



# GALAPAGOS SPRING 2007 *news*

*a biannual English-language publication for members of the international network of Friends of Galapagos organizations*

## MARINE ISSUE

*Green Turtles*

*Sharks in Galapagos*

*Coral Conservation*

*Future of Fishing*

PLUS:

*Tourism: 40 Years in Galapagos*

*New Vocational School*

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## President's Report

# GALAPAGOS: A PEOPLED LANDSCAPE

As this newsletter goes to print, a World Heritage Center delegation led by its director, Francesco Bandarin, is preparing to visit Galapagos. Readers may remember that terrestrial Galapagos was one of the first sites to be nominated and then included on the roster of World Heritage Sites.

During their visit, the UNESCO committee will meet with, among others, the director of the Galapagos National Park, the governor, the mayor of Santa Cruz, the staff of local schools, the fishermen's cooperative of Santa Cruz, representatives from Capturgal, and the director of the Charles Darwin Foundation. The delegation will also visit tourist sites to gain additional understanding of conservation issues in Galapagos.

Of note should be the number of resident groups, politicians, and businessmen that will be part of these very important meetings. Galapagos is no longer an isolated national park, devoid of a significant human population. The islands now have a resident population of almost 30,000. While this number is modest by many standards, the fact that this population resides in an exceptionally delicate ecosystem means that it is a number to contend with.

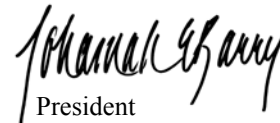
Successful conservation of Galapagos requires an acknowledgement that people form a part of the landscape and must form a part of the solution. I am pleased to report that some of the most critical

elements to successful conservation in Galapagos, such as legislative and regulatory frameworks, education, civil society, and sustainable economic systems, are now being discussed and addressed.

This issue of *Galapagos News* touches on a number of projects which have been set in motion to ameliorate the human footprint in Galapagos. It also speaks to the need to better understand the socioeconomic implications of current and proposed forms of tourism, which has become, by far, the largest driver of the Galapagos economy.

Galapagos maintains 95% of its pre-human biodiversity intact. It has survived, and will survive, because of the commitment of visionary Ecuadorians, contributions from the international scientific and conservation community, the tireless efforts of the Galapagos National Park and the Charles Darwin Foundation, and the growing awareness among those who live in the islands.

We will be successful in preserving Galapagos because those who are fortunate to experience its wonders are transformed and become committed to ensuring its future. Ultimately, this personal connection, which cannot be legislated, parsed, quantified, or even adequately expressed, is the most powerful conservation tool we have.



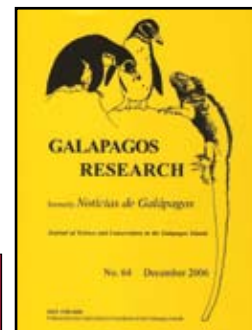
President

Galapagos Conservancy

## GALAPAGOS RESEARCH IS AVAILABLE!

The latest volume of *Galapagos Research: Journal of Science and Conservation in the Galapagos Islands* (formerly *Noticias de Galapagos*) is available. As a member of Galapagos Conservancy, you are entitled to a free copy upon request.

Please call the GC office at 703-538-6833 or email [member@galapagos.org](mailto:member@galapagos.org) for your copy.





# GREEN TURTLES IN GALAPAGOS

By Patricia Zárate

**The green turtle is the most common and abundant turtle species in the Galapagos Islands and the only one that breeds in the archipelago. It nests throughout the year, though mainly between December and May. Previous studies have shown that the primary nesting beaches in Galapagos for the green turtle were Quinta Playa and Bahía Barahona, south of Isabela Island; Espumilla on Santiago Island; Las Bachas on Santa Cruz Island; and Las Salinas on Seymour Island.**

Between 1975 and 1983 various studies were carried out showing that the number of nesting females increased from 102 to 1,961. These figures meant that the Galapagos population of nesting green turtles was one of the most important in the Eastern Pacific. Recaptures of marked individuals, though few, showed movement between nesting beaches and toward other countries, suggesting that the Galapagos population was partially migratory and partially resident.

In the past, the main threats to the green turtle were nest destruction by feral pigs and attacks on the eggs by a native scarabeid beetle. Feral pigs were abundant in some islands such as Santiago, where on one beach hatching success was less than two percent. In those days, few people visited nesting beaches, apart from scientists, although there was concern about sand extraction at nesting beaches in northern Santa Cruz Island.

After 1983 no research was conducted on turtles in Galapagos until the Charles Darwin Research Station began a systematic monitoring program in 2001 with support from NOAA. Intensive monitoring during the nesting seasons from 2002 to 2005 recorded a decline during the period from 2,756 to 724 nesting females, but still

confirmed that the green turtle population of Galapagos is one of the largest colonies in the Eastern Pacific.

Green turtle eggs and hatchlings are important in the diet of numerous introduced and native Galapagos species. Introduced fungus, bacteria, and fly larvae have recently been found to attack eggs and hatchlings during the incubation period. Once hatchlings emerge from nests, frigatebirds and herons are the most important native predators. Feral cats are a problem, but feral pigs are being controlled. For example, pigs have been eliminated on Santiago, and whereas the success rate for hatchlings emerging from eggs on Espumilla beach

tourism activities which may lead to the construction of roads and buildings close to nesting beaches.

