

The

Turtle Times

THE DATA SO FAR

Last month's article discussed the widely held prediction that 2015 was to be a particularly 'high season'. Now that the first two months are complete, and the data is in, we are able to see the actual figures. By projecting the data we can get a better idea of how the season is going to pan out and predict how many nests could be laid on our beaches.

As most of you will be fully aware- the season got off to a very slow start! In June there were a total of 12 nests laid on beaches with Curral Velho having the highest abundance at 5!

Thankfully, in July things began to pick-up.

(Continued on pages 2 & 3)



THE ANNUAL TF PARTY!

Saturday the 8th of August saw the annual Turtle Foundation party take place at Boa Esperança camp.

It was great chance to see all of the volunteers, rangers and interns in the same place, get to know one another and for some to say goodbyes.

Everyone in **Boa Esperança** was very welcoming and the camp itself was looking amazing- decorated with the recycled rubbish from the beach. The day was a great success and lots of fun was had by all involved.

Alberto and Zeddy helped shuffle everyone between camps. Ariana and Cintia D. had prepared delicious chicken and fish, which Frida stole a taste of, and even Patrick pretended to help cook!

Norte showed their dominance on and off the pitch winning the football and the quiz! Divaldo and Sidney also brought out some choice dance moves! **Lacacão** managed to destroy the hammock (and won't be invited back anytime soon!).

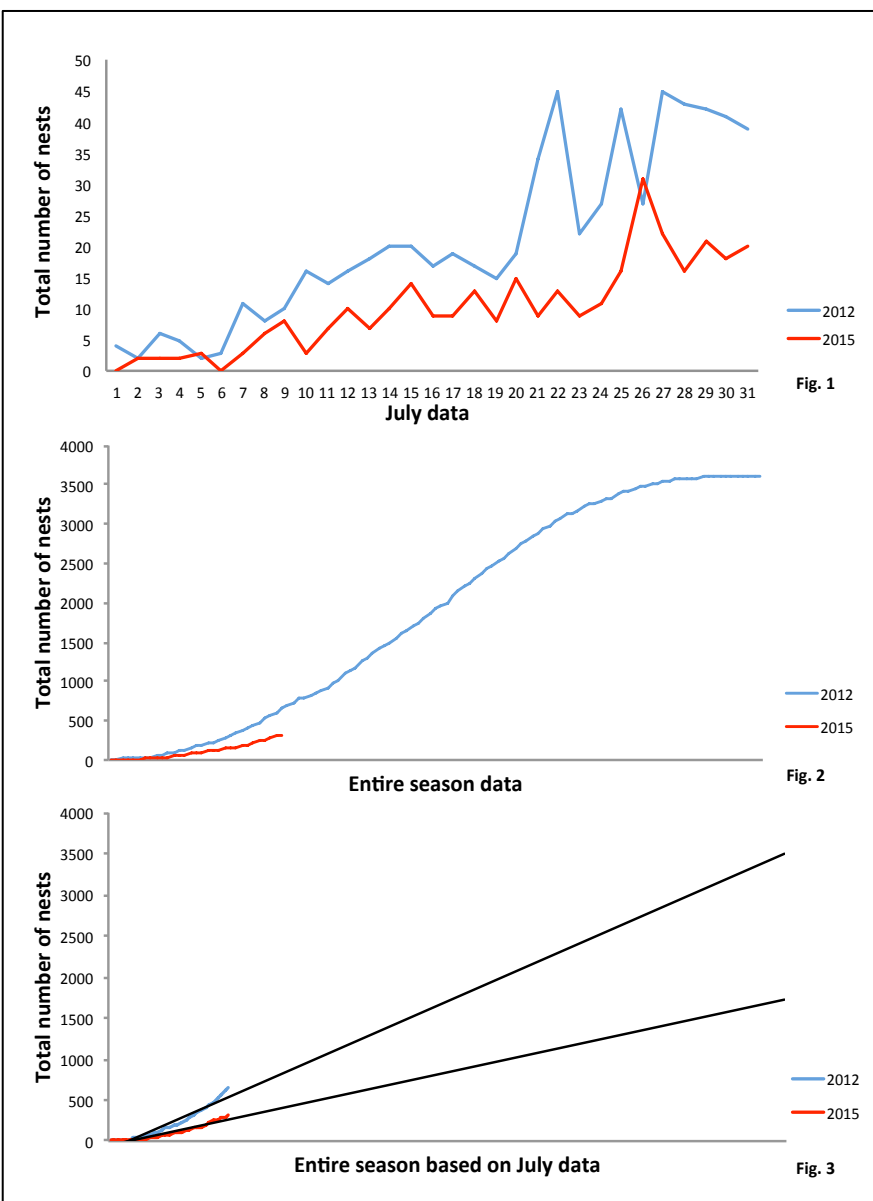
With the festival just round the corner it won't



