

# Ten Years of Impact





Frank of Petersens/Save the Elephants

# Forward

## Frank Pope

Chief Executive Officer,  
Save the Elephants



**I**n the coming decades the last of the planet’s wild places, and wild creatures, face the greatest threat since the cretaceous meteor strike. The scale of the challenge can be overwhelming. Thankfully we’re not standing still. Every day we are improving our ability to understand, to manage and to protect what is left.

When we first met the team from the Paul G Allen Family Foundation, the idea was to improve the sensors used to track elephants. But when great engineers meet field experts, unified by long-term philanthropic vision, big ideas can be born.

GPS tracking data appears simple but conceals a remarkable power. It can reveal how animals sees their environment and how they makes decisions. Live visualisations engage people from young herders to national presidents; analyses fed into landscape planning work give elephants and other wildlife a voice in their future.

Over the next decade the Allen team shepherded a powerful mix of engineers, field biologists, and

park managers. They created not just the best platform for understanding and managing wild spaces. They also laid important digital foundations for the future stewardship of nature.

Today, dozens of data streams are already interacting within EarthRanger installations, with the number increasing every day. Insights are already emerging from this cross-pollination. As the data from sensors gets ever richer and analytical power improves, the ability to measure, finance and protect nature is being transformed.

The wild has to be a part of our fast-changing future; EarthRanger is helping us ensure that it is.



Jane Wynyard / Save the Elephants

# Inside

An aerial photograph of a river winding through a lush, green landscape. The water is a deep, clear blue-green. In the center of the river, a hippopotamus is partially submerged, its head and back visible above the water. The banks are covered in dense, vibrant green grass and some trees. The overall scene is bright and natural.

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Roshni Lodhia / ABCG

## From the director

### Jes Lefcourt

Director, EarthRanger at Ai2



Ten years ago, a small team of concerned conservationists, philanthropists, and technologists came together to answer the question: How can technology help protect our planet's most threatened wildlife and support the people working to save them? From this conversation, EarthRanger, a platform now trusted by conservationists worldwide, was created.

For all of us on the EarthRanger team, the opportunity to work alongside and in service of those on the frontlines has been the honor of a lifetime. We have been continually inspired and awed by the successes and sacrifices of the dedicated people in conservation whom we're honored to call our colleagues, partners, and friends. Our team's commitment to this mission and to serving the conservation community is continually reinforced through these interactions, and today remains as strong as ever.

From those early days, EarthRanger has grown in ways we never imagined from our first deployments with partners such

as Save the Elephants, Lewa Wildlife Conservancy, WCS, Grumeti Fund, and African Parks focused on tracking elephants to now protecting red pandas in Nepal, pangolins in South Africa, vultures across East and Southern Africa, pumas in Chile's Patagonia, and dugongs in the Western Indian Ocean. It's used to track animals across savannahs, along coastlines, in the Arctic, and deep in the ocean. It helps detect illegal logging, coordinates fire response, and aids species restoration. When East Africa faced its worst locust outbreak in over 70 years, EarthRanger was adapted to track swarm movements and



support aviation and ground teams in real time, ensuring food security for millions of people. This reminds us of the importance of keeping our team and technology nimble to adapt to broad-ranging and fast-moving environmental crises.

The team has worked hard to continually evolve the platform to meet our partners' needs. We've significantly grown the browser-based application; EarthRanger Mobile puts real-time awareness and coordination directly in the hands of field teams; Gundi, developed with Wildlife Protection Solutions and WCS, helps technologies work together so conservationists can mix and match the best tools for the job; Buoy enables fishermen to protect critically endangered North Atlantic right whales while safeguarding their livelihoods; and Ecoscope, created with Wildlife Dynamics, transforms raw data into insights through dashboards, maps, and reports to improve long-term decision making. All of these no-cost tools are easy to adopt, integrate with existing systems, and help teams stretch limited resources while bringing cutting-edge satellite imagery, AI, and sensor data into daily workflows.

But EarthRanger's heart is its community—you. From day one, EarthRanger development has been driven by your needs. From

rangers in Mozambique tracking wounded lions to indigenous communities in South America reporting illegal mines, you determine every feature we build. You've turned EarthRanger into something more than software: a growing family of conservationists exchanging knowledge, challenges, and ideas across geographies. Your insights have pushed us to be more responsive, your use cases have helped expand what the platform can do, and your partnership has kept us grounded in what really matters. That responsibility is one we carry with great care.

And we're so fortunate to see this community come together. Last year alone, more than a thousand conservationists joined us for in-person events. More than 550 participants attended regional workshops in



Henry Espino / Kaiman Films



Image collected under MMPA Research permit number 17355 Photo Credit: NOAA/NEFSC/Christin Khan

Thailand, Kenya, Uganda, South Africa, and Costa Rica. We also hosted the first-ever Applied Conservation Technology (ACT Con) Congress in Vietnam, in collaboration with the SMART Partnership, bringing together 450 conservationists from 77 countries. An additional 900 people joined our online trainings. These gatherings, online and in person, help practitioners learn from one another, share approaches across landscapes, and build the relationships that make this work more effective and more resilient.

