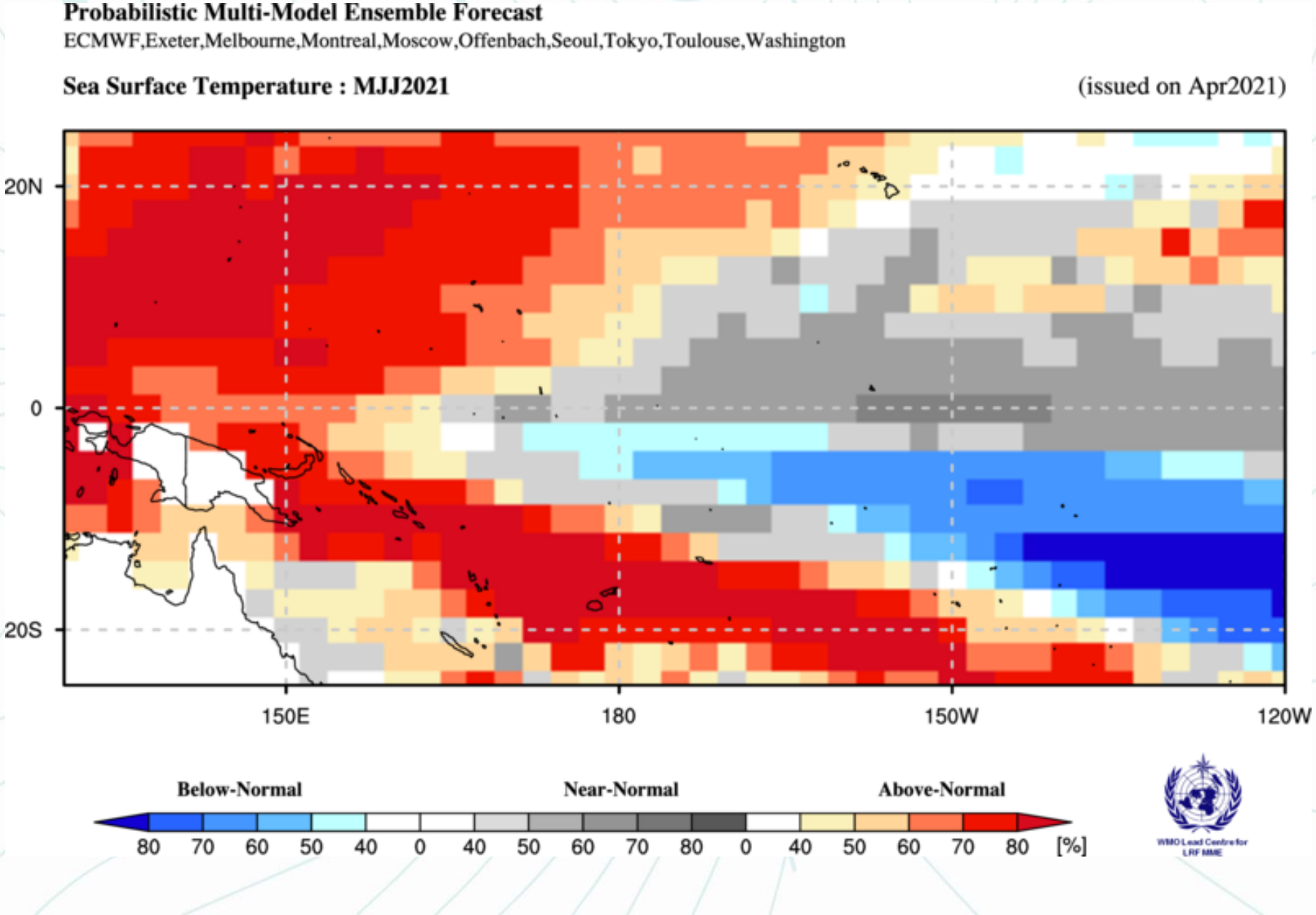
WORLD METEOROLOGICAL ORGANIZATION
Australian Government Department of Foreign Affairs and Trade Bureau of Meteorology
CSIRO
NOAA
APCC
NIWA Taihoro Nukurangi
SPC Secretariat of the Pacific Community
SPREP Secretariat of the Pacific Regional Environment Programme
10th Pacific Islands Conference NATURE CONSERVATION AND PROTECTED AREAS

PACIFIC METEOROLOGICAL COUNCIL

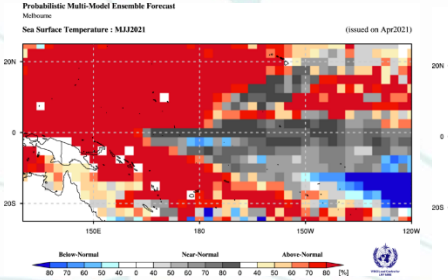
Outline of Presentation

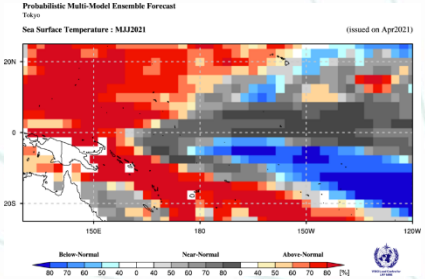
- WMO LRFMME SST
- SLA/Tides
- Coral Bleaching
- Fisheries convergence zone
- Key messages