ADOPT a stray!
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If we look at **figure 1**, which shows the July 2015 data across all TF beaches relative to those of July 2012 (the type of year 2015 was supposedly going to be). We can see both show an increasing trend. There are two occasions when the number of nests per night in 2015 surpasses that of 2012, however, for the most part the gradient of 2012 is significantly steeper than 2015 leaving an expanding gulf between them in total number of nests laid across all beaches.

Figure 2 again shows the July 2015 data for all beaches (in red), however, this time the entire 2012 season (excluding June) is also shown (in blue). Although the data is limited using just July it begins to put things into perspective.



If we now go to **figure 3** we see the July data for all beaches for both years. Furthermore, using just these data from July we can project forward across the rest of the season.

Given that we know 2012 resulted in 3,618 nests across all beaches we are able to gauge the difference between the real (3,618) and the predicted amount (3,500). Although hardly a robust prediction it appears to be fairly accurate (~96.7%).

Again using figure 3 we can see the forecast for the total for 2015 – approximately 1,700 nests across all beaches. This equates to 47% of the number of nests laid in 2012, which is significantly lower than anybody would have predicted prior to the season. In fact a total of 1,700 would also be lower than 2013 (a medium season), in which 2,500 nests were laid and only slightly more than 2014 (a low season; with 1,431).

Speculation aside, however many turtles do come to nest this year will remain just a number and we will continue to protect them one turtle at a time. Rest assured your presence on the beach is even more important than ever given the rising anthropogenic threats they face in the sea and on land. *Obrigadu!*

And back to speculating....

Whilst the cause of these low numbers remains as yet unknown and there are obviously a huge number of factors to consider, a few points should be mentioned:

2012 /2015 weather similarities and distinctions

Looking at the NOAA's annual data for global weather we can see that both 2012 and 2015 (thus far) were particularly warm years. Nonetheless if we then break this down to a month-by-month basis we see that in the run-up to the nesting season (i.e. during the late winter /spring), 2015 had well-below average temperatures between December and April; whereas 2012 was slightly above average for the same period.

Is it low or simply slow?

