



Monitor  
Environment



Analyse  
Results



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Findings



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Action

**Inside this issue of  
The Sandwatcher,  
activities in 18  
countries worldwide!**

**Including, Australia,  
Bahamas, Bonaire,  
Cape Verde, Cameroon,  
Comoros, Cuba,  
Dominican Republic,  
Gambia, Ghana,  
Jamaica, New Zealand,  
Nigeria, Puerto Rico,  
Saint Vincent & the  
Grenadines, Senegal,  
South Africa, Turks &  
Caicos...and more!**

**SANDWATCH**  
FOUNDATION



www.sandwatch.org

Dec 2013

The Sandwatcher

PROMOTING GRASSROOTS CONSERVATION OF BEACH ENVIRONMENTS

Photo: Paul Diamond

**DRAFT**

## Sandwatch training videos now online

In the July 2013 issue of The Sandwatcher we told you about the work on Sandwatch training videos by our partners at the University of Puerto Rico Sea Grant College Program. We are very excited to announce these videos were launched at the beginning of November and are now available, in English and Spanish, on the following YouTube channels: [youtube.com/sandwatchvideosENG](http://youtube.com/sandwatchvideosENG) (English videos), [youtube.com/sandwatchvideosESP](http://youtube.com/sandwatchvideosESP) (Spanish videos).

These videos will provide viewers the opportunity to learn about Sandwatch activities and to review the methods used to monitor beach changes. The videos will also facilitate the training of new participants to Sandwatch.

"These videos will help existing Sandwatchers and new trainees see for themselves how to do the actual measurements and will give them confidence that they too can take part in this exciting global effort – Sandwatch! We have already seen that Sandwatch measurements contribute to effective beach management at the local level, and we anticipate that over the long term the measurements will be properly stored in the **Sandwatch International Database** so as to contribute to the understanding of how beaches respond to climate change especially rising sea levels. The potential for Sandwatch is limitless" said Dr Cambers, co-director of the Sandwatch Foundation.

The Sandwatch training videos were prepared between 2012 and 2013, with the support of the **United Nations Educational, Scientific and Cultural Organization (UNESCO)**, the **Government of Denmark** and the **University of Puerto Rico - Sea Grant College Program (UPR-SGCP)**. The communications team at UPR-SGCP filmed, produced and edited 17 videos with editorial input from the Sandwatch Foundation and UNESCO. Each five minute video relates to a particular chapter in the Sandwatch Manual and there are additional videos showing how to use equipment such as an Abney level.

A DVD with the videos will be available shortly, as well as translations in other languages such as **French and Portuguese**.  
(Continued on page 2)



Participants at a climate change education course in South Africa watch the Sandwatch training videos



## Inside this Issue...



Participants from all over West Africa attended a training course on climate change education in Praia, Cape Verde, November 2013

### Welcome to the sixteenth edition of The Sandwatcher, the Official Voice of The Sandwatch Foundation

This issue highlights articles about Sandwatch activities from around the world.

While we do not have the resources to translate and publish the newsletter in different languages, we have tried in this issue to publish some of the articles that were received in Spanish in both the original version and translated into English.

Just some of the highlights of this issue include..

- **Sandwatch Training Videos** are now on YouTube in **English and Spanish**
- Sandwatch expands into more countries in **West Africa** and the **Indian Ocean**
- **The Dominican Republic** planned Sandwatch activities for the 2013-2014 school year
- Sandwatchers in **The Bahamas** plant sea oats to protect their beach after **Hurricane Sandy**
- Climate change education course trialled in **South Africa & the Cape Verde Islands**
- Two schools in **Bequia** receive training on the Sandwatch International Database

Please send us your feedback to [sandwatchfoundation@gmail.com](mailto:sandwatchfoundation@gmail.com)

## Sandwatch training videos online (continued from cover)



An opening screen shot from one of the Sandwatch training videos now online

The videos show step-by-step the different methods used in Sandwatch to monitor beaches. The first video gives an overview of Sandwatch while the following videos display specific methods. For example there are two videos showing methods for finding out whether the beach is eroding or accreting over time, one shows how to measure the beach width and the second shows how to measure a beach profile or transect. Other videos illustrate different aspects of beach monitoring e.g. water quality, beach debris and how to design a questionnaire to find out beach users' likes and dislikes about a beach site.

So 2013 has been an exciting year for Sandwatch with the **Sandwatch International Database** launched in March, and now we have the Sandwatch training videos available in English and Spanish. The time to get involved in Sandwatch and take action to protect your beaches is now, visit our website at [www.sandwatch.org](http://www.sandwatch.org) or send us an email and [sandwatchfoundation@gmail.com](mailto:sandwatchfoundation@gmail.com) for more information.

## New Zealand Sandwatchers create a 'Green Wall'



An innovative recycling project which is quite likely the first of its kind in **New Zealand** was recently constructed at Stanmore Bay School. The PET Green Wall will eventually transform a 4m by 2m wall into a vertical garden, where both native and exotic species, including epiphytes and edible plants will reside.

After collecting more than 600 plastic bottles, 460 were used to form the structure of the wall and were attached to wire frames by cables. These were then fastened to a concrete wall. Students, family and community members spent 2 days hard at work in order to finish. **Natural Habitats** a landscaping company were the main sponsors. In on the project from the beginning they even went so far as to install an irrigation system that keeps the plants alive. Vertical gardens are a great answer to the ever increasing spread of urbanisation and provide essential ecosystems in the landscape and do not take up too much room. *"As an Enviroschool this is just another way that we have added to our school's plan to fully embrace a sustainable future."* says the principal Mrs Carol Abley. *"To turn so many bottles into a garden feature is amazing!"* The wall has become a talking point with everyone. Many feel that such a project is a great way to combine sustainable technology with an environmentally sound ethos.