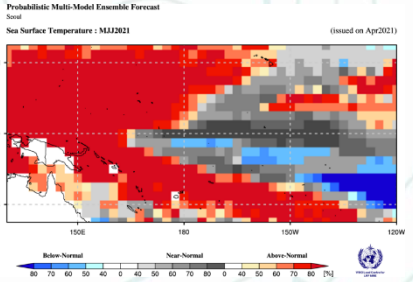
WMO-MME- 3 Month SST

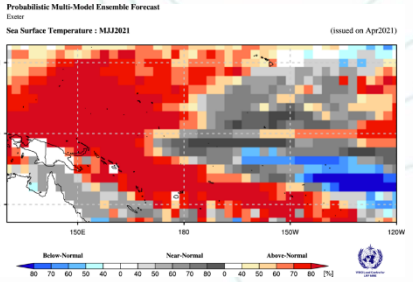


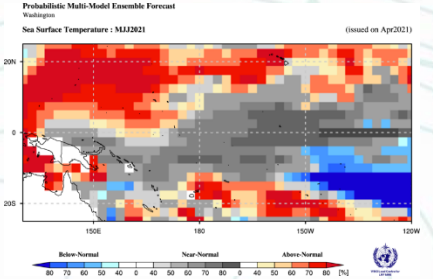
Individual Model –SST: 3 months

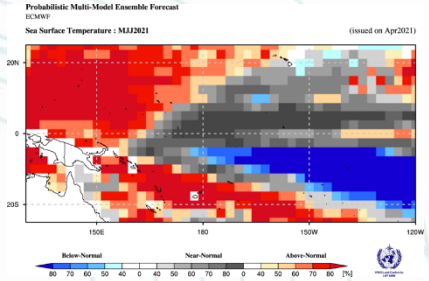


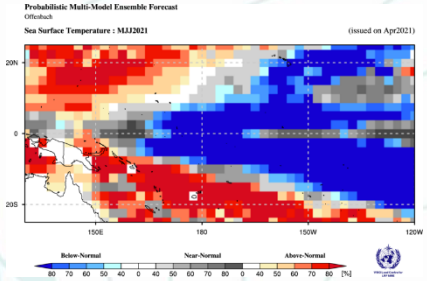


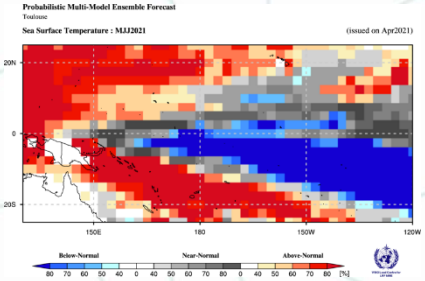


