

The Pacific Tradewinds Quarterly

The Pacific Rainfall Project

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Wednesday, July 18, 2007

The SPaRCE program is part of a larger project at the University of Oklahoma, the Pacific Rainfall Project (PACRAIN). PACRAIN brings together rainfall data from many different places in the tropical Pacific and distributes them via the Internet. When we receive your SPaRCE data sheets in the mail they get entered into a computer and then added to the PACRAIN database once a month. [Did you know that you can now enter your data online instead of having to mail your data sheets to us? It's faster, more convenient, and will check your data for errors before it gets sent to us. Contact Melissa if you're interested in doing this.] SPaRCE is a very important part of the PACRAIN database. There are many locations for which the only source of weather data is a SPaRCE school, so SPaRCE participants provide a valuable service to researchers around the world.

What do people do with PACRAIN and SPaRCE data? Almost anything you can imagine. High school and college students use the data for their class projects and research papers. Rainfall

information is important to entomologists (scientists who study insects). Engineering companies use the data to help them design buildings. Insurance companies often need to know what the weather was like on a certain day when they are investigating claims. And of course, PACRAIN data is very important to researchers who study weather and climate. The Pacific Ocean has a very large influence on the Earth's atmosphere, so Pacific rainfall data is important in the study of topics ranging from tropical cyclones to El Niño to climate change.

PACRAIN does more than just gather rainfall data. We also provide instruments and other assistance to the people who collect the data for us. SPaRCE is an example of this—we provide the rain gauges and thermometers to SPaRCE schools, and then we use the data they collect. PACRAIN also provides rain gauges to local meteorological services. They place the rain gauges where they need them most, and then they send the data to us to be added to the database. This helps the local meteorologists by giving them more

“Someone still has to visit the gauge every few weeks in order to make sure the gauge is working...,” Mike Klatt.

information about the weather on their own islands, and it also benefits people everywhere who can use that data for their research.

Sometimes the meteorological services receive the same type of plastic rain gauge that SPaRCE schools use, but we also send out a special type of rain gauge called a tipping bucket gauge. Inside the gauge is a triangle-shaped metal piece (the “bucket”) that is divided into two compartments. This piece can tip from side to side so that one compartment at a time will catch rainfall. When a compartment is full, the weight of the water will cause the bucket to tip, putting the empty compartment into position to catch rainfall and emptying the full compartment. Each time the bucket tips, a small electronic device inside the gauge called a data logger records the time. With that information we can calculate not only the rainfall amount (how much) but also the rainfall rate (how fast). Knowing the rainfall rate is very important for certain types of research.

So far, we have sent a total of 50 tipping bucket gauges to The Cook Islands, Guam, Kiribati, Niue, Samoa, Tonga, Tuvalu, and Vanuatu. Besides providing them information about rainfall rates, the local meteorological services really like these gauges because they are automatic. Unlike a plastic gauge, which should be read by an observer at least once a day, a tipping bucket gauge can be left alone for a long time. This means that the meteorologists do not have to spend all their time taking readings from

numerous rain gauges. It also makes it possible to place gauges in remote locations which cannot be visited every day. Someone still has to visit each gauge every few weeks in order to make sure the gauge is working (birds and other animals seem to really like tipping bucket gauges) and download data from the data logger, but this is better for them than having to visit each gauge every day.

If you’d like to access PACRAIN data (including all SPaRCE data) all you need is internet access and a web browser. At the web site <http://pacrain.evac.ou.edu/data_query.phtml> you can download all of the PACRAIN rainfall data (almost 2 million rainfall observations!) or do a search for specific data. You can also access SPaRCE for directly by going to <<http://sparce.evac.ou.edu>> and selecting Database from the menu on the left. This web site is easier to use than the PACRAIN web site because it will display the data directly in your browser window in a format similar to your data sheets. Also, this is the only way to get SPaRCE temperature data.

Thank you to all SPaRCE participants. You are very important to the Pacific Rainfall Project, and we appreciate your efforts.

-Michael Klatt



A PACRAIN tipping bucket rain gauge.

Cook Islands Monitoring Wind for Turbine Project

Saturday, July 7, 2007

RAROTONGA, Cook Islands – Two readings have been taken to date from measuring devices fitted to the 30 meter tall mast on a hill in Tupapa by the Ministry of Energy.

