PACIFIC REGIONAL CLIMATE CENTRE NETWORK

WORLD METEOROLOGICAL ORGANIZATION

The Pacific Regional Climate Centre Network (Pacific RCC Network) has five nodes:

Node on Seasonal Prediction

- Leads: National Institute of Water and Atmospheric Research (NIWA), New Zealand, and Bureau of Meteorology (BoM), Australia
- **Consortium members**
  - Météo-France, France
  - National Oceanic and Atmospheric Administration (NOAA), USA
  - University of Hawaii
  - Asia-Pacific Economic Cooperation Climate Center (APCC)
  - Secretariat of the Pacific Regional Environment Programme (SPREP)
  - The Pacific Community (SPC)

Node on Climate Monitoring

- Leads: NOAA and University of Hawaii
- Consortium members: BoM, SPC, SPREP and NIWA

Node on Operational Data Services

- Lead: BoM
- Consortium members: NOAA, University of Hawaii, SPC and NIWA

Node on Climate Change Projections

- Lead: Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
- Consortium members: United States Global Change Research Program (USGCRP), BoM and SPREP

Node on Training

- Lead: SPREP
- Consortium members: NOAA, University of Papua New Guinea (UPNG), BoM, NIWA, SPC and CSIRO

Linkage with Global Climate Centres

Seasonal predictions provided by Pacific RCC Network are sourced from the WMO Lead Centre for Seasonal Prediction Multi-Model Ensembles (LC-SPMME) as well as from its Global Producing Centres for Seasonal Prediction (GPCs-SP), such as GPC-Melbourne, GPC-Toulouse, and GPC-Washington. Data and products from the Copernicus Climate Change Service (C3S) are also used within the region.

Linkage with WMO Regional Climate Centres

The Pacific RCC Network is closely linked to the Southeast Asia RCC Network through the WMO Regional Association V (South-West Pacific). It also exchanges climate information with the WMO Caribbean RCC.

OVERVIEW

Domain of responsibility: Pacific Island Region
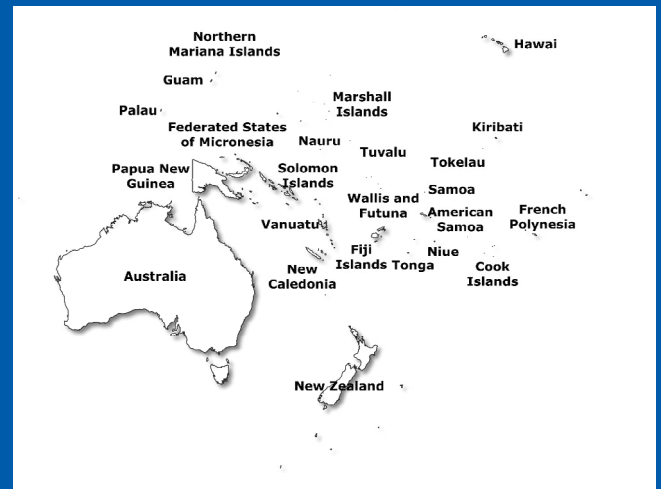
Language: English

Status:

Demonstration phase initiated: September 2017

Email: pacmetdesk@sprep.org

Climate features

The climate in the majority of the Pacific Islands can be described as tropical marine. Most of the islands have distinct wet and dry seasons. In the southern hemisphere, the wet season coincides with the November to April tropical cyclone season.

The El Niño Southern Oscillation (ENSO) is the main driver of regional climate variability, affecting rainfall and air temperature patterns, sea surface temperatures, air pressure, sea level and tropical cyclone activity.

The Pacific Islands are also dominated by three extensive bands of large-scale wind convergence with associated rainfall, namely the Intertropical Convergence Zone (ITCZ), the South Pacific Convergence Zone (SPCZ) and the West Pacific Monsoon (WPM).

Social media:

Linkage with WMO Regional Climate Outlook Fora

The Pacific RCC Network organizes the Pacific Island Climate Outlook Forum (PICOF) twice a year, in April and October, before the southern hemisphere dry and wet/tropical cyclone seasons.

Mandatory functions

All WMO RCCs fulfill a set of mandatory functions related to seasonal prediction, climate monitoring, data services and training. Listed below are those performed by the Pacific RCC-Network.

