

GALAPAGOS PASSPORT



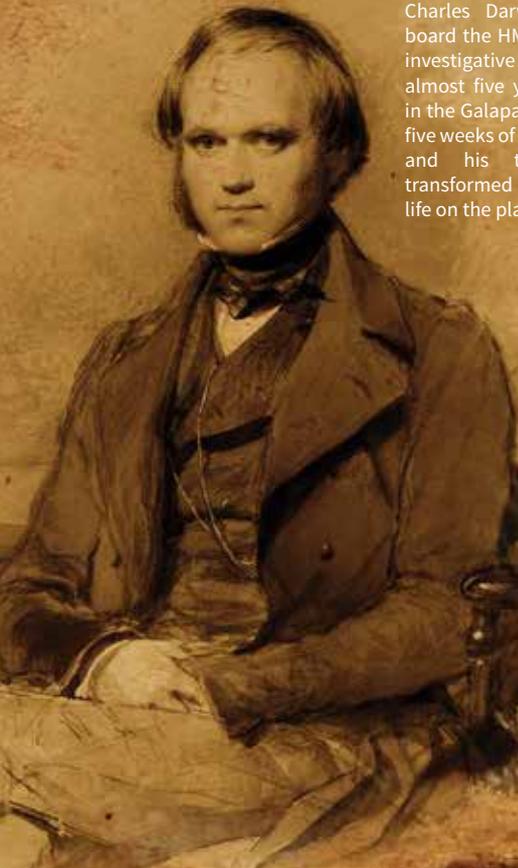
Estación Científica
Charles Darwin
Research Station



Oct. 20
Wolf Darwin

Charles Darwin in Galapagos

In 1831, a young 22-year-old Charles Darwin left England on-board the HMS Beagle as part of an investigative journey that lasted almost five years. When he arrived in the Galapagos Islands in 1835, his five weeks of scientific investigations and his theory of evolution transformed our understanding of life on the planet.



HMS BEAGLE 1835



fundación
Charles Darwin
foundation

All our projects are carried out with the support of the Ecuadorian Ministry of Environment, the Galapagos National Park Directorate and other collaborators.

