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November 2007

The Sandwatcher

The Voice of UNESCO's Sandwatch Project

www.sandwatch.org

United Nations Educational, Scientific and Cultural Organization

Sandwatch & Climate Change by Gillian Cambers & Paul Diamond

We decided to feature climate change in this issue of **The Sandwatcher**, partly because it is such a 'hot' topic at the moment especially with the award of the 2007 Nobel Peace prize to the Intergovernmental Panel on Climate Change and Al Gore; but also because we think it important that Sandwatch embraces the challenges of climate change and that Sandwatchers around the world play their part in promoting and developing ways to adapt to climate change both in their daily lives and at their coasts and beaches.

Let us try and look in a positive light at the challenges posed by climate change. For one thing it gives us additional justification for continuing and strengthening our efforts in environmental stewardship in general and at our coasts and beaches in particular.

Many people, when they hear or read about climate change, respond by thinking "This issue is just too big for me alone to deal with" or "Climate change doesn't affect me or where I live". But climate change is already ongoing, it is happening now and is not something that is going to start next year or in ten years time. Indeed climate has been changing through the millennia but now we have to come to terms with the fact that in addition to natural changes, climate is changing due to man's activities particularly the burning of fossil fuels. Climate change is affecting each one of us, sometimes in small insidious ways. For example the ice is thinner in the Canadian Arctic and as a result there is a much higher incidence of Inuit hunters falling through the ice; and residents in some tropical islands of the Caribbean are noticing that the dry seasons are lasting longer

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Welcome Sandwatchers!

This is the 5th International issue of "The Sandwatcher". The theme of this issue is ***Global Climate Change*** and how it is already affecting us all especially small islands.

Sandwatch seeks to change the lifestyle and habits of youth and adults on a community-wide basis, and to develop awareness of the fragile nature of the marine and coastal environment and the need to use it wisely.

All Sandwatchers are encouraged to submit articles on their projects to **The Editors:**

Gillian Cambers
g_cambers@hotmail.com
Paul Diamond
pdiamond@nevis-nhcs.org

Inside this Issue Sandwatch Activities in twenty two (22) countries world wide!

Including—Antigua & Barbuda, Bahamas, Barbados, Brazil, British Virgin Islands, Cook Islands, Dominica, Dominican Republic, Kenya, Malaysia, Mayotte, Montserrat, New Zealand, Nevis, Puerto Rico, Seychelles, St. Croix, St. Lucia, St. Vincent & The Grenadines, Trinidad & Tobago, Turks & Caicos and Wales...and much more!

Climate Change Affects Lake Victoria, Kenya

Our School is on the shores of Lake Victoria. This magnificent lake is not only the source of the Nile, but is also the largest body of fresh water in Africa, and second largest in the world after Lake Superior. It is bigger than many countries. At 27,000 square miles, the size of Ireland, Victoria is the greatest of Africa's Great Lakes — the biggest freshwater body after Lake Superior. And it has dropped fast, at least six feet in the past three years, and by as much as a half-inch a day this year before November 2007. The report, by U.S.-based Water Resources and Energy Management International, says rising temperatures may evaporate up to half the lake's normal inflow from rainfall and rivers, with "severe consequences for the lake and its ability to meet the region's water resources needs."

Teacher Peter Amunga and his students with the Environmental Conservation Award given to them by the Kisumu Municipal Council for their efforts

During the month of September, **Kisumu High Conservation & Sandwatch Club** spent an afternoon observing and watching the activities going on around the lake. The following is what we saw and heard on the shores of lake Victoria on that hot September afternoon. Across the bay, at a fish packing plant, fishermen had to wade ashore (through the thick green marsh that the water Hyacinth that has created in much of the lake) with their Nile Perch inflat-bottomed boats, and heave the silvery catch up to the jetty. Looking on, Joy Achieng wondered about what's to come. "Such a large body of water, dropping so fast," she said. We saw and measured parts of Lake Victoria's receding shoreline, a place of scavenging storks, weedy expanses of water hyacinth, fishing boats derelict on dried lake bed. We saw and interviewed people to find out what was happening but they did not understand why. One fisherman Otieno Ojwang, 24 told us, "In just a few years, the lake pulled back from there, maybe 200 feet," said fisherman, pointing to old high-water marks at Kichinjio Beach,in Kisumu City. Members of the club finally concluded thus, global warming has really reached its zenith since it has started affecting our large water bodies as well. It's high time now that we actually look into the matters of preserving our environment, which is engulfing our planet slowly and stealthily.

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Cook Islands Develops New Measuring Method

Sandwatch students in the Cook Islands sieving sand onto a sheet of paper for easy measurement

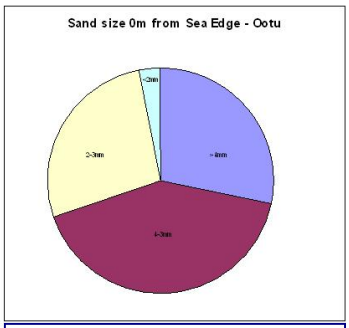
Cook Islands develop a new method to measure sand size **Sandwatchers** in the Cook Islands have been very innovative in developing a low-cost way to accurately measure sand size. During the **Cook Islands Sandwatch Learners Conference in June 2007**, students from Araura College in the island of Aitutaki showed how they had measured sand size. The Sandwatch manual provides a simple chart to make an initial assessment of sand size, but the Cook Islands Sandwatchers have gone one step further.

The method they used is simple:

1. Collect 4 clean plastic 500 gm ice-cream containers

2. In the bottom of one container make a lot of 4mm size holes

3. In the bottom of a second container make a series of 3mm holes



Sand Sieve Results

<2mm, 2-3mm, 3-4mm, >4mm

4. In the bottom of a third container make a series of 2 mm holes

5. Fill the fourth container with a sample of dry beach sand and weigh the container and sand

6. Transfer the sand to the container with 4 mm holes.

7. Shake the container so that the smaller sand particles fall through the holes onto a sheet of paper

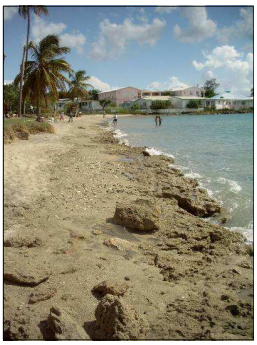
8. Weigh the container with the sand that remains and record it as >4 mm size

9. Transfer the sand on the paper to the container with 3 mm holes and repeat steps 7-8, recording the sand in the container as 3-4 mm size

10. Repeat step 9 with the container with 2 mm holes

11. Make a graph showing the results

Congratulations to Araura students: Vainetutai Nicholls, Temata Klaschka, Joe'ana Bishop, Kahmillia Puapii, Ruta Williams, Maki Arere, for showing us this method



Beach erosion is only one of the more obvious signs of climate change. This is a recent photo of the south end of Nevis's famous Pinney's Beach. It used to be 100 feet wide and much further seaward!

Sandwatch & Climate Change (Continued from cover)

...and longer each year. Small changes, yes, but they affect how we live our lives.

Should we panic? No. Should we listen, learn, understand and begin to adapt to climate change now? Yes. Within the framework of Sandwatch we need to learn first hand about the direct and indirect impacts of climate change on our beaches and coasts, e.g. how will rising sea levels and more intense hurricanes affect our particular beach and will increasing temperatures affect turtle hatching? We need to do our research, share our findings and then take action. Simple activities like establishing coastal forests may make a positive difference by reducing beach erosion and cooling sand temperatures.