Seasonal prediction – Node on Seasonal Prediction

- PICOF objective seasonal forecasts in October and April
- Island Climate Update (ICU) that includes monthly-to-seasonal rainfall and water stress outlooks as well as tropical cyclone outlooks for the Southwest Pacific region
- ACCESS-S web portal offering sub-seasonal and seasonal outlooks and satellite-based climate monitoring products of various parameters such as precipitation, air temperature, mean sea-level pressure, sea-surface temperatures, sea level and tropical cyclones
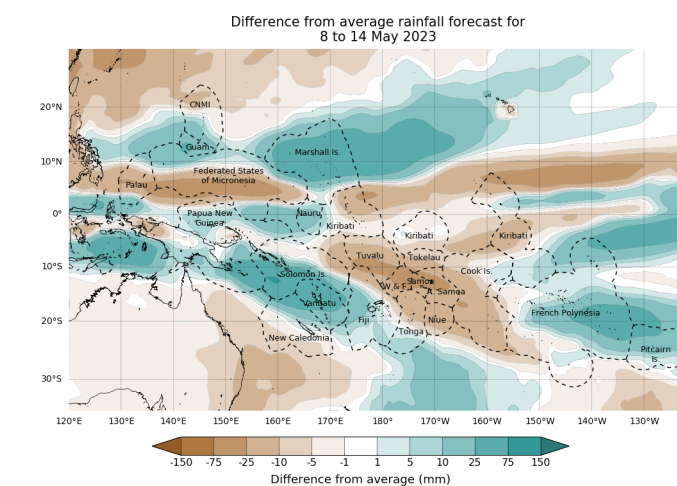
Example of sub-seasonal precipitation anomaly forecast (Source: ACCESS-S web portal)

Climate monitoring – Node on Climate Monitoring

- Pacific Island Climate Change Monitor report focusing on observed changes in the Pacific Islands
- Pacific RCC ENSO Tracker gathering and summarizing the status of the El Niño–Southern Oscillation (ENSO)

Data services – Node on Operational Data Services

- Station historical reference climatology
- Gridded rainfall climatology products
- Quality-controlled and homogenized station datasets of precipitation and mean, maximum and minimum temperature
- Tropical cyclone data
- Climate database and archiving services hosted by BoM for Pacific meteorological services

Training – The Node on Training has developed an online platform that provides technical training on tools for Pacific National Meteorological and Hydrological Services (NMHSs).

Recommended functions

WMO RCCs are recommended to perform certain functions. Listed below are those performed by the Pacific RCC Network.

Climate projection – Node on Climate Change Projections

- Climate change projections at regional, national and sub-national scales (Pacific NextGen Projections)
- Climate hazard-based impact assessment
- Regional case studies on impacts of climate change on water tropical Pacific related to:
  o Future tropical cyclone and extreme rainfall climatology
  o Extreme sea level climatology
  o Macro-economic analysis
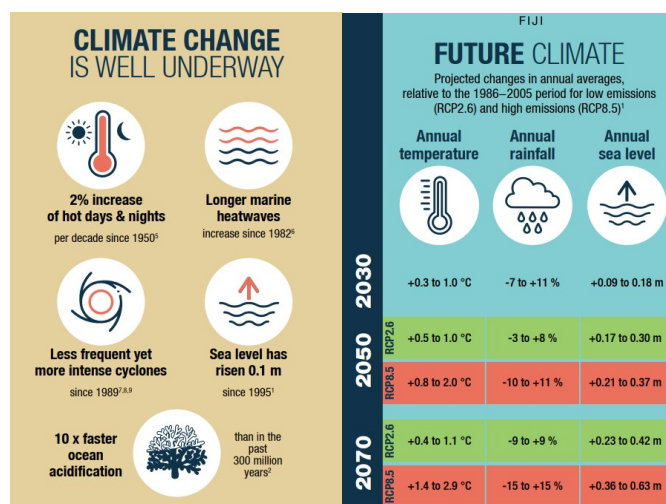
Pacific NextGen Projections – Digital Digest

Pacific Climate Futures is a web-tool designed to analyze raw and downscaled Coupled Model Intercomparison Project (CMIP) data (CMIP3 and CMIP5) to inform risk and vulnerability assessments.
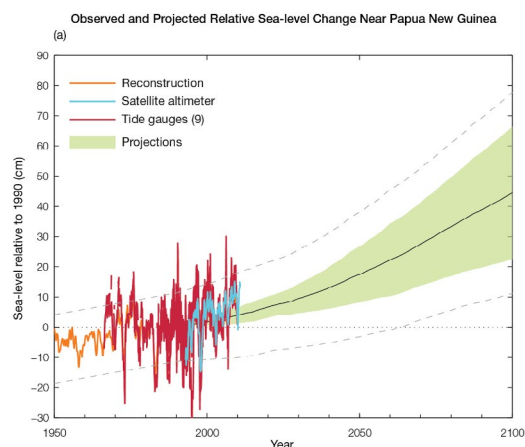
Observed and projected relative sea-level change near Papua New Guinea (Source: Pacific Climate Futures)

Training materials and guidance as well as technical reports and country brochures have been prepared to assist NMHSs and their sectoral stakeholders in the proper understanding and use of the products and tools.