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A Galapagos Giant Tortoise peeks out from the undergrowth on Pinta. It is one from a group of tortoises that are the first to roam across this remote northerly island in nearly 40 years. In May, Dr. Linda Cayot, Galapagos Conservancy’s Science Advisor, took part in a historic expedition to release the reptiles. “The moment they hit the ground, they were ready for action!”

You can visit www.galapagos.org to learn more about Project Pinta through blogs, satellite tracking maps, and additional photos and videos.
TORTOISE FEVER
Success for Project Pinta
Fall/Winter 2010

This issue of Galapagos News unabashedly highlights tortoises! As the iconic, signature species of Galapagos, and an important part of balanced island ecosystems, tortoise health, safety, and general welfare has guided much of the conservation decisions about Galapagos. At the same time, the complex issues surrounding biodiversity conservation in wilderness areas throughout the world cannot simply rely on a single charismatic species. We are drawn by the plight of a single animal, but we must be aware of the complex web (political, economic, social, biological) that surrounds all wild places.

The Pinta repopulation project has been long in the planning. Botanists, herpetologists, and conservation managers have debated the merits of returning tortoises to Pinta for over 20 years. When it became apparent that Lonesome George would not father a new generation of Pinta tortoises, the question arose regarding the fate of Pinta. The plant life on Pinta, long without its primary herbivore, was out of balance, and as the evidence mounted against the likelihood of pure Pinta tortoises being found anywhere in the world, the pragmatic approach won out. Pinta needed tortoises.

Together with the Galapagos National Park Service (GNPS), we asked GC’s Dr. Linda Cayot and the Houston Zoo’s Dr. Joe Flanagan to lead a team of veterinarians to prepare a group of hybrid tortoises held in captivity in Galapagos to take the first steps on Pinta after the island endured 40 years without tortoise activity. Joe and Linda describe their excitement in being part of the very dedicated team of vets who reeled the tortoises for their new adventure last November. They then accompanied the tortoises to Pinta in May, thanks to the very generous support of our members, the Panaphil Foundation, and Continental Airlines.

Galapagos Conservancy’s investments were complemented by the State University of New York in funding the Pinta repopulation work and the admirable work of Elizabeth Hunter and her team who observed and recorded the tortoises movements on Pinta for two months (Visit their blog: retoirontopinta.blogspot.com). Under the leadership of Dr. James Gibbs from SUNY–Syracuse, this endeavor was a stunning success. Phase Two will bring a reproductive population on to Pinta, and we will see the island once again populated with tortoises doing what they do best — eating, sleeping, trampling, and breeding.

This issue of Galapagos News also features the important work of social science in Galapagos. Galapagos Conservancy supported the introduction of sociological science data work in Galapagos, and we are grateful to our donors and supporters who took this leap with us. This is a relatively new discipline in conservation management which has yielded very important results.

Galapagos is no longer the group of isolated islands it was 50 years ago. The “continentalization” of Galapagos has changed the landscape of the inhabited areas in Galapagos in ways we are still struggling to understand.

We are honored to have the perspective of photographer, Tui de Roy. Galapagos has been in her blood and expressed in her photos for decades. While she has worked around the world, her heart is always in Galapagos. We are grateful for her tireless advocacy and engagement.

Our thanks and endless gratitude for our extended family of friends who support our work and, more importantly, advocate for this special place.

Johannnah E. Barry
President of Galapagos Conservancy

Fore more than 50 years, the Charles Darwin Foundation (CDF) has been an international leader in biodiversity research in Galapagos, establishing a vital baseline to understand this unique ecosystem and the impacts of climate change on biodiversity. On International Biodiversity Day in May, they launched the Galapagos Species Checklist, the first phase of an initiative to complete an inventory of all species in the Galapagos Islands.

Support from Galapagos Conservancy, the Galapagos Conservation Trust (GCT), the Frankfurt Zoological Society and the Swiss Friends of Galapagos has enabled CDF to create an internet portal that gives access to the cornerstone of CDF’s new knowledge management initiative (see the Datazone at darwinfoundation.org). This is a big step towards sharing data and ensuring that the strategies devised for safeguarding the islands and their unique biodiversity have a sound technical basis.

