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Charles Darwin Foundation Annual Report 2010

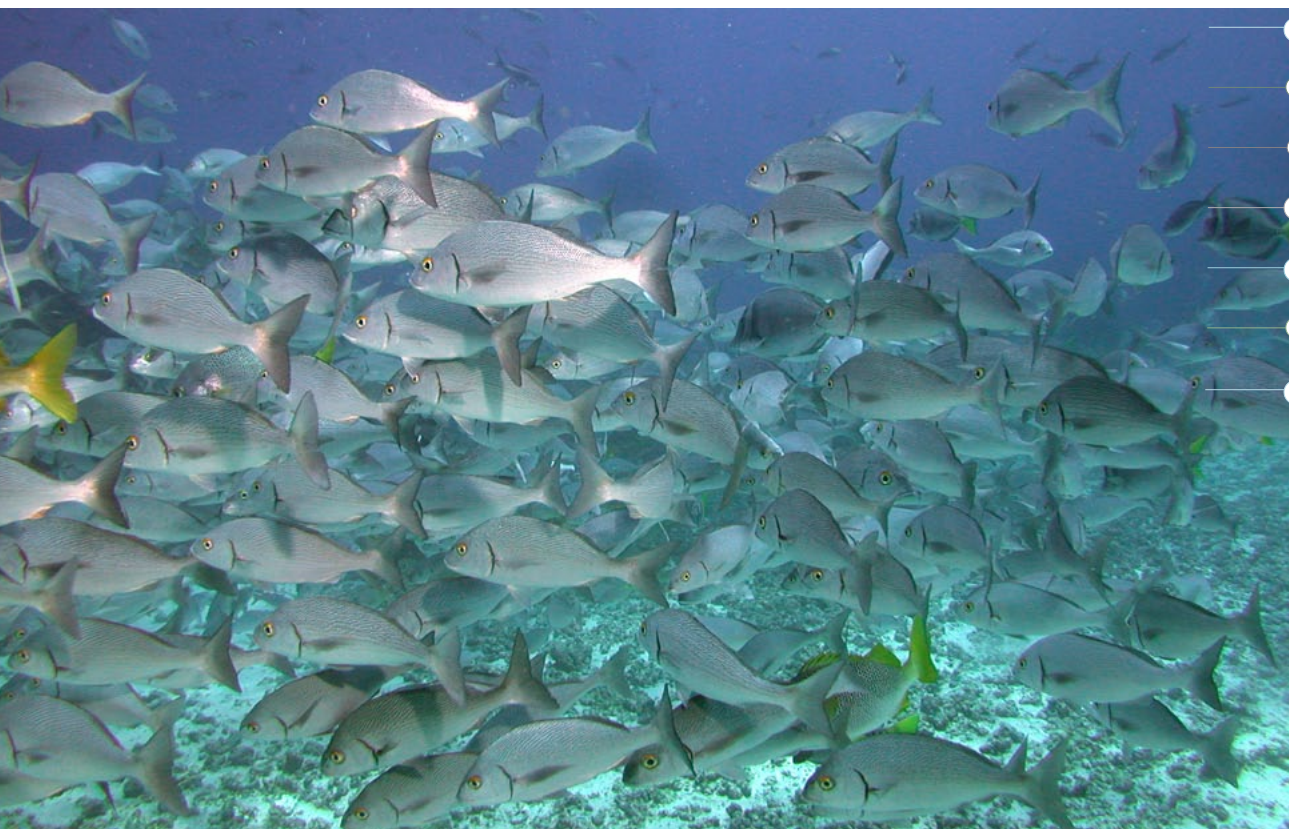
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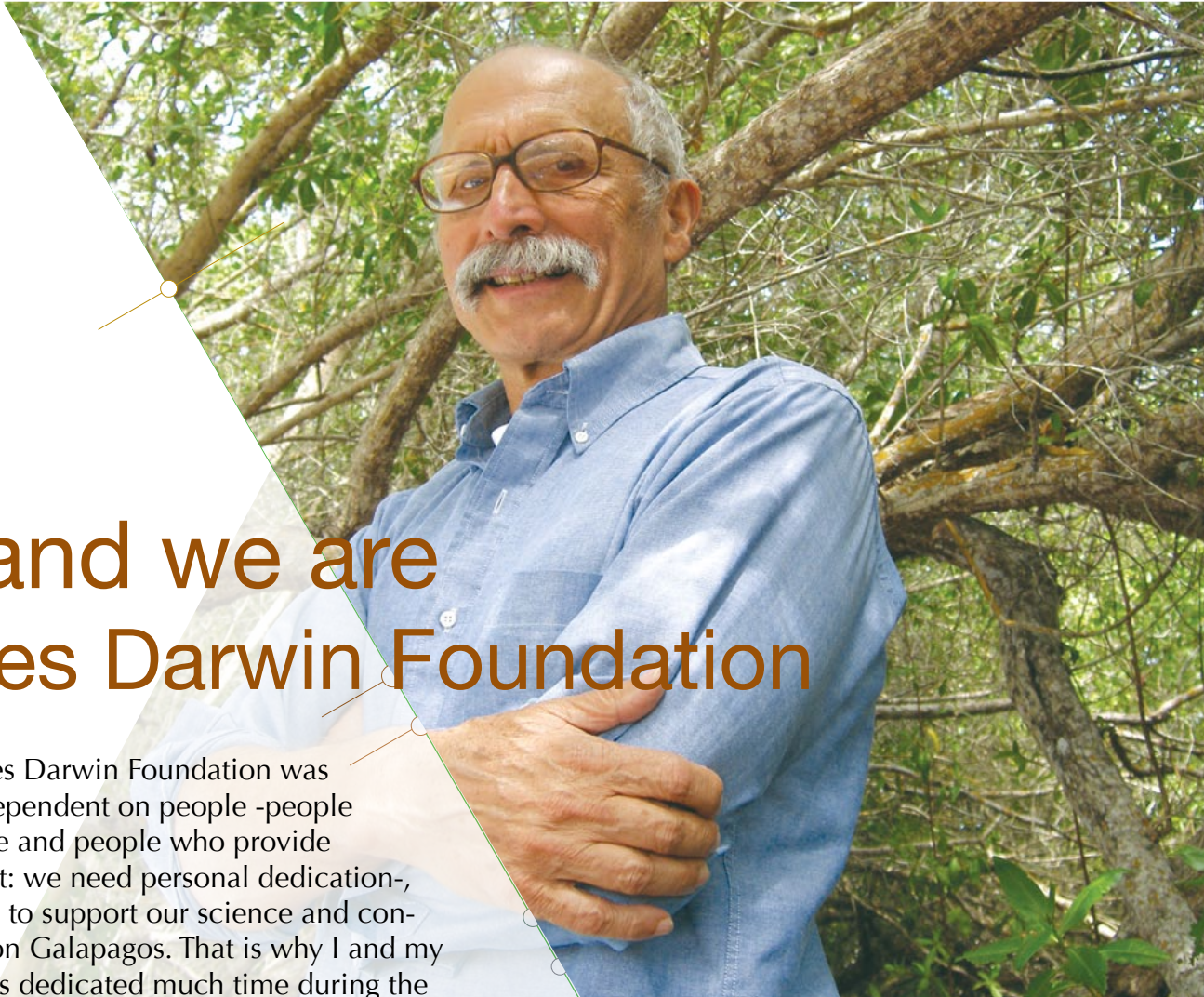
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Acronyms and Abbreviations

CDF	Charles Darwin Foundation
GMR	Galapagos Marine Reserve
GNPS	Galapagos National Park Service
IUCN	International Union for Conservation of Nature
NGO	Non-Governmental Organization
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
WWF	World Wildlife Fund
INOCAR	Naval Oceanographic Institute
CI	Conservation International
GIIWS	Galapagos Islands Integrated Water Studies





You and we are Charles Darwin Foundation

The Charles Darwin Foundation was always dependent on people -people who serve and people who provide financial support: we need personal dedication-, time and money to support our science and conservation work on Galapagos. That is why I and my board colleagues dedicated much time during the past year to raising funds for our work on Galapagos.

And I would like to tell you: For me it is a real pleasure to raise funds for the Darwin Foundation because it provides me with opportunities to talk about the fabulous work done by scientists working at or associated with the Darwin Foundation! I was able to talk about snails and sunflower trees, cormorants and cotton, tortoises and tomatoes and about the people who study them.

I spoke at dinner tables, in lecture halls and in conference rooms and some of my "hits" were: Galapagos lichens with more than 600 species in the Islands, Galapagos Hawks, one of the rarest raptors in the world, Galapagos sharks, protected, but threatened by illegal fishing. And so much more... We study this unique biodiversity and work to understanding how it is impacted by us humans, which in turn provides us with knowledge base needed to protect Galapagos.

Many of the people I talked to decided to support our Galapagos science and conservation work, some with small amounts, and others with significant sums, like the International Watch Company in Schaffhausen. Each one matters. Thank you!

Dr Peter Kramer
Acting President



“An institution steeped in history and with an important mission”

After my arrival at CDF’s Research Station in Puerto Ayora, one of our volunteer librarians took me on a tour of the library’s treasures that are not usually on public display. Amongst them, a fabulous photo album with images of the inauguration of the Research Station back in 1964 – think black and white photographs, yellowed letters sent from all corners of the globe, and that distinct smell that only an old document has. In my hands was a document that encapsulated the

entire history and the achievements of the Galapagos Islands' oldest private institution.

