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April 2011

MINISTRY OF FOREIGN  
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Black River Foundation



## Sandwatch Indian Ocean Workshop



**Inside this issue  
Sandwatch activities in 12 countries worldwide!**

**Including...Australia,  
The Bahamas,  
Barbados, Cuba,  
England, Grenada,  
Guyana, Kenya,  
Kiribati, Nevis, Seychelles, Trinidad, ...  
and much, much more!**

*The Sandwatch Indian Ocean Regional Workshop was held in Mahe, Seychelles*

Over the course of five days in October 2010, participants from the Indian Ocean, Pacific and Caribbean regions met to network, make new friends and learn about Sandwatch and how it is being implemented globally.

There were 25 participants from 12 countries: Australia, Canada, Cook Islands, Comoros, Dominican Republic, Fiji, France, Maldives, Mauritius, Seychelles, St. Kitts and Nevis, Tanzania. Some of the participants were new to Sandwatch while others were experienced Sandwatchers. Workshop arrangements were coordinated by a team led by Jeanette Larue and the Seychelles Ministry of Education, Employment and Human Resource Development. The workshop started with a formal opening and discussions about climate change in the small islands. The main part of the programme involved introduction and training in the Sandwatch monitoring techniques, which were then practised on the nearby beach at Beau Vallon.

A series of panel discussion on climate change in the Pacific, Indian Ocean and Caribbean regions were held emphasising the challenging

nature of climate change for Small Island Developing States (SIDS). Education is a fundamental part of bringing about the changes needed for adaptation and mitigation.

Mr. Hans Thulstrup of UNESCO's Small Islands and Indigenous Knowledge Section acknowledged the support of the Government of Denmark for this workshop and distributed the new Sandwatch Manual to visitors and workshop participants. On the final day of the workshop, participants had the opportunity to attend a prize giving for schools, visit Grand Anse School, and visit other sites of interest around Mahe.

The objectives of the workshop were:

- To launch Sandwatch in the Indian Ocean region, especially in Comoros, Rodrigues, Mauritius and Maldives;
- To re-invigorate Sandwatch in Seychelles and enhance the skills of existing Sandwatch practitioners in Seychelles;
- To form a group of Sandwatch trainers, skilled in the revised Sandwatch approach that incorporates climate change adaptation and resilience building, and equipped to

**(continued on page 2)**

**SANDWATCH**  
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## Inside this issue...



Teachers and community leaders from a dozen countries met in the Seychelles for the Sandwatch Regional Indian Ocean Workshop

Welcome to the eleventh edition of **The Sandwatcher**, the Official Voice of **The Sandwatch Foundation**. This issue focuses on expansion of Sandwatch into the Indian and Pacific Oceans regions, together with numerous articles, photos and items of interest from Sandwatch teams worldwide as well as contributions from several colleagues and partners.

Thanks to all of you for making Sandwatch a recognized global environmental programme..

Just some of the highlights of this issue include...

- Report on **Sandwatch Regional Indian Ocean Workshop** held on **Mahe, Seychelles**
- A Sandwatch team in The Bahamas is honoured by the government
- New Sandwatch teams are starting in **Australia** and **England**
- The new Sandwatch manual is officially launched at COP16 in **Cancun, Mexico**
- Sandwatchers in **Kenya** report on a growing biological hazard in **Lake Victoria**
- Sandwatch continues to expand in **Grenada** and **Kiribati**
- Sandwatch video competition prizes (two new laptop computers) shipped to winning teams in **Cuba**
- Sandwatch launches its updated website

Plus amazing updates, stories and photos from Sandwatch teams from 12 countries worldwide!

## Sandwatch Indian Ocean Workshop (cont'd from front page)



A video of participants at the Seychelles workshop can be viewed online at the Sandwatch website

spread the revised approach nationally and in the Caribbean and Pacific regions;

- To introduce and discuss the prototype Sandwatch database.

An overview of the Sandwatch approach: **Monitoring, Analysing, Sharing, Taking action (MAST)** was presented. Reference was also made to Decade of Education for Sustainable Development and how Sandwatch contributed to climate change adaptation by making beaches more resilient to climate change. The various Sandwatch methods documented in the manual were described and discussed, with particular emphasis on how they relate to climate change.

Workshop participants then had the opportunity to practice the techniques on the nearby Beau Vallon Beach. Measurement techniques included: *observing and recording; erosion and accretion; beach composition; human activities; beach debris; water quality; wave characteristics; currents; plants and animals.*

A half-day session describing and demonstrating various forms of Sandwatch networking was conducted on the second day of the workshop. This included making a video using **Moviemaker**, preparation of newsletters and other products using MS Publisher, and maximising the power of the media. Demonstrations of the use of **Google Earth** and **digital microscopes** were also held. At the end of this session, participants worked on short articles about Sandwatch.

In summary the countries new/relatively new to Sandwatch (Comoros, Fiji, Mauritius, Maldives, and Rodrigues) planned to share information about Sandwatch with other government stakeholders, conduct training sessions for teachers and other trainers, start Sandwatch in selected schools and environmental clubs on a pilot project basis, and approach the private sector and other potential funders for assistance with Sandwatch. Countries previously experienced in Sandwatch (Cook Islands, Dominican Republic, Seychelles) planned individual activities dependent on their particular situations. These activities included: introduce the new manual to existing Sandwatch groups, investigate ways to include Sandwatch in the curriculum, start Sandwatch clubs in schools, establish Sandwatch committees, and expand Sandwatch to primary schools. In addition, participants from the Pacific and Caribbean regions made a proposal to UNESCO and the Sandwatch Foundation to hold a Sandwatch Conference in Fiji in 2011.