Ensure the Conservation

of the Galapagos Islands

Conservation of Ecosystems



Protection of Marine Ecosystems
and Priority Species

Protection of Terrestrial Ecosystems
and Priority Species

Understanding Biodiversity
and Ecosystem Processes

Restoration of Ecosystems



Recovery of Threatened Species

Recovery of Threatened Ecosystems

Sustainable Development and Human Well-being

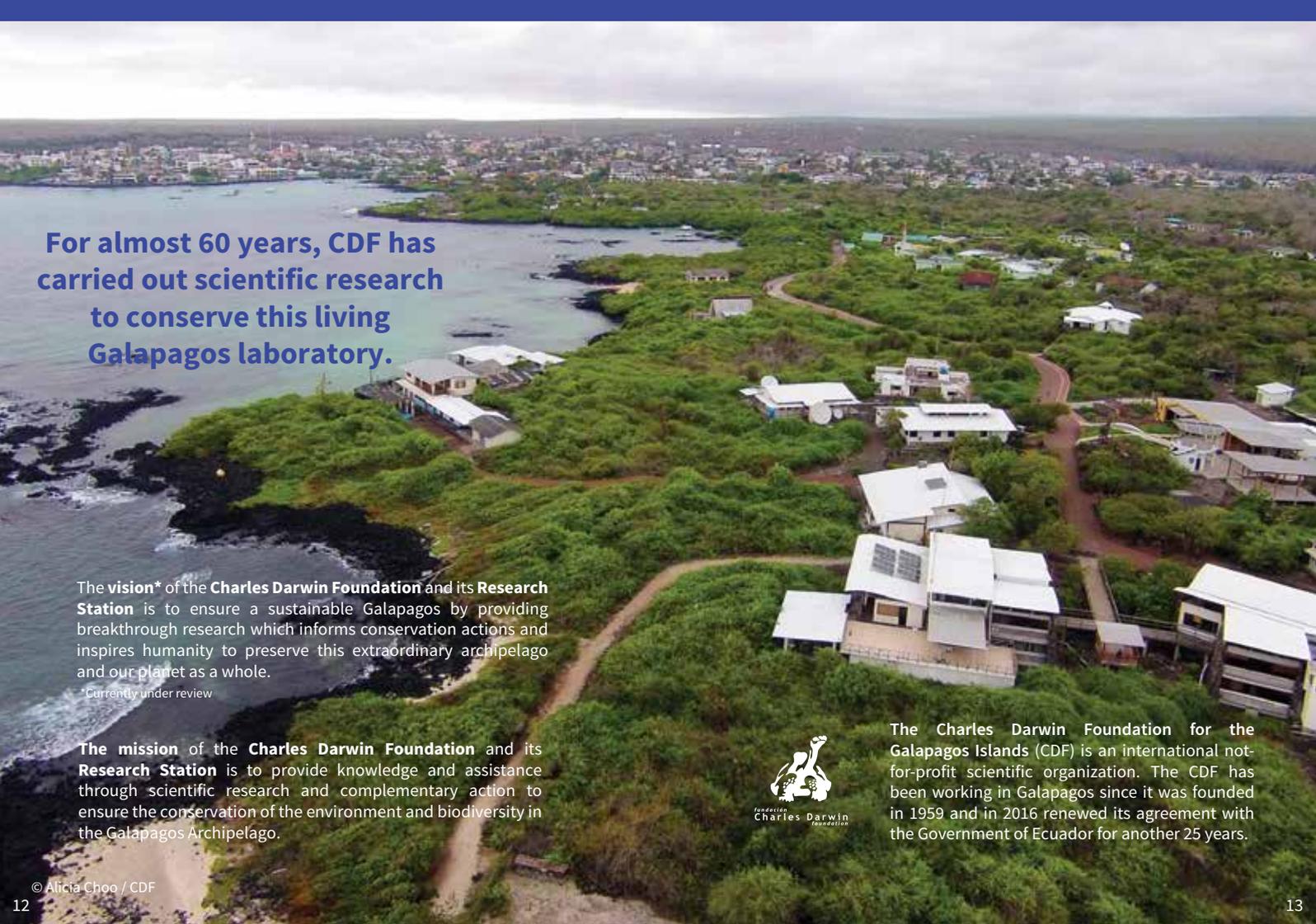


Provision and Protection
of Ecosystem Services

Sustainable Food Production

Prevention of the Impacts
of Invasive Species

Outreach and Education



For almost 60 years, CDF has carried out scientific research to conserve this living Galapagos laboratory.

The **vision*** of the **Charles Darwin Foundation** and its **Research Station** is to ensure a sustainable Galapagos by providing breakthrough research which informs conservation actions and inspires humanity to preserve this extraordinary archipelago and our planet as a whole.

**Currently under review*

The **mission** of the **Charles Darwin Foundation** and its **Research Station** is to provide knowledge and assistance through scientific research and complementary action to ensure the conservation of the environment and biodiversity in the Galapagos Archipelago.



The **Charles Darwin Foundation for the Galapagos Islands (CDF)** is an international not-for-profit scientific organization. The CDF has been working in Galapagos since it was founded in 1959 and in 2016 renewed its agreement with the Government of Ecuador for another 25 years.



Institutional Achievements

1959
The Charles Darwin Foundation for the Galapagos Islands (CDF) is created and the Galapagos National Park (GNP) is established.

1964
The Charles Darwin Research Station (CDRS) is inaugurated in Puerto Ayora, Santa Cruz Island.

1965
The 'Giant Tortoise Captive Breeding and Repatriation Program' is launched.

1966
The first Education for Conservation of the Galapagos Islands program is launched.

1971
Together with the GNPDP, CDF discovers Lonesome George, the last known surviving Pinta Island giant tortoise.

1972
CDF's Scholarship and Volunteer Training Program is founded for Ecuadorian students.

1976
Together with the GNPDP, CDF initiates the Land Iguana Breeding and Repatriation Program.

1995-1997
The daisy tree (*Scalesia atractyloides*) and the Floreana flax (*Linum cratericola*), thought to be extinct, are rediscovered in collaboration with the GNPDP.

1997
Project Isabela is launched – the largest eradication and restoration project in the world, focusing on eliminating the goats and pigs of northern Isabela, Santiago and Pinta Islands.

