

# The Pacific Tradewinds Quarterly

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## We Are Moving

*New Address:*  
 SPaRCE/EVAC  
 100 East Boyd St.  
 Norman, OK 73019  
 USA

Questions/Comments:  
 Editor: Melissa Koeka  
 koekabug@ou.edu

## What is a Climatologist?

Tuesday, January 23, 2007

Climatologists are often confused with meteorologists. A Meteorologist studies current weather conditions and makes short-term forecasts about the weather, including the temperature, winds, amount and type of precipitation. A **climatologist** studies long term trends in the **climate**. The climate that you live in depends on your geographic location and altitude. It includes all of the average weather conditions that you experience on an ongoing basis. The climate determines the types of plants and animals that can inhabit a particular region.

Climatology is the study of the periodicity of weather events over years to millennia, as well as changes in long-term average weather patterns. Climatologists, those who practice climatology, study both the nature of climates - local, regional or global - and the natural or human-induced factors that cause climates to change. Cli-

matology considers the past and can help predict future climate change.

Early climate researchers include Edmund Halley (who also discovered a comet that was named after him!), who published a map of the trade winds in 1686, after a voyage to the southern hemisphere. Benjamin Franklin, a renaissance man in the 18th century, was the first to map the course of the Gulf Stream for use in sending mail overseas from the United States to Europe.

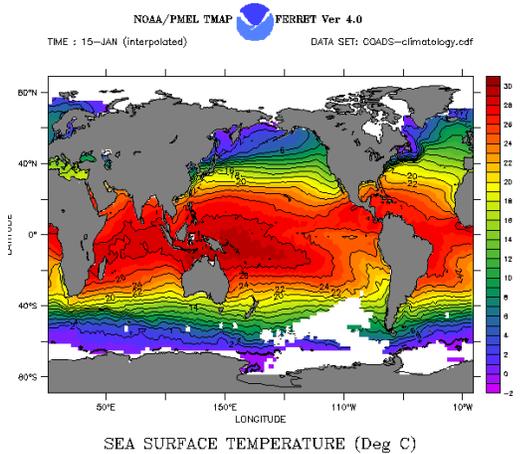
Climatology is approached in a variety of ways. **Paleoclimatologists** study past climates on Earth. They want to know what the conditions were like on Earth hundreds, thousands, or even millions of years ago. Understanding past conditions is extremely important in predicting future conditions. Most of the climatological studies on global warming today involve paleoclimatology.

Paleoclimatologists cannot

study the actual conditions from millions of years ago. They have to study fossils, rock layers, air trapped in polar ice caps, etc. They also have to consider the changing positions of the continents over geologic time. For example, a paleoclimatologist might dig up fossils from 100 million years ago; then they have to determine the longitude, latitude, altitude, and proximity to the ocean of those rocks when the fossils were formed. They have to draw on what they know about those species to determine what the climate was like.

**Historical climatology** is the study of climate as related to human history and thus focuses only on the last few thousand years.

One of the valuable services that local climatologists can offer is "seasonal forecasts." There will always be an interest in how the next summer or the next winter is going to be. This is equally true for the general public as well as for specific sectors of the society like farmers and energy providers. Climatologists can use their knowledge and computer models to try and give us an idea of whether the next season will be warmer than usual, colder than usual, wetter than usual, or drier than usual.



### A map of sea surface temperatures during January.

[http://www.atmos.washington.edu/~ferret/fo/COADS-climatology.cdf\\_xy\\_sst\\_0.0:360.0\\_90.0s:90.0n\\_15-jan.gif](http://www.atmos.washington.edu/~ferret/fo/COADS-climatology.cdf_xy_sst_0.0:360.0_90.0s:90.0n_15-jan.gif)

One of the greatest challenges facing climatologists today is predicting the consequences of increasing amounts of atmospheric carbon dioxide. Although there is general agreement among scientists that the global climate is getting warmer, the Earth's climate system is very complex it is often difficult to predict exactly what the regional and local effects of this global warming will be.

Data from SPaRCE participants are put into a data base that can be used by climatologists around the world to help determine how local, regional, and global climates are changing. Without this vital data, the job of climatologists is much more difficult!

-Susan Postawko

"One of the valuable services that local climatologists can offer is "seasonal forecasts,"

Susan Postawko.