Other activities like conserving freshwater and turning out the lights, using renewable energy, driving less and walking more, sharing information with our communities, will help our planet, one step at a time. Let us work within the framework of our Sandwatch groups, schools, organizations, communities and countries to make a difference and to begin now to adapt to climate change.

By G. Cambers and P. Diamond, Editors—The Sandwatcher

Climate Change & Lake Victoria, Kenya (cont'd from cover)

Sandwatcher Peter Amunga by a ferry boat on the shores of Lake Victoria

Fear and worry was evident on the the youthful faces of Kisumu High Conservation club members. Wycliffe Sawe was almost in tears when he opened the discussion. "Guys, This lake is our future! How will it still be here in the year 2030?" Mary Ann sounded even the more spiritual when she declared " God gave us this lake and now behold, God taketh it away from us! " "People talk about the snows of Kilimanjaro," said Elvis, speaking of African mountain's melting glaciers. "We have something much bigger to worry about, and that's Lake Victoria. " Each troubled lake is a complex story. Lake Chad's near-disappearance, for example, stems in part from overuse of its source waters for irrigation. Deforestation around Lake Victoria, shared by Uganda, Kenya and Tanzania, makes the area a less efficient rain "catchment" for the lake, and overfishing and pollution are damaging its $400-million-a-year fishing industry. Kenya's Rift Valley lakes, some just a few feet deep, have always fluctuated in size, even drying up with drought. Finally we all were in agreement, that the Dafur problem which has been witnessed in Sudan around Lake Chad region, is not a political issue. People are killing each other and dying daily in the Chad basin, because of an environmental issue. The lake that they depended on for watering, cleaning and farming has dried up. The same will soon be witnessed in the Lake Victoria region if unchecked global warming effects continue to eat up the lake. Global warming and climate change is killing our future in East Africa and the globe as a whole. We were very happy when the American Al Gore, won the Nobel prize for his efforts in educating us on global warming.

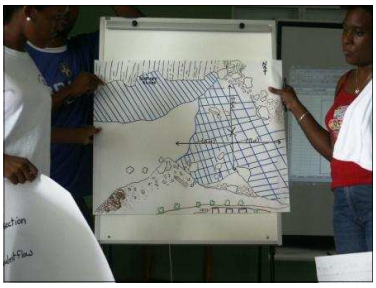
Peter Amunga, Kisumu High School, Kenya

River Care Starts in Dominica

Dominica with its mountains, waterfalls, rivers and lakes is well known as the Nature Isle of the Caribbean. With an active **Sandwatch programme** already ongoing, they are now expanding to apply the Sandwatch approach to the island's rivers. Fiji's River Care project is being used as their model; River Care is supported by Live and Learn Environmental Education, an international environmental NGO. Some fifteen teachers and NGO representatives met for 2 days from 13-14 September 2007 to design a project and discuss it with local experts, to learn about river monitoring techniques and to practice them in the field, and to draw up a programme for starting River Care through school environmental and adventure clubs. The workshop was especially timely, since it occurred shortly after Hurricane Dean which had caused flooding, landslides and road collapses in Dominica, and a few days after a very intense tropical wave which had resulted in the whole island being shut down because of very intense rainfall. The workshop was supported by the UNESCO National Commission in Dominica and the Ministry of Human Resources, Sports and Youth Affairs. Gillian Cambers from the University of Puerto Rico Sea Grant College Program also participated and provided a draft manual and shared experiences with monitoring rivers. During the workshop, participants learnt how Dominica's beaches have experienced serious erosion over the past 20 years; how the Dominica Water and Sewerage Corporation extract and purify water from the rivers for human use; and how the International Coastal Clean-up is providing solid data on the amount of garbage being dumped and reaching the coast of Dominica.
They also went out to the Belfast River and learnt how to measure river velocity and channel cross sections to determine water volume; they observed the various features of the river environment and drew sketch maps; they collected water samples and measured water quality. A **Sandwatch-River Care** Committee has been set up and will meet monthly; this will provide a project framework within which school environmental clubs can start monitoring their rivers, analysing their results, sharing their findings and taking action through small projects to address river issues and enhance river environments. This activity fits in well with the school curriculum in Dominica since rivers are already included in the curriculum and students have to complete 20 hours community service to graduate.

Terry Raymond
Ministry of Human Resources, Sports and Youth Affairs, Dominica

River Care is Sandwatch adapted for the study of rivers. Here teachers in Dominica measure the Belfast, one of their many rivers.



Educators creating a map of the river to show the dynamics of its flow is all part of the project

Earths "Shout of Alert" From the Dominican Republic

Meteorological phenomena and factors of climate change, especially those related to temperature increase and changes in precipitation, considerably affect the inhabitants of the ecosystems, including human beings. Human beings in their daily lives are changing weather patterns. Therefore, problems generated by the adverse meteorological conditions are increasing dramatically.

Effects on natural resources and health caused by climate change:
Global warming is the immediate cause of the economic and human losses. The excessive use of fossil fuels (i.e. petroleum, carbon, natural gas) for the production of power and the operation of cars, airplanes, and trucks is causing an increase of greenhouse gases and atmospheric gases -carbon dioxide (CO_2), methane(CH_4), nitrogen oxide (NO_2), ozone(O_3), and chlorofluorocarbons (CFCs) - and is contributing to the damage of Earth's atmospheric layers. As a result, the Earth is retaining more heat than it should and meteorological events such as hurricanes, floods, and tornados are occurring more frequently than ever.

Due to the climate change and the increase of sea water and global temperatures many native species decrease in number or are forced to abandon their original habitats. Out of their ecosystems, most of them are condemned to die and disappear. Also changes in precipitation, relative humidity, and temperature exert great influence on agricultural crops. If agricultural production decreases as a consequence of climate change, then the quality of life in rural and urban zones will decrease, and more communities will experience extreme poverty.

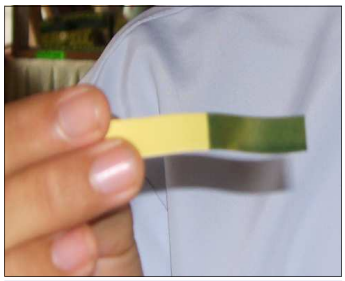
What can we do?
A "Shout of Alert" came up after people noticed the great damage that human beings are doing to "Our Mother Earth." Important events have occurred since the 1980s, including the development of strategies to reduce and stop the negative effects on the natural resources and the environment. In 1983, the United Nations established the World Commission for Environment and Development and issued a document known as Our Common Future or Bruntland Report in which it stated that human beings should make changes in their live styles and their economic interactions in order to avoid an age of extreme human suffering and ecological degradation.
Therefore, our mission is to protect and preserve our natural resources and the environment.

Gabriela A. De Los Santos, M.Sc., Environmental Educator, Dominican Republic
Translated by: Cristina D. Olán Martínez, Editor, UPR- Sea Grant College Program

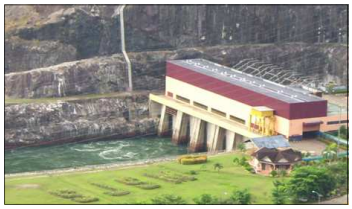
Corals, sea urchins & crabs are just some of the marine life that is most at risk from rising ocean temperatures

Malaysia: Save Our River Project

The palm oil factory at Kuala Berang dump their effluent directly into the Tapah River polluting the drinking water of a whole region



The test paper turned bluish green and showed that the river water had a pH level of 9 meaning it was very alkaline



The Kenyir Dam located 8 miles from the school, provides power and water for Terengganu State

Save Our River- Let The River Run Free

We are the young and enthusiastic researchers from SMK Tengku Ampuan Intan in Malaysia.
We have a possible mission this year. We want to help keep the Tapah river free from pollution.
Our state's main water-catchment area, is the amazing Lake Kenyir. It is the biggest man-made lake in South East Asia.