Jeanette Larue closed the workshop by thanking the teachers present for giving up their time during Seychelles Teachers Week. She emphasised that small islands must work together and she hoped to see all the participants again, perhaps in another setting. When people put their hearts into a cause, then things happen. Finally she thanked everyone for their time and active participation in the workshop.



Workshop participants were trained in all the Sandwatch methods on one of the many beautiful beaches of the Seychelles

Complete details of the Seychelles workshop, amazing photos and the video we filmed can be viewed on the "Sandwatch Workshop" page of [www.sandwatch.org](http://www.sandwatch.org)



## Sandwatch celebrated at Bahamas-UNESCO event



James Boyce presents Minister of Education, Honourable Desmond Bannister with the new Sandwatch manual.

### Hope Town Sandwatchers attend UNESCO celebration in Nassau, Bahamas

The Bahamas recently celebrated 30 years of partnership with UNESCO by having a week of meetings, events and displays of UNESCO projects. Hope Town School, longtime Sandwatch participants, was invited to display highlights of their activities at the celebration held in the capital of Nassau.

James Boyce and Lance Roberts attended with Hope Town School Principal, Mrs. Candace Key. James and Lance are now in High School but the projects they were involved in are still some of the most important ones done and they said it was just like they were still doing the projects as they explained them to guests and officials.



(L to R) Mrs. Elma Garraway, Permanent Secretary Ministry of Education, Lance Roberts, Sandwatch student, James Boyce, Sandwatch student, Minister of Education, Honourable Desmond Bannister, Mr. Kwame Bofo, UNESCO Director and Representative for the Caribbean from Jamaica, Mrs. Candace Key, Sandwatch Co-Coordinator for The Bahamas.

The display was quite extensive and drew a lot of attention. Hope Town School has been coordinating Sandwatch in The Bahamas for over 10 years.

The Minister of Education, the keynote speaker at the event, proudly mentioned the Sandwatch project and had James, Lance and Mrs. Key stand up to loud applause. As the officials visited the display, the Education Minister was presented with the new Sandwatch manual by James and Lance. The manual features several articles and pictures about the Sandwatch work James and Lance did at Hope Town School over the years.

*By Candace Key, Sandwatch Coordinator, The Bahamas.*



Sandwatchers in Western Australia, listen to Coastcare Officer, Craig Wilson talk about coastal plants

## Sandwatch comes to Western Australia



Students at South Coogee Primary School have commenced Sandwatch activities at their local beach. Under the guidance of Coastcare Officer, Craig Wilson, City of Cockburn Environmental and Education Officer Vicky Hartill and teacher Steven Lushey, students will carry out a range of Sandwatch monitoring activities under the auspices of our Verve Energy sponsored Adopt a Beach project.

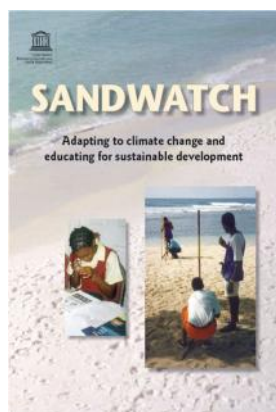
Over the course of the year, students will be learning about climate change and adaptations that can be made to better manage potential impacts. In order for the students in Perth to understand how climate change impacts can affect communities the school is planning to link with a school in Kiribati. Sharing experiences with students in a low lying atoll country such as Kiribati will reinforce the importance of controlling carbon emissions in developed countries and provide a valuable learning experience for the students in Australia.

On their first excursion to Coogee Beach, students measured beach width at a series of sites and participated in a 'Creature Feature' beachwalk where coastal plants and animals were photographed and identified. The next activity in June will see students planting coastal species to strengthen the dune system from storm damage and to improve habitat for animals including birds and reptiles.

*By Craig Wilson, Coastcare, Kwinana, Australia.*



Sandwatch is proud to have a new team in Kiwana, Western Australia!



The new Sandwatch Manual will soon be available in French, Spanish and Portuguese from UNESCO



## The new Sandwatch manual is released

The new "Sandwatch manual: adapting to climate change and educating for sustainable development" was launched at a Sandwatch regional workshop held in Seychelles 4-8 October 2010 and at the United Nations Climate Change Conference, Cancún, Mexico, 29 November – 10 December 2010. (This conference was the 16th Conference of Parties (COP 16) to the United Nations Framework Convention on Climate Change). Hans Thulstrup, of UNESCO's Small Islands and Indigenous Knowledge Section, introduced the new Sandwatch manual at the COP 16 side-event on Understanding climate change: success stories in awareness-raising and education, 3 December 2010, Cancún, Mexico. Many of the delegates at COP 16 were extremely interested in the new manual. During 2009, the Sandwatch manual was revised to integrate climate change topics into the existing Sandwatch methods on observing and recording beach characteristics, erosion and accretion, beach composition, human activities, beach debris, water quality, waves, long-shore currents, plants and animals.