Establishing a research station in one of the world's most remote regions was an effort to defy all odds, and to this very day, there are manifold challenges remaining. These challenges we can only overcome by collaborating with our partners and supporters. Over the past 52 years, several generations of scientists, employees, scholarship students and volunteers have been carrying out their research work with a passion that is difficult to find in other places on this planet. Galapagos captures the hearts and minds of those involved and visitors alike.

In the pages that follow, you will see some of the work that we undertook during the past year. Much of our work is still ongoing.

Most of these efforts are nowadays carried out by Ecuadorians. We are proud to be an International Organization that was set up based on an agreement between UNESCO, IUCN and the Government of Ecuador. What we are even prouder of is the fact that today, 82% of our staff is Ecuadorian and 75% of them are Galapagueños. Providing opportunities to Ecuadorians and to the permanent residents of the island, be that in the form of employment, scholarships or volunteer positions, has been a priority for decades. More than 200 Ecuadorians have received a scholarship from the Charles Darwin Foundation. Many of them consequently were able to further build their careers and are now contributing to science, policy and the archipelago from key positions in Galapagos, Ecuador or other parts of the world. We remain committed to training young people who will continue to contribute to these goals.

Equally, we are providing an important function by bringing international expertise in areas where local expertise does not yet exist. At the time of writing this report, we had staff from the Australia, the Netherlands, Germany, Italy, UK, Spain, Mexico, Chile, and

New Zealand. Our donors, collaborators, partners and supporters hail from even more countries, with a lot of key support coming from the United States and Europe.

During those more than five decades of the Foundation's operating in Galapagos, the islands have become a microcosm of changes taking place the world over. The comparatively simple, fragile ecosystem is particularly vulnerable to change brought about by man and climate.

As just one example, the Galapagos Penguin is already very susceptible, with only about 1300 breeding pairs left in 2010. Even just a small change in climate patterns and ocean currents could spell the end for this wonderful, rare species. Other icons of Galapagos' natural world are equally at risk, as is the overall sustainability of the growing human presence on the island. Galapagos is now home to a growing, affluent population. Other island economies, however, have shown that if the principles of sustainability aren't adhered to, all could eventually be lost.

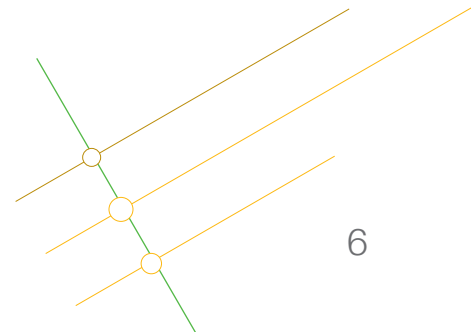
As a scientific institution with the largest existing knowledge base about the islands, we are not only in the ideal position, but we also have the obligation to further increase our efforts in light of these threats. Our contract with the Government of Ecuador sets out our objective – to provide scientific information and advice, so that local and national authorities are in a better position to make the decisions and set the regulations that are necessary to protect this UNESCO World Heritage Site. Our mission is to produce the best, most relevant science for the conservation of Galapagos.

Helping to preserve and create a sustainable future for the Galapagos Islands is the ultimate goal of our work. The Charles Darwin Foundation is eternally grateful for all the support we have been receiving to fulfill our mission.

With best regards from Puerto Ayora,



Swen Lorenz
Executive Director



Why does the Mangrove Finch matter?



I am woken by the sound of splashing fish beside me and crabs scuttling across my tent, the water seems to be closer than it should be. I un-zip the door and look out just in time to see my shoes floating away. I leap out, get wet and rescue them, at the same time I see David, the project's long term volunteer, perched on top of a Zarges box with his things while the tide flows through his tent. Its 3:30 in the morning and for the second time in two consecutive field trips the tide has risen a good 20cm higher than predicted. David and I wave and call greetings to each other, it is not worth braving the knife sharp lava submerged under waist deep water in the dark so that we can talk to each other. I remove my belongings from the tent and put them on top of a rock, leaving the tide to rise and flood my abandoned bed before getting my sleeping bag and stumbling across the lava, still half asleep, to where my hammock hangs in a small patch of mangroves, safely above the water level. There are still two hours to try and sleep before having to enter the flooded mangrove forest at dawn as we continue surveying for mangrove finches (*Camarhynchus heliobates*).

By Francesca Cunninghame

Myself and team mates Segundo Gaona (field assistant) and David Anchundia (CDF volunteer), have been looking for evidence that the nine mangrove finches we translocated to this site in May 2010 are still resident. We have been coming to this place for five months and we have not confirmed the presence of any. Why are we continuing to stoically camp in this half flooded lava landscape and spend most of the day wading and scrambling through mangrove trees like aquatic monkeys when its been so long and we have not seen any of the birds?

We stay positive as we tell ourselves that just because we cannot find them does not mean they are not there. At this time of year when the mangrove finches are not singing they are incredibly cryptic (females never sing) making them a challenge to find unless nesting. The small size and dull grey coloring of mangrove finches makes them hard to see through the dense forest and mass of roots. Moreover if you do get a glimpse of a small grey finch, often by the time you've climbed through the hanging roots the bird has vanished...

The Mangrove Finch Project is a tri institutional initiative by the Charles Darwin Foundation (CDF), Galapagos National Park Service (GNPS) and the Durrell Wildlife Conservation Trust that has been running for five years. Previous studies highlighted the risk that introduces black rats presented to the species and immediate action was taken by CDF and GNPS staff to set up permanent bait stations in a grid system every 50m throughout the forest and around the periphery to control the pest.

This scheme has now been running for three years and has had huge success. Bi annual monitoring has shown that rats are only occasionally present at PTN in very small numbers following reinvasions after the wet season. As a result of low rat numbers nesting success studies of the mangrove finch have shown a significant increase in fledging success. This year over 75% of monitored nests fledged chicks, compared to less than 40% prior to rat control. The maintenance of the bait stations is continual and they need refilling at least every three months and ideally monthly during the breeding season. Due to the remoteness of the sites this work is expensive and challenging and the logistical support provided by the GNPS is essential. It is imperative that in the long term we can continue to control rats at mangrove finch sites to ensure the successful breeding of the birds. Due to black rats being present in all mangroves on Isabela Island, this management is ongoing.

At present no large scale control methods exist for *Philornis downsi* the introduced parasitic bot fly that causes nestling mortality and mangrove finch staff play a supportive role helping collaborating scientists who are working with the parasite in the hope that control techniques can be developed. Over the last two breeding seasons on Santa Cruz Island thousands of *P.downsi* larvae and pupae have been collected and sent out to SUNY in the USA where work into isolating the flies' pheromones has taken place. Current proposed research by collaborators into possible biocontrol agents is timely given that now that rats no longer present a risk to the mangrove finch eggs, and hatching success has improved, it is likely that we will see an increase in nestling mortality due to *P. downsi* parasitism. The inaccessibility of mangrove finch nests makes any control methods that require nest manipulation challenging. Often nesting high in the canopy at the tip of spindly branches in a mangrove forest where trees can reach



over 20m, has resulted in us using tree climbing techniques to improve our access. CDF volunteer Graeme Loh (Department of Conservation New Zealand) who was with the project for three months was indispensable in bringing these skills, and equipment to the project.

Translocations are widely used throughout the world in endangered species management and have been used regularly within the Galapagos for tortoise and land iguana conservation; however the mangrove finch operation was the first time that a bird species had been translocated within the archipelago. There were several unknowns associated with the exercise which made planning such an exercise for the first time with such a critically endangered species rather nerve wracking. Due to the small population size of the finches it was decided to move a maximum of only 10 individuals, putting precedence on juveniles so as to avoid removing too many breeding adults from the source population. Choosing a release site was also a challenge as there is no suitable habitat similar to that found at PTN and CB. After habitat assessments a site 22km south of PTN at Bahía Urbina was chosen.

Though surrounded by fairly hostile lava fields the mangrove forest is well established and invertebrates are abundant. Moreover its relative proximity to the source population and its small size made both post release monitoring and black rat control logistically possible. Such is how we came to leave the comfort of camping on the sandy beach at PTN and set up a base camp in the tidally flooded lava, finding just enough mostly flat rock to pitch a maximum of four tents, providing that the tide never rises further than 1.6 metres!

The translocation itself went very well and over three consecutive days ten birds were caught, of which we decided to translocate nine, five juveniles and four adults. Due to the inability to reliably confirm the sex of birds in the field (most difficult with juveniles) we could not even be certain that we were transferring an even mixture of males and females until the genetic analysis was done, after we had released the birds. All birds were fitted with individual color bands and radio transmitters which were glued to their feathers between the wings. The transmitters were necessary to facilitate post release monitoring; however due to the small size



of mangrove finches (18 – 22g) and the consequent light weight of the transmitters (0.3g), the longest monitoring period available, determined by the battery life, was 22 days. The mangrove finches were transported by speed boat in specially made transfer boxes on the same day as they were captured. Quarantine regulations meant that the birds were supplied with locally caught invertebrates as a food source and fresh mangrove branches were fitted in the boxes as perches. The birds traveled well and the juveniles were observed feeding during transport, apparently not too perturbed by load motor noise and rough seas. All individuals arrived at the release site in good health.

