

GALAPAGOS MATTERS

AUTUMN/WINTER 2012



- **Songbirds at Risk**
- **Farewell George**



© Godfrey Merlen

THE ENCHANTED HIGHLANDS 6-9



© Sonya Andonov

14-15 FAREWELL TO LONESOME GEORGE



© Metropolitan Touring

12-13 PROJECT UPDATE



© Katsunori Namikata

Cover shot:

"I took this photo on Isabela in 2010 on the slopes of Sierra Negra. The top of a volcano was wrapped in a thick fog that day and we could not see into the crater. On our way down, this Vermilion Flycatcher suddenly flew into our path to perch on a nearby branch. I forgot my tiredness in an instant." Katsunori Namikata.

- **News in Brief** 4-5
- **The Enchanted Highlands** 6-9
The lush highlands of Galapagos hold many secrets, says **Godfrey Merlen**. Compared to the coastal and arid zones, this magical habitat is rarely visited by humans and yet there is increasing evidence that this unique ecosystem is at risk.
- **Galapagos in the UK** 10-13
All the latest news from the **Galapagos Conservation Trust**, with ideas on how to get involved.
- **Farewell to Lonesome George** 14-15
The death of Lonesome George in June offers an opportunity for reflection. **Galapagos Matters** asks where you were when you heard the sad news.
- **Global Galapagos** 16
Stephen Walsh and Carlos Mena reflect on the importance of change.
- **Islanders** 17
Fausto Llerena looks back on his career at the Galapagos National Park and remembers Lonesome George.
- **Reviews** 18
- **Galapagos Gifts** 19

Contributors



Henry Nicholls is the editor of *Galapagos Matters* and the author

of *Lonesome George: The Life and Loves of a Conservation Icon* (Macmillan, 2006). He is currently writing a new book on Galapagos to be published by Profile Books in 2013.



Godfrey Merlen has lived in Galapagos for more than 40 years. He

has worked for many Galapagos institutions, including the Galapagos National Park and NGOs like the Charles Darwin Foundation and WWF. He is currently working with SICGAL – the quarantine inspectorate – to prevent the arrival of invasive species.



Fausto Llerena works for the Galapagos National Park as a ranger.

He joined the institution in 1971 and developed an intimate relationship with Lonesome George. In Galapagos, he is something of a living legend and the tortoise-breeding centre on Santa Cruz is named in his honour.

Stephen J. Walsh and Carlos F. Mena are geographers at the University of North Carolina in Chapel Hill (UNC), USA. They are co-directors of the Galapagos Science Center on San Cristobal in Galapagos, a joint venture between UNC and the Universidad San Francisco de Quito to promote science and education in the Islands.

© GCT



Our Unique Focus has a Global Relevance

It is with great pleasure and a real sense of honour that I take up the position of Chief Executive of the Galapagos Conservation Trust (GCT). GCT has undertaken vitally important work in the 17 years since its foundation and its on-going focus on conservation of this unique archipelago has never been more important.

The Galapagos Islands, a household name the world over, combine a compelling history of discovery, a world-altering scientific heritage, a complex geographic history at one of the earth's few 'hot spots' and a resultant iconic ecosystem and biodiversity that are exceptional. The Archipelago has also been at the heart of the conservation movement and more recently the sustainable development debate. For all of these reasons and more, being able to help conserve these remarkable islands and their waters for both humans and the native species, now and for future generations, is something we at GCT are deeply committed to.

At a time of ever-increasing pressures, from local population growth, tourism, invasive species, resource extraction and climate change to name but a few, finding the ways and means to further support the conservation of these iconic islands and surrounding waters is a compelling task, and one we must succeed in. We have a great opportunity to make a difference and it is only thanks to our many and varied supporters that we can do so.

I join GCT with an immediate background at the British Antarctic Survey and a prior career in industry. As a scientist by initial training and with an on-

going academic interest in sustainable development, along with the GCT team I aim to channel our diverse experiences of the environmental, scientific, political and commercial worlds to deliver our primary objective: conservation of the Galapagos. AT GCT we have this unique focus but I believe there is global relevance in the work we undertake on your behalf.

We will be celebrating the diverse beauty and breathtaking drama of Galapagos this autumn (p.11) and I invite you to join us. Photographer and conservationist David Plummer has recently returned from a visit to the Islands and will share his experiences and fabulous images in the Galapagos Talk on 24 October at London's Wellcome Collection. On 2 November the *Galapagos* art exhibition opens at The Fruitmarket Gallery in Edinburgh, followed on 29 November by a talk, champagne reception and book signing by our president Andrew Marr on *A History of the World* at London's 195 Piccadilly, the home of BAFTA. As with all of our events, we look forward to reminding those of you who have visited Galapagos just why what we do is so important, as well as inspiring those who are yet to fall under their spell.

I hope you enjoy this issue of *Galapagos Matters*. I would love to receive your feedback at Ian@gct.org on this edition and on any other Galapagos related matters. Thank you for your support to date and I do hope it will continue. I commit that we will use your funding wisely and for the benefit of Galapagos.

Ian Dunn Chief Executive

NEWS

IN BRIEF

LOST TOURIST

A large-scale search and rescue mission tracked down a tourist reported missing on Santa Cruz in June. A party comprising rangers from the Galapagos National Park, a fireman and a policeman located the Chilean Felipe Bravo after he had been lost for five days in the centre of the island. He had managed to survive by extracting water from the fleshy cactus leaves growing in the region.



© A. Davey

LONESOME GEORGE IS DEAD

Lonesome George – the last remaining giant tortoise from Pinta – is dead and his species *Chelonoidis abingdoni* is officially extinct.

It was Lonesome George's long-term keeper, Galapagos National Park (GNP) warden Fausto Llerena, who found him dead in his enclosure at the Charles Darwin Research Station early on 24 June (see interview on p. 17). The following day, a team of vets and scientists carried out a thorough postmortem to preserve key tissues for future research and to determine the cause of death.

George was discovered on Pinta by Hungarian-born snail biologist Joseph Vagvolgyi in December 1971 and recovered

by wardens from the GNP the following year. It was hoped that a female of his species might be found or that he would reproduce with tortoises from a different island, but he died without leaving any offspring. During the 40 years he spent in captivity he became a dependable feature of the Galapagos landscape, much-loved by residents and tourists alike (see feature on pp. 14-15).

