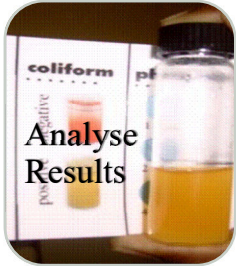




Monitor
Environment



Analyse
Results



Share
Findings



Take
Action



The Sandwatcher

PROMOTING GRASSROOTS CONSERVATION OF BEACH ENVIRONMENTS

Photo: Collapse of Crashboat Fishing Village, Puerto Rico (photo credits see article page 2)



Black River Foundation



United Nations Educational,
Scientific and Cultural Organization

The Caribbean 2017 Hurricane Season

Sandwatch started in 2001 with a regional workshop held in the Caribbean Island of St. Lucia. So it is with great sadness that we reflect on the 2017 hurricane season in the Caribbean islands.

ed by the 2017 hurricanes. Such events are terrifying to live through, but rebuilding lives and livelihoods after the hurricane event can be extremely challenging,

Inside this issue:
Sandwatch activities
in 14 countries
worldwide including,
Azores, Australia,
Bahamas, Canada,
Cape Verde, China,
Cuba, Guyana,
Indonesia, Madeira,
Mexico, Puerto Rico,
St. Vincent & the
Grenadines, Trinidad
& Tobago ... and
much more!

2017 was the seventh most active season in the historical record dating back to 1851, and it was also the most active season since 2005. Two of the 2017 hurricanes are particularly noteworthy for the islands. Hurricane Irma passed over the north-eastern Caribbean in the beginning of September as a major hurricane (varying in strength between categories 3 – 5) and directly impacting Antigua and Barbuda, St Maarten, St. Barthelémy, Anguilla, British and US Virgin Islands, Puerto Rico, Hispaniola and the north coast of Cuba; only to be followed a couple of weeks later by Hurricane Maria, another major hurricane that devastated Dominica and Puerto Rico in particular.

The Sandwatch Foundation would like to extend our condolences to all who lost loved ones during this hurricane season. Furthermore, we would also like to commiserate with everyone who was impact-

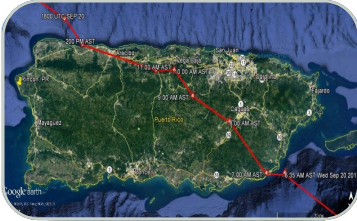
Recognising that hurricanes/cyclones/typhoons are natural events, what can we as a network of Sandwatchers do to help? We can work with our families, communities and officials to be well prepared for extreme events as the storm season approaches each year; and we can also work to educate everyone, and especially coastal communities, about their increased vulnerability during these extreme events, when they face the additional danger posed by high waves and storm surges. You only need to read the report from Puerto Rico inside this issue to see what one storm can do to the coast. Simple measures like siting property well back from the beach can save lives, property and livelihoods. Let's play our part as Sandwatch to relay this message.

Gillian, Paul, Dave & Michelle
The Sandwatch Foundation





Inside this issue...



The track of Hurricane Maria as it crossed over the Puerto Rican mainland in September 2017.

Welcome to the nineteenth edition of The Sandwatcher, the official voice of the Sandwatch Foundation.

This issue highlights the truly global nature of Sandwatch as it contains articles and photos from Sandwatch teams in 14 countries all over the world, from the Caribbean, Indian and Pacific Oceans, Africa, Asia and Australia. Thanks to all of you, Sandwatch has become a recognized global environmental project. Just some of the highlights of this issue include...

- Sandwatch has a great team on **Terceira Island** in the **Azores**!
 - **Cuba and Puerto Rico** stories describe impacts of the 2017 hurricanes
 - Two schools begin Sandwatch in **Guyana**
 - UNESCO hosts a regional Sandwatch training workshop in **Trinidad**
 - **Cape Verde** integrates Sandwatch as part of an ambitious environmental program
 - **Most significant change stories** highlight the long term value of Sandwatch
 - and how Sandwatch activities have affected young lives in the long term in many countries
- Plus amazing updates, stories and photos from Sandwatch Teams from 14 countries worldwide!



Puerto Rico recovering from 2 major hurricane strikes



Undermined and partially collapsed apartment buildings in Rincon, Puerto Rico, a result of the high waves and storm surge in the two hurricanes