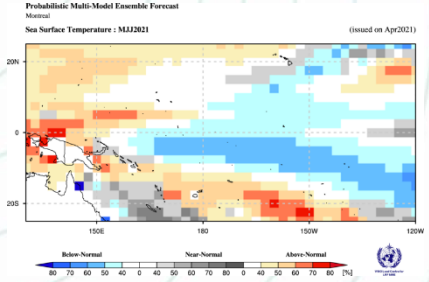


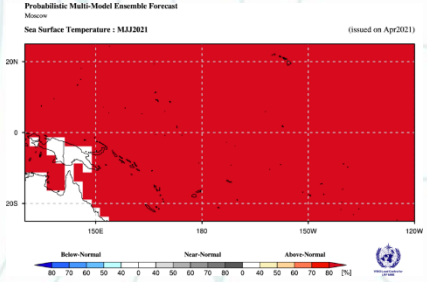




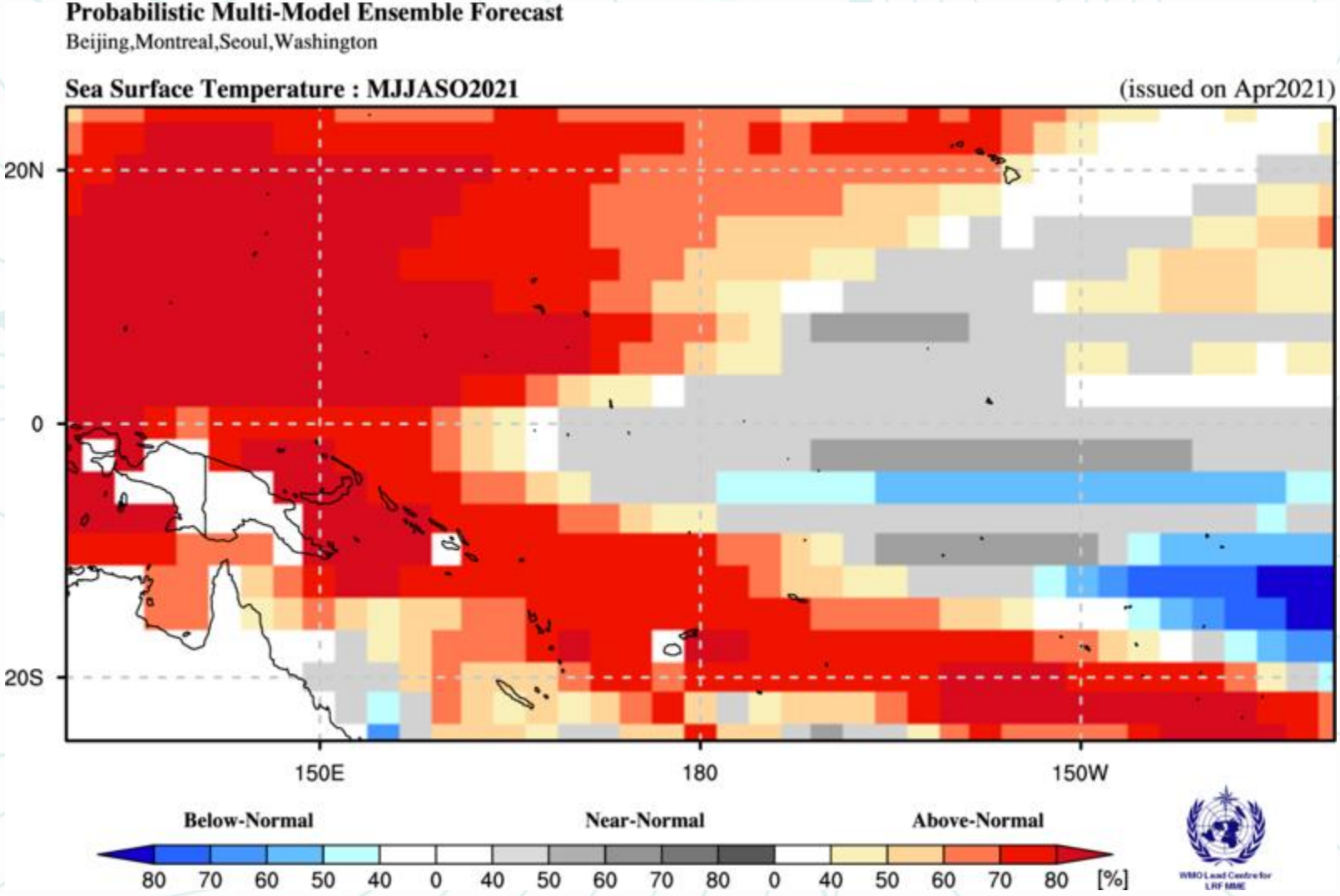




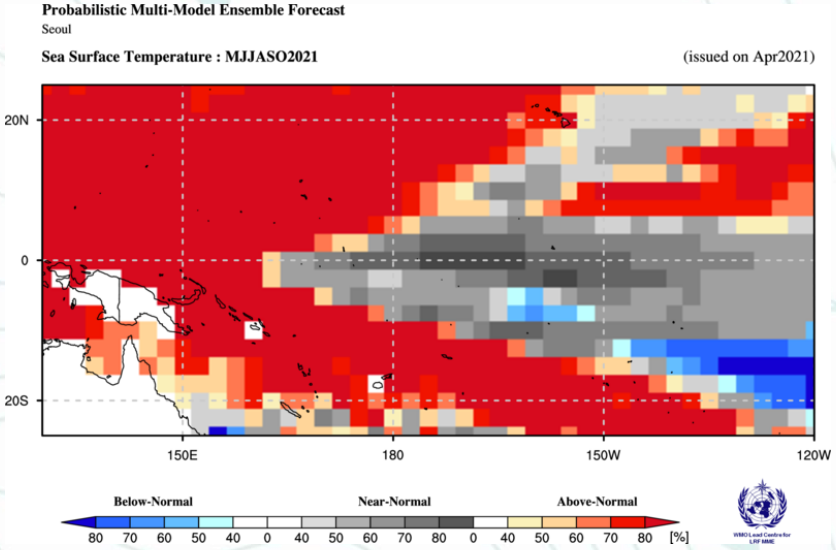


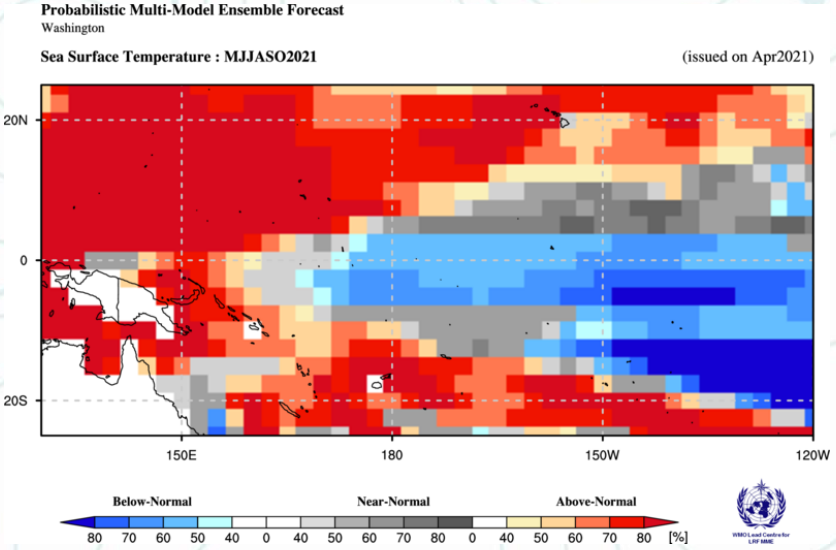


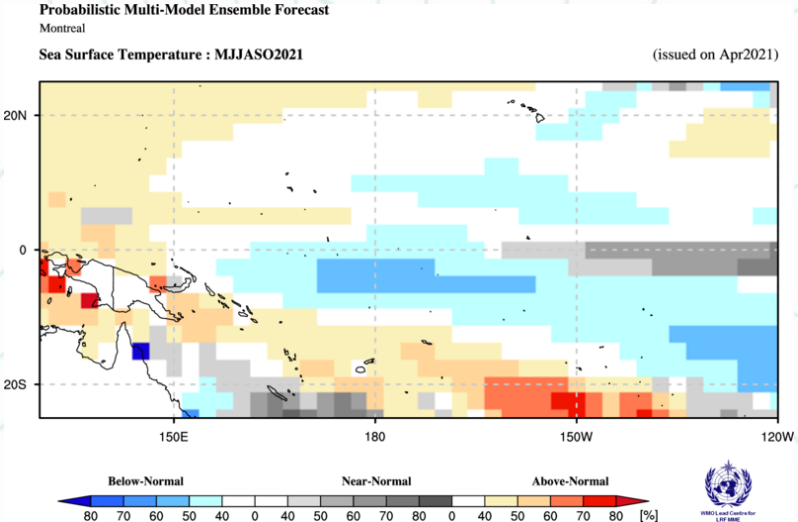
WMO-MME- 6 Month SST