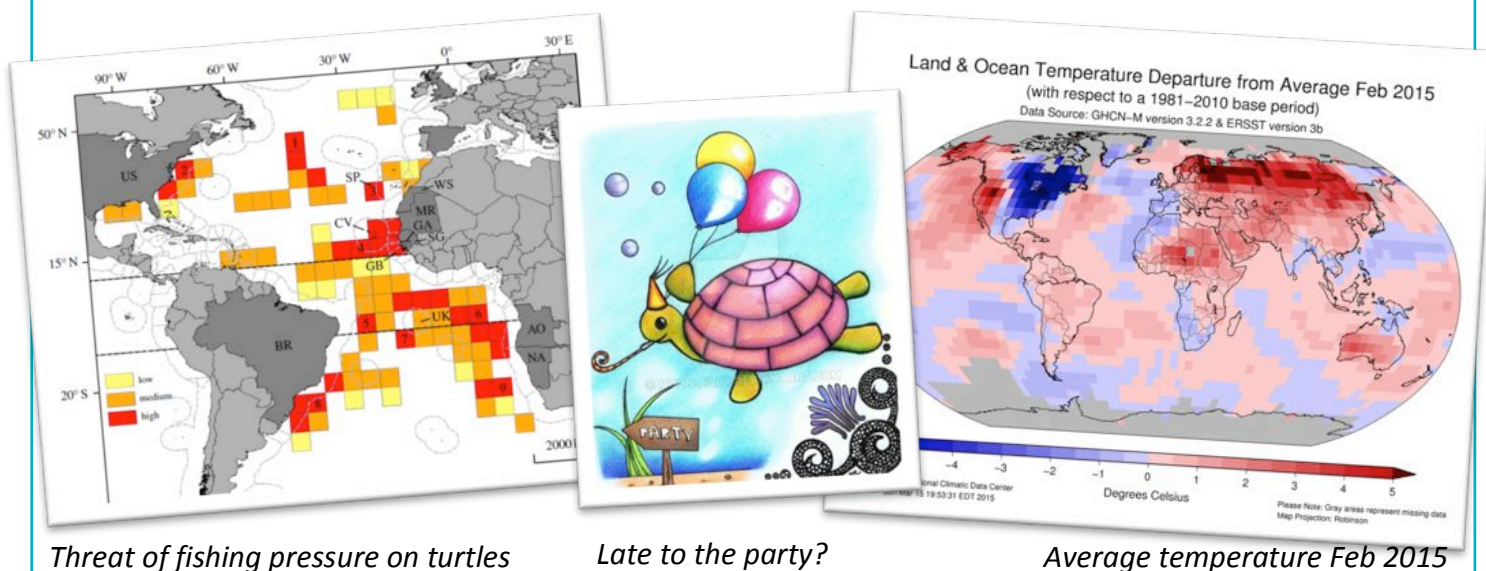
The graph illustrates the difference in nesting frequency to be substantial and suggests that it should continue to increase over the next month, however, it could be that a variety of factors have delayed the arrival of turtles coming to nest. The cooler temperatures during the spring could be an important factor. If we were to shift the 2015 data back a 7-10days we can see the similarities trends become more apparent.

El Niño

It looks as though 2015 is going to be an *el Niño* oscillation event year. Although focused in the Pacific this has consequences for global weather patterns and consequently a potentially significant impact for turtles. Speculating exactly how this will affect Cape Verdean turtles is a complicated and dangerous practice; nonetheless, there is little doubt that a change from mean temperatures and / or precipitation could have a significant impact on cold-blooded turtles as well as future generations given the Temperature State Dependent (TSD) development of hatchlings.

Fishing pressure

The foraging grounds for the Cape Verdean loggerhead is loosely in the neritic and pelagic zones off West Africa. This area between West Africa and Cape Verde is also a well-known fishing ground for a variety of industrial fisheries, principally European and Chinese vessels. Perhaps it is too early to make such drastic conclusions but if the data continues as predicted we may need to look elsewhere in order to establish where the turtles have gone.



Threat of fishing pressure on turtles

Late to the party?

Average temperature Feb 2015

Meet the Coordinators

The coordinators

With nearly 40 seasons of turtle experience between them this years coordinators have a wealth of knowledge and experience. Together a good mixture of African, European and Latin America characters.

Miguel Field Coordinator, Norte

Miguel first came to Boa Vista with the military and now is in his 6th year with TF and first as FC. As FC in Norte he has a tough job but as Joaninha's *protege* he is brave and relentless. He retains a military precision and fighting attitude, fortunately for us he is also very hardworking!