The Puerto Rican archipelago is uniquely located in the Caribbean, and is constantly exposed to extreme weather events. In the past, Puerto Rico has faced hurricanes like San Felipe, San Ciprián, Hugo and Georges, among others. Recently, we received direct impacts from Hurricanes Irma and María within two weeks. Hurricane Irma, a Category 5 storm, struck close to Puerto Rico on September 6, 2017, and affected the northeast area of the main island, causing great devastation. The government preliminarily estimated damages at \$600 million. Several municipalities were declared disaster areas because of the destruction the storm left in its wake, including Adjuntas, Canóvanas, Carolina, Guaynabo, Juncos, Loíza, Luquillo, Orocovis, Patillas, Utuado, Vieques and Culebra, among others. Two weeks later, specifically, on September 20, 2017, Hurricane María swept through our archipelago. This powerful Category 4 hurricane crossed the entirety of the mainland. It entered through Yabucoa and left through the coast of Isabela. It continuously pounded the island for approximately 27 hours, causing never before seen consequences on the country. The strong winds, intense rainfall (between 5 and 37 inches approximately), landslides and storm surge caused serious damage throughout the archipelago. Communications completely collapsed. The water and energy systems stopped working, several people lost their homes, vegetation was significantly harmed and the coasts were severely affected by erosion and coastal flooding.

The damages from erosion were so severe that some towns like Rincón, Aguadilla, Isabela, Luquillo and Loíza, were left practically without beaches. The buildings found there suffered unreparable damages. Rincón was the town most deeply affected by erosion and coastal flooding. Hotels, apartment buildings, restaurants and other commercial spaces were left inoperable, seriously harming the local economy. Economist José Alameda estimated the long-term losses associated with Hurricane María at about \$200 billion. A study performed by the University of Puerto Rico at Cayey Census Information Center (CIC) predicted that Hurricane María may increase poverty levels from 44.3% to 52.3%.

Currently, Puerto Rico is slowly recovering from these two powerful hurricanes. According to Professor Aurelio Mercado from the University of Puerto Rico at Mayagüez, subsequent hurricane seasons are expected to become even stronger, causing more damages to impacted areas. Because of this, it is important to educate others about the need to become resilient and develop the ability to effectively adapt to these risk factors and extreme weather events.

See the full report and all the photos on the Puerto Rico country page at www.sandwatchfoundation.org/puerto-rico.html



Erosion damaged buildings ring the coast of Puerto Rico and other islands after the hurricanes

Delmis del C. Alicea Segarra, EdD

Translated by: Wilmarie Cruz Franceschi

Photos by: Raúl Omar Ortiz "Pichón Duarte", Ruperto Chaparro and Oliver Bencosme



Caring for the beach environment in China

During seven days in September 2017, twenty high school students and two teachers from **Concordia International School Shanghai** travelled to Xichong Beach on the Dengpeng Peninsula in Guangdong Province in Southern China to participate in **Sandwatch** beach monitoring. This week-long trip was part of their 'Transforming Individuals by Education and Service' (TriBES) program. (TriBES is a full-year program providing high school students with experiential learning and challenging leadership opportunities).

Students were asked to collect environmental data for the Sandwatch Program and to contribute to an ongoing beach profile that monitors changes to the beach environment, giving

students a deeper understanding of crucial environmental changes over time of the world's beach environments. The group was led by leaders from Indier, a Chinese adventure learning company, and spent two days on the beach taking measurements, conducting interviews and exploring the tidepools and intertidal zone of this busy beach near the city of Shenzhen, China. Students described this trip as educational and fascinating and said that it helped to build community among this group of students who care how their actions affect the larger world.



Sandwatchers on Xichong Beach, Shanghai
(photo: Kevin Jin)

**Carla Molloy, HS Science Teacher,
Concordia International School,
Shanghai.**



Concordia Sandwatchers
explore rock pools
(photo: Kevin Jin)



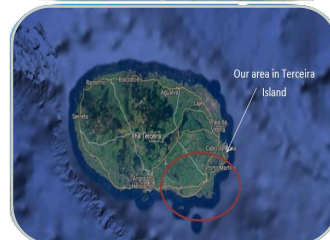
Sandwatch on Terceira Island, Azores, Portugal

Our school has been working in the **Sandwatch Project** since 2015, in **Terceira Island, Azores, Portugal**, but this year we took the project to an all-new level. We have applied to a Portuguese Government project of curricular autonomy and flexibility and we have committed our 7th graders and the Sandwatch Project to this application. Therefore, we have a curricular support for Sandwatch activities this year at school, which are held by our 7th grade students and teachers, within the curricular subjects they are supposed to attend. The curricular project also implies weekly staff meetings, so by now the project is widely spoken of in our school and community. Also, the Sandwatch Manual is very handy and helpful in designing educational activities.

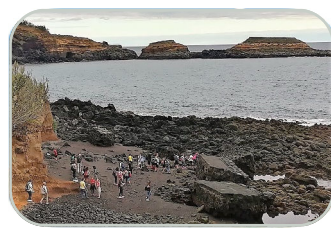
We chose a nearby bay, **Baía das Mós**, a very rich spot both in natural and historical terms, and started the project with a field trip, in September; from this first contact, students decided to promote an exhibition at school to involve the community in their work and we have already made another field trip in December, to collect specific information on several curricular subjects.