But if you take a close look and you can see smoke emitted by a palm oil factory on the Tapah River.
Lake Kenyir which is much talked about with its splendid sight to behold and Lake Kenyir has become the main source of clean water for all of Terengganu State's residents.
Besides fresh water the lake also has the Kenyir Dam which is very important in this state because it generates electricity for all of us.

About 10 years ago a palm oil factory was built in a remote area in Kuala Berang. According to one of the villagers, the factory has emitted palm oil wastes into Tapah River ever since.
Before 1997, fish were available in abundance and the river was clean. Since it has been contaminated with organic wastes from the factory, the ecosystem is seriously affected.

There are no more fish and the river is dirty and oily and it is also letting off a foul smell.
On our home pages on the Sandwatch website (www.sandwatch.ca/malaysia.htm) you can photos of the factory and how the Tapah River is murky and dirty now.
This is one of the main reasons why the river's ecosystem is dying and fish are hard to be found.
We have taken pictures of the stream where the factory releases its wastes in the morning and evening.

The stream flows to Tapah River and causes the water to become contaminated and unhygienic.

Is there anyone in this world who dares to drink the murky, oily and dirty water? We're certain, NOBODY dares!

So, what are you waiting for? Come and support us to help the river breathe again and run free like it was ten years ago.
Our River Care/Sandwatch Team have done our own research at Tapah River since we have been lodged with complaints about the pollution from the villagers living nearby the river. We take the samples of the water twice in a month, but you might think it is Coke because of the color, but the sample's aroma and taste is totally different from Coke as the sample has been contaminated by oil palm wastes.

The Malaysian River Care Team - see more about their project on their homepages. They have a great PowerPoint presentation for downloading and viewing as well.
www.sandwatch.ca/malaysia.htm

We use Methylene blue and pH paper in our investigation. Methylene blue is used to test the Biological Oxygen Demand (BOD) of the sample taken, while pH paper is used to identify its characteristic, either alkaline or acidic.

The pH paper's normal yellow color turned to greenish blue when dipped in the water sample and when we referred to the pH indicator, the greenish blue color indicated that the water was alkaline, and its reading was pH 9, which is very high!

When we dipped the pH paper into the clean water sample taken at Lake Kenyir, the color did not turn into greenish blue. The color of the paper indicated that the water's reading was pH6. This showed the water is safe from pollution. It is not alkaline. It is almost neutral.

We repeated the scientific investigation using the different sample taken at the contaminated Tapah River, two weeks earlier than the first sample. Still, the result was similar. Its reading was pH 9.
Then, we tested the BOD of the samples taken from Tapah River and Lake Kenyir.

For this experiment, methylene-blue was dropped into the samples. What happened next? The color of the methylene-blue stained and the color turned to dark green. But the result was different when we dropped the methylene-blue into the Lake Kenyir's sample. From our observation, the color of the methylene-blue did not stain. The experiment had been repeated for three times to get an accurate finding. The green color tells us that the Biological Oxygen Demand of Tapah River is very high. This indicates that the river is seriously polluted by the palm oil residues. Prompt actions must be taken to save the river and its ecosystem immediately.

That's all for now. Our next mission is to study the ecosystem of the river. This scientific investigation will be carried out until the mission to save Tapah River becomes a success!
Wish us best of luck.
Thank you.

Rohaniah Brahim
Project Manager
SMK TENGKU AMPUAN INTAN, KUALA BERANG, MALAYSIA

Blue Flag, Sandwatch & Climate Change

The Beaches World Tour 2007 International Conference on best practices and key issues at beaches around the world was held in Toronto. 9-11 October 2007. The conference was organized to recognize the 20th anniversary of the International Blue Flag programme, which has 36 countries participating. Blue Flag is a highly successful eco-certification program that applies to both beaches and marinas and provides a framework through which authorities and managers ensure that their beaches and/or marinas are meeting specific standards, which are categorized under water quality, environmental management, environmental education and safety and services. Over 3200 beaches and marinas worldwide received certification in 2007. The conference focused on four main areas: the effects of climate change on coastal areas; health and water quality; coastal development and sustainable tourism; equity and access to coastal resources.
There are many obvious links between Blue Flag and Sandwatch, and Puerto Rico is one of the countries exploring ways to link the two initiatives. A presentation on **Sandwatch** during the conference initiated interest among several participants, so we may be having some new member countries in the following months.
There were several presentations on climate change and how sea level rise in particular will affect beaches around the world. Reference was made to the Bruun Rule which shows that for every 1 cm of sea level rise, beaches will retreat inland 1 m. So as sea level rises, beaches will reposition themselves further inland where the land behind the beach is undeveloped. However, on developed coastlines where there are roads and buildings immediately behind a beach, it cannot reposition itself, so it will get progressively narrower and eventually disappear over time. This is a very worrying scenario for many countries dependent on their beaches for coastal protection and tourism.

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On this developed beach at San Juan, Puerto Rico, the beach cannot retreat inland, so it will get narrower and eventually disappear as sea level rises, unless expensive sea defence measures are undertaken

On this undeveloped beach in Culebra, Puerto Rico, the beach will re-position itself further inland as sea level rises, so the beach will remain

Sandwatch Students Ask, What is Global Warming?

Global warming refers to the increase in the average temperature of the Earth's near-surface air and oceans in recent decades and its projected continuation.
The global average air temperature near the Earth's surface rose 0.74 ± 0.18 ° C (1.33 ± 0.32 °F) during the last 100 years. The Intergovernmental Panel on Climate Change (IPCC) concludes, "most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations" via the greenhouse effect. Natural phenomena such as solar variation combined with volcanoes probably had a small warming effect from pre-industrial times to 1950 and a small cooling effect from 1950 onward. These basic conclusions have been endorsed by at least 30 scientific societies and academies of science , including all of the national academies of science of the major industrialized countries. A few individual scientists disagree with some of the main conclusions of the IPCC.
Climate model projections summarized by the IPCC indicate that average global surface temperature will likely rise a further 1.1 to 6.4 °C (2.0 to 11.5 °F) during the 21st century. The range of values results from the use of differing scenarios of future greenhouse gas emissions as well as models with differing climate sensitivity. Although most studies focus on the period up to 2100, warming and sea level rise are expected to continue for more than a millennium even if greenhouse gas levels are stabilized. The delay in reaching equilibrium is a result of the large heat capacity of the oceans. Increasing global temperatures will cause sea level to rise, and is expected to increase the intensity of extreme weather events and to change the amount and pattern of precipitation. Other effects of global warming include changes in agricultural yields, glacier retreat, species extinctions and increases in the ranges of disease vectors.
Remaining scientific uncertainties include the amount of warming expected in the future, and how warming and related changes will vary from region to region around the globe. There is ongoing political and public debate worldwide regarding what, if any, action should be taken to reduce or reverse future warming or to adapt to its expected consequences.
Most national governments have signed and ratified the Kyoto Protocol, aimed at reducing greenhouse gas emissions
Humans are altering climate at a Global scale by integrating various atmospheric concentrations of Green house Gases, both directly and indirectly. this in the long run contributes to the break down of the chemical structure in the atmosphere. Some of our contributions are:
(1) Deforestation
(2) Industrialization
(3) Population development
(4) Migration
(5) Commercialization
(6) Demand for non-renewable resources e.g oil and gas
(7) Addition of Carbon dioxide to the oceans and atmosphere
(8) New agricultural activities

By Talia Rahim and Amelia Motilal Palo Seco Government Secondary School, Trinidad

Sandwatchers on Mayotte encounter a 'Maki', a species of Lemur near their adopted beach. See back page for details

SW'er's Attend St. Lucia Climate Change Meeting

This poster by Lazaro Unuka from Takitumu Primary School in the Cook Islands won second prize in a climate change competition organized by the World Wide Fund for Nature.