The Galapagos Islands contain many high productivity areas where turtles gather to feed, and thousands of turtles are spread throughout the year around the coast of almost every island. Although longline and gillnet fishing are prohibited within the Galapagos Marine Reserve, illegal artisanal and industrial fishing is a regular occurrence and has a strong impact on the turtles. Green turtles with fishing hooks have been observed in foraging grounds. Headless and limbless nesting females have been recorded on beaches during the last nesting seasons.

Information from satellite transmitters attached to the carapaces of Galapagos green turtles has revealed some animals moving across the open ocean to the shores of Central America. During their journey they are vulnerable to injury caused by fishing gear.

The above information is essential in identifying, managing, and protecting important green turtle nesting and foraging habitats. The current provisional zoning of the GMR allows fishing activities along the shoreline

of most nesting beaches and foraging grounds. The system is due to be reviewed in the light of new data. Data collected at both nesting and foraging grounds will contribute to the appropriate classification of areas of importance to green turtles.

Although some surveys suggest the number of nesting females is now increasing, this does not necessarily tell the whole story and other evidence indicates that the overall population is in decline.

*Patricia Zárate runs the green turtle nesting and foraging research program at CDF.*



*Green turtle at Punta Cormorant, Floreana Island. (Photo by Lori Ulrich.)*

was only 1.88% in 1979, it had risen to 61.7% in 2003, and has since risen to an average of 86.4%. Predation by native Galapagos birds is now believed to be virtually the only cause of hatchlings not reaching the sea.

Uncontrolled human presence at nesting sites is a factor that could put nests at risk, while artificial light is another potential threat on nesting beaches. Lights can cause adult turtles to stop nesting and disoriented hatchlings lack the ability to move from the nest to the sea, sometimes moving to the back of the beach where they are vulnerable to dehydration, exhaustion, and depredation. Of major concern is the interest of some communities to extend



# NEWS

## FROM GALAPAGOS

PROVIDED BY THE CHARLES DARWIN FOUNDATION



### Another success story in the making!

restoring the island's degraded habitats. To this end, the Park used techniques pioneered in recent years on Santiago and

Isabela, such as the use of radio-telemetry and GPS, coupled with aerial hunting from a helicopter and ground hunting with the aid of trained dogs.

The results were spectacular! In just 22 days the park wardens eliminated 98 percent of the goats and donkeys estimated to be living on the island. The remaining two percent will be removed soon, using other methods.

### Bigger isn't always better

Large ground finches from Santiago Island established a new breeding population on Daphne Island in 1983. During a recent drought they started to compete with large-beaked medium ground finches for big seeds. As a result, medium ground finches with smaller beaks adapted to eating smaller seeds were more likely to survive and breed.

"Once this happened before our eyes, we realized we had a very unusual and potentially very important event to follow," said Dr. Peter Grant, a leading authority on Darwin's finches. In 2003–2004, the lack of rain meant that seeds of any kind were scarce, and natural selection occurred. Many birds died or disappeared; only small-beaked medium ground finches that ate seeds not suitable for medium ground finches with larger beaks survived. As beak size is hereditary, this combination of conditions resulted in the evolution of small-beaked medium ground finches on Daphne Island, and it occurred within just one bird generation.

### Rediscovery of an amazing plant

CDF botanists have rediscovered a leafless plant (below) that had not been recorded in Galapagos for more than 30 years. The parasitic *Ombrophytum subterraneum* takes nutrients from tree roots and only surfaces when it produces flowers and fruits. It was found by botany staff members Xavier Arturo, Fredy Nugra, and Felix Burgos who were collecting and cataloguing lichens and fungi in the *Scalesia* forest in the highlands of Santa Cruz Island.



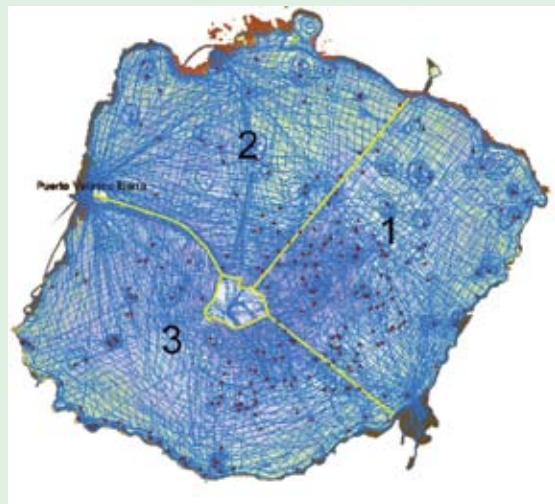
Fredy Nugra

The last recording of *Ombrophytum* was near Cerro Puntudo in the highlands of Santa Cruz in 1975 by Dr. Henning Adersen, a visiting scientist from the University of Copenhagen. Further field studies failed to find any specimens, and it was thought that invasive species such as feral pigs may have been eating the fleshy tuber.

### The West Nile Virus threat

We have discussed the threat posed by this mosquito-borne virus before in *Galapagos News*, but as time goes by the threat looms larger. If the West Nile Virus (WNV) is introduced in Galapagos it is likely to cause catastrophic mortality among the archipelago's birds, reptiles, and mammals. The information that follows was extracted from a bulletin of IGTOA, the International Galapagos Tour Operators Association.