It was widely assumed that George was around 100-years-old but if, as is currently suspected, he died of natural causes it could be that he was older. A plaque has been erected on the platform above his enclosure, expressing a commitment to share his conservation message. His remains will be embalmed and go on display at the GNP.



TIRED TYRES

Ecuador's Ministries of Environment and Health have conducted a massive effort to remove discarded tyres from Santa Cruz in an effort to prevent the further spread of the Dengue mosquito *Aedes aegypti*. The rainwater that collects inside these rings provides the perfect breeding ground for the disease-bearing invasive insect. In early August, park rangers began the process of shipping more than 30,000 tyres from the island. This follows a similar initiative on San Cristobal earlier this year.



© Galapagos National Park

SMUGGLED IGUANAS

In early July, Galapagos police arrested a tourist allegedly attempting to smuggle iguanas out of the Archipelago. Routine x-ray imaging at Baltra airport led to an investigation of the German national's luggage and the discovery of four living specimens of the endemic Land Iguana *Conolophous subcristatus*. This species is listed as Vulnerable on the International Union for the Conservation of Nature (IUCN)'s Red List and protected under the Convention on International Trade in Endangered Species (CITES). Following a preliminary hearing, a judge agreed that Dirk Bender should be detained in Galapagos to await trial. According to online reports, Fijian authorities arrested and prosecuted Bender in December last year for attempting to export a gravid female of the critically endangered Fijian Crested Iguana.



© Galapagos National Park

TORTOISE WORKSHOP

A "tortoise summit" held in Puerto Ayora in early July and dedicated to Lonesome George's memory began to map out a detailed plan for the management of each of the remaining tortoise species. "Each species is very important, but most important are the ecosystems," says Washington Tapia, director of conservation and sustainable development at the Galapagos National Park.

The delegates reviewed each of the known tortoise species in turn. From a management perspective, "each island is totally different," says Linda Cayot, science advisor for Galapagos Conservancy and the organiser of the workshop. "Pinzon has rats. Santiago had pigs and goats. Pinta had goats, but only for 20 years. Espanola had goats for probably 100 years," she says. The aim was to synthesise the different perspectives of ecologists, geneticists and conservation managers into a single set of recommendations that will help shape GNP's protection of tortoises over the coming decade.



© Galapagos National Park

EL MIRADOR ON HOLD

All construction at El Mirador, the controversial new development to the north of Puerto Ayora, has come to a standstill. Following a routine inspection, the GNP has begun administrative action against the local government on Santa Cruz over allegations that work has been proceeding without the appropriate environmental licence. It is crucial that the El Mirador site, which contains more than 1,000 plots and will effectively double the size of Puerto Ayora, be developed to the highest possible standards.



The enchanted highlands

By Godfrey Merlen

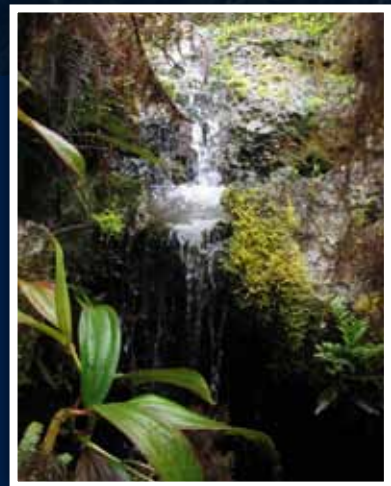
Oceanic volcanic islands have a dreamy look to them and the imagination explodes as the eye darts from the white water rolling onto the shores to the distant highland greenness with its unknown contents.

Galapagos is no different. On Santa Cruz we see the army of cacti fringing the beachhead, seemingly standing guard over the hinterland behind. Our eye roams to the horizon where 25 green-clothed volcanic cones form the central ridge or “Sierra”, the backbone of our volcanic home. Nearer by, silvery trees are marching up the

lesser hills, glittering along the edge of a cliff. Frigatebirds, arching black wings defying the wind, soar as the advanced guard of this rare and eminently curious world.

Tempted by sight and urged by expectation, a journey to the highland ridge is full of danger, thirst and frustration, yet wonder, enchantment and deep reflection are the inescapable rewards. Darwin, in his Victorian garb and boots of leather, would have felt just the same as he clambered over rough, black lava and followed in the steps of tortoise hunters along tight trails marked by stones lodged in the grey-barked trees.

There is one unforgettable memory and lesson as we struggle through



© Godfrey Merlen

the silence of the thorny coastal cactus land into the silvery world of Palo Santo trees, and higher into the lichen-bearing endemic guavas of a Japanese painting. That is to stop and wait, even if parched, sweating and



© Godfrey Merlen

perhaps with bleeding cuts. Within a few moments, the nearby bushes are no longer a menace but an ecosystem of incomparable rarity.

Mockingbirds, million-year residents, settle on branches a foot or so from your face, bright eyes searching out every detail of this new opportunity, pecking on your backpack or grabbing hold of shoelaces as if they were worms. It seems so quiet, but then you hear more fluttering – every beat – of small wings. A Galapagos Flycatcher, another long-term resident, has landed on your hair and is urgently tugging to loosen building material for a nest tucked into an old collapsing tree. Ground Finches, even more ancient settlers, arrive in a shower of differing beak sizes, cracking seeds, digging into the scarce soil, walking over the toes of your boots, for you dare not come here in sandals!

Pushing higher, the wind starts to cool and the once-blue sky is being replaced by an intermittent greyness. The sound of silence is supplemented by a slight whispering of gentle breezes, which start to budge the butterfly-winged leaves of the endemic passion vine clambering up mossy boughs. Moisture adorns the orchids with bright drops and the tight-fitting leaves of *Tillandsia* (related to the pineapple) form little cups of water for a thirsty bird or our own dry throats.

The Galapagos Flycatcher Myiarchus magnirostris is still a common sight across the Archipelago.
© Godfrey Merlen

© Godfrey Merlen



The Galapagos Passionflower Passiflora colinvauxii is a fast-growing endemic vine with boomerang-shaped leaves and small white flowers with a purple centre. Found only on Santa Cruz, the International Union for the Conservation of Nature (IUCN) considers it Vulnerable to extinction.

Now, there is a sight! A brilliant red-breasted bird has landed a few yards away, his black crest flaring as his black eyes pick up on invisible insects. He vanishes but just as you long to see this Vermilion Flycatcher again he is back, a few feet from where you sit. Now he preens and you are caught totally by the contrast of the soft greens of the vegetation and the brilliant colours of his plumage. Quick as a wink he is gone but just a few yards away to a perfect lichen-lined nest tucked amongst the vines and mosses. The female sits silent yet attentive, for short-eared owls patrol these woodlands. Amongst the soft greenness she is safe.