**New topics include:** *how beaches respond to climate change; ways in which Sandwatch can contribute to climate change adaptation; simple ways to measure weather; beach erosion and sea level rise; beaches and ocean acidification; climate changes and beach users; coral bleaching; and enhancing beach resilience to climate change.*

Other new sections of the manual cover monitoring beaches for nesting turtles; creating a Sandwatch network (websites, newsletters, social networking, making videos, video conferencing and using other free web-based resources); and how to undertake

Sandwatch projects. All the chapters feature well illustrated, simple activities that can be used by students of all ages, as well as by communities, to monitor beach changes and design and implement projects and activities to enhance the beach environment and build beach resilience to climate change. The new manual was tested in June 2009 by teachers from the Bahamas, Dominican Republic, Puerto Rico and the Turks and Caicos Islands, at a Sandwatch workshop held in Hope Town, The Bahamas. Following this workshop, the manual was finalised. It was first launched at a workshop in Seychelles, 4-8 October 2010, which brought together new and experienced Sandwatch participants from small islands in the Caribbean, Indian Ocean and Pacific. Participants used the new manual to refresh their knowledge of Sandwatch methods, and learn about new applications relating to climate change adaptation.

French, Spanish and Portuguese editions of the manual will be produced in 2011. The up-dated version of the Sandwatch manual has been developed through a joint project of UNESCO, the Sandwatch Foundation and the Government of Denmark.

The new Sandwatch manual can be downloaded at: [http://www.sandwatch.ca/new\\_site/images/stories/food/SW%20Docs/Sandwatch%20Manual.pdf](http://www.sandwatch.ca/new_site/images/stories/food/SW%20Docs/Sandwatch%20Manual.pdf)

Within the limits of available stocks, paper copies can be obtained from UNESCO offices around the world listed at [www.unesco.org/csi/field-offices](http://www.unesco.org/csi/field-offices)



Mr. Hans Thulstrup from UNESCO HQ in Paris, presented the new Sandwatch Manual at the COP16 Conference in Cancun, Mexico



Logo from 2008 Youth and Climate Change Workshop held in Barbados

## Google Earth: A great teaching tool

An increasingly important part of Sandwatch workshops and training is not only showing educators how to use the Sandwatch manual, and methodology, but also how to network and expand your project using inexpensive or free technologies. This includes using **Google Earth** to show people where your country/community/school/beach is located, or using it to teach your students geography. It is very popular with teachers, especially the first time they use it.

It is free and easy to use! Please ask us if you need help on how to best use it for Sandwatch.



## An update from Sandwatch Guyana



Observational studies were conducted of some of Guyana's coastal areas to ascertain the sea defence mechanisms in place and how effective they are in protecting these areas during high tides. These studies were conducted in the light of climate change and the effects it is having on the global environment. However, these recent changes are different because they are taking place faster and are unlikely to be reversed by natural processes. Guyanese have been removing their first line of sea defences: mangroves, to build resorts and entertainment spots. In the capital city Georgetown, some of the mangroves have been destroyed to build a resort projecting out into the Atlantic Ocean. Others have cut mangroves down because they increase the influx of mosquitoes, showing a total disregard for their significance.

Hope Beach is frequented by picnickers and is a dumping ground for all types of plastic waste (bottles, bags, including tins and boxes). Visitors to the beach would dispose of their waste by throwing them into the water or leaving them on the sea shore and the water would wash them out into the Atlantic Ocean. However, every time the water washes in, garbage that had been left by the visitors and at various other locations would wash up along the beach. Mangroves, once destroyed, will not grow back unless they have been replanted and they usually grow inwardly on swampy areas. However, observations have shown the opposite at Hope Beach, the mangroves are now growing outward into the sea. One logical conclusion that could be drawn is that Hope Beach is slowly drying up and going more inwardly causing the mangroves to grow where the right swampy conditions prevail. The Government of Guyana is working in collaboration with the Environmental Protection Agency and the Ministry of Agriculture to develop appropriate education programmes to sensitize people about the importance of the mangroves in preserving our sea defences, and the impact of climate change on the global economy and how it can affect their own lives. *By Paula Tulloch, Sandwatch Coordinator, Guyana.*



A dead sea turtle on Hope Beach, bears testament to the many problems coastal Guyana is facing

## Marine educational workshop for Nevis teachers



On April 8-10, the Living Oceans Foundation, Pleiades, and the Nevis Historical and Conservation Society teamed up to host a two and a half day workshop for ten teachers in Nevis. The teachers were selected from ten different schools in Nevis based on recommendations from the Principals and the Fisheries Department, who had recently engaged some teachers in environmental activities. Ms. Kathleen Frith, Assistant Director of the Center for Health and Global Environment at Harvard Medical School and Pleiades Network, and her colleague, Jen Galvin, director of the award winning film, "Free Swim," conducted the workshop. The educational goal was "to provide experiential learning about marine conservation with a focus on coral reefs, to a range of educators in Nevis." The opening evening gave participants a view of undersea life, shown in a colourful slideshow on coral reefs presented by Bob Mancoff, accomplished diver and professor at the Medical School of the Americas, along with a movie describing the work of the Living Oceans Foundation. A brief overview of the reefs and the condition of sea life in Nevis was presented by Captain Anslyn, the advisor on marine life to the Nevis Island Administration. On day two of the workshop teachers viewed the awarding winning movie "Once Upon a Tide", directed by Kathleen Frith and the movie "Free Swim" directed by Jen Galvin which promoted much discussion. They also got an introduction to "in class" activities that they could use to reinforce coral reef facts divided into three options: elementary, middle and high school. After a lunch made exclusively of local foods, the group went to Oualie Beach to learn the fundamentals of snorkelling. In the spirit of conservation it must be noted that nothing was disposed of during the workshop where three meals and numerous snacks were provided. On Sunday morning the group set off in two fishing boats as guests of their owners, Jason Molle and Barry Wilson, and headed for St. Kitts where they paired up and snorkelled along the shore. They saw sea fans, fish, coral, sponges, sea urchins, and an amazing triton shell which was admired and returned to its habitat. After returning to Nevis the group gathered at **Sandwatch coordinator Miriam Knorr's** house for lunch. Each participant was given a re-useable gift bag containing a workshop DVD, the movies "Once Upon a Tide" and "Free Swim" and a certificate of award for outstanding performance and participation in the Ocean Conservation Educator Workshop. Sandwatch manuals were on display and a brief overview of the program was explained by Miriam Knorr who sees **Sandwatch** activities continuing in the tiny 36 mile island of Nevis in the Caribbean. *By Miriam Knorr, Sandwatch Coordinator, Nevis*