It is part of an 18 month project to record wind speed data to determine the feasibility of setting up electricity producing wind turbines.

[PIR editor's note: Tupapa is a town near Avarua on the north coast of Rarotonga, the main island in the Cook Islands.]

Late in May, Ministry staff erected the mast under the supervision of specialist Jan Tang from the Denmark company [Alpha Wind](#).

At that time the Herald reported Ministry Project Officer Tangi Tereapii as saying three wind measuring devices, Anemometers, were fitted at three different levels: 10 meters, 20 meters and 30 meters. The mast sits on a hill 146 meters high. A computer micro-chip recorded the wind strength. The chip could store up to 650 days of data.

Tereapii said for the first three months, the chip would be removed each week, inserted into a lap top computer and the data down loaded. Thereafter, readings would be taken every fortnight.

Tereapii told the Herald then that this was the initial phase of the project and that after one year, by May 2008, the Ministry would

have a fair idea of the potential for a wind turbine. Negotiations would then commence with landowners.

As the winds are predominantly from the northeast and southeast, Tereapii said the Anemometers were set to 105 degrees which is northeast.

The site was selected due to clearance of obstacles that could affect wind flow.

Tereapii said the readings to date revealed one particularly windy day in June when the average wind speed was recorded at 11m per second. The minimum speed that day was 9m per second.

Other measuring devices fitted to the mast are; a Byramometer at 10 meters which measures solar output, a device to measure air pressure and a Thermometer to measure temperature.

Readings are taken every ten minutes and recorded on a micro-chip.

Tereapii said he would produce a quarterly report on the readings at the end of August.

*The Cook Islands Herald: <http://www.ciherald.co.ck/>
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Pacific Island Report <http://pidp.eastwestcenter.org/pireport/2007/July/07-16-13.htm>

"...by May 2008, the Ministry would have a fair idea of the potential for a wind turbine. Negotiations would then commence with landowners," Tangi Tereapii.

Offshore wind turbines near Copenhagen.

http://en.wikipedia.org/wiki/Wind_power



PNG Schools Receive \$17.6 Million Subsidy

Tuesday, May 22, 2007

PORT MORESBY, Papua New Guinea – The first PGK50 million of the PGK100 million approved by the Somare Government as school subsidy to assist parents was released by the Treasury Department last week.

Months after Prime Minister Sir Michael Somare announced this subsidy programme in Kundiawa, it was seen by critics as a vote buying lure in an election year.

Secretary for Education Dr Joseph Pagelio said he was grateful for the first funding, which was released by Treasury last week.

"I am very grateful to the Somare Government for approving the funding and for keeping their commitment by releasing the first PGK50 million," he said.

He said the Department of Education was now processing the first K50 million to be paid out to schools.

"We are expecting the second half of the funding in June. When we receive this from Treasury, we will process and distribute it to the different schools and institu-

tions in the country," Dr Pagelio said.

The Education Secretary said that this money was to relieve the burden on parents paying fees for their children.

However, he said that the subsidy was only one component of a school's budget.

"Therefore, parents still have a responsibility to pay some part of their children's school fees so that schools can function properly for the full school year," Dr Pagelio said.

He added that parents would be refunded any extra money schools had collected after the respective schools received their money.

He said this would depend on the provinces and levels of school fees in each province.

Details of the policy on the subsidy and amount per school will be published in the newspapers next month.

Pacific Island Report

<http://pidp.eastwestcenter.org/pireport/graphics.shtm>

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"...this money was to relieve the burden on parents paying fees for their children," Dr. Joseph Pagelio.

A 7 year old student at an elementary school in Goba, Papua New Guinea.

http://www.ms-starship.com/sciencenew/village_life_png.htm



Water Shortage Closes Fiji Schools

Tuesday, July 17, 2007

SUVA, Fiji - Schools in Lami had to close early yesterday because of water cuts. Among schools that closed early were Lami Primary, Marist Convent and Suva Adventist High.

[PIR editor's note: Lami is a town near Suva, capital of Fiji on the island of Viti Levu.]

Kelera Adi, a Lami resident, said her children could not go to school because they did not have sufficient water. "The truck which carts water delivers it on the main road and since we live far from the main road, we are not able to fill up a lot of water," she said.