Overhead the crowns of the low trees are growing so close they form a canopy that almost totally fills the sky, lending a softness to the green light. This is the *Scalesia* forest at 2,000 feet, perhaps the most enchanting of Galapagos environments, a place that seems to captivate and hold your mind and sight. The understory of endemic coffee, ferns, orchids and mistletoe, the snails between the moss-covered stones and the birds amongst the daisy-like

The moisture that pools in the tight-fitting leaves of the endemic Tillandsia insularis provides a unique microhabitat.



© Godfrey Merlen

Scalesia flowers is a construction of millions of years, an ecosystem of waifs and strays sculpted to their unique situation.

The sound of small objects falling on the leaves brings you back to the present. A pale bird with a powerful beak is hammering at a branch blanketed in moss, sending a shower of wood chips earthward. For this habitat is a favourite of the Woodpecker Finch, related to those Ground Finches near the coast but, in the absence of true woodpeckers, highly specialised to his forest trade. With a stem of a fern grasped

Continued on page 9



The female Vermilion Flycatcher is not as conspicuous as the more colourful male (overleaf). This species is now very scarce on Santa Cruz and probably already extinct on San Cristobal and Floreana.

© Godfrey Merlen



Invasive threat

The introduction of non-native species is the greatest threat to the songbirds found largely in this highland habitat and to the long-term future of the Archipelago as a whole. Apart from the obvious devastation caused by introduced mammals like rats, pigs and goats, other major threats to native flora and fauna come from invasive plants like raspberry, Cuban cedar, the quinine tree and guava, invertebrates like fire ants, fruit flies, and the botfly *Philornis downsi* (right) and microorganisms like avian pox virus, avian malaria and West Nile virus.



© Godfrey Merlen

*The botfly *Philornis downsi* lays its eggs in the nests of birds. When they hatch, the larvae feed off the nestlings, frequently killing the entire brood. This devastating species, known to occur in Trinidad and in Brazil, is now present in all the islands, with parasite impact greatest in the highlands.*

© Godfrey Merlen



Songbirds in decline

Following a recent study on the population of Darwin's Finches on Santa Cruz, the Galapagos Conservation Trust has decided to take action, launching our *Darwin's Songbirds Appeal* in autumn 2012 (see P. 20). The study revealed that six of the nine species that occupy Santa Cruz underwent a dramatic decline from 1997 to 2010. This trend was most obvious on insectivorous species and in the highlands. It is likely that several factors are involved, including a reduction in *Scalesia* forest, changes in plant and invertebrate communities, the increasing abundance of invasive species and fluctuations in climate. The Vermilion Flycatcher appears to be suffering a similar fate on all four inhabited islands. GCT recognises that several steps need to be taken as a matter of urgency: raise awareness of the impact invasive species are having on native flora and fauna; study the causes of songbird decline on Santa Cruz and the other inhabited

islands; protect and restore critical habitats for these birds; and research methods of controlling the most damaging introduced species, such as the blackberry and the botfly *Philornis downsi*. Through the *Darwin's Songbirds Appeal*, GCT aims to act to help the land birds of Galapagos. Please keep an eye out for further information about how you can help us save some of the most significant species to our understanding of the entire natural world.

Scalesia forest

There are at least 15 different species of *Scalesia* in Galapagos and as with Darwin's Finches, each is adapted to its own particular ecological setup. All are single-stemmed evergreens, but they range from small shrubs to impressive trees up to 15-metres tall and can be found in a range of habitats, from the very driest sites to the most humid upland forests. These species have an unusual life cycle, living fast and dying young. Within a matter of years, a tree will reach seven or eight metres tall, flower and then fruit. By the time it is 20 years old, it will have died.

The Woodpecker Finch boasts the rare talent of using a twig or cactus spine to weedle out grubs from beneath the bark of trees.



© Godfrey Merlen



© Godfrey Merlen

The Black-billed Cuckoo is a vagrant to Galapagos that is only known from Santa Cruz and Espanola.

The stunning Short-eared Owl can be seen on most islands in Galapagos.



© Terri Anderson

in his bill, he works it into a hole in the tree to extract a fat grub.

"The *Scalesia* forest is perhaps the most enchanting of Galapagos environments"

Before our enchantment is over, a tiny bird appears. From the look of its fine bill and the darting nature of its flight, it must be a warbler of some sort. But no. This is yet another of Darwin's Finches – the Warbler Finch – that has taken up the position that on the continent would be occupied by true warblers.

A churring song brings our attention to a well-rounded, parrot-billed bird. The Small Tree Finch spends its time rootling amongst the mosses, plants and fruits for caterpillars and soft seeds. It is highly mobile and often hangs upside down during forays for food. A bigger version, the Large Tree Finch, moves into the canopy above and sends down a shower of old flower parts from the composite heads of the *Scalesia* tree. This species is very rare and not often

seen. The deep strong bill is used in a twisting fashion to open seed cases, although it is omnivorous and consumes insects and grubs.

The sun momentarily breaks through the low-lying clouds, turning the pointed leaves in the canopy into silhouettes. The drops of water on the leaves shine like jewels. The birds become backlit too, bringing into clear relief the curves and forms of their beaks. Santa Cruz boasts nine of the 14 species of Darwin's Finch, a remarkable diversity within a single group of birds and a clear demonstration of the power of natural selection to use its one tool – genetic variability – to suit the scenery on hand.

Above us, a cuckoo flashes his white tail band, giving us a glimpse of the soft greys and buffs of his throat and breast. We are lucky too for I know that a little higher we can find the endemic *Miconia* bushes. Beneath their leaves another endemic bird, the Galapagos Petrel, quietly burrows its nest during the drizzling nights, surrounded by bubbling brooks. Let's go!

Current supporter activities

Even our supporters on the other side of the world are getting involved.

A team from the Charles Darwin Foundation, led by Executive Director Swen Lorenz, has set itself the challenge of completing the Galapagos Triathlon on 12 October in memory of Lonesome George.

George's unfortunate story and the fate of the Pinta Tortoise touched Swen. He is determined that the money raised will go towards conservation efforts to keep the Galapagos Islands and their wildlife unharmed and to ensure that no other species suffers George's lonely fate.