Nevis teachers and some students learned how to snorkel and identify reef creatures during the workshop



Nevis teachers took advantage of a great marine educational workshop





## Sandwatch expands in Kiribati



Students from Animarao School, Kiribati, cleaning their beach.

Following the very successful Sandwatch Workshop in Kiribati in September 2010, Sandwatch is being established in the junior and secondary schools and many exciting activities are underway. Guiding this process is a Sandwatch Committee comprising teachers representing the junior and secondary schools involved in the workshop, representatives from the Environmentally Safe Aggregates Tarawa (ESAT) Project, the Curriculum Development Resource Centre (CDRC) of the Ministry of Education, and the Ministry of Fisheries and Marine Resource Development. This committee meets once a month to coordinate the activities.

In the last quarter of 2010, several of the schools conducted highly successful beach clean-up and beach beautification activities. For example, students from St Patricks College found that the rubbish on the beach at Anaanau Causeway at Bonriki consisted of kimbies (bags of used diapers), iron, steel, shoes, and containers for medicine, yumyum, broken glasses, ice bags, handbags, clothes and dead leaves. Their finding showed that most of the rubbish on the beach and in the sea was made up of kimbies and broken glasses. At some of the beaches the teachers and students also planted mangroves, pandanus trees and coconut palms on the cleaned areas.

Meanwhile Nick Harding, ESAT project, purchased Sandwatch equipment sets for the participating schools, which were distributed to nine schools in early 2011 with each school getting two sets of equipment. Copies of the new Sandwatch Manual have been distributed to the schools. Starting in this school year, the secondary schools will be commencing Sandwatch monitoring activities with selected classes. Teachers will likely select specific chapters from the manual to guide the monitoring, e.g. erosion and accretion (Chapter 5), human activities on the beach (Chapter 7), water quality (Chapter 9). They have chosen chapter 4 (observation and recording) to start off with and present their progress in the next meeting in May. Another exciting development is that the Kiribati Meteorology Service (KMS) has expressed interest in Sandwatch and a KMS representative, Ueneta Toorau, attended the Sandwatch Committee meeting in March 2011. The KMS is also interested in school outreach and providing weather monitoring equipment to the schools. Combining forces with the KMS will strengthen and enhance Sandwatch in Kiribati.



Sign placed at the beach by Betio Junior Secondary School, Kiribati: "The rubbish you throw on the beach can be back on your plates"

Working on another front, the CDRC are undertaking a revision of the primary school curriculum (classes 1-6) starting in March 2011. They are starting with three subject areas: English language, Kiribati studies and mathematics. They plan to include Sandwatch as topics in these subject areas, e.g. extracts from the Sandwatch manual will provide useful readings for the primary school English language reader. Other subjects such as environmental science will likely be covered in 2012. Revision of the secondary school curriculum will likely follow on the revision of the primary school curriculum. The teachers' Sandwatch monitoring activities in the secondary schools will likely inform the revision of the secondary school curriculum. The Kiribati Sandwatch Committee is looking at several other activities for this year. These include the possibility of having a Sandwatch Day during Teachers Week in October; holding a Sandwatch training workshop for primary school teachers.

*By Titeem Auatabu, Sandwatch Coordinator*



## Water hyacinth a growing menace in Kenya's L. Victoria

### *Water hyacinth in Lake Victoria: A Double Edged Sword*

The Kenya branch of **Sandwatch** is based AT Kisumu High School, Kisumu City, the third largest town in Kenya. Kisumu is on the shores of Lake Victoria which is the second largest fresh water lake in the world after Lake Superior.

Our **Sandwatchers** have been mainly involved in cleaning and conserving the beaches and shores of this lake. We have had our great moments and low moments but the last few months have been difficult for us. This is because the Water Hyacinth weed has re-invaded Lake Victoria. The lake is now facing a serious threat thanks to this deadly weed that has wreaked havoc to Kisumu's water supply systems, marine transport and fishing activities. While there are other threats to the lake such as over fishing and pollution of the lake waters, the hyacinth has so far been the strangest phenomenon. The weed has from the early nineties blocked fish landing sites and communal water points along the lakeshore.

(continued on page 10)



Students from King George V School, Kiribati, cleaning the beach.

## Sandwatch to begin in England



Hello! We are Kings Park Primary School in Bournemouth, England and we are very excited to be starting out on our Sandwatch journey.



Hengistbury Head Beach using Google Earth..

There are eight children representing our school. We hope to get the whole school and the local community involved in beach clean ups and various fund-raising events. We have a particular interest in turtle conservation and are trying to learn more about this. We have chosen **Hengistbury Head** as the beach that we will monitor and look after. We are looking forward to measuring the waves and currents and learning how to look after our beach properly.