Chauhan Memorial Primary School head teacher Surendra Kumar said they did not close the school even though water had been cut off in the area since last week. "We have two big tanks which we ask the PWD to fill up once the water level gets low and that is sufficient for 275 students," said Mr. Kumar. He said students had been asked to get water in bottles from their homes and the water from tanks was only being used for washing of hands and flushing toilets. "We have to be really careful about the type of water students drink because there are already so many cases of diarrhea," Kumar said.

Works by water supply engineers continued yesterday on the Waimanu pump [supplies water to Suva and Nausori areas], which broke down at the weekend.

Suva-Nausori Water Supply System project manager, Sereicoko Yanuyanurua said engineers had managed to repair one of the two pumps which broke down on Saturday and hoped to complete repairs to the other pump by yesterday afternoon to restore operations by today. He said the two pumps had been operating on a 24-hour basis from Monday to Sunday and they hoped to rectify this once two additional pumps were installed either in September or August.

The Water and Sewage Department states common faults giving rise to numerous water supply disruptions are mainly due to low levels at the Wainibuku Reservoir, pump breakdowns at Waimanu and Savura pump stations, undetected leaks and burst mains, and the dilapidated condition of the system and facilities.

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Pacific Island Report

<http://pidp.eastwestcenter.org/pireport/2007/July/07-18-17.htm>



Lami High School: re-roofing done by Rotary Suva North.

http://www.rotarysuvanorth.org/lami_page.htm

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"The Water and Sewage Department states common faults giving rise to numerous water supply disruptions," Pacific Island

Tsunami Impact Assessment Reveals Marine Damage

Friday, July 6, 2007

GIZO, Solomon Islands - Efforts to gauge the degree of impact of the April 2nd tsunami disaster on the marine environment and coastal community livelihoods in affected Marine Protected Areas (MPA) of Western Province have now been completed by WWF staff based in Gizo, Solomon Islands.

Working in collaboration with WorldFish Center, WWF has gathered information on the status of coastal fisheries and damage to MPA sites through a rapid assessment within affected sites.

WWF focused on MPA sites set up by communities it has been working with on Gizo Island and other reef areas between Pienuna to Obombulu (Rannogga), Kakara (Vella Lavella), Nusatuva, (Kolombangara), Boboe (Kohingo Island) and Babanga, covering 22 communities.

WorldFish Center carried out its assessments in 17 communities in the Western Province. WorldFish Center has existing relationships related to marine livelihoods in three of these communities but for all, it was the first community-based assessment of coastal fisheries they had experienced. The sites included communities on the islands of Parara, Kolombangara, Simbo, Vella Lavella, Ranongga, Mono, Fauro and Shortlands.

WWF Project Manager, Bruno Manele and his field team com-

pleted the livelihood component to identify the impacts of the tsunami and earthquake on fishers and households, and to identify how WWF can work with the communities on sustainable marine resource management in the future.

Complementing the livelihood survey, the WWF marine team went under water to assess the impacts on the coral, fish and invertebrate population.

The main objective was to observe the impact on the coral reefs that provide food and income to the populace around Gizo Marine Conservation Area (GMCA), one of the worst affected areas, and other affected communities outside Ghizo Island.

The team observed that in many areas, the marine and coastal environments were badly damaged, including those in the GMCA.

An area of high biodiversity off Njari Island has been reduced to rubble. This reef was recorded by the 2004 TNC rapid marine assessment to have one of the highest number of fish and coral species in the world, second only to sites at Raja Ampat in Indonesia.

Parts of the MPA established by the Boboe community on Kohingo have also been damaged and a coral farm set up as a sustainable livelihood project has been affected. On the other hand, MPAs in Titiana and Karaka suffered

"An area of high biodiversity off Niari Island has been reduced to rubble," Pacific Magazine.

only minimal damage.

On nearby Ranongga Island, coral reefs in the MPA are dying after being uplifted out of the sea by three meters and the shoreline has extended out to sea by up to 70m.

The reef, once rich in fish, shells and other invertebrates, has for many years been the source of marine food the villagers from Ranongga depended on for the sustainability of their livelihood.

According to Pienuna village spokesman, Mr Jebeth Toribule, there are no other reefs beside the fringing reef along the coastline and after it was exposed to air people do not have any other choices but to fish in the deep.

"The villagers who often took time to swim, collect shells and fish on the reef have no other places to go but to stay inland in fear that another earthquake might come." said Toribule.