The exhibition is scheduled for the School Day, the 26th January of 2018 and, from that day on, we still have to plan new activities, all of them involving our bay, Baía das Mós, under the framework of the Sandwatch Project. We have taken photos of the activities taking place there which will be on our Sandwatch homepage and includes garbage removal, water temperature measurements and rock sample collection, but I think some location pictures will be helpful, taken from Google Earth, and included (right) to show people where we are located on the globe.

Luis Maciel Silva
EBI Francisco Ferreira Drummond School, UNESCO's Sandwatch Project Team



The location of Sandwatch activities on Terceira Island, Azores



Sandwatchers study Baía das Mós, Azores



Cuba's Sandwatch Brigade goal to change attitudes



Senior Sandwatch students help train the younger students

Two hundred years after the foundation of the Villa Fulgencio de Gibara, a group of students walk along its coasts, accompanied by children of all ages, by young people, and the elderly and by many other citizens. What are they doing? What is so interesting to them? Who are the organisers?

If we look closely we see they are the same people who last night were enjoying a cultural activity by the sea, and in the afternoon participated in a beach sporting event between two schools. They are the same people who worked with specialists on environmental protection, conservation and sustainable use of beaches and marine resources, who together with the artisans of the Fund for Cultural Assets, trained a group of girls and boys excited to make the beach become the most beloved and protected place in the community, as well as the centre of all the cultural, sporting, recreational and scientific activity.



Measuring the beach in Holguin Province, Cuba

The research project "Sandwatch" of the Pre-university Vocational Institute of Exact Sciences (IPVCE) "José Martí Pérez" of Holguín, a UNESCO Associated School, is characterized by a comprehensive work programme that is not limited to the cleaning and beautifying of the beach. Instead the project involves all community groups: schools; work centres; social and artistic organizations; athletes; artisans; and scientists; to undertake actions that enable them to coexist with the environment, build scientific knowledge, and take ad-

vantage of the beach resources while at the same time conserving and protecting them.

The members of the "Sandwatch" project of the IPVCE "José Martí Pérez" of Holguín have as their guide the phrase **"We are not a group to clean beaches, we are a brigade to clean conscience"**. The group has become a valuable assistant to the scientific institutions in the monitoring of the beaches because they are able to measure the profile of the beach, its width, length, sand composition, stability and risk of erosion; flora and fauna; water quality, temperature, salinity, acidity and alkalinity, dissolved oxygen, biochemical oxygen demand, phosphates, nitrates, coliform bacteria, turbidity; wave characteristics, height and period of the waves; direction and wind speed; amount and origin of beach litter.

The project "Sandwatch" has become a facilitator of actions of all kinds, from artistic and literary competitions, sports and recreational activities, scientific work, awareness raising to make each beach in the Bay of Gibara beautiful, used by the community and protected and studied for the benefit of all. A place where neighbours value each grain of sand as part of a common effort to conserve the natural riches of this zone between the sea and the land where sand, sea, beauty and benefit shake hands.

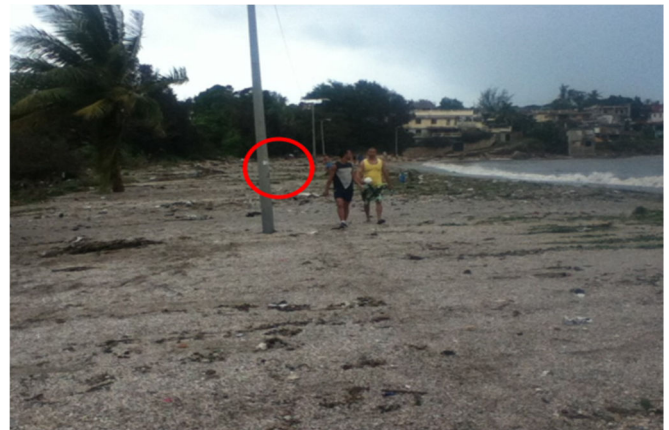
Fernando Doimeadios Cuenca, Sandwatch Project Coordinator, IPVCE "José Martí Pérez" Holguín Province, Cuba.



Impact of Hurricane Irma on Cuba



El Cachon Beach, Cuba **BEFORE** Hurricane Irma
Note the light pole (see red circle) is behind the road



El Cachon Beach, Cuba **AFTER** Hurricane Irma
The light pole (see red circle) is now in the middle of the beach.

