

The Pacific Tradewinds Quarterly

Betty Christian, Pitcairn Radio Operator Wins British Prize

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Betty Christian praised for saving lives.

Tuesday, October 21, 2008

WELLINGTON, New Zealand (Radio New Zealand International) – A Pitcairn Islander, Betty Christian, has been awarded an Order of the British Empire for her 44 years of service to the island at a ceremony in Wellington.

Ms. Christian began her career as a radio operator in 1963 when the island's community links to the outside world relied on Morse code.

Her role was especially important in medical emergencies, when her skills to contact passing ships were a matter of life or death.

She says she's humbled to have become a member of the order.

"Oh it's really awesome, I mean, I

never ever expected anything like this would happen to me. It's a great honour."

Betty Christian says one of the highlights of her career was coordinating the rescue of 29 seamen on their way from New Zealand to Panama in the 1980s.

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Radio New Zealand International: www.rnzi.com

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<http://www.pidp.org/pireport/2008/October/10-22-05.htm>

A note from the editor:

Thomas and Betty Christian have been active participants and great friends of the SPaRCE program for many years.

Everyone here at the SPaRCE Headquarters would like to congratulate Betty in receiving this honorable award!

Pacific Leaders Meet in Samoa

Tuesday, October 14, 2008

Regional talks on how small island states could better adapt to climate change are being held in Samoa this week.

Pacific leaders appealed to the United Nations General Assembly last month for urgent measures to help them combat and adapt to the ongoing effects of rising sea levels and rising temperatures.



The leaders will join other delegates, including donors, for a gathering organized by the Secretariat of the Pacific Environment Programme.

Adapting to climate change is one of the biggest challenges facing the region and affects the economic, social, and environmental sectors of countries.

Already, Pacific Islands have experienced more frequent and extreme weather events such as storm surges and El Nino like conditions, but the impact on low lying atolls like Kiribati and Tuvalu is even greater as they are now in danger of being inundated by rising sea levels sooner than expected.

The United Nations Intergovernmental Panel on Climate Change said that climate change is manmade, but adapting to it is possible if there is political will to act.

The Pacific Climate Change Roundtable was formed after leaders adopted their Framework for Action on the matter in 2005 and SPREP made responsible for developing and reviewing the plan with input from relevant stakeholders."

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<http://pidp.eastwestcenter.org/pireport/2008/October/10-14-09.htm>

Pacific Year of Climate Change 2009 Launched

Friday, October 17, 2008

The Pacific Climate Change Roundtable, which took place from 13-17 October 2008, in Apia, Samoa, was organized by the Secretariat of the Pacific Regional Environment Programme (SPREP).



Participants from all over the Pacific region, from academia, NGOs [Non-governmental Organizations], donor agencies, and countries shared information on ongoing and planned climate change activities in the region. They prepared an inventory of activities that will eventually become a matrix and database of activities for the Pacific Climate Change Portal, to be

developed in partnership with NOAA [National Oceanic and Atmospheric Administration], SPREP, Australia and New Zealand. Participants also agreed on a set of next steps, including communications and strategizing for the Poznan Climate Change Conference in December 2008.

It is envisaged that the Roundtable will meet once a year, but that smaller thematic meetings may be held as well, making full use of internet and e-mail for communication. In addition, the Roundtable launched the 2009 Pacific Year of Climate Change, as agreed to by the 19th SPREP meeting in Pohnpei, Federated States of Micronesia.

Reprinted From:

<http://www.climate-l.org/2008/10/pacific-year-of.html>

Remote Swain's Island to Get Internet

American Samoa island anxious to communicate.

Thursday, November 7, 2008

MELBOURNE, Australia (Radio Australia) – One of the most remote islands in the Pacific is about to be connected to the Internet.

Swain's Island, which lies between American Samoa and Tokelau, has a population of fewer than 40 people.

It has come to an agreement with the American Samoan government to construct a satellite dish and get a wireless Internet connection.

The service should be installed next year, once cyclone season has passed.

The island's representative in the American Samoan parliament, Alex

Jennings, told Radio Australia's Pacific Beat program, it will benefit the island in a number of ways.