Dr. Charlotte Causton, a scientist at the Charles Darwin Research Station, believes that the current inspection and quarantine system urgently needs upgrading. It was set up in 1999, when there were 60,000 visitors to Galapagos. Today, with more than double that number going to the



This chart shows the tracks of the helicopter as it flew over Floreana Island during the eradication project, and indicates how meticulously the wardens searched the island.

### Floreana almost free of goats and donkeys

Following on from its magnificent successes in eradicating large mammals, mainly feral goats and donkeys from the islands of Santiago and Isabela, the Galapagos National Park (GNP) has good news to report from the southern island of Floreana.

The smallest of the inhabited islands of Galapagos, Floreana is nevertheless the one that has been most seriously affected by introduced species, mainly because it was the first to be colonized. The 19th-century settlers brought with them a range of domestic animals and some plants which had a devastating impact on the island's ecosystems. This included serious erosion, loss of native vegetation, and a decline in the native and endemic fauna. At least one plant species (*Sicyos villosa*) became extinct, as did the giant tortoises that once lived there.

However, in December 2006 the GNP launched an ambitious project aimed at



islands, SICGAL, the government body responsible for inspection and quarantine, has even fewer inspectors than before, and has no technical, legal, or educational staff.

She also cites the advent of large cruise ships, such as the 500-passenger *Discovery*, as a likely source of insects from other parts of the world. David Cruz, technical advisor for the Quarantine System at the Research Station, agrees, but it's the aircraft that worry him most. More than 130 flights a month from the mainland are overwhelming the system, according to Cruz. He points out that there is a new airport opening on Isabela Island. The more entry points there are, the greater the risk of introducing new species, and private flights from outside Ecuador, from countries like Peru, Brazil, and Panama, bypass the inspection system altogether.

## Helping enforce fishery regulations

WildAid, in cooperation with the World Wildlife Fund, the Sea Shepherd Conservation Society, Galapagos Conservancy, and the Galapagos Forever Foundation recently invested more than \$460,000 to carry out a complete overhaul of the *Sirenian*, a ship in the Galapagos National Park Service fleet.



*Sirenian*, now named *Yoshka*

A fleet of marine vessels of varying sizes and capabilities is central to the Park's ability to enforce fisheries regulations and to conduct scientific research in the Galapagos Marine Reserve, and the *Sirenian*, an ocean-going vessel, and arguably the fastest in the fleet, is the cornerstone of this effort. Following the refit, the ship has been renamed the *Yoshka*.

## Vegetation returns to Santiago Island



Paquita Hoeck

*Regrowth of Opuntia cacti*

During her field work on mockingbirds, Paquita Hoeck and her Canadian assistant Mike Janssen stayed at Puerto Nuevo on Santiago Island for ten days in January. Every morning they walked through the area between the coast and the volcanic hill Pan de Azúcar. "We found the walking very easy here, in the open spaces where large goat and donkey populations once roamed," said Paquita. "But thanks to the efforts of the Project Isabela team, Santiago Island is now considered free of these destructive animals. It was fantastic to witness how the island is already recovering. The nicest sign for me were the *Opuntia* cactuses that are appearing in large numbers on the arid soil, forming beautiful groups of spiny statues between the palo santo trees. Well done Project Isabela!"

## National Geographic Channel Hails Galapagos!

On Sunday, March 18, 2007, the US-based National Geographic Channel premiered a stunning three-hour high-definition movie about the wonders of Galapagos. Almost three years in the making, culled from more than 300 hours of HD footage, *GALÁPAGOS* is the first in-depth, full-access film made in over 20 years about these 13 extraordinary islands and the wondrous array of wildlife that calls them home.

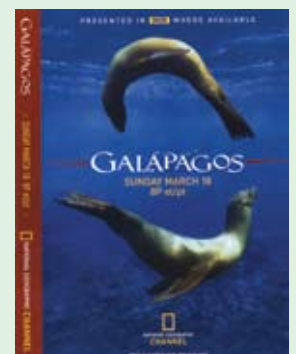
National Geographic Channel, in conjunction with Galapagos Conservancy, Lindblad Expeditions, and the Embassy of Ecuador, hosted a movie premiere event a few days prior to the United States television debut at the National Geographic headquarters in Washington, DC. More than 400 people attended, including the Ecuadorian Ambassador to the United States, The Honorable Luis Gallegos, and the Ecuadorian Minister of the Environment, Ana Alban.

Ecuadorian artist Miguel Illescas provided artwork for the evening's reception with his colorful sculptures comprised of textured metals, and Galapagos Flores created the sweet-smelling atmosphere by arranging flower displays with 1,000 Ecuadorian roses donated by the Embassy of Ecuador. Continental Airlines and Lindblad Expeditions generously donated airfare and a trip-for-two to Galapagos for a raffle, which

raised money for Galapagos Conservancy. Bruce and Ellen Ramsay of Tacoma Park, Maryland, were the lucky winners.

The event and the television premiere of *GALÁPAGOS* captivated audiences both familiar and unfamiliar with the special biodiversity and geography of the Galapagos Islands. We hope that *GALÁPAGOS* will make the world more aware of the importance of conserving one of the world's most scientifically significant and truly wild places.