Ariadna Field Coordinator, Lacacão

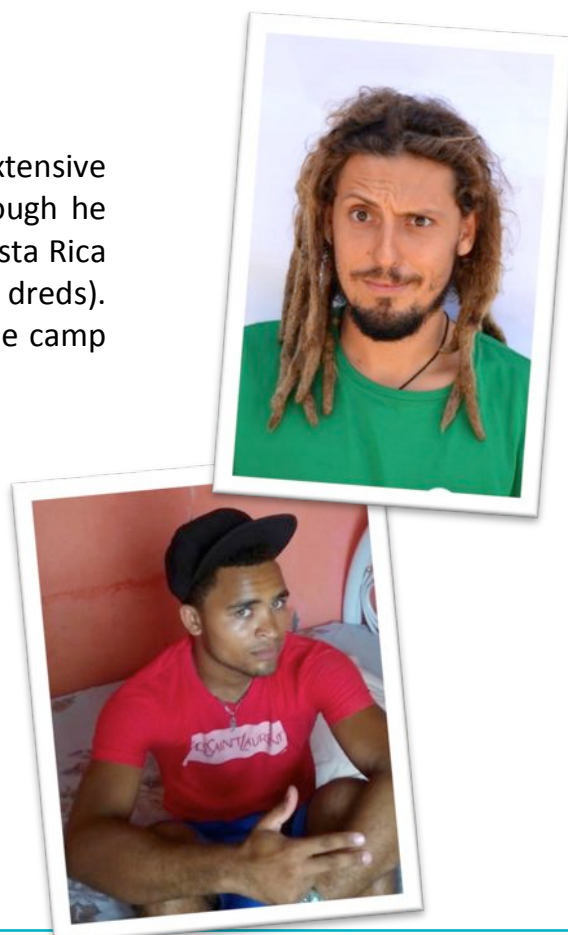
Now in her second season with TF, after moving to Lacacão from Boa Esperança, Ariadna builds upon 5 years experience in Boa Vista with Natura2000 and more recently Costa Rica. Extremely hard-working and always eager to please though best not to get on the wrong side of her as she has more Catalan passion than Shakira and Gerard Pique's love-child!

Renato, Field Coordinator, Boa Esperança

Renato's Brazilian laidback attitude hides his extensive knowledge of turtle biology. His first year with TF though he has years of experience with TAMAR in Brazil and in Costa Rica where he has continued to develop his skills (and his dreds). Always ready and willing to help be it on the beach, the camp or with activities.

Divaldo, Camp Coordinator, Norte

Another military arrival Divaldo is now in his 6th year with Turtle Foundation and 4th as CC of Norte. A solid member of the team. Always happy to have a laugh but quick to teach those who step out of line. Fortunately his coordination is more orthodox than his dancing!





Camilo Camp Coordinator, Lacacão

Another new Brazilian, Camilo's experience ranges from jaguars to fish but perhaps most important is his love for fungus. As an ecological mushroom farmer from São Paulo Camilo is relaxed, a little funky and always happy. Although he looks like a famous biblical figure I don't think JC would have been able to walk on water with those size 36 feet!



Patrick Camp Coordinator, Boa Esperança

Previously known as the General of Curral Velho due to his passion for walking. Patrick has been with TF for 5 years after coming to Boa Vista from Guinea-Bissau. Very knowledgeable if not always as vocal. A firm believer in folklore and that geckos have bad *juju*. Lover of tea, radio and Barça!

Domas Sub-Coordinator, Norte

Recently noted for rescuing the tied up turtle in reality Domas has been saving turtles for years. Never one to shy away from voicing his opinion in the community or confronting poachers Domas has been raising awareness and improving the situation in *Norte* for years. A keen farmer and biker.



Derek Sub-Coordinator, Lacacão

Known simply as Des or Mr. Grumpy Derek is now in his 3rd year coming to Boa Vista. Each year gaining responsibility, smiling a little more and embracing exhaustion wholeheartedly! Always a lover of the double-shift, bracelets, and *frappes* (camp iced coffees). He holds the record for most animals taken off the island- with 3! If the mosquitos come expect Mr. Grumpy to return!