## PNG'S Duke of York Islands to Test Wind Energy

**"The wind energy project is jointly funded by the Chinese and the National Government," the National.**

The National:  
<http://pidp.eastwestcenter.org/pireport/2006/November/11-30-13.htm>

**"Sir Rabbie said in the 2007 Budget, the biggest spending increases were in education," the National.**

The National:  
<http://pidp.eastwestcenter.org/pireport/2006/November/11-30-13.htm>

**Tuesday, November 28, 2006**

PORT MORESBY, Papua New Guinea – The Duke of York Islands in East New Britain, one of a group of islands in Papua New Guinea facing the threat of a rise in the sea level because of global warming, is practicing what most just preach.

The islanders, with the help of their Member of Parliament and Treasurer Sir Rabbie Namaliu, and China, will seek power from an alternate source – wind.

Sir Rabbie was in Duke of York last Saturday to open three new projects that are jointly funded by China and PNG Government.

They are a double classroom, a new school library, and a pilot wind farming project.

The wind energy project is jointly funded by the Chinese and the National Government.

"This could not be better timed," said Namliu. "Today there is a world-wide focus on the impact of climate change and what can be done to reduce and manage its impact on daily lives."

He said the APEC meeting in Vietnam and the Melbourne meeting of Treasurers and Finance Ministers, had the issue

of global warming high on the agenda.

"This community already knows what one of the impacts of global warming and climate change is – rising sea levels. We can play a part by focusing on environmentally friendly energy sources and few are more environmentally friendly than wind power."

Sir Rabbie praised China's bilateral aid to PNG, adding that all of the aid projects and programs China had funded have had strong practical value.

"The majority are in rural communities, some are in agriculture, while others are in areas such as education and health care."

Sir Rabbie said in the 2007 Budget, the biggest spending increases were in education.

"The extra spending this year, and next year's budget increases, will make a real impact in schools around the country. It is part of the Government's commitment to ensure that we not only expand the availability of education for our children, but maintain and grow standards as well."

*The National: www.thenational.com.png* Copyright © 2006 The National Online. All Rights Reserved

<http://pidp.eastwestcenter.org/pireport/2006/November/11-30-13.htm>

## Environmental Protection Agency Praises CNMI Landfill

**Friday, December 8, 2006**

SAIPAN, CNMI – The Northern Mariana Islands is the only jurisdiction in the Pacific region that has a federally compliant landfill facility, according to the Environmental Protection Agency's Pacific Islands Office.

The Environmental Protection Agency officials who arrived here a few days ago said they are satisfied with the state-of-the-art landfill facility in Marpi.

Michael Wolfram, Environmental Protection Agency's Guam program manager, said the CNMI is way ahead of other islands in the Pacific region in the field of solid waste management.

The Environmental Protection Agency said the CNMI has effectively addressed problems on solid waste management, which were among the major concerns of the federal agency five years ago.

Wolfram said they are also impressed with how the CNMI people are maintaining their islands' environmental quality.

Environmental Protection Agency Pacific islands region manager John McCaroll said they are impressed with the Division of Environmental Quality's efforts in enlisting the people's support in the imple-

mentation of initiatives that protect the environment.

The Environmental Protection Agency lauded Division of Environmental Quality for the Beautify CNMI! coalition, which was described as a "great and unique program."

The Environmental Protection Agency officials said local community awareness of environmental concerns has increased, as shown by a lot of different activities that range from cleanup to recycling.

The Environmental Protection Agency provides technical assistance, conducts inspections, issues permits and manages grants in helping build local environmental protection capacity.

Last fiscal year, the Environmental Protection Agency said it focused on improving access to safe drinking water, coordinated enforcement, environmental compliance and technical assistance, protected ocean and aquatic ecosystems and improved recycling and solid waste management.

Marianas Variety: [www.mvariety.com](http://www.mvariety.com)  
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<http://pidp.eastwestcenter.org/pireport/2006/December/12-08-15.htm>

**"The Environmental Protection Agency officials who arrived here a few days ago said they are satisfied with the state-of-the-art landfill facility in Marpi,"**

**Marianas Variety.**

Marianas Variety:  
<http://pidp.eastwestcenter.org/pireport/2006/December/12-08-15.htm>

## 100 Nights of Mourning for Tonga King Nears End

**Wednesday, November 15, 2006** Kava.

NUKUALOFA, Tonga – The Tongan Royal Family will end their 100 nights of mourning for His Late Majesty King Taufa'ahau Tupou IV on December 28.

The occasion will be marked with the Pongipongi Tuku or the Last Morning of Mourning for the Royal Funeral, and a Taumafa Kava [kava ceremony] will be held at Pangai Lahi on Thursday December 28.