Swen will be joined by two of his colleagues, Ulf Torsten Haerdter and Juan Carlos Vega. The team has set up a Justgiving page and every

donation received will go towards the Lonesome George Tribute Fund, helping to secure a future for the Islands' wildlife. The page will remain open for donations after the event so please visit the team's page at www.justgiving.com/swen-lorenz.

Supporter Emily Bradfield is also running for GCT in October. Emily visited Galapagos in 2008 as a conservation volunteer. After completing the Great South Run in 2011, she has decided to take on the extra challenge of completing the Royal Parks Foundation Half Marathon in London. To show your support for Emily's dedication to Galapagos, please visit her Justgiving page at www.justgiving.com/emilybradfield. As with Swen's, Emily's Justgiving page will remain open for some time following her run.

GCT's Tortoise Club member of the year Sam Barrekette visited Galapagos in 2011. Seven-year-old Sam was so taken by his experience that this year he decided to have a Galapagos-themed birthday party with volcano (rock) climbing and an amazing archipelago cake.

The most incredible part of Sam's story is that he asked everybody to donate the money they would have spent on birthday presents to the Galapagos Conservation Trust instead. At the time of going to print, Sam's total amount raised sat at a fantastic £671.18.

We are so grateful to Sam, Emily and Swen for their amazing generosity and dedication to the conservation of Galapagos. Everyone at GCT would like to say a huge THANK YOU!

© Elizabeth Barrekette



Who's who?

Victoria Creyton
Membership Officer

What attracted you to the job?

Having worked extensively in a variety of fundraising and membership departments I was excited when I saw the opportunity to work for such a unique and valuable charity. I think there's real potential to make a difference to the conservation of these important Islands and to educate people in the UK about the importance of what we do. I'm really looking forward to working on plans that will help achieve this and getting to know the GCT supporters as well as working with such an enthusiastic and committed team.

What does your job involve?

I run all aspects of the membership scheme at GCT, from general administrative work to running our junior Tortoise Club and making sure our members are kept up to date with all Galapagos news and

issues. One of the projects I am currently working on is a membership survey. The results will allow me to get to know our supporters and work with them to make sure they are getting the most from their GCT Membership. If you would like to take part in the survey, please complete the form included with this issue of *Galapagos Matters*.

Do you have a fundraising message for GCT supporters?

I would like to thank our members for the valuable support they have already given GCT. Without your help our work funding important projects on the Islands and raising UK awareness of the fragility of the Archipelago wouldn't be possible.

There are so many innovative and varied ways our supporters are helping to raise funds and awareness. Some great examples of the activities our supporters are involved with are featured above.

Please get in touch with me if you would like to get involved in fundraising for GCT or if you have any enquiries regarding membership at Victoria@gct.org or by telephone on **020 7399 7440**.

© Jen Jones



Bluecoat Tortoise Day

It was our pleasure to visit Liverpool's Bluecoat Gallery in June, which was hosting the culmination of the five-year artists' residency programme *Galapagos*. To coincide with this exhibition, the Gallery held a Tortoise Club Day.

Two schools from the area attended and spent the day taking part in three very interesting and interactive tortoise- and Galapagos-themed workshops. The first session was a presentation by Santiago Bejarano, a former naturalist guide, on the history of the Islands. This was followed by a talk from the Cheshire branch of the British Chelonia Group where the children were lucky enough to meet some real life animals face to face. And finally the Tortoise Club members spent the afternoon getting creative, with a badge-making and DIY pet tortoise workshop.

With the help of the Bluecoat Gallery staff, the British Chelonia Group and Santiago Bejarano, the day was a great success and the children left full of facts and enthusiasm for Galapagos. To find out more about the Tortoise Club, please visit our website at www.savegalapagos.org or email us at gct@gct.org.

> What's On?

Galapagos Talk

24 October 2012, Wellcome Collection, London

Presented by leading wildlife photographer David Plummer

£18 members
£22 non-members

STUDENT OFFER:
buy one get one free

Buy your ticket online at www.savegalapagos.org or by phone on 020 7399 7440

Tickets for both the Galapagos Talk and Andrew Marr's *A History of the World* talk and champagne reception can be booked by filling in the form at the back of the newsletter. Alternatively, please call the office on **020 7399 7440** or book online at www.savegalapagos.org/events.

ANDREW MARR on A HISTORY OF THE WORLD

29 November 2012 at 195 Piccadilly, London

Join Galapagos Conservation Trust president Andrew Marr for a talk and champagne reception, followed by a signing of his book to accompany his latest major television series *A History of the World*. This event at London's 195 Piccadilly - the exclusive home of BAFTA - starts at 6.30pm.

Price: £50 (includes a donation to GCT's Lonesome George Tribute Fund)

Buy your ticket online today at www.savegalapagos.org or by telephone on **020 7399 7440**

The *Galapagos* art exhibition will run at The Fruitmarket Gallery in Edinburgh from 2 November 2012 to 13 January 2013. Keep an eye on www.artistsvisitgalapagos.com for information on events during this time.



Project update

Two years ago, the Galapagos Conservation Trust (GCT) launched its 15th Anniversary Appeal. A year later your support helped us to reach our fundraising target of £150,000. This appeal highlighted the areas of island restoration, climate change and social issues as priorities for building a sustainable future for Galapagos. We are committed to funding projects that fall into these three areas, which have since been refined to the priority areas of science, education and culture. Our Lonesome George Tribute Fund (which aims to prevent us from having to report sad stories like the death of Lonesome George) is supporting a range of priority projects within these key areas.

For further information on the work that we have already funded and that we are currently raising funds for, please visit the newly updated project pages on our website www.savegalapagos.org/galapagos. Below, we summarise three projects that your donations have helped us to support.

Science

Marine Iguanas in peril?

Galapagos Marine Iguanas *Amblyrhynchus cristatus* are unique in their adaptations to life at the shoreline. They are endemic to the Galapagos Islands, where they occur on all major and minor islands.

Based on earlier studies, Marine Iguana populations on different islands appeared to be genetically quite similar. However, a recent and more detailed genetic study published in 2009 demonstrated substantial differentiation among island populations. Most surprising was the finding that San Cristobal, one of the oldest islands in the Archipelago at about 3-4 million years, is home to two genetically distinct populations. One population lives on Punta Pitt at the eastern end of the island, and the other at the western end. The genetic difference proved so extensive that the two populations may constitute different species living on the same island. Additionally, the Punta Pitt population appears to be the most ancient lineage within the Archipelago, which is consistent with the idea that Marine Iguanas spread from east to west from the geologically oldest to more recently formed islands.