Indonesian Sandwatchers visit reforestation project



In April 2017, SD N Bojong with a total of about 65 **Sandwatch** students visited the Department of Seedling Plantation and Nursery under the auspices of the Ministry of Environment and Forestry, Republic of Indonesia. The Department was located near Bogor Agricultural University surrounded with forest and agricultural lands as well as beautiful views of Dramaga village. The aims of the visit were to demonstrate to students how to nurture forest and tropical tree species for altruistics, to interlink the importance of forests in mitigating climate change to the International Green Action Forum (IGAF) members and scientists, and to raise environmental awareness of students to actively conserve tropical trees species and agroforestry ecosystems. In the Department, there were several sections which were tremendously beneficial to deepen the understanding and knowledge of the students. These sections were: the Department of Seedling Plantation and Nursery, Seedling Management, Practical Action of Seedlings Plantation, Tree Species Introduction, and Seedling Distribution. **Indonesian Green Action Forum.**



Sandwatchers in Indonesia visit a tree farm and learn about reforestation

Sandwatch Regional Workshop held in Trinidad



Participants from countries in the Caribbean archipelago and South America met for a week's workshop from October 2nd to 5th 2017, at the Radisson Hotel in Trinidad. This workshop, titled 'Sandwatch: A Combined Citizen Science Approach to Climate Change Adaptation and Education for Sustainable Development', was organised by UNESCO Headquarters, the UNESCO Kingston Office and the UNESCO National Commission for Trinidad and Tobago. Participants were educational and curricula professionals and some teachers.

On day one Ms. Sandra de Vries of **the Netherlands** and Ms. Debra

Mc Fee of the Gender Issues Department of the University of the West Indies St. Augustine Campus, relayed experiences they encountered while trying to recruit members of different communities to become citizen scientists. The floor was then opened for questions and discussion. The rest of the day's proceedings revolved around moderated group discussions on opportunities for the expansion of citizen science programmes within the Caribbean, with a focus on specific sustainable development goals. Day one concluded with an in-depth introduction to Sandwatch. Days 2 and 3 of the workshop foc-

-cused on Sandwatch activities at Las Cuevas Beach. Mr. Andy Paul and Mrs. Gourie Dukeran-Ali of **Trinidad** and Mrs. Michelle Stowe and Ms. Trachia Simmons of **St. Vincent and the Grenadines** trained the participants in Sand-

watch activities including beach profiling, water and sand analysis, longshore current measurement and the measurement of human activities on the beach. Trainers from the Institute of Marine Affairs in Trinidad and Tobago demonstrated further beach

profiling tools such as automatic levelling. On the final day of the workshop Mrs Michelle Stowe demonstrated how the enter the information collected on the previous days into the Sandwatch International Database. Portraying Sandwatch through art was other activity. The workshop concluded with a lively discussion on how to merge and integrate the different aspects of the Sandwatch initiative into the education curriculum.

Michelle Stowe and Trachia Simmons. St. Vincent & the Grenadines



Participants at the UNESCO sponsored Sandwatch regional training workshop in Trinidad Oct 2nd-5th, 2017



Sandwatch teachers examine sand composition at the UNESCO workshop on Trinidad



Sandwatch teachers learned how to conduct beach profiles during the Trinidad workshop



Brigada de Cuba para Limpiar Conciencia



Trinidad Sandwatchers are experimenting with using plastic water bottles to make huts



The cover of the Slovakian text book featuring Sandwatch



The students of Madeira have issued a "Mannequin Challenge" to Sandwatch teams globally!

A doscientos años de la fundación de la Villa Fulgencio de Gibara un grupo de estudiantes recorren sus costas, se hacen acompañar por niños de todas las edades, por jóvenes, por ancianos y por gran cantidad de pobladores ¿Qué hacen? ¿A qué se dedican, qué resulta de gran interés para todos? ¿Quiénes son los que convocan que reciben tanto apoyo?

Si miramos bien son los mismos que anoche que estaban dirigiendo una actividad cultural junto a las aguas del mar, los que por la tarde desarrollaron un encuentro deportivo en las arenas con dos escuelas de la comunidad, los que coordinaron con especialistas para el desarrollo de un ciclo de conferencias con los vecinos sobre protección, conservación y uso sostenible de las playas y los recursos marinos, los que junto a los artesanos del Fondo de Bienes Culturales desarrollaron un taller para lograr el aprovechamiento de los recursos que depositan las olas sobre las arenas, un grupo de muchachas y muchachos entusiasmados en lograr que la playa se convierta en el lugar más importante de la comunidad, que sea el centro de toda la actividad cultural, deportiva, recreativa y científica de la zona y que al ser el lugar más querido, también sea el más protegido.