Longtime friends and **UNESCO Sandwatch Project Coordinators** Candace Key from Abaco, **Bahamas** and Andy Paul from Mayaro, **Trinidad**, recently attended a Caribbean Natural Resource Institute (CANARI), PANOS and the Commonwealth Foundation sponsored workshop on Climate Change. The pair was quite keen on attending as Climate Change is the chosen topic for this issue of **"The Sandwatcher"** and there are implications for the Sandwatch progamme in general. The workshop was held in Vieux Fort, Saint Lucia from the 2nd October to 5th October, 2007. It was a Civil Society Climate Change Workshop: Enhancing the Role of Civil Society in Raising Awareness and Building Capacity for Adaptation to Climate Change. This group of twenty-five (25) professionals comprised Non-Governmental Organizations, Civil Society Organizations, artists/ performers/cultural, educational sector and the media. We were charged with developing unique ways to inform the Caribbean region and its surrounding coastal areas such as Belize and Guyana about the impacts and effects climate change will cause on our islands. It is interesting to note that we in the Caribbean only contribute about 1% of climate change problems however; we will be one of the areas to suffer the most from the effects of climate change. We have to accept the fact that climate change is here in the Caribbean. Over the past three years there have been spans of coral bleaching, crop degradation, fishing stock depletion and massive erosion of land and beach areas. Since we are mostly dependent on the tourism dollar, these effects have grave implications for our economic development and livelihoods. Our low lying villages and coastal dwellings will be destroyed by changes in storm patterns, and the changes in stronger and more frequent violent hurricanes. The whole world saw and heard what happened to us as a result of hurricane Ivan and Katherine.

In developing unique ways to communicate the message of climate change, our media participants produced a four page informational newsletter – The Laborie News, and the rest of us created a dramatic, yet comical play, as a means of imparting our message to the coastal community of Laborie. These strategies of communication were put to the test as we culminated our workshop at a "Town Meeting" in the local market place. There we distributed The Laborie News and conducted a town meeting. Before the "Town Meeting", we had the privilege to meet and talk with the villagers, and experience for ourselves some of the effects climate change have been having and continues to have on this vibrant fishing community. We also had the glorious opportunity to indulge ourselves in delicious local foods and witnessed the baking of bread in a dirt/stone oven. The fresh aroma of this bread still lingers in our memory, and the taste is unbelievable! Wished we had some now to eat. The 'Town Meeting" was a huge success. In attendance was a cross section of the community. Young and old, teenagers and children were in attendance and participated fully. Indeed, our strategies were tested and were a resounding success. As we departed Laborie, we were satisfied that the objectives of the Climate Change workshop were met, and the messages were well received by the villagers.

As we left to return to our islands, we felt empowered with information to effectively spread the word about changes we can expect and some possible adaptations we can make to continue to enjoy the beauty of our Caribbean jewels. We need to treasure what we have, preserve and conserve them. *It is imperative now that we Sandwatchers continue to be proactive and encourage our students, who are the next generation, to deal with changes in their lifestyles, as it relates to climate change.*

Sandwatchers have an awesome responsibility and a crucial part to play. We have and can acquire the data to show whether or not there are changes at our high water mark etc. Climate change has direct implications for Sandwatch. Sandwatchers can be the leaders in the climate change forum. Let us encourage everyone to do his/her part faithfully. Let us spread the gospel of Sandwatch. It is the key to sustainable development. It is the key to gather information on climate change and its effects. Let us so resolve.

By Sandwatchers Candace Key (Bahamas) & Andy Paul (Trinidad)

Although, Seychelles' contribution to greenhouse gases is limited, there is still a need to educate our young islanders so that they can help curb man's greatest challenge.
Please join together: young and old; rich and poor; continental states and island states to save our one and only home.

- Anil Arnephy, Anse Boileau Secondary School, Seychelles

Youth in the Seychelles Discuss Climate Change

The giant land tortoises of the Seychelles are among the species that will be impacted by rising temperatures. (Photo from Ministry of Environment's website)

Here in the Seychelles we are trying hard to see how we can involve our young people in climate change sensitization programmes. Several activities have been organized locally. Early in 2007 we organized a competition for young people who were asked to write an editorial on climate change for a magazine targeting young people. Three students shared the first prize. Recently, we also organized a public speaking competition under the topic 'Melting Ice, A Hot Topic'. It was very interesting.

Jeanette Larue, Ministry of Education, Seychelles.

Editorial: In the recent past, we have seen drastic climatic changes. These global climatic changes are brought about by us humans. We are destroying the ozone layer which protects the earth, and increasing greenhouse gases in the atmosphere which are changing the global climate. In recent years small island nations like ours have been experiencing a steady rise in temperature, posing great danger to the environment and unique species of birds and animal life.

Rising levels of the sea will make the governments of the island nation states spend huge financial resources to relocate its people to higher locations, money which could have been spent on other important needs such as education and health. Today's younger generation, tomorrow's scientists, must consider alternative source of energy, such as the sun, wind and water. Let's start experimenting now and look for solutions now. Working together as one global community we can save our islands and our planet.

Jigme Tsultrim G., 12 years, Anse Boileau Secondary School, Mahe, Seychelles

Brazil & Trinidad to do Sandwatch Exchange!

Sandwatch project's leaders have shown great commitment to building and enhancing an international network of project partners. The organization of international events and cooperation in research projects with partners worldwide has greatly strengthened the international reputation which the Sandwatch project has acquired in its short history.

In this way, Degenal Santos, a partner from Colegio Afonso Pena (school), Santos City, Brazil and Andy Paul from Trinidad and Tobago have been working hard to organize **The First Sandwatch Student Exchange** between their two countries and schools.

This kind of activity helps students to develop their skills to function in the constantly globalising world. The inter-cultural communication skills of the participating students improve and in addition they get a different point of view of how important it is to preserve the world we live in.

"In order to better reflect the complexity of how it works, we have put together this trip to Trinidad and Tobago. We want to take our kids out of their comfort zone and show them what students from their own age have been doing about their environment in another country. We want students to realized that we all live in the same place – the earth. And that all things are connected. If someone is causing an environment disaster in the other part of the planet, it will affect us all", said Degenal Santos from Brazil.

In Trinidad, Brazilian students will be hosted at the Ro Claro High school by teacher Andy Paul and UNESCO Secretary-General Susan Shurland.

Students from Colegio Afonso Pena (school) who are going to Trinidad and Tobago for the Sandwatch Student Exchange are looking for sponsors. The have had meetings with the authorities of the Santos City to discuss how Prefeitura Municipal of Santos can support this project and we also got some good support from English Extreme – an English language school.

By Degenal Santos, Colegio Afonso Pena, Santos City, Brazil

Some of the Sandwatch students from Colegio Afonsa Pena School who will be going to Trinidad to meet the Sandwatch team there

Sail Caribbean Adopts Sandwatch on Tortola, BVI

This summer, approximately 95 Sail Caribbean students participated in the **Sandwatch program** on Tortola in the British Virgin Islands.

Sail Caribbean, a teen sailing, scuba and community service adventure program, offers 7 different programs in the Bahamas, British Virgin, Leeward and Windward Islands. In its 28 years, over 11,000 students, age 13 through college and from a variety of backgrounds and locations, have embarked on a Sail Caribbean adventure.

