

APAGAT REPORT 2024

©Carlos Espinosa / CDF



CONTENTS

5. Letter From Our President

"I am pleased to report another year of growth and impact for CDF and its Research Station."

6. Letter From Our **Executive Director**

"2024 marked an extraordinary milestone for CDF-65 years of science and conservation action in the Galapagos Islands."

8. 2024 Science Review



LAND

14. Preparing for Species Reintroductions in Floreana: CDF's contributions

16. Tracking the Movement and Health of Giant Tortoises

18. Strengthening Conservation of Galapagos Landbirds

22. Protecting Galapagos Birds from the Avian Vampire Fly

24. Saving the Endangered Giant Scalesia Trees

26. Restoring Galapagos: Why Long-Term Monitoring is Essential 27. Measuring the Return of Santa Fe's Lost Plant Life

28. Conserving Threatened Plant Species of the Arid Zone

30. Investigating the Spread and Impact of the Invasive Tree Frog

32. First Digital Dashboard for Introduced Species



OCEAN

36. Strengthening Deep-Ocean Science & Conservation

38. Advancing Marine Conservation in the Galapagos Marine Reserve

40. Galapagos Mangroves: Our best allies for climate change mitigation

42. Monitoring the Health of Marine birds

44. New Insights into Coastal and Pelagic Shark Populations

46. Conserving Sharks and Rays in Ecuador

50. Advancing Green Sea Turtle Conservation in Galapagos



PEOPLE

54. Sustainable Fisheries

56. Sustainability for Conservation

58. A Greener Future for Galapagos' Community

60. Science. Education. and Community Engagement

62. Natural History Collections

64. Technology & Innovation

66. Our Library, Archive and Museum

- 68. Our Team
- 70. Fundraising
- 72. Our Donors
- 74. Audited Financials

76. Board and GA

LETTER FROM OUR PRESIDENT

Dear friends and supporters,

This year, the Charles Darwin Foundation (CDF) celebrated 65 years of science and conservation in the Galapagos Islands. It also marks 65 years of partnership with the Galapagos National Park Directorate, working side by side to protect this extraordinary ecosystem.

I am pleased to report another year of growth and impact for CDF and its Research Station that is well reflected in this year's Impact Report. However, 2024 was also a year of reckoning for our planet. As the world faces a series of defining global crises and political shifts, nature itself is at risk like never before.

At COP16 in Cali, world leaders acknowledged a global biodiversity crisis—one million species are at risk of extinction, and since 1970, wildlife populations have declined by 73%. This crisis threatens entire ecosystems and human survival itself, by undermining food security, water, and climate stability.

In the face of these challenges, CDF remains steadfast in its mission to protect Galapagos through science and conservation action, continuing to deliver against our strategic plan. To strengthen our organization, we have begun a major governance overhaul in order to streamline CDF processes and make us more adept at

THE CHARLES DARWIN FOUNDATION IS THE LARGEST AND OLDEST RESEARCH AND CONSERVATION ORGANIZATION IN GALAPAGOS, GENERATING GROUNDBREAKING **DISCOVERIES AND EFFECTIVE CONSERVATION FOCUSED ON PROTECTING THE UNIQUE BIODIVERSITY OF ONE OF THE GREATEST** NATURAL WONDERS ON EARTH.

The mission of the Charles Darwin Foundation and its Research Station is to tackle the greatest threats and challenges to Galapagos through scientific practices and the next generations to research and conservation action, in order protect our planet's natural wonders. to safeguard one of the world's most important natural treasures.

Our vision is to champion the Galapagos Islands as a global model for conservation, inspiring sustainable



addressing challenges in a rapidly changing world. We also welcomed three new and distinguished board members—Andrew Balfour, Lucia Lohmann, and Mary Pearl—who bring valuable expertise to guide us forward.

Our impact would not be possible without the dedicated leadership team and staff at the Charles Darwin Research Station, whose vision, world-class expertise and commitment drive our conservation efforts on the ground. Their tireless work ensures that science informs action and conservation leads to real-world change.

As we look ahead, our work has never been more critical. Science, conservation, and policy must go hand in hand to safeguard the Galapagos Islands and beyond. Thank you for your continued support of our mission.

With gratitude,

Malabadra

Yolanda Kakabadse President of the Board of Directors **Charles Darwin Foundation for** the Galapagos Islands

Letter from our Executive Director



LETTER FROM OUR Executive director

Dear Members, Friends, and Supporters of the Charles Darwin Foundation,

2024 marked an extraordinary milestone for CDF—65 years of science and conservation action in the Galapagos Islands. And as we reflect on this legacy, we must also celebrate the progress and innovations that will define our future.

STRATEGIC HIGHLIGHTS

One of the most exciting developments at our Research Station this year was breaking ground on the overhaul of our historic Tomas Fischer Complex–the heart of our terrestrial scientific facilities– generously funded by our longstanding donor and partner, the COmON Foundation. Construction will take place in two distinct phases with the Fischer North building the first to be renovated. This new state-of-the-art facility, set to open in late 2025, will for the first time house CDF's four Natural History Collections under one roof, ensuring that our 137,000 specimens are preserved for scientific research and conservation.

In another major step toward securing CDF's long-term financial security, we launched the Bill Durham Endowment. With \$2 million raised so far, this fund will ensure the continuity of CDF's work for generations to come, supporting groundbreaking research and education initiatives that are focused on sustainability.

Operationally, we embraced digital transformation to modernize our infrastructure. We launched a new website and brand identity, and implemented a new accounting and email system, thereby streamlining our internal processes and boosting our visibility. Strengthening our leadership team was also a priority—we welcomed a new Chief Development Officer and a new Human Resources Director, two key positions to secure our future. We also successfully completed our transition to a new Finance Director.

Finally, as one of the six pillars underpinning our strategy, education is central to our mission, empowering future conservation leaders and broadening our reach in higher education. To A key milestone was the Rewilding Galapagos Workshop, bringing together experts from around the world to chart the next steps in the long-term restoration of the Galapagos archipelago that builds on the groundbreaking Floreana Ecological Restoration Project. This work will be crucial to ensuring that these island ecosystems are not only protected, but actively restored to their natural balance.



advance this vision, we established a new Director of Education position in our leadership team. The selected candidate will started in April 2025, leading our expanding education initiatives.

RESEARCH HIGHLIGHTS

In 2024, all of our science and conservation programs made significant strides toward our scientific priorities—filling critical knowledge gaps, conserving species and habitats, combating bioinvasions, advancing ocean and climate research, enhancing ecosystem resilience, and making our work more accessible to the world. It was also CDF's most productive year to date in terms of scientific output, with more than 90 published papers, further solidifying our role as a global leader in science-led conservation. We also made important inroads into higher education, laying the groundwork for future growth. For the first time, we hosted a semester abroad program in partnership with the University of Hawaii, welcoming eight National Science Foundation-funded undergraduate students who were embedded into CDF's research programs. Additionally, we welcomed several university course groups who participated in immersive field activities led by CDF scientists. These initiatives not only expanded CDF's reach in education but also provided crucial support for our operations through program fees, field activities, and housing revenue. With the arrival of our new Director of Education, we look forward to scaling these efforts even further.

LOOKING AHEAD

As we build on this momentum, one of our most ambitious projects will be the renewal of the Charles Darwin Research Station's Exhibition Hall, one of the top five most visited sites in Galapagos. The project, developed in partnership with two world class museums, the California Academy of Sciences (USA) and the Naturalis Biodiversity Center (Netherlands), will seek to deliver a new immersive visitor experience that inspires action and drives conservation change—one visitor at a time, through a unique and state-of-the-art museum.

With a strengthened team, modernized infrastructure, and a growing network of partners, I am confident that CDF is well-positioned to tackle the urgent challenges facing the Galapagos, even in these most uncertain times.

On behalf of everyone at CDF, I would like to thank you for your unwavering support, which makes all of this possible. Together, we can protect Galapagos and impact the world.

Sincerely,

Rakan Zahawi Executive Director Charles Darwin Foundation for the Galapagos Islands



IMPACT REPORT 2024



DELIVERING ON OUR SCIENCE STRATEGY: 2024 HIGHLIGHTS

Our Science Strategy, launched in 2023, guides CDF's research and conservation efforts in Galapagos, ensuring that scientific priorities align with the most pressing environmental and human-driven challenges. In 2024, this strategy guided groundbreaking discoveries, strengthened conservation policies, and expanded collaborative partnerships, reinforcing CDF's role as a leading scientific institution in the region.

1. Biodiversity

- Continued Mangrove Finch emergency conservation efforts to prevent species extinction. (p. 19)
- Advanced restoration of habitats for species reintroductions on Floreana. (p. 14)
- Published a 28-year dataset on Galapagos marine biodiversity on <u>OBIS and GBIF</u>. (p.39)
- Added a total of 4,569 specimens to CDF's Natural History Collections, including type specimens, and 3,800 new invertebrate records, mainly butterflies and moths. (p. 62)
- Conducted the first-ever vulnerability assessment of Galapagos mangroves using the IUCN Red List of Ecosystems methodology. (p. 40)
- Completed the first genome assembly for the Vermilion Flycatcher, with a study to be published in 2025.

2. Bioinvasions

• Demonstrated for the first time the impact of the invasive *Cedrela* tree on giant tortoise migration. (p. 16)

migration. (p. 16)

2024 SCIENCE REVIEW

In 2024, CDF's team of 65 scientists worked across 22 projects, making significant progress in biodiversity conservation, climate-related research, ecosystem restoration, and sustainability in socio-ecological systems. This year marked a major milestone for our teams with 90 scientific publications, the highest productivity in a decade, including six theses-three doctoral and three master's. Our research efforts were further strengthened by 150 visiting scientists from 50 institutions and 66 volunteers, who contributed to both laboratory and fieldwork. Additionally, CDF expanded academic opportunities, awarding scholarships to two Galapagos residents for postgraduate studies, and training a local scientist in genetic-based laboratory techniques in a stateof-the-art lab in the U.S.-a key skill needed at our Research Station.

STRENGTHENING SCIENTIFIC COLLABORATIONS

Scientific research thrives on collaboration, and in 2024, we expanded our national and international partnerships to enhance conservation efforts. Internationally, we engaged with Greenpeace,

supporting the High Seas Treaty ratification during their expedition to Galapagos, and we participated in major global forums, including the 2024 IUCN South America Regional Forum, the UNESCO Ocean Decade Conference, the 2024 United Nations Biodiversity Conference (COP16), and the World Conference of Biofouling. We were also appointed co-chair of the Global Ocean Accounting Partnership (GOAP) and participated as a member in the Conservation of Albatrosses and Petrels working group in Lima.

Nationally, we deepened our collaboration with Ecuadorian institutions, including the Undersecretary of Fisheries Resources and the Scientific Institute of Fisheries, to improve fisheries governance. CDF also played a critical role in the Emergency Task Force led by Galapagos' Biosecurity Agency, that addressed the Avian Flu outbreak, and worked with the Galapagos National Park Directorate (GNPD) on regenerative tourism initiatives, as well as helping them prepare the Galapagos World Heritage status report for UNESCO. Our partnerships with Ecuadorian universities—PUCE, UTPL, ESPOL, USFQ, and Universidad Central del Ecuador—were also vital in advancing joint research projects this year.

- Advanced biocontrol research for the Avian Vampire Fly, with a release plan proposal set for 2025. (p. 22)
- Expanded habitat restoration in the highlands of Santa Cruz from 14 to 17 hectares, to cater to the growing population of Little Vermilion Flycatchers. (p. 18)
- Extended our subtidal ecological monitoring and marine invasive species monitoring to Cocos Island–a big step toward amplifying our efforts across the ETP. (p. 38)

3. Climate and Ocean Change

- Supported CMAR in exploring the technical basis for a legally binding treaty between the four member countries. (p. 37)
- Expanded deep-ocean exploration efforts with partners in Colombia, Costa Rica, Ecuador and Panama. (p. 36)
- Mapped 1,800m² of coral reefs using photogrammetry, creating 3D models to track biodiversity and habitat changes in the Galapagos Marine Reserve. (p. 39)

Monitoring the health of Galapagos marine birds

volunteerstrained





- Tracked a silky shark migrating over 27,000 km across unprotected waters, reinforcing the need for urgent regional shark conservation. (p. 45)
- Studied the impact of climate change on artisanal fisheries species, monitoring how ocean warming affects fish abundance and distribution, and how climate refugia in Galapagos may serve as critical habitats during El Niño years. (p. 55)

4. Ecosystem Resilience and Restoration

- Completed the first-ever Galapagos ocean account, providing a quantitative valuation of marine ecosystem services. (p. 54)
- Advanced research on agroforestry, fisheries and tourism sustainability in protected and non-protected areas, with a focus on the role of women in these sectors. (p. 56)
- Expanded work with coastal fishing communities in Manta, promoting sustainable fishing, market strategies, and enhanced

governance and traceability. (p. 48)

• 50,200+ samples exported for genetic/non-

• Expanded research on wildlife health, focusing on parasitism, symbiosis, zoonotic diseases, and pathology across our various programs.

genetic analysis

5. Science to Action

- Expanded access to CDF's scientific data by publishing three interactive dashboards (invasive species, tortoise movement, and collaborating institutions), while also making CDF's library resources digitally accessible. (p. 64 & 66)
- Renewed outreach efforts to reduce bird (and other vertebrate) mortality on roads in Santa Cruz Island, with a plan to be published in 2025. (p. 21)
- Launched an Ecological Garden contest, engaging Puerto Ayora's community in ecological restoration efforts in their backyards. (p. 58)

• Supported the negotiation process to advance the implementation of the 2016 Galapagos Marine Reserve zoning. (p. 46)

65 scientists working on 22 projects

• Expanded environmental education efforts through our ECO Program and mentored five young Galapagos professionals, providing pathways into scientific careers. (p. 60)

LOOKING AHEAD

2024 was a landmark year, marked by unprecedented scientific productivity, important discoveries, and strengthened collaborations. With science at the heart of conservation efforts, CDF continues to provide data-driven solutions to protect Galapagos' ecosystems, species, and local communities. As we move forward, we remain committed to expanding research, engaging local stakeholders, and driving conservation impactensuring that Galapagos remains a global model for sustainability and biodiversity protection.