The past year kept our team busy. We welcomed 350 new partners, adding nearly one new EarthRanger site per day. The platform is now used in over

90 countries, including 13 with nationwide adoption. Tens of thousands of daily logins reflect its use in day-to-day operations.

Behind the scenes, our team has grown to over 50 members, working from locations such as South Africa, Tanzania, Australia, Cambodia, Thailand, Mexico, and Argentina, ensuring we're as global and diverse as the challenges we face. We continue to invest not just in software, but in impact. Two-thirds of our team is focused on engineering, while the rest includes leading biologists with deep field experience and people working in partnerships, support, communications, and design. Together, the full team prides itself on working closely and directly with

our partners and community to ensure that EarthRanger is making meaningful contributions towards successful conservation outcomes.



Still, the challenges ahead are daunting and accelerating. We see the most vulnerable communities facing the greatest pressures from degraded ecosystems and human-wildlife conflict, while more privileged nations significantly reduce or eliminate their commitments. We deeply recognize and feel the urgency of these issues, and that reality is shaping how we prepare for the decade ahead.

A major part of the way we're responding, and accelerating the field, is through the SMART-EarthRanger Conservation Alliance or SERCA. The first-of-its-kind global collaboration unites the two most widely used conservation platforms, proven field experience, and global training resources into a single, free



global suite of software, training, and technical support designed to strengthen protected area management. SERCA will connect and support more than 2,500 areas worldwide, creating the interoperability and collaborative infrastructure the field has needed for years. It represents a major shift in how conservation technology will serve practitioners in the decade ahead.

As we look towards the next chapter and reflect on what we've accomplished thus far, we wish to express our deep gratitude to the late Paul G. Allen, whose founding vision made EarthRanger possible, and to Jody Allen and Ai2 for their unwavering belief in this mission and for allowing the EarthRanger team to dedicate their full-time efforts to their passion for

protecting nature. The support of the Allen family has allowed us to stay focused on what matters most: empowering people and protecting ecosystems, and now to scale that work globally.

And to everyone who plays a part in protecting wildlife and securing a brighter future for the ecosystems we all depend on: Thank you!! You are at the heart of what we do, and we renew and strengthen our commitment to supporting you during the next 10 years and beyond.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jes Lefcourt'.

Jes Lefcourt, Director,  
EarthRanger at Ai2



## Our origin

EarthRanger grew out of one of the most alarming periods in modern conservation. As elephant poaching surged in the early 2010s, reliable information was scarce and often outdated. The late Paul G. Allen launched the Great Elephant Census, a continent-spanning aerial survey, revealing a 30 percent decline in savanna elephants in just seven years. Recognizing that frontline teams were working with fragmented, outdated information, Paul and his team set out to build technology that would provide a clear picture of what was happening and enable real-time response.

Working in collaboration with Save the Elephants and building off of their Elephant Real-Time Monitoring System, Paul and his team at Vulcan Inc. designed what became EarthRanger. From day one, EarthRanger has been co-developed with the conservation community—shaped in operations rooms, refined through field testing, and strengthened by constant dialogue. The platform has since evolved and grown in capacity and scope, becoming a holistic solution for protected areas, critical habitats, and the communities that live alongside wildlife.