During the following month telemetry monitoring revealed that most of the birds stayed in the vicinity of the release site. Interestingly a juvenile returned to where it was captured just two days after being transferred, when we confirmed its presence back at PTN. Due to adults molting and the presence of still growing feathers on the juveniles, several of the transmitters fell off prematurely. During late June the last transmitter stopped functioning and monitoring was confined to either seeing or hearing the birds to confirm their presence. Hence began the five months of patient searching that led staff and volunteers of the Mangrove Finch Project to persevere camping.





Facts and project

Perhaps the most important virtue needed to manage and conserve the rarest breeding bird on the Galapagos is patience. Classified as critically endangered by IUCN, with an estimated population of just over 100 individuals and one of the most range restricted species in the world, we have to do what ever it takes to try and secure the future for the mangrove finch.

Once widespread throughout the mangrove forests of Isabela and Eastern Fernandina the mangrove finch has suffered severe range reduction within the last 100 years and is now confined to just two patches of mangroves, Playa Tortuga Negra (PTN) and Caleta Black (CB) on the North West coast of Isabela with a combined area of 30 hectares (current habitat photo).

Mangrove finches are threatened by introduced black rats (*Rattus rattus*) which predate the eggs and chicks of nesting birds.

The remoteness of current mangrove finch habitat, their cryptic behavior and the fact that they are just yet another small grayish and hard to distinguish Darwin's finch have meant that although they are the most endangered bird found in the archipelago there has been little wider interest in them and they remain a largely unknown species. Therefore to help increase local knowledge of the species the Mangrove Finch Project contains an education component. Working with CDF Education staff activities and products have been presented within the community of Puerto Villamil on Isabela Island.

Due to the uniqueness of the mangrove finch to Isabela we have focused the campaign within the local community. On World Wetlands Day 2011 (2 February) CDF and GNPS staff presented talks about the current conservation advances with the mangrove finch and the overall importance of wetlands and mangrove habitats. A short video presenting an overview of the field aspect of the Mangrove Finch Project was presented and copies distributed to schools, the municipality and nature guides. This film was made by CDF volunteer Sue Maturin (Forest and Bird New Zealand) and has been produced in Spanish and English. An awareness raising poster featuring a large image of a mangrove finch was then given out and distributed throughout the village.

By reaching a range of people of various ages within the small community of Villamil we hope to create a feeling of pride amongst the community in regards to what is a unique and special species. The mangrove forests adjacent to the East of the village, which are incorporated in the sole RAMSAR site on Galapagos, were historically home to mangrove finches. Though habitat restoration and introduced predator control is needed before this site can be suitable for a reintroduction project, it would be wonderful to be able to one day re establish the mangrove finch in this area where the birds would be accessible and close to humans, able to be observed and appreciated as the highly specialized species that they are.





Galapagos, anchor free

By David Acuña
and Inti Keith

Between late 2011 and early 2012, seventy ecological mooring buoys will be installed at ten GMR visitor sites.



Anchors are an essential part of any watercraft and are used in all the world's seas and oceans. In Galapagos, they are used by everything from the largest tourist vessels to the smallest skiffs for safe anchoring in port and in sightseeing and fishing areas. Nevertheless, there has been an increasing awareness over the last few decades of the damage that anchors cause to the seafloor.

As a result, in other parts of the world, including many marine reserves, ships no longer use anchors but rather fixed mooring buoys – known as ecological moorings – that are installed so that vessels need not use anchors, thus helping to conserve marine ecosystems.

Use of ship or boat anchors and chains can have a devastating effect on a marine ecosystem. Most species living on the seabed (corals, gorgonians, algae, sponges and starfish, among others) are very sensitive to impacts from the dragging and abrasions that anchors and chains cause. Since many of these species play a key role in marine ecosystems, the damage caused by anchors can have serious consequences. Coral reefs are a clear example: continuous use of anchors harms coral, shattering it and making it vulnerable to predation and disease. When we hurt coral, we also hurt the organisms that depend on it, from the tiniest mollusk to the largest shark. This is precisely what is happening with the rocky reefs, algae beds and sand beds of the Galapagos Marine Reserve (GMR).


In response to this predicament, the Zero Anchors project was started in 2006 to reduce the impact of anchor use by watercrafts in the GMR. The first ecological mooring buoys were installed in April 2009 Bartolome Island, in the project's pilot phase. We started the second phase early this year with an inter-institutional agreement between the Galapagos National Park (GNP), the Naval Oceanographic Institute (INOCAR), the Charles Darwin Foundation (CDF) and Conservation International (CI).

Eight divers from the three institutions involved (CDF, GNP and INOCAR) have participated in the monitoring tasks of the current project phase.

In this new project phase, INOCAR will install 70 ecological mooring buoys between late 2011 and early 2012, with the help of the other partners (GNP, CDF and CI). To this end, we chose the 8 most popular visitor sites in the GMR (Bartolomé, Bachas, North Seymour, Plazas, Santa Fe, Gardner Bay, Suárez Point and Cormorant Point) and the 2 that have coral reefs and the most sensitive marine communities (Wolf and Darwin).

In future phases of the project we plan to finish installing all the ecological mooring systems needed to eliminate the continuous use of anchors in the GMR. The GNP will thereby have a management tool to control the number of vessels at each visitor site, and tour boat operators will benefit from having a safe, fast and environmentally correct alternative for mooring their vessels, thus avoiding sometimes complicated and painstaking mooring maneuvers.



A diver in a blue wetsuit and yellow mask is measuring a starfish on the seabed. The diver is wearing a yellow mask with the brand name 'ventana' visible. The diver's hands are holding a white measuring tape against the starfish. The seabed is covered in green algae and other marine life. The diver's wetsuit has 'SCUBAPRO' written on it. The diver's hands are wearing blue gloves with the number '5' on them. The diver is looking down at the starfish. The background is a blue underwater environment.

It is very important for institutions responsible for natural resource management to assess the effectiveness of the management measures they implement, as in the case of ecological moorings. This ensures official and community support for their use. We need to evaluate the recovery of anchor-damaged marine communities after the installation of ecological moorings to ascertain if they are fulfilling their purpose. To do this, we first need to know their current state and then monitor how they evolve over the next few years subsequent to the installation of these buoys.

CDF is responsible for the scientific and monitoring parts of the project at this stage. In close collaboration with GNP, INOCAR and CI, we have done the baseline study of the 10 sites where the buoys are to be installed. This work has made it possible for us to establish the current status of the seabeds and identify the indicators that will serve as a reference to follow their recovery after anchors are no longer being used. To carry this out, we have trained and directed a scientific monitoring team in which divers from GNP and INOCAR have taken part. These two institutions also contributed by making their vessels and crews available. CI put up the funds necessary to carry out the monitoring work and analyses of results.

Thanks to the Zero Anchors initiative and this institutional collaboration, we now have the chance to recover and conserve the good health of the seabeds in the GMR.

The road to sustainable fisheries in Galapagos

By Anna Schuhbauer

Date	Time	Lat	Long	Dart Tag No.	Depth (m)	TL (cm)	Comments
28 Jun 2011	9:15	-0.52707	-90.51729	217	25	40.5	stomach wa
	10:50	-0.52787	-90.51928	206	24.5	36.5	a bit p
	10:53			212	24.5	42	P=5836
	11:35	-0.52800	-90.51701	205	24.0	52.5	10-1015
29 Jun 2011	08:48	-0.54367	-90.53231	215	23.0	56	10-1011
				219	25.0	51	10-1017
				218	25.0	45	107
	09:15	-0.54415	-90.53218	201	24.0	53	107
	10:10	-0.52782	-90.51873	240	23	57.5	107
	12:00	-0.50945	-90.46189	209	23.5	43.5	107
	12:05			208	20	52.5	107
12:30	-0.50850	-90.46330	210				
30 Jun 2011							

The Galapagos Marine Reserve (GMR) is a sanctuary for marine life in the Pacific Ocean, 1000 km from the continent. Many fish that inhabit the open ocean come here to find food and shelter. Where they come from and where they go is still not clear, but we are quite certain that many of them migrate from far away to enjoy the rich food supply the Galapagos archipelago provides.

The ecological impact of the 300-400 active artisanal fishermen in Galapagos is very limited, especially when compared to other fisheries in the world. Galapagos however, is special, and fish populations have already been reduced by being fished outside the marine reserve or from high fishing pressure before the Reserve was declared in 1998. Conservation zones along the coastlines provide protection



for coastal fish such as the endemic Galapagos Grouper (*Mycteorperca olfax*), but we don't know if there are enough of these zones to protect their populations and if the fish stay in them. Fish populations need to be monitored to manage their fisheries and ensure the long-term viability of our precious marine resources. How do we achieve this?