Science Review



ALCEDO VOLCANO 0°23'48"S 91°06'33"O

©Carlos Espinosa / CDF



PREPARING **FOR SPECIES** REINTRODUCTIONS **IN FLOREANA: CDF'S CONTRIBUTIONS**



Following the large-scale invasive species eradication campaign at the end of 2023, which was led by the Galapagos National Park Directorate (GNPD) and Fundación Jocotoco with support from Island Conservation and other partners, CDF has been busy advancing important Monitoring bird populations after invasive lines of work to prepare the grounds for species reintroductions, in collaboration with the GNPD. Key highlights in 2024 included:

Assessing habitat suitability for species

reintroduction: Our team of restoration ecologists continued to monitor habitat changes following the removal of invasive species, gaining key insights about habitat suitability for the reintroduction of 12 locally extinct species on Floreana. Vegetation surveys across 24 permanent plots from the coast to the highlands, confirmed that the humid highlands support the densest plant cover, dominated by endemic Scalesia pedunculata (24%), but heavily invaded by blackberry (Rubus niveus) (37%). In contrast, the drier and transitional zones had less plant cover but served as strongholds for native and



endemic species, highlighting the resilience of these ecosystems.

Our invertebrate monitoring efforts from 2022 to 2024, conducted during both the warm and cooler seasons in agricultural and protected areas, also provided a baseline for habitat quality and food availability for species like the Little Vermilion Flycatcher to be reintroduced. Key insect orders essential for bird diets—Diptera, Hemiptera, Araneae, Lepidoptera, and Coleoptera—were recorded, but the high presence of two species of invasive fire ants remains a concern. Notably, land snail populations-key to soil health-surged from 61 individuals in 2022 to 883 in 2024 across eight study sites covering a total area of 800 m². This increase may be linked to rat eradication efforts or El Niño conditions. Continued annual monitoring will help identify the long-term drivers behind this ecological shift.

species control: After the eradication campaign at the end of 2023, we monitored 223 points on Floreana to assess its impact on bird populations.

As expected, Ground Finch numbers declined, likely due to their reliance on ground feeding areas where bait was placed. However, populations of other endemic species, including the critically endangered Medium Tree Finch, remained stable, indicating a positive outcome for conservation efforts.

Preparing for the reintroduction of the Little Vermilion Flycatcher: To support the

reintroduction of this endemic bird to islands like Floreana and Santa Fe, we tested ultralight transmitters (0.16g) on six individuals in Isabela. The transmitters had no impact on flight, movement, or foraging, confirming their suitability for rewilding efforts. Additionally, birds were held in captivity for up to 13 hours to simulate interisland transport, and showed no signs of stress or health issues during trials. Building on these findings, CDF researchers are drafting a detailed reintroduction plan for the GNPD to guide the next steps in restoring this species to its former range.

Self-fumigation to combat the Avian Vampire

Fly: To further support bird populations after the eradication campaign, CDF researchers placed 90 self-fumigation dispensers with insecticidetreated nest material in key nesting areas on Floreana. This method helps control Avian Vampire Fly infestations, reducing chick mortality of threatened bird species.

Preparing for the reintroduction of the Floreana Mockingbird: In preparation for the re-establishment of the Floreana Mockingbird, we planted 577 seedlings from eight native plant species within a 2.5-hectare ecological corridor. These plants provide food, breeding sites, and shelter, all essential for the species' survival. To ensure a sustainable water supply, we installed two 2,500-liter tanks with rain-collecting roofs for long-term habitat restoration. Additionally, we established four community ecological gardens using native and endemic species, including the "Refugio del Cucuve" corridor, fostering local engagement in active habitat restoration efforts.

Restoring the Black Gravel Mine: After 10

years of restoration, we conducted biodiversity surveys to assess the impact of CDF's restoration efforts at this heavily degraded site. Researchers assessed native, endemic, and introduced plant species to evaluate survival and growth rates, and censused invertebrate species using pitfall traps to track ecosystem recovery. We collected 102

Floreana Island

botanical samples and 88 invertebrate samples. We also collected 30 soil samples to analyze chemical composition, texture, and physical properties in order to understand whether the soil had regained the nutrients needed to sustain a healthy plant community. To enhance restoration success in dry areas, we used water saving technologies, including hydrogel and biochar to boost plant growth, and used drone-imagery based monitoring to improve the accuracy of endangered species population assessments, providing a comprehensive view of ecosystem regeneration.

Maintaining the island's only forest nursery:

To support our habitat restoration efforts, 1,019 seedlings were produced in the Island's only forest nursery, which is managed by CDF. Key species included Bursera graveolens, Scalesia pedunculata, Opuntia megasperma, Croton scouleri, Vachellia macracantha, and Lecocarpus pinnatifidus. Additionally, 860 seeds from seven species were collected and stored for future propagation.

Monitoring marine invasive species in

Floreana's harbour: Although the Floreana project primarily focuses on terrestrial species, in 2024, we expanded efforts to the marine environment by installing 30 settlement plates in Floreana's only harbor. This marks the first attempt to assess the distribution of native vs. introduced marine species in the area. Genetic analysis is currently underway to determine the presence and extent of invasive species, providing critical insights for future marine biosecurity measures.



TRACKING THE MOVEMENT AND HEALTH OF GIANT TORTOISES

CDF's Galapagos Tortoise Movement Ecology Program (GTMEP) works alongside the Galapagos National Park Directorate (GNPD) and collaborating institutions to conserve the endangered giant tortoises of Galapagos by studying many aspects of their long lives–from their reproductive health to movement patterns, to their ecology. While we made advances on all research themes, in 2024 the program's work revealed new and important insights on giant tortoise behavior in a changing environment– all crucial information to refine and prioritize conservation strategies. Key highlights included:

THE THREAT OF CEDRELA ODORATA ON MIGRATION PATHWAYS

Over the last 12 years, researchers tracked 140 migration routes of 25 Galapagos giant tortoises on Santa Cruz Island using GPS technology. Movements were mapped against vegetation data and the findings were clear: tortoises actively avoided dense forests of *Cedrela odorata*, an invasive tree species, restricting their migration to narrow corridors where *C. odorata* was absent. This study reveals not only a significant disruption to tortoise movement but also potential consequences for the Galapagos ecosystem. As ecosystem engineers, giant tortoises disperse seeds and recycle nutrients, playing a crucial role in habitat health. The restriction to their migratory pathways could threaten Santa Cruz's ecological balance, highlighting the urgent need to monitor *Cedrela's* spread and adopt management strategies to protect tortoise migration routes.

EFFECTS OF ENVIRONMENTAL VARIABILITY ON REPRODUCTION AND SURVIVAL

A study tracking 166 adult females, 33 migratory females, and 104 hatchlings across different climatic conditions, vegetation, and elevations

revealed key reproductive patterns. Higheraltitude nests had larger clutch sizes but lower egg survival, whereas midelevation nests showed the highest hatchling survival and growth rates. These findings emphasize the critical need to protect habitat connectivity, ensuring tortoise populations remain resilient to climate change and shifting environmental conditions.

Learn more about these studies:



IMPACT REPORT 2024

WE WORK WITH FOUR ENDANGERED GIANT TORTOISE SPECIES:





Western Santa Cruz Giant Tortoise, Chelonoidis porteri

FOCUS ON: Eastern Santa Cruz Giant Tortoise, Chelonoidis donfaustoi

Status: critically endangered

Goal: Investigate nesting patterns, migration benefits, genetic diversity, health, and juvenile survival.

147

blood and swab samples collected, along with morphology data from hatchlings and embryos for genetic analysis.

> juvenile tortoises tracked with VHF radio tags.



Española Giant Tortoise, Chelonoidis hoodensis



Alcedo Volcano Giant Tortoise, Chelonoidis vandenburghi



STRENGTHENING **CONSERVATION OF GALAPAGOS LANDBIRDS**

Throughout 2024, CDF, in collaboration with the Galapagos National Park Directorate (GNPD) and international research partners, made significa strides in protecting Galapagos landbirds, including the Little Vermilion Flycatcher and the critically endangered Mangrove Finch. Conservation efforts focused on reversing population declines by: tackling the Avian Vampire Fly, Philornis downsi; restoring habitats. implementing targeted field interventions, and applying scientific innovation to safeguard these iconic species.

LITTLE VERMILION FLYCATCHER **GOING FROM STRENGTH TO STRENGTH**

Once a common sight across multiple islands, the Little Vermilion Flycatcher, Pyrocephalus nanus, is now extinct on two islands and rare on two others, struggling against habitat degradation, introduced predators, and parasitism by Philornis downsi. In response, CDF is leading an integrated management approach on Santa Cruz Island aimed at boosting reproductive success, and the results have been very encouraging.

Thanks to our team's sustained efforts, in 2024, 15 healthy young birds fledged (up from 12 in 2023), marking our most successful breeding season yet.

Since our integrated management approach began in 2019, a total of 48 birds have joined the population, with some already forming territories and breeding—an essential step toward longterm population recovery. Today we estimate the island's population is made up of 40-50 individuals.

Little Vermilion Flycatcher, Pyrocephalus nanus

IMPACT REPORT 2024



However, as the flycatcher population grows, In 2024, 12 pairs were observed nesting, against 16 in 2023 (an outlier year), with 6 pairs so does the demand for suitable habitat-a good successfully fledging 11 chicks, an improvement problem to have! In response, habitat restoration efforts were expanded in October 2024, from 7 fledglings in 2022. Conservation efforts increasing the area of land cleared of invasive focused on rodent control and nest treatments to reduce parasitism. The team treated 10 nests blackberry from 14 to 17 hectares. This expansion ensures that the growing population of flycatchers in situ and installed 19 self-fumigation stations, has the foraging and nesting space needed to with 7 monitored by trial cameras to study bird succeed, though restoration of more habitat will interactions. While nests treated with selfbe necessary in the future. fumigation materials were unsuccessful, birds actively engaged with the stations, warranting further research in 2025 to refine this method, which has shown success elsewhere in Galapagos.

SAVING GALAPAGOS' RAREST BIRD

With less than 100 individuals left in the mangroves of Playa Tortuga Negra in Isabela Island, the Mangrove Finch, Camarhynchus heliobates, has the dubious distinction of being Galapagos' rarest bird and is a top conservation priority. Threatened by rodent predation and Avian Vampire Fly parasitism, the CDF and GNPD have implemented hands-on conservation management since 2006 to prevent its extinction.

A key milestone in 2024 was the incorporation of María Igual Beltrán as Principal Investigator, bringing on-site leadership after years of remote oversight by Francesca Cunningham. María's expertise in threatened birds strengthens the project's foundation and future conservation efforts in Galapagos.

MONITORING GALAPAGOS BIRDS: POPULATIONS, HEALTH, AND EMERGING THREATS

Since 2013, CDF ornithologists, GNPD, and partners have been estimating bird populations and assessing their health to help inform management actions and reintroduction plans.

Land

Here is an overview of our work across the archipelago in 2024:

ALCEDO VO (ISABELA 61

samples collected to detect potential bird pathogens, with results pending.

ISABELA: Hands-on conservation management of the critically endangered Mangrove Finch, with an estimated population of below 100 individuals

PINZÓN & RÁBIDA: 12 years after the rat erradication, surveys

confirmed a thriving Galapagos Rail population on Pinzón, where it was previously absent. Encouragingly, many Little Vermilion Flycatchers were also recorded.

FLOREANA: Following the eradication of rodents and cats in late 2023, bird counts at 223 monitoring points

0

showed an expected decline in ground finches (who feed on the ground and are more likely to come in contact with the poison) but stable numbers of other endemic species, including the critically endangered Medium Tree Finch.

REDUCING BIRD MORTALITY ON ROADS

In 2024, CDF renewed outreach efforts to reduce Galapagos Yellow Warbler, Small-ground Finch, Galapagos Barn Owl and Galapagos Short-eared bird (and other vertebrate) mortality on roads in Santa Cruz Island, coordinating closely with the Owl, among others. Conservation measures proposed during the October 2024 workshop, Galapagos National Park Directorate (GNPD) attended by over 19 institutions, included public and engaging transportation professionals, local and national authorities, NGOs, and community awareness and driver education campaigns, improved signage, road maintenance, vegetation members. To do so, CDF joined forces with the GNPD to organize a workshop to develop practical management, installation of speed bumps, and strategies to protect wildlife along the main road radar enforcement. These initiatives will be connecting the Itabaca Canal (Baltra airport) to detailed in an action plan, set for release in 2025, Puerto Ayora, a road that bisects National Park in order to provide a clear roadmap for reducing land and critical breeding areas for species that roadkill and safeguarding Galapagos' biodiversity. are in the IUCN Threatened Red List such as the

SANTA CRUZ: 400

samples from 13 species across five islands were collected. Higher levels of Adenovirus (AdV) and Herpesvirus (HV) were detected in endemic birds near chicken farms highlighting the risk of disease spillover from domestic poultry.