Sail Caribbean's Foxtrot Environmental Service and Sailing Adventures Program focuses on marine conservation projects that includes sea turtle tagging, Reef Check and project REEF data collection along with Sandwatch.

In 2005, Foxtrot students began working with local scientist Shannon Gore, to carry out Sandwatch surveys of the beaches at Trellis Bay and Cane Garden Bay on Tortola, BVI. The teens created maps and took measurements of the width of the beaches. These surveys were conducted to help determine the status of Trellis and Cane Garden Bay's coastlines in an effort to preserve what remains of each beach.

At these and other beaches throughout the BVI, Foxtrot students and those on other Sail Caribbean programs participated in beach clean up efforts and Reef Check surveys. These important programs are in place as a way for Sail Caribbean and its students to give back what they can to the beautiful areas they enjoy for 3 months every summer.

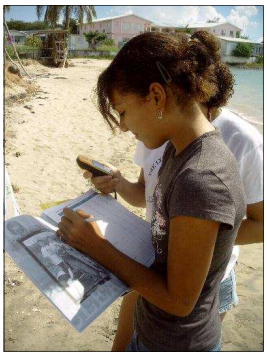
In Summer 2008, Sail Caribbean will **expand its Sandwatch project** efforts to its Foxtrot Junior. Program geared towards younger students. Teaming up with Tortola's Youth Empowerment Project, a local non-profit organization, the teens will jointly work on Sandwatch surveys and coastal conservation efforts.

We're hopeful that this cultural exchange and conservation program will be an invaluable experience for all the students as they learn from one another and contribute to a project with lasting impact.

Global climate change is a huge concern to anyone who cares about the environment. In addition, marine environments are threatened by pollutants from marine vessels, humans, and coastal development projects.

The BVI, and other pristine areas that are also coveted vacation destinations, are experiencing growth and development that their marine environments can not adapt to or keep up with. By continuing its partnership and involvement with organizations like Sandwatch, Sail Caribbean is determined to maintain its strong presence in the BVI's marine conservation and habitat protection efforts for years to come.

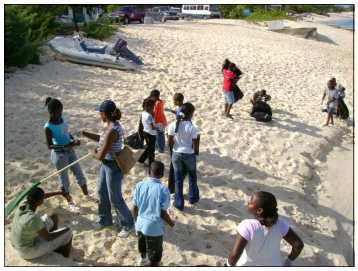
Melissa Welesko
Program Director
Community Service Coordinator
Sail Caribbean



Sandwatch students on Nevis have started to use GPS and Google Earth in their project

Sail Caribbean students conduct measurements of Cane Garden Bay on Tortola, British Virgin Islands

Sandwatch Comes to The Turk & Caicos Islands!



Sandwatch is being integrated into TCI's existing adopt-a-beach programme

The Turks and Caicos Islands (TCI) are known for their great beaches and lovely waters and we want to keep it that way. The condition of our beaches is a reflection on us, the people who live here. As such the Department of Environment and Coastal Resources (DECR) at the beginning of 2007 implemented the **adopt-a-beach programme**. This initiative encourages private companies, organizations and schools to adopt a beach and assume responsibility for implementing several actions in that location. The program is an anti-litter and beach clean up campaign intended to promote pride and natural resource stewardship. Through this program the DECR hopes to promote public education, interest and involvement in protecting our beaches.

The Sandwatch initiative, which provides an opportunity for high school students to monitor, evaluate and recommend approaches to the issues facing the beach environment, will now be incorporated into the TCI's adopt-a-beach programme. The Sandwatch initiative was developed by UNESCO in 1998 and almost a decade later the programme has become a global success involving islands in the Pacific, Indian and Atlantic Oceans. Incorporating the scientific and monitoring elements of the Sandwatch initiative into our adopt-a-beach programme will provide an opportunity for the development of skills relating to data collection, critical thinking and conflict resolution, all of which would ensure better management of our beaches.

Rhonda Lee-Dalrymple
Environmental Education Officer, Department of Environment and Coastal Resources
National Environmental Center
Providenciales
Turks and Caicos

Be Prepared for Climate Change

By Colibri Wildlife Club, Plaisance Secondary School, Mahe **Seychelles**

Let's be prepared for Climate Change
To minimise the loses
The hazards span a lengthy range
From increasing greenhouse gases
That burning fossil fuel produces

Let's reduce the various risks
As for us small islands
Vulnerability is a major concern
Our coastal areas deteriorate
With threats from many natural disasters

There are many lessons to learn
Or consequences to suffer
Environmental risks are changing
It is thus crucial to be prepared
And this, is all about adapting and surviving

Changing Seasons in Wales

From Brynhyfryd Junior School, Swansea, Wales.

This term I have a new class of 7 to 8 year olds and they are studying weather as part of geography. In the first few weeks they have been looking at the seasons and developing their understanding that the weather in Wales is rapidly changing.

They are being made aware that it is now getting more difficult to distinguish between seasons as winters become milder and summers become wetter.

At present they are developing their knowledge of weather patterns by keeping a diary of daily weather. New equipment has been purchased so that the children can carry out practical tasks during their studies.

Teacher Russell Bevan, October 2007

Caribbean Red Cross Make Climate Change DVD

The whole Caribbean region is at increasing risk from global warming and rising sea levels

People all over the Caribbean are noticing that unusual things are happening. Beaches are being lost to erosion, and coral reefs are losing their vibrant colors, or even dying, causing problems to tourism. The rainy seasons are changing, negatively affecting farmers. It doesn't get as cold as it used to, and sometimes it can get very hot for unusually sustained periods, threatening the health of children and the elderly. Mosquito-borne diseases such as malaria and dengue are expanding their territorial coverage in many regions of the world, and the Caribbean is no exception. Hurricanes seem to be getting more powerful, leading to immense challenges for disaster management.

With the unequivocal evidence provided by scientists demonstrating that climate change is a fact, the Red Cross needs to start preparing for a more dangerous future: things are no longer the same, and the risk of more frequent, more severe or even different disasters is getting larger. The best way to address this threat is to make communities more capable of coping with the extreme weather events that are more likely to occur. With the support of a European-funded project called DIPECHO V, the Red Cross has worked with filmmakers to produce numerous short videos on climate change and what it means for the participating countries (**Antigua and Barbuda, the Bahamas, Cayman Islands, Jamaica, and St. Kitts and Nevis**). These videos and TV spots are meant for raising awareness among local residents. They start with the voices of local residents who experienced changes in weather patterns (from fishermen and farmers to hurricane victims and members of insurance firms), then share very basic scientific information about global warming from local experts, and conclude with a call for action, illustrating the work of the Red Cross in community-based disaster preparedness. An example of this video work can be seen in http://www.youtube.com/watch?v=f-zpbeyFRnU. In the next project phase, filmmakers and local communities will collaborate with Red Cross staff and volunteers to produce a set of video tools for the entire Caribbean region. The message is simple: "The climate is changing; we have to change too". More information is also available at Red Cross / Red Crescent Climate Centre (www.climatecentre.org)

Pablo Suarez, Ph.D., Dept. of Geography and Environment, Boston University, USA

Sandwatchers From Around The World!