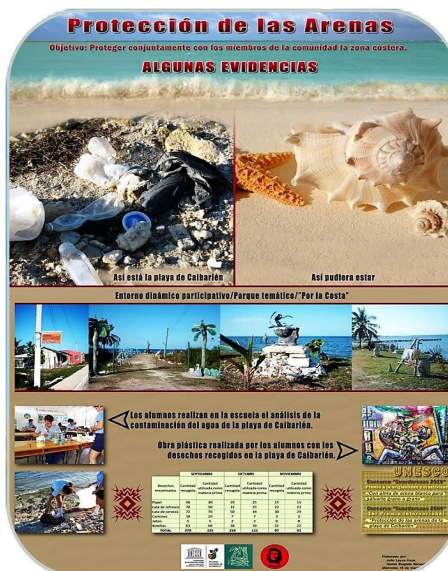
El proyecto de investigación y creación de "Arenas" del IPVCE "José Martí Pérez" de Holguín, escuela asociada a la UNESCO se caracteriza por realizar un trabajo abarcador que no se limita a la limpieza y acondicionamiento de una playa sino que actúa sobre todos los grupos poblacionales de la zona costera, escuelas, centros de trabajo, organizaciones sociales, artísticas, deportistas, artesanos, científicos, coordinando acciones comunes para lo-

gar la completa identificación del factor humano con el medio donde conviven, para fortalecer hábitos y conductas en la interacción con el medio reforzando los conocimientos científicos y las habilidades para aprovechar los recursos y a la vez cuidarlos, protegerlos, restaurarlos. Los integrantes del proyecto "Arenas" del IPVCE "José Martí Pérez" de Holguín tiene como guía la frase **"No somos un grupo para limpiar playas, somos una brigada para limpiar conciencia"**

El grupo se ha convertido en un valioso auxiliar para las instituciones científicas en el monitoreo de las playas pues son capaces de medir el perfil de la playa, su ancho, parámetros de sus límites, suavidad de las arenas y su composición, determinar las defensas contra la acción del mar, flora y fauna, iluminación, temperatura, salinidad, acidez y alcalinidad, oxígeno disuelto, demanda bioquímica del oxígeno, fosfatos, nitratos, bacterias coliformes, turbidez, altura y período de las olas, dirección y velocidad del viento, tamaño de los granos de arena y su origen, clasificación y origen de los residuos depositados, riesgo de depresión y erosión.

El proyecto "Arenas" se ha convertido en un facilitador de acciones de todo tipo, desde concursos artísticos y literarios, actividades deportivas y recreativas, trabajo científico, llamado de atención y labor común para lograr hacer de cada playa de la bahía de Gibara un lugar bello, útil, querido y a la vez organizado, protegido, estudiado donde cada vecino pone su granito de arena en la inmensa obra común de conservar las riquezas naturales de esta porción límite de agua y tierra, de arena y mar donde la belleza y la utilidad se dan la mano.

Fernando Doimeadios Cuenca, Coordinador del Proyecto "Guardarenas", Instituto Preuniversitario Vocacional de Ciencias Exactas (IPVCE) "José Martí Pérez" provincia Holguín



Sandwatch methodological poster (IPVCE Ernesto Guevara)

Sandwatch's Most Significant Change Stories



During 2017 the Sandwatch Foundation evaluated Sandwatch achievements using the **Most Significant Change method**. This involved the collection of stories of significant change from the Sandwatchers about who did what; when; where, why and how is the story important. (The most significant change method was developed in 1994 by Rick Davies and Jess Dart). Ten stories were received and these came from **Australia, Bahamas, Cape Verde, Cuba, Kiribati, Madeira, Puerto Rico, St. Vincent and the Grenadines, Trinidad and Tobago**. All these stories can be read in full on the Sandwatch Foundation website at www.sandwatchfoundation.org/most-significant-change-stories.html

The stories showed an amazing diversity and were truly inspiring. Here are a few snapshots...

Stories from the **Bahamas, Cuba, Puerto Rico, Trinidad and Tobago** showed how students had been inspired by Sandwatch to undertake secondary school, undergraduate and postgraduate courses in environmental studies, and, in some cases, embark on careers in environment and conservation.

Nayrobie Lee Rivera Estévez, an undergraduate university student from Puerto Rico wrote *"I will reach my objective by helping create a generation more conscientious about the environment. In the future, I hope to have my own school, with my own educational system, in which I'll foster education through projects like Sandwatch, in which children learn by having the most direct contact possible with nature."*

My Sandwatch experience was significant because *"I discovered something I could dedicate myself to - educating and creating consciousness, and protecting the marine environment"*,

- **Pedro Antonio Nina Acevedo, Puerto Rico.**

Many of the stories showed how Sandwatch groups inspired other groups to get involved in beach conservation, ranging from community groups in **Kiribati**, to local authorities and private companies in **Madeira and Cape Verde**. In **Perth, Australia**, the students shared their involvement in Sandwatch activities with parents and families and this resulted in increased numbers of families participating in coastal conservation weekend events.

Overall, the stories illustrated how Sandwatch has **empowered students and young adults** to get interested in environmental conservation through their further studies and career paths. The enhancement of civic pride was another recurring theme—see the story from **St. Vincent & the Grenadines**. Another recurring finding evident in many of the stories was the **outreach potential of Sandwatch** which has resulted in the involvement of many other groups and organisations in beach conservation.