Ma'u Kakala one of the Nima Tapu or the "Sacred Hands" of the King of Tonga said today, that prior to the Pongipongi Tuku and the Taumafa Kava the ritual of Lanu Kilikili or the Washing of the black pebbles will be held on Wednesday, December 20.

Ma'u said that these rituals mark the end of the 100 nights of mourning period, which have restricted the movement of the Royal Family and the Nima Tapu attendants.

Ma'u said that at the Pongipongi Tuku the Taumafa Kava, the Ha'a or the clans would make a massive presentation of food at Pangai Lahi similar to the presentation they made at the Pongipongi Tapu, Sacred Morning and the Taumafa

In preparation for the Lanu Kilikili, the Nima Tapu – royal attendants - have started to remove all the kilikili stones from all of the tombs at Mala'e Kula. During the Lanu Kilikili ceremony on December 20 all the kilikili will be washed again with seawater and oil before they are put back on the tombs. Ma'u said that the kilikili for the tomb of the late monarch were specially collected by the people of the island of Fotuha'a from the nearby volcanic island of To-fua.

Ma'u said that there are currently 24 Nima Tapu residing at the Mapu 'a Fuiva residence to carry out their traditional roles to the royal tombs, but after the 100 days of mourning they will all return to their own homes and resume their normal way of life.

Tonga officially ended the one-month of mourning period for the late monarch on October 17.

Matangi Tonga Magazine : [www.matangitonga.to/home/](http://www.matangitonga.to/home/)

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<http://pidp.eastwestcenter.org/pireport/2006/November/11-16-10.htm>



**“Ma’u said that these rituals mark the end of the 100 nights of mourning period, which have restricted the movement of the Royal Family and the Nima Tapu attendants,”**  
**Tonga Magazine.**



<http://pidp.eastwestcenter.org/pireport/2006/November/11-16-10.htm>

## Environmental Conference Set for American Samoa

**Friday, November 24, 2006**

SAIPAN, CNMI – The next regional environmental conference will be held in American Samoa from June 18 to 22 next year, according to the U.S. Environmental Protection Agency's Pacific Islands Office.

Regional office manager John McCarroll and conference coordinator Carl L. Goldstein said the federal agency is working on an agenda that will focus on environmental and public health, coral reefs and watershed protection, water resources, wastewater, natural resources, solid waste, hazardous waste, recycling, pollution prevention, and environmental enforcement.

"This year, we expect to have

additional participation from the international sector concerning various environmental programs," McCarroll and Goldstein stated in a letter sent to stakeholders of environment.

"As in past conferences, we are expecting participation from islands throughout the Pacific," they added.

The EPA officials said the exact venue of the 26th Pacific Islands Environmental Conference will be announced later.

The conference is expected to be participated in by delegates from Guam, the CNMI, Palau, American Samoa, and other U.S.-affiliated islands.

<http://pidp.eastwestcenter.org/pireport/2006/November/11-27-18.htm>

**"The site of the old war village is in the Naisauma mangrove area," Fiji Times Online.**

<http://pidp.eastwestcenter.org/pireport/2006/November/11-14-08.htm>

## Archeologists Find Ancient Fiji Village

**Tuesday, November 14, 2006**

SUVA, Fiji – Nestled among the forests of Tailevu, the Fiji village of Naisaumua is hidden away from the sight of travelers along the Kings Road.

However, its obscurity is not about to last for much longer. Situated about 200 metres away from the main road, among the bushes of Naisaumua lie ancient sites that have

recently been mapped out by the Fiji Museum and the Tourism Ministry for an eco-tourism project.

The site of the old war village is in the Naisauma mangrove area. Three rows of ditches surround the village with a maze-like walkway leading to it.

Fiji Museum official Sepeti Matararaba said museum officials were surprised with the

new find at the site.

"There were pieces of pottery that were once used by those who were occupying the village," he said. "The pottery we found was similar to the others that were found around other parts of Fiji."

He said from the designs on the pottery indicated that the village was occupied 1200 years ago.

"The designs on the pots were all mat impressed, a design that became part of pottery making around the year 1200.

Not only that a stone which is believed to be used for worshipping or vatu ni sokalou and the vatu ni bokola were also located in the old village," he said.

Mr Matararaba said they also found two steel axes, believed to be brought in by early European settlers, and a smoking pipe with a crown engraved on it.