**Ms. Robyn Bennet, teacher and Sandwatcher**



A 4 x 2 metre vertical garden made from 600 recycled plastic bottles!



# DRAFT



## Climate change education course trialled in Africa and Cape Verde



In the June 2013 issue of The Sandwatcher, we announced that **UNESCO**, the **Sandwatch Foundation** and **Rhodes University** partnered to create a course that would empower secondary school teachers to teach elements of climate change inside and outside the classroom. Now, the *Climate Change Education for Sustainable Development Course for Teachers* has been successfully trialled in **South Africa** and **Cape Verde** and discussions are under way to hold the course in other parts of the world.

The course combines elements from UNESCO's *Climate Change Education for Sustainable Development Course for Teachers* with the Sandwatch programme's methodology (**M**easure, **A**nalyse, **S**hare and **T**ake action - **MAST**) and has been developed specifically for educators in **African coastal regions** and **Small Island Developing States**. These regions are especially vulnerable to the impacts of climate change and the challenges it raises for the wellbeing of people and the ecosystems on which they depend. The course supports a range of educators, most especially secondary school teachers, but also teacher educators and community educators, to teach about climate change in ways that reflect the principles of education for sustainable development (ESD).

One of the main features of the course is to better understand how a global phenomenon such as climate change will affect the local environment, in particular the beach. So as part of the course, participants get out of the classroom and visit their local beach and learn about past changes in the beach environment and then project how climate change will impact the beach in the next 20-30 years.

The course consists of three modules delivered over a four day period. Module 1 presents some local and global perspectives on climate change and its impacts, as well as giving a background to climate change science and ESD. Module 2 introduces the participants to the Sandwatch approach and includes a field trip which allows participants to investigate past changes and future climate change scenarios at a local beach location. Module 3 provides an opportunity for participants to build on the materials and activities presented and develop an educational intervention that they will undertake on return to their home countries.

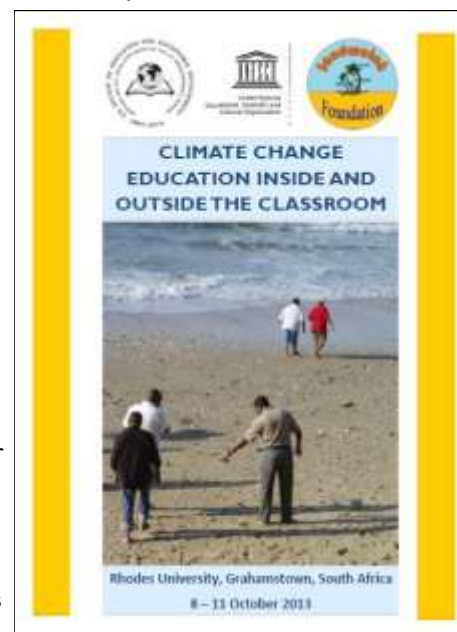
The first trial of the course took place at **Rhodes University, Grahamstown, South Africa** from 8-11 October 2013 where there were 29 participants from 10 African countries as well as **Madagascar** and **Mauritius** in the Indian Ocean. After the course one participant commented: *"I really enjoyed the Sandwatch fieldtrip activity and I also learnt new teaching strategies like the 'circle sharing' which was a great concept and I look forward to implement it in my class. Thank you loads guys – fantastic!"*

The second trial of the course took place at **Praia, Cape Verde** from 20-23 November 2013 and involved 26 participants from all over West Africa and beyond, including **Cape Verde, Senegal, Guinea-Bissau, The Gambia, Ghana, Guinea-Conakry, Togo, Sao Tome, Cameroon, Nigeria, Mali and The Comoros**. An additional 5th day of training on the new [Sandwatch online data-base](#) was also held for selected participants.

Many of these participants had previously been involved in Sandwatch training and had ongoing programmes in their countries. One of the challenges faced in this trial was conducting the course in **English, French and Portuguese**. However, the facilitators, Lausanne Olvitt and Paul Diamond, with the help of Khalissa Ikhlef and Gloria Ribeiro and her staff from the **UNESCO National Commission** made the trilingual delivery process work. After the course participants commented: *"More people should be given the chance to be taken through the concepts of climate change"* and *"The training was an eye-opener in many ways"*.

Following these two trials, the course materials will be reviewed and revised, and feedback sought from the participants of the two courses as to their follow-up activities.

**Gillian Cambers and Paul Diamond, Sandwatch Foundation, and Lausanne Olvitt, Rhodes University**



Sandwatch has partner with UNESCO and Rhodes University to develop a new climate change teaching methodology



Full details of the South Africa and Cape Verde training workshops can be found at [www.sandwatch.org](http://www.sandwatch.org)

# DRAFT



## Bonaire Junior Rangers hold climate change debate



STINAPA Bonaire's Junior Rangers are blazing a trail for the other Dutch Caribbean islands' nature education programmes. On Bonaire the Junior Rangers serve as ambassadors for nature and directly participate in conservation activities and discussion.

### Climate Change Debate

On 29 October 2013, the Junior Rangers tackled a big and intimidating topic – climate change. The effects of climate change are already occurring, but there is still a lot we can do to minimise the causes (mitigation) and increase the resilience of our fragile ecosystems (adaptation). The Junior Rangers divided into these two teams to debate the root causes of climate change and the effects it will have on their island – Bonaire.

The Adaptation team presented novel ideas on how to best deal with the effects of climate change while the Mitigation team focused on how we should minimise the causes of climate change.