### Remembering a Pioneer

#### **Dr. Iain Douglas-Hamilton**

A life that shaped modern conservation

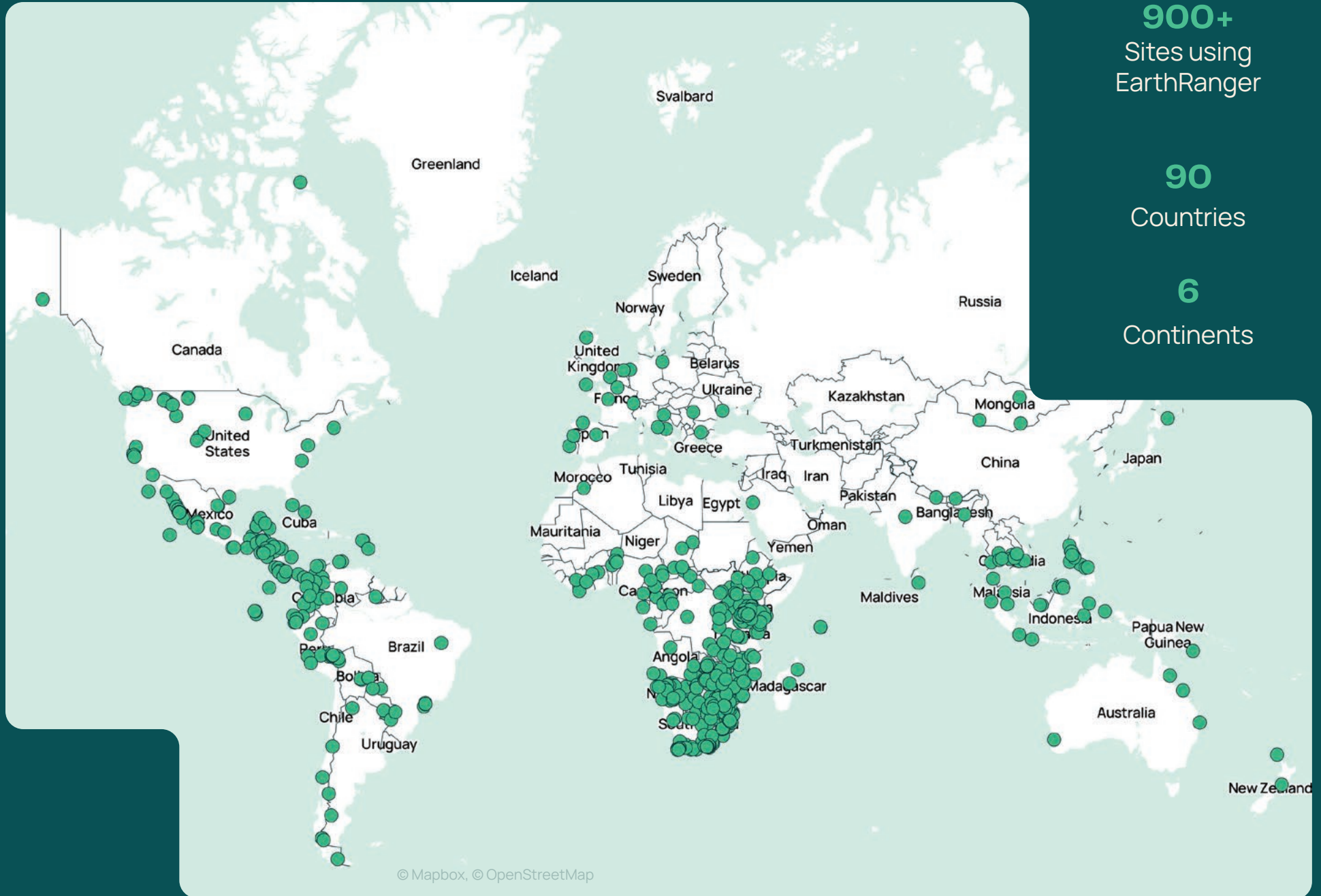
Dr. Iain Douglas-Hamilton transformed how conservation—and society—understands wildlife by revealing elephants as individuals, not anonymous parts of a landscape. His pioneering work at Save the

Elephants set new standards for evidence, urgency, and action. That



legacy directly informed a tracking system that became the basis for EarthRanger and continues to shape how conservation teams today use data to protect wildlife and people. He is deeply missed, and we remain committed to carrying his mission forward.

# Where we work



**900+**  
Sites using  
EarthRanger

**90**  
Countries

**6**  
Continents

# EarthRanger by the numbers



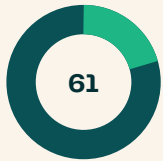
From the smallest, the sea turtle hatchling, to the largest, every data point represents a team working to protect wildlife and wild places.

**97%** of survey respondents agree or somewhat agree

"I would recommend EarthRanger to a friend or colleague"

## Impact

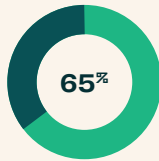
We asked 316 users in a 2025 survey how EarthRanger has contributed to outcomes in their conservation area



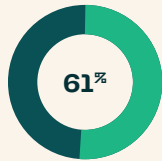
61  
Respondents say ER helped save a human life



98  
Respondents say ER helped save an animal's life



65%  
Say ER improved ops efficiency

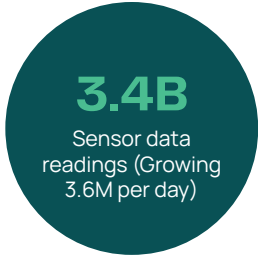
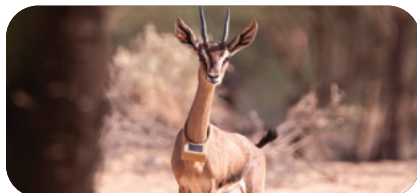


61%  
Say ER improved team coordination

Every observation logged by field personnel adds what collars, cameras, and automated sensors alone cannot: behavior, threats, and conditions on the ground.

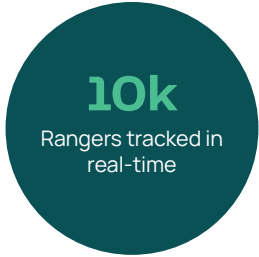
# >8 million

Observations by field personnel



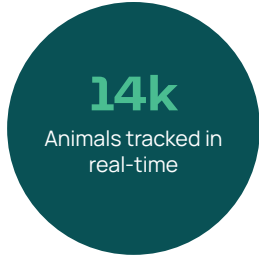
## 3.4B

Sensor data readings (Growing 3.6M per day)