We would love to hear more "significant change" stories about Sandwatch – so please send us your story and we will share it with the Sandwatch community. These stories are informing our future planning for the next decade. To find out more go to

www.sandwatchfoundation.org/most-significant-change-stories.html

- **The Sandwatch Foundation**



Nayrobie Lee Rivera Estévez, Puerto Rico shares her Sandwatch experience



Sandwatchers on Madeira Island have testified to the impact of Sandwatch



Pedro Antonio Nina Acevedo, Puerto Rico shares his significant change experience



Sandwatch at Canico School, Madeira Island



Sandwatchers attend lecture given by Dr. Ágatha Gil from CIIMAR (Interdisciplinary Centre of Marine and Environmental Research – University of Porto)

In Madeira this school year we are developing many activities related to the sea. We embraced a regional project of Ocean Literacy, developed by the Regional Secretariat of Education and led by the former president of the School's Parents Association, one of the first enthusiasts of the "Reis Magos" beach sponsorship initiative, Dr. Sandra Brito.

At the end of the school year we are planning a whole week dedicated to the sea, with many sporting and artistic activities.

In the 13th of November our school received the visit of Dra. Ágatha Gil from CIIMAR (Interdisciplinary Centre of Marine and Environmental Research – University of Porto) who gave a presentation to parents and students from the 6th grade.



Sandwatchers learn about the dangers of micro-plastics in the environment

tems, animal and human.

In Portugal the National Sea Day is celebrated on November 16. Several initiatives have taken place to show the importance of the sea for the economy and for national development. In our school the 7th grade classes made slogans and logos about the sea and presented an exhibition in the school hall warning for the importance of the Oceans and the need to preserve it.

This year our most traditional **Sandwatch** activity, the cleaning of the "Reis Magos" beach associated with the beach sponsorship initiative, was planned for the 13th of December but unfortunately

was cancelled due to bad weather conditions. However the beach will be cleaned on a date yet to be defined with the collaboration of our usual partners.

Cristina Freire, School ASPnet Coordinator at Escola Básica do 2º e 3º Ciclos do Caniço Madeira, Portugal



Sandwatchers in Guyana measure water quality at Kingston Beach

We had the opportunity to learn more about the SEACHANGE Project and the environmental contamination by Microplastics and their implications for the health of ecosys-



Two Schools start Sandwatch in Guyana

On October 6th, 2017 Grades 5, 6 and 10 students from Tutorial High School and Stella Marris Primary School conducted their first Sandwatch field trips at the western end of Kingston Beach (by the coconut trees opposite the Marriott Hotel) in downtown Georgetown, the capital of Guyana.

They conducted a series of measurements, observations and tests of water quality at several areas of the beach and have recorded their results, so as to build up a profile of their coastal environment over the coming months and perhaps years.



Some of the huge amounts of cans and bottles Hopetown students have collected from locals and tourists



Sandwatch Bahamas start recycling depot

The Hope Town School Sandwatchers Eco-Club on Abaco Island in the Bahamas has the only recycling depot on our island!

Locals and tourists deposit aluminum cans and plastic bottles at the road below our school and students and teachers sort and pack them in huge cloth bags for shipment off the island for recycling. Money earned from the project goes to paying for school projects, trips and supplies of various kinds. **Candace Key, Sandwatch Co-ordinator, The Bahamas**

Students at Icacos School start Sandwatch in Trinidad



The village of **Icacos** is situated at the south westernmost point in **Trinidad and Tobago** – at the tip of the Cedros peninsula. Icacos is just 7 miles away from neighbouring Venezuela and on a clear day one can see the Venezuelan coast. One of the main sources of employment is fishing. Fish can be bought straight off the boats that come ashore and fishermen often have stories to tell of their visits to the nearby Venezuelan islands. The first primary school in the area was built in 1877 and in 2008; a new primary school was opened to replace the old wooden structure. This school was one of the model schools to be built in the country. It is outfitted with modern amenities. The school provides a well balanced curriculum where academics, sports and other co-curricula activities are pursued with varying measures of success. In October 2017, two teachers of the Icacos Government Primary School were given the opportunity to attend a Sandwatch training programme sponsored by **UNESCO**. They were housed along with persons from various countries as well as within Trinidad and Tobago.

There they learnt the purpose of “Sandwatch” in adapting to climate change and educating for sustainable development. The week long training entailed theory as well as practical work. Sandwatch is based on the MAST approach so

participants learnt about Monitoring the beach, Analysing the results, Sharing the results and Taking action.

At the school, the idea of having our own Sandwatch programme was well received due to the fact that erosion was evident in Icacos. The Principal Ms Gail Alexander-Walters made the necessary arrangements for the programme to be undertaken. Members of the P.T.A, students, teachers and other interested persons showed their support by being part of the Sandwatch programme. The first Sandwatch exercise was done on the 9th November 2017, with 15 parents, 35 students and 3 members of staff. The students especially, were much thrilled to conduct the activities at the beach. The first trip to the beach entailed selecting the three reference points, measuring the width of the beach, checking wind direction and a few others.