"Even some elderly men question themselves whether their reef will ever come back to its normal position".

According to Toribule, this was not the first time the people of Ranongga have experienced earthquakes on their island. They had similar shakes in 1952 and 1984 that had little effect on land and sea.

WWF is greatly concern for the health of the reefs in the affected MPAs because the communities themselves have worked tirelessly to set them up as refuge areas for fish and other marine resources.

Ranongga based WWF Field Officer, Cherry Tanito was saddened

to see the status of the reefs in the MPA between Pienuna and Obombulu.

"The villagers have invested a tremendous amount of hard work into setting up management areas which are now exposed and possibly no longer useful for increasing fish stocks," said Tanito.

"However, it is very encouraging to see community members begin their own rehabilitation program," he said.

According to Toribule, some Ranongga villagers have started planting mangroves and other trees where the seagrass bed used to be. But for the time being they need to accept and adjust to their new environment; only time will tell when their reef will come back to its normal setting.

Information from the livelihood and marine assessments is now being analysed collaboratively with the WorldFish Center and joint reports will be provided to the surveyed communities, relevant government departments, the Western Provincial Government and donor agencies.

www.wwfpacific.org.fi

Pacific Magazine

<http://www.pacificmagazine.net/news/2007/07/06/tsunami-impact-assesment-reveals-marine-damage>



Photos from the April 2007 tsunami in the west province of the Solomon Islands.

http://www.flickr.com/photos/ocean_of_dreams/526983585/

Recent Pacific Quake Series Intrigues Scientists

Tuesday, July 17, 2007

By Jan TenBruggencate

EWA BEACH, Hawaii - Scientists are intrigued by a cluster of earthquakes that circled the Pacific during the past two days, but seismologists don't believe most of them are related.

From late Saturday night, the edges of the Pacific Ocean felt tremors of magnitude 5.0 or greater in the area of Japan and the Philippines to the west, the Aleutians to the north, the Galapagos to the east, and Vanuatu and Papua New Guinea to the south.

"It's been pretty exciting," said Charles "Chip" McCreery, director of the Pacific Tsunami Warning Center in 'Ewa Beach.

Only a quake Sunday afternoon, Hawai'i time, off Japan caused local damage. At least nine people were reported killed.

None of the recent shakers generated Pacific-wide tsunami likely to affect Hawai'i.

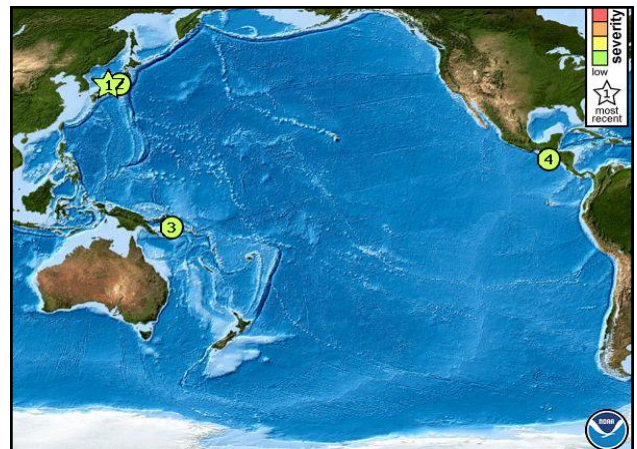
Most of the earthquakes were comparatively weak, but it is unusual to see so many in the 5 and 6 range clustered together. McCreery said it is unlikely that quakes in, say, Japan and in the Aleutian chain thousands of miles away are related.

"We think these are random clusters" and that it was just happenstance that a dozen of them occurred within two days, he said.

For some in the quake-watching community, what's more interesting is what hasn't been happening.

It's been an unusually long time — nearly four months — since there has been a big earthquake of magnitude 7 or more anywhere in the world. The last one was a 7.1 quake March 25 in Vanuatu. Again, that doesn't necessarily mean a bigger one is coming, or that one isn't. There was a four-month lag last year, which ended with a 7.1 quake that killed two people in Taiwan on Dec. 26, 2006.

The map for the Pacific Ocean regarding activity for the past 90 days as of Thursday, July 19, 2007. Number "3" is in regards to a 6.7 Mwp earthquake off the coast of the Solomon Islands on June 28, 2007. Map and information can be found on NOAA's Pacific Tsunami Warning Center at <http://www.prh.noaa.gov/ptwc/>.