SANTA CRUZ:

Conserving the Little Vermilion Flycatcher through integrated management on 17 ha of Scalesia forest, with an estimated 40–50 individuals.

Surveys at 60



SAN CRISTÓBAL: 🔵 monitoring points in the highlands revealed only 9 mockingbirds. The population's stronghold is generally in the lower, more arid lands-something which

pathogens, with results

Why these findings matter: These findings reinforce the importance of continued monitoring and habitat protection, ensuring that conservation efforts effectively safeguard Galapagos bird populations from emerging threats.



PROTECTING GALAPAGOS BIRDS FROM THE AVIAN VAMPIRE FLY

One of the most urgent threats to Galapagos landbirds is the **Avian Vampire Fly**, *Philornis downsi*, an invasive parasite introduced around the 1960s and whose larvae feed on the blood of nestlings, significantly reducing fledging success and contributing to unsustainable landbird population declines. Over the past decade, CDF has worked with the Galapagos National Park Directorate (GNPD) and the University of Vienna to finalize stop-gap methods to protect threatened birds while more sustainable control methods are investigated. In 2024, two promising techniques—**Self-fumigation and the Spritz technique**—were deployed in the field with very encouraging results.

SELF FUMIGATION: EMPOWERING BIRDS TO PROTECT THEIR NESTS!



The self-fumigation technique provides birds with nest-building materials treated with a minimal dose of insecticide. This method reduces the labor-intensive process of manually treating each nest and protects nests over a greater scale. In 2024, **90 dispensers** with a variety of materials were placed in key nesting areas on Floreana Island in order to boost population numbers following the control of invasive rats and cats. At least 60% of the nests had some material with kapok, sisal and down feathers being the most popular.

 Read our Q&A with Prof. Sonia Kleindorfer of the University of Vienna about the landbird reintroduction on Floreana following invasive species eradication:



The technique also proved highly effective in protecting Little Vermilion Flycatcher hatchlings on Santa Cruz Island, where 10 dispensers were operational in 2024. The technique performed so well that it will replace the previous, much more complex nest-injection method, making conservation efforts safer and more efficient.

SPRITZ TECHNIQUE: SHIELDING THE NEST FROM THE OUTSIDE

Meanwhile, trials of the Spritz technique, which involves spraying the exterior of nests to prevent flies from entering the nest and laying eggs, entered their second year. Results showed a clear increase in fledging success. For example, **80%** of Small Tree-finch nests treated with the spray successfully fledged chicks, compared to 18% in untreated nests. Similarly, **100% of Warbler** Finch nests treated with the method were successful, compared to just 47% of untreated nests. Excitingly, the first trials on the critically endangered Medium Tree Finch in Floreana also yielded promising results, offering hope for one of Galapagos' most at-risk bird species.



GETTING CLOSER TO A LASTING SOLUTION: BIOLOGICAL CONTROL

While current efforts help reduce the impact of the **Avian Vampire Fly (Philornis downsi)**, they do not offer a permanent solution. A long-term strategy requires **biological control**—introducing a natural enemy to keep fly populations in check. Unlike eradication, biological control aims to restore balance, preventing *Philornis downsi* from overwhelming native bird populations in the absence of its natural enemies.

In collaboration with the University of Minnesota, ESPOL, and INABIO, CDF has been investigating potential biological control agents that could be safely introduced to Galapagos. After many years of research, scientists have found two species of **parasitic wasps with potential**, identifying *Conura annulifera* as the most promising candidate to focus on first.

Research in 2024 focused on understanding whether Conura annulifera uses chemical signals to locate its host-therefore making it a host specialist and reducing the risk of it affecting other species. Studies also continued to assess whether this tiny wasp poses any risk to endemic Galapagos fly species, with two species of flies tested. The results were promising-Conura annulifera appears to be attracted to bird nests that contain fly larvae specifically, and which are typically located high in the tree canopy, while the endemic flies pupate in the ground, thus reducing the likelihood of ecological overlap. This finding marks a crucial step toward developing a safe and effective long-term control method for Philornis downsi.

In 2025, data from these studies will be used to evaluate whether *Conura annulifera* could provide a viable and sustainable solution for protecting Galapagos landbirds from extinction.

REARING FLIES TO CONTROL FLIES

To develop effective control techniques, our scientists need access to *Philornis downsi* at various life stages. However, breeding these flies in captivity remains one of the biggest scientific challenges, forcing researchers to collect wild specimens from the field—an expensive and time-consuming process.

Challenges notwithstanding, 14,000 fly pupae were reared in the lab this year, in line with 2023. Further, our fly-rearing facility expanded in late 2024, allowing for largerscale experiments to take place starting in 2025. After countless hours of field and lab observations, researchers achieved a breakthrough in understanding Philornis downsi mating behavior, bringing us closer to solving the mystery of why these flies refuse to mate in captivity. This discovery could eventually unlock the ability to mass-rear flies, accelerating efforts to test control methods such as the Sterile Insect Technique, which involves releasing sterilized flies to reduce wild populations.

Land

IMPACT REPORT 2024

SCALESIA CORDATA: A CONSERVATION SUCCESS STORY

Scalesia cordata was estimated to have fewer than 300 trees remaining in 2019 on Isabela Island. Through intensive research, restoration, and collaboration with the Galapagos National Park Directorate, we have now documented over 3,000 trees—more than tenfold the originally estimated number. 2025 will see us scale our reforestation efforts on the island, refine drone-based surveys, and deepen community engagement–a vital piece of the conservation puzzle.



SAVING THE ENDANGERED GIANT *Scalesia* trees

The Galapagos highlands are home to one of the most unique and fragile ecosystems on the planet—the endemic *Scalesia* forests. Once thriving, these forests have been reduced to less than 1% of their original distribution across the archipelago. Invasive plants, habitat loss, and climate change are pushing these forest remnants to the brink, making conservation efforts more critical than ever. But there is hope. With cuttingedge technology, dedicated conservation efforts, and strong community engagement, we continue to make headway to restore these unique ecosystems.

TECHNOLOGY IS TRANSFORMING CONSERVATION

To protect these forest remnants, we employ drones, satellite imagery, and artificial intelligence, to generate high-resolution maps to track changes in vegetation, even in remote and inaccessible areas. In 2024, we scaled up our mapping efforts, spending over **40 days in the field and surveying 2,173 hectares across** Santa Cruz, Isabela, San Cristóbal, and Floreana. Thanks to this work, we identified new forest remnants on 3 islands and doubled our known number of *Scalesia* trees on Isabela. This work also allows us to pinpoint where invasive plants are taking over, track the distribution of *Scalesia* species, and implement precise management actions to ensure their survival.

In 2025, we'll advance our Al-driven monitoring to enhance efficiency and tracking accuracy, assess

how changing weather patterns affect *Scalesia* distribution and health, and measure the success of our restoration efforts.

Isabela's green house where

Scalesia cordata are grown

SCALESIA PEDUNCULATA: A REFUGE FOR ENDEMIC INSECTS

Insects are often overlooked in conservation, yet they are essential to ecosystem health. Galapagos is no exception. Our research found that over 145 species of endemic insects—beetles, ants, bees, wasps, butterflies, moths, flies, bugs, and grasshoppers (21% of the total number of endemic species recorded in Galapagos within these groups)-depend on the threatened Scalesia pedunculata forest on Santa Cruz Island, now reduced to just 3% of its original cover. Until now, little was known about the conservation status of these insect species. Our assessment identified 11 highly vulnerable species, none of which are listed on the IUCN Red Listunderscoring the urgent need for further research and targeted action to prevent their loss.

The endemic *Scalesia pedunculata* forest is a hotspot for insect diversity. These findings highlight the importance of restoring and protecting this threatened forest, ensuring it continues to sustain these irreplaceable species. To raise awareness, we turned to macro photography—capturing these extraordinary insects in stunning detail, and revealing a hidden world few have seen. Restoring the *Scalesia cordata* forest, one seedling at a time:

- **375** natural seedlings emerged in areas where invasive plants were removed.
- **2,800+** seedlings successfully cultivated in the nursery (up from 2,000 in 2023).
- **1,000+** young trees planted in the field at 6 sites.
- 2 new Scalesia cordata populations discovered with a total of 47 adult trees, 102 juveniles and 17 seedlings.

Young Scalesia cordata tree, with its heart shaped leaves

> expeditions to Isabela's remote highlands

45

Scalesia cordata trees provided to local farmers for conservation efforts

> school children engaged through 12 outreach activities



RESTORING GALAPAGOS: WHY LONG-TERM MONITORING IS **ESSENTIAL**

In the 1990s the Galapagos National Park Directorate (GNPD) began an ambitious campaign to control the invasive guinine tree, Cinchona pubescens, an invasive species threatening the native Miconia robinsoniana shrub zone in the highlands of Santa Cruz.

Land

While vegetation monitoring doesn't make headlines, it is essential for measuring conservation success. For 26 years, CDF's ecological restoration team has been meticulously tracking changes in the vegetation structure in the highlands to make sure that the GNPD's efforts are informed by science, not assumptions. In 2024, after a 4 year gap since the last monitoring trip, a CDF team returned to the highlands for the latest monitoring effort, surveying the 31 permanent 20 m \times 20 m plots, first established in 1998. The results speak for themselves:

- Miconia robinsoniana cover has surged from <1% in 1998 to **35% in 2024**
- Quinine cover decreased from 16% to just 1%

These findings prove that targeted restoration efforts work-but without long-term monitoring, we wouldn't know what's succeeding and what still needs action. Galapagos ecosystems are in constant flux, shaped by El Niño, invasive species, changing urban areas and climate change. Without sustained data collection, conservation becomes guesswork. By tracking ecosystem shifts over decades, we ensure science drives actionsecuring the future of Galapagos, one plot at a time.

2024 monitoring field trip, what it takes:

- 2 scientists
- 12 days in the field
- 31 permanent 20 m × 20 m plots
- 5 transects per plot
- Plant cover recorded at 10 cm intervals!

• 81 plant species recorded

Next monitoring field trip: 2028

MEASURING THE RETURN OF SANTA FE'S LOST PLANT LIFE

After a 20-year hiatus, we resumed our vegetation Key findings included: mapping efforts in Santa Fe Island last year, an ecologically unique site once devastated by invasive goats and the extinction of its native giant tortoise species. After the eradication of goats in the 1970s, Santa Fe's arid ecosystem started a slow recovery process. More recently, the 2015 reintroduction of a closely related giant tortoise species restored its key bioengineer — and now the native plant community is showing clear signs of renewal.

To track this change, our team, in collaboration with University of Hawaii students, established 14 new permanent monitoring plots, complementing the 6 historical plots that have now been tracked for over 50 years.



- Thriving woody vegetation such as Opuntia echios var. barringtonensis and Bursera graveolens, with population increases, particularly at seedling stage.
- Scalesia helleri is expanding its range, and colonizing coastal and inland areas.
- Three new species were recorded (one parasitic plant and two macrofungi), highlighting Santa Fe's relatively unknown diversity.

These discoveries underscore the importance of long-term ecological restoration and prove that collaborative conservation can revive fragile ecosystems in the Galapagos. We'll be back in 2025 to continue monitoring and exploring Santa Fe further.

> Monitoring vegetation on Santa Fe Island

CONSERVING Threatened plant Species of the Arid Zone

CDF's Galapagos Verde 2050 team made significant strides in ecosystem restoration and the conservation of threatened plant species in Galapagos' arid zones in 2024. Through science-based actions, adaptive management, and community engagement, these efforts strengthened conservation initiatives and reinforced our commitment to conserving Galapagos' unique biodiversity. Key achievements included:

HOPE FOR SCALESIA RETROFLEXA

We were pleased to rediscover 16 juvenile and adult plants of the critically endangered *Scalesia retroflexa* near El Garrapatero beach on Santa Cruz Island. This rediscovery marks a major breakthrough for the conservation of this endemic species, which hadn't been seen at this site in over 30 years and was thought to exist only in a fenced area further down the coast (Punta Nuñez). The presence of these individuals is encouraging as it demonstrates that natural regeneration is still possible. CDF researchers collected seeds from the new site for germination in the lab, to be replanted in 2025 and boost this rare plant's population.

REINTRODUCING GALVEZIA LEUCANTHA TO ISABELA

We also successfully reintroduced *Galvezia leucantha* to Caleta Tagus on Isabela Island–an area where it hadn't been recorded for 60 years. A total of 54 seedlings were planted, of which 16 individuals have survived, highlighting the importance of our ecological restoration efforts. Monitoring of 23 individuals at Playa Tortuga Negra demonstrated that using the Waterboxx® technology in our restoration of this rare plant results in an 87% survival rate–well above any other technology used to date. Pest control strategies were also implemented at this site.

