



National Weather Service Capacity Building Efforts in the Pacific

National Weather Service
International Affairs Office

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Early Warnings for All

Since 1950, extreme hydrometeorological events have affected approximately 9.2 million people in the Pacific Islands region and have caused almost **10,000 reported deaths** with total damage of around **US\$3.2 billion**.

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Source: Acting on Climate Change and Disaster Risk for the Pacific

([chrome-extension://efaidnbmninnibpcajpcglclefindmkaj/https://www.worldbank.org/content/dam/Worldbank/document/EAP/Pacific%20Islands/climate-change-pacific.pdf](https://www.worldbank.org/content/dam/Worldbank/document/EAP/Pacific%20Islands/climate-change-pacific.pdf))

What does NOAA NWS do in the Pacific Region?

Current

- Pacific International Training Desk (PITD)
- Joint-forecasts with Compact States through WFO Guam
- Weather Ready Nations
- Tsunami Readiness
- Flash Flood Guidance Systems (FFGS)
- Communications equipment

Planned

- Climate-based early warning systems on floods and drought
- 3D Printed Automatic Weather Stations (3D PAWS)
- Storm surge forecasting
- Hydromet database management



Pacific International Training Desk (PITD)

- Since 2001, NOAA's flagship one-on-one basic weather training for Pacific Island Countries
- Focuses on operational forecasting to enable the preparation and dissemination of locally-produced meteorological, hydrologic and climate products for the home country of each trainee
- NOAA has trained over 200 meteorologists through the PITD.
- Implemented through instructors at the University of Hawaii - Manoa



Weather Ready Nations (WRN)

- Implemented through NOAA's partner, Hydrologic Research Center.
- Multi-year bilateral effort focuses on strengthening capacity at in-country National Meteorological and Hydrological Services (NMHS) and National Disaster Management Agencies (NDMAs)
- Modeled after NWS Weather Ready Nation, WRNs projects (2-3 years each) share IDSS lessons learned and best practices
- Current project with FMS, initiated with Palau and Solomon Islands



Photo credit: HRC

Flash Flood Guidance System

- Partner effort with WMO and Hydrologic Research Center
- Provides operational forecasters and disaster management agencies with real-time information pertaining to the threat of small-scale flash flooding throughout a specified region within 72-hours.
- Operational in over 77 countries with coverage of half the world's population
- Currently operational in Fiji with planned efforts along with WMO and USAID for expansion to additional PICs.



FFGS 2nd Global Workshop. Photo Credit: HRC

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PACIFIC Communications

- RANET: A Pacific wide network of weather emergency communication devices
- Sponberg Chatty Beetles: encased communication device that receives warnings and sends out monitoring information.
- EMWIN – Emergency Managers Weather Information Network
 - A round-the-clock data feed of current weather warnings, watches, images, advisories, forecasts, and products.
 - A suite of methods to obtain this data feed and display the products on a personal computer

Chatty Beetle Testing in Tongan island of Niuataputapu



Chatty Beetle Training in Vaitupu, Tuvalu

3D-Printed Automatic Weather Stations (PAWS)

Printed Automatic Weather Stations (PAWS) address need to expand observation networks in sparsely observed regions

Low cost production using locally sourced materials

Program includes training

Measure pressure, temperature, relative humidity, wind speed, wind direction, precipitation, and visible/infrared/UV light

Testing stations Central America, Curacao, Kenya, the U.S. and elsewhere

U.S. has begun efforts to seek procedural and technology reviews from international credentialing agencies

Original 3D PAWS Model in Zambia



3D-PAWS Installation in Kenya

Tsunami Readiness

- Support tsunami hazard risk inundation mapping
- Assessment of community vulnerabilities to a tsunami event
- Lays the foundation for growth to other tsunami ready communities
- Current projects with FSM, RMI, Palau, Fiji with new projects in Solomon Islands, Vanuatu, Samoa



Efforts under PREPARE Pacific

- **Expand and Enhance Early Warning Systems in Pacific SIDS**
 - Training of Pacific SIDS professionals in interpretation of high-impact weather guidance, including tropical storms, flash floods, heat waves and droughts
 - Foster synergies with WMO RA-V to establish a multi-hazard early warning system for the Pacific (MHHEWS) on climate outlooks for drought and floods
 - PITD expansion and EWS scholarships
 - Upgrade, repair, install suite of Pacific SIDS communications equipment for EWS support
 - Leveraging existing efforts from Green Climate Fund project to expand information dashboards for Palau and RMI
 - Equitable representation and use of climate information
 - Preparing and Planning for Sea-Level Rise

Coordination

- Weather Ready Pacific/SPREP
- WMO Early Warning for All
- Leveraging existing efforts
 - Green Climate Fund
 - Australia Bureau of Meteorology (BOM)
 - New Zealand National Institute of Water and Research (NIWA)
 - Japanese Meteorological Agency (JMA)
 - Systematic Observations Financing Facility (SOFF)



GREEN CLIMATE FUND



S O F F
Systematic Observations Financing Facility

Weather and climate data for resilience



THANK YOU! VINAKA VAKALEVU!

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