1998
The Special Law for Galapagos creates the Galapagos Marine Reserve (GMR). Contributions from CDF are crucial in ensuring that Galapagos' needs for local sustainable development and environmental education are met under this new law.

2000
The Terrestrial Invertebrates Database and Collections are established. The Galapagos Inspection and Quarantine Program is initiated to prevent introduced species from reaching the islands.

2002
CDF researchers and GNPDP staff deliberately release the Australian lady bug to control the cottony cushion scale invasive insect.

2007
CDF releases the "Galapagos at Risk" report, effectively analyzing damaging socio-economic trends in the archipelago.

2012
The dataZone web platform is launched. Efforts to control the invasive *Philornis downsi* fly are initiated.

2014
The first mangrove finch is born at the CDRS, as part of the 'Captive Rearing Program'.

2016
Scientific research supports the declaration of the Darwin and Wolf Marine Sanctuary. The CDF renews its agreement with the Ecuadorian Government to operate the CDRS in Galapagos for another 25 years.

2017
The Ecuadorian National Assembly ratifies the Agreement between CDF and the Government of Ecuador.

A man with short, thinning hair, smiling, stands on a rocky beach. He is wearing a white short-sleeved button-down shirt with a logo on the left chest pocket and a watch on his left wrist. The background shows the ocean with waves crashing against dark rocks under a cloudy sky.

Arturo Izurieta Valery Executive Director

In 2015, Dr. Arturo Izurieta Valery became the Executive Director of the Charles Darwin Foundation for the Galapagos Islands (CDF). He is the first Ecuadorian permanent resident of Galapagos to have a Doctorate of Philosophy in the field of Natural and Rural Systems Management. In his role as Executive Director of CDF, Dr. Izurieta has led the process of renewing our agreement with the Government of Ecuador for another 25 years and has signed both national and international cooperation agreements for the CDF.

Conservation of Ecosystems

- ▶ Protection of Marine Ecosystems and Priority Species





© Elvis Celi / CDF

Reducing the Threat of Boat Strikes for Green Turtles

In collaboration with Queen's University Belfast, we have developed a project to reduce the number of turtles injured and killed by boat impact.



© Shannon D'Arcy Photography / Falmouth University



© Daniel Unda García / CDF



Population Studies of Sea Birds

We conduct long-term ecological monitoring of sea birds such as the Galapagos penguin, flightless cormorant and waved albatross in order to improve management plans and ensure their survival.