In the debate, the Mitigation team won as they presented a strong case, however in reality both teams won as they not only sparked an island discussion on climate change, but also learned a great deal about debating complex and controversial topics.

### Impacts on Bonaire

The Intergovernmental Panel on Climate Change (IPCC) states that overall temperature rise, sea level rise, increasing aridity on land and acidification of the oceans are the greatest impacts of climate change in the immediate future. Bonaire is especially vulnerable to these impacts because the island already has a dry climate and is so dependent on its healthy coral reefs. The arid shrubland with its characteristic cacti could easily be transformed into a desert before the end of the century.

The waters around Bonaire harbour one of the most intact coral reef ecosystems in the Caribbean with relatively high live coral cover. When the temperature rises and the ocean becomes more acidic, the coral reefs will be affected by increased bleaching events, decimating the entire ecosystem. Since Bonaire's local economy depends on the environment, with large numbers of dive tourists coming to Bonaire every year, losing this resource could destroy the economy and livelihood of many Bonaireans.

### A new perspective

For far too long the problem of climate change has been discussed without effective actions being taken. According to the World Meteorological Organization (WMO), the concentrations of greenhouse gases in our atmosphere have reached new record-levels yet again. This suggests the need for a fresh approach.

The United Nations has expressed their desire to involve those people who will be most affected by climate change in the global debate. Young people from Small Island Developing States are not only less responsible for the emissions of greenhouse gases and more impacted by climate change, but they have also been less involved in discussion and planning.

The time has come to hear the youth's opinion. Young people from the 52 Small Island Developing States (SIDS) were asked to attend workshops in Jamaica, Fiji Islands and the Seychelles to contribute their vision for the future of small islands in this world. This all leads up to the U.N. Third International Conference for Small Island Developing States that is scheduled in September 2014 in Apia, Samoa, where the Bonaire Junior Rangers hope their voices will be heard.



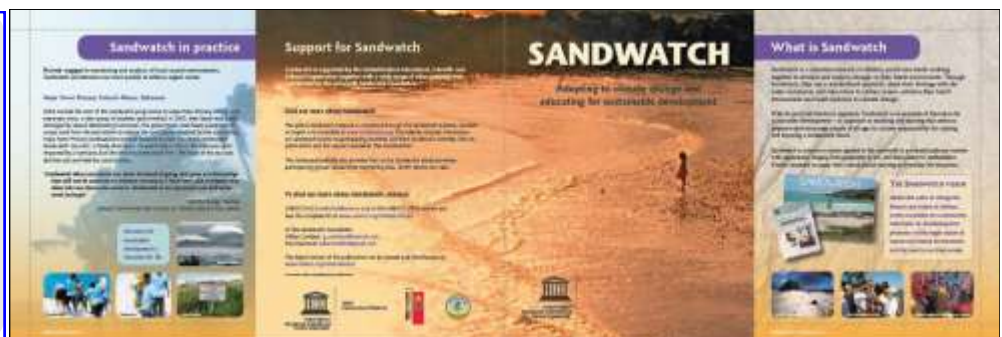
Bonaire Junior Rangers debating climate change causes.  
Photo: Danielle Noeken



Bonaire Junior Rangers debating climate change causes.  
Photo: Danielle Noeken

### New Sandwatch Brochure!

UNESCO recently published a new four page fold out Sandwatch brochure. Copies can be downloaded from the Sandwatch website and paper copies are also available on request.



## Sandwatch to restart in Ghana



Ghana is a West African country which was known as "Gold Coast" during the days of Colonialism. Castles and Forts were built in some of the coastal towns for the trade in slaves. Due to the existence of these Castles and Forts, our coast has become a major tourism site for many people across the world from the African Diaspora.

But Ghana's beaches are now becoming places of less interest due to human activities along the coast (i.e. disposal of refuse and other waste materials and coastal development). It has therefore become necessary to equip the youth and the adults living along the coast with relevant skills and knowledge that will help change their lifestyles and habits. Also, there is the need to create awareness on the fragile nature of the marine and coastal environment and the need to use them wisely.

**Sandwatch** will therefore fit into our schools environmental goals, because as I learned during the workshop on Cape Verde, it will help our youth in the acquisition of knowledge that will help change the lifestyle of our people.

**James B. Arthur, Teacher and Municipal Education Director, Kumasi, Ghana**



Sandwatch was present in Ghana in years past but is now becoming active again



## Sandwatchers in The Gambia visit Senegal



The members of UNESCO's Sandwatch and Associated Schools Project network (ASP) of St. Joseph's Senior Secondary School are participating effectively in and out of the school to promote the aims and objectives of UNESCO towards human development. It is against this backdrop that we are known for work in the areas of environmental sanitation, tree planting and most importantly our popular Sandwatch activities on the beaches of **Banjul, The Gambia**.

In April 2013, sixty students from our school visited **Dakar, Senegal** and we took that opportunity to conduct a Sandwatch activity on one of the beaches of Dakar, which helped us to compare the rate of coastal erosion in Dakar and Banjul.

In May 2013, the members of UNESCO ASPnet of St. Joseph's Senior Secondary School conducted another Sandwatch activity on the beach of Banjul, which made us to conclude that coastal erosion is a serious issue for both cities but Banjul is at a higher risk. Therefore we recommend that collective measures be put in place by the Government and all stakeholders before it's too late.

**Mr Musa Touray, St. Joseph's Senior Secondary School**



Sandwatchers from The Gambia taking measurements on the beach of Dakar, Senegal

## Turks & Caicos students at West Road Beach



Seven children ranging in age from 8 to 12 years from the Turks and Caicos National Museum's Children's Club undertook some Sandwatch activities on 8th June, 2013. The club convened at the museum and then went out to observe a portion of the West Road Beach from Missick's Building to the Fishermen's Port.