"One of the problems that we have is communication," he said. "In fact I can only talk to Swain's once a day through my radio, so communication has been an important part of what I've been trying to bring into Swain's and so far we've moved forward with that. "We've constructed the facility that will house the equipment and technology to bring the phone system as well as the Internet system for Swain's Island."

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<http://pidp.eastwestcenter.org/pireport/2008/November/11-07-09.htm>



Samoa to Begin Daylight Savings Next Year

To promote energy conservation, longer afternoons.

Monday, December 1, 2008

APIA, Samoa – Daylight savings is to begin in Samoa on the first Sunday of October next year in a bid to address the worldwide crises in fuel and food prices.

Cabinet has approved the report by the Committee appointed to assess possible benefits to instituting Daylight Saving Time for Samoa. Daylight Saving Time is a convention of advancing

clocks so that afternoons have more daylight and mornings have less. Typically, clocks are adjusted forward one hour near the start of spring for the southern hemisphere and are adjusted backward in autumn. According to the Committee's report, daylight saving time in Samoa will have significant benefits to the country, like: promoting energy conservation; increasing opportunities for leisure; enhancing public health and safety; and economic growth. Cabinet has approved: Daylight saving time in Sa-



moa to start on the first Sunday of October 2009 until the last Sunday of March 2010. The legislation to allow this to happen will be drafted by the Office of the Attorney General. The Labour Department will implement and monitor this programme. Daylight saving time for Samoa is a response to

the need for national strategies to address the current worldwide crises in fuel and food price increase.

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Samoa Observer: www.samoaoobserver.ws

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<http://pidp.eastwestcenter.org/pireport/2008/December/>



Hail Pelts Villagers in Central Viti Levu

Families say it was a first in Fiji.

Monday, November 9, 2008

Residents of Yauyau settlement in Nadarivatu, Ba in central Viti Levu were caught by surprise when hailstones fell on them yesterday and not rain.

Some villagers Fijilive spoke to today still expressed shock at what they had experienced saying nothing like that had ever happened before.

Jale Nabenia said at around 12 midday yesterday he and his family decided to have a sit under the trees outside as it was "getting really hot".

"We'd been outside for just a few minutes when suddenly the sky turned grey and cold winds started blowing. Everything was getting dark. This is when we all ran back inside the house as we knew there would be heavy rain soon," he explained. "But as soon as rain started pouring it seemed as if some people were throwing stones on our roof. When we looked outside, we saw that it was hail instead and the ground was completely covered with what seemed like huge ice cubes."

He said this went on for about 15 minutes.

"I actually held it in my hand and it was so cold as if it was stored in a freezer. The largest one I think could have measured about half an inch," he said.

"We couldn't believe it."

He said a few hours later he met up with some men from Nadala village, about nine miles away, who said they experienced the same thing there.

"According to those men, the hailstones fell at around the same time, we at Yauyau felt it," Nabenia said.

Last week, villagers of Wainibuka in the Tailevu Province also experienced hail for the first time.

Comments are being sought from the weather office on these extreme weather conditions.

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<http://pidp.eastwestcenter.org/pireport/2008/November/11-10-14.htm>

"I actually held it in my hand and it was so cold as if it was stored in a freezer. The largest one I think could have measured about half an inch." - Jale Nabenia



Severely Endangered Fiji Frog “Rediscovered”

USP scientists announce finding after expedition.

Monday, December 8, 2008

An endangered and endemic Fiji ground frog was rediscovered in an expedition into the Nakauvadra Range by local scientists from the University of the South Pacific.

Local herpetologists in the past five years searched for surviving populations of ground frogs, locally known as dreli, boto ni viti or ula, in likely habitats on Viti Levu.

The Viti Levu surveys into the Savura, Sovi Basin, Wabu, and Tomanivi Forests reserves were unsuccessful in locating any surviving populations.

A 10-day expedition into the Nakauvadra Range by a team of researchers last month led to the rediscovery of the ground frogs close to the expedition campsite.

Nunia Thomas, NatureFiji-MareqetiViti co-ordinator and herpetofauna team leader, said the rediscovery proves the point that we know little about our forests and the animals that inhabit them.

Marika Tuiwawa, curator of the South Pacific Regional Herbarium and Nakauvadra expedition team leader, said the rediscovery supports the notion that the Nakauvadra Range was like an island refuge for some of Fiji's endangered wildlife.