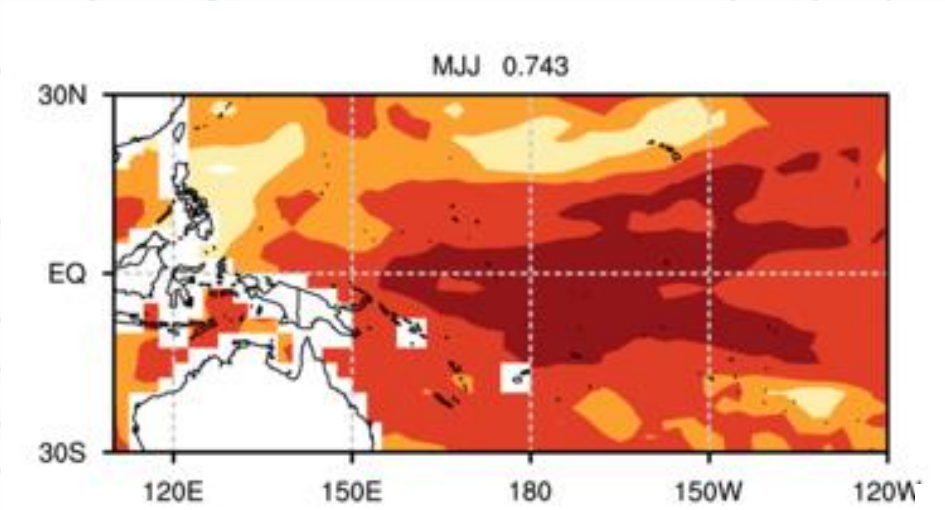
Individual Model –SST: 6 months







Skill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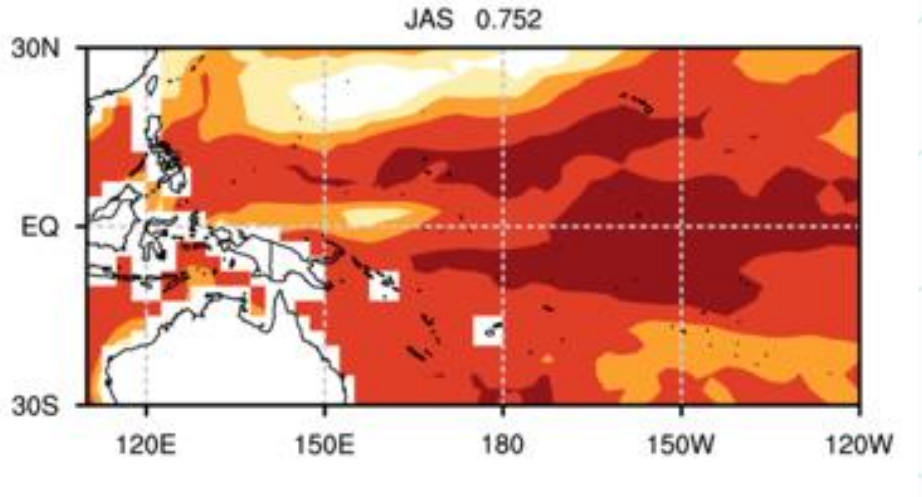
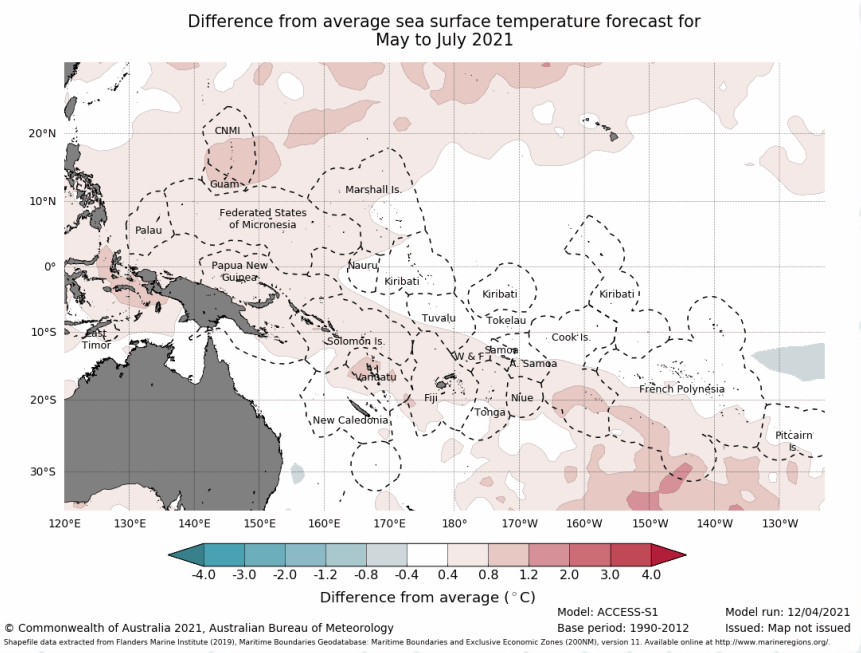
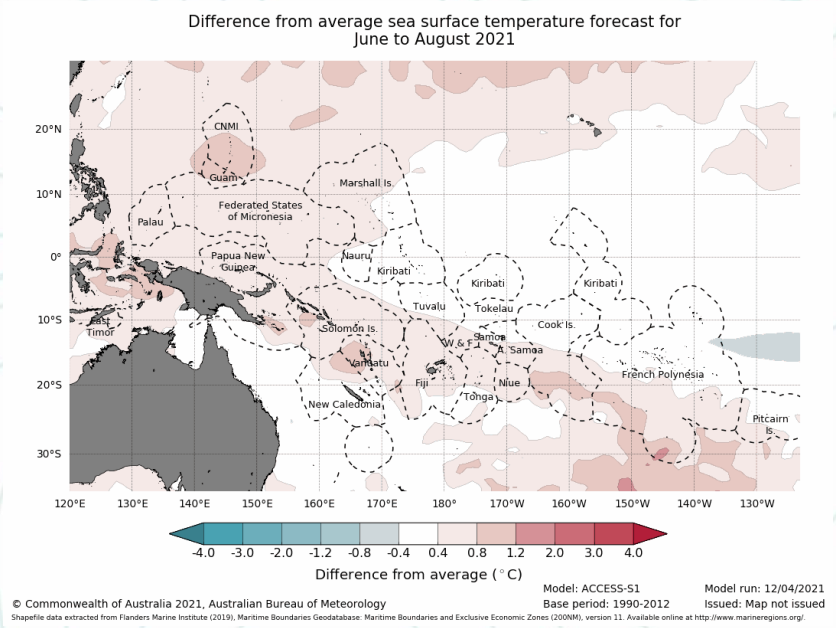
30N
EQ
30S
120E
150E
180
150W
120W