ECOLOGICAL RESTORATION AND PLANT SPECIES RECOVERY PLAN

Islands: Baltra, South Plaza, Española, North Isabela. **Objective:** Restore ecosystems and recover native species.

PROBLEMS

- Loss of flora and fauna due to invasive species and human activity.
- Decline of Opuntia echios var. echios, affecting land iguana survival.
- Impact of El Niño on natural regeneration.

SOLUTIONS

- Restoration using water-saving technologies.
- Protection of seedlings with fences and natural barriers.
- Control of invasive species to restore ecological balance.
- Reference ecosystems as models for recovery.

EXPECTED RESULTS

- Increased native vegetation.
- Greater resilience.
- Protected wildlife.

SCALESIA AFFINIS BLOOMING AGAIN IN PUERTO AYORA

Our team germinated 3,900 *Scalesia affinis* seeds in-vitro using three different treatments to optimize seedling production for this year's Ecological Gardens contest in Puerto Ayora (see page 58 for details). Encouragingly, we also observed flowering and seed production in the wild for individuals planted in 2023—a positive sign of recovery. Native to the Puerto Ayora region, *Scalesia affinis* has declined significantly, in part due to urban expansion. But it is progressively recovering thanks to our urban restoration efforts and the community's engagement.

A PLAN FOR PLANT SPECIES RECOVERY & ECOSYSTEM RESTORATION

Galapagos Verde 20250 published its 2025-2029 Ecological Restoration and Plant Species Recovery Plan, outlining priorities for natural regeneration and active management of key species. The plan details the conservation actions needed to restore critically endangered plant species and rehabilitate degraded areas on four key priority islands. Through applied nucleation and assisted regeneration, we aim to strengthen ecosystem resilience and connectivity, ensuring the recovery of ecosystem structure, function, and services, and supporting the long-term restoration of Galapagos biodiversity. Water saving technologies used by CDF's GV2050 team





IMPACT REPORT 2024

SKELETAL SYSTEM

cervical vertebra

scapula

LED HEA

pelvic bone

humerus

sca

phalange 🌑

skull 🔵

INVESTIGATING THE SPREAD AND IMPACT OF THE INVASIVE TREE FROG

The tree frog *Scinax quinquefasciatus*, native to mainland Ecuador, has rapidly expanded across Santa Cruz and Isabela since its likely arrival via cargo ships in the late 1990s. Since 2017, CDF has been studying its ecology and potential impact on Galapagos ecosystems. Findings from 2024 highlight the alarming speed of its spread, though its biology and full ecological impact remains under investigation.

KEY FINDINGS FROM 2024 REVEALED:

- Tens of thousands of frogs were recorded at 6 isolated water bodies, confirming widespread establishment.
- Frogs were recorded in the remote beach of Quinta Playa, Isabela, which confirms their presence beyond human populated areas.
- Up to **1,175** eggs are laid per spawning event, with peak breeding season between January and May.
- Up to 98% hatching success has been registered, with tadpoles developing within days, highlighting their rapid reproductive cycle.

The rapid expansion of this invasive frog poses a growing ecological concern. Its abundance, predation on native insects, and presence in protected areas as well as the lack of knowledge about its ecology highlight the urgent need for continued research and proactive management.

NEXT STEPS FOR 2025:

- Refining distribution maps through expanded bioacoustic and population studies.
- Assessing its ecological impact by analyzing diet and its effect on endemic insects.
- Investigating dispersal pathways to determine if human mobility is aiding spread.

IMPACT REPORT 2024







maya—an introduced species

FIRST DIGITAL DASHBOARD FOR INTRODUCED SPECIES IN GALAPAGOS

Invasive species are one of the greatest modern threats to the Galapagos Islands, intensified by climate change, globalization and human development. Since the islands' discovery in 1535, an estimated 1,574 introduced species have become established in Galapagos. Managing bioinvasions is a critical conservation priority for CDF and a core focus of its five scientific pillars for the coming decade.

To build awareness of this problem and provide a user-friendly medium to obtain accurate information on non-native species, in October 2024, CDF launched the first openaccess dashboard for introduced species in the archipelago. This interactive dashboard consolidates real-time data on how species arrived, whether they were introduced intentionally or accidentally, and their potential ecological impact.

KEY INSIGHTS FROM THE DASHBOARD

- 52% of introduced species are plants, followed by invertebrates (43%), most of which are insects.
- 4% are classified as invasive, including 36 plants, 11 vertebrates, and 12 invertebrates.
- 5% are potentially invasive, meaning they have been invasive elsewhere and could pose a future risk to Galapagos ecosystems.

This tool is a game-changer for students, scientists, policymakers, practitioners, and conservationists. By providing accurate, accessible data, the dashboard will help prioritize conservation and management efforts, strengthen biosecurity measures, and ensure science-based decision-making in line with the Galapagos Invasive Species Management Plan (2019-2029). Beyond the islands, this initiative contributes to global conservation goals, including Target 6 of the Kunming-Montreal Global Biodiversity Framework, which aims to reduce the impact of invasive species by 50% by 2030.

With better data, stronger policies, and informed decisions and actions, the fight against invasive species in Galapagos enters a new era of digital conservation.



IMPACT REPORT 2024

WHAT TERRESTRIAL INVASIVE SPECIES DOES CDF INVESTIGATE?



Avian Vampire Fly, Philornis downsi

Threatens endemic landbird populations.

CDF's work: Searching for short- impact on plant and invertebrate and long-term control methods, including biological control.

Blackberry, Rubus niveus Threatens native Scalesia forests and competes for resources. **CDF's work:** Investigating communities, as well as impacts of control actions; developing a biological control agent.



Tree frog, Scinax quinquefasciatus

Threatens endemic insect populations, competes for resources with endemic land bird **CDF's work:** Investigating species.

CDF's work: Understand the ecology and distribution of the frog population.



Smooth-billed Ani, Crotophaga ani

versicolor

human activities.

Threatens endemic bird and invertebrate species, disperses seeds of invasive plants, potentially spreads disease. CDF's work: Understanding its behavior and whether it is a vector of disease; developing control methods.





Cedrela tree, Cedrela odorata Blocks migratory paths of tortoises, threatens native vegetation.

CDF's work: Mapping spread across major islands to inform management actions.



Yellow paper wasp, *Polistes*

Threatens endemic species and

potential control methods, including biological control.



Quinine, Cinchona pubescens Outcompetes endemic plants, reduces light availability, increases soil nitrogen and phosphorus. CDF's work: Investigating longterm impacts of guinine and the impacts of its control on the plant community, evaluating endemic plant species recovery over time

and mapping distribution.



STRENGTHENING DEEP-OCEAN SCIENCE & CONSERVATION

Deep-ocean ecosystems face growing threats from pollution, bottom trawling, mining, and climate change, yet they remain largely excluded from marine conservation planning in the Eastern Tropical Pacific due to a lack of scientific knowledge and technical capacity in the region.

In 2024, our researchers prioritized base-line research necessary to expand awareness and strengthen conservation across hidden depths of the Galapagos Marine Reserve (GMR), the Hermandad Marine Reserve (HMR), the wider Eastern Tropical Pacific Marine Corridor (CMAR) network, and adjacent International Waters. Building on the exploration momentum of 2023, a new regional alliance is developing the first regional baseline to value, integrate and advance conservation of deep-ocean biodiversity as part of essential steps towards improved ocean governance.

LAUNCHING A REGIONAL DEEP-OCEAN RESEARCH ALLIANCE

In 2024, CDF and partners established the Eastern Pacific Deep-Ocean Research Alliance (DORA) to enhance collaboration on deep-ocean science and conservation. Working alongside STRI (Panama), FAICO (Costa Rica), CIMAR (University of Costa Rica), and INVEMAR (Colombia), we are addressing regional research priorities, strengthening scientific capacity, and fostering cross-border cooperation to tackle shared challenges in understanding and protecting the deep ocean.

Following DORA's inception workshop in July 2024, our researchers and regional experts have been coordinating seafloor mapping, analyzing collected samples, and integrating deep-ocean imagery and data to document previously unregistered biodiversity. By overcoming logistical and communication barriers, we are building a shared research agenda that will bridge knowledge gaps and advance deep-sea conservation efforts across the Eastern Tropical Pacific.

EXPANDING DEEP-OCEAN RESEARCH THROUGH OFFSHORE EXPEDITIONS

CDF participated in three major expeditions in 2024 that provided groundbreaking insights into deep-sea habitats, oceanic processes, and species connectivity:

Exploring Mesophotic Reefs & High Seas

Habitats: In collaboration with Greenpeace UK, Fundación Jocotoco, Migramar, and USFQ, the R/V Arctic Sunrise expedition investigated mesophotic reefs (30–200m) and oceanic seamounts, including the Paramount Seamount, a critical foraging area for many ocean-faring species. Using ROVs and drop cameras, the team documented previously unrecorded species and habitats that may serve as climate refugia during El Niño years. The expedition also raised awareness about the High Seas Treaty and the need for stronger international protections of the open ocean.

Tracking Climate Changes through Ocean Spanning Oceanographic Surveys: Partnering

with the Max Planck Institute, the state-of-the-art R/V Eugen Siebold expedition launched a fiveyear initiative to monitor ocean responses to El Niño and La Niña. Sampling across the Panama-Galapagos corridor, these cruises provide updated high-resolution oceanographic data to understand and track climate-driven changes over time.

Mapping the Galapagos Plume & Deep-Sea

Ecosystems: In collaboration with the University of Oregon , the R/V Sally Ride expedition extended high-quality seafloor mapping from the Cocos Submarine Volcanic Ridge across the GMR and HMR. CDF's Deep-Ocean field assistant, Esther Marcayata, led an extensive biological sample collection from seismic scanners at >3km depth, offering new insights into deep-sea species' settlement and growth.

IMPACT REPORT 2024

STRENGTHENING HIGH SEAS GOVERNANCE & AWARENESS

CDF played a key role in ongoing regional discussions on the High Seas Treaty. These included community presentations on the R/V Arctic Sunrise expedition, participation in the 12th South Pacific Regional Fisheries Management Commission meeting in Ecuador, briefing to CMAR representatives based in Panama, and webinars to enhance regional understanding of the treaty's implications. All four CMAR countries have signed the High Seas Treaty, which indicates an intention to ratify

60

80

100

130

200

300

in the future. However to date only Panama has ratified it. On a global level, the Treaty needs 60 ratifications to come into force. There have been 21 ratifications thus far (as of May 2025).

1,728

fauna and sediment samples collected from 49 seafloor lander platforms at depths of 1,642– 3,606m.

ADVANCING REGIONAL OCEAN GOVERNANCE

CDF's ocean governance experts are actively supporting CMAR exploring the technical basis for a legally binding treaty between member countries, marking a significant step toward strengthening marine protection in the Eastern Tropical Pacific Marine Corridor. To ensure institutional continuity and knowledge management, our data experts also supported CMAR in implementing its first information management system, creating a centralized data repository. This will ensure that critical data, research, and policy developments are preserved and accessible to inform future decision-making and regional collaboration.

332km²

of deep ocean floor mapped by multibeam sonar in Galapagos and Costa Rica.

50+

potential new species of sponges identified from 356 samples cataloged using microscopy.

285

coldwater coral specimens analyzed to compare with the 32 species already recorded in Galapagos, helping expand knowledge of deep-sea corals.

48

exploratory dives conducted using an observationclass ROV over 9 survey days.

17

scientists, conservation professionals, and students supported through the program, fostering collaboration across Ecuador, Panama, Costa Rica, and Colombia.



CDF's marine biodiversity research team continued making significant progress in longterm monitoring of underwater habitats and in tracking marine invasive species. These efforts provided key insights into ecosystem resilience and strengthened conservation strategies within the Galapagos Marine Reserve (GMR). Key highlights for 2024 included:

MONITORING CORAL HEALTH

The critically endangered coral species *Rhizopsammia wellingtoni*, was rediscovered at four new sites in the cooler waters of Isabela and Fernandina Islands. This rare coral had not been observed in 24 years and was believed extinct following the El Niño events of 1982-83 and 1997-98. Its presence suggests ecosystem resilience in the region and reinforces the importance of continuous monitoring in the GMR.

CDF researchers mapped 1,800m² of coral reefs using innovative photogrammetry technology that generated 3D models of the reef used to assess biodiversity and track structural changes over time. Encouraging progress was observed in Floreana, where we documented a substantial increase in hermatypic coral cover (key to the formation of reef structures) from 12.6 to 30.4% in protected areas between 2010 and 2024.

MANAGING AND PREVENTING INVASIVE SPECIES

In 2024, efforts to detect and manage invasive species were strengthened through enhanced monitoring techniques and risk assessments. To improve early detection, 90 settlement plates were deployed across Santa Cruz, Baltra and Floreana with varying upwelling conditions, revealing 120 visually distinct species, some with invasive potential. These species will undergo genetic analyses in 2025 to confirm their identity and assess their ecological risk.

In parallel, our team conducted a risk assessment of 31 marine species not yet present in Galapagos to determine their potential threat to the GMR. This new framework classified 19 as high risk, 7 as moderate risk, and 5 as low risk, allowing for a more strategic and proactive approach to invasive species management.

