Outlook: Ocean temperature, Coral Bleaching and Sea level

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

• WMO LRFMME SST
• SLA/Tides
• Coral Bleaching
• Fisheries convergence zone
• Key messages
WMO-MME- 3 Month SST

Probabilistic Multi-Model Ensemble Forecast
Beijing, CMCC, ECMWF, Exeter, Melbourne, Montreal, Moscow, Offenbach, Seoul, Tokyo, Toulouse, Washington

Sea Surface Temperature: NDJ2021

(issued on Oct 2021)
Individual Model – SST: 3 months
Individual Model – SST: 6 months
Skill
ACCESS-S: SST Anomalies

Skill
Sea Level Anomaly

Skill

ACCESS-S1

UoH
# Highest Tides

## FSM-Pohnpei

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## PNG-PM

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## Funafuti

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### Majuro (7.1°N, 171.4°E)

- Tide Prediction
- Monthly Sea Level Prediction, 14 cm (2 mo lead)
- Total Water Level: Highest and Lowest Tides, 1983-2001 (5%)

### Malakal (7.3°N, 134.5°E)

- Tide Prediction
- Monthly Sea Level Prediction, 16 cm (6 mo lead)
- Total Water Level: Highest and Lowest Tides, 1983-2001 (5%)
Coral Bleaching

Pacific Ocean
4 Weeks Coral Bleaching Outlook: 31 October 2021

Pacific Ocean
8 Weeks Coral Bleaching Outlook: 28 November 2021

Pacific Ocean
12 Weeks Coral Bleaching Outlook: 26 December 2021

Alert Level 2
Alert Level 1
Warning
Watch
No Stress

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 Alert

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Geoscience Energy and Maritime Division, CSIRO, SPFF
NOAA Coral Reef Watch

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NOAA Coral Reef Watch
Coral Bleaching

• Bleaching can also be caused by:
  o freshwater inflows
  o salinity changes
  o nutrient pollution
  o intense light
Fisheries
Convergence zone
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. Palau, FSM >20cm
• Countries to be aware of higher tides
• Coral Beaching on alert levels for PNG, FSM, RMI
• Fisheries convergence zone slightly expands eastward
Thank you/Vinaka