-0.9
-0.7
-0.5
-0.2
0.2
0.5
0.7
0.9


JAS 0.752
30N
EQ
30S
120E
150E
180
150W
120W

ACCESS-S: SST Anomalies





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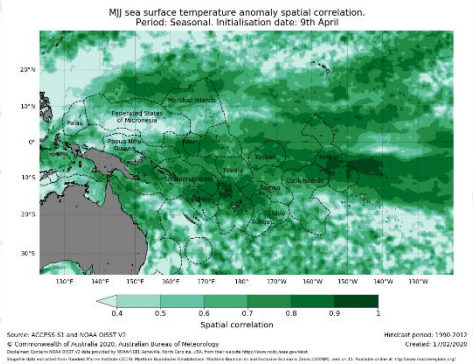
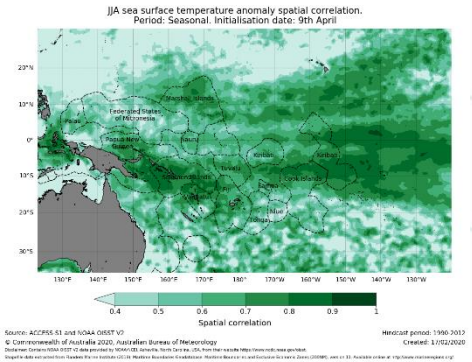
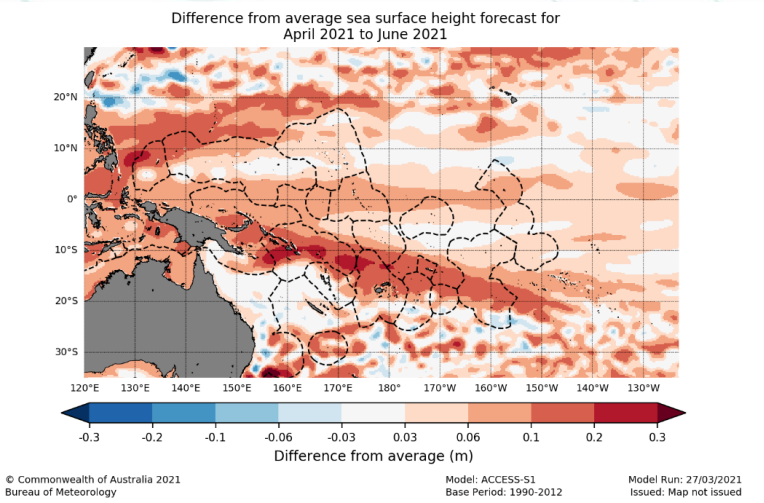
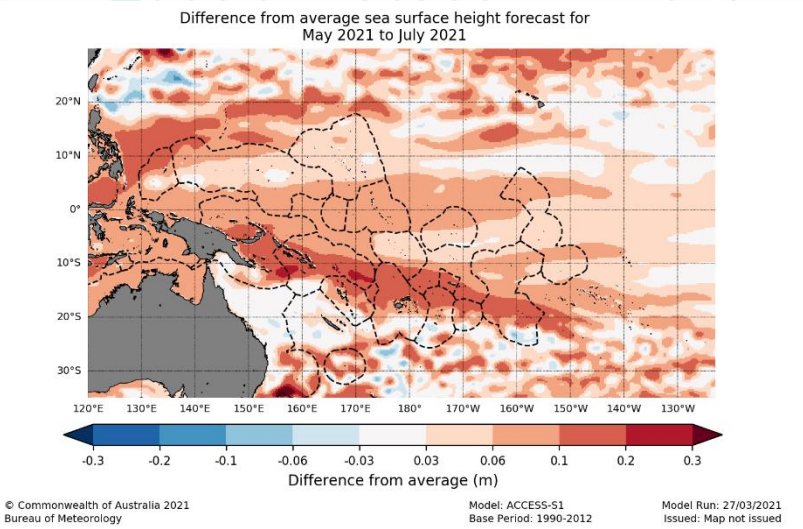