All our fisheries projects are coordinated with the National Park of Galapagos and we collaborate with expert scientists from abroad such as the University of Hawaii, UC Davis (CA) and the ZMT (Bremen, Germany). Our current research focuses on the Galapagos Grouper (*Mycteorperca olfax*), a coastal species, and Wahoo (*Acanthocybium solandri*); a species that inhabits the open ocean

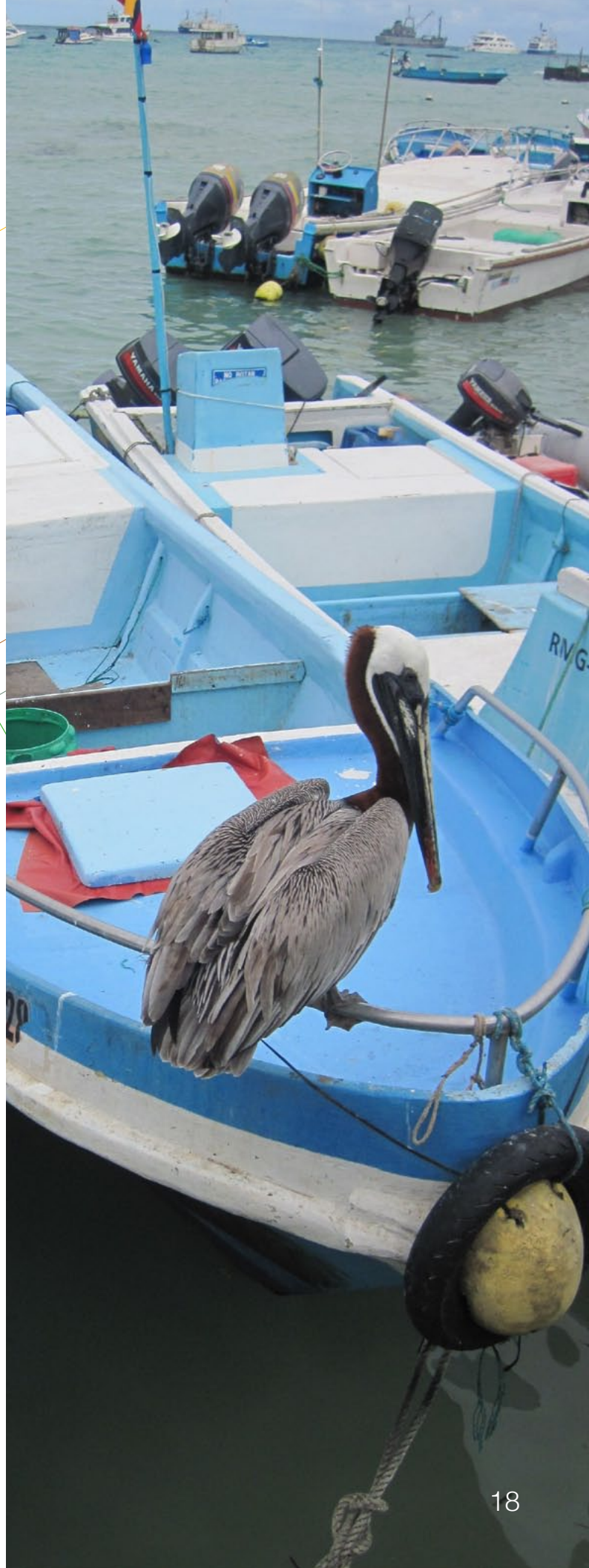
The cornerstone for a sustainable fisheries management is longterm monitoring of catches and the collection of biological data.

Research on movement of fish and other marine animals such as sharks and turtles is important for the design and evaluation of conservation zones.

and is one of the fastest fish world-wide. Both species are commercially very important for the Galapagos fishing sector. Therefore we observe their catch daily at the quay in Puerto Ayora, and record their weight and length. Sometimes our volunteers, students and junior staff have to fight with the pelicans and sea lions over the fish to collect samples of head, gonads or liver for analysis in the lab. The gonad samples are used to assess maturity stage and fecundity, which helps us to know at which size those species reach maturity and what their main reproductive season is. It is very important that fish are only caught after they had the chance to spawn at least once in their life before landing in a frying pan.

Minimum length, length of fishing season, and catch limits are the three most important regulations for a fishery, but to find the correct measures, information needs to be collected for several years. All members of our fisheries team rotate time on board with fishermen to observe fishing sites, catch rates and also by-catch. The sea can be rough and the little blue fiberglass skiffs are not very comfortable, but it is always an adventure and a very important part of our work. Most fishermen are very co-operative, but it took time to gain their trust.

Our projects also include a large part of fisheries independent research. For this we rent out a fishing vessel with all its gear and two fishermen to go out and tag fish at certain sites. We want to find out the movements of the fish. Some of the Groupers we tagged were re-caught 6 months later at the same site and now we know not only that they haven't moved much (referred to as high site fidelity), but also how fast they grow. We are also tracking the fish using acoustic telemetry: We go diving to deploy hydrophones (acoustic receivers) which then record signals of fish we have tagged with little transmitters. These transmitters send signals to the hydrophone which records them and are recovered after 6 months so we can download the information of which fish has swam past the hydrophone and when. We see patterns of their movement

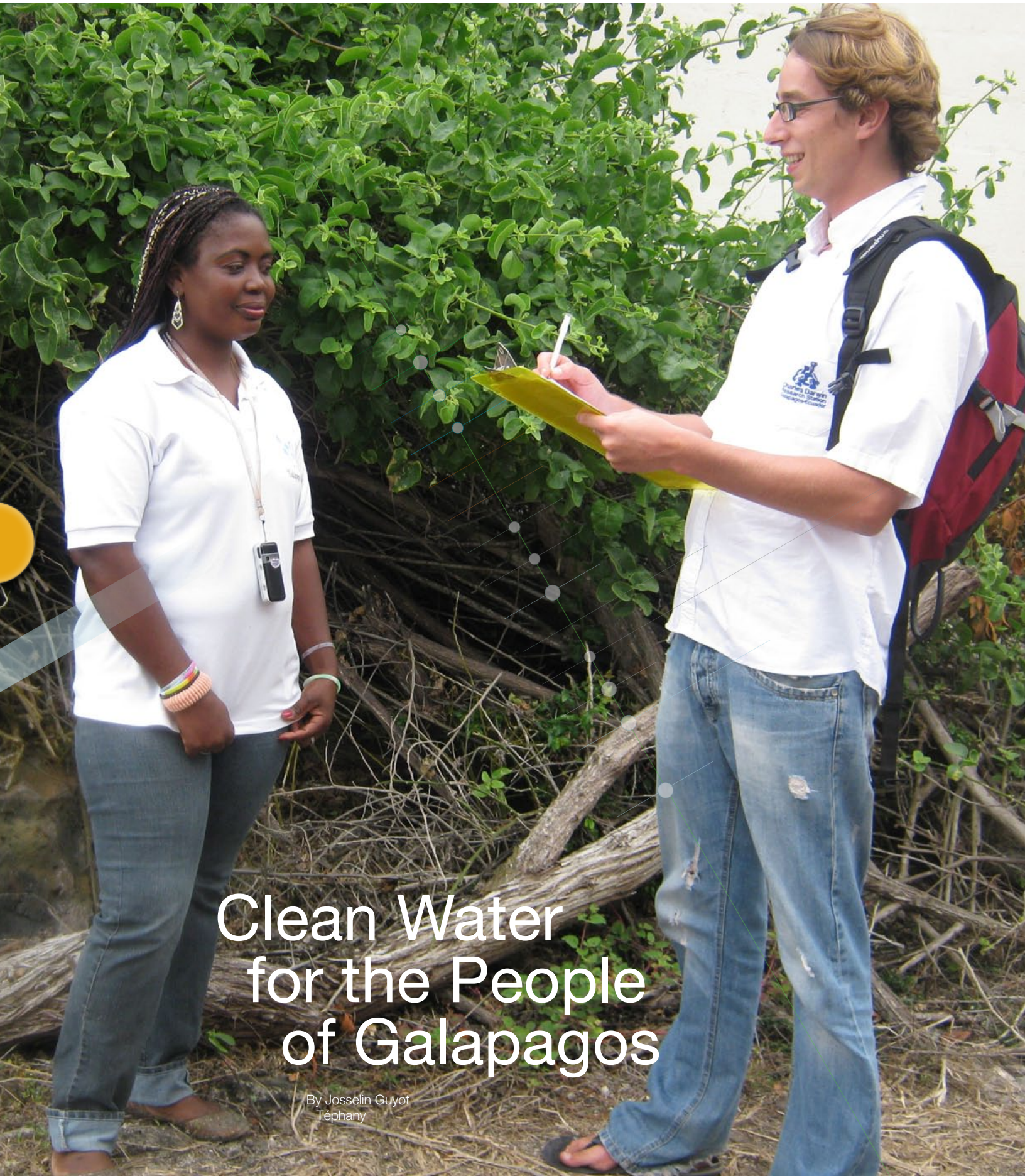


and together with a maturity study and underwater surveys we will gain a better picture of their life cycle. Research on movement and migration is essential to be able to protect marine animals. The same type of research is also being carried out with sharks and we intend to include more and more species (e.g. sea turtles) to broaden our picture of what is happening under water in the GMR.

All the information that we gather is presented to the participatory management board, providing them with a scientific basis for their decisions to sustainably manage the future of the Galapagos marine resources. We also distribute information (for example flyers and posters) to the local fishermen to inform them about the results of our work. It is also important for fisheries management that information is distributed to the local community, so the consumers can make informed decisions about which marine resources they choose to eat.



More information needs to be distributed to the community so consumers can make better choices about which seafood they eat.