For the last 20 years it has been accepted that two species, the ground frog and the megabotoniviti were consumed to extinction by mongooses and humans on Vanua Levu and Viti Levu.

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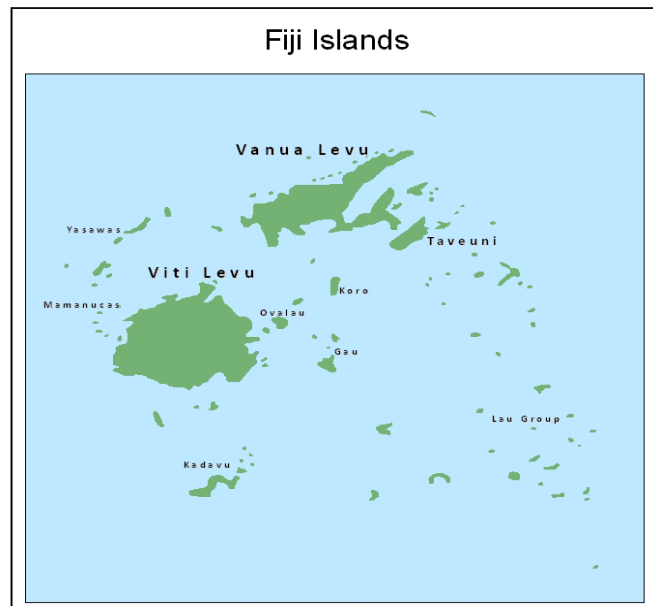
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<http://www.pidp.org/pireport/2008/December/12-09-19.htm>



Fijian ground frog, also known as dreli, boto ni viti, or ula.

Picture courtesy of: <http://www.naturefiji.org/images/endangered/pics/40.jpg>



Great Whites Make Rare Visit to Tonga Waters

More common in colder waters of Australia, New Zealand.

Monday, November 16, 2008

By Mary Fonua

Three Great White Sharks — each over 4 metres long — have visited Tongatapu waters very recently, dropping their transmitting tags and surprising scientists who say that it is the first time they have known these creatures to come here.

"All three sharks may still be in Tongan waters or they may have left," said Clinton Duffy, a scientist with the Aquatic & Threats Unit in New Zealand's Department of Conservation, who confirmed that three tags have popped up in Tongan waters in the last two months.

The 4 meters long male and two 4.5 meter females were among six great whites that were tagged off the Chatham Islands in April by his colleague Dr. Malcolm Francis from the NZ National Institute of Water & Atmospheric Research Ltd.

Clinton is looking for a shark tag that might have washed up on Ha'ateiho Beach on the southern coast of Tongatapu, last week. The tag that looks like a microphone sent out its last GPS signal from there at 4:33 pm on November 7.

Shark scientists are looking for a Mk10 pop-up archival transmitting (PAT) tag washed up in southern Tongatapu.

Great White Sharks are rare to the point of being unknown in Tongan waters, and are found in the cooler waters off New Zealand and Australia.

Clinton said the PAT tag attached to the sharks only transmits after it has released from the shark. "We use the data trans-

mitted back from the tag to work out where it has been," he said.

"We think the sharks may return to New Zealand and programmed the tags to stay on the sharks until January to see if that was the case. So, unfortunately, all of the tags that have reported from Tongan waters have come out prematurely. They may have grown out of the sharks, or caught on the bottom and pulled out. When this happens the tag will only drift for three days before it begins transmitting. This is triggered by the constant depth setting in the tags program -so if the depth does not vary by more than 4m in three days the tag automatically begins to transmit data. So there is no way that the tags could have drifted into Tongan waters," he said.

Details of the sharks that have travelled to Tonga from the Chathams are:

- (i) 4 m long male tagged at Star Keys, 14 April 2008, pop-up location Ha'ateiho Beach, Tongatapu;
- (ii) 4.5 m long female tagged at Star Keys, 15 April 2008, pop-up location c. 50 km northwest of Tongatapu;
- (iii) 4.5 m long female tagged at Te Awapatiki, 19 April 2008, pop-up location c. 135 km south of Eua. (Clinton said that this shark may have visited Pelorus Reef but the tag actually started transmitting over deep water east of the reef, so it could have visited any of the sea mounts in that area).