Sandwatch is a truly global project with schools in more almost 40 countries participating

La-Fleur John, Secretary-General for UNESCO in St. Vincent & the Grenadines, uses the newly opened radio station

Pinney's Beach, Nevis shows how "Lethal Yellow" disease has killed all their beautiful coconut trees

The River Care Students of Kuala Berang, Malaysia

Sandwatch Teacher, DJ Santos is interviewed for TV about the project in Brazil

Sand, sand, sand

Sand is everywhere
In the land and sea
Sand is precious
To smooth and polish the surface of hard things

You are so bright
But the sun is brighter
You are eroded
It takes a long time to change you
You surround my island and me
We are protected by you

Sound, impossible to number, and destroy
Creature live in you
No matter how small you are
You are so white as the fluffy white clouds

And you are so soft as a mothers touch
Sand is everywhere, land and sea
It's important for you and me.

by Temata Klaschka
Araura College, Aitutaki, Cook Islands
Sandwatch Group 2007, Rarotonga, Cook Islands

Nikao Maori Sandwatch Group, The Cook Islands

Sandwatch students from Virgin Gorda, BVI try on underwater breathing gear during a field trip

River Care teachers in Dominica measure depth of the Belfast River

Traditional fishing boats on the shore of Lake Victoria Kenya, now under threat from pollution and climate change

Mayaro Environmental Wave Students (Trinidad) visit Dominica - Trafalgar waterfall

Barbados holds a Community Sandwatch Exhibition to show what they are accomplishing

New Zealand: Lets Walk Not Drive!

Sandwatch Team, New Zealand study the creatures in rock pools near their beach

Kia ora everyone from Aotearoa!

It seems to have been a long winter for us but at last we are looking forward to the summer. We decided to go back to our **Sandwatch** beach and take measurements that would hopefully show us how the beach fared since our last visit. Wow were we surprised. Why? Well we noticed that although there was some erosion, it was relatively untouched especially after such a wet and windy winter. We feel sure that what changes we saw there could be contributed to the winter weather rather than people. It was great to also see that there was very little litter on the beach. Although we were a bit disappointed to see a local fisherman drive speedily down on to the beach, seemingly unaware of a small child. After putting his boat in the water he zoomed off to park. We were tempted to say something. Apart from that incident, on our way home we discussed how lucky we were to have such a safe, clean and people friendly beach nearby. Even the rock pools were interesting. (check out our photo) Here's hoping it stays that way! Related to our Sandwatch project we are also doing other programmes in our school to also help us to try and deal with climate change problems such as our new Travel wise Programme. It encourages kids to get out of cars and walk to school. We feel if we can do this then not only can we get fitter but it is definitely of benefit to the environment. At the moment we are running a Frequent Walker Competition trying to get as many as we can to walk. Wish us luck!

Robyn Bennett and the Sandwatch Team of Stanmore Bay School, New Zealand

School Radio Station Starts in The Grenadines

Sandwatch students on Bequia, clean up the Jeff Greg area of their town...and start their own radio station!

Saturday is a day for sleeping late right? How about catching up on one's favorite T.V show? Not for the dedicated bunch of about 30 young persons who descended upon the small patch of shoreline outside Jeff Gregg's Shop in Paget Farm Bequia. Their mission was to transform the area from a neighbourhood dumping ground into a healthy, more aesthetically-pleasing beach. This effort was a part of the International Coastal Clean-up Day activities on the 15th of September 2007.

Members of the **Bequia Community High School Sandwatch group**, the R.I.P.P.L.E.S group and the Paget Farm 4H club were the main volunteers, although a few well-wishing passers-by pitched in later. After four and a half hours of back-breaking work, 165 bags of garbage were collected, whilst larger items such as parts of machines and building materials were lifted directly into a truck. Most of the garbage related to shoreline and recreational activities, of which 943 were food wrappers and containers and 805 plastic bottles. The 534 oil/ lube bottles collected are also a cause for concern.

It is hoped that the efforts of this team would have been greatly appreciated by the community and that they have inspired the community to show greater commitment to keeping the area clean.

The Bequia Community High School created history on 2nd October 2007 when it became the first Secondary school in St. Vincent and the Grenadines to officially launch its own radio station, "Radio Bequia Anglican Community High School". Operating on frequency 89.0fm, the station which is run by the students of the school, has been creating a stir on the Northern Grenadine Island.

Other activities Sandwatch group was involved in:

* Scuba diving training for students and teachers
* Reef check with Kim from Barbados.
* In-house training with Mr. Herman Belmar former coordinator of Sandwatch.

Please check out our homepages on the Sandwatch website for more photos and details.

Joanna Stowe, Sandwatch-Small Islands Voice group, Bequia, St. Vincent and the Grenadines

Sandwatch on the move in St. Croix

The Fourth Grade Sandwatch Team of St. Croix in the US Virgin Islands

Greetings from Pamela Buckley and Cindy Mault's fourth grade class at **Good Hope School in St. Croix!** We've been participating in various activities here on the island in conjunction with the **Ocean Conservancy's International Costal Cleanup.** Our very first project was partnering with Good Hope's sixth grade and picking up and sorting debris on the beach we monitor for **Sandwatch.** It's located on the west end of our campus and is beautiful and wild. Our group was the first one out and we found quite a bit of trash. Later, we made bar graphs to show what we had found. The students were astounded at the amount of plastic (over 200 pieces) that they had gathered as well as other large numbers of offensive trash. It was nice to be back in the classroom after the activity. Though hot and sandy, the students were satisfied that they had done a good job of cleaning the beach. There are thirteen students in our class this year and all are looking forward to being members of the Sandwatch team!

The Sandwatch Team, Good Hope School, St. Croix, USVI

Sandwatch Nevis Reports on "Lethal Yellow"

On Thursday, September 13th 2007 the Form 5 students of Lyn Jeffers left their school with their teacher Miriam Knorr, at 2:10 pm and went to our usual spot at Pinney's beach for the first beach monitoring trip of the 2007/2008 school year. Here we met with Paul and Pippa Diamond who where there filming a **new Sandwatch training DVD video** which depicted us cleaning the beach, measuring the high tide mark line, and recording the garbage collected etc. We also measured the beach with a new GPS system to see how the beach expands and contracts over time. We also used **Google Earth** to see what our stretch of beach looked like from space. It is really cool! We also took pictures north and south of the beach which showed how badly eroded the beach has become over the last couple of years. Only a few years ago it was 100 feet wide, but now it has eroded down to the bare rock in many places, perhaps due to damage to the reef system caused by climate change. We are still studying our results.

We also noticed that the newly introduced **"Lethal Yellow"** disease had killed of almost all of the lovely coconut palms trees that used to line the beach for miles. Its a bacteria that turns the palm tree leaves yellow then brown then they all fall off and leave only the "telephone pole" trunks. There is no cure for this disease and soon all our coconut trees will be dead. Who knows how this will affect our beach, perhaps it will make the erosion even worse? You can be sure that the students of the Lyn Jeffers School will continue to make regular trips to the beach for the Sandwatch and report them on our homepages on the Sandwatch website.

By Form 5 Students Pheauncie Jones & Chevelle Chaderton, The Lyn Jeffers School, Nevis

The Nevis Sandwatch Team are doing many projects. Check out their Google Earth work at their homepages.... www.sandwatch.ca/st_kitts_&_nevis.htm

Dolphins: An Indicator of Climate Change, Bahamas

Grades 5 & 6 at Hope Town School enjoy working on the **Sandwatch Project** each year . When we began our study of changes we may see in association with global warming and climate change we were thinking more about our reef and bleaching and beach erosion. However, One of our first lessons came from long time Marine Biologist and local dolphin researcher, Dr. John Durban. "Dr. John" has always worked with us students over the years and he stopped by the school to catch us up on what's happening with our resident population of bottlenose dolphins that live and play along our sandy banks. He was disappointed that he had only seen about half of the 100 plus regular members of the local population during his month of daily on the sea study of sightings. We all discussed what the cause could be. He told us he considers dolphins to be an **"environmental indicator."** They are one of the first to alert scientists of pollution, raise in sea temperature and other env. situations.