Fiji Times Online: <http://www.fjitime.com>.  
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<http://pidp.eastwestcenter.org/pireport/2006/November/11-14-08.htm>

## Educators Converge In Palau for Regional Workshop

**Friday, November 24, 2006**

SAIPAN, CNMI – Educators coming from 15 Pacific countries met in Palau for one week to discuss areas on how to enhance student learning and strengthen delivery of basic education in the region.

Leading the weeklong workshop was PRIDE Project director Bob Teasdale. The workshop, held in Palasia Hotel, focused on Technical and Vocational Education and Training, and ended on Nov. 22.

Vice President Elias Camsek Chin and Minister of Education Mario Katosang graced the opening ceremony, Nov. 15.

Director of Education Emery Wenty and other division chiefs

of the Ministry of Education hosted the workshop.

The workshop covered both the formal and non-formal sectors with an objective to enhance the capacity of Pacific education agencies to effectively plan and deliver quality basic education through formal and non-formal means.

Organized by the Pacific Regional Initiatives for the Delivery of Basic Education, the weeklong gathering also aimed to improve coordination of donor inputs to assist countries to implement their plans.

Marianas Variety: [www.mvariety.com](http://www.mvariety.com)  
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<http://pidp.eastwestcenter.org/pireport/2006/November/11-24-19.htm>



**"The workshop covered both the formal and non-formal sectors with an objective to enhance the capacity of Pacific education agencies to effectively plan and deliver quality basic education..."**

**Marianas Variety.**

<http://pidp.eastwestcenter.org/pireport/2006/November/11-24-19.htm>

## Papua New Guinea Hailstorm Damages Crops

**Tuesday, November 28, 2006**

PORT MORESBY, Papua New Guinea – A hailstorm that hit Kuli Konda area outside Mt Hagen, Papua New Guinea over the weekend has left 106 families homeless, 14 pigs killed and two women hospitalised.

The hailstorm also damaged a Suzuki and 44 houses, including two semi permanent houses which were wrecked by fallen trees.

George Denge, a rural development officer with Anglimp District told The National yesterday that coffee and food gardens were also destroyed by the storm, leaving most families without shelter.

Mr Denge said the most affected villages included Okka, Koim and Kentanga.

He added that the matter was reported to the DPI officers in the province, who are now working on an evaluation report.

Community leaders from the affected areas Daniel David and Chris Dong said most families were taken by surprise.

Mr David said it was their first time to experience such a natural disaster.

He said most food and coffee gardens were slowly turning brown, a sign that they would dry up in a few days.

He said the displaced families were now temporarily accommodated by friends and relatives while starting to build new houses and gardens.

The National: [www.thenational.com.pg/](http://www.thenational.com.pg/)  
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<http://pidp.eastwestcenter.org/pireport/2006/November/11-30-14.htm>

**“Mr David said it was their first time to experience such a natural disaster,” The National.**

The National:

<http://pidp.eastwestcenter.org/pireport/2006/November/11-30-14.htm>

**A view of Mt Hagen, Papua New Guinea**

<http://asao.paslog.jp/image/MtHagen01.jpg>



## Cook Islands Consider Wind Energy Project

**Wednesday, January 24, 2007**

By: Ulamila Kurai Wragg

RAROTONGA, Cook Islands – A wind farm project similar to that in Mangaia is being proposed for Rarotonga on a ridge situated above Kiiikii in Cook Islands.

[PIR editor's note: Mangaia is the southernmost island in the Cook Islands chain and south-east of Rarotonga, where the



**The first-ever offshore wind farm off the coast of Long Island, New York.**

<http://www.citizenscampaign.org/newsletters/fall2003.htm>

national capital is situated.]

The wind energy project is being [proposed] by the Cook Islands Investment Corporation and the ministry of energy.

However, since the project is in its infancy a meeting is being called for the landowners tomorrow at the Sinai Hall at 6.30pm.

According to the Cook Islands Investment Corporation 's legal manager Lloyd Miles the meeting is to seek support and approval to conduct possible wind energy feasibility studies on their land.

Director for energy Mata Nooroa could not comment on the project referring all questions to Tangi Tereapii who he says is working with Cook Islands Investment Corporation on the project.

Reduced dependency on fossil fuel has become a priority for many countries given the increasing cost of fuel.

Landowners for Toromai 190G2, Tuamata 190H, Mataroa 190K, Papua 191A and Tangarakoa 192 B are requested to be at the meeting.