With support from GCT, CDF held the first of a series of international workshops on pivotal sustainability issues such as tourism, water and waste management, transportation and related conservation and development issues in order to inform decision-making and better facilitate ecosystem management. Most ‘Friends of Galapagos’ organizations have been supporting Project Floreana, the ambitious plan to restore the native ecosystem of Floreana in harmony with farming and the local population’s other activities.

The Swiss Friends of Galapagos meanwhile have been busy with a project to develop an inspirational outreach exhibit at Zoo Zurich that will allow visitors to experience the movements of two satellite tracked tortoises currently roaming the highlands of Santa Cruz.

Friends of Galapagos Organizations

BOOK REVIEW


Review by Linda J. Cayot
Science Advisor, Galapagos Conservancy

The extinction of tortoises could come in our lifetime. After millions of years on earth, their future is bleak. Humans are destroying their habitat, buying them as pets, and eating them. No species is safe, except perhaps the giant tortoises of Galapagos and Aldabra.

In The Last Tortoise, biologist Craig Stanford convincingly describes the destruction of the tortoises of the world, with mass extinctions likely if we do not act. While collecting animals for the pet trade can devastate critically rare species, collection for food markets is shamefully abundant with more than 10 million turtles and tortoises traded each year. But even if the pet trade and collection for food stop, habitat destruction could spell the end for many species.

Stanford describes the need for cultural change and local involvement in and commitment to conservation. Humans provide the only solution — but the prognosis remains dim for many species. Cultural change takes time — and time is running out. “The species that survive into the twenty-second century and those that don’t may be decided by which species breed readily in captivity.” It is a wake-up call for all who love tortoises and the natural world. Solutions will require thinking outside the box and we’d better hurry up about it.

For sale at www.galapagos.org
There are giant tortoises on Pinta after an absence of almost 40 years. Following on from this success, GNPS staff carried out a 10-day survey on Española, an island where tortoise numbers had once dropped to just 15. These last animals have been breeding in captivity at the Charles Darwin Research Station since the 1970s and more than 2000 of their offspring have been returned to Española.

“During the expedition, we found nests, recently hatched tortoises, and adults born on the island which indicates that the tortoise population is doing well,” says Washington Tapia, Technical Coordinator for the GNPS and leader of the Española survey. “We will now need to determine if further captive breeding of the Española tortoise is necessary.”

Not Out of Danger

Conservation organizations have voiced concern over UNESCO’s decision to remove Galapagos from its List of World Heritage Sites “in danger.” In 2007, Galapagos was placed on this list, bringing a much-needed sense of urgency to the situation in the Islands. But during the 34th session of the World Heritage Committee (WHC) held in Brazil in July, members voted 15 to 4 in favor of removing Galapagos from the list in recognition of efforts made by the Ecuadorian government in the last few years.

“It would be a mistake to interpret the decision of the WHC as a signal that all is well in the islands,” says Johannah Tapia, president of the US-based Galapagos Conservancy (CC). This view is echoed by Toni Dorton, chief executive of the Galapagos Conservation Trust (GCT) in the UK. “I am concerned that this announcement is premature and may give the impression that the natural wonders of Galapagos are no longer threatened.”

Both GCT and GNP acknowledge that the population has been made in recent years, citing the tightening of immigration and quarantine measures, the creation of a $1.5 million Species Fund, and the strengthening of governance in the Islands. “Galapagos continues to face extremely difficult challenges of invasive species, rapid human population growth, and lack of consensus on the kind of tourism which is best suited to the delicate ecosystems of the islands,” says Barry. There is a danger that this announcement will divert funds away from vital conservation and sustainability programs, she says.

Renewable Ripples

San Cristóbal plans to invest in hydropower to power its increasing energy demands. The Island’s local government has entered into a partnership with a Florida-based renewable energy company, Hydro Alternative Energy, Inc., to study the feasibility of installing as many as three turbines off the island that will generate clean electricity from the ocean’s waves and currents. At the same time, the Japan International Cooperation System Company will invest $10 million for the installation of a solar energy station on Baltra Island.

Barnacles in the Fast Lane

It’s been widely assumed that barnacle larvae, attempting to find a spot to lodge, are unable to settle on coasts dominated by upwelling currents. But research in Galapagos, a site characterised by strong upwelling, is challenging this conventional wisdom. An international team of researchers installed plates at dozens of underwater sites along the Galapagos coastline. The swifter the water current the more likely barnacles were to colonize the rocky surface. According to Tui De Roy, a long-time Galapagos participant, the findings suggest that vertical upwelling zones are “much more dynamic ecosystems in terms of marine organisms than previously believed,” says Jon Witman, a marine ecologist at Brown University and lead author of the study.