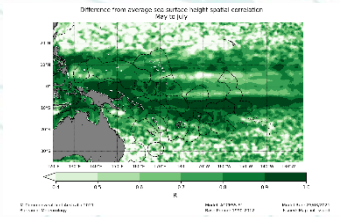
Sea Level Anomaly

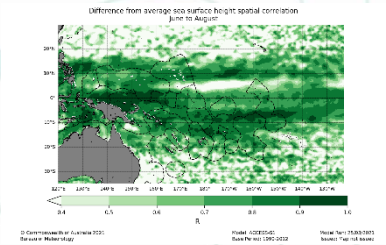
ACCESS-S1



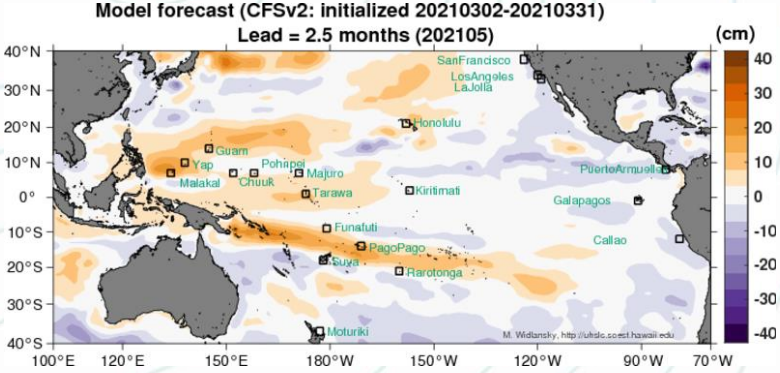


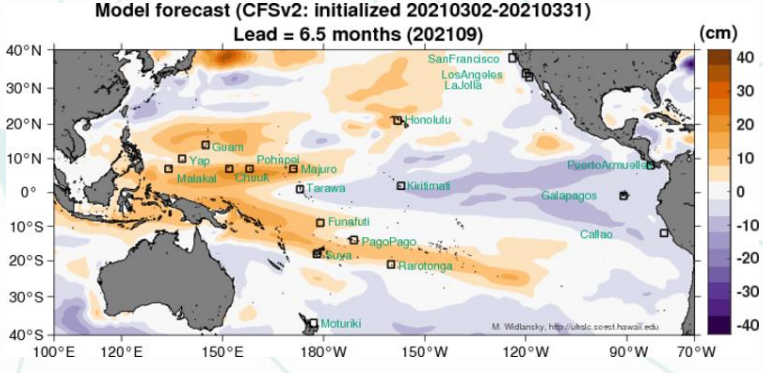
Skill





NOAA





Highest Tides

Port Moresby

10 highest tides for 2021

Date	Time	Height (m)
28-Mar	8:46	2.77
23-Jul	21:21	2.77
2-Oct	8:48	2.76
13-Jan	9:40	2.76
24-Jun	21:30	2.76
12-Jan	8:58	2.75
25-Jun	22:20	2.75

Honiara

10 highest tides for 2021

Date	Time	Height (m)
1-May	5:12	1.00
2-May	5:29	0.99
6-Dec	16:00	0.99
7-Dec	16:25	0.99
29-May	4:15	0.98
30-Apr	4:58	0.98