Meanwhile, early yesterday morning, the Big Island was shaken by a comparatively small earthquake, of 3.2 magnitude, under the southeast flank of Kilauea. It did not appear to be directly related to the eruption of the volcano, said Jim Kauahikaua, who heads the Hawaiian Volcano Observatory.

Most likely, the earthquake represented slippage under the southern flank of the volcano, said Dave Wilson, seismic network manager for the observatory.

"This type of earthquake is associated with slippage. It's lined up with quakes we've been seeing

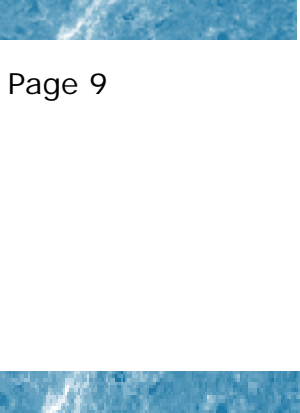
along the south flank faults," he said.

Wilson said the seaward part of the southern flank of Kilauea is constantly slipping into the ocean. He said yesterday's earthquake could be indirectly linked to the Kilauea eruption because earthquakes that have been part of the recent changes in the eruption pattern may have shaken up the area and helped destabilize the fault zone.

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"Most likely, the earthquake represented slippage under the south flank of the volcano,"

Pacific Teachers of the Year Gather in Honolulu

Tuesday, July 10, 2007

HONOLULU, Hawaii - Teachers of the Year (TOYs) from across the U.S.-affiliated Pacific are gathering in Honolulu as part of the 24th annual Pacific Educational Conference (PEC).

The PEC will take place July 9–12 at McKinley High School.

The Pacific TOYs are chosen by their respective departments and ministries of education for their teaching excellence.

Corporate sponsorships from Continental Airlines, Harcourt Education International Group, Hawaiian Airlines, and Pacific Resources for Education and Learning (PREL) provide the opportunity for the Pacific TOYs to attend the PEC,

where they not only pursue their own professional development, but also share their successful teaching strategies with other conference attendees.

This year's TOYs are: Dr. Jose-Rose Jyothibhavan of American Samoa, Mrs. Lourdes Innocenty of Chuuk, Ms. Acelia Dela Cruz of the Commonwealth of the Northern Mariana Islands, Mrs. Rufina Fejeran Mendiola of Guam, Ms. Jami Muranaka of Hawai'i, Mr. Al-erson Alik of Kosrae, Ms. Christina Orak of the Republic of Palau, Ms. Mayleen Saimon of Pohnpei, Mrs. Kenye Anien of the Republic of the Marshall Islands, and Ms. Dolores Gurumow of Yap.

Pacific Magazine

<http://www.pacificmagazine.net/news/2007/07/10/pacific-teachers-of-the-year-gather-in-honolulu>

World Health Organization: Climate Change at 'Critical Stage'

Monday, July 9, 2007

By Cherele Jackson
APIA, Samoa – A recent study by the World Health Organization estimated that climate change directly or indirectly contributes to about 77,000 deaths annually in Asia and the Pacific.

A figure for the Pacific itself could not be obtained, however WHO representative to Samoa, Dr. Kevin Palmer, told Newsline the figures are a cause for concern.

"The total number of deaths in the region is significant and the impacts are pretty specific," Dr. Palmer said.

Major changes related to climate change such as the gradual disappearance of atolls, do make a contribution to health problems, he said.

"The mosquito population is on the increase and with that the prevalence of malaria."

Dr Shigeru Omi, WHO Regional Director for the Western Pacific, warned recently: "We have now reached a critical stage in which global warming has already seriously impacted lives and health, and this problem will pose an even greater threat to mankind in coming decades if we fail to act now."

Among the potential effects of global warming would be the appearance of mosquitoes where they were previously absent, with the accompanying threat of malaria and dengue fever according

to WHO.

Some regions might be at risk of reduced rainfall, causing a shortage of fresh water and introducing the danger of waterborne diseases.

WHO says millions of people could be at risk of malnutrition and hunger if arable lands become unworkable.

Locally, Principal Climate Change Officer for Samoa, Anne Rasmussen said Samoa is very much aware of the link between the weather phenomenon and health.

"Currently we are implementing an Adaptation Plan to prevent health problems as a result of climate change," she said.