Lichen Growth

A lichen survey has uncovered more than 60 previously unreported species in Galapagos and nearly 10 species new to science (see image). The discoveries were made by an international scientific team during a lichen workshop at the Charles Darwin Foundation (CDF) in the middle of June. A one-day field excursion resulted in 400 samples collected on Santa Cruz from diverse habitats in various vegetation zones and on an array of substrates. “It gives us a rather good idea of how little we know and further inspires us to deepen our understanding of Galapagos biodiversity,” says Frank Bunger, CDF’s Head of Natural History Collections and Theme Leader in Biodiversity Assessment. CDF’s lichen collection now contains 12,000 specimens of more than 600 Galapagos species (see www.darwinfoundation.org/dotezaine).

Renewed wildlife photographer Tui De Roy has been to the ends of the earth in search of stunning images of the natural world. Here, she reflects on what sets Galapagos apart as a photographic destination.

I t is well known that the Galapagos Islands have served as the birthplace of many ideas and discoveries, so poignant is their unique and thriving ecological treasure. For me, a lifelong career in wildlife photography was honed there from an early age, thanks to my parents’ unorthodox decision to leave Europe in search of a pioneering lifestyle among Darwin’s finches and marine iguanas 55 years ago — four years before the establishment of the Galapagos National Park. Intimate encounters with the giant tortoises of Alcedo Volcano on Isabela enabled me to publish my first magazine article when I was just 17, a cover story at the age of 19, and my first coffee table book a few years later (Galapagos Islands Lost in Time).

Ironically perhaps, these youthful experiences only made me hungrier for other places and animals that, in my mind at least, might be even wilder and more elusive than the towering island species I knew so well. A long list of captivating projects ensued, taking me to seven continents and often to the most remote and pristine corners of the globe.

But ultimately, it is always to Galapagos that I gravitate for yet another enchanting experience, a life-affirming adventure session, and yet another book, with seven volumes published so far. Only in these magical islands, which molded not only my profession but also my entire view of life, can I completely lose myself, camera in hand, in a world where time and space matters not. My very existence seems to become transparent, seemingly unseen as a vibrant community of wild creatures go about their busy lives in peaceful balance with their age-old environment. Here, a good photo cannot be measured by how close to the subject you can get (because this is so easy) but rather by how carefully you can line up various elements into one pleasing composition, often including several species, interesting landscapes, and carefully chosen light angles to boot. It is here that I have learned what I consider the greatest reward of my profession: to show the world through the eyes of the animals themselves, to capture life from their perspective. Only time and true intimacy could ever make this possible.

To the best of my ability, I have tried to depict this special gift from nature in complimentary ways through my three all-time favorite books. In Galapagos: Islands Born of Fire, I aimed to capture all facets of Galapagos via my personal adventures and discoveries, from iguanas and finches on erupting volcanoes to whales and sharks in the ocean depths. Galapagos: Wild Portraits is a tender family album of all the special animals in the Islands. And Galapagos: Preserving Darwin’s Legacy is an ode to 50 years of intense scientific research and conservation work since the establishment of the Charles Darwin Foundation and Galapagos National Park.

I am currently working on my ultimate contribution, Galapagos: A Vision of Eternity, for which I plan to select my best, most evocative images from more than 40 years of Galapagos photography.

With every one of my books I hope to contribute in a small way to mankind’s fascination and respect for these extraordinary islands, as I am convinced human emotions are our best weapon to galvanize the actions required to ensure their lasting protection. To order Tui De Roy’s books, email books@rowingtonaisle.co.nz
As the Sierra Negra dropped anchor, the crew made preparations to ferry a large contingent of park wardens, scientists, and journalists to one of two small sandy beaches that stood out against Pinta’s dark, rough, southerly coastline. Also on board, awaiting to disembark, were dozens of giant tortoises that were about to make conservation history.

No tortoise had walked on Pinta soil since 1972, when the Galapagos National Park (GNP) removed Lonesome George—the last of his kind—into captivity on Santa Cruz. Pinta’s tortoises, like those on many other islands in the archipelago, had suffered over the course of several centuries at the hands of hungry whalers. In an age before refrigeration, with protein sources essentially limited to dried meat and fish, the giant tortoise was a great prize; these long-lived reptiles could be kept alive on board for as much as a year without need for food or water until needed for the pot.