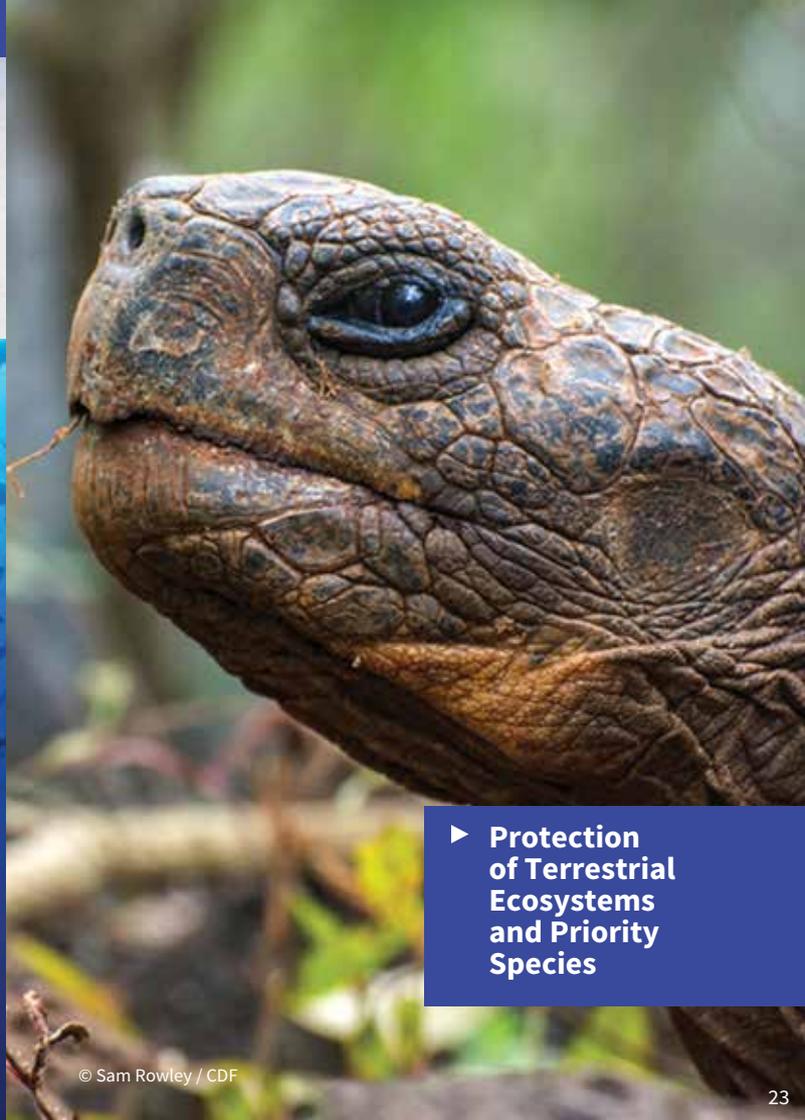
© David Acuña / CDF

Status and Ecology of Sharks

We are researching shark ecology to determine the effectiveness of the Galapagos Marine Reserve in protecting them and to understand the effect of El Niño/La Niña in the context of climate change.



© Pelayo Salinas / CDF



► **Protection of Terrestrial Ecosystems and Priority Species**

© Sam Rowley / CDF

Status and Ecology of Landbirds

We are working on strategies to detect species declines in a timely manner and evaluate the status of landbirds in the archipelago.

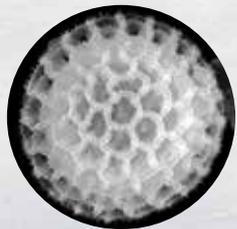


Status and Ecology of *Lecocarpus leptolobus*

We have determined that *Lecocarpus* originated on San Cristóbal Island, which clarifies the origin of the samples collected by Charles Darwin in 1835 and by Alban Stewart, a botanist with the California Academy of Sciences expedition, in 1906.



© Patricia Jaramillo / CDF



Pollen and Seed Collection

The Charles Darwin Foundation houses Ecuador's first and largest pollen and seed collection.



© Liza Diaz Lalova / CDF

Ecology of Giant Tortoises

The 'Galapagos Tortoise Movement Ecology Program' has conducted cutting-edge applied science and educational programs for the local community in order to effectively conserve giant Galapagos tortoises.

www.gianttortoise.org



© Claire Hobbs / CDF



► **Understanding Biodiversity and Ecosystem Processes**



© Hernan Vargas / CDF

Pathogens and Parasites

We are investigating the incidence, dispersion, distribution and impact of pathogens and parasites on the archipelago's ecosystems to create a baseline for these species.

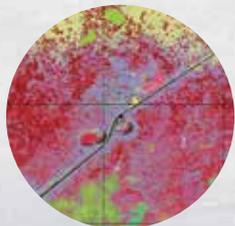




© Liza Díaz Lalova / CDF



©Sam Rowley / CDF



© Carolina Carrión / CDF

Mapping Plant Species

We are using drones and satellite images to map the dominant plant species found in the humid zones of the inhabited islands and Santiago Island in order to improve the management and control of these invasive species.



Mapping Mangroves and Beaches

Using high-resolution satellite images from Google Earth and an innovative methodology, we are obtaining data and updating existing knowledge about the distribution and coverage of beaches and mangroves in these areas.



- Main Street Calle principal
- Secondary Paths Camino secundario
- Beach Paths Camino de playa
- End of Path Fin del camino

Puerto Ayora

Ruta de la tortuga
Tortoise Path

Van Straelen

Playa de la Estación
Station Beach

Punto de donaciones
Donations point

Mirador
Viewpoint

Laboratorio de investigación
Research Lab

Videos de proyectos
Project Videos

Baños Restrooms

Cafetería
Cafeteria

Galápagos Verde 2050
Green Galapagos 2050

Sala de exhibición
Exhibition Hall

Welcome

Biblioteca
Library

Estatua de Darwin
Darwin Statue

Centro de crianza
Fausto Llerena

Breeding Center
Fausto Llerena



Ratonera Beach
Playa la Ratonera



Restoration of Ecosystems



1,476

Introduced species currently established in Galapagos:



Terrestrial plant species (including varieties and cultivars)

810



Vertebrate species

27



Pathogens

63



Other terrestrial invertebrate species

70



Marine invertebrate species

5



Sea plant species

2



Insect species

499



► **Recovery of
Threatened
Species**



Saving the Mangrove Finch

We are leading a captive-rearing program for mangrove finches, a critically endangered species, and have increased the world population of this species by 50%.