They observed a number of things on the beach. They noted that there is a great need for users of the beach to keep it cleaner. We saw several sea biscuits. One of the highlights of the trip was to witness a symbiotic relationship between a pelican and a laughing gull. Fishermen on the beach allowed them to photograph them catching "fries" and to touch the "fries". Spread the word says our Pelican : "Keep Our Beaches Clean" !!! A record of one of the children's observation can be seen on our Sandwatch homepage.



The Caribbean Turks & Caicos Islands are very vulnerable to global climate change and rising sea levels



# DRAFT



## A Sandwatch team on Cape Verde reports



Sandwatchers from Abílio Duarte and Manuel Lopes High Schools, conduct measurements on Gamboa Beach, Cape Verde

On 4th May 2013, two Sandwatch teams from the UNESCO Associated School Project network went to **Praia da Gamboa**, at the margins of the city of Praia, to do monitoring and training. The teams came from Abílio Duarte High School - eleven students from the 9th year classes and two teachers, Rita de Pina and Denilson Delgado; and the Lopes High School - eleven students from the 11th year and two teachers. The teams met at the schools and walked to Praia da Gamboa. The activity lasted for the morning.

The students and teachers made observations of the beach, measured it, collected and analyzed the sea-water and finally collected trash and put it into the proper location for pickup trucks by the City Council. Among other things they noticed that shells and snails are increasingly absent. Some years ago the beach was a nesting spot for leatherback turtle but sadly not anymore.

The activity helped the students become sensitized to the need for protection of the environment at Praia da Gamboa.

They measured different aspects of the beach including length and width, water temperature and water quality, waves and currents.

They plan to continue to monitor the beach and use the new Sandwatch online database to enter the data. The teachers participated in the Sandwatch Database Training Workshop held in Praia, Cape Verde on 24th November 2013.



## Monitoring the establishment of sea oats in Bahamas



Bessie Lowe shows her sand dune and Sandwatch signage in Abaco, The Bahamas

In March 2013 our school participated in re-planting the sea oats on the dunes in front of the Hope Town Lodge which is our Sandwatch test site area. We study the patch reef and work on the dune restoration in that area which is right next to our school. Hurricane Sandy which struck our island in 2012 washed out the whole dune and also all of the sea oats the school planted after Hurricane Floyd in 1999. All 70 students in our school participated in the planting (see article in last Sandwatcher). We gently dug a small 6 inch deep hole in the sand, placed the 6 inch baby sea oat plant in and held it while another student carefully poured some liquid gel-like fertilizer in the hole. Then we covered the roots and patted the sand down around the root ball. Thank goodness we did not have a hurricane or even a tropical storm this summer so the sea oats really got a good start. All the rain we had also helped them grow.

As you can see from the pictures our sea oats have really grown---to almost 3 feet tall ! Their roots are spreading out widely under the sand as they do their job holding the sand on the protective dune. Our beach was pushed back up in place by beach bulldozers after Hurricane Sandy but it still has a pretty steep incline. The tides and winds can be rough in October. We call them October surges and they occur during the spring tides. This washed the beach out a bit more. We will continue to monitor our beach and dunes to learn how beaches change and how the mighty sea oats help us by protecting our beloved beach.

**Bessie Lowe, Head Girl, Hope Town Primary School, Abaco, Bahamas**



## Sandwatch has a new Facebook page

Do you have a Facebook profile? If you do, then like us on our new Facebook page at: [www.facebook.com/SandwatchFoundation](http://www.facebook.com/SandwatchFoundation).

We want to hear from you, the Sandwatchers, so post your photos, let us know what activities you are doing and share your passion for the environment with the Sandwatch network around the world! Sandwatch is active in about 50 countries worldwide so it provides a great opportunity to network exchange ideas, swap information, teach your students about geography, culture and the environment. So if your Sandwatch group, school or organization has a Facebook page we would like to connect!



# DRAFT

## Sandwatch expands in Cuba



The national workshop for **UNESCO's Associated Schools Project Network (ASP Network)** in **Cuba** was held November 5-7, 2013. The theme of the workshop was "*Por una cultura de Paz*" ("*For a culture of peace*"). **The Sandwatch program**, "Protection of las Arenas," was featured during the workshop and an update on the performance of the program was given by the directors to representatives of the 76 ASP Net schools in Cuba.

Dr. C. Rafael Bosque Suarez, Director of the Center for Studies of Education Environmental-GEA of Pedagogical Sciences of Enrique J. Varona, University of Havana, gave a presentation and described the Sandwatch program. After listing the 15 schools involved in Sandwatch he asked if any other school was missing. We were all delighted to have a group of directors request that their schools be involved in Sandwatch. **We are now at 29 participating schools which represent 12 of Cuba's 15 provinces!**

One of the highlights of the workshop was reaching out to teachers who had previously been involved with Sandwatch but their schools were no longer associated with UNESCO. One of these teachers was Dr Raudel Cuba who was so motivated by the work he did with his elementary school students at the El Judío Beach in Matanzas that he included it in his doctoral thesis and now collaborates with the school advising their Sandwatch group.

Currently all participating schools have identified their beaches and taken photos of them. Training has been conducted, water quality kits and cameras (to record progress) have been distributed and everyone is ready to make the project a success. Support was sought from the municipal directors of Science, Technology and Environment, as well as the pedagogical universities. Equally important is interacting with the local communities and gaining their support.