The tortoises on board the Sierra Negra, carefully corralled on deck and in a hold in the bow, were facing a much brighter future. They were about to be released into the wild, to bring much-needed balance to Pinta’s ecosystem. Since the removal of introduced goats in 2003, the vegetation has been recovering so fast it is threatening to choke out some of the Island’s native sun-loving plants; our tortoises, it is hoped, will restore the natural mosaic of plant communities on the Island.

The chosen reptiles—39 of them—were hatched in the 1960s and 1970s during the early years of the tortoise-breeding program run jointly by the GNP and Charles Darwin Foundation on Santa Cruz. Since these are of mixed ancestry, it is impossible to be certain of the impact they will have on Pinta, so I traveled to Galapagos in November 2009 with a team of veterinary surgeons to sterilize each animal. It is a sensible precaution; this way, they will not be able to interbreed with genetically pure animals that may be introduced to Pinta in the future. In the week before they boarded the Sierra Negra, I returned to Galapagos to examine the animals and to collect blood and fecal samples to determine their health status. I also treated them for intestinal worms to prevent the introduction of unwanted parasites to their new home.

Each tortoise was also fitted with a radio or satellite transmitter. Although the GNP has returned thousands of juvenile tortoises to several islands over the last three decades, these animals were the first adults to be released. The transmitters will allow GNP staff and researchers at the State University of New York to track the animals as they adapt to their new freedom and, importantly, to assess the difference they make to Pinta’s ecosystem. Like tourists going ashore for a “wet landing” tortoises were transferred from the Sierra Negra to a panga two at a time.

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(Continued on page 9.)

Left: Tortoises on board the Sierra Negra on their way to Pinta Island. Below: Galapagos National Park wardens gather at the release site.
H

Thus! A warning rose from the mist, registering over the sounds of rain dripping from trees, bushes, my hat, the tip of my nose. Bending as I wiped my glasses, I met the gaze of a tortoise. One more step and I would have tripped over him. I eyed him respectfully, and we continued our slog along his trails, hauling seismic equipment through the rain. After a week of crunching over smooth swirls of tough oceanic crust, something could help predict and plan for earthquakes and volcanic eruptions.

Recording seismic activity requires a piece of heavy, awkward-to-carry, and extremely delicate equipment known as a seismograph. These had to be transported to Galapagos by plane, truck, boat, smaller boat, sometimes horse, and scientist. Each device contains two key components: a ground-motion sensor known as a seismometer and a recording system powered by a combination of solar panel and car battery. During three weeks of field work, we installed sixteen of these devices on and around the volcano.

This was the hard part, requiring several people, lots of wires, small tools and problem-solving skills to site, level, situate, and connect each seismograph to its recording system. Whenever possible the equipment is buried, but the soil on Isabela is often wet or nonexistent so some of our stations are discreetly sited on bare lava. With the equipment up and running, it is now a question of returning every six months to download the precious data from each seismograph. At the latest visit, in June 2010, the team reported that two stations required repairs, two had been irreparably damaged by water, and one had been stolen, a clear indication that could help predict and plan for earthquakes and volcanic eruptions.

A seismograph on bare lava.

Continued from pg. 6 -- TORTOISES.

It took three days to complete the job, so we were able to see changes happening right before our eyes. When tortoises were freed at the release site, they started feeding within minutes. We could hear branches breaking as their heavy frames crunched trails through the dense vegetation. In two days, we found that some animals had moved several hundred meters and it was not long before there was no other way to locate them than by picking up signals from the transmitters fitted to their shells.

I had many wonderful experiences in Galapagos over the years, but none has come close to giving me the sensation of joy and excitement I felt when the last tortoise arrived at the release site. Everyone involved gathered together to share this historic moment. There were smiles, photos, and a strong sense of camaraderie over a job well done. There are tortoises on Pinta!
Unlocking information for conservation

The challenge. Although Galapagos is one of the most studied places in the world, accessing basic information is surprisingly difficult. Information is held in disperse archives and databases in Galapagos and around the world.