20 YEARS ASSESSING THE HEALTH OF MARINE ECOSYSTEMS

In 2024, researchers traversed 16.3 km of transects, further strengthening data on subtidal ecosystem health and providing critical insights for conservation planning. During these surveys, five Indo-Pacific fish species, including surgeonfish

MPACT REPORT 2024

and butterflyfish, were recorded. Their presence suggests El Niño-driven current shifts may be opening new connectivity routes to the Galapagos.

Since the launch of the standardized ecological monitoring project in 2004, the team has conducted 271.5km of transects across rocky and coral reefs–providing critical long-term data to track changes in marine biodiversity and guide evidence-based conservation strategies for the Galapagos Marine Reserve. This effort spans three monitoring groups, covering:

• 6,592,500 m³ of fish monitoring tunnels – equivalent to over 2,600 Olympic swimming pools.

settlement plates installed around Floreana, Baltra and Santa Cruz.

30_4% hermatypic coral cover in Floreana, up from 12.6% in 2010

31 non-native species assessed and classified for their risk level

- 271,500 m² of macroinvertebrate monitoring surface area about the size of 38 soccer fields.
- 6,617.5 m² of sessile quadrants roughly a soccer field and representing over 2.4 million observations of substrate or individual organisms.

This data, collected over 20 years, has been published on two esteemed platforms—the Ocean Biodiversity Information System (OBIS) and the Global Biodiversity Information Facility (GBIF) providing a comprehensive record of marine life within the Galapagos Archipelago.

8.8%

estimated cover of Caulerpa chemnitzia at Darwin Island in 2024, down from 39,6% in 2016. This aggressive marine invader proliferates during El Niño evente.

1,800m² of coral reefs mapped







GALAPAGOS MANGROVES: OUR BEST ALLIES FOR CLIMATE CHANGE MITIGATION

Mangroves are essential allies in the fight against climate change, not only by storing carbon but also by protecting coastlines, fostering biodiversity, and strengthening community resilience to climate-related impacts. In 2024, our research made significant headway in understanding the ecology of Galapagos mangroves and assessing their conservation priorities. Key highlights included:

GALAPAGOS MANGROVES CLASSIFIED AS VULNERABLE BY IUCN

CDF conducted the first-ever vulnerability assessment of Galapagos mangroves using the IUCN Red List of Ecosystems methodology. The research revealed that 25% of the mangrove ecosystem could be submerged by 2060 due to rising sea levels, while the degradation of these critical ecosystems is expected to increase from 3.1% to 9% over the next 50 years. As a result of this study, Galapagos mangroves have been officially listed as "Vulnerable" by the IUCN,

highlighting the need to protect these vital habitats for biodiversity, local communities, and global climate regulation.

Read more about this study:



TRACKING THE IMPACT OF CLIMATE CHANGE ON MANGROVES

CDF researchers also launched a long-term monitoring program to assess mangrove health in light of a changing climate. As part of this effort, we tagged and tracked 152 mangrove branches from three species, measuring their growth every 2–3 months. These measurements help determine growth rates and assess the influence of climate fluctuations on mangrove development.

A KEY ROLE IN CARBON SEQUESTRATION AND STORAGE

To further investigate the blue carbon capacity of Galapagos mangroves, we collected 50 biomass samples and 161 soil samples from eight sites for carbon content analysis. Soil and biomass samples are now being analyzed for carbon content at Yale and Utah State University. These studies aim to reconstruct historical carbon sequestration rates, detect climate-related disturbances like El Niño, and assess the long-term resilience of mangroves in storing carbon.

By deepening our understanding of mangrove ecosystems, we are equipping conservationists and policymakers with the scientific knowledge needed to protect these vital coastal habitats against climate change and environmental degradation.

HOW AND WHY OUR SCIENTISTS ARE STUDYING MANGROVE ECOLOGY

1. DISTRIBUTION & ADAPTATION

Goal: Understand how mangroves adapt to environmental stress and what shapes their distribution.

2024 Work: Analyzed 275 leaves from 3 species across 10 sites.

Findings:

- All species adapt to high salinity and pH with thicker leaves, smaller leaves, and shorter trees.
- Red mangroves show more stress under these conditions, explaining the prevalence of black mangroves in harsher sites.
- Salinity and pH reduce photosynthesis in red mangroves.

2. GENETICS & CONNECTIVITY

Goal: Explore genetic diversity and dispersal across Galapagos mangroves.

2024 Work: Extracted DNA from 471 sample across 18 sites.

Findings:

- PCR underway; sequencing starts in 2025.
- Results will inform connectivity and gene flow among islands.

3. MANGROVES, REEFS & BIODIVERSITY

Goal: Investigate how mangroves support reef ecosystems and biodiversity.

2024 Work: Used underwater video and visual surveys at 6 sites in 3 regions.

Findings:

- Data analysis ongoing.
- Future monitoring will expand site cover and seasonal variation.



Ocean

MONITORING THE HEALTH OF MARINE BIRDS

In 2024, CDF continued to support the Galapagos National Park Directorate (GNPD) and the Galapagos Biosecurity Agency's (ABG) efforts to evaluate the presence of the Avian (Flu) Influenza H5N1 in Galapagos (first documented in late 2023). Seven monitoring expeditions were carried out across six islands and five islets around the entire archipelago to assess the status of marine bird populations and their threats. Key highlights included:

NO SIGN OF AVIAN FLU

A total of 727 individuals from 11 species of waterbirds were captured and sampled using choanal-tracheal swabs for Avian Flu. Encouragingly, all samples tested negative for the virus. Additionally, the birds were measured, weighed, and marked to facilitate long-term monitoring. Other samples were also collected

to analyze additional potential threats to their populations. A total of 201 individuals, including penguins, cormorants, and albatrosses, were recaptured to gather additional data. This information will contribute to long-term analyses of their survival in relation to various threats.

MONITORING POPULATION TRENDS

With marine bird populations varying vastly year after year due to climatic change (El Niño / La Niña), CDF's annual census is vital to keep the pulse on the health of populations. In 2024, a total of 12,847 waterbirds from 21 species were recorded along parts of the Isabela, Fernandina and the Marielas Islets. 1,219 penguins and 2,129 flightless cormorants were recorded, respectively-see graph opposite to view interannual fluctuations.





ds recorded in annual census in western islands

> 10 years of population studies show a close correlation between ocean temperature and population numbers. No data was collected in 2022.



SHARK POPULATIONS

Ocean

CDF's Shark ecology and conservation program continued to expand its research efforts in 2024, deepening our understanding of shark populations, movement patterns, and conservation needs within the Galapagos Marine Reserve (GMR) and beyond. Over the year, we conducted seven scientific expeditions, including two to Darwin and Wolf, the islands with the highest shark biomass on earth. Key highlights included:

MONITORING COASTAL SHARK POPULATIONS IN A CHANGING CLIMATE

This year, we continued to combine two methodologies-Baited Remote Underwater Video Systems (BRUVS) and Diver Operated Video Systems (DOVS)-to estimate the abundance of coastal sharks at Darwin and Wolf. This longterm monitoring, initiated in 2014, is vital to track population trends and assess how anthropogenic

pressures as well as climate variability impacts shark populations in the GMR. The data also informs adaptive conservation strategies to ensure continued protection of these important predators.

ASSESSING THE DISTRIBUTION AND ABUNDANCE OF PELAGIC SHARKS

the field

To improve our knowledge on pelagic sharks, CDF researchers conducted 102 drifting BRUVS deployments in open waters across three bioregions of the GMR. This work focuses on wide-ranging sharks including blues, threshers, makos and silkies. These highly migratory species often travel far beyond protected areas, making them vulnerable to artisanal and industrial fishing fleets. This is why establishing population baselines and monitoring their status helps evaluate the level of protection the GMR provides to them, generating important information for regional conservation efforts.

TRACKING SHARK MOVEMENTS BEYOND GALAPAGOS

Our scientists deployed 32 satellite tags, tracking 15 scalloped hammerhead sharks, Sphyrna lewini, and 17 silky sharks, Carcharhinus falciformis. Tracking data revealed long-distance migrations, with some sharks leaving the GMR and traveling across the Eastern Tropical Pacific.

One remarkable case, documented a female silky shark migrating over 27,000 km, the longest recorded for this species, spending over 95% of her tracked time in international waters, where shark fishing is legal and intense. This research underscores the importance of coordinated regional efforts to ensure protection of endangered and migratory species beyond marine reserves and national borders.

Read more about this silky shark's incredible journey:





sharks: Monitoring shark health is key to understanding the impacts of climate change and pollution on marine life. In 2024, we conducted a pilot study to establish baseline data on the blood composition of blacktip sharks, Carcharhinus limbatus, in Galapagos. We collected and analyzed blood samples from 12 sharks near Puerto Ayora, assessing stress levels and overall health. While the sharks appeared healthy, some differences in blood composition were noted, likely due to local environmental conditions. These findings provide a critical reference for future monitoring and conservation efforts in the Galapagos Marine Reserve.



CONSERVING SHARKS AND RAYS IN ECUADOR

Ocean

Sharks and rays play a vital role in maintaining healthy marine ecosystems but face growing threats from overfishing in Ecuadorian waters and beyond. In 2023, CDF partnered with WWF-Ecuador to launch Habla Tiburón, a fiveyear conservation project initiated with support from USAID. The project aims to protect shark and ray populations in Ecuadorian waters, while promoting sustainable fishing practices in coastal fishing communities. In 2024, we made significant progress in two of the three main strategies underpinning the project, namely: strengthening fisheries governance and promoting market incentives, laying a strong foundation for the project's long-term conservation objectives.

STRENGTHENING FISHERIES GOVERNANCE

Our project team made important first steps to strengthen governance of the main national fisheries impacting sharks and rays. As in any such policy-related work, it is vital that key partnerships are established–something that takes time and effort but is the groundwork off of which real change can be enacted. We are pleased to report that in 2024 CDF established itself as a technical-scientific partner to the Ecuadorian government through agreements with Ecuador's Fisheries Authority (Vice Ministry of Aquaculture and Fisheries/Subsecretary of Fisheries Resources–SRP), the Fisheries Science Institute (IPIAP), and with the Inter-American Tropical Tuna Commission (IATTC), a key regional partner. These partnerships positioned CDF as a trusted collaborator in shaping fisheries management policies, and paved the way for stronger fisheries governance frameworks.

We also signed an agreement with FENACOPEC, Ecuador's largest artisanal fishing confederation, marking the start of closer collaboration with fishers—the key stakeholders in adopting sustainable fishing practices. This partnership aims to bridge the gap between fishers, scientists, and policymakers, ensuring that artisanal fishers are actively engaged in decision-making processes that impact fisheries governance.

Additionally, our work supported Ecuador's compliance with CITES regulations, providing technical guidance, a capacity-building workshop for 20 officials, and the development of a multi-year CITES Action Plan to improve the management of fisheries linked to incidental shark bycatch. These efforts are essential for ensuring sustainability and regulatory compliance in Ecuador's fisheries sector. In Galapagos, our team played a key role in supporting the negotiation process to advance the implementation of the 2016 Galapagos Marine Reserve (GMR) zoning. We provided facilitation and technical guidance to refine zoning polygons, ensuring that conservation priorities align with sustainable resource use. As the largest scientific data contributor in this process, CDF generated 49 new geographic layers and refined 42 existing ones. These layers are critical tools that help visualize, analyze, and integrate spatial data on species and habitats, allowing environmental authorities to assess and revise zoning regulations. By improving zoning design, the effort strengthens biodiversity protection while supporting sustainable activities like artisanal fishing and tourism. CDF also facilitated 21 meetings and engaged with 139 participants, which led to 27 intersectoral agreements, ensuring a collaborative approach to marine zoning and resource management.

Other key achievements included:

- Strengthening Participatory Governance Facilitated the creation of consultative councils for mahi-mahi and swordfish fisheries.
- Advancing Science-Based Fisheries Management – Launched a joint scientific working group with the government fisheries bodies to identify knowledge gaps and provide data-driven recommendations for managing key fisheries affecting sharks and rays.
- Enhancing Shark Conservation Strategies Conducted technical studies on the ecology of silky, blue, mako, and thresher sharks, providing critical insights for conservation planning.





 Tracking Shark Movements and Threats

 Tagged 110 sharks during four research expeditions, to improve our understanding of migration patterns and external pressures on shark populations.

These efforts helped improve transparency, enhance policy decisions, and strengthen Ecuador's ability to manage fisheries impacting sharks.

Ocean

PROMOTING RESPONSIBLE FISHING AND **MARKET INCENTIVES**

A major milestone this year was the launch of EmprendeMar in Galapagos—a program developed by CDF in collaboration with the EDES Business School (UTPL-Ecuador) to empower entrepreneurs within the Galapagos seafood system. This initiative brings together businesses and stakeholders committed to transforming the seafood sector into a more resilient, fair, and prosperous but sustainable model, while minimizing impacts on shark and ray populations. In its first year, the program:

- Provided specialized training to 89 fishers and entrepreneurs.
- Incubated 28 business ideas, with 13 tested before an audience of over 200 people.
- Awarded \$31,000 in funding to 16 ventures for prototyping.
- Granted \$30,000 in acceleration funds to 10 businesses to scale their operations.

Beyond Galapagos, we mapped the seafood value chain in Manta and Jaramijó, two of Ecuador's main ports for shark landings. Through this process, we co-created a shared vision to transform artisanal fisheries toward greater responsibility and transparency. This milestone lays the foundation for future investments and

innovations, guiding the development of a business incubator set to launch in the region soon.