Our Sandwatch group have already visited the beach to see how clean it is, whether the sea was rough or calm and to see what shells we could find. We presented our facts on a worksheet to share with the other children at school. It's very exciting to see what other **Sandwatchers** are doing and we will keep everybody posted about what we are up to.

*By Mel Berkhauser, Kings Park Primary School, Boscombe, Bournemouth*



Hengistbury Head Beach, Boscombe, England on a cold winter's day

## Sandwatch launches brand new website!



Way back in 2005 we launched the first Sandwatch website to provide a forum for Sandwatch teams to post their photos, data, project details and other information about their schools and communities. Of course back then there were fewer schools doing Sandwatch so it was a simple matter to keep up with the input. However, over the last several years Sandwatch has grown to include several hundred schools all over the world, from Australia to Zanzibar, Turks & Caicos Islands to Kiribati. Our original website, built using the simple, easy to use Microsoft FrontPage website creation program was not designed to handle global needs with several hundred pages and literally thousands of photos and other documents. For that reason we have spent the last several months creating a brand new website from scratch!

The new website, which is still at [www.sandwatch.org](http://www.sandwatch.org) was created using the far more advanced Joomla website program, which is a lot more flexible and interactive than our old site.

We have already created pages for all national and many school homepages as well as copying over hundreds of photos and other documents.

Of course it will take several more months of work to transfer the contents of the old site in its entirety over to the new one, but in the meantime, please take a few moment to examine your homepages and let us know if there are any errors, things you want to add or change. All previous copies of The Sandwatcher and eNews Issues are on the new site as well as copies of the new manuals. We are also currently working on developing an online database to make it much easier for everyone to store and analyse their Sandwatch data over time. Please let us know what you think of the new website.

*By Paul Diamond*



The new Sandwatch website is up and running, although there is still a lot of work to do on it.

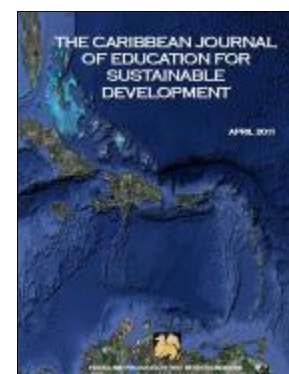
## Sandwatch featured in new Caribbean ESD Journal

Sandwatch has once again been featured in an international publication, this one highlights articles regarding UNESCO Education for Sustainable Development (ESD) program within the Caribbean.

Sandwatch has been cited and featured over the years in several "Best Practices" and other ESD related projects. This new publication is **The Caribbean Journal of Education for Sustainable Development** which was born during an ESD workshop held in Kingston, Jamaica in October 2010 in an effort to begin to have ESD experts, both academics and those working at the grass roots community level work together and share ideas. **Sandwatch** co-Director, Paul Diamond wrote an article on how to use local media effectively to publicize and expand community based projects. **The Caribbean Journal of Education for Sustainable Development** features a dozen ESD related articles from countries all over the region from **Suriname** to **The Bahamas**. The new journal will be officially launched by publisher, The Nesoifoundation at the Cropper Foundation's Regional ESD Workshop which will be held April 28-19th in **Trinidad**.

Copies of the journal can be found at [www.nesoifoundation.org](http://www.nesoifoundation.org)

Mrs. Nikauly Vargas, the Sectary General of the **Dominican Republic's** National Commission for **UNESCO** will be a keynote speaker at this Trinidad Workshop and her presentation will feature **Sandwatch** in the Dominican Republic.



Sandwatch is featured in another International publication!





## Trinidad Sandwatchers rescue marine turtle



The leatherback was baking quickly in the tropical sun far for the sea

*Miracles still happen, and members of the Mayaro Environmental Wave/Sandwatch Team were happy to contribute to this miracle. A Leatherback Turtle lost its way, stranded and with no hope of finding its way back to the water. Lost, injured and disoriented. What an unfortunate situation to find herself in.*

Luckily for this "fortunate" protected creature, a member of Mayaro Environment Wave (MEW) saw this huge creature in a watermelon field.

From a distance, I saw "something" lying in the field. My immediate reaction was that it was a dead person. However, as I got closer, I realized that it was a leatherback turtle.

This turtle was over five feet in length. It was a big one! I immediately summoned other members of our team (MEW), called our coordinator Mr. Andy Paul, and we went into action. Buckets of water were regularly poured on the turtle, especially its head, to keep her cool, under the blazing sun. We soon realized that she had also laid her eggs. We felt sorry for her – she did not even have the time to dig a hole to lay her eggs. All her eggs were exposed to the elements. One of her flippers was damaged and pinned in the drain between the watermelon beds. She tried to move, but we can see that it was a painful experience.

Moving her or attempting to pull her out of her stuck area was impossible for the few of us. A call was made to the Rio Claro Forestry Department who contacted the relevant authorities for assistance. Help was finally on its way, about three hours after its discovery. What or how will we move her? After deliberating on how, one of our members said, "Can a 'backhoe' do the job?" After consulting with the Officers of the Wildlife Department, the decision was made to get a backhoe to life her up.

The Mayaro Ministry of Works was contacted and immediately one was sent.

There was great excitement in the air, when the turtle nicknamed after the acronym of our UNESCO Club "MEW" was finally in the air and placed in the sea. After, regaining her bearings and some coaxing by the Wildlife Officers and other members of Mayaro Environmental Wave, she gleefully started to swim. There was a loud cheer and at times, as though saying thank you, her head popped up, moving from side to side.