## 10k

Rangers tracked in real-time



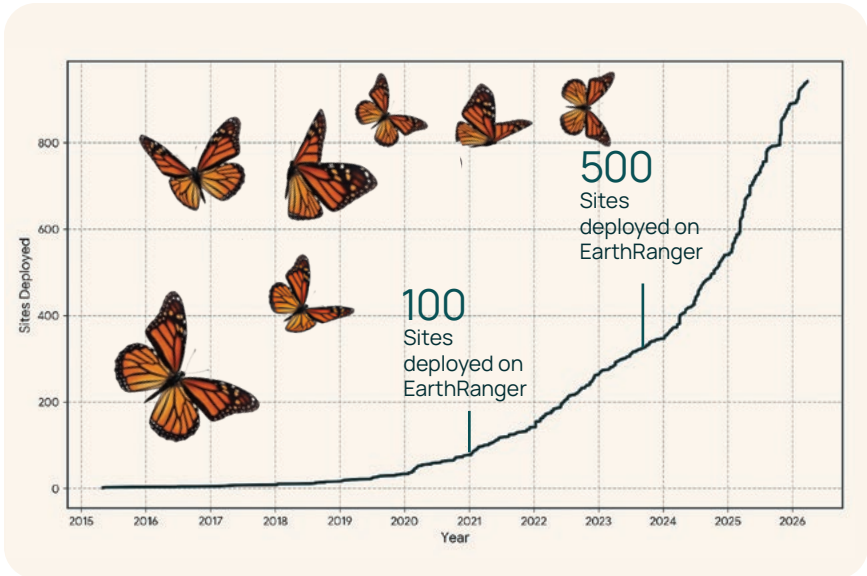
## 14k

Animals tracked in real-time



## Site adoption over the years

More than 900 conservation teams worldwide have made EarthRanger part of how they work. For our team, that trust means everything.



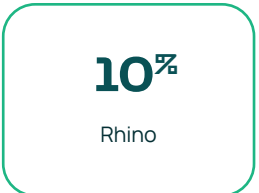
## Global populations tracked in EarthRanger

Percentages are estimates. For the oryx, once extinct in the wild, EarthRanger tracked every reintroduced individual. Fewer tracked today points to recovery.



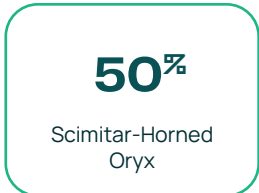
## 25%

Elephants



## 10%

Rhino



## 50%

Scimitar-Horned Oryx

# Lewa's real-time rhino protection network

Ten years ago, field teams at Lewa Wildlife Conservancy were juggling radio chatter, collar pings, notebooks, and instinct. One of the first sites to deploy EarthRanger, Lewa put the platform to work operationally from the start, stitching those fragments into a single, living map. GPS from collared wildlife, patrol trackers, radios, camera traps, and incident reports all flow in together, visualized in

real time and accessible through a time slider that lets teams scroll back in time to replay how events unfolded.

The shift sounds technical. In practice, it's deeply human. A watchkeeper in Lewa's control room now sees a boundary breach as it happens, dispatches the nearest team, and later mines weeks of data right within EarthRanger to redesign patrol routes and prevent the next incident. As Lewa's Head of Security, John Pameri, puts it, EarthRanger helps teams "track animal movements, detect threats, and coordinate rapid responses from a single dashboard," turning vigilance into foresight.

That foresight is felt most urgently in Lewa's role as a living corridor for elephants. In the past, elephants strayed into crops before rangers could intervene, sparking frustration among local communities. Today, geofence alerts trigger the moment a bull edges toward croplands. The nearest unit is dispatched from the control room, sometimes with aerial backup from Lewa's helicopter or drones. What once was a reactive scramble is now a coordinated, preventative response

that protects livelihoods and wildlife at the same time.

The same approach protects rhinos, Lewa's flagship species. Teams use EarthRanger to study where rhinos spend time, which areas carry the highest risk, and where patrols should focus. Alerts trigger automatically when a rhino stops moving for longer than expected or when speed signals something unusual. When threats rise, staff at headquarters know exactly where every team is in the field. No one patrols in isolation. As one ranger noted, "It feels like someone is watching over us while we watch over the wildlife."

The results are measurable. Lewa has recorded no rhino poaching since 2019. That security has allowed the population to grow to the point where Lewa now contributes rhinos to sanctuaries elsewhere in Kenya, helping restore a species that was nearly lost to the country within living memory.

Community trust has grown alongside operational capacity. EarthRanger's incident records build a picture over time. When reports showed repeated elephant pressure in certain villages, Lewa used the data to collaborate with communities on new mitigation strategies, from reinforcing fences to adjusting patrol coverage. The technology became not just a tool for

security, but a bridge for dialogue.

What began as an experiment in data integration is now embedded in the conservancy's culture. On any given morning in the operations room, a collar ping, a flashing icon, and a quick deployment compress EarthRanger's promise into minutes: detect, decide, deploy—and learn.

At Lewa, that cycle has grown into something bigger: a way of protecting rhinos, elephants, and people with equal vigilance, proving that conservation technology, when in human hands, can safeguard both heritage and future.

## EarthRanger Mobile

Lewa's field teams use EarthRanger Mobile to see wildlife, vehicles, and personnel in real time or offline; record incident reports with geotagged photos; receive subject-tracks, geofence alerts, and "Go-To" directional guidance—streamlining field workflows and improving safety, coordination, and response.