Our involvement in Sandwatch comes from our hearts and we will be documenting and sharing best practices among Cuban schools so as to create a multiplier effect.

We will work to make the Sandwatch project sustainable given its importance in the context of the Decade of Education for Sustainable Development.

Lastly, we would like to point out that it was agreed at the workshop that samples of sand would be collected by each of the schools from all the different beaches and delivered to El Museo Escolar de Historia Natural Antonio Núñez Jiménez de la UCP de La Habana (The Antonio Núñez Jiménez Museum of Natural History at the UCP of Havana).

**Lic. Delia Vera Medina Coordinadora Nacional redPEA  
Coordinadora Nacional Proyecto Protección de las Arenas, CUBA**

### Protegiendo las arenas aprendemos y disfrutamos de las playas.

En el Taller Nacional de Escuelas Asociadas a la UNESCO de Cuba "Por una cultura de Paz" celebrado del 5 al 7 de noviembre en La Habana, se dedicó un espacio para la realización del Taller sobre el Proyecto "Protección de las Arenas" con la participación de directores y docentes de las 76 Escuelas Asociadas a la UNESCO del país.

Se inició la exposición explicando las etapas del proyecto con la colaboración del Dr. C. Rafael Bosque Suárez, Director del Centro de Estudios de Educación Ambiental-GEA de la Universidad de Ciencias Pedagógicas "Enrique J. Varona" de La Habana. Al finalizar mencionamos las 15 escuelas que trabajarían el proyecto y preguntamos si faltaba alguna, de inmediato un grupo de directores solicitaron su incorporación. Para sorpresa de todos ahora son 29 !. Las escuelas se encuentran en 12 provincias de las 15 que tiene Cuba.

Dentro de los aspectos importantes podemos decir que se contactó con profesores que en otros años trabajaron el proyecto; pero que ya no están en Escuelas Asociadas a la UNESCO. Cabe mencionar al Dr. Raudel Cuba quien motivado por el trabajo que realizó con sus alumnos de primaria en la playa El Judío en Matanzas defendió su tesis doctoral sobre el tema y ahora colabora con la escuela asesorando al grupo.

En estos momentos todas las escuelas tienen identificadas las playas y han tomado fotos de las mismas. Se entregaron los kits para la calidad del agua, los videos y cámaras fotográficas para los boletines escolares donde también se informará de los avances del proyecto. Con la capacitación realizada todos están preparados para que el proyecto tenga éxito; además se orientó buscar el apoyo de las Direcciones Municipales de Ciencia, Tecnología y Medio Ambiente y de las Universidades Pedagógicas. También se enfatizó en la importancia de interactuar con las comunidades.

Trabajaremos con todo el amor del mundo y estaremos presentando las buenas prácticas que realicen las escuelas para que sirvan de efecto multiplicador y que de todas las experiencias documentadas.

Debemos lograr la sostenibilidad del mismo dada su importancia en el contexto de la Década de la Educación para el Desarrollo Sostenible.

Queremos señalar que se acordó en el Taller que cada escuela entregara una muestra museable de arena de las diferentes playas en las que están trabajando para exponerlas en el Museo Escolar de Historia Natural "Antonio Núñez Jiménez" de la UCP de La Habana.

**Lic. Delia Vera Medina Coordinadora Nacional redPEA**



One of the Caribbean beaches is located on the northern coast of Boca Miel in Baracoa, Province of Guantánamo



Sandwatchers in Cuba cleaning up a local beach



## Update on Sandwatch activities in the Dominican Republic

### Training workshop on Adapting to climate change and ESD

Dominican Republic National Commission for UNESCO through its Associated Schools Project Network (ASPNet) conducted a training workshop, *"Adapting to climate change and educating for sustainable development,"* with the financial support of the 2012-2013 UNESCO Participation Programme and the Ministry of Culture of the Dominican Republic.

The workshop was held on 26 - 27 September 2013 in the Auditorium of the National Aquarium and the "Fisherman" of Juan Dolio Beach respectively.

The workshop strengthened the technical capacities of teachers and students from ASPNet about the methodologies used in the field for the **Sandwatch Project** and will lead to the development of activities that address critical problems and conflicts facing the beach ecosystem and surrounding areas.

The main objective was to empower twelve schools of the Dominican Republic ASPNet in the study of the issues related to sustainable development and climate change. This will also contribute to the continuity of the **Sandwatch** program in the Dominican Republic and provide educational tools for the development of classroom activities focused on the problems related to climate change.

The training brought together teachers and students of ASP Net schools from the provinces of La Altagracia, Peravia, San Cristobal, San Pedro de Macoris and Santo Domingo.

The National Aquarium, the National Council for Climate Change and the Ministry of Environment and Natural Resources also provided support for the workshop.

**Coordinación Nacional, Red de Escuelas Asociadas a la UNESCO , E-mail:**  
[redpea@cndu.gob.do](mailto:redpea@cndu.gob.do)

### Training in Sandwatch methods at the beach

On October 31, 2013, the workshop "Methodological Tools for Education Practices Outside of the Classroom" was held. This workshop involved teachers of natural sciences. The event was organized by the "Distrito Educativo 10-04 del Ministerio de Educación (MINERD)" on the premises of Politécnico Pilar Constanzo in Santo Domingo this and was attended by 46 teachers and 5 district technicians.

On behalf of the ASP Net of the Dominican Republic and the National Aquarium, technicians Ángela Hernández and Juan Ciprian presented the Sandwatch project, under the theme "Student services, tools and working methods for educational practices outside the classroom."