We here at Icacos Government Primary School will continue with the Sandwatch programme and make it part of our culture at Icacos. We see Sandwatch as something beneficial to our coastal environment. It will also teach our students, residents and stakeholders to take care and practice sustainability.



Students from Icacos Primary School in Trinidad begin Sandwatch



Teachers from around the region attended the UNESCO sponsored training session in Trinidad

The Sandwatch website and our social media channels

The **Sandwatch Foundation** would like to welcome you to the new Sandwatch website. You can access it at www.sandwatchfoundation.org. The country pages are still a work in progress. Take a look at the new site and tell us what you think – our email address is sandwatchfoundation@gmail.com

The Sandwatch Foundation maintains a presence on several social media forums and we actively encourage our teams worldwide to join and contribute.

We have a **Twitter** account <https://twitter.com/sandwatchr> and a dedicated **YouTube video channel** that contains all our training videos, interviews and submissions from teams around the world. To view them, go to www.youtube.com and type in “The Sandwatch Foundation” and they will appear.

On **Facebook** we have two (2) active forums, www.facebook.com/SandwatchFoundation which is our main FB forum, but we do also have an older, FB Forum, one that many long term Sandwatchers still use www.facebook.com/sandwatch.programme

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

We hope that you will join some or all of our social media forums and help to make them a viable, informative and fun way to exchange Sandwatch and community information. If you have any suggestions on how we can improve our social media presence please let us know!





And the first new Sandwatch Team of 2018 is...



Harve-au-Maison in the Magdalen Islands is the latest Sandwatch Team

Hélène Chevrier, a recently retired ethnologist and community organizer on Harve-au-Maison Island in the îles de la Madeleine (**The Magdalen Islands**) an archipelago in the Gulf of St. Lawrence off the coast of Quebec is the first new Sandwatch team leader of 2018! Hélène writes "I remain concerned about safeguarding the natural heritage in our archipelago and seems to me that **Sandwatch** would be very relevant, particularly for our environmental organizations working in the local schools, that would inform and involve children, teenagers and adults from "developed" northern island regions, where the impact of climate change on the coasts is major, especially in winter"

Sandwatch welcomes Hélène and her developing team of researchers to the program and we look forward to seeing what they can accomplish and what we can learn about their fascinating location.



Sandwatchers launch enviro campaign in Cape Verde

At the end of the United Nations Decade of Education for Sustainable Development (ESD) Sandwatch was nominated as one of the 25 most successful ESD projects from around the world to present their work at the World Conference on Sustainable Development in Japan in 2014.

As Coordinator of this **Sandwatch Project** for the Salineiro Secondary School, I check every activity we do on the beaches we have visited, because we are increasingly aware that protecting and preserving the environment is an important contribution to the balance of the ecosystem and our health. We need guidance in this country on environmental education, because if we continue on this path, we will be increasingly exposed to the perils of unstable Nature. One of the most practical things we can today is work on Sandwatch using its methodologies and teach these things to our students. Using Sandwatch research we will suggest a set of measures that may be needed to solve the problems of Praia do Caniço and make it more resilient, beautiful and attractive. The following are some of the things we doing to achieve these goals based upon Sandwatch practices.

- An urgent cleaning campaign for the removal of all trash that is on the perimeter of the beach. We are doing this with the contribution of the Municipality of Ribeira Grande de Santiago (Sanitation, Tourism and Culture Pelouros), the Salineiro Secondary School (and it's Sandwatch team) and the Health Office of RGS.
- Sensitization of bathers who go to the beach to avoid littering on the beach. By informing them of the many consequences it can have on the environment and public health.
- Construction of a gate that prevents the run off floods from heavy rains reaching the beach with a high intensity thus avoiding the garbage that is dragged to the seafront.
- Protection of slopes via planting trees and shrubs to prevent landslides of dirt and stones to fall onto the sand.
- Planting of trees and improvements of the trees/vegetation that exist in and around the beaches with the intention of giving more attractiveness and shade to the beach areas
- Increase the number of containers for garbage on the beach for bathers, where the sanitation services of the local authority can collect them regularly, thus avoiding the accumulation of garbage.
- Avoid leaving scraps of fish, other foodstuff and trash on the ground and make stakeholders aware of the proper use of the containers.
- Beach safety should also be enhanced as our beach is fairly isolated; it would be desirable if possible to have lifeguards and a look-out post so that swimmers can feel safer.