During fieldwork in Galapagos in March 2011, Professor Fritz Trillmich from the University of Bielefeld, Germany learned from local experts that the Marine Iguana population on Punta Pitt may be in danger of extinction due to high predation by rats and feral cats. Little information exists regarding the conservation status of the small population of Punta Pitt Marine Iguanas. The recent discovery that this population constitutes the ancestral line of Marine Iguanas – and perhaps a unique species – makes it paramount to assess the nature of the threat, and to initiate protective management as a matter of urgency.

GCT has recently provided funding for Fritz and his colleague Sebastian Steinfartz to carry out a short-term study. This has several aims: to estimate the size and local distribution of the Marine Iguana population on and around Punta Pitt; to determine essential demographic data including the juvenile to adult ratio, sex ratio and reproductive capacity of the remaining population; and to estimate the predation pressure by feral rats and cats (that prey on juveniles) to determine the need for immediate measures to control these introduced species.



© Henry Nicholls

Funded by



Coastal cleaning programme

Waste has a profound impact on the wildlife, environment and local population of Galapagos. GCT has teamed up with Fundacion Galapagos Ecuador and the Galapagos National Park to help address this problem through a coastal cleaning programme.

Local human and tourist-related activities are causing a slow accumulation of inorganic waste – especially plastic – along the shores, with inevitable consequences for this habitat. Some of the native animals including sea lions, turtles, birds and iguanas could remain trapped, even die, in debris accumulated along the shores and therefore Fundacion Galapagos Ecuador and the Galapagos National Park have developed a permanent coastal cleaning programme.

Thanks to the support of one of our donors, GCT has been able to fund one of the 12 coastal clean-ups taking place each month of the year. Clean-ups involve young volunteers from all over the world visiting different coastal areas in hired local fishing boats, collecting the rubbish and waste along the shore of the Islands.

A decade ago, a similar scheme retrieved some 1,800 kg of waste. By 2011, this figure had increased by an order of magnitude to 18,000 kg. It is vital that this project continues for years to come, not only to keep the coastlines clear of waste, but to spread the word about the dangers of waste.



© Metropolitan Touring

Environmental education on screen

In April 2012, film student Juliane Wothe went to Isabela Island to implement an environmental education initiative through film. It is believed that through this media, topics can be presented in a more appealing way making them more vividly remembered than a lesson in school.

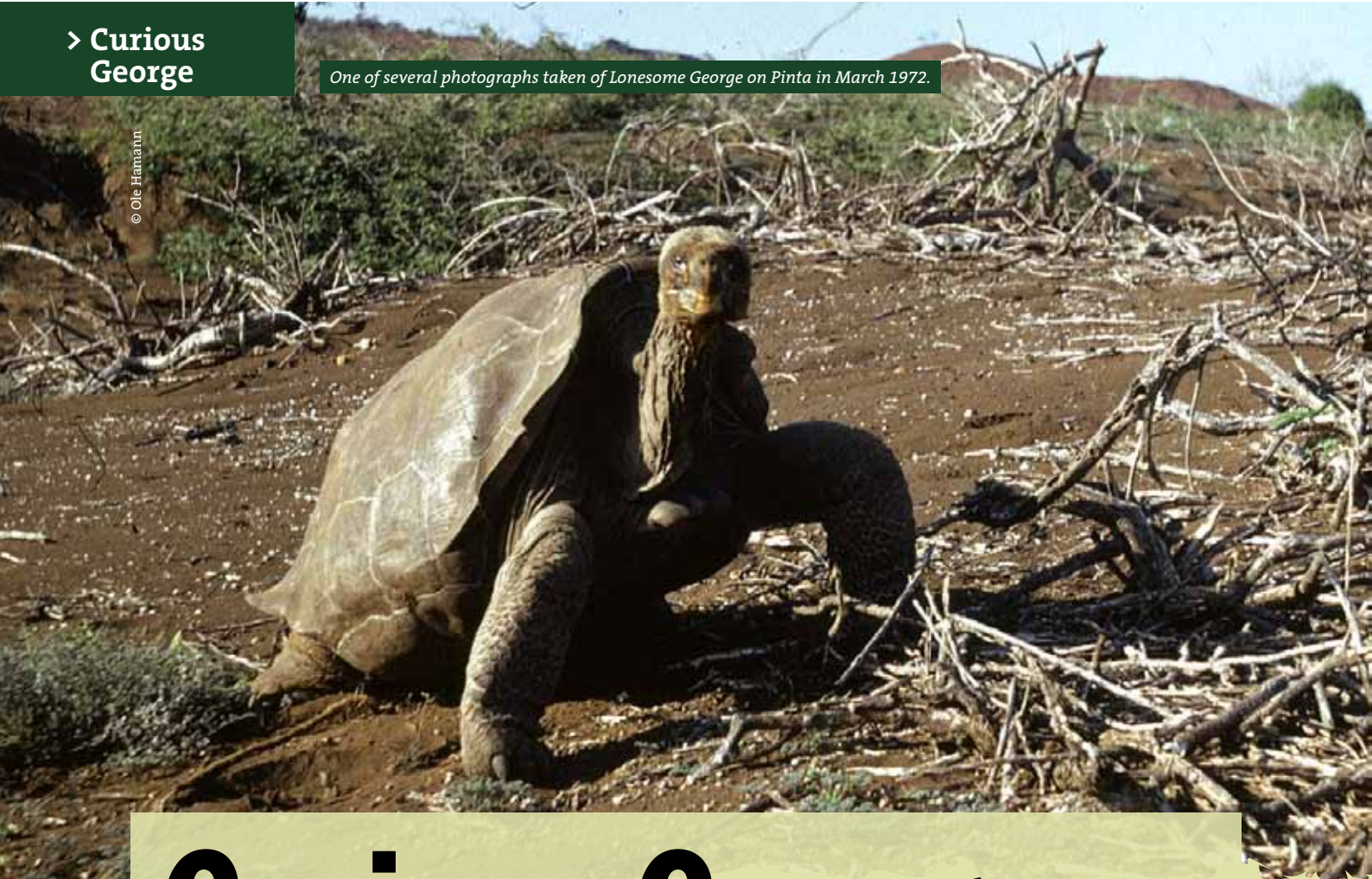
The project will help to raise ecological awareness and encourage critical and interconnected understanding and ecological engagement. Films will mainly be produced together with children. Juliane wants them to participate in the creation of their own sustainable society and to add to how school lessons currently shape environmental attitudes and behaviour.