The Hatchery

In the last few weeks there has been considerable effort by those in Lacacão in order to finish the construction of what is the biggest hatchery that has ever been built on Ponta Pesquero (and likely strong opposition to the 'voluntary-nature of the workers!'). It's purpose is to protect hatchlings from the anthropogenic threats to nests, and hatchlings, caused by light pollution, foot-traffic and other human-associated impacts from the RIU Touareg hotel. *[It is a key part to sea turtle conservation on the island and something we all value immensely, so thank you for all the hard work!]*

The similarities between the Pyramids of Giza, the Great Wall of China and the Hatchery of Lacacão go beyond their precise geometrical design, desert location and magnitude of their construction. In fact it has been speculated that all three were built using slave labour! However, recent evidence suggests that the pyramids were not built by slaves and that the Hatchery was in fact built by volunteers. Whatever the case all three were undoubtedly subject to intense work in harsh environments and all serve a purpose that far surpasses their physical size.

An element intrinsic to all three is the defensive protection they provide – be it for the souls of the pharaohs, the Qin dynasty against invading Mongols, or to turtles from unsustainable development. However, only one of these wonders really stands to benefit biodiversity – The Hatchery of Lacacão.

Estimates suggest that in the wild an egg has about a 1: 3,000 chance of (hatching and) surviving to adulthood, a hatchling about 1: 1,000. These estimates do not consider other human-related threats that are prevalent throughout their life stages in the sea, namely -bycatch, boat traffic, plastic pollution etc., And which as a result decrease the likelihood even further of them contributing to the overall population.

Loggerheads can be described as 'keystone species' due to the disproportionately large impact they have on the ecosystem. By relocating those nests that would otherwise be susceptible to these adverse effects, we aim to positively affect the population of loggerhead turtles (*C. caretta*), something important given the threats they face in Cabo Verde and status of the species as a whole.

In Boa Vista, nests are vulnerable to predation by ghost crabs and crows as well as inundation by extreme high tides. Nonetheless, these are natural events, which help shape the evolution of the species. For this reason, Turtle Foundation does not advocate relocating unless they are directly threatened by human impacts.

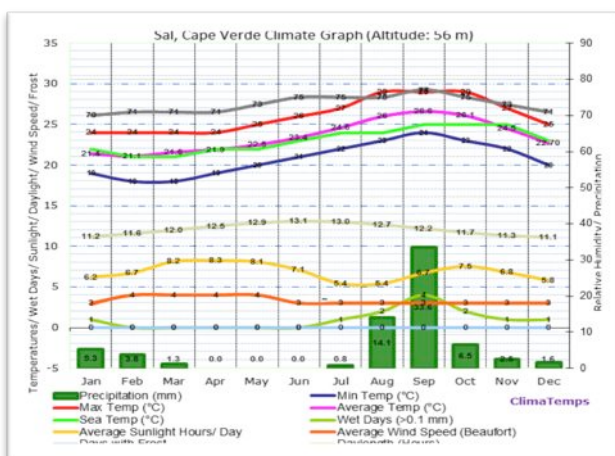
The first nest is due to hatch around the 20th of September and we will be ready!



WAITING FOR THE RAIN

With the arrival of August the rains are likely not far away. After 10 months since the last real rain fell it is blessing for the parched earth. For us it brings both benefits and inconveniences but more than anything it triggers changes to which we must adapt.