"We tagged 6 sharks at the Chathams in April and two tags have yet to pop-up."

Great white sharks are protected in New Zealand waters because their numbers are in gradual decline and Clinton said the

Great White Sharks are rare to the point of being unknown in Tongan waters, and are found in the cooler waters off New Zealand and Australia.

aim of the study is to identify important great white shark habitats in New Zealand waters and links between the New Zealand great white shark population and those found in other countries.

The females mature between 4.7-5.2 m total length and have a maximum of only 10 pups in a lifetime. They do not start giving birth until halfway through their life when it is thought they give birth every two to three years, said Clinton.

"Great whites are also listed on Appendix I and II of 'The Convention on the Conservation of Migratory Species of Wild Animals' (CMS, or Bonn Convention). Appendix 1 requires signatories to the convention to do everything they can to protect the species listed on it, and as New Zealand is a signatory to CMS the government was obligated to protect white sharks," he said.

Clinton hopes that someone will find the lost shark tag on the beach and that they can recover it.

"It is a Mk10 pop-up archival transmitting (PAT) tag manufactured by Wildlife Computers. It was attached to the shark and transmits data."

"An Argos satellite emails the data summaries to me, but if we get the tag back we are able to access all of the data collected. From this we could reconstruct a much more detailed picture of the shark's diving behaviour and temperature preferences. The information on light levels is used to roughly estimate the path the shark travelled along."

"This is the first time we have tracked great whites to the waters of Tonga. Previously we have had great white sharks tagged at the Chathams travel to New Caledonia and Vanuatu. We think they may be travelling to these areas to feed on humpback whales that die on migration or during birth. It is also possible they

may attack sick, injured or orphaned calves. These areas also support deep water snapper fisheries and the sharks may also be feeding on fish aggregating around seamounts," he said.

Meanwhile, Poasi Fale, a scientist at Tonga's Ministry of Fisheries in Nuku'alofa agreed that the Great White is unknown here.

"To my knowledge the Ministry of Fisheries has not encountered or sighted this kind in our waters. We are tropical so that's why the great white don't like to come here. It is rare to be sighted," he said.

The Great White Shark is the world's largest known predatory fish and like many other sharks, has rows of teeth behind the main ones, allowing any that break off to be rapidly replaced. According to Wikipedia, a typical adult great white shark measures 4 to 4.8 m (13 to 16 ft) with a typical weight of 680 to 1,100 kg (1,500 to 2,450 lb), females generally being larger than males. With a single bite, a great white can take in up to 14 kg (31 lb) of flesh, and can gorge on several hundred kilograms or pounds of food.

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<http://pidp.eastwestcenter.org/pireport/2008/November/11-17-11.htm>

"To my knowledge the Ministry of Fisheries has not encountered or sighted this kind in our waters. We are tropical so that's why the great white don't like to come here. It is rare to be sighted"
- Poasi Fale



What's Going on With SPaRCE

First off, I would like to wish all of our participants and friends a Happy New Year from all of us here at SPaRCE! This new section of the SPaRCE newsletter will be used to update our participants on what is going on around the SPaRCE Headquarters. This section will also be used to announce new participants and events. If anyone has any suggestions for the SPaRCE newsletter, please let us know.

— Nikki Acton, SPaRCE Coordinator



Send in Your Questions!

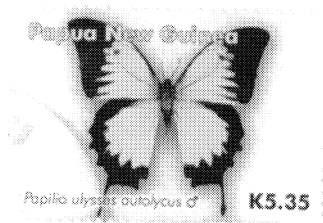
If you or your students have any questions relating to science please send them to us here at SPaRCE. Once we receive a question we will publish the question and an answer in the next newsletter.

Call for Newsletter Contributions

In order to get to know our schools and participants a bit better, please send us items to be published in the SPaRCE newsletter.

Here is a list of ideas:

- Accounts of extreme weather events
- School history
- Pictures of students taking measurements
- Activities using SPaRCE data
- Songs or poems about weather
- Any other interesting facts about your school or culture.



Welcome to SPaRCE!


Bhaona Anjani Gasai—Sigatoka, Fiji Islands

Welcome to the SPaRCE family!
We look forward to working with you in the future!