© Tui de Roy / CDF

Control of an Invasive Fly

The introduced parasitic fly *Philornis downsi* is believed to be the main cause of the decline of landbird species on the Galapagos Island. Therefore, we have been coordinating a multi-institutional working group to investigate methods for controlling this dangerous invasive species.



©Daniel Unda García / CDF



► Recovery of Threatened Ecosystems

©Rosie Brown / Falmouth University / CDF

Restoration of the *Scalesia* Forest

The diversity and abundance of species in the *Scalesia* forest known as 'Los Gemelos' are being monitored to detect long-term changes due to introduced species such as invasive blackberry and also to obtain information about residual herbicides in the soil or water.



© Sam Rowley / CDF



© Sam Rowley / CDF



©Heinke Jäger / CDF



Control of Invasive Plants

We are studying the impacts of invasive species such as blackberry, Cuban cedar, guava and red quinine with the aim of improving control actions to reduce their abundance.

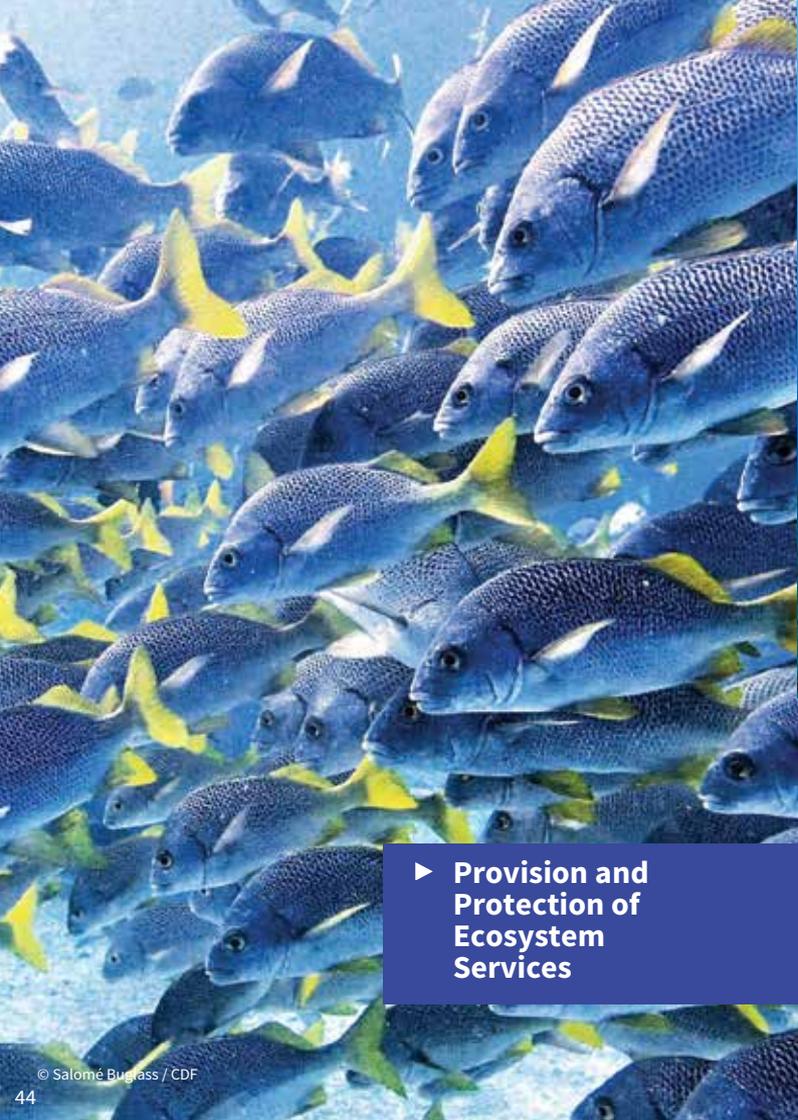


Biological Control of the Tropical Fire Ant

We are evaluating the feasibility of using classical biological control against the tropical fire ant, a very dangerous introduced species.