Cape Verde held a Sandwatch Teachers Training Day

Sandwatchers in W. Australia visit Penguins



Penguin delight for Sandwatch students in Perth, Australia

Sandwatch students from South Coogee Primary were excited to visit Penguin Island in Perth to experience little penguins up close at the Penguin Discovery Centre. Little penguins (*Eudyptula minor*) are the smallest of the penguin species at 30 cm tall and occur along the southern coastline of Australia. Students then explored the island checking for nesting penguins in their protected breeding boxes. While no breeding penguins were seen, they are very shy, the island also is home to Crested Terns, Pelicans and Bridled Terns and numerous chicks were spotted during the walk. The day finished with a beach walk and "Creature Feature" where interesting plants and animals spotted during the walk were identified and their role in the ecology of the island was explained. The highlight was spotting an Australian Fur Seal as it moved from a beach cave where it was resting, to the sea.

Craig Wilson, Coastcare, City of Kwinana.



Young Sandwatchers in W. Australia visit a penguin sanctuary

Sandwatch takes off in Mexico



Sandwatch Mexico: schools ratify agreement and appoint first ambassador

3 June 2017. Puerto Escondido, Oaxaca. At the end of one year, the environmental education program and promoter of science in action, Guardarenas Mexico, the pioneer in the country, confirms their commitment agreed with the directors of four schools in this city and appoints its first ambassador, Surfer Ángel Lozano Corzo.

The following school year, 2017-2018, Sandwatch activities will continue with the students of the schools Juan Rulfo, Benjamín Bloom, Calmecac and Conalep, so they do not lose continuity. "We will adjust the activities to the school year so that those who move to another grade do not lose the sequence of work that is being done every Saturday at the beach in Bacocho and Coral. With the signing of each agreement, we announce that we will continue Sandwatch for one more year".

Seeking support: The participation of four teachers as well as the students has been voluntary, as well as the Guardarenas team: Carolina Luna and the marine biologists Montserrat López, María de Jesús Trejo and Edith Silva of the UMAR Puerto Ángel, who have started a campaign to raise funds for the equipment and maintaining Sandwatch activities. "Gabriel Sánchez created a promotional video to share on social networks. We want to make Sandwatch sustainable and to motivate people who support us with donations "in kind" and monetary.

We know that Oaxaca and its coast is famous for international tourism, and we hope that donors and companies will identify with the program and adopt it, "said Escalona. Guardarenas Mexico have their own website (www.guardarenasmx.org) and will have ambassadors, such as artists and sports heroes to promote it.

The Buenos Airean surfer Angelo Lozano is the first ambassador. "Encouraging students to continue doing research and take action against climate change that is resulting from global warming, and generating awareness among the new generations, about the importance of taking care of beaches and their ecosystems is important for Puerto Escondido and the ecology", he said.

The team hopes is to replicate Sandwatch in other beaches of Oaxaca, so far they have had talks with Pochutla and the city of Huatulco.



The Guardarenas/Sandwatch Teams are very active in Oaxaca Region of Mexico



Guardarenas/Sandatch teachers taking part in training

Sandwatchers around the world!

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



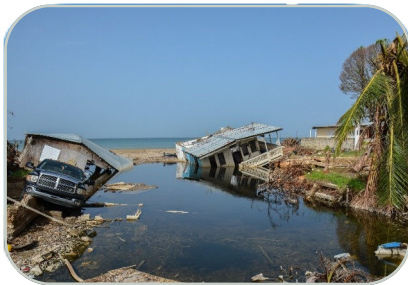
The Magdalen Islands, Canada are the first new Sandwatchers of 2018



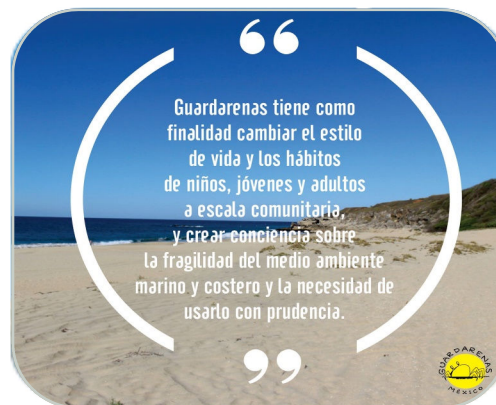
The Sandwatchers (Guardarenas) of Mexico



Sandwatchers of Terceira Island, in the Azores used Google Earth to show where their school and beach is located.



Puerto Rico was extensively damaged by two major hurricanes in September 2017



"Sandwatch aims to change the lifestyle and habits of children, youth and adults at the community level, and raise awareness about the fragility of the marine and coastal environments and the need to use it wisely."
- The Sandwatch vision statement



Sandwatchers in Indonesia see how a reforestation project works



Sandwatch in Kiribati is working with community groups and students to clean the beaches.



Sandwatchers in Guyana show how beaches may retreat inland with rising sea levels



Damaged beachfront restaurant, Joyuda, Puerto Rico (2017)



Learn more about the Azores team on their Sandwatch homepage



View "Sandwatch is fuh all ah we" a poem from Sandwatch Guyana on our Youtube channel



The Fragments of Hope group in Belize have begun Sandwatch