Clean Water for the People of Galapagos

By Josselin Guyot
Téphany

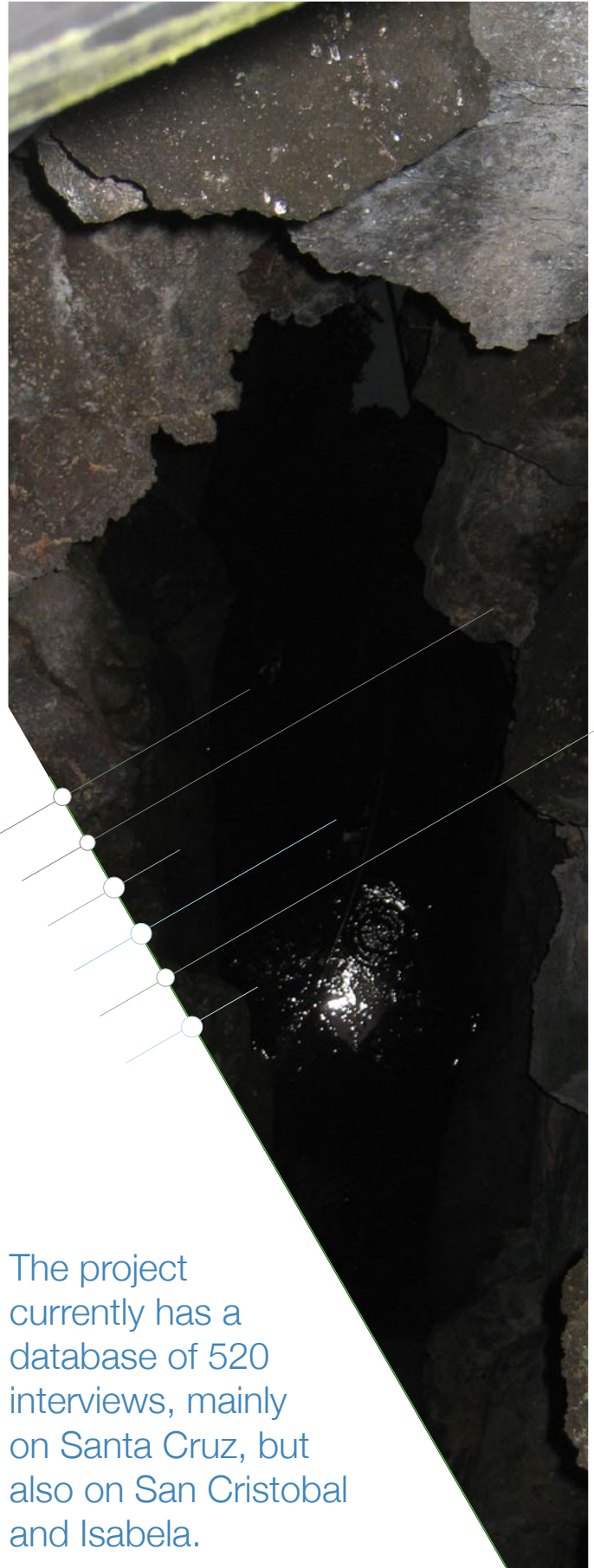
Fresh water, which is essential to human life, is a scarce resource in Galapagos. Until very recently, the human presence in the islands was limited to small settlements near the few existing gorges, pools or other natural sources of water. Today, the inhabitants of the islands receive water to their homes thanks to the implementation of supply systems of brackish water – or fresh water, in the case of San Cristobal – that pump water from underground. However, the current scenario of rapid population growth and influx of tourism has produced complex problems that are difficult to solve: water wastage, contamination of the basal aquifer from which water is pumped to the grid, water-related illnesses, disorder in water resource management, and so forth.

In 2010, the Charles Darwin Foundation (CDF) Social Sciences area began to work on the issue of water for human use along with the Galapagos Islands Integrated Water Studies (GIIWS) program. So far, three population surveys have been conducted as well as interviews with the key players in island water management.

To understand the complexity of the challenges involved, it is necessary to call into play various fields of science, including hydrogeology, microbiology, economics, sociology, and anthropology. Nevertheless, the geographic focus allows an adequate approach to an overall study of water resources. In the first place, the water consumption cycle –that is, the supply chain, use– and wastewater production must be associated with the natural water cycle so as to identify the practices that cause environmental impacts on island ecosystems and health impacts in the community. Then, it is necessary to determine how access and water quality conditions influence water-use practices and perception of the natural and social setting. Finally, spatial analysis of the circumstances associated with the water cycle on the islands enables drafting suitable management plans.

Despite having different hydrogeological conditions, the three most populated islands of the archipelago evidence comparable phenomena. Rapid growth of water demand (both in volume and in spatial coverage) is greater than the technical capacity of the municipalities to offer good water service to the urban centers.

In the highland areas of the islands, traditional means of water supply by rainwater, catchment of fresh water in gorges or from natural sources no longer covers the needs



The project currently has a database of 520 interviews, mainly on Santa Cruz, but also on San Cristobal and Isabela.



of farmers, who become dependent on brackish water bought from tankers that bring it up from low-lying areas. Moreover, there is no wastewater treatment system adapted to the island environment. This causes massive bacteriological contamination of water resources, which is exacerbated by the debilities of the municipal water-pipe systems and, above all, by home-based storage systems. Thus, the relationship between the inhabitants and water resources is characterized by poor practices such as water wastage or misuse based on a mistaken perception of water management (brackish and/or contaminated water) and the supply system.

The CDF Social Sciences area has been working with the Galapagos Islands Integrated Water Studies (GIWS) program on solutions to improve the quality of water for human use.

Study of the population-water resource relationship on each island affords a clear understanding of the root of the unsustainability of the current water-use and supply model and seeks to put forward more suitable practices for island environments.



Faced with such a challenge, CDF scientists have been working with local authorities (municipalities, Galapagos Governing Council, Galapagos National Park Service) and national agencies (MIDU-VI, SENAGUA) to improve access and water quality conditions. Part of the project is promoting sustainable and viable practices like rainwater harvesting, household reuse and implementation of consumption reduction systems. Additionally, campaigns have been conducted in the Santa Cruz community to encourage water conservation and to inform on how to improve water storage practices to prevent diseases. Water belongs to everyone and is everyone's concern!

Floreana: Everything in Its Place, Recycle Waste!

Awareness Program
to Bolster Floreana Island's Solid
Waste Management System

By Cristina Georgii and María Fernanda Arce



When you arrive on Floreana you encounter recycling stations, a sign that the island has a solid waste management system. A petrel, the bird chosen as the system's mascot, informs tourists and the population at large how to properly sort recyclable and non-recyclable trash into their respective bins. With a bit more attention, you see messages from the children of Floreana next to the stations, asking that we all take care of their home. These are some of the results of an Education for Sustainable Development program that the Charles Darwin Foundation has carried out on the island.



Joining forces to achieve goals

Technical support to the autonomous municipal and parish governments in the area of education for sustainability has been a strategic priority of CDF's Education for Sustainable Development Program since 2009, and the Floreana Parish Government has been receiving such support since September 2010. CDF teamed up with the Galapagos Ecuador Foundation and the Floreana Parish Government to develop an environmental awareness program to reinforce the solid waste management system on the island as part of efforts toward developing a sustainable society.

The program's goal is to develop community participation and shared responsibility in seeking solutions to enhance the quality of life of all the island's inhabitants. It implements strategies to strengthen environmental awareness regarding the problem of waste production and support the parish government's Solid Waste Management System.

From science to fun

To learn the actual status of solid waste management on Floreana and devise educational strategies, the project began with a short study that enabled a more detailed understanding of the workings of Floreana's recycling system and helped to determine the community's needs and interests in this respect.

This investigation facilitated identification of the system's technical weaknesses and subsequently served as a basis for measures the parish government is taking in cooperation with other institutions. Furthermore, a need was seen to fortify the recycling system through educational campaigns directed at the local and transient populations.

With all these inputs, we designed a series of activities targeted at different groups: local students and school teachers, restaurant owners and employees, the tourist population and the local community at large.

Working through various methods, including informative workshops, field trips, group discussions, puppet shows and children's projects, the entire Floreana community got involved and assumed responsibility for seeking solutions.



Measurable and visible results

To aid the educational process and encourage community participation, the following lines of action were implemented at the non-formal education level: creation of a graphic image (slogan, logotype and mascot) based on community input, puppetry workshops for children and youth during school vacation, and information and training workshops for teachers, parents and local businesses. Moreover, we have complemented these activities with the production of educational and informative materials developed jointly with the Floreana community for both the local and transient populations.

A commitment by all: Floreana's children, youth and adults participate in providing solutions for their environmental problems

The CDF education program's conceptual approach is oriented toward developing a comprehensive understanding of solid waste issues and management so that the community can undertake responsibility for finding solutions. The educational component has thus proven to be a necessary tool complementing the technical actions of the island's parish government to improve its solid waste collection and treatment service.







Financial Report

The Financial Statements of the Charles Darwin Foundation for the year ended December 31, 2010, were audited by the independent international auditing firm BDO, which has stated that said financial statements reasonably present, in all material respects, the financial position of the Foundation at that date, the results of its operations, its Equity and its Cash Flow, in conformity with the International Financial Reporting Standards.

Revenue

Revenue for 2010 amounted to US\$ 3,635,632, an 18% decrease compared to revenue for 2009, which was US\$ 4,415,599.

The International Community continues to be the mainstay of our programs and primary support for the fulfillment of our goals.