Our approach. Through the Knowledge Management/Data Exchange initiative, we will build on the growing awareness in Galapagos of the need to develop new ways to collect, store, share, and utilize information resources. The goal is to develop a unifying, accessible portal that will serve both as a destination for diverse information resources and as an easily accessible source of existing information. Partners in this project will include the Charles Darwin Foundation (CDF), the Galapagos National Park Service (GNPS), the Governing Council in Galapagos, local municipalities, ministries of the Ecuadorian government, Ecuadorian and international universities, individual researchers, etc.

Current needs. We view this as a multi-year, large-scale initiative. At present we seek start-up funding to immediately bring together key actors in Galapagos to create a shared work plan for the next several years.

Developing a sustainable society

The challenge. Long-term protection of Galapagos requires an economic system that is compatible with biodiversity conservation, an educational system that prepares citizens to alter their daily activities, and a strong civil society dedicated to and engaged in Galapagos conservation.

Our approach. GC’s priorities over the coming years include: educational reform (with a focus on establishing examples of best practices and transforming the skills of Galapagos teachers), micro-lending to build local capacity, and a focus on sustainable agriculture and environmental management capacity of municipal governments and small farmers. This work is supporting projects to reduce air and water pollution, and seek solutions to the way Galapagos society relates to key conservation issues. Partners in this work will include local non-profit organizations, businesses, community leaders, municipal governments, and cooperatives.

Current needs. 1) funding to expose local leaders to innovative educational practices being implemented elsewhere in Latin America and to formulate strategies to implement such approaches in Galapagos; and 2) matching funds to increase the size of gifts to our capacity-building small grants program.

Restoring degraded ecosystems

The challenge. Ecological damage caused long ago by whalers, pirates and early settlers is exacerbated by more recent human activity and the presence of aggressive introduced species has disrupted natural biological processes in Galapagos. If left unchecked, the islands will suffer irreversible losses of natural resources.

Our approach. GC’s ecosystem restoration efforts seek to rebuild healthy, balanced plant and animal communities and establish management and strategic approaches to sustainability of these communities in perpetuity. In the next five years, our focus will be on working with our partners to complete Project Pinta (re-establishment of a reproductive population of tortoises), improve monitoring of long-term, island-wide restoration efforts (Pinta, España, Floreana, San Salvador), breed and rear tortoises with Floreana ancestry for the eventual repopulation of Floreana, and initiate thinking about the potential return of land iguanas to Santiago. We will also explore critical issues surrounding the impact of climate change on marine and terrestrial ecosystems and support efforts related to highland restoration. Partners in this work will include the CDF, the GNPS, local NGOs, Ecuadorian agencies responsible for agriculture and the quarantine system, and various US universities.

Current needs. 1) funding to complete the monitoring of the tortoises released onto Pinta in May 2010, and 2) matching funds to encourage larger gifts from our donors interested in island restoration and species conservation.

Identifying and responding to emerging issues

The challenge. Conditions in Galapagos change rapidly. While scientists, planners, and managers are well-versed in an array of urgent challenges, it is often difficult to identify, evaluate, and respond to new or potential issues within or directly affecting the islands which, if not addressed, may have negative long term effects on a sustainable and diverse Galapagos. These events will generate white papers, technical journal articles, project proposals, and work plans. The CDF, the GNPS and the Governing Council of Galapagos will be key partners in organizing these events.

Current needs. GC currently seeks funding for the first workshop, which will be held in 2013.
And the winner is. . .

Congratulations to Alice Bartlett of Fyansford, Victoria, Australia for her winning photo of Spotted Eagle Rays in the 2011 Galapagos Conservancy Calendar Photo Contest. Her photo graces the cover of the 2011 Galapagos Calendar. Twelve other winners’ photos mark each of the months and back cover while showcasing Galapagos’ amazing biodiversity and rich landscapes. Visit www.galapagos.org and click on the GALLERY to view this year’s other winning photos.

If you’re eager to submit your photos for the 2012 Galapagos Conservancy Calendar Photo Contest, we are now accepting submissions. Visit www.galapagos.org to read submission guidelines and rules. Deadline for submissions is: July 30, 2011.

2011 Galapagos Calendars

Filled with 42 breath-taking photos that will delight any wildlife enthusiast.

On sale now for $13 at www.galapagos.org

We also have: Galapagos coffee, T-shirts, holiday cards, books, mugs, totes, etc.