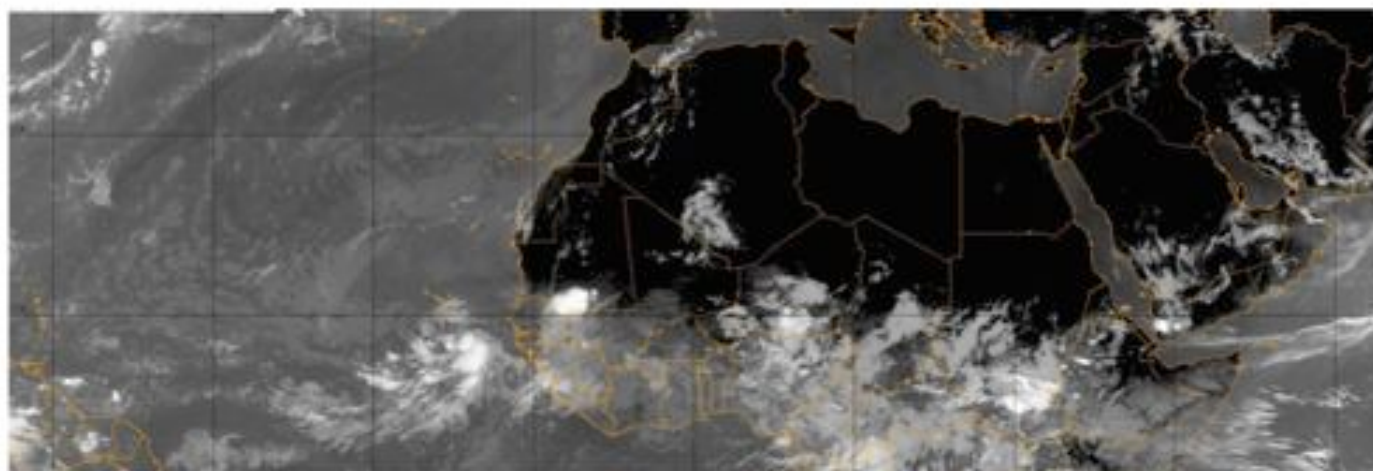
Boa Vista has an extremely arid climate (as you will have realised!). This is loosely split between 9 months of wind (*tempo das brisas*) and 3 months of rain (*tempo de chuvas*). Though the latter could perhaps be better described as 5-10 days of rain in this 3-month period (July-September with September being the peak). Nonetheless, when it does rain, it pours! And having minimal shelter, be it on the beach or in camp, we need to be ready. Here's why...



The storms are generated by the mixture of *harmattan* (dry warm air coming off the Sahara) mixing with humid air generated from the Congo-basin.

These storm cells fuelled by the hot air blow NW of West Africa often clipping, the archipelago and on their way to becoming the hurricanes, which make landfall and headlines in the Americas.

Given the strength of these storms they often result in heavy but quick downpours. It is therefore essential that camp is suitably defended, the equipment is always protected and most importantly everyone on the beach is safe. Nonetheless, rain on its own is not reason-enough to abandon patrol.



Here are a few of the things we can expect if and when it rains:

Biodiversity – The rain stimulates life in the interior of the island turning the landscape green – a colour not often seen in Boa Vista! The plants relish the sudden water and the grasshoppers the new growth.

Rain showers – Its not just mother nature that has been waiting for the cooling benefits of the rain. Cape Verdeans dance, bathe and collect the spilling bounty.

Clouds – If you appreciate a good cloud then you're in luck. More importantly they'll keep it cooler thus extending how long you can survive sleeping in!

Sunsets – aside from just abating the rising temperatures the rain droplets in the atmosphere quash the incessant Saharan dust normally prevalent. This can lead to magnificent clouds and incredible sunsets.



Mosquitoes - definitely the most inconvenient of the consequences. Following the first rain mosquitoes are brought to life, as they are suddenly able to reproduce in numbers in the stagnant bodies of water. Their abundance varies annually and can usually be correlated with the amount of rainfall. However, from the first rain it is imperative to cover up on patrol and take repellent with you.



Ribeira d'agua – the 'stream of water' over which you will have passed on your way to *vila* can, believe it or not, become a raging torrent as the dry, bare earth does little impede its run to the sea. In 2012 this caused the bridge to collapse thus severing connections between *vila* and the airport / rest of the island. In 2013 a couple of people died trying to cross the river due to the lack of suitable crossings. Fortunately, in April this year the new bridge was opened and it is very unlikely it will fall!



Odje d' mar – the rains bring the only real waterfall on the island to life. Located in the mountains in the NE. It's a good spot for picnic and better one for cliff-jumping.