Interesting , because as this is written , we have a hurricane approaching our area. Did our friendly dolphins know about this before we humans did and go to ocean waters from our shallow sandy banks when a storm approaches to avoid being pummelled by huge waves. Unfortunately this is dangerous for several reasons for them. When they are forced to go into deeper waters they run more of a chance being attacked by sharks. After hurricanes our dolphins return to the shallow waters with severe bite marks on their bodies and dorsal fins. They try to avoid the deeper water as much as they can. Sharks do not seem to bother them much in our shallows. Speaking of their dorsal fins---that is how they are identified. We get to name the dolphins by giving them names according to the design of individual nicks and cuts on their dorsal fins. Right now we are selecting a name for a new calf of one of our favourite dolphins, Rocky. Scientists give them numbers to keep track of sightings also. Around here the local dolphins will travel around 100 miles a day to feed and play.

There is a lot of development going on around our island. Daily we see 75 foot sand barges on our shallow bars dredging sand for the construction of resorts and homes. That really disturbs the dolphins feeding patterns. They love to nose dredge up their favourite fish--the razor fish and slurp them down. All this takes place on the same sandy banks as the ones being dredged!

We all know the sea is warming and here in Abaco it was a very warm summer and fall. Dolphins must go into deeper water to stay cool. Have they put themselves into shark danger to stay cool? We have more and more tourists here each year. Our parents depend on their arrivals for jobs. More and more rental boats are out on our beautiful waters each year as well. The same areas where the dolphins like to inhabit. Everyone loves to see them but have we disturbed them too much? Have they moved farther out to avoid human activity? Since we had no hurricanes this fall people kept coming .

Dr. John leaves soon to go to Seattle, Wa. to study Orca whales for several months before returning here. We will wonder until his return what is going on with a favourite natural resource of ours--our bottlenose dolphins. Is it warmer seas, too much human activity, disruption of their feeding areas? Are our sensitive "environmental indicators"trying to alert us ?

Grade 5 & 6 Students -Hope Town School Sandwatchers, Hope Town, Abaco, Bahamas

The latest school to join Sandwatch is the St. Augustine Catholic School on the actively volcanic island of ***Montserrat!*** *We cant wait to see their photographs!*

Hope Town students, Abaco, Bahamas learn about local dolphins from marine biologist Dr. John Durban

Cook Islands Hosts Sandwatch Learners Conference

Dignitaries and students at the Sandwatch Learners Conference, Rarotonga, Cook Islands, June '07

Students from Te Uki Ou School talked to their community elders to find out how their beach used to look in years gone by

Cook Islander Sandwatch students made special grids to note what was found on their beach

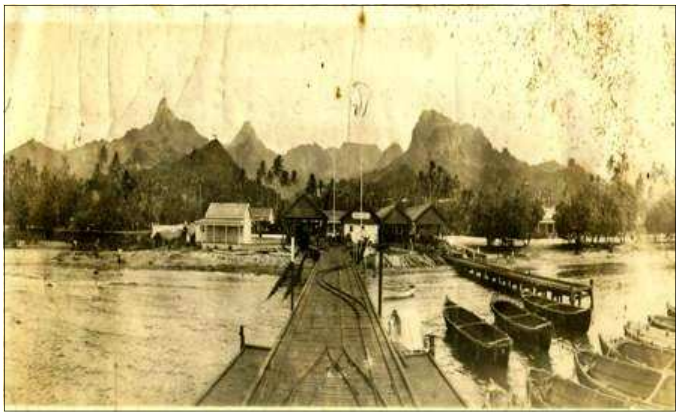
Rarotonga, Cook Islands, June 2007

One hundred and one students plus thirteen teachers from different islands took part in the first ever **Sandwatch Learners Conference** held in the Cook Islands in June 2007. This was organized by the Curriculum Advisory Unit of the Ministry of Education and supported by the **UNESCO Participation Programme**.

Students from all the schools which submitted Sandwatch projects to the Curriculum Advisory Unit came to Rarotonga to take part in a national forum where they shared ideas on environment and sustainable development. Student presentations and discussions at the national forum demonstrated the students' active involvement and decision making as part of their projects on sustainable management of the coastal environment on their island. Student presentations also demonstrated how they had worked with the wider community. Presentations also included plans for how they would sustain the environmental initiatives they had introduced.

Te Tika Mataiapo (President of the House of Ariki, representing tribal leaders) was the key note speaker at the Conference. She has been involved with other environmental initiatives in the Cook Islands. UNESCO was represented by Miss Tepaeru Herrmann to the opening of the conference. Staff from the government ministries of Environment, Marine, Agriculture, Water Works, Waste Management and the Metrological Office attended the conference as did volunteer workers for the Takitumu Conservation Foundation.

Sandwatch is included in the local schools' Science, Culture and Social Science programmes. Many of the conference participants spoke of how they will continue the applied and community-based aspects of their projects. This was the first time we held a conference involving students presenting papers and leading discussion. It was a very positive experience and one we would like to repeat in the future. Conference evaluations showed that participants would also like something similar repeated every two years.



Sandwatch students at the St. Joseph Primary school are using old photos of their area to see how their beach environment has changed over the years. This is an old photo of Avarua town, on Rarotonga

This was a very worthwhile project both in terms of increasing student and community awareness of the need for environmental protection and sustainable projects as well as in terms of allowing students an opportunity to prepare for and present their views in a national forum. Coverage of the conference was included in the Cook Islands News and on Cook Islands TV news.
Some of the students' presentations are available on the website at...

www.sandwatch.ca/cook_islands.htm

By Jane Taurarii and Gail Townsend, Curriculum Advisory Unit, Cook Islands

As part of their Sandwatch studies, the students at **seven (7) Cook Islands schools** each adopted a different beach and set about conducting an exhaustive series of measurements and tests.

From these activities they each constructed a truly impressive series of **PowerPoint Presentations**, showing with amazing photos, graphics, art work and even **Google Earth**, exactly what they found and did during their various field trips.

Their work on these presentations was so impressive that each school will be given it own **Sandwatch Cook Islands 'homepages'** over the coming weeks to properly display both their creativity and the beauty of their islands. The PowerPoint presentation themselves will also be made available online for downloading

The Seven schools who created these presentations are, **Araura College (on Aitutaki), Nikao Maori School, Nukutere school (Rarotonga), St. Joseph Primary (Rarotonga), Te Uki Ou School, Enuamanu School (on Atiu Island) and Tematangarengare School (on Mitiaro)**

We look forward to seeing what these students and educators will come up with next for Sandwatch. Many schools on small islands could learn a lot from viewing their homepages.

- ***The Sandwatcher Editors***

Barbados Holds Sandwatch Community Exhibition

The exhibition was held on Friday, June 29 in the Speightstown Esplanade in St. Peter. This is just a few yards away from the beach which the students of the Coleridge & Parry School Eco-Club monitor. The exhibition was organised by the Barbados Environmental Youth Programme (www.beyp.org) and the **Coleridge & Parry School Sandwatch Committee.** The main Sponsor was the National Commission for UNESCO and two businesses, Plastic Plumbing Services Ltd and Plumbing Supplies from the community gave donations to cover the cost of tents. It was an Environmental Education awareness event for the public in the North of the Island and at the same time it sensitised the public about the **UNESCO Sandwatch Project**. The Coleridge and Parry School Sandwatch Team presented their community survey which placed third in the Regional Sandwatch Community Competition as well as their beach monitoring data. Lester Vaughn School exhibited their Biodiesel Project and Ellerslie School their **Sandwatch "Animals on the Beach" Survey.** It attracted exhibitors from the both the private and public sector who highlighted activities and projects related to the environment. These include the Sanitation Service Authority, The Barbados Sea turtle Project, the Coastal Zone Management Unit, the Barbados Water Authority, Counterpart Caribbean and the Environmental Protection Department; to name a few.
The event was very well attended by people and school children from the surrounding Speightstown community attended. They were very pleased to see the positive work the children were doing for their beaches.