Revenue from Government Organizations dropped by 66%, largely because the fishery and sea turtle monitoring agreement with the GNP, which was signed in 2009, was not renewed in 2010.

Similarly, revenue from the FOGOs fell 45% in comparison with 2009.

Revenue from Nongovernmental Organizations, on the other hand, grew by 100%, due to contributions from new donors such as the Prince of Monaco Foundation and the Offield Family Foundation.

Expenditures

Revenue received in 2010 went to fund 54% of the Research, Technical Assistance, and Information programs carried out in fulfillment of the CDF mission.

Expenses were targeted to supporting research, monitoring, and species-control activities in the archipelago, establishing an aggressive strategy in the area of education for sustainability and providing continuing advice and support to partner institutions in Galapagos conservation. A major recurring expense was ongoing investment in the scholarship and volunteer program, which gives priority to the local community and focuses on capacity building for local environmental conservation.

Administrative expenses in 2010 amounted to 33% of total expenditures. Emphasis was given to maintenance and improvement of buildings and facilities, physical safety and strengthening of institutional relations, which was a major expense item.

Charles Darwin Foundation for the Galapagos Islands (AISBL) Balance Sheet (in US dollars)

Years ended on December 31		2010	2009
Assets			
Non-current assets:			
Property, equipment, vehicles, and furniture and fixtures	(Note A)	1,372,251	391,899
Trust fund		32,532	22,848
Total non-current assets		1'404,783	414,747
Current assets:			
Stock on hand	(Note B)	88,897	44,908
Other current accounts receivable	(Note C)	414,394	276,604
Current income tax receivable	(Note D)	124,657	104,833
Investments held to maturity	(Note E)	35,392	484,409
Cash	(Note F)	254,996	337,527
Total current assets		918,336	1'248,281
Total assets		2'323,119	1'663,028
Net worth and liabilities:			
Capital fund	(Note G)	479,595	479,595
Restricted assets	(Note H)	1'588,886	588,303
Capital reserve	(Note I)	(1'059,838)	(1'059,838)
Accumulated surplus	(Note J)	200,912	950,040
Total net worth		1'209,555	958,100
Non-current liabilities:			
Non-current provisions for employee benefits	(Note K)	402,884	320,743
Current liabilities:			
Current provisions for employee benefits	(Note L)	99,285	30,208
Accrued expenses payable		10,412	-
Trade accounts payable and other accounts payable	(Note M)	590,416	344,518
Current income and sales tax payable	(Note N)	10,522	9,459
Total current liabilities		710,680	384,185
Total liabilities		1'113,564	704,928
Total net worth and liabilities		2'323,119	1'663,028

Charles Darwin Foundation for the Galapagos Islands (AISBL) Statement of Changes in Net Worth (in US dollars)

Years ended on December 31	2010	2009
Capital fund		
Starting and closing balance	479,595	479,595
Restricted assets		
Starting balance	588,303	588,303
Adjustment for reassessment of fixed assets		-
Starting and closing balance	(1'059,838)	588,303
Capital reserve		
Starting and closing balance	682,678	(1'059,838)
Accumulated surplus		
Starting balance	950,040	682,678
Adjustment effect employer retirement and severance pay previous years	(38,700)	(38,509)
Adjustment for write-off of accounts receivable previous years	-	(15,797)
Net deficit / surplus	(710,428)	321,668
Closing balance	200,912	950,040
Foundation's total net worth	1'209,555	958,100

Charles Darwin Foundation for the Galapagos Islands Cash Flow Statement (in US dollars)

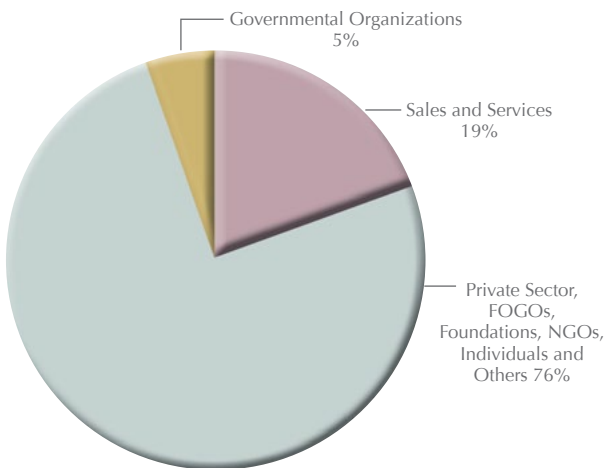
Years ended on December 31	2010	2009
Cash flows from operating activities:		
Cash received from donors and for services rendered	3'088,070	3'818,032
Cash received from sale of assets	468,853	462,325
Cash paid out to suppliers, projects and employees	(4'055,756)	(3,816,660)
Interest received	6,109	8,332
Other income, net	72,599	128,817
Net cash provided (used) by operating activities	(420,125)	600,846
Cash flows from investment activities:		
Decrease (increase) in investments held to maturity	449,017	(399,980)
Payment for purchases of property, equipment, vehicles, and furniture and fixtures	(63,590)	-
Cash paid out for trust fund	(9,685)	(19,956)
Net cash provided (used) by investment activities	375,742	(419,936)
Cash flows from financing activities:		
Payment of non-current employee benefit provisions	(38,148)	(56,072)
Net cash used in financing activities	(38,148)	(56,072)
Net decrease (increase) in cash	(82,531)	124,838
Cash at the start of the year	337,527	212,689
Cash at the end of the year	254,996	337,527



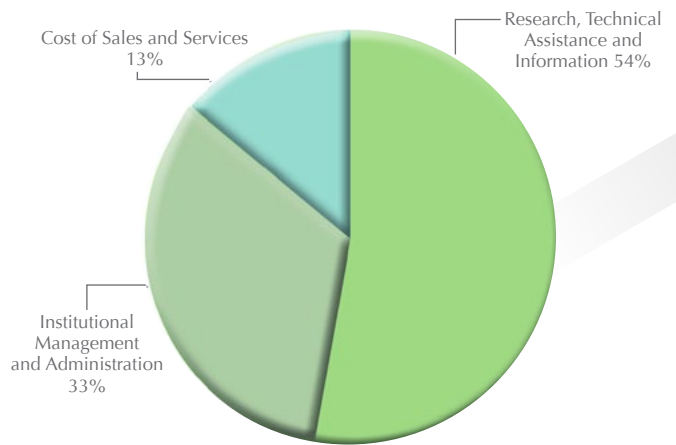
REVENUE	2010	2009
Private Sector, FOGOs, Foundations, NGOs, Individuals and Others	2,777,680	3,201,185
Government Organizations	167,733	489,234
Sales and Services	690,219	725,180
Total Revenue	3,635,632	4,415,599

EXPENDITURES	2010	2009
Research, Technical Assistance and Information	2,284,074	2,416,406
Institutional Management and Administration	1,425,690	1,096,959
Cost of Sales and Services	552,701	478,197
Total Expenditures	4,262,465	3,991,562
Depreciation	83,595	102,368

REVENUE



EXPENDITURES



Donors 2010

Galapagos is world renowned as a storehouse of unique terrestrial and marine biological diversity and a natural laboratory for biological evolution and speciation. Galapagos also faces numerous challenges linked to economic and tourism growth, introduced species, climatic change, and a growing human population which requires food, services, and other amenities. Through its unique agreement with the Government of Ecuador, CDF provides technical advice to Galapagos stakeholders and especially to the Galapagos National Park Service helping Galapagos to remain one of the most pristine ecosystems left on our planet. To do this, CDF depends on the generosity of individuals and organizations and it is the trust and ongoing commitment of our supporters that enables our legacy to endure.

We whole-heartedly thank the supporters who made our work possible in 2010.

Corporations

\$250,000 - \$999,999	International Watch Company, Schaffhausen
\$10,000 - \$49,999	BESS Forest Club (E) Keidanren Nature Conservation Fund
\$1,000 - \$9,999	OMAS SrL Discovery Networks

Foundations/ Non-Governmental Organizations

\$250,000 - \$499,999	The Leona M. and Harry B. Helmsley Charitable Trust
\$50,000- \$99,999	Offield Family Foundation (B) Prince Albert II of Monaco Foundation
\$10,000 - \$49,999	Conservation International Conservation International in Ecuador WWF Galapagos
\$5,000 - \$9,999	Erwin-Warth Stiftung (C) Cameron Foundation (B)
\$1,000 - \$4,999	Stanley Smith Horticultural Trust, UK (A)

Government, Bilateral and Multilaterals

\$5,000 - \$9,999	British Embassy, Quito, Ecuador
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Travel Partners

\$500,00 - \$999,999	Lindblad/National Geographic Fund
\$10,000 - \$49,999	International Galapagos Tour Operators Association(B)
\$1,000 - \$9,999	Steppes Discovery The Intrepid Foundation Galapagos Travel

Individuals

\$10,000 - \$49,999	Miss Moore (legacy gift) Kenneth and Diane Saladin (B) Michael Klett (C)
\$1,000 - \$9,999	Mark & Janet Eckhouse Anonymous Jay Venkatesan Susan Meek Murray Kilgour (B) Jeanne Haselkorn
\$500 - \$999	Joseph M. and Marie Field Sheryl Ann Dreyer Swen Lorenz Stefan Reichenberger Rob Clack Herbert Laing Diane Wood



Friends of Galapagos Organizations (FOGOs)

CDF is privileged to count on the commitment of the international Friends of Galapagos Organizations (FOGOs) in various countries which partner with the CDF to raise both funds and awareness in support of Galapagos conservation. The FOGO's are dedicated independent organizations whose sole aim is the conservation of Galapagos. FOGO's work within their respective countries to develop long-term relationships with donors (individuals, foundations, governments, and others) and to campaign for the conservation of Galapagos. FOGO's often play a key role in obtaining and administering specific grants included in the CDF donor list included separately in this annual report.