The resulting films will be distributed by the local television station on Isabela, in schools, hotels and possibly further afield. During production, Juliane will work together with the educational establishments on the island and also with experts from the Isabela Oceanic Institute, WWF, the Charles Darwin Foundation and other NGOs on the Islands to produce this series of educational environmental films.

Juliane has been very busy during her first six months on Isabela. Already she has produced a film informing the local population about the implications of hitting birds with cars, especially Darwin's Finches.

Funded by





Curious George

Henry Nicholls asks those who knew Lonesome George to reflect on the sad news of his death.

I met Lonesome George in 1981 when I went to Galapagos to do my research for my PhD on giant tortoises. I happened to be in Galapagos again when George died. As soon as I started talking about it I started crying. There was this great sadness of losing a tortoise and a population and a species but there was also this strong determination that this should never, ever happen again in Galapagos.

Linda Cayot is science advisor to the Galapagos Conservancy and one of the first people to research the behavioural ecology of giant tortoises. During the 1990s, she was head of protection at the Charles Darwin Research Station.

In March 1972, we were on our way to Pinta on a small fishing boat and we had radio contact with the Galapagos National Park people who were already on the island and they told us that they had just found a great, live tortoise. When we arrived they had brought him down to the beach and tied him up with a rope and there he was. His death marks the end of an era. He developed into a sort of icon for conservation in Galapagos. Everybody knew about the story of Lonesome George.

Ole Hamann, professor Emeritus of Botany at the University of Copenhagen in Denmark and one of just a few people to have seen Lonesome George on Pinta.

I found out that Lonesome George had died on Sunday night (24 June). I thought it was a mistake. It's like when you lose a family member and say "It cannot be. It's impossible. It has to be an error." But it wasn't. On Monday, the Galapagos National Park asked me to carry out the necropsy. I felt a confusion of emotions. It was not something I wanted to do but it was something that had to be done.

Marilyn Cruz, coordinator of Agrocalidad in Galapagos, the institution responsible for agricultural standards and biosecurity in the Islands and the vet who led the necropsy on Lonesome George.

My first professional contact with Lonesome George came in the early 1990s, when I had the honour of drawing blood from George for the first analysis of his genetic makeup. Since then I've kept my eye on him. The last time I saw George he looked great. He had a little bit of flabbiness around his arms and the base of his neck but then so do we all. He was active and alert. I was very surprised that he just died.

Joe Flanagan, director of Veterinary Services at the Houston Zoo in Texas and an advisor to the Galapagos National Park on matters of tortoise health.

I first met Lonesome George when I first went to Galapagos in 1994. It was a very emotional moment. With my interest in genetics, the obvious thing was to use genetic methods to try to find a mate for Lonesome George. I looked around in zoos and in private collections and amongst the animals of unknown origin at the Charles Darwin Research Station but without success. When George died it really hit me very hard. He was like a family member. As when you grieve for a person who was close to you, I grieved and I thought of the things I could have done that I did not do. I thought I had more time.

Gisella Caccone, geneticist at Yale University's Department of Ecology and Evolutionary Biology who works on the evolutionary genetics of Galapagos tortoises.

1971 Lonesome George is discovered by a snail biologist working alone on Pinta.

1972 Scientists and park rangers relocate Lonesome George and move him to Santa Cruz.

1982 Fausto Llerena of the Galapagos National Park is made responsible for the care of giant tortoises at the breeding center.

1993 George is joined by two female tortoises from Wolf Volcano on Isabela.

2008 After 15 years together, the female tortoises lay eggs but they are not fertilised.

2011 The Wolf females are replaced by more closely related females from Espanola.

2012 Fausto Llerena finds Lonesome George dead in his corral.

© NASA



Lonesome George's native Pinta is one of the smaller islands in Galapagos. But although it takes up less than 1% of the Archipelago's land area, it is home to almost one third of all native Galapagos plants.

© Henry Nicholls



The plaque raised outside Lonesome George's corral following his death in June.

THE LONESOME GEORGE TRIBUTE FUND

In memory of Lonesome George and to minimise the risk of further extinctions on the Islands, GCT launched the Lonesome George Tribute Fund. All of the proceeds help GCT to work with scientists and communities to secure a sustainable future for Galapagos. With your support, GCT's work can make a difference and ensure that no other animal on Galapagos suffers George's lonely fate.

If you would like to donate to the Lonesome George Tribute Fund, please visit www.lovegeorge.org, telephone the office on 020 7399 7440 or fill in the form at the back of this issue of Galapagos Matters.

For a full interview with the man who knew Lonesome George best, see Islanders on p. 17.

More change

Stephen J. Walsh and Carlos F. Mena are co-directors of the Galapagos Science Center on San Cristobal in Galapagos.

The world is changing rapidly and much of this change is driven by humans. In our global efforts to prevent extinctions and conserve fragments of the natural world before they are lost forever, it is all too easy to imagine that we are trying to prevent change, keeping the natural world in some perfect, bubble-wrapped state. Yet, this ignores the simple fact that change is a fundamental, necessary process of all life.

This is especially true for Galapagos, islands that have become inextricably linked to the idea of evolutionary change. Forged of fire, Galapagos is defined by volcanic processes that continue to shape the Islands in both subtle and conspicuous ways. Tectonic uplift and subsidence, for instance, change the three-dimensional landscape, with profound consequences for particular habitats like coastal mangroves. This affects the species that live in the immediate vicinity. It also alters the protection that mangroves afford the land from ocean swells and destructive tsunamis.

Yet it's not just natural forces that drive change. In the coastal communities and agricultural highlands of the four inhabited islands in Galapagos, the actions of human visitors and



© James Pistole

settlers have brought about dramatic change. Invasive species, for example, either introduced intentionally by settlers seeking the comfort of familiar plants and animals or arriving unintentionally as “hitch-hikers” on products and materials transported from the mainland, are clearly an unwanted part of the landscape mosaic in Galapagos. The appearance of settlements, the development of towns and the urban infrastructure to accommodate a growing residential population and international tourism has also caused dramatic change to coastal communities. Direct changes like these demand yet more change in the shape of ports, airports, energy consumption, waste generation, movement of cargo ships and the support services meant to accommodate the expanding human imprint.