The technicians showed participants the backpack containing the Sandwatch equipment and explained how to use the equipment. The presentation received the support of the representatives of the Politécnico María de la Altagracia y el Liceo Matutino Socorro Sánchez, both schools affiliated with the Dominican ASPNet.



Educators from across the DR took part in Sandwatch training  
© Red de Escuelas Asociadas a la UNESCO de la República Dominicana.

### RedPEADominicana realiza Taller de Capacitación "Adaptarse al Cambio Climático y Educar para el Desarrollo Sostenible"

Santo Domingo - La Comisión Nacional Dominicana para la UNESCO a través de su programa Red de Escuelas Asociadas a la UNESCO- RedPEA Dominicana- realizó el taller de capacitación "Adaptarse al Cambio Climático y Educar para el Desarrollo Sostenible" con el respaldo financiero del Programa de Participación de la UNESCO 2012-2013 y el Ministerio de Cultura de República Dominicana.

El taller se celebró los días 26 y 27 de septiembre del presente año en el auditorio del Acuario Nacional y la playa "El pescador" de Juan Dolio respectivamente.

El taller contribuyó a aumentar las capacidades técnicas de los maestros y estudiantes de la RedPEA sobre el trabajo metodológico de las prácticas de campo del proyecto del Mar Caribe de la UNESCO "Observando la Arena" y, propiciará el desarrollo de actividades que aborden de manera crítica los problemas y conflictos que se enfrentan en el ecosistema playero y las zonas circundantes.

El objetivo fundamental fue el de empoderar a doce (12) escuelas de la RedPEA Dominicana en el estudio de los temas relativos al Desarrollo Sostenible y Cambio Climático, contribuir a la continuidad del proyecto Observando la Arena en República Dominicana y dotar de herramientas pedagógicas que contribuyan al desarrollo de actividades en aula enfocadas al abordaje del estudio de los problemas relacionados al Cambio Climático.

La formación reunió a docentes y estudiantes de centros educativos asociados a la UNESCO de las provincias de La Altagracia, Peravia, San Cristóbal, San Pedro de Macoris y Santo Domingo.

### Técnicos del Proyecto del Mar Caribe "Observando la Arena", presentan experiencia en el "Curso Taller Herramientas Metodológicas para Prácticas Educativas Fuera del Aula"

Santo Domingo - El pasado 31 de octubre de 2013, se celebró el "Curso Taller Herramientas Metodológicas para Prácticas Educativas Fuera del Aula" dirigido a docentes del área de Ciencias Naturales. El evento fue organizado por el Distrito Educativo 10-04 del Ministerio de Educación (MINERD) en las instalaciones del Politécnico Pilar Constanzo de Santo Domingo Este y contó con la asistencia de 46 maestros y 5 técnicos distritales.



Teachers in the DR conduct a Sandwatch training session  
© Ángela Hernández, Acuario Nacional

En representación de la Red de Escuelas Asociadas a la UNESCO de República Dominicana y del Acuario Nacional, asistieron los técnicos Ángela Hernández y Juan Ciprian, quienes presentaron el Proyecto del Mar Caribe "Observando la Arena", con el tema "Servicios estudiantiles, herramientas y métodos de trabajo para prácticas educativas fuera del aula".

Los técnicos mostraron a los docentes participantes la mochila que contiene las herramientas de trabajo del proyecto Observando la Arena y dieron las explicaciones sobre la utilidad de la mochila en las prácticas de campo. La presentación recibió el respaldo de los representantes del Politécnico María de la Altagracia y el Liceo Matutino Socorro Sánchez, ambos centros educativos afiliados a la RedPEA Dominicana.





## Meeting of the Dominican Republic Sandwatch Working Group

The National Coordinator of the ASPNet held a meeting with a group of schools who will work during the 2013-2014 school year on the Sandwatch project.

During the meeting a project planning matrix was approved, the field practice schedule was created, and a first draft was agreed on for the Profile Center coordinators. Lastly, backpacks containing equipment to measure the beaches were delivered.

Implementation of the 2013-2014 phase program will include the participation of 12 educational centers located in the provinces of La Altagracia, Santo Domingo, San Cristobal, San Pedro de Macoris and Peravia. It is expected that there will be a total of 18 field trips on 6 beaches along the Caribbean Sea coast.

The documents relating to this phase of implementation are available to view in the virtual repository of the project: <http://goo.gl/461Xnw>. See pictures of the project here: <http://goo.gl/8iJ0Xn>



Educators from across the DR work to plan Sandwatch activities for the 2013=2014 school year

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### Sesiona el grupo de trabajo del Proyecto del Mar Caribe "Observando la Arena"

Santo Domingo. La Coordinación Nacional de la RedPEA encabezó la reunión del grupo de centros educativos que trabajarán durante el año escolar 2013-2014 en el proyecto del Mar Caribe "Observando la Arena".

Durante el encuentro se aprobó la matriz de planificación del proyecto, se definió el calendario de prácticas de campo, se acordó un primer borrador sobre el perfil de los coordinadores de centro y finalmente, se realizó la entrega de las mochilas que contienen las herramientas para el estudio de las playas impactadas por las iniciativas.

En el desarrollo de la fase de ejecución 2013-2014, estarán participando 12 centros educativos ubicados en las provincias La Altagracia, Santo Domingo, San Cristóbal, San Pedro de Macorís y Peravia. Se espera la realización de un total de 18 prácticas de campo en 6 playas distribuidas a lo largo de la costa del Mar Caribe.