We extend our sincere appreciation to these valuable partners.

Friends of Galapagos Organizations

\$500,000 - \$999,000	<ul style="list-style-type: none">Galapagos Conservancy, USA
\$100,000 - \$499,999	<ul style="list-style-type: none">Frankfurt Zoological Society - Help for Threatened WildlifeGalapagos Conservation Trust, UK
\$10,000 - \$49,999	<ul style="list-style-type: none">Charles Darwin Foundation of CanadaSwiss Friends of GalapagosFriends of Galapagos Netherlands
\$1,000 - \$9,999	<ul style="list-style-type: none">The Japanese Association for Galapagos (JAGA)The Galapagos Darwin Trust (Luxembourg)

Learn More

Find out more about the wildlife and ecosystems of Galapagos and the issues facing them. Visit our website at www.darwinfoundation.org

Support the Work of the Charles Darwin Foundation

The CDF is the only organization offering onsite research, knowledge, information and technical assistance to ensure the conservation of Galapagos ecosystems and biodiversity. We cannot do it without you. Please join us today by making a gift and helping to ensure that we help bring Galapagos, unique in the entire world, closer to a sustainable future.

Please visit our website at

www.darwinfoundation.org

where you will find numerous ways to help Galapagos today.

Donate using Paypal. CDF has partnered with PayPal to allow you to securely support our work from anywhere in the world, in any currency.

Help raise funds for CDF by shopping at **Amazon.com**. Amazon will donate 4% on each item you purchase via our website.

For more information on supporting our work, please contact our development department at cdrs@fcdarwin.org.ec

General Assembly Members

The General Assembly is the governing body of the CDF and reflects its international character. Members include scientists, philanthropists, Ecuadorian Government officials, and others dedicated to the CDF's mission. The Assembly sets policy, issues regulations, elects the Board of Directors, and approves the operating plan and budget, as well as manages other important matters. The president of the CDF Board of Directors presides over the General Assembly at its annual meeting in Ecuador.

Board

Pablo Iturralde – Presidente
Peter Kramer – Vice President
Barbara West – Treasurer
Ministry of Foreign Affairs
Dennis Geist
Randal Keynes
Luis Maldonado Robles
Burr Heneman

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Katherine Coolidge Lastavica
Sixto Duran-Ballén
Irenaeus Eibl-Eibesfeldt
Jacinto Gordillo
Peter Grant
Rosemary Grant
Cleveland Hickman Jr.
Oswaldo Hurtado Larrea
Syuzo Itow
John Lastavica
Sven-Olof Lindblad
HRH The Grand Duke of Luxembourg
Plutarco Naranjo
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Robert Bensted-Smith
Rodrigo Bustamante
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Lynn Fowler de Abad
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Toni Darton (GCT)
Edwin Naula (DPNG))
Dennis Geist
Elena Gualanacanay
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Sylvia Harcourt-Carrasco
Juan Holguin
Macarena Iturralde

Pablo Iturralde
Michael Jackson
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Andrew Laurie
Craig MacFarland
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Unesco (Mauricio Castillo Mena)
Carlos Valle
Tjitte de Vries
Barbara West

Active Members

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Laura Arcos
Alfredo Arévalo Tello M.Sc.
Léon Baert
David Balfour
Bernardo Beate
Linda Cayot
Segundo Coello
Conesup
Guy Coppois
Felipe Cruz
Sarah Darwin
Tui De Roy
Dolores Gangotena de Diez
Fernando Espinosa
Joseph P. Flanagan
Emma Flor de Tejada
Frankfurt Zoological Society
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Oscar Gordillo
Jack Stein Grove
Minard (Pete) Hall
Freddi Herrera
Hendrik Hoeck

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Galapagos Governing Council
National Fishery Institute
Naval Oceanographic Institute
IRD
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Friedemann Koester
Bernard Landry
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Maria Lopez
Swen Lorenz,
Kazumi Matsuoka
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Ministry of Agriculture and Livestock
Ministry of Tourism
Museum of Natural Sciences
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Eugenia del Pino
Duncan Porter
Guenther Reck
Carmen Rivadeneira de Moncayo
José Rodríguez Rojas
Marcelo Santos Vera
Juan Schiess
Roque Sevilla
Senacyt
Smithsonian Institution
Heidi Snell BFA
Howard Snell
Jennifer Stone
Luis Suarez
Jim Thorsell
Fritz Trillmich
Roberto Troya
Hernán Vargas
Vice Presidency of Ecuador
José L. Villa
Pádraig Whelan
Martin Wikelski
World Conservation Union (IUCN)
WWF – Programa Galápagos



We Are CDF



Staff Santa Cruz Island

The efforts of the CDF depend on a hardworking and dedicated group of people. More than 70% of CDF staff is permanent resident in Galapagos and nearly 90% are Ecuadorian.

David Acuña
Anna Alonso
Andrea Andrade
Lorena Balon
Stuart Banks
Jorge Baque
Juan Barreno
Lenyn Betancourt
Karola Buitron
Frank Bungartz
Goberth Cabrera
Fredy Cabrera
Aide Cadena
Sandy Calderon
Roslyn Cameron
Wilson Carrión
Javier Carrión
Nuria Cedillo
Kleber Chango
Freda Chapman
Martha Chica
Sonia Cisneros
Samuel Clarke
Emmanuel Cleder
Paulina Couenberg
Felipe Cruz
David Cruz
Adelita Cruz
Francesca Cunningham
Julio Delgado
Olivier Devineau
Pilar Díaz

Elena Farías
Luis Fernandez
Segundo Gaona
Mark Gardener
Pamela Gavilanes
Cristina Georgii
Maira Gómez
Germania Granda
Christophe Grenier
Noemi Guerra
José Guerrero
Anne Guezou
Josselin Guyot
Juan Carlos Guzmán
Jorge Herrera
Henri Herrera
Patricia Jaramillo
Juan Carlos Jaya
José Jiménez
Freddi Jiménez
Gustavo Jiménez
Volker Koch
Angela Kuhn
Sandra Landazuri
Alizon Llerena
Yessenia Llerena
Gabriel López
Johanna Macias
Cinthia Manzano
Andrea Marin
Lady Márquez
María Teresa Martínez

Rodolfo Martínez
Luis Molina
Carlos Montenegro
Henry Mora
Simón Mora
Jerson Moreno
Fernando Moreno
Francisco Moreno
José Naula
Marisol Ochoa
Mario Daniel Olaya
Alex Ontaneda
Daniel Orellana
Jaime David Ortiz
Luis Catedral
Mariela Padilla
Roberto Palacios
Macarena Parra
Marco Paz
Raúl Peñafiel
César Peñaherrera
Roberto Pepolas
Mercedes Pincay
Galo Quezada
Enrique Ramos
Solanda Rea
Bolivia Renteria
Patricia Robayo
Angélica Rodríguez
Bolívar Romero
María Cristina Ron
Diego Ruiz



Danny Ruiz
Elmer Salazar
José Sánchez
Mayra Sánchez
Betzy Sánchez
Alfredo Santillan
Anna Schuhbauer
Mirian Silva
Saskia Silva
Sandra Tapia

Patricia Tapia
Mónica Tigse
Natalia Tirado
Oliver Tisalema
Janina Valarezo
Carlos Vega
Gabriela Verdesoto
Matthias Wolff
Frauke Ziemmeck

Staff San Cristobal Island

Scholars

The CDF awards scholarships to exceptional students in Galapagos and provides financial aid and other forms of support to promising Ecuadorian postgraduate students in the fields of conservation, science and education.

Galapagos Scholars

Johanna Carrión, Carolina Carrión, Juliana Cevallos, Priscilla Espin, Sandra García, Vanessa Jalka, Daniela López, Diana Loyola, Edgar Masaquiza, Grace Pesantes, Felix Reyes, Yanella Tutivén, Jeisser Vernaza

National Thesis Scholars

Susana Chamorro, Claudio Crespo.

Galapagos Thesis Scholars

Jorge Peralvo, Jennifer Suárez.



Volunteers

National and international volunteer students and professionals benefit from a hands-on conservation experience with the CDF. Their considerable expertise and dedication contributes to building the Foundation's capacity to effectively respond to the challenges facing Galapagos.