In support of sustainable fisheries governance and management, we developed guidelines for best seafood handling practices in Ecuador's longline fisheries. Our partner WWF also designed a toolkit to adapt the Spanish "Lonja" model—a co-managed fishery and port facility system—for Ecuadorian ports, beginning with San Mateo (Manta) and Jaramijó. The latter activity aimed to increase guality standards, transparency in fisheries and incentivise the market's demand for higher standards of sustainable seafood with low impact on sharks and rays.

PROJECT FUNDING HALT AND NEXT STEPS

Despite its strong start, Habla Tiburón's funding from USAID was terminated in February 2025 following an executive order from the US government. While this abrupt loss of funding is a major setback for the progress made in shark and ray conservation, fisheries governance reform, and sustainable livelihoods for coastal communities, CDF remains committed to building on the achievements of 2024 through our longterm sustainable fisheries and shark conservation research initiatives, working to secure new funding to continue this vital work.







PARTS OF THE SCALLOPED HAMMERHEAD SHARK



Georeferencing a newly marked nest

ADVANCING GREEN SEA TURTLE CONSERVATION In Galapagos

Eastern Pacific green turtles, *Chelonia mydas*, face growing threats in Galapagos from increasing tourism, maritime traffic, and also climate change. In 2024, CDF's sea turtle conservation team advanced key monitoring, threat assessments, and conservation strategies in the Galapagos Marine Reserve (GMR), combining stateof-the-art scientific research and innovative technologies to protect this endangered species and inform more sustainable tourism and marine management.

UNDERSTANDING THE IMPACT OF CLIMATE CHANGE ON TURTLE NESTING

We launched a pilot study on incubation temperature at Quinta Playa, Isabela, a key green turtle breeding site. While nesting monitoring has been conducted for over two decades, this new initiative introduces the installation of temperature sensors at the time of oviposition to record incubation temperatures and evaluate their impact on hatching and emergence success. This data will support the implementation of predictive sex ratio models, with final results expected by 2026 after three full nesting seasons.

Additionally, we conducted five drone surveys using advanced photogrammetry to monitor 22 hectares of nesting habitat, assessing its stability against climate change impacts. Data on air and sea surface temperatures and rainfall will be analyzed in 2025, providing key insights into nesting site resilience in the face of extreme climate events and informing adaptive conservation and management strategies.

Initial results showed:

- 76% hatching success rate.
- 74% of hatchlings successfully emerged from their nests.
- Average incubation period of 54 days.
- Temperatures ranged from 24°C to 37°C.

ASSESSING VESSEL COLLISION RISKS

We continued evaluating the risk of vessel collisions with marine turtles using aerial drone surveys in high-traffic waters of the GMR. Between January and May 2024, we completed 59 flight lines, totaling 7 hours of flight time and surveying a total of 185 hectares along a 2 km stretch of coastline. These flights recorded 609 marine megafauna sightings, including 409 green turtles, as well as tiger, hammerhead, and blacktip sharks, manta rays, golden rays, sea lions, and penguins. The data reinforces the urgent need for management and enforcement measures to reduce maritime traffic impacts on marine wildlife.



• 185 hectares surveyed with drones to assess risk of vessel collision

> drone surveys conducted using advanced photogrammetry to assess nesting habitat stability against climate change impacts.

nuchal plate

neural plate

peripheral bones





SUSTAINABLE FISHERIES

In 2024, CDF's sustainable fisheries program continued to generate scientific knowledge to support sustainable fisheries management in Galapagos and beyond. By integrating research, policy advising, and community engagement, we worked to strengthen marine conservation, fisheries governance, and ecosystem monitoring to ensure the long-term sustainability of artisanal fisheries in Galapagos and the region while also safeguarding a marine reserve of global importance. Key highlights of the year included:

FIRST ECOSYSTEM ACCOUNTING FOR ECUADOR

We are proud to have successfully conducted Ecuador's first-ever ecosystem accounting study for its Insular Exclusive Economic Zone (IEEZ), quantifying the economic and ecological value of marine and coastal ecosystems. The study found that:

- 600+ tons of carbon are sequestered annually by mangrove forests
- \$275+ million is generated annually by tourism

- \$110+ million is generated annually by fisheries
- 41,000+ jobs are supported by marine
- ecosystem services

The Ecuadorian Ministry of Environment, Water, and Ecological Transition recognized CDF's study as a key step toward developing Ecuador's first national ocean accounts. Importantly, the study **helps redefine the economic value of nature**, moving away from a purely extractive view to one that recognizes nature as a vital system that sustains life, livelihoods, and biodiversity that is worth protecting.

Our team is co-leading the Global Ocean Accounts Partnership (GOAP) in collaboration with Indonesia's Ministry of Maritime Affairs and Fisheries, advancing the global implementation of ocean accounts. As part of this effort, we launched the Latin America and Caribbean Community of Practice, promoting the regional adoption of ecosystem accounting methodologies.

Read the accounting study for the IEEZ here:



STRENGTHENING SUSTAINABLE FISHERIES AND TRACEABILITY

Our team launched the Responsible Fishing Network, connecting fishers, chefs, and scientists through Galapagos seafood traceability systems. This platform promotes responsible fishing and consumption practices, enhances food security, and promotes sustainable fisheries management.

To further improve seafood traceability, we developed a video analysis protocol for reviewing onboard camera footage, verifying that seafood products come from responsible fishing practices. This system enhances transparency and compliance with sustainability standards in Galapagos.

ASSESSING CLIMATE CHANGE IMPACTS ON KEY FISHERIES

Together with the Galapagos National Park Directorate (GNPD), we worked to monitor the effects of climate change and climate variability on the abundance and distribution of species crucial

230,000 underwater temperature records from data

loggers collected across the GMR

INFORMING ARTISANAL FISHERIES MANAGEMENT

As the GNPD's main scientific advisor on artisanal fisheries management, we continued to provide technical guidance for the management of sea cucumber and spiny lobster fisheries—both economically and ecologically important species in Galapagos. Our contributions help ensure these fisheries are sustainably managed, supporting both biodiversity conservation and local livelihoods. to artisanal fisheries in Galapagos. We installed 10 additional underwater temperature loggers across five bioregions of the GMR, bringing the total to over 40, from which we collected >230,000 temperature records.

We mapped 2,030 m² of subtidal coral reefs using photogrammetry to monitor changes in benthic cover and biodiversity. Additionally, we documented the distribution of 16 coral species through 273 georeferenced observations to understand how thermal fluctuations impact biodiversity and adapt conservation strategies accordingly.

An additional 21,000 m² of intertidal rocky reefs were mapped using drones, and 552 photo quadrats collected from the rocky intertidal zone. These data are being analyzed with artificial intelligence as part of the Marine Biodiversity Observation Network (MBON), enabling us to accelerate coverage estimates for over 50 sessile benthic species while improving the efficiency and accuracy of our assessments.



We also hosted a co-creation workshop on the role of women in Galapagos agriculture, identifying knowledge gaps, skills, and specific needs. While women play an essential yet often overlooked role in the agricultural value chain, there remains a gap in knowledge about the major barriers women face in this sector. Workshop participants highlighted key challenges such as pests and climate change, emphasizing the urgent need for targeted training, education, and technology to strengthen sustainable agricultural practices.

Engaging Communities in Conservation

CDF and the Pontificia Universidad Católica del Ecuador (PUCE) conducted participatory mapping in Puerto Ayora, engaging over 25 community members in addressing urban sustainability challenges. The initiative culminated in an Innovation Bootcamp, where three community-driven projects were awarded and will receive dedicated support from PUCE's incubator, PUCEmprende.



SUSTAINABILITY FOR Conservation

As tourism and population growth increase in Galapagos, sustainable practices are becoming increasingly essential in reducing human pressures on the archipelago's fragile ecosystem, while also maintaining community well-being. With this enormous challenge in mind, in 2023, CDF launched its Sustainability for Conservation program, a research area born out of its Sustainability Fellowship. Last year, the program focused primarily on agroforestry and sustainable tourism.

SUSTAINABLE TOURISM

Tourism drives Galapagos' economy, but rapid growth of the industry threatens its ecosystems. In 2024, CDF research focused on sustainability challenges in this important research line, with an emphasis on Ecuadorian visitors–a relatively understudied group who accounted for roughly 45% of all visitors that year. Three key studies were undertaken to inform future tourism management strategies:

 An analysis of Ecuadorian tourists' "willingness to pay" for the increased National Park entry fees.

- A qualitative analysis of visitor behavior, identifying key challenges and opportunities in managing overcrowding, inappropriate conduct, and pressures on visiting sites around urban and protected areas in Galapagos.
- A tourism perception study in collaboration with the University of Zurich using machine learning tools to examine YouTube videos uploaded by Spanish-speaking tourists to gain insights into visitor appreciation and values related to their experience in insular landscapes.

AGROFORESTRY SYSTEMS AND COFFEE

In Galapagos, agricultural crops—largely grown for local consumption—are vital for both environmental sustainability and socio-economic well-being. In 2024, our research focused on gathering baseline data, in collaboration with farming communities on Santa Cruz Island. We conducted initial assessments across 17 coffee farms to evaluate the incidence of coffee rust disease and related agricultural practices, a major concern for local growers. The results will inform integrated crop management strategies and identify priority actions to ensure sustainable agricultural production and best practices.



Advancing Social Sciences and Sustainability

At the annual Science Symposium, hosted by the Galapagos National Park Directorate, CDF introduced its Social Sciences Research Group to further engage local stakeholders and the community in this key research area. Our exhibit at the CDF Open House featured a timeline of Galapagos' natural and human history, integrating UN Sustainable Development Goals (SDGs) to highlight the connection between science, society, and conservation.

We also catalogued over 300 publications and 200 grey literature references on social sciences and humanities in Galapagos, establishing a baseline for strategic research planning and to support future research.

Garden Contes plants of 21 species planted in other urban green areas 236 of Puerto Ayora, including the cycling path

A GREENER FUTURE FOR GALAPAGOS' COMMUNITY

People

In order to engage the local community and build a stronger sense of pride and ownership for ecological restoration efforts on the islands, CDF's Galapagos Verde 2050 and Environmental Education teams joined forces with the Galapagos National Park Directorate (GNPD) to launch an **Ecological Gardens Contest** on Santa Cruz Island. A total of 10 educational institutions participated in this new initiative involving more than 327 students and educators, with a view to creating urban green spaces using native and endemic plants. A total of 434 plants, provided by the GNPD's greenhouse, were planted in school environments, boosting biodiversity in urban areas while fostering a deeper connection between students, teachers, and nature. The contest will be rolled out to the other three inhabited islands, beginning with San Cristobal and Isabela, in 2025.

Our team also promoted rural ecological restoration activities through female leadership in rural areas of Santa Cruz Island and conducted 4 training sessions with 95 community members on species propagation, water-efficient practices, and climate-adapted garden design in order to promote sustainable solutions to climate change in urban areas.

Through community collaboration and the use of innovative water-saving technologies such as Biochar, Hidrogel, Cocoon, Growboxx and Waterboxx, Galapagos continues to advance toward a greener landscape, restoring ecosystems with native and endemic plants that are essential for urban and rural spaces.



As part of GV2050's urban ecological restoration program, researchers evaluated green spaces in Puerto Ayora, the largest town in the archipelago, estimating just 2.1 m² of urban green space **per person**—well below the 10 m² minimum recommended by the World Health Organization. These findings highlight the urgent need to expand ecological gardens in urban areas.



SCIENCE, EDUCATION, AND Community Engagement For the conservation of Galapagos

We believe that sustainable long-term conservation is only possible with the active participation of the local community. Through our ECO Program, we integrate science, knowledge, and practice to inspire and train the next generation of conservation leaders. In 2024, we expanded our impact, bringing more people into science and strengthening community engagement in sustainability.

SCIENCE CLUBS: INSPIRING THE NEXT GENERATION

This year, 128 teenagers and young adults in Galapagos participated in our Science Clubs, Leadership Programs, and Summer Clubs, providing them with hands-on learning experiences to explore and connect with their environment. Through more than 70 activities, we sparked scientific curiosity, built leadership skills, and empowered youth to take an active role in conservation. From sensory explorations to real-world research, each experience helped shape these young participants into committed changemakers for the future of Galapagos.

EXPERIENTIAL SCIENCE: CHANGEMAKERS FOR CONSERVATION

In 2024, we engaged over 1,050 people from 17 educational institutions and organizations across Galapagos' four inhabited islands, bridging science and conservation through hands-on learning. Through programs like our Experiential Science Portfolio, Community Science, and Science for Sustainable Communities, our educators led more than 80 interactive activities, allowing participants to explore ecosystems, apply scientific knowledge, and take an active role in environmental protection. By fostering curiosity and direct engagement, we are strengthening community commitment to a sustainable future for Galapagos.