Volunteers keep the lost leatherback turtle cool with some water while planning on how to get her back into the sea

On behalf of Mayaro Environmental Wave, special thanks the Ministry of Forestry at Rio Claro and the Wildlife Department of the Ministry of Agriculture for the kind and immediate assistance. Thank you Mr. David Boodoo. Without the kind assistance of the Ministry of Works (Mayaro) and the use of their backhoe, the rescue mission would not have been possible. Our hearts and the "MEW Turtle" are eternally grateful. A big, big THANK YOU. Thanks also to Mayaro Cable TV for supporting us in this mission. We all were happy to be part of

it. Our only regret was that we did not tag our new found member "MEW." Take care partner. Please come back to our beach and lay your eggs. We will keep our eyes out and continue to protect all those that come our way.

A very short video clipping can be seen on the following site:

[http://affiliate.kickapps.com/\\_Stranded-Leatherback-Turtle/video/155549771516.html](http://affiliate.kickapps.com/_Stranded-Leatherback-Turtle/video/155549771516.html) (Stranded Leatherback Turtle)

Let us continue to do our part faithfully, as we continue to protect and conserve our beloved environment. Remember, Sandwatch is the best sustainable development tool to do such. Keep our Sandwatch flag flying.

Until next time.

**By Devon Dhanessar**

**Mayaro Environmental Wave and Sandwatch Member**

## The Sandwatch website logs over 20,000 hits!

Since its creation 5 years ago the Sandwatch website passed its twelve thousandth viewing as of Dec 2009...and it seems to be picking up speed as more and more people become aware of the programme. We are making a difference!



After keeping it cool with cloth soaked in water, we arrange to have a backhoe pick it up (and the dirt around it) and carry it to the ocean



Mission successful, the leatherback was released back into the ocean!



## Barbados students receive climate change books



Delivery of Book 1 in the Future Centre Trust's (FCT) Climate Change Learning Series, entitled "*Bri and Luk – Friends in times of changing climates*" to all students in Class 3 in some 85 Primary Schools across Barbados is now complete. This is thanks to FCT's Programme Assistant, Krystal Boyea and Volunteers Kerri Birch, Myles Phillips, Paul Decoteau and Adrian Randall! The deliveries were completed during the month of January 2011 and marked the first roll out of what is planned to become an annual delivery for students across the country.

At a climate change awareness workshop organised by CANARI ([www.canari.org](http://www.canari.org)) in St Lucia, in 2007, the author, Nicole Garofano of the FCT, recognised a distinct lack of information ABOUT regional climate change impacts for the younger generation of Caribbean people. A contribution to the development of the learning tool basket was made at the "Youth and Climate Change Workshop" held in Barbados in 2008, which involved **Sandwatchers from 9 Caribbean countries**. These attendees were engaged in the development of four types of learning tools – video, web site development, drama and written word. The concept of locally developed tools encompassing these areas formulated in the author's mind at that time.

The Bri and Luk Climate Change Learning Series was then developed over an 18 month period and now forms the basis of the FCT's primary school education programme in Barbados. The series includes Book 1 and a puppet show. A story book, an E book and DVD are still to be developed subject to funding. At the recent release of Book 1 and the puppet show, Ms Garofano remarked, "Although this book is aimed at primary school children, adults can learn a lot as well thanks to the easy reading. It is

hoped that by focusing on the children of our society, that a multi generational impact of learning will start to take place". Teachers informational sessions are planned for later in the year to update them on the impacts of climate change to the region and the need to consider various levels of adaptation within the context of Primary School learning. "The words climate change are not written in the current curriculum in Barbados at this age, in fact it is not really mentioned until students get to Social Studies Streams in Secondary School!

It is heartening to note however, that after meeting with officials of the Ministry of Education in Barbados in February, there is the recognition of the need to consider these words when next reviewing the curriculum for primary school children. By this time, it is hoped that many students and teachers will have already been exposed to our Bri and Luk series and be a little more aware of the phenomenon," explained Ms Garofano. Garofano attributes part of the success of the book and the puppets to the illustrator, local artist Jason Waithe, as he developed the 'personalities' of the characters. "Jason is a fantastic artist and we are very lucky to have him on board, particularly as this project is happily expanding into other areas", she explained. Also credited are the puppet makers: local artist Ms Cherise Ward and Ms Joanne Bigham from Toronto, Canada. Ms Garofano highlights their contribution by adding, "Cherise and Joanne have really brought the characters alive, and certainly with several local puppeteers now trained in the show, they are real live characters to the kids! They just love them!" find out more by emailing [briandluk@futurecentretrust.org](mailto:briandluk@futurecentretrust.org). today!  
By Nicole Garofano.



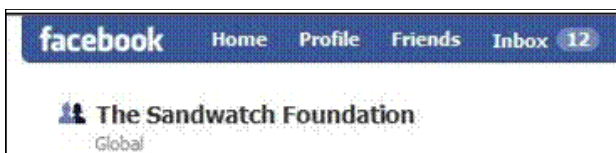
The Principal of St Elizabeth's Primary, Ms Cicely King receiving a package of books from Krystal Boyea of The Future Centre Trust



The puppets Luk, Tida and Carey 'on stage' at St Andrews Primary

## Please join the Sandwatch Foundation's Facebook Forum

In its ever continuing efforts to keep up with rapidly changing technology, **The Sandwatch Foundation** has recently set up a dedicated 'Sandwatch Forum' on the globally popular social networking website '**Facebook**'. If you are a member, or are considering joining the website (it is free) then simply do a Facebook search using the phrase '**The Sandwatch Foundation**', and it will pop up on your screen. Then you click on the dialog box that asks you if you would like to join this group...and that is basically it!