According to Ms Rasmussen, the lack of proper figures and records of health problems relating to climate change will make the implementation of the adaptation plan, challenging.

"We are now focusing on building partnership with the Ministry of Health, to link health problems such a dengue fever and malaria to climate change, we are trying to establish the relationship between changing weather patterns and diseases," she said.

Ms Rasmussen added that once such records are compiled, the Ministry will then be able to forecast health issues relating to heavy rainfalls such as water borne diseases, and others relating to other extreme weather patterns.

"The total number of deaths in the region is significant and the impacts are pretty specific," Dr. Palmer.

Ms Rasmussen says the Climate Change division in partnership with the Ministry of Health and other stakeholders will be working on the health section of the Adaptation Plan for the next four

years.

[Newsline Newspaper Samoa](#)

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Pacific Islands Report

<http://pidp.eastwestcenter.org/pireport/2007/July/07-09-11.htm>

The Pacific “Gets Its Facts Right For Climate Change”

Tuesday, July 3, 2007

By SPREP

APIA, Samoa - If you thought living in the tropics couldn't get any hotter here in the Pacific, think again. Climate change projections for the Pacific are forecasted to increase seasonal surface air temperature ranging from 0.45 to 3.11°C by 2100. If you think that's a long time away, Pacific residents are feeling the impact of climate change now. Annual and seasonal ocean surface and island air temperature have increased by 0.6-1.0°C since 1910 throughout a large part of the region.

The position your country plays in climate change is clear from the National Communications on Climate Change reports prepared by each country. Each Pacific Island nation has completed a report that contains information on climate change issues ranging from how much greenhouse gasses they emit and how much forestry your country has to absorb the carbon, to detailed proposals on how your country will seek to adapt to climate change.

These reports should be updated at least every 5 years and this month SPREP is hosting a conference that is part of the UNDP Na-

tional Communications Support Program. It's to help countries develop these reports, which involves a lot of work from a pool of people within each Pacific Islands Country. Each report contains factual information from looking at the economy of the country as part of the national circumstances as well as to explain their plans for adaptation to the effects of climate change.

“It also affords an opportunity for the country to get some capacity building in because to write this National Communications, its not a one person job, its something a team has to work on, and that's been quite helpful in the past experience of the region. Country teams have been assembled with multi stake holder approaches,” said Espen Ronneberg the Climate Change Adviser at SPREP.

Each of the countries will be renewing their reports individually. This workshop will look at the changes to the criteria of these National Communications as well as new opportunities for further work associated with them. Visit www.unfccc.int to find out more.

Pacific Magazine

<http://www.pacificmagazine.net/news/2007/07/03/the-pacific-gets-its-facts-right-for-climate-change>

“Annual and seasonal ocean surface and island air temperature have increased by 0.6 - 1.0°C since 1910...,” SPREP.

Tongan Teen Wins Scholarship to Top U.S. University

Tuesday, May 15, 2007

NUKUALOFA, Tonga – In September Fehi'a Kava (17) will enter Brown University in the US on scholarship to study Bio-Chemical Engineering and her family believes that she will be the first Tongan student to enter the famous Ivy League university.

She is the grand daughter of 'Epalahame Kifi Lousiale Kava and his wife Temaleti and the daughter of US Marine Corps Captain Sione Lousiale Kava of American Samoa.

Fehi'a of South Sacramento, California, is accepted to Brown University on a full scholarship for four years to pursue a degree in Bio-Chemical Engineering.

Fehia wanted to follow his father's footsteps into the United States Armed Forces. Her father, Sione, said that she had been accepted to West Point and the Air Force Academy but her brother David, in his third year at West Point, was against her choice because there was "a possibility that she would end up on the front line of a war somewhere".

Sione said that "after much thought and deliberations, she decided to honor her brother's wish, taking up her second choice at Brown University."

Brown University is a private university located in Rhode Island.

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Pacific Island Report

Samoaan Butterfly a Wonder of Evolution

Friday, July 13, 2007

WELLINGTON, New Zealand – A Samoaan butterfly has provided scientists with one of the most clear and fastest cases of evolution under natural selection.

Researchers from London's University College say a bacteria passed down through the female Blue Moon or Great Eggfly butterfly killed males, so the species on Savaii and Upolu were faced with extinction.