Neiafu

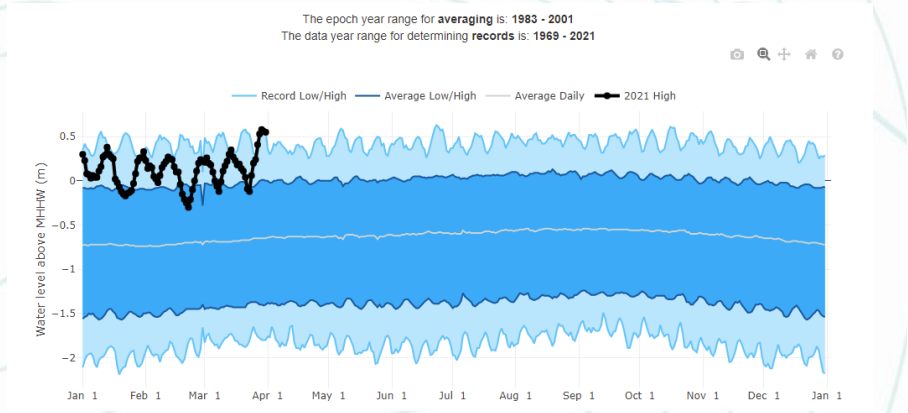
10 highest tides for 2021

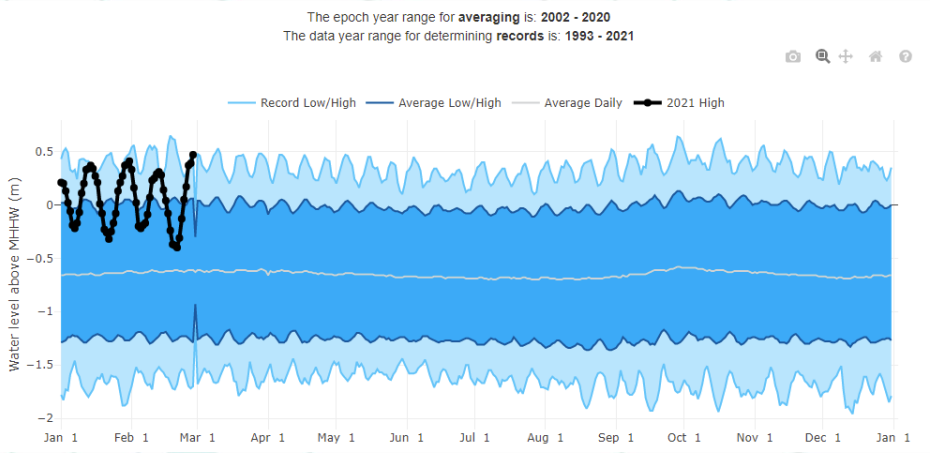
Date	Time	Height (m)
5-Dec	19:42	1.51
29-April	8:33	1.51
27-May	7:17	1.50
28-Apr	7:40	1.50
28-May	8:13	1.50
6-Dec	20:38	1.49
4-Dec	18:46	1.49

Funafuti

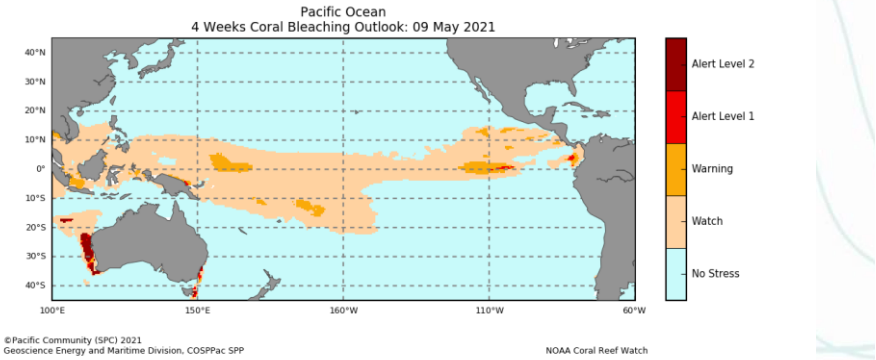
10 highest tides for 2021

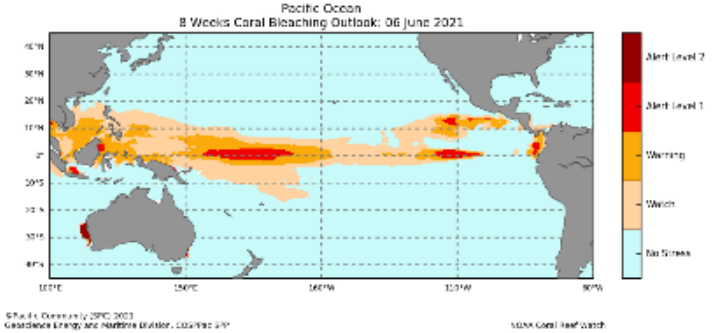
Date	Time	Height (m)
28-Apr	5:30	3.21
29-Mar	17:31	3.2
27-Apr	4:49	3.19
28-May	16:52	3.19
28-Feb	17:53	3.19
30-Mar	5:53	3.18

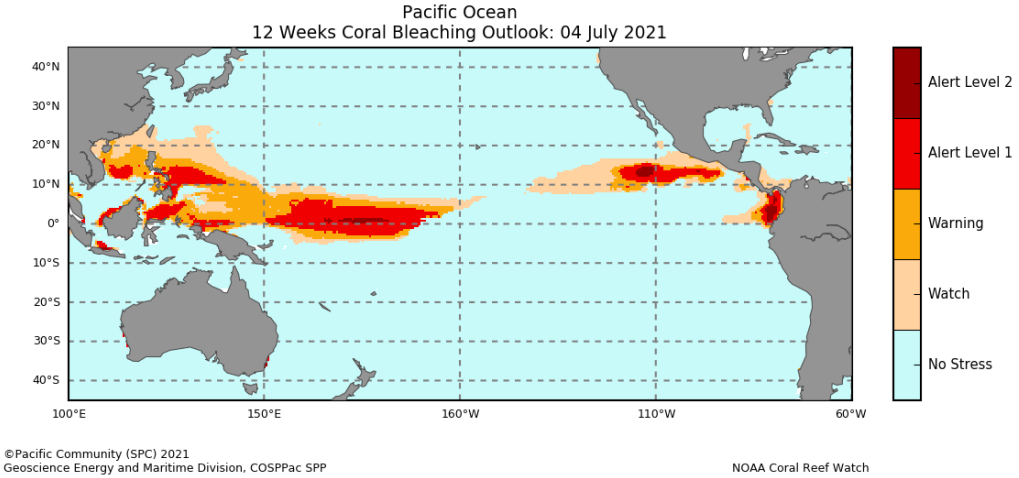




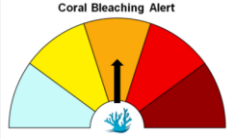
Coral Bleaching (NOAA)