Cook Islands News: <http://www.cinews.co.ck/index.htm>

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**“The wind energy project is being [proposed] by the Cook Islands Investment Corporation and the ministry of energy,” Cook Islands News.**

<http://www.cinews.co.ck/index.htm>

# Welcome to the SPaRCE Family!



**Charlie Pierce**  
**Vanuatu Teaching College**  
**Port Villa, Vanuatu**



**Mr. Stephen Roroma**  
**Wabunuana Community School**  
**Milne Bay Province, Papua  
New Guinea**



**Koni Wamzii N'Drihin**  
**Papitalai Secondary School**  
**Lorengau, Papua New Guinea**



# CLASSROOM WEATHER FOCUS

Welcome to Weather Focus! This section is dedicated to the students and teachers of the SPaRCE program. Every newsletter will have a weather trivia section or an activity. Trivia questions will start out simple and progressively increase in difficulty with the arrival of your workbooks.

- 1) What time of thermometer uses two pieces of metal?
  - a) Liquid-in-glass
  - b) Max and min
  - c) Bi-metallic
  - d) Sling
- 2) The change in leaf color is due to the loss of what?
  - a) carbon
  - b) chlorophyll
  - c) peroxide
  - d) chlorine
- 3) The Earth's shape of its rotation around the Sun is a?
  - a) Circle
  - b) Square
  - c) Ellipse
  - d) Rectangle
- 4) True or False:  
The Autumnal Equinox occurs around September 23rd.
- 5) The first astronomical day of Spring for the Northern Hemisphere is?
  - a) Vernal Equinox
  - b) Summer solstice
  - c) Winter solstice
  - d) Autumnal Equinox
- 6) What lines show the flow of temperature?
  - a) Isotherms
  - b) Isobars
  - c) Isopressure
  - d) Isocelsius
- 7) True or False:  
Daily range of temperature is the maximum and minimum temperature.
- 8) True or False:  
The modern Wind-Chill-Index was formulated in 2000.

Correction on the Classroom Weather Focus from Newsletter Volume 14 Number 4:

Question 3: When water goes to water vapor (clouds) this process is called:

Answer: Evaporation (answer was not offered)

- Answers:
- 1) C) Bi-metallic
  - 2) B) Chlorophyll
  - 3) C) Ellipse
  - 4) True
  - 5) A) Vernal Equinox
  - 6) A) Isotherms
  - 7) True
  - 8) False: The modern Wind-Chill-Index was formulated in 2001.

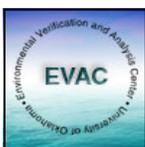
## SPARCE HEADQUARTERS

EVAC  
100 East Boyd Street  
Norman, OK 73019  
USA

Phone: 1.405.447.8412  
Fax: 1.405.447.8455  
E-mail: [spostawk@ou.edu](mailto:spostawk@ou.edu)  
[mmorriss@ou.edu](mailto:mmorriss@ou.edu)  
[koekabug@ou.edu](mailto:koekabug@ou.edu)

### WE'RE ON THE WEB!

<http://www.evac.ou.edu/>



# ENSO Diagnostic Discussion

January 11, 2007

Most of the statistical and coupled models, including the NCEP Climate Forecast System (CFS), indicate that SST anomalies are near their peak and that decreasing anomalies are likely during February-May 2007. Recent observed trends in the upper ocean tend to support those forecasts. Decreasing upper-ocean heat content in the central equatorial Pacific has been progressing east in association with the upwelling portion of the most recent Kelvin wave. In the absence of any further Kelvin wave activity, the upper-ocean heat content should return to near average in a few months. However, there is considerable uncertainty in this outlook, given the resurgence of MJO activity in late December 2006.

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory/index.html](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/index.html)



Stephanie Buway



Orion (top) and Moz-

## Get to Know: Stephanie Buway

January 4, 2007

Hello! My name is Stephanie Buway and I am a master's student in the Geography Department at the University of Oklahoma. Currently I work for the Oklahoma Wind Power Initiative (OWPI) as a Graduate Research Assistant. OWPI is a collaborative project between the University of Oklahoma and Oklahoma State University. We travel the state educating people about wind power as well as promoting the economic and environmental benefits of this clean, renewable energy.

I am originally from Western



Stephanie at the 2005 Career Tech Conference in Tulsa, OKIa-

Michigan where I frequently travel, visiting my family and relaxing at Lake Michigan. In my spare time I enjoy reading, spending time outdoors, and playing with my two cats, Moz-enrath and Orion.

SPaRCE would like to thank those of you who have made this program possible: NOAA Office of Global Programs, NOAA PI-GCOS and especially Howard Diamond. Thank you!