Visit the Galapagos Conservancy website to order your own DVD of *GALÁPAGOS*: [http://www.galapagos.org/news/02\\_2007\\_NatGeoGalapagos-Series.html](http://www.galapagos.org/news/02_2007_NatGeoGalapagos-Series.html). Click on the Amazon.com *GALÁPAGOS* DVD link on this page and place your order with Amazon.com. Amazon.com will donate a small percentage of the sale to Galapagos Conservancy.

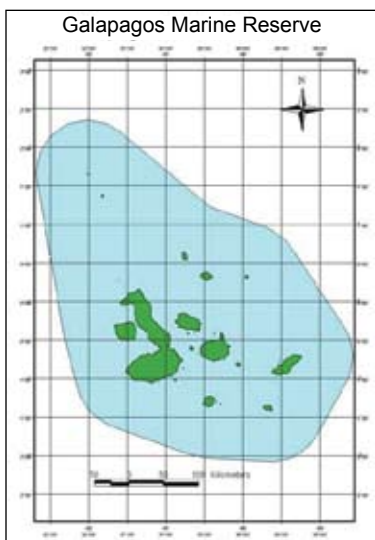


# SHARK RESEARCH AND CONSERVATION

BY ALEX HEARN

*Coordinator of Fisheries Research  
and Population Dynamics at the  
Charles Darwin Foundation*

**The Galapagos Marine Reserve (GMR), which straddles the Equator at approximately 600 nautical miles from the coast of Ecuador, is one of the largest marine reserves in the world. Its protected waters extend 40 nautical miles from a baseline connecting the major islands, covering a total area of 138,000 square kilometers (over 53,000 square miles) of Pacific Ocean and featuring a dynamic mix of tropical and Antarctic currents and rich areas of upwelling.**



Consequently, the GMR contains an extraordinary range of biological communities, including penguins, fur seals, tropical corals, and large schools of hammerhead sharks. It has a high proportion of endemic marine species and supports the coastal wildlife of the terrestrial Galapagos National Park (GNP), such as marine iguanas, sea lions, flightless cormorants, swallow-tailed gulls, lava gulls, waved albatross, and three species of booby. It also appears to play an important role in the migratory routes of pelagic species such as marine turtles, whales, dolphins, Galapagos sharks, and the world's largest fish, the whale shark.

A total of 30 species of shark have been recorded in the reserve, including a recently discovered new species, the Galapagos catshark, which was filmed at a depth of 600 meters (2,000 feet). As top predators, most shark species contribute to the healthy functioning of the diversity of marine ecosystems. The GMR fully protects sharks within its boundaries and,



*Newly discovered Galapagos catshark* (MY Octopus)

given its great size, it probably represents the largest shark refuge in the world.

However, there is strong evidence of illegal shark fishing within the GMR, starting in the 1980s. Sharks are primarily exploited for their fins, which are highly valued in Asian markets. This is reflected by an increase in shark fins confiscated by the GNP, whose confiscation of fins has risen from 556 in 1996 to over 13,000 fins during the last five years. 90% of the species concerned were mainly requiem sharks (silky, blacktip, Galapagos, sandbar, blue sharks, etc.), and the remaining numbers included hammerheads, thresher sharks, and whale sharks.

More importantly, it appears that a significant proportion of juvenile hammerhead and requiem sharks are being taken.

In recent years, sharks have gained importance in Galapagos as a key tourist attraction, with visitors arriving from all over the world for a close-up experience with the large schools of hammerheads which have become the symbol of the GMR. The Galapagos community is becoming more aware that sharks may provide a far more lucrative source of income alive than dead, but dive guides have perceived a drop in shark numbers over the past ten years.

However, scientific information on sharks in the GMR is very poor, so in



2006, the Charles Darwin Foundation initiated a Shark Research Program, aimed at gathering basic information on population structure, spatial distribution, home range, and biological status of hammerhead, Galapagos, and whale sharks in the vicinity of Darwin and Wolf islands, the locations of highest shark densities. This program links closely with other research being carried out throughout the eastern tropical Pacific.

The main component of this program involves attaching small ultrasonic tags behind the dorsal fins of sharks by free diving. Receivers are deployed at known shark "hotspots" and these detect the signals emitted by the tags. Using this method, we aim to improve our knowledge of sharks' site-fidelity, whether they move between sites, and whether they move across the region. This work is complemented by satellite tags which allow us to estimate the long-term movements of sharks away from hotspots.

In July 2006, the first tagging trip in Galapagos took place. Fourteen hammerheads were tagged at Wolf Island, and an additional four hammerheads, three Galapagos sharks, and one whale shark were tagged near Darwin Island. At each site, two receivers were installed. At the same time, 12 Galapagos sharks (including the three which had been tagged with ultrasonic devices) were caught by hand-line using the expertise of a local fisherman. Each Galapagos shark was brought onboard the Galapagos National Park Service research vessel and fitted with two types of satellite tag. Earlier the same month, one Galapagos shark was tagged with a continuous transmitter at Gordon Rocks, by Santa Cruz Island, and tracked manually for three hours.

Three months later, on retrieving the receivers and downloading the information, several startling discoveries were made. Not only did we register the presence of 20 out of the 22 tagged animals, proving that the methodology was successful, but most of the hammerheads moved between the two study sites, the south-eastern corner of Wolf and the eastern side of Darwin, indicating that most of their time is spent at hotspots. One individual moved back and forth between the sites at least three times. Some of the Galapagos sharks with satellite tags showed interesting movements, apparently hopping from island to island.