Classroom Science Focus

Celebrate Pi (π) Day!

March 14, 2009



Pi, the Greek letter π , is the symbol for the ratio of the circumference of a circle to its diameter. Pi has a numeric value of 3.1415926535... Pi Day is celebrated every year by math enthusiasts around the world!

OVERVIEW: Many students tend to memorize, without understanding, formulas that we use in geometry or other mathematic areas. This particular activity allows students to discover why pi works in solving problems dealing with finding circumference.

OBJECTIVES: The students will:

1. Measure the circumference of an object to the nearest millimeter.
2. Measure the diameter of an object to the nearest millimeter.
3. Explain how the number 3.14 for pi was determined.
4. Demonstrate that by dividing the circumference of an object by its diameter you end up with pi. Discover the formula for finding circumference using pi, and demonstrate it.

RESOURCES/MATERIALS:

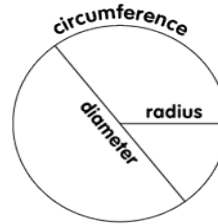
- π Round objects such as jars, lids, etc.
- π Measuring tapes, or string and rulers
- π Paper
- π Pencil
- π Calculator

ACTIVITIES AND PROCEDURES:

1. Divide class into groups of two.
2. Give materials to student teams.
3. Have student teams make a table or chart that shows name or number of object, circumference, diameter, and π .
4. Have students measure and record each object's circumference and diameter, then divide the circumference by the diameter and record result in the π column.
5. Have students find the average for the π column and compare to other groups in the class to determine a pattern. Students can then find the average number for the class.
6. Explain to the students that they have just discovered pi, which is very important in finding the circumference of an object. (You may wish to give some historical information about pi at this time or have students research the information.) Have students come up with a formula to find the circumference of an object knowing only the diameter of that object, and the number that represents pi. Students must prove their formula works by demonstration and measuring to check their results.

TYING IT ALL TOGETHER:

1. Have students write their conclusions for the activities they have just done. Students may also share what they have learned with other members of the class.
2. Give students three problems listing only the diameter of each object and have them find the circumference.
3. Encourage students to share learned knowledge with parents.



$$\text{Pi} = 3.141592\dots$$

$$\text{circumference} = \text{Pi} \times 2 \times \text{radius}$$

$$\text{area of the the circle} = \text{Pi} \times \text{radius}^2$$

π

Have a Happy π Day!!!

ENSO Diagnostic Discussion

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Synopsis: ENSO-neutral or La Niña conditions are equally likely through early 2009.

ENSO-neutral conditions continued during November 2008, although equatorial sea surface temperatures (SSTs) remained below-average across much of the central and eastern Pacific Ocean. The subsurface oceanic heat content anomalies (average temperatures in the upper 300m of the ocean) became increasingly negative as below-average temperatures at thermocline depth expanded throughout the central and eastern Pacific.

Low-level easterly winds and upper-level westerly winds expanded and strengthened across the equatorial Pacific Ocean during the month. Also, convection remained enhanced near Indonesia and suppressed near the International Date Line. However, in recent months intraseasonal variability has contributed to episodic strengthening and weakening of convection over Indonesia. Overall, the ocean-atmosphere system during November remained consistent with ENSO-neutral conditions, but exhibited several atmospheric characteristics typical of weak La Niña conditions.

A majority of the SST forecasts indicate ENSO-neutral conditions will continue into the first half of 2009. Several models, including the NOAA Climate Forecast System (CFS), suggest the development of La Niña during December 2008- March 2009. The recent strengthening of the low-level easterlies over the equatorial Pacific suggests the possibility of additional anomalous cooling of the SSTs. However, the magnitude of cooling remains uncertain and it is possible the La Niña threshold will not be met. Therefore, based on current observations and recent trends, ENSO-neutral or La Niña conditions are equally likely through early 2009.

NOAA Climate Prediction Center

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

Wanted: Schools to Join SPaRCE!

SPaRCE is looking for new schools to join or former SPaRCE schools to re-join!

If you know of any teacher or school in the Pacific that would be interested in the SPaRCE Program or if you have been an active school in the past please contact Nikki Acton at:



sparcecoordinator@gmail.com

Or

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Thank you for being a part of the SPaRCE Program!

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!