Sustainable Development and Human Well-being





► **Provision and Protection of Ecosystem Services**



© Alucia (Woods Hole Oceanographic Institute)



© Salomé Buglass / CDF

Seamounts and Ecosystem Services

Through the exploration of seamounts, we have discovered new species and are trying to establish a biodiversity baseline and determine their socio-economic value in order to facilitate responsible decision-making in the management of the Galapagos Marine Reserve.



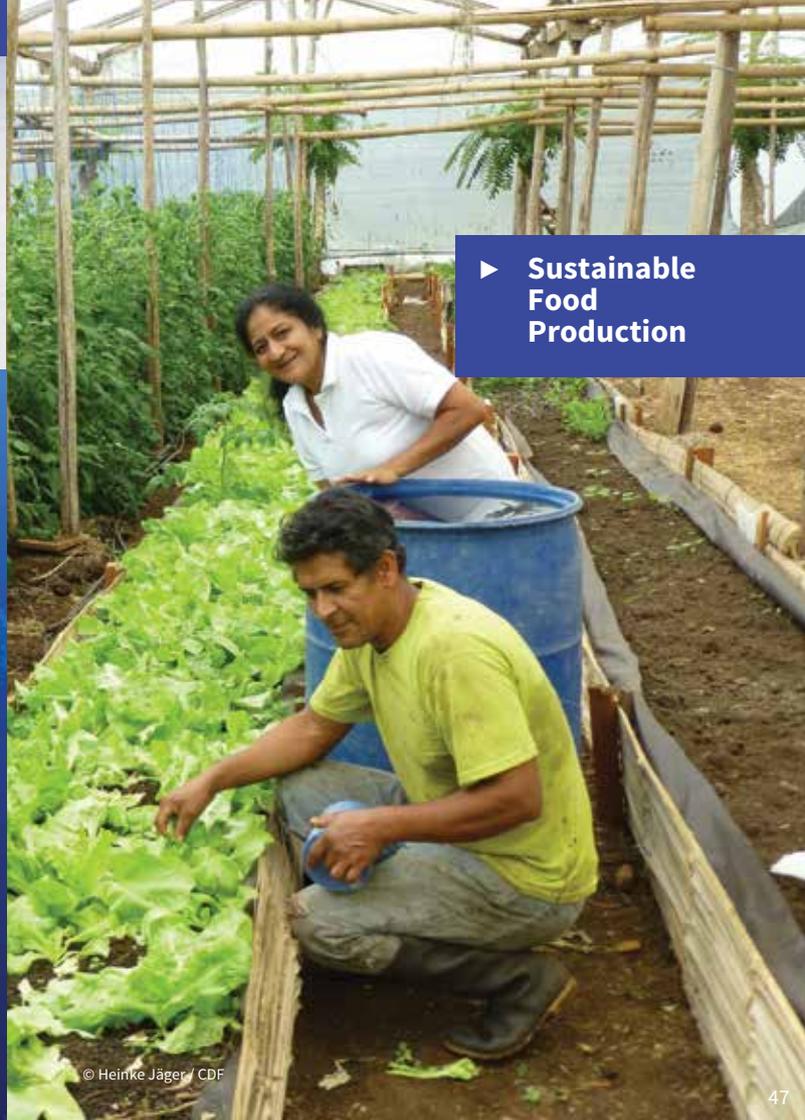
© Salomé Buglass / CDF

The DiveStat Project

Through this project, an innovative tool has been created to monitor touristic diving activities and gather data for their sustainable management. You can access the web page here: www.observatoriolagalapagos.gob.ec/divestat



© Jonathan R. Green / CDF



▶ **Sustainable Food Production**

© Heinke Jäger / CDF



© David Acuña / CDF

Invasive Species in the Agricultural Zone

Research was carried out on the occurrence and management of invasive plants and ants in the agricultural zone of Santa Cruz, and we hope to standardize the producers' knowledge to improve the management of invasive species in the Galapagos.