In addition, there are also the impacts of global climate change. El Nino and La Nina-Southern Oscillation events can cause weather extremes in local places. Major El Nino events like those in 1982-83 and 1997-98 can result in

conspicuous change, disrupting oceanic currents, curtailing local upwellings, diminishing the availability of phytoplankton and devastating marine-dwelling species like Galapagos Penguins, Sea Lions and Marine Iguanas. Conversely, La Nina events generally bring a strengthening of cold, nutrient-rich waters but terrestrial flora and fauna struggle with reduced rainfall and even drought. There are signs that with climate change, such natural fluctuations are becoming more frequent and severe. If this turns out to be the case, this would have important implications for species, populations, invasive flora and fauna and, possibly, international tourism.

In short, change is fundamental to life in Galapagos. It is ongoing and perpetual but, what change there is, is not enough. We humans must work harder to understand the balance of natural and anthropogenic forces currently shaping Galapagos, their origins and their cumulative effects. We must adapt our behaviour, radically and soon, if we are to realise the dream of social and ecological sustainability.

Islanders

Fausto Llerena ...

... is one of the Galapagos National Park's longest serving and most dedicated employees. The breeding centre at the Charles Darwin Research Station in Puerto Ayora is named after him in acknowledgement of his lifelong dedication to the tortoises and iguanas held in captivity.

Q: Soon after you joined the Galapagos National Park in 1971 you travelled to Santa Cruz. The point of the expedition was to help eradicate goats from the island but you found something else didn't you?

A: We were on a 20-day trip and on the first day we found Lonesome George. He was found at around 10 am by a park ranger and a student from the University of Guayaquil. They didn't touch him; they just saw him and left him there. In the afternoon I went with four others to bring him back to camp. It wasn't very far: about a 15-minute walk. George remained in the camp for three days until a tourist boat passed by and took him to the centre (at the Charles Darwin Research Station on



© Galapagos National Park

Santa Cruz). The rest of us stayed on the island.

Q: Over the last four decades caring for Lonesome George you knew him better than anyone. What was he like?

A: He was never aggressive, always friendly. He always came to say hello to me. He would come up to the door, raise his head and look me in the eye. It was as if he was asking "What's on the menu today?" to which I would reply "Well, it's the same menu as every day." While I carried out my work, he would stay with me and then follow me to the door. We have 1,160 small tortoises and 58 adults at the breeding centre and among all of them – over 1,200 tortoises – he was my best friend.

Q: It must have come as a great shock to have found him dead in his enclosure in June.

A: I don't remember how I reacted at that exact moment. I think it took me a few minutes to react and I felt sadness. Then I recalled the day we first found him and how excited and happy everybody was. I received many condolences from people who visited him and also from national and international media. There were many calls.

Q: What did Lonesome George mean to Galapagos?

A: From the moment he arrived at the breeding centre he was an idol. The whole world would come to visit him. Obviously I didn't want him to die, but these things happen and we have to keep fighting. There are still so many species to restore, so many other tortoises that need us.

Reviews

THE REAL GALAPAGOS

**Galapagos, Bluecoat Gallery, Liverpool
(4 May to 1 July 2012)**

Curated by Bergit Arends and Greg Hilty, featuring the work of artists who took part in the Gulbenkian Galapagos Artists Residency Programme (www.artistsvisitgalapagos.com)

© Nuwan Wijie



I started working as a naturalist in the Galapagos in 1992. Over the last twenty years I have seen the Islands through many eyes and have had the pleasure of seeing how the Archipelago has inspired the artists I have guided there, from nature photographers to illustrators and watercolour artists.

At the Galapagos exhibition at the Bluecoat Gallery in Liverpool I had the pleasure of seeing Galapagos interpreted in a way I had never seen before. Until now, I had always seen Galapagos reflected almost mirror-like on canvas or in photographs. But this was different, as if finding the inner beauty of the Islands and at the same time exploring the problems and conflicts created by the ever-growing human population.

I found it fascinating that the artists should have captured Galapagos in so many different ways: from the shockingly ugly architecture of some parts of Puerto Ayora, to the beauty of a naked bone, or the fascination of the brightness of the light. My favourite exhibit was the work by Kaffe Matthews using data from acoustic tracking of hammerhead sharks to produce a "soundspace", notes and melodies that reflected the visual underwater beauty of these magnificent and threatened creatures.

A truly inspiring exhibition and a powerful reminder of how beautiful and fragile Galapagos is and of the growing threats and pressures the islands face.

Reviewed by Santiago Bejarano (www.thinkgalapagos.com).

NEW BOOKS

Where the Wild Things Were

By Stanley Johnson, Stacey International, 2012, £9.99, ISBN 9781906768870

Journalist, environmentalist and GCT Ambassador Stanley Johnson recounts a lifetime of travel in search of wild places and wild animals, including an unforgettable trip to Galapagos.



Darwin: The Power of Observation and Reflection

By Guido J. Braem, BookBaby, 2012, \$24.99, ISBN 9781620959367

A complete biography of Charles Robert Darwin, covering the HMS Beagle voyage that took him to Galapagos and charting his evolution from a young gentleman intended for the cloth to the world's most celebrated naturalist.



Ecuador & the Galapagos Islands

By Ben Westwood, Avalon Travel, 2012, \$19.99, ISBN 9781598803549

Seasoned traveler and journalist Ben Westwood leads adventurers to off-the-beaten-path experiences in Ecuador.

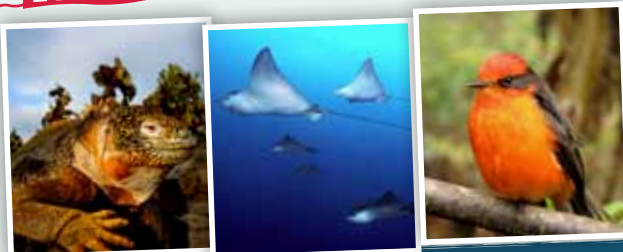
Acknowledging the interest in visiting Galapagos, he devotes a good chunk of the book to the Islands.

Galapagos will be showing at The Fruitmarket Gallery in Edinburgh (2 November 2012 to 13 January 2013) and at the Centro del Arte Moderna in Lisbon, Portugal (18 April to 7 July 2013).

A book about the Gulbenkian Galapagos Artists Residency Programme is also available and can be ordered on our website www.savegalapagos.org/shop.