# Ridge to reef biodiversity

On a stretch of Costa Rica's Pacific coast, an estimated 2.5% of the world's terrestrial biodiversity is found. Dense rainforest meets the sea, and the iconic Corcovado National Park anchors the landscape. But the peninsula faces constant pressure: illegal hunting, habitat fragmentation, deforestation, and encroaching development push against its boundaries every day.

Osa Conservation was the first organization in Latin America to deploy EarthRanger. Their Ridge to Reef initiative spans more than 1.3 million acres, and the platform serves as a central operational hub for field teams, researchers, and community

volunteers. EarthRanger brings together iNaturalist records, real-time camera feeds through Wildlife Protection Solutions, and Movebank tracking data for vultures, tapirs, and wildcats into a single shared view. Automated Global Forest Watch alerts flag deforestation as it happens. Six customized event categories cover community biomonitoring, human-wildlife coexistence, patrol logistics, wildlife tracking, and field research. The results have been concrete.

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## 2.5%

of the world's terrestrial biodiversity is found on the Osa Peninsula

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Osa Conservation

When an unusual cluster of 1,926 forest cover loss alerts appeared inside Corcovado, EarthRanger's link to Global Forest Watch allowed Osa Conservation to identify the threat quickly, coordinate directly with park administration, and launch targeted field expeditions. The response strengthened an ongoing working relationship between Osa Conservation and park authorities.

Vulture tracking data from Movebank has also surfaced patterns beyond wildlife monitoring. By identifying roadkill hotspots through EarthRanger, Osa Conservation built the evidence base for successful advocacy against road widening in the peninsula.

Human-wildlife coexistence work runs through the same platform. After a puma predated two calves over five months, the team documented the conflict in EarthRanger, worked with the affected landowners, and helped design and build a safe calf enclosure that resolved the situation. When white-lipped peccaries and tapirs began damaging crops, a mobile solar-powered electric fence was deployed. The community now moves it as needed, following crop damage where it appears and reducing tension between wildlife and local livelihoods.

In two years of working with local communities through



EarthRanger, 15 community members have patrolled more than 144,000 kilometers and logged over 605 events, creating a body of evidence that would not exist without community involvement. Control and Protection staff patrol an average of 337 kilometers per month, documenting everything from wildlife tracking to evidence of potential environmental crimes. And use of the platform has grown. In 2025, research teams added frog surveys, bird point counts, small mammal monitoring, bat roost surveys, and vegetation surveys, building baseline data across multiple species groups in one place.

The Osa Peninsula faced decades of deforestation and habitat loss. Osa Conservation's work across the community, field, and research programs is helping reverse that. EarthRanger supports the shared infrastructure that keeps all of it coordinated.



# Protecting wildlife and ecosystems with data- driven insights

# Great Nile migration

Six million antelope migrate across South Sudan's Boma-Badingilo landscape every year, making it the largest land-mammal migration on Earth. But the migration does not move through wilderness alone. It moves through communities and areas where people depend on the same land and resources—and the communities whose decisions shape that land will ultimately determine whether the migration continues.

The scale of what moves through it was not fully understood until recently. Confirming it required over 350,000 photographs analyzed by a trained team, supplemented by satellite tracking data from 125 animals collared across 13 species—all of it feeding into EarthRanger. What that data

made clear was that the migration moves largely outside protected area boundaries. Protecting it would require a broader strategy.

Inside the protected areas, the operational challenge is its own kind of scale. The locations and reports of up to 25 simultaneous patrols spanning foot teams, vehicles, and aircraft all feed into

## 6 million

Antelope cross the Boma-Jonglei landscape in the world's largest land mammal migration

## 330,000+

Images captured during the 2024 survey of Great Nile Migration



Marcus Westberg / African Parks

EarthRanger, giving managers one picture across both parks. For ranger teams navigating mountain terrain and placing camera traps in remote areas, EarthRanger means someone always has eyes on their location, around the clock.

Commercial bushmeat harvesting is one of the biggest threats to the migration. During the dry season, pressure on migratory species is intense. Addressing it means working across 17 ethnic groups—a task built on presence, not just data. African Parks' TANGO teams (Transhumance Engagement Officers) operate on the ground in these communities daily, tracking alongside cattle herders, supporting livestock vaccinations, and building awareness of which species are protected. Every TANGO team member carries an inReach device and is tracked in real time within EarthRanger. The same operational picture that covers ranger patrols inside the parks extends to these teams moving through community land—making their work visible and supported.

While migratory species number in the millions, sedentary species tell a harder story. Comparisons with surveys from the 1980s show catastrophic declines in elephant, giraffe, and others that depend on year-round access to water.

The work of understanding this landscape is still early. The agreements, the collaring data, and the operational infrastructure now in place are the foundation. What they protect is already one of the most significant wildlife phenomena on Earth.



## Gundi Project

Developed in collaboration by EarthRanger, Wildlife Protection Solutions, and WCS, Gundi is a free, open-source platform that connects devices, sensors, and conservation software. Through Gundi, EarthRanger users can draw on more than 150 integrations, bringing proven and cutting-edge technologies to the teams that need them.