Los documentos relativos a esta fase de ejecución se encuentran disponibles en el repositorio virtual del proyecto: <http://goo.gl/461Xnw>. Ver fotos aquí: <http://goo.gl/8iJ0Xn>



## Sandwatch attends

The workshop "**Promoting the use of Satellite Data to Support National Environmental and Climate Change Decision-making in the Caribbean**" was held in Kingston, Jamaica, 3-5 December 2013. Representatives from government departments and universities from several Caribbean countries attended including Jamaica, Trinidad & Tobago, Barbados, Cuba and Dominican Republic.

A team from Ghent University in Belgium presented an early version of a framework for storing and presenting satellite data and related documents. They are working on this framework in cooperation with UNESCO and will make the software available when completed to Small Island Developing States that want to use it to manage such information. If the Sandwatch Foundation can get access to a time series of satellite images of monitored beaches with adequate resolution they could be integrated with the database. This could enhance the information collected by Sandwatch groups on the ground particularly to help visualize historical changes in accretion and erosion.

**Dave Gray, Sandwatch International Database Developer**

## 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.



Sandwatch's online database can accept photos and satellite images from teachers around the world





## Making a video on reclaiming Paget Farm, Bequia



Screening a movie on environmental challenges in their community, Bequia

The community of Paget Farm on the Caribbean island of Bequia in Saint Vincent and the Grenadines has been very busy in the past few months encouraging awareness, conversation and action on their community environmental issues. In July, the Reclaiming Paget Farm initiative screened a 15 - minute film exposing the environmental challenges in the community.

Following the film screening, several presentations were made to the community including 17-year-old **Sandwatch** student, Kirk Ollivierre who shared some of his thoughts about his Sandwatch group and his involvement in the Reclaiming Paget Farm initiative.

*"I have always been interested in marine life and the dynamics of coastal communities. As such, I have had a strong desire to study marine biology. When I heard about Sandwatch, I became very interested and it was an obvious decision to become a member."*

**Sandwatch** is a group that focuses on getting young people involved in activities that will make them aware of dangerous changes in our environment, what causes these changes and what can be done to minimize the impacts.

Since joining the group, I have had the opportunity to study changes in the coastline due to erosion brought on by development projects and sea-level rise due to climate change. To help reduce the observed changes, our group has planted some trees around our beaches and coastline. We have also been involved in various cleanup projects in order to free beaches and communities from dangerous materials, not only for the marine environment but also for our health.

Sandwatch has made me more aware of and more responsible for my own environment and the impacts we are having on our entire planet. Through my experience with the Saint Vincent and the Grenadines group, I can truly say Sandwatch is a great program and I strongly encourage anyone with similar interests to join and become a member."



Sandwatchers cleaned up an entire truck load of trash from the Paget Farm area.

Reclaiming Paget Farm is a participatory film and restoration initiative set on the island of Bequia in Saint Vincent and the Grenadines. The initiative seeks to demonstrate how collective actions can help tackle coastal pollution & promote environmental stewardship—with specific emphasis on partnerships, education & public outreach. For more information about the Reclaiming Paget Farm see <http://reclaimingpagetfarm.com/>

**Kirk Ollivierre, Bequia, and Jessica Jaja, Canada**



## Beach monitoring supplies received in Bequia



Mrs. Debralyn John (BCHS) and Mrs. Janeal Ollivierre (BSDASS)

On the 24<sup>th</sup> October 2013, teachers and students from the Bequia Community High School (BCHS) Sandwatch Group along with Mr. Herman Belmar, journeyed to the neighboring school, Bequia Seventh Day Adventist Secondary School (BSDASS) to participate in the handing over of supplies to enable the Sandwatch team there to carry out their beach monitoring duties efficiently and effectively. Mr. Belmar gave a short lecture to the keen and enthused listeners on what it means to become a part of the Sandwatch team, what short and long term goals the organization hopes to achieve in the upcoming months/years.

Mrs. Michelle Stowe and Mrs. Debralyn John presented the Group Leader and Teacher at the BSDA Secondary School with the items needed to carry out their beach monitoring task.



Mrs. Michelle Stowe (BCHS) and Mrs. Janeal Ollivierre (BSDASS)

The session was beneficial to both teams in that they got the opportunity to greet and interact with each other with an effort of forming unbreakable bonds, since the teams would be coming together on a regular basis to achieve a common objective.

A follow-up gathering, where the BCHS group would conduct a training session with the group from the BSDASS, is expected to be done on Friday November 1<sup>st</sup> 2013.

**Janeal Ollivierre, Bequia Seventh Day Adventist Secondary School**



## Exploring Ocean Acidification in Perth, Australia

Students from South Coogee Primary School recently assembled at Coogee Beach in Perth to continue their Sandwatch activities. An important aspect of the Sandwatch program is the implementation of the MAST methodology and students were excited to participate in an experiment on ocean acidification.

Guided by Activity 6.2 of the Sandwatch Manual, students collected a range of materials from the beach including shells, sand, cuttlebone, limestone rock and granite rock. Vinegar (acetic acid) was added to the samples and the students recorded any reactions. It was evident that all samples containing calcium carbonate reacted with the acid producing bubbles of carbon dioxide gas as the calcium carbonate in the samples dissolved.

Perth Region NRM Coastcare Officer, Craig Wilson explained to the students that increasing ocean acidification levels from dissolving carbon dioxide in the ocean may affect the ability of animals to produce the calcium carbonate required to build shells or skeletons for animals including crabs, oysters and coral.

Students then discussed the effect ocean acidification may have on marine organisms, our local fishery and global food chain. The importance of reducing carbon dioxide emissions was discussed and students then prepared a poster outlining ocean acidification impacts.

Information from the experiment will soon be entered on the Sandwatch database and shared with all interested viewers.