Sandwatch also has its own dedicated YouTube Video Channel at...  
[www.youtube.com/user/SandwatchFoundation](http://www.youtube.com/user/SandwatchFoundation)

Once a member of the Sandwatch forum you can post photos, links, ask questions, communicate with other members all over the world and be regularly updated on Sandwatch events and activities. The Facebook forum has just started and

has already proven to be quite popular with members, especially students and we hope that you will join the forum and help to make it a viable, informative and fun way to exchange Sandwatch and community information.





## Man O'War Cay, Bahamas reports on storm



The Sandwatchers of Man O'War Cay, measure their beach after the big storm, to compare with last years measurement's

In November our Sandwatch Club at Man O'War Cay School, became active again with some new members and some enthusiastic former members. We compared our measurements from last year's study and we found many changes. On the weekend of November 13th, we had giant waves (for us). These were the largest waves anyone had seen for about two decades that were not hurricane related. We are fortunate to have a barrier reef that helps protect our beaches from large waves and massive erosion. These waves were so large that even our wonderful reef couldn't prevent some erosion. The waves, reported as being 10-15 ft. by local media, removed the sea oats that our students planted after Hurricane Floyd. The sea oats had been doing well and had multiplied since they were planted 11 years ago. When we measured the beach and looked at the remaining sea oats, it became apparent that there is a need to replant before further storms take away the dune that remains. This dune is in front of our community grave yard and the beach is one that many of us enjoy as it is an easy walk from our homes.

We have contacted our local town council with a plan that our club will plant and care for the sea oats and we are seeking help to purchase the plants. The council leaders have asked us to get a price on the plants so that they might be able to help us with our plan. During the next few months we will be putting this plan into action. We will keep you updated.



## Sandwatch expands in Grenada over to Carriacou



Sandwatch expands to the small island of Carriacou

### Sandwatch stretches to Carriacou!

As of January 2011, Carriacou has become part of the Sandwatch experience! There are 7 schools in Carriacou (2 secondary and 5 primary) that have been challenged to integrate Sandwatch into their classrooms. Dover school has gladly adopted Sandwatch into their after school environmental group, which consists of 25 students. "We get to learn about our ecosystems, how our beaches function, and if our small island is healthy," Romella Compton stated as one of our afterschool lessons were focused on the importance of educational programmes such as Sandwatch.

Dover school meets twice a week and has scheduled beach fieldtrips 3 times since January 2011. Sandwatch has greatly enhanced their knowledge on beach functions, climate change, community accountability, and individual decisions that impact the environment. Since the Sandwatch programme also teaches math, science and english comprehension, teachers, community members, and parents are beginning to acknowledge the immediate and long term benefits of Sandwatch. Other schools in Carriacou are starting to participate and incorporate Sandwatch into their classrooms.

Carriacou is a small island with an estimated population of 7,000. Sandwatch addresses all the key problems that are currently happening such as sand mining, importance of successful turtle nesting, erosion, accretion, and beach litter that is so prevalent on the windward side where Dover School is located. Sandwatch is a unique environmental program for Carriacou and I have a feeling that this program is going to continue and thrive on this island.

*By Crystal Marie Bernal, Peace Corps Volunteer, Grenada Coordinator for Sandwatch*



## Sandwatch sends laptops to Cuba

### Way back in February 2009, the winners of The Sandwatch "Coping with climate change: Sandwatch leading the way" video contest were announced.

Almost two dozen entries were submitted from teams all over the world with winners chosen in age categories (primary/high school), as well as for creativity and originality. US\$6,000 in prize money was awarded the best eight (8) entries.

However, two of the winning schools were in **Cuba**, and we (Sandwatch Foundation) had a very difficult time trying to arrange to give the Cuban winners their prize money. Eventually it was decided that we would use the prize money to purchase two laptop computers for the school and have them delivered, which was successfully done earlier this year with the help of Maria Brito Feliz and the UNESCO National Commission in the Dominican Republic. We are glad to report that the two winning schools have finally received their long belated, but much deserved prizes. First Prize for Community Groups (All ages and 19 years+) went to The ESBU Camilo Torres Restrepo, **Habana, Cuba** for their movie, "Aqui las arenas son mas blancas" (Here the sands are white). Joint 2nd Prize in the Secondary School Category (13-18 years) went to The IPVCE Ernesto Guevara, Santa Clara, **Villa Clara, Cuba** for their entry, Enfrentar el cambio climatico, tarea de 1er orden (Facing Climate Change : First Order Task)



All the videos made for the contest can be viewed on the Sandwatch website [www.sandwatch.org](http://www.sandwatch.org)



## A growing menace in Lake Victoria (continued from page 6)



The weed, scientifically known as *Eichhornia Crassipes* is believed to have originated from the Amazon Basin and was brought to East Africa as a pot plant that later found its way into the lake waters. Its rapid proliferation has been blamed on the emission of untreated industrial effluents and fertilizers into the lake. "The spread the weed into Lake Victoria is directly attributed to the enrichment of the water environment by the effluent from the expanding population around the Lake", says Dr Margaret Oduk a research scientist at the United Nations Environment Programme. The researcher adds that the continued infestation of the weed could result in food insecurity as it blocks access to fishing ground. The green plant produces beautiful purple flowers and has long fibrous roots. The spongy tissues in its stem enable it to float in water. It grows in clusters that form floating mats in the lake and thrives best in polluted waters. According to scientists, the weed spreads out at an alarming rate, doubling its biomass every 15 days.