SCIENCE AND COMMUNITY: THE POWER OF LEARNING

Through our Traveling Libraries program, we expanded access to books and learning resources for 189 children, teenagers, young adults, and teachers in rural communities across Santa Cruz, Isabela, and Floreana, including a specialized educational institution in Santa Cruz. We provided over 300 books, musical instruments, and educational materials, trained teachers in reading facilitation, and established a knowledge-sharing network with teachers to foster a love of learning. Beyond literacy, we deepened community engagement through events and activities, including CDF's annual Open House and Christmas Bird Count, which brought together more than 2,300 participants in 2024. These interactive experiences encouraged curiosity, learning, and active participation in conservation, strengthening the community's connection to science and sustainability. Additionally, we held 31 talks for 581 attendees and 22 workshops for 254 participants across Santa Cruz, San Cristóbal, and Isabela, expanding education and engagement opportunities.

SCHOLARSHIPS

In 2024, we launched the Deep-Ocean Graduate Scholarship Program and Post-Graduate Research Grants to equip young professionals from Galapagos, Ecuador, and the Eastern Tropical Pacific region with key skills in marine conservation research. One scholar has started their studies, with two more beginning in 2025, advancing research to protect our oceans.

We also introduced the *Blue Pioneers Research Grant*, supporting up to six Master's or PhD students in creating sustainable fishing solutions that strengthen artisanal fishing communities. The first grantees were announced in early 2025.

The CDF's Fernando Ortiz Scholarship, which has been awarding scholarships exclusively to young Galapagos residents since 1971, granted two new scholarships this year, bringing the total to 11 active scholars in 2024. By investing in education, we are shaping the next generation of professionals dedicated to the conservation and sustainability of Galapagos. 5,800+

people engaged through joint outro with partners



LEADERS IN ACTION

Over the past three years, our Leaders Clubwhich focuses on highschool graduates (18+ years)-shaped the path of 15 young participants, with 8 now pursuing studies in biology, environmental management, or tourism, 2 in other fields of study and 2 engaged in environmental education volunteer programs. Beyond their academic growth, these young leaders are driving projects, supporting local initiatives, and securing scholarships, demonstrating the program's impact in empowering the next generation of environmental leaders in Galapagos.

PARTNERSHIPS THAT EXPAND OUR IMPACT

Over the year, we collaborated with more than 10 institutions across 30+ projects and activities, benefiting more than 5,800 people. A standout initiative was "Defendamos lo Nuestro," a puppet show from the *Acción Nativa* project, which creatively engaged the community in environmental awareness and conservation. NATURAL HISTORY COLLECTIONS

Rendering of the new Collections building,

set to open in the second half of 2025.

scientific articles published in leading journals, deepening our understanding of



EXPANDING SCIENTIFIC RESEARCH

Over the year, our curators cataloged 505 type specimens from 89 insect species, providing a Beyond research and conservation, CDF's critical reference for invertebrate biodiversity. collections serve as an educational resource, A study on lava lizards revealed their high engaging students, researchers, and visitors. consumption of introduced ants, raising new In 2024, we welcomed 623 visitors to our ecological questions. Additionally, we documented Collections, including school groups, authorities, a potentially introduced sand wasp species, and donors, providing hands-on experiences offering new insights into its distribution and that highlight the importance of natural history ecological role in Galapagos. collections.

ADVANCING SCIENTIFIC-BASED KNOWLEDGE THROUGH NATURAL HISTORY COLLECTIONS

The Charles Darwin Foundation's Natural History Collections serve as a valuable repository, preserving and documenting Galapagos' unique biodiversity. These collections support research, conservation efforts, and education, providing invaluable data for understanding species distribution, ecology, and evolutionary history. Key highlights from our Collections team this year included:

GROWING AND PRESERVING COLLECTIONS

A major milestone in 2024 was the start of the reconstruction of our state-of-the-art Natural History Collections building, set to reopen in the second half of 2025. This modernized facility will house all four collections under one roof, significantly improving storage, preservation, and research capacity to safeguard Galapagos' biodiversity records for future generations.

To facilitate the reconstruction, we temporarily relocated the Herbarium to the Fischer South building, ensuring its continued functionality throughout the process. Despite these logistical hurdles, our collections continued to grow, with 4,569 new specimens cataloged, including 3,800 invertebrate records, primarily butterflies and moths.

A major highlight this year was the repatriation of 187 historical orchid specimens, originally collected in the 1960s-70s and returned to Galapagos after more than five decades abroad and more than doubling the size of our orchid collection. Additionally, we digitized 330 specimens in three of the four collections, expanding global access to critical botanical, vertebrate, and invertebrate records.

Natural History Collections

CONNECTING SCIENCE WITH THE COMMUNITY

Technology & Innovation

USING TECHNOLOGY & INNOVATION TO ENABLE OUR RESEARCH

At CDF, we prioritize effective, science-based conservation through the optimal utilization of technology and data management. That's why we are dedicated to expanding the accessibility of Galapagos-related information and knowledge through web-based databases, visualization tools, and interactive digital platforms. Our dataZone platform hosts a comprehensive suite of applications, providing access to more than 65 years of scientific research data collected from various databases that center on the Galapagos Islands.

1073

LAUNCHED 2 NEW **INTERACTIVE DASHBOARDS:**

Introduced species dashboard - this interactive tool includes records since 1898 to inform viewers about introduced species in Galapagos, their introduction pathways, and their impact on the Islands' environment.

A artestant

Chiras Dara

HOME > MISENROV. HD

Galactamos intractioned a

Tortoise d

Gal a todolie men ties ti

Giant tortois

68.7cm

69.1cm

Charles Daras

Mothods

dashboard - enables scientists from around the world to visualize the movement, biology, and health data we collect from 8 tortoises across 4 islands.

IMPACT REPORT 2024

Giant Tortoise Movement, Biology & Health

HOME RESEARCH HUB MATAZON

Galapagos Geoportal

ABOUT THE

DATAZONE

GELCLOREA

We generated 75 digital models of specimens from our Natural History Collections using 3D equipment.

We launched CDF's

new GeoPortal with 141 datasets, 11 new maps, 5 geostories and 5 geoapps. The Geoportal is where you can explore maps and download spatial data that visualizes crucial local issues.

DATABASE

GALAPAGOS SPECIES

DATAZONE





OUR LIBRARY, ARCHIVE AND MUSEUM

In 2024, the G.T. Corley Smith Library, Archive, and Museum at CDF strengthened its information management and accessibility, launching key initiatives to expand and enhance its collection. Committed to conservation and knowledge dissemination, we continue to innovate, ensuring that more people can access essential scientific resources and historical documentation on the Galapagos Islands.

SCIENCE AT EVERYONE'S FINGERTIPS

This year, we expanded our electronic catalog, adding 264 new records including books, articles, theses, and journals to the Koha Integrated Library Management System, which is, as of 2024, accessible from any device in the world. This initiative not only supports scientific research but also reinforces our mission of sharing our knowledge across borders.



THE WORLD'S LARGEST COLLECTION ON GALAPAGOS

A detailed analysis of CDF's Galapagos Collection confirmed it as the world's most extensive repository on the archipelago, with 1,918 texts—surpassing collections at the Library of Congress (USA), Berlin State Library, and National Library of France. This invaluable archive, built over more than six decades, compiles thousands of scientific publications, providing remote access to essential research and deeper insights into Galapagos' natural and human systems.



PRESERVING HISTORY AND SUPPORTING RESEARCH

The library also continued the maintenance of its facilities, including the Archive and Museum, which house documents, maps, recordings, archaeological materials, and historical artifacts. While these materials await cataloguing and review by archival specialists, they represent a valuable resource for researchers and historians, offering insights into the rich history and biodiversity of Galapagos.

Throughout 2024, CDF's library remained a hub for intellectual inquiry, welcoming approximately 450 visitors for consultations, studies, and research. Looking ahead, we remain committed to supporting research projects, expanding bibliographic collections, and serving as an essential resource for the scientific community and conservation efforts in Galapagos.

Research Station's campus, our library is open 7:45-12:30 and 14:00-17:15, excluding public

GALAPAGUEANA

CDF's Galapagueana is a digital and bilingual platform dedicated to the recovery, management, and dissemination of the cultural heritage, and the social and scientific memory of Galapagos.





OUR TEAM

CDF STAFF

At the Charles Darwin Foundation (CDF), our success is built on the dedication and expertise of our team, united by a shared commitment to protecting the biodiversity of the Galapagos Islands. In 2024, we had 142 full-time employees, with 46% working in scientific teams and the remainder in administrative support roles across operations, finance, HR, communications, fundraising, and IT.

Gender equity and local talent development remain key priorities for CDF. In 2024, 55% of our science staff were women, compared to 48% at the institutional level, with equal gender representation (50/50) in management. As a major local employer, we continue to prioritize hiring and training Galapagos residents, with 61% of staff being permanent island residents, 28% from mainland Ecuador, and 11% international. Within our science teams, 42% are Galapagos residents, slightly down from 45% in 2023.

VISITING SCIENTISTS

Since its founding, the Charles Darwin Research Station (CDRS) has been a scientific hub,

providing facilities, admin and logistic support, and field access for visiting researchers. Each year, scientists from all over the world collaborate with CDF to advance conservation efforts in Galapagos.

In 2024, CDF welcomed 150 visiting scientists from 50 academic institutions across 25 nationalities, reflecting a return to normal activity levels after an exceptionally high influx in 2023, driven by four major deep-ocean expeditions. With CDF and CDRS as their base, these scientists contributed invaluable expertise, expanding our collective understanding of the Galapagos and ensuring that conservation strategies remain rooted in cutting-edge research.

VOLUNTEERS

Volunteers play a vital role in CDF's research and conservation efforts, contributing their time and skills to support projects across Galapagos. In 2024, we welcomed 117 volunteers, an increase from 83 in 2023, of whom 56% trained with our scientific teams. Of our volunteers in 2024, 38% were Galapagos residents, 32% came from mainland Ecuador and 30% were from other countries.

SENIOR STAFE

OUR MANAGEMENT TEAM

Rakan Zahawi | Executive Director Fernando Araújo | Director of Finance María José Barragán Paladines | Science Director Jim Boyle | Chief Development Officer María Cristina Guerra R. | Human Resources Director Ambre Tanty-Lamothe | Marketing and Communications Director

PRINCIPAL INVESTIGATORS

Stuart Banks | Deep-ocean exploration & conservation Charlotte Causton | Invasive invertebrates Sarah Enright | Ocean governance Birgit Fessl | Landbird conservation Maria Igual | Mangrove finch conservation Heinke Jäger | Ecological restoration Patricia Jaramillo Díaz | Galapagos Verde 2050 Gustavo Jiménez | Marine bird conservation Inti Keith | Marine biodiversity research Andrea Muñoz | Sustainability for conservation Macarena Parra | Sea turtle conservation Courtney Pike | Giant Tortoise Ecology Program Miguel Pinto | Natural History Collections Jorge Ramirez | Sustainable fisheries Pelayo Salinas de León | Shark ecology & conservation Gabriel Vianna | Shark ecology & conservation César Viteri | Sustainable fisheries

Our Team



FUNDRAISING

2024 has been a landmark year for the Charles Darwin Foundation, driven by the generosity of our donors and the power of transformative partnerships that are shaping the future of scientific research and conservation in the Galapagos Islands.

We are deeply grateful to all our donors, both longstanding and new, whose generosity makes our work possible. Thanks to your support, over \$19 million has been raised and committed in 2024, fueling critical research and conservation efforts. This impact has been achieved through two key strategic objectives:

EXPANDING OUR BASE OF SUPPORT FOR GALAPAGOS

Our donor community has been steadily growing, reflecting a deepening commitment of our followers to the conservation of Galapagos. We have welcomed 438 new donors in 2024 that today make up 61% of our total giving community, and received a total of 26 grants and 37 major gifts. Meanwhile, donor retention remains a key priority, with a retention rate of 35% in 2024-an area we are actively working to strengthen.

One of our biggest successes this past year has been the steady growth in monthly donors. A major driver of this was the launch of CDF's Wild Club in March, our new monthly giving

program that sparked a series of fun and engaging campaigns in celebration of CDF's 65th anniversary. These recurring gifts provide the steady, reliable funding needed to sustain longterm conservation efforts and ensure Galapagos remains a thriving ecosystem for generations to come.

But beyond the numbers, this year has been about building a lasting legacy. One of the most important milestones was the launch of The William Durham Fund for Discovery and Learning, the first chaired endowed fund of its kind for CDF, created to honor the remarkable legacy of Prof. Bill Durham while connecting new supporters with our mission.

The Fund's official launch in San Francisco was a heartfelt celebration, followed by the 2024 Galapagos Expedition-a special cruise dedicated to honoring Prof. Durham, made possible by the generosity of the Gordon and Betty Moore Foundation and Ecoventura. The journey gave 19 guests-many of them first-time donors-a unique opportunity to experience the wonders of Galapagos and the work of our organization up close. Inspired by their experience, the cruise raised over \$1.5 million, bringing the Fund's total to nearly \$2 million and ensuring that Prof. Durham's legacy will continue to inspire and support the next generation of conservationists.

FORGING NEW AND STRENGTHENING **EXISTING PARTNERSHIPS**

A particularly exciting development in 2024 was the launch of a 16-year partnership with Oceans Finance Company, a collaboration set to channel resources into critical programs that are strategically aligned with UN Sustainable Development Goals. What makes this partnership unique is that the funding comes from private financing focused on sustainable investments. ensuring long-term impact through rigorous monitoring and measurable outcomes.