Mr. Randolph Woodroffe
Coleridge and Parry School
Speightstown,
Barbados.

Sandwatch Barbados students take part in a community environmental

Recording Biodiversity on Small Islands

Biodiversity is very much in the news these days, as the threats posed by climate change, over development, pollution and habitat loss, increase globally; These threats are particularly acute for small island states.
Strangely relatively few islands have conducted a **'biological census'** of their extant flora and fauna, not only to see what they have, but also to track how it may be changing over time.
The **Nevis Historical & Conservation Society** has recently decided to tackle this problem by creating, with community assistance, a comprehensive website dedicated to all the plants and animals found in and around their island. Started in October '07 the project has already attracted a lot of attention from various environmental organizations within the Caribbean region, with several suggesting that the concept may become a model for other islands. Initially concentrating solely on the fauna pages in the "Native to Nevis" section of the website, the NHCS still have a mountain of information on the islands flora and fauna, from a wide and diverse variety of sources still to add. In fact the site is being updated often on a daily basis. Key to the project was getting permission from many of the scientists (biologist, botanists etc) who have worked on Nevis over the years to reprint their reports, surveys and photos on the new website. On every occasion permission has been granted by the authors.
In addition, the NHCS has started to recruit four, 6th forum high students to be trained in-house to become the site's webmasters and researchers. In this way the project can truly become community based and ultimately more sustainable in the long run. Nevis new biodiversity website can be found at...
www.bio-diversity-nevis.org
Please email them if you have any questions about setting up a similar programme on your island.
By Paul Diamond
www.nevis-nhcs.org

Bats are the only mammals native to Nevis that still exist. Above is a native Brown Flower Bat (photo: S. Pedersen)

Sandwatch: Some Project Highlights of 2007

As we approach the end of 2007, it is timely to look back at just some of the Sandwatch highlights of the year:
Many new countries have joined the project, including **Gambia, Kenya, Malaysia, Montserrat, Wales, Indonesia, Turks & Caicos Islands**. Also several countries including **British Virgin Islands, Fiji, Jamaica, Nevis, Seychelles, Trinidad & Tobago** expanded their programme to include more schools; **The Cook Islands, Barbados, Dominica and Trinidad** all held large Sandwatch conferences. This year we also started to publish both **Spanish & French** editions of The Sandwatcher and work has started on filming a training **DVD** to suppliment the manual. As 2008 approaches we anticipate many more exciting events including inter-country Sandwatch exchanges, publication of the Sandwatch manual in French and Spanish, Sandwatch featured in academic journal articles and conferences, and lots more wonderful case studies of how Sandwatchers are working around the world to monitor and care for their beaches – making a difference - one step at a time. *This past year has been an honour for both of us to work with you all, and we are looking forward to the new year. Best to all,*

Gillian Cambers (Puerto Rico) & Paul Diamond (Nevis)

Sandwatch students from Virgin Gorda, BVI, reminding everyone that Sandwatch is fun!

Sandwatch On Mayotte Adopts a New Beach

Wed Oct 3rd, '07—The name of the beach where Fadhula, Kassidi,Oussouna, Gwennaelle, Haniya, Hadidja, Ahamada, Antonin, Mrs Gabriel, Mrs Vannier. Mr Madi, Mr Ahmada, Mr Mami and I are going to work is BARAKANI. Some people know this beach but it is not very popular, except in the village of Koungou It is quite popular in the village because we don't have to go too far to make a voulé. A voulé is a great picnic on the beach with family and friends, we eat "mabawas" (barbecued chicken wings), bathe, play games, listen to music, etc. But why isn't this beach popular in Mayotte? Because it is quiet, dirty and nobody ever thinks of cleaning it. We are glad to become part of Sandwatch, at last somebody is going to watch Barakani, clean it and make people aware of its importance and beauty. We all gather in front of the school, at 2 pm, we'll work on computers later, today is D day and we are meeting the other teachers for the first time. We take photos and then start walking to the beach.

Of course, Mrs Gabriel starts asking questions, she wants to know what the name of the beach is, how often we come here, if we know any fishermen etc. When we arrive, we first watch and what we can see is not really beautiful. The beach is quite dirty in fact with trash everywhere.

What a shame! Then we start to make measurements: this beach is 39 metres long and 1,40 metre large. We are lucky : the tide is low. The temperature of the air is 33 ° C and the water is 28°C. We note down all this data and go back to school. We imagine how to clean the beach and how it could be in three months, when we have found the solutions.

So, see you in the next Sandwatcher and we'll tell you about our improvements!

By Maïmoune, College of Koungou, Mayotte, Indian Ocean

The students of Koungou, Mayotte, are extremely active in the project and have recently gotten other schools involved

(Continued from page 5)

However, all is not lost, for besides expensive sea defence works, there are other things we can do by working with nature to conserve the coastal environment and cope with the consequences of climate change, these include:

- Recognizing that healthy beaches and dunes are strong, flexible natural barriers that protect coastal property
- Providing space for beaches to move naturally by positioning new coastal development a "safe" distance well back from the beach
- Building sand fences to trap windblown sand and create and or strengthen sand dunes
- Creating coastal forests by planting deep rooting trees such as almond, seagrape and seaside mahoe to hold the sand and slow down the rate of erosion.

You can find out more about the Blue Flag Programme at www.blueflag.org

Gillian Cambers, University of Puerto Rico Sea Grant College Program

Sandwatch Starts on Jost Van Dyke Island, British Virgin Islands

Building on a successful environmental summer program, the Principal of the Jost van Dyke Primary School, Merlyn Gordon, is beginning the formulation of an Environmental Club that will undertake a variety of on-going, hands-on projects in beautification and environmental education. With the encouragement and support of the non-profit Jost van Dykes Preservation Society, Sandwatch is on the list of activities to be started this school year.

Jost van Dyke is a small island in the British Virgin Islands (BVI). Populated for over 300 years, it now has a population of about 260 residents with tourism as its primary industry. Thanks to relatively slow development, Jost van Dyke has become well-known as an island that offers an authentic Caribbean ambiance. While residents appreciate the modern but easy-going lifestyle of the island, vacationing tourists enjoy its natural beauty.

Ms. Gordon led the school's students to first place overall at the last BVI Science Fair with a variety of thought-provoking entries. This past summer she organized week long summer program with the support of the BVI National Parks Trust and the local Jost van Dyke Scuba and Eco-tour business owner. In that effort she saw the opportunity for additional projects that would enhance the students' personal involvement with the island's environment. Teacher Linda Graham attended the Ocean Conservancy's Youth Summit for the Virgin Islands and looks forward to bringing information from that experience back to the school.

The Jost van Dykes Preservation Society is an emerging organization founded to initiate and manage a variety of historical, cultural, and environmental projects. Its first major project is the construction of a wooden sloop, evoking the local sailing traditions and heroics of the 19th century that was critical to the island residents. Looking ahead, the Society plans projects in environmental research and education; and Sandwatch offers an excellent curriculum that simplifies implementation through its manual and support resources.

Susan Zaluski
Projects Manager
Jost Van Dykes (BVI) Preservation Society

The students of the island of Jost Van Dyke, British Virgin Islands become the latest Sandwatch Team

THE SANDWATCHER IS EDITED BY PAUL DIAMOND,NEVIS & GILLIAN CAMBERS,PUERTO RICO