Unfortunately, a plan to save the lake shared by the three East African countries of Kenya, Uganda and Tanzania and funded by the World Bank and the Global Environment Facility has made very little impact, especially in Kenya where the rescue plan, started in 1994, has been hampered by many hurdles. Consequently, the livelihood of the lake side communities who eke out a living from the lake is still threatened.

Other conservationists argue that the weed can be controlled by mechanical means and manpower but this has mostly been unsuccessful since the weed grows so fast. Various herbicides are also effective but have significant risks for other wetland biodiversity. Due to continued presence of this weed in the lake our city experiences perennial water shortages as all the intake points have been blocked by the plants. Marine and navigational activities at the port of Kisumu are also often blocked and clogged making it impossible for light steamers to dock. It thus became so serious a matter that the Sandwatch club members decided to try to address this menace. "What can we do to stop this weed from spoiling our lives?" asked Lillian. "Nothing" answered Jacob. "If the World Bank with all its money has failed, how about us, mere students with no income?" After much deliberations, one of the club members called Wizard who is known for his skills on browsing the net and getting ideas, found a group in South America who use the water hyacinth to make paper and boards. Since water hyacinth gives an easily digestible pulp, it serves as a readily available raw material for manufacture of paper. Now as we read and re-read the articles we began to look for more uses of water hyacinth on the internet.

We made a list of all the uses and looked at the uses that could apply and be used easily. Since our club does not have money to invest in harvesting the weed for commercial purposes we decided that the best thing is to encourage funded youth groups, and members of several women's groups and handicapped groups come together to form "Community Based Organizations" (CBOs) to harvest and process water hyacinth and manufacture a variety of exotic products. We suggested to them that they could capitalize on the hyacinths tough but flexible nature to weave together baskets, chairs, and other pieces of furniture, even biodegradable sanitary napkins, to sell for extra income. The plant is also used to make fuel briquettes for cooking and fertilizers.

Several of the groups took our advice while others found out for themselves about the uses of the weed. Now all over the Kisumu streets, markets and shops a variety of products made from the water hyacinth are visible. (My current diary 2011-2012 is made of water hyacinth paper!). Other examples include pulp, cards, lampshades, excellent furniture, baskets, footwear, cordage, fodder for animals, and gas. **Sandwatch** club members have been involved in twice a month activity of manual harvesting of the weed from the lake and using the water hyacinth to make ropes, which are used to tie domesticated animals like cows, goats and sheep. Recently we visited a hotel near the lake where they use water hyacinth as a substitute for tea/ coffee. It tasted...Wow! "We are helping farmers and fishermen around the lake shores to not only improve their incomes and livelihoods, but also to make at least a small difference on their local surroundings," says Timothy. "They are turning a devastating situation into a life-improving situation."

What the **Sand watchers** are trying to prove is that while water hyacinth is viewed by many people around Lake Victoria as a menace that must be removed, it also has merits. The hyacinth can be used for food for people because its leaves are rich in proteins and vitamin A; and as green fertilizer, mulch and compost to regenerate degraded soils. It can remove different pollutants from water and positively influence fish populations in natural waters or fish growing in artificial enclosures. It can easily replace straw as substrate for mushroom growing or it can be use as fodder. It is interesting that it can be used in energy production thereby combating deforestation. As briquettes or biogas it can be used for lighting and cooking in schools, restaurants or government institutions. That is our new message. That the water hyacinth is a two edged sword.



Water hyacinths block the Lake's fish landing sites, beaches and even drinking water intakes



Sandwatch Coordinator, Peter Amunga and a visitor from the UK remove hyacinth debris from the lake shore



Furniture can be made from the water hyacinths dried fibres

## Sandwatchers around the world!

*Sandwatch is a truly global project with schools in more than 50 countries participating*



Sandwatchers In Kiribati load a truck with beach debris



The Sandwatch Indian Ocean Workshop team in the Seychelles



Sandwatchers from Form 1A Animarao School, Kiribati after cleaning their beach



Even mechanical reapers can't clear water hyacinths out of Lake Victoria faster than they grow back

"The Flagship UNESCO Sandwatch Project is an excellent example of what can be achieved...Sandwatch provides a framework for school children and local communities to work together to critically evaluate the problems facing their beach environments and develop sustainable management solutions. Since its launch in the Caribbean in 2001 which I myself attended, while visiting several islands of the region, Sandwatch has expanded to the Pacific and Indian Oceans, and is now active in around forty nations worldwide, including about 20 SIDS (Small Island Developing States)"

- Excerpt from The Opening Address by Mr Koïchiro Matsuura, Director-General of UNESCO, on the occasion of the International Seminar on Climate Change Education - UNESCO, 27 July 2009, Paris.



Teachers and students from Nevis learn to snorkel and care for their reefs



Students in Barbados watch a puppet show about climate change and the environment



Sandwatch Coordinator for the Cook Island, Jane Taurarii punches a croc in Mahe



Sandwatch is proud to have a new team in Kiwana, Western Australia



Using a digital microscope at the Seychelles Indian Ocean workshop



Remember Sandwatch is Fun!



Samoan community participates in a Sandwatch training session in August 2010