*Shark fins drying in the sun, Taiwan*

Throughout 2007, we aim to build on the success of the pilot work carried out in 2006, and to involve stakeholders in the local community, particularly the

dive guides, who can be a very important source of information regarding shark numbers and distribution.

WILDAID



## WHAT IS THE FUTURE OF FISHING IN GALAPAGOS? *by Carlos Zapata Brazo*

**If there is one thing on which the conservationists, tour operators, and fishermen in Galapagos are in agreement, it is that fishing resources are getting ever scarcer.**

However, they do not agree on the solution. When the Galapagos Marine Reserve was created in 1998 all parties worked for the same goal: to exclude industrial fishing from the islands and keep the Reserve for the sole use of local artisanal fishermen regulated by the Galapagos National Park. However, once the Reserve was created, internal conflicts resulted in confrontations between the various parties. In 2003 and 2004 the level of conflict had increased to such a point that the artisanal fishermen decided not to participate in the Participatory Management Board, a body that had been created to manage the Reserve. The so-called "war of the sea cucumbers" became international news.

The main reason for the depletion of sea cucumber and lobster fisheries was the excess numbers of fishermen and fishing vessels, brought about by the high prices obtained from harvesting these species. Another factor was the expectation that some organizations would buy out fishermen.

According to the Special Law for Galapagos 1998, the fishermen would be given preferential treatment for any new tourism licenses. However, that has not been easy to achieve, since most of them lack the necessary skills or the large amount of money needed to buy or equip a boat suitable for tourists.

The fishermen are looking for new ways of earning a living. Traditional fishing is no longer economically viable, so they have asked to exploit new species, but so far this has not been allowed.

Perhaps the only real alternative activity that has been approved is "Pesca artesanal vivencial" which entails the artisanal fishermen making small adaptations to their boats and taking tourists out fishing.

So what is the future for fishermen in Galapagos? The way ahead will not be easy, but the Charles Darwin Foundation, the Galapagos National Park, along with local fisheries cooperatives and a number of other organizations, are working hard to find solutions.

*Carlos Zapata Erazo is Director of FUNDAR-Galapagos, which works with Galapagos residents in support of integrated development and conservation of the Galapagos archipelago.*

# CORAL CONSERVATION IN THE NORTHERN ISLANDS *by Dr. Terence Dawson*



Terence Dawson

*Rediscovered coral Gardineroseris planulata*

**The far northern islands of Wolf and Darwin form a distinct and isolated biogeographic zone in the Galapagos Islands that supports a high level of biodiversity, including priority conservation endemic corals and associated species. These species are, however, subject to extreme human and “natural” climatic pressures.**

The extreme climatic fluctuations during El Niño events in the region are particularly damaging for corals. For example, extensive coral reefs were reduced by 97% in 1982-83 and further compounded to 99% losses in 1997-98. Subsequent surveys show that Wolf and Darwin currently harbor about 95% of the remaining coral species now found in the Galapagos Marine Reserve (GMR) including rare corals that may well become locally and indeed globally extinct, and demand special attention to their conservation.

A recent project funded by the British government's Darwin Initiative program is now underway towards protecting the last remaining extensive Galapagos coral reefs of the northern islands. Entitled "Galapagos Coral Conservation: Impact Mitigation, Mapping, and Monitoring," the project is led by Dr. Terence Dawson, from the University of Edinburgh, and Scott Henderson, from Conservation International. Other principal project partners include WildAid, as well as the Charles Darwin Foundation and the Galapagos National Park. The overall science and management objectives of the project will be to:

1. Improve the baseline scientific knowledge of coral reefs and associated

biodiversity of the northern Galapagos Marine Reserve through marine monitoring and mapping surveys.

2. Reduce coral damage from tourist and fishing boat anchors through the installation and establishment of a minimum of six permanent boat moorings located at popular diving sites.

Although research into Galapagos coral has been carried out previously, this project constitutes the most comprehensive study using innovative mapping techniques undertaken to date in the remote northern islands. It builds upon an earlier Darwin Initiative project, which had highlighted the conservation priority of the Wolf and Darwin coral reefs. In addition to the establishment of baseline biodiversity data, the project will actively engage with the fishing and tourism industries for improved management of the marine environment through capacity-building of local tourism and diving guides and fishermen.

The project has completed two major expeditions to date; the first was conducted in September 2005, followed by a second expedition in May 2006. The first expedition resulted in the re-discovery of a coral species that was thought to have become extinct as a result of the 1982-83 and 1997-98 El Niño events—several separate, but small, colonies of the species *Gardineroseris planulata* were identified at

the Wolf and Darwin island sites. On the second expedition, at least three new coral species (*Pocillopora effusus*, *Pocillopora inflata*, and *Pavona chiriquiensis*) have been named since an earlier 1970 survey, and possibly an additional new species of *Leptoseris* was collected during the Darwin Initiative 2006 cruise.