Philip J. Briggs

Above: Lion Guardians  
Below: Junior Ranger Program Classroom



# Conservation Tech Award

EarthRanger software supports a global community of more than 75,000 conservationists. Since 2021, the Conservation Tech Award has provided \$120,000 in grants—\$15,000 each—to organizations using technology to protect wildlife in ways that demonstrate both ingenuity and impact. Their work pushes the whole field forward and inspires all of us.

## 2021

**Giraffe Conservation Foundation** Applying machine learning and data to better understand giraffes and support their protection

**Lion Guardians** Community-led monitoring and tech-driven risk maps to improve how people and lions coexist

## 2022

**Arribada** Free after-school, hands-on conservation tech program offering STEM activities, computer literacy training, and tools that inspire the next generation of Príncipe's conservationists

**MoveApps** No-code platform letting ecologists run complex analyses and uncover new wildlife insights

## 2023

**Conservation X Labs** An AI-connected camera trap that sends real-time alerts, helping conservationists respond to poaching, wildlife trafficking, invasive species, and emerging zoonotic disease threats

**Mount Kenya Trust** Digital, hands-on Junior Ranger Program inspiring students to value wildlife and ecosystems

## 2024

**Rainforest Foundation** Indigenous-led alert system turning satellite data into local action to cut deforestation

**Scottish Oceans Institute** AI-driven acoustic monitoring that identifies cetaceans in real time to improve protection

# Real-time rewilding

Rewilding Europe works to restore wild ecosystems across large landscapes, re-establishing natural processes such as grazing, predator-prey dynamics, and free-flowing rivers, while supporting the recovery of species like European bison, wolves, and vultures. Through its partnership with EarthRanger, the organization aggregates wildlife, ranger, and habitat data into one platform to strengthen monitoring and decision-making. In the Southern Carpathians, for example, GPS-collared European bison are tracked through EarthRanger alongside ranger observations and camera-trap images. This integration enables

proactive patrols when herds move near villages, reduces conflict risks, and highlights habitat corridors needing restoration—advancing both species recovery and long-term ecosystem resilience.



Hugh Kinsella Cunningham / Forgotten Parks Foundation



# Ranger safety in the DRC

Protecting wild places depends on protecting the people who defend them.

Upemba National Park sits in southeastern Democratic Republic of Congo, one of the country's oldest parks and one of its most remarkable recoveries in progress. Once called the Triangle of Death, decades of armed conflict, poaching, and neglect had stripped its wildlife and left rangers working in some of the most dangerous conservation conditions on the continent.

In 2022, with support from the Forgotten Parks Foundation, the Congolese government began rebuilding. Personnel safety came first. Garmin inReach devices were connected to EarthRanger so headquarters could track every team in real time. Satellite

base layers within the platform let coordinators flag terrain and security hazards as teams move. For rangers in conditions like these, knowing someone at headquarters can see their location provides an extra safety net, even in remote areas with limited connectivity.

Progress is measurable. Zebra numbers have grown from 35 to 196. Nine elephants are GPS-collared and tracked through EarthRanger, among an estimated 200 that may be the last pure savanna elephants in the country. Wildlife once thought beyond saving is returning.

The rangers and conservationists driving that recovery face risks most outside the work will never grasp. Keeping them safe is inseparable from the mission itself.

# Indigenous community turtle monitoring

The Conflict Islands Conservation Initiative (CICI) operates in one of the most remote conservation settings in the world. A designated Mission Blue Hope Spot for Biodiversity, the 21-island atoll sits in Papua New Guinea's Milne Bay, 12 hours by boat from the nearest town. Among other conservation activities, CICI uses EarthRanger to support turtle monitoring, patrol coordination, manta ray surveys, and debris removal, with indigenous rangers working alongside researchers and community partners.

Rangers use EarthRanger Mobile to photograph turtles during patrols, with images syncing directly into EarthRanger, where they are tied to individual records to build a growing

database of known animals. Each observation becomes a structured field record capturing GPS location, photos, time, date, and nesting activity. Over time, those records build into a long-term dataset that helps CICI track population trends and measure the effectiveness of their conservation work. The shift eliminated hundreds of hours of manual data entry and built lasting capacity among CICI's indigenous rangers, who now contribute to research, inform conservation decisions, and share that knowledge with their communities.

Using EarthRanger Mobile, rangers log their movements and record incidents, giving the team a running picture of where patrols have been and where



Conflict Islands Conservation Initiative

threats are emerging. Where rangers once logged more than 45 poaching incidents per season, that number now sits in the single digits, a result CICI attributes to stronger monitoring protocols combined with community awareness and education. Beyond anti-poaching, indigenous rangers maintain hatchery infrastructure, protect natural nests from predation, and document nesting success and failure for endangered Green and Hawksbill turtles.

Beyond turtles, CICI uses EarthRanger to monitor a newly identified manta ray population, logging survey effort, environmental conditions, and sightings data alongside drone surveys and underwater photography used to identify individuals by the unique spot patterns on their ventral sides. Rangers collect data on behavior, habitat use,

and feeding, all contributing to the case for a potential Marine Protected Area around the atoll.

Marine debris removal rounds out the picture. Rangers log patrol tracks and debris collection activities in EarthRanger to identify pollution sources and trends. In 2024-2025, CICI removed 3,589 kilograms of marine debris and cleared 76,997 plastic items from 4,200 kilometers of beaches.