© Henri Herrera / CDF



Ecology and Evaluation of Fisheries

Using the first fish age and growth laboratory on the Galapagos Islands, we have described the life history of three long-lived species so that data on their size and reproduction can improve fisheries management in the archipelago.



© Heinke Jäger / CDF



© Tui De Roy / CDF



GALÁPAGOS VERDE



Galapagos Verde 2050

With the aid of water-saving technologies, more than 6,700 plants and 71 different species have been planted for the ecological restoration of Galapagos and the well-being of its human population.



▶ Prevention of the Impacts of Invasive Species

© Sam Rowley / CDF



© Macarena Parra / CDF



Identifying Invasive Marine Species

We work with local government authorities on prevention, early detection and rapid response strategies in order to protect the marine biodiversity of the Galapagos Marine Reserve.



Distribution of the Introduced Tree Frog

We are studying the distribution and dispersal mode of the introduced treefrog *Scinax quinquemaculatus* to assess its invasion potential across the archipelago and recommend management actions.

© Raffael Ernst / Senckenberg Museum



©Heinke Jäger / CDF

Outreach and Education

Sharks and the Local Community

In 2016, the Charles Darwin Foundation designed and implemented an educational outreach campaign called 'Protect the fins and the ocean wins' to promote sustainable co-existence between sharks and humans within the Galapagos Marine Reserve.



© Liza Díaz Lalova / CDF



© Octavio Aburto / National Geographic

Galapagos Marine Research and Exploration (GMaRE)

We have established a program with the Escuela Superior Politécnica del Litoral (ESPOL) to improve our understanding of Galapagos marine ecosystems in the context of climate change and support their conservation.

> Collections



© Archive / CDF

The Charles Darwin Research Station has Ecuador's largest collection of Galapagos specimens and contains extensive taxonomic, ecological and geographical information.

> Inspiring Stories



TO FOLLOW OUR STORIES,
SUBSCRIBE TO OUR NEWSLETTER
www.darwinfoundation.org

© Liza Díaz Lalova / CDF

For the world to learn about our conservation efforts, we aim to tell stories about the efforts of our team of scientists and collaborators who work to preserve one of the most amazing World Heritage sites on the planet.

> dataZone



© Claire Hobbs / CDF

The dataZone houses CDF's information about Galapagos biodiversity, collected for almost 60 years.

> Library



© Sam Rowley / CDF

The Corley Smith Library contains a large collection of long-term Galapagos research and we have been working hard to preserve and digitalize our holdings.

2016 - 2017

in numbers



1,178

Children committed to shark conservation



23,209

Birds counted during censuses



+ 20
Projects

Conservation of Ecosystems
Restoration of Ecosystems
Sustainable Development and
Human Well-being



22
Sharks tagged



more than
6,700
Seeds planted

more than
1,200 
Philornis Downsi
Flies bred for the first time on an artificial diet



Renewal of the
Cooperation Agreement
with the
Government of Ecuador



25
More Years



-1,000m

Maximum depth on board a submarine



30 Possible new deep-water species



© Marcela Rodas / CDF

Charles Darwin Exhibition Hall

The Charles Darwin Exhibition Hall was opened in mid 2016 and features our work of almost 60 years in the archipelago. Local, national and international visitors pass by our Exhibition Hall and learn about our scientific work and the history of Galapagos while they enjoy local art in a unique place on Santa Cruz Island.



Support Our Work

Running an independent scientific Research Station in such a remote place as Galapagos now costs upward of \$ 4 million annually.

© Sam Rowley / CDF

CONSERVATION COSTS IN GALAPAGOS

\$1,000



Digitalization of 10 books in the CDF Library collection. There are now 14,000 articles cataloged in the Library collection.

\$5,700



Ensuring the survival of nests for a mangrove finch. Total cost to care for 19 chicks = \$ 108,000



\$10,000

1 "Shark Ambassadors" marine education campaign.



\$2,000

1 day of boat rental for marine science research.

\$5,000



1 year of support for a Galapagos student studying for a conservation-related degree.



\$2,500

100 boxes of Groasis technology. In total, 6,756 seedlings have been planted using Groasis.