In 2001 only 1% of the butterflies were male, but the rapid develop-

ment of a genetic mutation that suppresses the bacteria has seen male and female levels equalize.

Their tests confirmed the recovery was not due to changes in the parasite.

The scientists say they do not know whether the mutation already existed in the local butterflies or was introduced through a South American species.

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Pacific Island Report

<http://pidp.eastwestcenter.org/pireport/2007/July/07-13-12.htm>



Classroom Weather Focus

Hurricane Activity - Wind Speed & Ocean Waves

OBJECTIVES:

1. Wind speed increases the height of ocean waves.
2. Higher waves occur in shallower water.

MATERIALS:

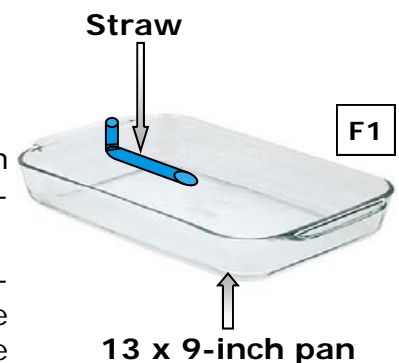
9" x 13" baking dish, flexible straw, duct tape, water, and ruler

PROCEDURE:

1. - Bend the straw so that it forms an L shape.
 - Place the straw inside the dish in the middle of one of the 9-inch sides. Place the straw so that the shortest end of the straw is vertical and against the side of the dish. The long end of the straw will point towards the other 9-inch side of the dish. Tape the straw in place so that there is about a half an inch between the bottom of the pan and the longest part of the straw. See figure (F1).
 - Pour water into the dish until it reaches just below the straw.
2. One partner or group member should blow very gently into the end of the straw that is sticking straight up, creating "wind" over the water in the dish.
3. Another student should observe the water at the opposite end of the straw and mark the wave height on the outside of the dish.
4. Students should repeat the procedure two more times, blowing harder each time, and record their measurements to assess the effect of wind speed on the height of waves.
5. Have students remove the water from the dish, move the straw up near the top of the dish, and refill the dish with water until it reaches just under the straw. Then they can repeat the procedure to compare wave height in deeper and shallower water.

DISCUSSION QUESTIONS:

1. Describe the mechanics of the development of a hurricane.
2. Storm surge water height over open water is not as high as when it reaches land. Assuming the pressure in the eye of the hurricane is the same for both instances, why is this so?
3. Study a cross section of a hurricane and write a journal entry describing what you would see if you actually flew through one. Be sure to include details about any changes you observe within the hurricane itself.



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ENSO Diagnostic Discussion

Synopsis: ENSO-neutral conditions are expected to continue during the next 2 months, with ENSO-neutral or La Niña conditions equally likely thereafter. ENSO-neutral conditions continued in the tropical Pacific during June 2007, with average to below-average sea surface temperatures (SSTs) extending from the date line to the west coast of South America. A majority of the statistical models indicate a continuation of ENSO-neutral conditions through the summer months, with several statistical models forecasting weak La Niña conditions during the fall or winter. In contrast, most dynamical models, including the NCEP Climate Forecast System (CFS), continue to predict a transition to La Niña within the next three months. Given the large spread in ENSO forecasts, along with the slower than expected decrease in observed SSTs over the past few months, it is reasonable to expect either a slower evolution toward La Niña conditions or the continuation of ENSO-neutral conditions.

NOAA Climate Prediction Center

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.html

Get to Know: Dr. Scott Greene



Friday, July 20, 2007

Hello to all out in SPaRCE land. My name is Scott Greene and I was lucky enough to have been with the SPaRCE program from the beginning. My current position is a professor of Geography at the University of Oklahoma. In addition to working with the SPaRCE program, I study renewable energy, climate variability and climatic hazards. My classes consist of physical geography, climate and history, and statistics.

I grew up in California, where it rarely rains. I became interested in the causes and patterns in rainfall at an early age. My

interest in Pacific rainfall peaked when I moved to Hawaii to pursue my graduate education. Listening to the tropical rainfall pound my roof made me wonder how there could be such different types of rainfall in different locations. Luckily, I became aware of the SPaRCE program, and began to work describing and analyzing tropical pacific rainfall patterns.

When I'm not listening to the rain, I like spending my time playing with my two children, Katherine (age 7) and Spencer (age 3).

- Scott Greene

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