Sandwatch in Perth is supported by City of Cockburn, Verve Energy and Perth Region NRM's Adopt a Beach initiative.

**Craig Wilson, Manager Coastal and Marine Program, Kwinana, Australia**



Sandwatchers in Australia discussing the ocean acidification experiment.



Using Google Earth to map and measure our Sandwatch beach in Western Australia

## The Sandwatch website logs over 55,000 hits!

Since its creation in June 2006 the Sandwatch website passed its fifty thousand viewing as of May 1st, 2013...and it seems to be picking up speed as more and more people become aware

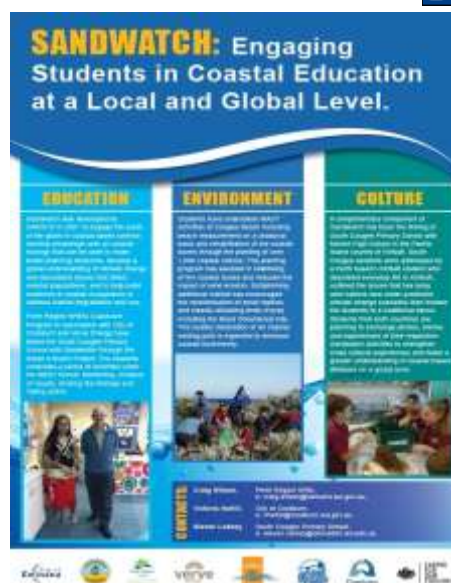


## Linking schools in Kiribati and Australia



Through the Sandwatch program South Coogee Primary School in Perth, Australia is linking with Moroni High School, Tarawa, Kiribati to share information, culture and experiences relating to the coast. Sharing information from the Indian Ocean to the Pacific Ocean enhances the students understanding of the coast and the issues that they face under a changing climate.

This exchange was featured in a poster presentation at the Western Australia State Coastal Conference "Balancing Communities and Coasts"







## Sandwatch finds new partners in Nigeria

Bailiff Africa is an environmental NGO, run by young Nigerians with a passion for and expertise on environment and sustainable development. We are the 'Voice of GREEN in Africa' and in order to live up to this mandate, we host a comprehensive online platform where we publish and promote environmental initiatives in Africa.

Sandwatch provides a brilliant template for practical education on climate change and its effects, especially in coastal African cities like Lagos. Sandwatch is like the pre-assembled toolbox for youth-conscious climate change education. Our focus is to use technology to provide environmental education to young Africans with innovative potential, in order to initiate projects and solutions to problems in an African context. The reach of our articles and other media content on our website continues to grow. We also utilize social media to provide environmental education to the population of young Africans who are online. In addition we host periodic forums and workshops on environment and development through which we cater to the population of our target audience that is offline.

**Oluwafunmilayo Oyatogun, Bailiff Africa** <http://bailiffafrica.org/>



Nigeria is facing a host of environmental problems not least on its vulnerable coastlines.



## Sandwatch begins in the Comoros Islands

After attending the climate change education training workshop in Cape Verde in November 2013, Sandwatch has been accepted as a practical and educational tool at the Henri Matisse French School in the Comoros. Now I can finally integrate Sandwatch into our school's environmental program.

On December 13, 2013, we will start with the first Sandwatch lesson for 2nd year students. The pilot project will take place on Njaziidja Beach where erosion is a major problem. It is located in the village of Mbachilé, in the Bambao region of the Big Island.

**Mr. Ben Anthoy, teacher, Ecole Française Henri Matisse, Comoros**



We look forward to hearing more from the new Sandwatch team at Njaziidja Beach in the Comoros



## Sandwatch starts in Cameroon

There is a need for environmental education in Cameroon and Sandwatch with its methodology of involving community members at the grass roots level fits in perfectly with the country's environmental goals.

Cameroon is an important country in the global fight for a sustainable future with its rich natural resources, including plentiful tropical forest and water reserves, the third highest hydro-electricity potential in Africa, very fertile volcanic soil, significant oil, aluminium and other mineral resources, and a wealth of beautiful eco-tourism potential. It is ranked fifth in Africa for greatest diversity of species, including a national park with the highest biodiversity in Africa, and has 178 species of flora and fauna that are endemic only to Cameroon. It also has significant populations of 18 endangered species, including several of human's closest cousins, and 5 critically endangered species.

Cameroon's economy is growing quickly and there is growth in international investment and development projects. But history has shown that development that is not properly managed is often unsustainable and does not provide for a long term, stable protection of a country's social, economic and environmental interests. Already there are some projects being initiated in Cameroon that may be devastating for people's livelihoods and destructive of very important biodiversity hubs, without providing economic benefit for the country. We believe this comes largely from ignorance on the true value of natural resources or short-term thinking.



The Sandwatch Foundation looks forward to working with Green Cameroon  
[www.greencameroon.org](http://www.greencameroon.org)

## Sandwatchers around the world!

*Sandwatch is a truly global project with schools in more than 30 countries participating*



Sandwatcher in Abaco, The Bahamas help to replant their sand dunes damaged by storms



Climate change training for teachers from around West Africa, Quebra Canela Beach, Cape Verde, November 20013



New Zealand Sandwatchers build a vertical garden out of hundreds of recycled plastic bottles



Sandwatch students in the Cape Verde Islands clean up a beach

**"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.**



Sandwatchers from The Gambia visit a beach in Dakar, Senegal



Students Paget Farm elementary school students working hard on their environmental art



Sandwatchers in Bequia attend a database workshop



A new Sandwatch team has been established in Senegal



A new Sandwatch team has been started in Guinea-Bissau!



Sandwatch student photographed their experiments in ocean acidification