EXAMPLES OF ANNUAL OPERATIONAL COSTS



\$69,000
Cleaning Maintenance



\$98,000
Electricity Internet Phone



\$300,000
Conservation of the Collections

BIENVENIDOS - WELCOME

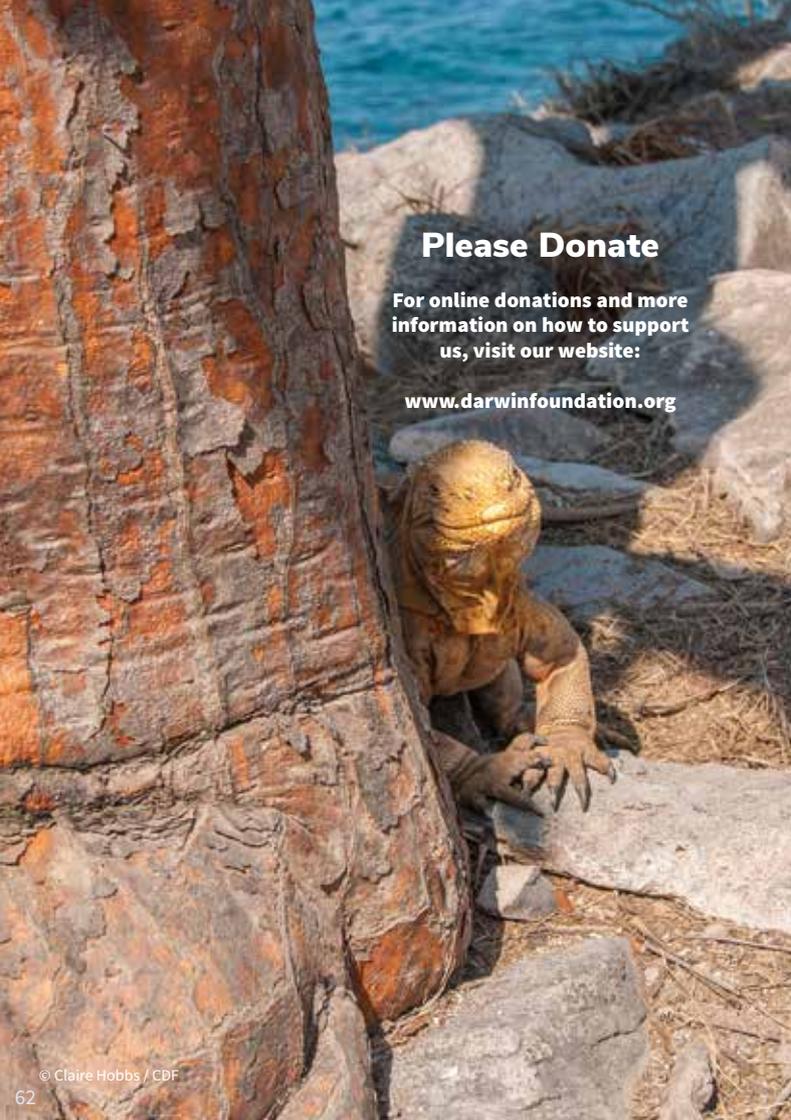


Estacion Charles Darwin

ESTACION CIENTIFICA CHARLES DARWIN

Charles Darwin Research Station





Please Donate

For online donations and more information on how to support us, visit our website:

www.darwinfoundation.org



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Amazon

If you visit Amazon from our CDF website, the Charles Darwin Foundation will receive a percentage of the value of your purchase at no extra cost to you.



© Sam Rowley / CDF

Our vital endeavors have a significant impact on the conservation of the Galapagos Islands.

We need your support to continue to finance our work.

Thank You!



Produced by the Communications team of the
Charles Darwin Foundation (CDF).

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during the preparation of this report.

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We would like to thank the Government
of Ecuador, the Ministry of Environment,
the Galapagos National Park Directorate,
and all of our collaborators and donors for
supporting our work in Galapagos.



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fundación
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Fundación Charles Darwin para las Islas Galápagos (AISBL)
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The “Charles Darwin Foundation for the Galapagos Islands”. Under its French name, “*Fondation Charles Darwin pour les îles Galapagos*” (association international sans but lucratif), the foundation has its registered office located at Drève du Pieuré 19,1160 Brussels, and is registered under the trade registry of Brussels under the number 0409.359.103 (the “AISBL”).