International Volunteers

Sofía Alderete, Anna Alonso, Alexander Baker, Kaitlyn Beaty, Kelsey Bradley, Antoni Camps, María Casafont, Laureline Chabran, Ana María Chunga, Samuel Clarke, Jonathas Da Silva, Tracey Dearlove, Andrew Di Salvo, Rebecca Ditzgen, Roxanne Duncan, Deborah Freund, Carolina García, Héctor Huespe, Tatiana Iretskaya, Susan Jordan, Jessie Liu, Graeme Loh, Phillip Martin, Susan Maturin, Katharine McGowan, Luciana Medeiros, Marcela Mella, David Mondo, Tony Nahrung, Juan Pedrianes, Laura Quinn, Yasmina Rodríguez, Sébastien Romero, Alejandro Sánchez, Adam Schneider, Vera Schuhbauer, Ashley Sheridan, Diana Silva, Angela Smith, Karine Steigleder, Sally Taylor, Fabio Trabucchi, Sebastián Tuja, Liesbeth Vervloet, Catherine Wigglesworth, Dean Wills, Mary Witoshynsky, Julio Zemor

Local Volunteers

Juan Barreno, Denisse Barrera, Kenny Bermúdez, Rosita Calderón, Itziar Chapa, Karen Constante, Diana Flores, Hector Ganan, Tania German, Isabela Green, Jonathan Guillén, José Herrera, Solanye Jordán, Erika Loor,

Keylla López, Judith Moreira, Sandra Niveló, Byron Pilataxi, Nery Plúa, Amanda Ramos, Mónica Reyes, Gaby Serrano, Oscar Tipán, Ernesto Vaca, Cristian Villarroel, Byron Yucailla.

National Volunteers

David Anchundia, Martina Avilés, Ana Baquero, Nicolás Borja, Estefanía Bravo, Stephanie Callejas, Lucía Chávez, Edgar Chiquito, Maritza Copo, Luis Cruz, Nicole Galindo, Samantha Garrido, Andrés Hervas, Inti Keith, Paola Lahuatte, Alejandro Mielles, Layz Ochoa, Ana María Ortega, Pablo Palacios, Mauricio Quimí, Gustavo Redín, Jorge Rentería, Gabriela Robles, Alegría Romo Leroux, Soledad Sarzosa, María Terán, Carlos Terán, Jorge Vera, Luis Villagómez, Diana Villota, María Viteri, Alba Yáñez.

National FAE Volunteers

Eduardo Galarza, Carlos Guanotasig, Francisco Hidalgo, Wilmer Ortega, Edwin Sánchez, Jorge Zabala.



Publications

PEER REVIEWED

2010

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2011

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List of Visiting and Adjunct Scientists



Visiting Scientists

Anderson David (Wake Forest University): Galapagos Seabird Monitoring Program. Scott Freeman, Sarah Bastarache, Emily Tompkins, Felipe Estela, Natalia Ocampo, Jacqueline Grace, Eric Riddell, David Anchundia, Kevin Anderson.

Balbas Andrea & Clark Peter (Oregon State University): Testing variations in cosmogenic-nuclide paleo-production rates through the Matuyama-Brunhes magnetic reversal from Isla Floreana. Kevin Konrad, Marco Almeida.

Chadwick William (Oregon State University): Monitoring Sierra Negra Volcano. Brendan Hodge, Mark Piersol, Miriam Paredes.

Feingold Joshua (Nova Southeastern University): El Niño-impacted corals in the Galapagos Islands: continued monitoring of affected populations 2011. Javier Carrion

Geist Dennis & Ebinger Cynthia (University of Idaho - University of Rochester): Magma Migration under the Fernandina and Sierra Negra Volcanos. Branden Christensen, Dustin Cote, Marco Bagnardi, Alex Steele, Nathaniel Lindsey, Manahloh Belachew, Ben Ellis

Grant Peter (Princeton University): Ecology of Darwin's Finch Populations on Daphne. Rosemary Grant.

Groves Richard (CSIRO – Plant Industry Canberra): Ecological factors associated with different patterns of plant invasion on Galapagos islands.

Kitayama Kanehiro (Kyoto University): Ecology and climate of the dry highland vegetation zone on high volcanic mountains in the Galapagos Islands. Akio Maruyama, Naoki Okada, Kuraji Koichiro, Nobuaki Tanaka, Alex Rubio.

Kurata Kaoruko (Goto Scholarship Society): Microevolution of endemic plants in Galapagos Islands - The genetic diversity for conservation. Shigetaka Yakabe, Tomoko Kurata, Shigeo Kurata, Adela Zapata.

Miller Suzanne (Amherst College, Massachusetts): Lycium minimum (*Solanaceae*) and endemic Galapagos shrub: Phylogeography of a widespread species and characterization of its sexual system. Rachel Levin, Adela Zapata.

Payne Brianna (Andrews University): Using mathematical models to predict haulout patterns of marine iguanas (*Amblyrhynchus cristatus*). James Hayward, Libby Megna, Susana Velastegui.

Podos Jeffrey (University of Massachusetts): Morphology and vocal evolution of Darwin's finches. Luis De Leon Reyna, Diana Sharpe, Jaime Chaves, Joost Raeymaekers, Neeltje Boogert, Jeremy Schwarzentruher.

Saiz-Lopez Alfonso (Laboratory of Atmospheric and Climate Science - CIAC): Climate and halogen reactivity tropical experiments – CHARLEX. Juan Carlos Gomez, Anoop Sharad Mahajan, Samantha MacDonald, Tim Hay, John Plane, Concepcion Parrondo.

Sequiera Andrea (Wellesley College): Invasion success, genetic diversity and habitat fragmentation in populations of introduced and endemic weevils in the Galapagos Archipelago. Courtney Stepien, Christina Tran, Weixa Guo, Oscar Suing Cocios.

Trillmich Fritz (Bielefeld University - Max Planck Institute for Ornithology): Biology of Galapagos sea lion populations (*Zalophus wollebaeiki* and *Arctocephalus galapagensis*). Kristine Meise, Paolo Piedrahita, Melchior Zimmermann, Oliver Krueger, Erin Kunisch.

Waselkov Katherine (Washington University): Diversification of *Amaranthus* in Galapagos: 2010-2011.

Adjunct Scientists

Blakes Stephen & Wikelski Martin (Max Planck Institute for Ornithology): Ecology of the restoration of the giant tortoise on Santa Cruz, Galapagos. Franz Kummeth, Herman Kummeth, Greg Marshall, Christian Zeigler.

Campbell Karl (Island Conservation, Minnesota University, UC Santa Cruz): Rats. Julia Ponder, Coral Wolf, Aurora Alifano, Madeleine Pott, Lori Rae Mueller, Penelope Fisher, Joseph Flanagan

Friedlander Alan (Hawaii Cooperative Fishery Research Unit): Life history of the Galapagos Grouper (*Mycteroperca offax*), an endemic and commercially important species: implications for fishery and protected marine area management. Paolo Usseglio.

Huyvaert Kathryn (Colorado State University): Conservation biology and population monitoring of the critically endangered waved Albatross. Paul Doherty, Phillip Street.

Jaeger Heinke (Berlin Technical University): Understanding ecological processes for the restoration of highland ecosystems in the inhabited islands.

Luzuriaga Nivia (University of Paris): Adaptive management of endemic species of Galapagos - from monitoring to conservation. Diana Villota.

Patricia Parker (University of Missouri - St. Louis Zoo): 1.) Bird Diseases: a) Transmission dynamics of plasmodium in the Galapagos Archipelago; b) Dispersion patterns of diseases. Marine birds in Galapagos. Jenni Higashguchi, Jane Merkel, Jason Pogacnik, Paul Zwieters, Jose Luis Rivera, Iris Levin, Victoria Suarez, Paula Peña. 2.) Galapagos Hawk Project. Maricruz Jaramillo, Denis Mosquera, Allysine Gillet, Stephanie Sabin, David Anchundia, Jaime Peñafiel, Tjitte De Vries, Gabriela Toscano, Pablo Sanchez, Diego Alarcon, Andres Morabowen.

Ruiz Ballesteros Esteban (GISAP - Social Research and Participative Action Group): Anthropology of Conservation in Galapagos. Miguel Gual, Javier Andrada, Pedro Cantero.

Traveset Anna Maria (University of the Balearic Islands): Mutualistic networks in the Galapagos Islands: direct and indirect impacts of invasive species on threatened plants. Ruben Heleno, Susana Chamorro, Manuel Nogales, Pablo Vargas, Jens Olesen, Conley McMullen, Julia Stutzman, Elena Antolin.

Trueman Amanda (University of Western Australia): Understanding ecological processes for the restoration of highland ecosystems in the inhabited islands.

Violette Sophie (Pierre and Marie Curie University of Paris): Study of hydrological functioning in the Galapagos Islands. Alexandre Pryet, Noemie d'Ozouville, Julien Tournebize, Bernard Vincent, Chaumont Cedric, Marcos Villacis, Jeronimo Fortin, Mathilde Adelinet, Silvia Loaiza, Christian Dominguez, Andres Gonzalez, Josue Fernandez

Wauters Nina (Free University of Brussels): Genetic and ecological aspects of the invasion of the tropical fire ant (*Solenopsis geminata*) in the Galapagos Archipelago. Kaarle Parikka, Denis Fournier.

Witman Jonathan (Brown University): Effects of outcropping and productivity in subtidal rock wall communities. Leslie Howitt, Natalie Hui Ning, Giancarlo Toti.

Wolf Matthias (University of Bremen): Differences in natural succession and food web structure in subtidal benthic communities. Annika Krutwa, Diego Ruiz, Carolin Herbon.

Young Howell Glyn (DURRELL): Mangrove Finch and Floreana Restoration.



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To provide knowledge and assistance, through scientific research and complementary action, to ensure the conservation of the environment and biodiversity in Galapagos.

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