Modern technology should give us a couple days head start on when the rains are going to come but in reality most weather forecasts are best guesses at best and it is important we get ready now. That being said there is no need to panic and it may hardly rain at all especially given all the el niño chat, which may increase/decrease the frequency. Whatever the case, we should try to enjoy most of what the rain brings in the knowledge that its life giving force is so much bigger than us.

If you can guess the first day of real rain /storm (i.e. not a few minutes shower) you can win a prize!

Waste impact on nature

Plastic is the biggest pollutant to the marine ecosystem and one of the biggest threat to marine health, often impacting in different ways. The most obvious is directly related to the death of animals: through the ingestion of rubbish confused with its natural food , entanglement in synthetic materials such as fishing gear, etc., and contaminating the environment as they degrade.



The rubbish in Boavista's beaches may have been left by the beach-goers, by parties on the beaches or even brought by ocean currents. This last one is the biggest problem on the beach of Boa Esperança. The impact of waste on its marine life is compounded as it is a major nesting area of sea turtles, which means that in addition to the natural obstacles, turtles still need to overcome any floating garbage and the ones deposited on the beach to be able to nest and ensure their hatchlings can later enter the sea.



Estoril beach clean-up campaign

On Saturday the 25th of July we organized a small cleaning in Estoril beach. Around 20 children from Sal Rei participated in the campaign, which began at 9 am and went until midday. Cintia Domingos ran the event and made sure the kids had fun as well as working. They did a good job and had to call it day when the sun got hotter and hotter, forcing them in to the water to enjoy bathing in the sea. They were provided with some snacks by Tortuga Beach Club. Zeddy, Cintia Lima and Leida (Protected Areas) also came down and got put to work.

It was revealed that the work done was not enough. For the next one we hope for greater participation from the Beach clubs in the Estoril, in spite of the campaign, there is still a lot to be done. We will continue to clean and raise awareness until we can control the problem at the source.

The spaces between the clubs (ignored by them) and the thicket nearby are the largest areas of pollution on the beach, and these are the focal points of the next campaign, as well as construction of small awareness posters. New participants are always welcome!





Dead green turtle

A green turtle (*C. mydas*) washed ashore in Boa Esperança in mid-July. Fortunately, the incident was not poaching-related and the team was able to move her to an area where she could be buried. Nonetheless, she most likely died prematurely out at sea and floated to the north coast of Boa Vista. It may have been a consequence of the fishing industry or plastic pollution.

The team, lead by Brazilian Field Coordinator, Renato, assessed how to move her to a suitable burial site and then buried her.

Photos by Mireia G-C



Failed poaching attempt

When the car broke down (and its rented replacement) we were unable to patrol as normal. After only a couple of days down, an experienced ranger of ours biked to the beach to do the morning census.

He found this turtle tied-up. Fortunately, she was still alive. He freed her and let her go to sea. So strong was her urge to nest she came back (for a selfie), before swimming off.

It highlights just how important the protection work is that the patrols do and the quick response of the poachers when we are not there. Fortunately, the cars are back working.

As a result of this we have amped up patrols, diversified strategies and, with the help of the Protected Areas, increased the number of guards on the beach.



School in Nature

The first 'School of Nature' weekend event was held at Boa Esperança camp over the last weekend of July/beginning of August. The idea is a weekend environmental camp in order to raise awareness of the importance of turtles and the marine environment. By involving young people who don't otherwise have the opportunity or access to education we hope to raise awareness and have a positive impact in the community. This first group consisted of 15 young people from the Riba D'Olte in Sal Rei. Cintia Domingos was responsible for running the activities with help from the coordinators Renato and Nerine.

The weekend was a huge success with the kids getting the first chance to come face to face with a turtle on the beach rather than in a stew. Renato explained how and why we work with the turtles and the importance of protecting the species for the eco-system as a whole. Various **presentations** were given on environmental issues and the reality of marine eco-systems.