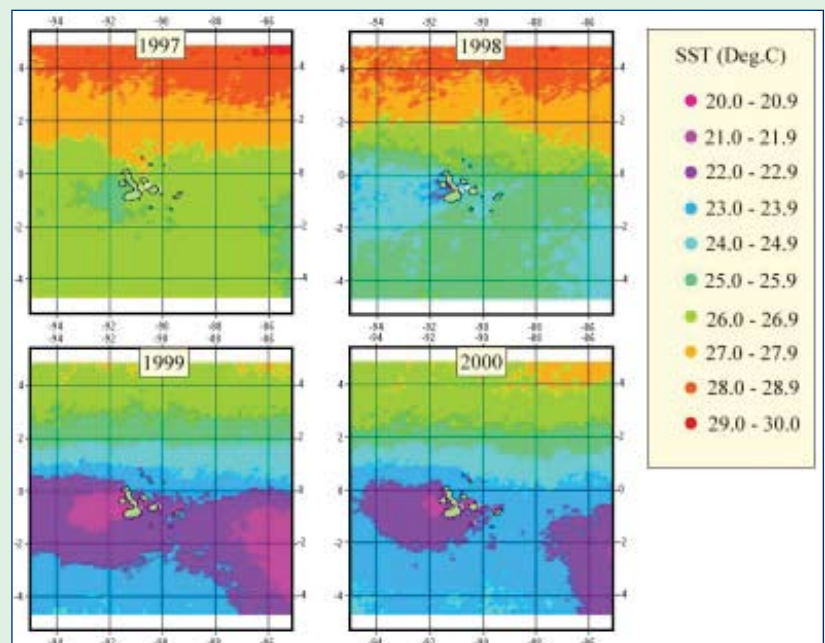
The coral samples collected during this latest survey are currently being prepared for systematic morphological and molecular analyses. Contrary to expectations, corals seem to be recovering quite well from past devastating El Niño events. International coral expert, Dr. Peter Glynn, who had joined us on the 2006 cruise, has provided a report on his observations contrasting that year with the past 35 during which he has conducted coral research in Galapagos.

The lesson learned is that with proper protection, corals in Galapagos may continue to recover well. This is an additional reason to install all the proposed dive boat moorings this year, 2007, to encourage maximum recovery before any future El Niño events.

*Terence Dawson is the Principal Investigator of the UK's Darwin Initiative project, which provides funding in support of research of the resilience of coral reefs of Wolf and Darwin islands.*



Sea surface temperatures, which relate to coral bleaching





# A GROUND-BREAKING VOCATIONAL SCHOOL

Pablo Guerrero



*Students of the Colegio Nacional Galapagos Culinary Program*

by Sven Lorenz

**In the past 50 years, Galapagos has experienced an average population growth of 5.9% per year. There are now about 30,000 people living in the islands, with the majority on Santa Cruz Island and San Cristobal Island. Most of the recent migrants have come from the lowest level of the socio-economic pyramid. Tourism may bring large sums of money to the islands, but little of it filters down to such people, who usually possess only a few rudimentary skills.**

For local restaurateurs and hoteliers, the situation is often frustrating. Many of them try hard to hire people from the islands' labor pool. Unfortunately, most of the skilled workers still have to be imported from mainland Ecuador simply because there are none available locally.

Pablo Guerrero, manager of the successful Finch Bay Hotel on Santa Cruz Island, stepped in. The Government of Spain had recently made a gift of an industrial-size kitchen to help Galapagos set up a vocational school for aspiring chefs. The kitchen had arrived with the requirement that it had to be installed and used within two years of its arrival. If it was not used it would have to be shipped back to Spain.

Here was a great opportunity that would enable some of the archipelago's

youngsters to take higher-paid jobs in the local community, while reducing the need for imported labor. But sadly there was no money to establish the teaching program.

## *Ten-minute meeting*

By coincidence a solution for funding such a school was found—literally between a front door and a car. Pablo's best friend, Vasco von Baselli, who is also a hotel manager, had been equally frustrated by the local labor situation. As General Manager of the Royal Palm Hotel in the highlands of Santa Cruz, he too had some first-hand experience with the difficulty of finding trained staff.

Vasco happened to be at the reception desk of his hotel when I was about to leave after a short stay. A quick chat immediate-

ly revealed lots of common ground—and crucially, interests that we shared.

Ten minutes later, the decision had been made that we would seek funds to create the first vocational school in Galapagos.

## *The school today*

Since April 2006, the Colegio Nacional Galapagos Culinary Program has been preparing 30 local students for a career in the hospitality industry. Enrollment for the following school year is approximately 60 students. The local high school in Puerto Ayora provided the space within its grounds, and the head mistress, Maria Lopez, supported the concept from the start.

In daily classes, the students are not just learning how to cook. Safety standards, improving their English language skills, food culture, and folding napkins are among the twelve different subjects taught in year one. Possibly most important, they also learn which local fish can be sustainably caught, and which cannot. Besides becoming valuable additions to the local labor pool, the students are also learning that the islands' resources must not be taken for granted.

## *Meet a student*

Daniel was already the sole provider of his family when he enrolled in the Culinary School. The School requires him to attend 40 hours a week, on top of the obligations thrown upon him by the early death of his parents, which require him to look after his siblings. Sensing an opportunity to both double his future income (to about \$600 per month) and help the islands, Daniel rose to the task in an admirable way—his grades are among the best in the school.