Galapagos Gifts: Winter Wonderland

NEW!



GCT Cards £4.95

It's that time of year again so grab some GCT Cards to send to all your friends and family this Christmas! This year, our cards come in a pack of 10 featuring 5 stunning Galapagos images and are blank inside for your own message.



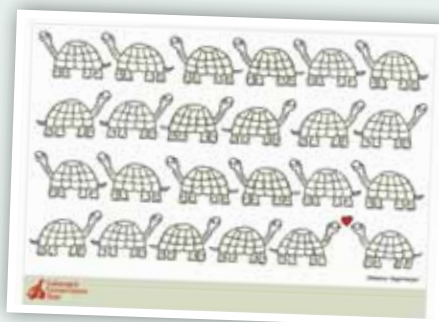
**Galapagos
Calendar 2013
£9.50**

Have a little bit of Galapagos with you throughout the year with GCT's 2013 Calendar featuring the fantastic winning images from our 2011 Photo Competition!



Notelets £8.50

Write in style with these beautiful notelets by artist and GCT supporter Mary Ellen Taylor, featuring endangered bird species of Galapagos – a great gift for any time of year.



GCTea Towel £8.00

You can even show your support for Galapagos when doing the dishes with our GCTea Towel featuring a design by artist Joanna Angermeyer.

NEW!

**Lonesome George
Tribute Fund £35.00**

In memory of Lonesome George, we are offering a special adoption package featuring a Galapagos Giant Tortoise toy, magnet and special certificate.



NEW!

Galapagos £10.00

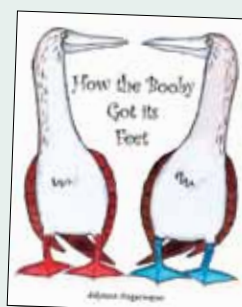
See Galapagos through the eyes of the 12 artists who participated in the Gulbenkian Galapagos Artists Residency Programme, following them on their journey to the Enchanted Isles and finding out about the varied perceptions of their experiences.

Spend over £20 and grab some GCT Christmas Cards from previous years for only £1*

*Maximum 4 packs per customer, while stocks last!



Galapagos Christmas Iguana



How The Booby Got Its Feet £6.95

Very popular for younger Galapagos fans, How the Booby Got Its Feet is an illustrated story by Johanna Angermeyer and is a fun introduction to the world of wildlife.

Gift items that are not featured on this page are also available for order on the attached form and can be viewed and purchased through our website www.savegalapagos.org



Gifts & Donation Payment Form

There are several easy ways to place your order or make a donation to support our work.

- 1) Via our website (www.savegalapagos.org)
- 2) By telephone 020 7399 7440
- 3) By completing the details on this form and returning with your preferred payment method to:

**Galapagos Conservation Trust, Charles Darwin Suite,
28 Portland Place, London, W1B 1LY**

Giving a Donation	Total price £
I would like to give: £30 / £60 / £100 / £300 / Other (please circle) to support the Lonesome George Tribute Fund	
I would like to give: £30 / £60 / £100 / £300 / Other (please circle) to support the Darwin's Songbirds Appeal	

Events	Price	Qty	Total price £
Galapagos Talk with David Plummer (24 Oct)	22.00 (18.00 for members)		
<i>A History of the World</i> talk and reception with Andrew Marr (29 Nov)	50.00		

Gifts	Price	Qty	Total price £
Galapagos Calendar 2013	9.50		
GCT Cards	4.95		
Mary Ellen Taylor Notelets (pack of 6)	8.50		
GCTea Towel	8.00		
Lonesome George Tribute Adoption	35.00		
Name on certificate:			
Cuddlekins Galapagos Giant Tortoise soft toy	12.00		

Books	Price	Qty	Total price £
<i>Galapagos</i>	10.00		
<i>How The Booby Got Its Feet</i>	6.95		
<i>Croc and Bird</i> – view online	10.99		
<i>My Father's Island</i> – view online	10.00		

Christmas Card Offer	Price	Qty	Total price £
<i>Lonesome's Christmas</i>	1.00		
<i>Christmas Iguana</i>	1.00		

Postage*	
I enclose a donation**	
TOTAL	

We aim to deliver your order as soon as possible but please allow 28 days. *Postage and packing for gifts and books: UK – please add £2.50 for orders up to £15; please add £4.50 for orders of £15+. Overseas – please add £5.00 for European countries and £7.50 for the rest of the world. **All donations will go to support conservation in Galapagos.

> Contact Details

Please fill in your details below:

Name:

.....

Address:

.....

.....

Post code:

Tel no:

Email:

> Method of Payment

PLEASE CIRCLE:

Cheque (payable to Galapagos Conservation Trust)

Credit card / Debit card / CAF voucher / CAF card

NB: We do not accept American Express.

Name on card:

Card no:

Expiry date:

Issue no. / Start date:

Security code:

giftaid it

☐ Yes! I am a taxpayer. Please reclaim tax on all my donations and subscriptions made in the past four years and all future donations.

☐ No, I am not a taxpayer.

Date:

Charles Darwin Suite

28 Portland Place, London, W1B 1LY

www.savegalapagos.org

Email: gct@gct.org Tel: 020 7399 7440



Galapagos
Conservation
Trust

Registered Charity No. 1043470

DARWIN'S SONGBIRDS APPEAL

Following a study of the population of Darwin's Finches on the island of Santa Cruz, the Galapagos Conservation Trust (GCT) recognised the urgency to launch the *Darwin's Songbirds Appeal*. With your support, GCT can help songbirds of Galapagos and secure a future for two of the Archipelago's critically endangered species - the Floreana Mockingbird and Mangrove Finch. Please keep an eye out for more information or visit the appeal's website at:

www.darwinssongbirds.com



THROUGH THIS APPEAL, GCT AIMS TO:

- 1 Study causes of songbird decline on inhabited islands.
- 2 Raise awareness of the impact of invasive species.
- 3 Research the control of introduced species.
- 4 Protect and restore critical habitats for land birds.

Mangrove & Tim Podile: Floreana Mockingbird © Patricia Hecht
Mangrove Finch © Michael Dwyer, Finch Research © B. Feltz



*Stolt-Nielsen Limited is pleased to support
the Galapagos Conservation Trust*



c/o Stolt-Nielsen M.S. Ltd 65 Kingsway London WC2B 6TD
Tel: +44 20 7611 8960 Fax: +44 20 7611 8965 www.stolt-nielsen.com