Cintia organised a **beach clean-up** where the kids were able to see the extent of the rubbish in the environment and help to remove it. The kids made a big dent in the amount of rubbish littering the beach but soon realised (just how much rubbish is in the sea and) the size of the fight since the amount in the sea means more and more will continue to wash-up unless we solve the root of the problem – through recycling, education and promoting the importance of the environment.

Nerine and Renato conducted a **workshop** giving the kids the chance to make mobiles and other decorations purely out of plastics and wood they had collected. A great way to make something beautiful out of something ugly, something useful out of something useless and potentially dangerous.

The kids also got a chance to enjoy camp-life skim boarding the waves of Boa Esperança, playing games such as tug of war and sack racing and dancing to some pretty dodgy music!

The next event will be on August the 14th-16th at Boa Esperança. This time with a group of young people from the *barracas*.



Suggestions for dealing with diarrhea

The most common cause of diarrhea is a virus infection, bacteria, or other parasites that enter the body. The main sign of the illness is the presence of liquid stools. But it can also manifest pain in the abdominal region and a constant desire to go to the toilet.

Treatment of Diarrhea

It is usually done at home, through fluid intake in order to prevent dehydration. The doctor may also prescribe some medications. These remedies usually do not require prescription, but avoid them unless medical advice.

Medical help

Most cases of diarrhea can be solved by you. You should seek a specialist if your symptoms do not go away by themselves in three days and if you start to present signs of dehydration, or rectal pain, cramping, present blood in the stool or severe fever.

Some measurements to accelerate the treatment and recovery:

- Drink 8 to 10 cups of clear liquids every day
- Drink at least one glass of liquid every time you have a bowel movement
- Eat small meals throughout the day instead of three large meals
- Eat salty foods, such as crackers, soup and energy drinks
- Eat foods rich in potassium, such as bananas, and diluted fruit juice. These and other foods such as apples, which are known as the "hold intestine"; Eat starchy foods such as rice and potatoes; Increase fibre intake (eg. Cereals, raw vegetables)
- Avoid spicy and fatty foods
- Limit the amount of caffeine in your diet
- Do not consume a lot of milk or milk products as they may worsen diarrhea
- Rest well and pray



Diarrhea generally does not lead to more serious complications but a common result. Can be dehydration. Check out some signs that your body is dehydrated:

- Excessive thirst
- Decrease amount of urine
- Dry mouth and skin
- Sunken eyes
- Weakness, dizziness and vertigo

Some tips to avoid getting diarrhea:

- **Personal hygiene** : Wash hands with soap and water before eating, preparing food and after using the toilet.
- A good method of **treating water** is to boil it for some time.
- **Wash food and disinfect the food** that is consumed raw. Place 10 drops of bleach per liter of water, and leave the fruits and vegetables during 15 to 30 minutes, then rinse in clean water.
- **Keep cooking area clean** to reduce the number of flies and other insects (a big transmitters of microbes).



Resting;



Camilo Redentor;



Wash your hands!



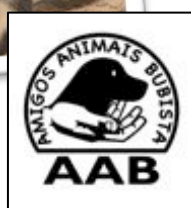
And the vege!

Festival de Praia de Cruz

On the **21st and 22nd of August 2015** the annual music festival will take place on Praia de Cruz (at the end of Cabral).

Half of camp goes 1st night other half go 2nd night, simple!

A great chance try the local grogue, dance all night and let your hair down! Have fun but be safe!



In Sal Rei there are thousands of dogs, many of which don't have anyone to care for them. Fortunately, *Associação dos Amigos dos Animais de Boa Vista* (AAB) do great work helping stray cats and dogs, organising sterilisation campaigns, adoptions and raising awareness.

This is a little puppy recently brought into the office. Who needs a home. She is:

- Female
- Very sweet
- About 8 weeks old

Currently referred to as 'Café com leite' (*milky coffee*).
Essentially is Frida a year ago!

If you want to help this dog by taking full responsibility of her, or one of the many others, please let us know