*Sven Lorenz is a member of Galapagos Conservation Trust and personally helped raise much of the funds to run the culinary program.*



*Students bottle homemade sauces as part of the culinary program.*





# FORTY YEARS OF TOURISM IN GALAPAGOS

John Whitear

*by Leonor Stjepic, Executive Director of Galapagos Conservation Trust*

**In 2003, the BBC surveyed the British public to ask them to name the place they most wanted to visit before they died. The Galapagos Islands came in the top fifty. Proof—if it was needed—that Galapagos continues to inspire visitors and would-be visitors as it did over 170 years ago when Charles Darwin visited on HMS Beagle.**

However, it was a long time before Galapagos became a tourist destination. Most early visitors were economic migrants, in the broadest sense, while others came involuntarily as convicts. Scientists did not pay much attention to the islands (despite Darwin's writings) until the early years of the 20th century. It was not until 1967 that the first organized tourist visit occurred. This was when Lars-Eric Lindblad, a New York tour operator, arrived with about 60 passengers in the chartered Chilean navy ship *MV Navarino*. Forty years later the face of tourism in the islands has changed radically and it is now facing another major upheaval with the coming of a large cruise ship.

Following Lindblad's cruise, tourism developed slowly, but by 1974 had reached 7,500 visitors. Thereafter the rate of growth increased, and in 2006 there were 120,000 visitors to Galapagos, of whom approximately 25,000 were Ecuadorians. Others came largely from the United States, with British visitors the second largest foreign group. Most tourists do not stay on the islands but transfer immedi-

ately to boats on which they sail round the islands—a pattern that has been in place virtually since the beginning. Of the 84 vessels with permits to carry passengers in Galapagos, the majority are owned by Galapagos residents or mainland Ecuadorians, and all are operated by Ecuadorian companies or individuals. All tourists are accompanied by naturalist guides who have to undergo training by the Galapagos National Park.

Traditionally, these tourists have been those who see their journey to the islands as the holiday of a lifetime. For those with an interest in wildlife, the opportunity to walk among animals that have no fear of humans makes this a journey that will be remembered forever. Visiting Galapagos is like stepping back in history to a time before humans began to have such a negative impact on the natural environment. Galapagos is one of those rare places on earth where expectations are exceeded; every day seems magical.

However, as other places in the world are affected by conflict and instability, Galapagos is increasingly being visited by travellers who are seeking a "safe" holiday. Gradually a new type of traveller is being seen in the islands—one who

may come to see Galapagos, but also has come for the vessel itself and its amenities. IGTOA (the International Galapagos Tour Operators Association) reported that a veteran Galapagos guide recently spoke to them about his experience on a ship where most passengers chose a boat (panga) ride rather than the walk that visitors normally make on shore. He was also told not to bring up the topic of evolution as there had been complaints.

The visit of a cruise ship carrying 500 passengers to Galapagos in 2006 and early 2007 could see this process accelerate. The ship's owners have stated that they want to see their ship visit Galapagos more frequently, and possibly every month, despite the fact that last year it spent three days at anchor off San Cristobal Island, and most passengers experienced a less than magical



Mark Coreth

*The Alta, a 16-berth tourist vessel*



visit. Mainstream conservation bodies consider the large ships's planned visits inappropriate.

Overall, tourism has benefited Galapagos. It has provided jobs and income locally and the tens of thousands of visitors who have explored the islands in the last forty years have become advocates and supporters of conservation of the archipelago. Without the funds raised from visitors from the National Park entrance fee, and also through their generous support of the various Friends of Galapagos organizations worldwide, much of the vital conservation work carried out by the Charles Darwin Foundation and the Galapagos National Park would not have happened. Tourism could also provide alternative employment for local Galapagos residents currently involved in more destructive activities such as sea cucumber harvesting and shark finning (for details, see elsewhere in this issue).

However, we are rapidly reaching a point where tourism will become the problem not the solution. The visit last year, and again this year, of the Discovery has shown that some in Galapagos are already thinking that mass tourism is the answer. In our view, mass tourism is not appropriate for Galapagos. Apart from the increased risk of introduced species, and of vectors of disease such as Avian Flu or the West Nile Virus, we are also concerned about the effects of another boom and bust cycle in Galapagos. The last one—based on the sea cucumber fishery—had a huge impact on the islands' fauna and flora. The arrival of cruise ships often causes the local economy to gear up for an influx of potential shoppers; but when the big ships stop coming local businesses fail.

So what is the future of tourism in Galapagos? Should we continue to encourage visitors to come? The answer is one that has worked in other parts of the world. The Galapagos community—local institutions, conservationists, tour operators, and others—must promote tourism that is low-volume/high-value, and in which local people benefit. The latter consideration is extremely important. We must discuss the issues openly so that those thinking about visiting Galapagos can do so on an informed basis. And we should continue to support the local institutions that are working to establish a tourism model that is both sustainable and responsible. That's important for the whole world.



## THE NEED TO TURN AROUND TOURISM *by Graham Watkins*

**Galapagos is an extraordinary place as a result of the work of many people over the last fifty years who have strived to ensure the effective conservation of these islands. Unfortunately, Galapagos is at a crossroads and indirectly under threat from those who want to visit these unique islands.**

Tourism in Galapagos is growing rapidly and seemingly without limits, and we need to recognize that this growth is not sustainable. The number of visitors in 2006 is triple the number in 1990. From 1991 to 2006, the number of beds on vessels in Galapagos increased by 80%; the prospect of twelve 500-passenger cruise ship visits, as proposed in existing legislation, will result in an additional 5% increase. Extending present rates of growth to the future mean that in 2021 we should expect at least 400,000 annual visitors staying in about 120 ships and 130 hotels.