This work is possible because of the commitment of CICI's rangers, researchers, and community partners who believe conservation is strongest when it is locally driven. EarthRanger supports that commitment by turning what the team observes in the field into data they can act on, report from, and build on over time.



Conflict Islands Conservation Initiative

**3,201**

Turtles tagged

**4,317**

Nests saved from poaching

**2,629**

Nesting females protected

**314,014**

Hatchlings produced

### 2015

Paul G. Allen greenlights development, igniting our partnership with Save the Elephants

### 2016

Great Elephant Census reveals alarming declines as EarthRanger sees first operational use



Ted Schmitt

### 2020

UNFAO and 51 Degrees combat East Africa's locust crisis using EarthRanger, showing versatility across conservation needs



### 2019

EarthRanger expands outside Africa to Cambodia's Siem Pang Wildlife Sanctuary and American Prairie in Montana

Kenya Wildlife Service deploys the first nationwide use of EarthRanger, creating a unified operational view across all of Kenya



Beezie Burden

## Milestones

### 2021

Program moves to Ai2, where increased investment supports platform's continued global growth

### 2022

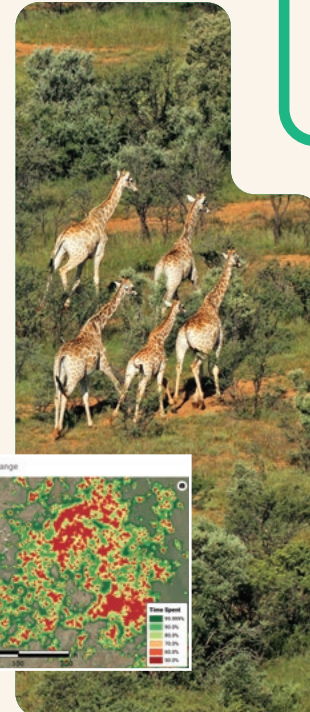
GEF funds \$7 million project deploying EarthRanger across key African protected landscapes



Cristhian Pleites / Instituto Nacional de Conservación Forestal de Honduras (ICF)

### 2023

EarthRanger Mobile launches, bringing real-time tracking and reporting into field teams' hands



### 2024

Gundi surpasses 100 integrations. Built with Wildlife Protection Solutions and WCS, it lets conservation teams mix and match the tools that fit their work

### 2025

SMART-EarthRanger Conservation Alliance (SERCA) announced, uniting conservation NGOs to strengthen frontline operations

Ecoscope introduced, turning conservation data into clear insights that strengthen long-term decision-making

# Reintroducing black rhino

In Tanzania, the Grumeti Fund manages more than 350,000 acres of wilderness adjacent to Serengeti National Park. From the Joint Operations Center, watchkeepers monitor the Ikorongo-Grumeti Game Reserves around the clock. On their screens, EarthRanger draws the day: patrol camps, mobile units, canine teams, collared elephants. When an elephant crosses into village lands, a location-based alert fires to the Human-Wildlife Conflict Unit before damage is done. The same canvas shows under-patrolled gaps and snare hotspots, helping managers

shift effort from where it's been to where it's needed.

**“This real-time software has transformed how Grumeti delivers conservation impact—from mapping invasive plants to supporting our human-wildlife conflict response and tracking critically endangered black rhino.”**

—Matt Perry, General Manager, Grumeti Fund

Grumeti's black rhino reintroduction made the stakes clear. With transmitters feeding positions into EarthRanger in real time, teams coordinated layered security and daily monitoring across open Serengeti terrain, technology and partnerships moving in lockstep so animals could move freely and safely.

But with such a vast area to cover, not all of it can be patrolled. Wildlife Protection Solutions (WPS) recently strengthened that coverage through their wpsWatch AI-enabled camera traps, installed at known poaching hotspots across the concession. Motion-triggered, the cameras identify humans, animals, and vehicles within seconds and feed alerts with image, location, timestamp,



Grumeti Fund



Grumeti Fund

and classification directly into EarthRanger. Since cameras went live in fall 2024, detections have increased—reducing pressure on rhinos, elephants, and the broader wildlife the concession exists to protect.

A decade on, EarthRanger's impact is the sum of thousands of such moments: an alert before a

fence is cut, a faster medevac for a ranger, a patrol route redrawn after a season's analysis. It has professionalized protected area management by turning scattered signals into shared situational awareness and by doing so, it has given wildlife, habitats, and communities a measurable margin of safety.

## Ecoscope

Grumeti Fund was among the first organizations to use Ecoscope, a free, open-source analytics tool that is part of the EarthRanger. Analysis that once took weeks now takes minutes within the platform. Instead of wrangling spreadsheets, teams use dynamic dashboards that surface patterns across years of patrol data, animal movement

records, and field observations—revealing the kind of long-term trends that day-to-day monitoring alone cannot capture.

For Grumeti, visualizing that data over time builds the evidence base to anticipate elephant movement into community land and shift both policy and public attitudes toward coexistence.