Alert Level	Effect
No Data	No alert data available
No Stress	No thermal stress
Bleaching Watch	Low-level thermal stress
Bleaching Warning	Coral bleaching possible
Bleaching Alert Level 1	Coral bleaching likely
Bleaching Alert Level 2	Coral mortality likely

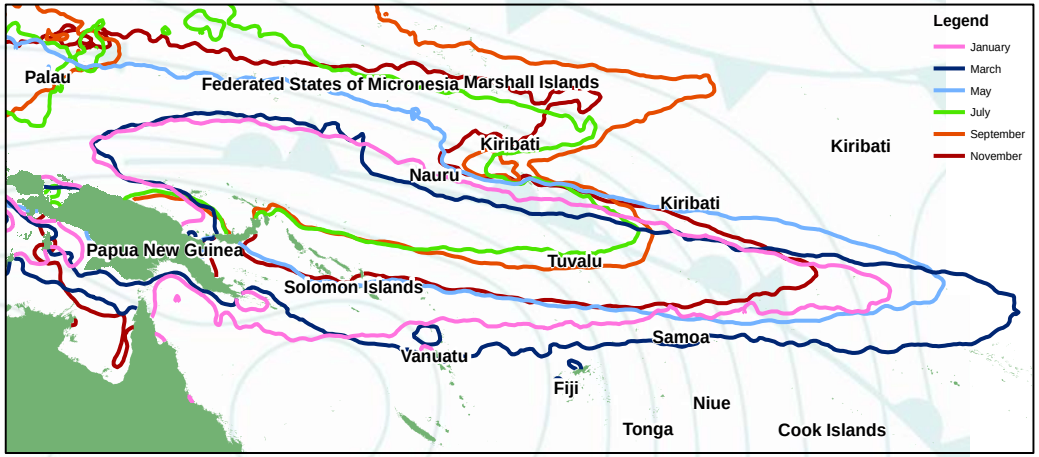


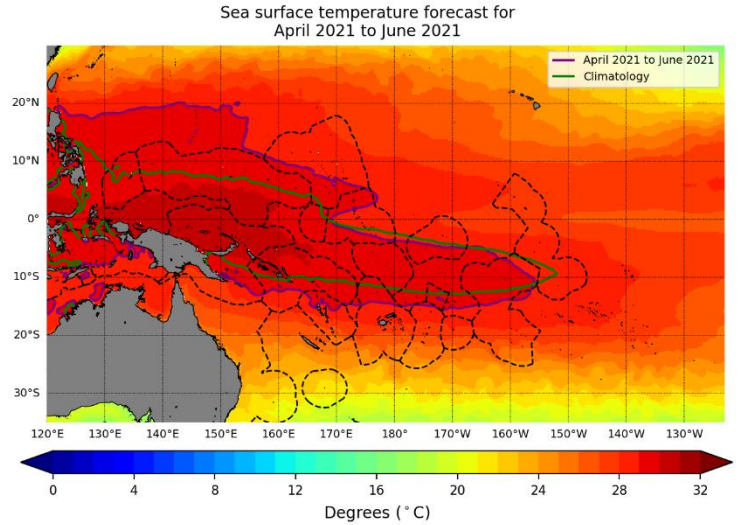
Coral Bleaching

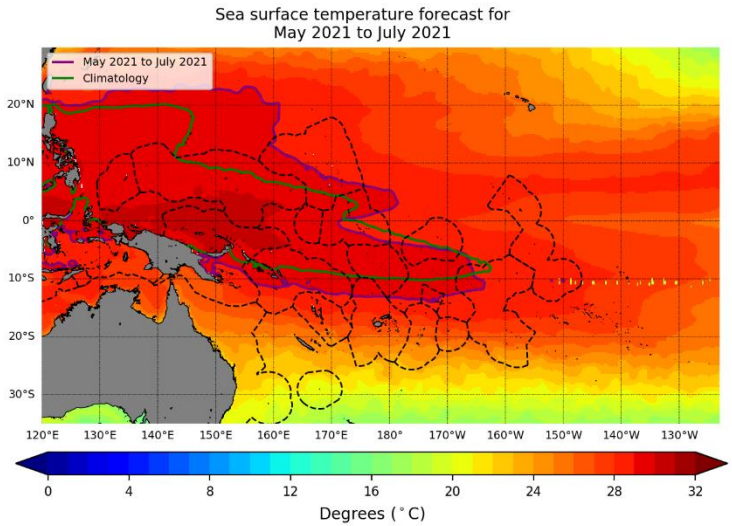
- Bleaching can also be caused by:
  - freshwater inflows
  - salinity changes
  - nutrient pollution
  - intense light

Airport Reef, Tutuila, American Samoa
https://coralreefwatch.noaa.gov/satellite/analyses_guidance/global_coral_bleaching_2014-17_status.php

ACCESS-S: Fisheries Convergence zone







Model: ACCESS-S1
Base Period: 1990-2012

Model Run: 27/03/2021
Issued: Map not issued

Key Messages:

- Warmer than normal for most countries in the west, including COSPPac partner countries in the south. Cooler along the equator towards the east.
- Sea Level favoured to be higher than normal for most countries. Solomon Is, northern Fiji and northern Tonga expect increase of >20cm
- Countries to be aware of higher tides
- Coral Beaching on alert levels for northern PNG, Nauru and western Kiribati
- Fisheries convergence zone slightly contracts westward and shifts north

Thank you/Vinaka