Tourism provides local and national benefits through employment and ownership of the companies that make money from tourism. Presently, Galapagos tourism is worth an approximate \$400 million, of which almost half is spent on the international leg of the journey. Tourism is the mainstay of the islands' economy and as such is the major driver of growth. There is a strong correlation between the human population growth on the islands and the growth in tourism.

Growth of the economy, population, and number of tourists will increase the probable arrival of invasive species—the greatest threat to the native plants and animals—and an increased likelihood of

man-made disasters such as oil spills. While growth would be good for purely short-term economic reasons, its implications for the future are dire.

We have to ensure that the results of fifty years of successful conservation and tourism are not abandoned by letting an uncontrolled free market drive decisions in Galapagos. To ensure that tourism is sustainable in the future, we—the market—must choose trips with companies that are growing in quality and not volume. We must ensure that our money finds its way into the pockets of local residents, but does not bring additional people and outside investors to the islands. We also need to ensure that the ships and hotels we choose are proactively and directly supporting conservation and sustainable development.

In short, we need to turn tourism around in Galapagos. If we don't, it will be nearly impossible to ensure that these extraordinary islands are as well conserved fifty years from now as they are today. Visitors must begin to put pressure on the companies that are operating in Galapagos to reduce growth; customers have the power to affect changes in business practices. Tourism can be sustainable in these magical islands—but only if the market begins to define the shape of tourism in the future.

*Graham Watkins is Executive Director of the Charles Darwin Foundation and Research Station in Puerto Ayora on Santa Cruz Island in Galapagos.*

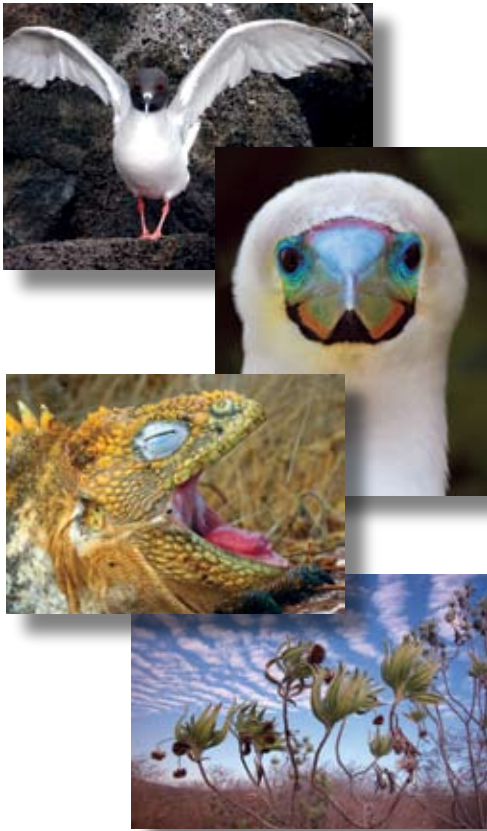


*Tourists enjoying a beach on Floreana Island (above) and disembarking from an airplane at the airport on Baltra Island (right).*



*Lori Ulrich*

# GALAPAGOS CONSERVANCY CALENDAR PHOTO CONTEST 2008



A few 2007 winners (from top): LaVey Norquist,  
Bill Klipp, Don & Norine Audette, Christine Swanson

Galapagos Conservancy invites you to submit your favorite Galapagos photographs for our 2008 Galapagos Conservancy calendar. Staff and close supporters of Galapagos Conservancy will choose 14 winning photographs sent in by our members to be included in the 2008 calendar, with the favorite featured on the cover. We will also select 25-35 additional photos to appear as details in the empty spaces of the monthly grids.

## RULES FOR SUBMISSION:

- 1) Submissions are due by midnight on **June 30, 2007**.
- 2) Please do not send more than 5 photographs per person.
- 3) Please do not send photos that have been submitted to past GC photo contests.

High quality photos make all the difference! Please visit our website for submission guidelines and more details, and to view the winners from 2006 and 2007:

<http://www.galapagos.org/photos/photocontest.html>

**HOW TO SUBMIT:** We prefer digital image submissions. Please email your photos as labeled attachments (*subject.photographerfirstandlastname.2008.jpg*, example: *SeaLions.JenniferSmith.2008.jpg*) to **photo@galapagos.org**. Be sure to include your name, mailing address, email address, and telephone number in your email. We will not consider photos submitted by means of an online photo display website.

You may also submit photographs, slides, or a CD. Be sure to label your photos with your name, mailing address, email address, and telephone number, or include a separate note with this information. If you would like your photos returned, enclose a self-addressed stamped envelope with your submission. Please mail your submission to:

**Galapagos Conservancy—Photo Contest 2008**  
407 N. Washington Street, Suite 105, Falls Church, VA 22046

407 North Washington Street, Suite 105  
Falls Church, VA 22046

*Saving one of the world's great treasures*

**GALAPAGOS**  
CONSERVANCY