2024 also marked the 30th anniversary of our this valued partnership. valued partner, Friends of the Galapagos Islands **Switzerland**. In celebration of this milestone, this Each of our partnerships plays a critical role in organization made a generous grant of 200,000 helping us advance research and conservation efforts and protect the unique biodiversity and Swiss Francs to directly support our Landbird Conservation Program, helping to protect iconic ecosystems of Galapagos. species from chronic threats like the invasive Avian Vampire Fly. Renewed support from LOOKING AHEAD Fondation Franklinia-a \$200,970 commitment over the next three years-will further vital As we look ahead, we are inspired and energized restoration of the endangered Scalesia cordata by the vision of what is possible. Our fundraising forest on Isabela Island. Meanwhile, a \$325,000 efforts are focused on strategic priorities that grant from the **Rohr Foundation** is funding will help us expand our community of dedicated research on El Niño's impact on Galapagos coral donors, strengthen our existing relationships, and reefs. By monitoring key sites before, during, and welcome new supporters. after the event, we aim to assess reef resilience and recovery in warming waters. We are profoundly thankful to those who make

We are also profoundly grateful for an extraordinary estate gift of \$1.6 million from an anonymous donor, which has greatly enhanced our mission in 2024. Of this amount, \$1.1 million has been designated to our strategic mission reserve fund, providing long-term organizational stability. Meanwhile, \$537,000 has been directed

	2024	2023	% ch
Number of donors	723	560	29
Number of new donors	438	284	54
Monthly donors	139	77	81

towards the development of the new Museum Experience at the Charles Darwin Research Station. We look forward to receiving an additional contribution in 2025, which will further strengthen our efforts to protect and conserve Galapagos.

Finally, we are thrilled to share that our longstanding and valued partner, the **COmON** Foundation, has renewed its commitment to our mission for another three years following a thorough evaluation. Their ongoing support and advocacy have been instrumental in driving meaningful impact, and we are deeply grateful for

this work possible. Your generosity powers the science, conservation, and education initiatives that allow us to safeguard one of the world's most important natural treasures for future generations.

Thank you for being an essential part of this journey!



OUR DONORS

The Charles Darwin Foundation Board of Directors, thank the following for their generous support of our vital work in the financial year 2024, including those who have chosen to remain anonymous.

FOUNDATIONS / NON-GOVERNMENTAL ORGANIZATIONS

Above \$1,000,000

COmON Foundation Gordon and Betty Moore Foundation Oceans Finance Company Re:wild USAID

\$100,000 - \$499,999

Fondo para el control de las Especies Invasoras de Galápagos (FEIG)

\$100,000 - \$499,999

Blue Action Fund Fondation Franklinia Friends of the Galapagos Islands Switzerland Galapagos Conservancy Galapagos Conservation Trust International Atomic Energy Agency Lindblad Expeditions-National Geographic Fund Paul M. Angell Family Foundation The Pew Charitable Trusts The Rohr Foundation

\$50,000 - \$99,999

CAF - Development Bank of Latin America and the Caribbean Houston Zoo

\$10,000 - \$49,999

The Blue Feet Foundation Focused on Nature Hurtigruten Foundation Keidanren Nature Conservation Fund (KNCF) Rapid Response Facility Stanley Smith Horticultural Trust Wilhelma

\$1,000 - \$9,999

Cameron Foundation Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Island Conservation Japanese Association for Galapagos (JAGA) Pontificia Universidad Católica del Ecuador (PUCE) Schmidt Ocean Institute Stanford University Alumni The Origins Project Foundation Inc

CORPORATIONS

Above \$100,000 Ecoventura

\$10,000 - \$99,999

CASIO Galapagos PRO IGTOA Johnsonwax del Ecuador S.A. Lindblad Expeditions

\$1,000 - \$9,999

Aqua Expeditions BeatBox Beverages BESS Forest Club Galapagos Travel Galapagos Travel Center Lowell Instruments LLC Quality Positioning Services (QPS Inc) Roberto Ochoa Superyacht Galapagos St. Augustine Alligator Farm Zoological Park Wilderness Travel

INDIVIDUALS

Above \$500,000 Anonymous donor Anonymous bequest TB-ARR Fund

\$100,000 - \$499,999 George & Susan Krouse Kris & Peter Norvig

\$50,000 - \$99,999 Kate James & Hans Bishop

\$10,000 - \$49,999

Anonymous donor (2) Brian Carr Dennis Geist & Karen Harpp Ken Collins & Jenny Mallinson Khwaja Naeem Ahmad Marisa Ignacio Hormel Trust Sven-Olof & Kristin Lindblad

\$1,000 - \$9,999

Anonymous donor (3) Amy Blackwell Ann Margerison Barbara West Carelle Karimimanesh (in honor of Sophie Lenoir) Cliff & Liz White Darrel Schoeling & Jeff Corbin David & Maria Duffy **Donald Clark** Dyann & Peter Wirth Eduardo Diez & Dolores Gangotena de Diez Ellson Family Charitable Fund (in honor of Prof. William Durham) James Boyle James Kahan (in honor of Barbara West) Janice Swab Jason Wright

Jennings Stacklin Fund Juan Pablo Moncayo (in honor of Alma Moncayo-Haitsma) Kok Loong Lye (in honor of Low Ming Pow and CNH Tours) Laura Lee Jones Lydia Fitzpatrick Marchello Family Fund Mary & Mike Danko Mary Berg & William Bahr Patricio Marquez (in memory of Dr. Miguel Angel Marquez) Paul Anderson Peter Kramer & Diane Wood Kramer Randall & Vivian May Black Ritz Family Foundation Sarah Bottini (in memory of Henrietta Davis) Sophie Lenoir Steven & Karen Sperber Thomas Peterson Vivian Morgan Mendez William & Jean Wilcox William Chadwick William King & Joann Yates

\$500 - \$999

Anonymous donor (3) Aliya Jiwani Andrew Drumm Angelika Domig **Billie Robison Catherine Sheridan** Charles & Colleen Mills Conyee & Jonathan Lim (in honor of Prof. William Durham) David Carr Deborah Bowers Diane Liu Donald Miles Greg Leonard Harold & Joan Feinbloom Family Foundation Holly Bailey & Jason Corbridge Holly Straub Irene Gatling (in honor of Ned Harvey) Jennifer Brown John & Dawn Edwards Contraction of John Crabbe & Jeri Janowsky Josh & Alex Marchand (in honor of Prof. William Durham) Kelly & Lori Fletcher Kimberly Sp Leslie Griff Lisa Lindel Mary & Jim Smith Matthias Schmitt Nathan Ferlazzo Patricia Armstrong (in honor of Prof. William Durham) Richard & D **Richard** Co Robert Cla Roey Yoge Salim Nath Samantha McClure Susan Ma Tamela Do

Tommy Greer & Katherine Schultz (in honor of Dario Mariani)

IN-KIND DONATIONS

\$10,000 - \$99,999

California Academy of Sciences David Foster & Wilka Toppins Ecoventura Fotógrafo de Galápagos Lindblad Expeditions Marita Velarde Quasar Expeditions Ronnie Stewart

\$1,000 - \$9,999

Connie & Donald Rankin The Blue Feet Foundation Deborah Kainer & Ken Ripper Kathleen & Glen Gondo Lowell Instruments LLC Metropolitan Touring Picturatus Quality Positioning Services (QPS) Roberto Ochoa Samsung

WILLIAM DURHAM FUND FOR DISCOVERY AND LEARNING DONORS

Brit & Sharon McLin Deepak & Radha Basu Dennis Geist & Karen Harpp Don & Margaret Ann Fidler Doug & Emilie Ogden **Duncan Beardsley Genny Biggs** Harvey Fineberg & Mary Wilson Jamie & Joe Wang Jennifer Ryan John & Rebecca DiCola John Working & Lysbeth Anderson Leslie Keiler Melissa & Devang Kantesaria Paul & Mary Anderson Peter and Jane Carpenter Pritzker Pucker Family Foundation Ray & Lisa Bukaty Robert Breech Roger Lang & Lisa Lenard Sara Neff Sundeep Bhat Ward Bukofsky William & Kathleen Durham

AUDITED FINANCIALS

	2024	2023
INCOME		
Applied restricted income	5.861.215	3.452.353
Unrestricted pledged income	2.674.450	2.891.246
Unrestricted other income	614.895	434.222
Institutional promotions	463.144	230.545
Other income	269.645	203,991
TOTAL	9.883.350	7.603.242
EXPENDITURE		
Science, conservation and education*	7.189.008	4.694.793
Fundraising	393.367	491.329
Other expenditure	2.217.396	2.514.975
Extraordinary	-	-
TOTAL	9.799.771	7.701.097
*Science, conservation and education		
Cost of scientific projects	4.893.429	2.967.254
Cost of other projects	967.787	485.100
Services to scientists	344.617	288.171
Laboratory and collections	983.176	954.268
TOTAL	7.189.008	4.694.793

STATEMENT OF FINANCIAL POSITION

ASSETS		
Cash/cash equivalents	9.405.810	5.277.833
Other current assets	1.449.310	778.759
Non-current assets	3.938.029	3.526.229
TOTAL	14.793.148	9.582.821

LIABILITIES AND EQUITY

Deferred income	8.561.799	5.289.515
Other current liabilities	3.240.629	1.814.335
Employee benefits	786.592	764.768
Equity	2.204.128	1.714.203
TOTAL	14.793.148	9.582.821



L_

©Carlos Espinosa / CDF



BOARD AND GA

BOARD MEMBERS

Yolanda Kakabadse, President Mark Bauman, Vice-President Carla Pinto, Treasurer Darrel Schoeling, Secretary Paul A. Baker Andrés Balfour Alfredo Carrasco Lúcia Lohmann John Loudon Juan Pablo Moncayo Mary Pearl Ronald Stewart Andrés Córdova

INDIVIDUAL GOVERNING MEMBERS

Individual Governing Members Naeem Ahmad Santiago Bejarano Shannon Bennett Rodrigo Bustamante Monica Calvopiña Juan Manuel Carrión Andrew Drumm David Duffy William Durham Klaus Fielsch Sylvia Harcourt-Carrasco Macarena Iturralde Michael Jackson Matthew James Gabriela Sommerfeld Cynthia Manning Patricio Marguez Conley McMullen Marc Patry Tui de Roy Paula Tagle Robert Tindle Alan Tye Hans van Poelvoerde

INSTITUTIONAL GOVERNING MEMBERS

Dirección del Parque Nacional Galápagos | María Auxiliadora Farías Ministerio del Ambiente | María Cristina Recalde UNESCO | Saadia Sánchez Galapagos Conservation Trust | Jen Jones Presidencia de la República del Ecuador | Daniel Noboa Consejo de Gobierno de Galápagos | Jimmy Bolaños Ministerio de Relaciones Exteriores Ecuador | Gabriela Sommerfeld

HONORARY MEMBERS

Rodrigo Borja Cevallos Ken Collins Dennis Geist Peter Grant Rosemary Grant Henri The Grand Duke of Luxembourg Lynn Fowler Ole Hamman Cleveland Hickman Jr. Oswaldo Hurtado Larrea Peter Kramer Katherine Coolidge Lastavica Sven-Olof Lindblad Craig MacFarland Tjitte de Vries



See our full list of General Assembly <u>members</u> here Islets "Los Beagles"

PROTECT GALAPAGOS, IMPACT THE WORLD

Help us safeguard Galapagos, one of the world's greatest natural treasures, by making a taxdeductible donation today via our website www.darwinfoundation.org.

Your gift directly supports our scientists' work at the Charles Darwin Research Station.



And why not become a monthly donor? Join our Wild Club today!

We also accept donations via check, bank, and stock transfer. For more information contact our fundraising team at <u>fundraising@fcdarwin.org.ec</u>

Thank you for making an impact with us!

CHARLES DARWIN FOUNDATION FOR THE GALAPAGOS ISLANDS

The 'Charles Darwin Foundation for the Galapagos Islands', in French 'Fondation Charles Darwin pour les lles Galapagos', Association internationale sans but lucratif (AISBL), has its registered office at 54 Avenue Louise, 1050 Brussels, Belgium. Trade Registry # 0409.359.103

www.darwinfoundation.org cdrs@fcdarwin.org.ec

This document was printed on sustainable and environmentally responsible paper.

ANNUAL REPORT GENERAL LAYOUT Rakan Zahawi Ambre Tanty-Lamothe

> EDITOR Ambre Tanty-Lamothe Daniela Ibarra

> > GRAPHIC DESIGN Boris Herrera

FRONT COVER IMAGE (Devil's Crown) Carlos Espinosa / CDF

BACK COVER IMAGE (Darwin's Pillars) Mara Speece / CDF

> **PHOTOGRAPHY CREDITS** Agustin Gutiérrez / CDF Alessandro Moggi Andrés Cruz Bernie Jácome Boris Herrera / CDF Camilo Cruz / CDF Carlos Espinosa / CDF Carolina Carrión Esteban Barrera Fabián Salame Gabriel Vianna / CDF Heinke Jäger / CDF Jeremy Squire Joshua Vela Juan Manuel García María Igual / CDF Octavio Aburto Oskar Cortez / CDF Paúl León / CDF Pelayo Salinas / CDF Rashid Cruz / CDF Tui De Roy William Bensted-Smith / CDF

Puerto Ayora, Galápagos, Ecuador +593 (5) 2526 146









© 2025 Charles Darwin Foundation. All rights reserved