# Thailand's elephant early warning system

Across four landscapes in Thailand, the boundary between forest and farmland is a nightly negotiation. Wild elephants emerging from protected areas to raid durian and jackfruit orchards, pineapple fields, and cassava plantations bring real economic harm—and sometimes physical danger—to farming communities that have lived alongside them for generations. A new initiative is using the EarthRanger platform, AI, camera-trap technology, and community-driven data collection to change that.

The project spans Khao Soi Dao-Khao Ang Rue Nai in the east, Khao Yai in the central highlands, the southern Western Forest Complex, Kuiburi and Khao Luang in the south. It brings together Ecoexist Society, Zoological

Society of London (ZSL) and Bring the Elephant Home, the Thailand Department of National Parks, Wildlife and Plant Conservation, Mahidol University, King Mongkut's University of Technology (KMUTT), farming communities, conservation scientists, and the EarthRanger's Asian team around a shared goal: an early warning system that puts real-time information about elephant movements into the hands of the people who need it most.

At the heart of the system is a customised Thai-language EarthRanger mobile app through which community members document elephant observations, crop raiding incidents, property damage, and injuries directly from their phones. AI-enabled

camera traps and CCTV units positioned along forest boundaries detect elephants the moment they emerge from cover, transmitting images automatically to EarthRanger via Wildlife Protection Solutions' wpsWatch. When an elephant is detected moving toward a known crop area, alerts reach community response teams within minutes, allowing them to mobilize and guide elephants back into the forest before serious damage occurs.

The system also integrates Global Forest Watch fire and deforestation alerts across all four landscapes. Human-lit fires are among the most significant drivers of human-elephant conflict in Thailand: when forest habitat is degraded by repeated burning, elephants are displaced from their home ranges and increasingly drawn to the reliable food sources that farmland provides. Global Forest Watch alerts feed directly into EarthRanger, directing ranger patrols to sensitive areas before habitat loss reaches the point of forcing elephants out—connecting fire monitoring, forest condition, and elephant behaviour within a single operational platform.

Every observation logged, every camera trigger, and every incident reported builds a growing spatial picture of elephant movement patterns across all



four landscapes. Researchers at Mahidol University and KMUTT are using this data to identify the corridors, timing, and conditions that predict raiding events, turning community experience into evidence that can inform longer-term land management and conflict mitigation strategies.

What makes this initiative distinctive is not the technology alone, but the integration of community knowledge with scientific analysis and government engagement. The communities are not simply sensors in a system designed by others—they are active participants whose observations and response capacity are central to whether the early warning system works. For Thailand's farming communities living adjacent to protected forests, a night without crop loss is a victory. The goal of this collaboration is to make those nights more frequent.





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“It is incredible. It is so great to learn from people doing the work on the ground and have conversations about what we can do together.”

—Marta Prat Guitart, Blue Forest

## Live events

We hold in-person events because connection accelerates conservation outcomes. What began as small gatherings now bring hundreds together to share lessons, build networks, and form collaborations focused on field impact.



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1. Christin Winter at the 2023 EarthRanger user conference

2. Victor Matsanza at the 2019 EarthRanger user conference

3. Greta Francesca Lori and Moses Tenke at the 2023 user conference in Cape Town

4. Yun Wu, at the 2024 workshop in Cambodia

5. Tebogo Kgongwana and Alina Peter Daati teaching at the 2024 workshop in Lusaka, Zambia

6. Jordan Steward, part of the EarthRanger team

7. Chee Chean Phung, Panthera at ACT Con 2025 in Hanoi, Vietnam

# 97%

of 2025 workshop participants said they gained new knowledge that will impact their work

# Eyes in the Sky

The evening of May 5, 2025, began with a concerning signal. Conservationists were alerted through EarthRanger to suspicious vulture activity in a high-risk section of Kruger National Park. The alert came from Eye in the Sky (EITS), a near-real-time mortality monitoring network spanning 15 countries, more than 400 tagged birds, and over 30 partner organizations, built on EarthRanger. Co-developed by the Endangered Wildlife Trust (EWT) and North Carolina Zoo, in partnership with The Peregrine Fund (TPF), EITS monitors vulture movement continuously across millions of square kilometers in Africa. By

first light on May 6, a SANParks ranger was airborne. What he found was a mass poisoning event: a carcass laced with highly toxic pesticide, 123 vultures already dead, and 84 still alive.

What followed was the most extensive coordinated vulture rescue in Southern African history. More than 20 conservationists, veterinarians, and enforcement officers

## 2,500 vultures saved

An estimated figure—and one that continues to grow



## Web

EarthRanger Web gives conservation teams a real-time, bird's-eye view of wildlife locations, field reports, and assets in one map. Free and easy to use, it collects, integrates, and displays historical and current data from across land and sea to support faster, better-informed decisions.

coordinated the response. It was the first time South African National Parks helicopters were deployed in a poisoning response at this scale. By the end of June, 81 rescued birds had been returned to the wild.

Two EarthRanger capabilities sit at the center of how the network operates. The cluster analyzer processes incoming GPS data from tracked birds continuously, using a MoveApps to EarthRanger integration, generating prioritized alerts when vulture movement matches feeding or immobility patterns. Those alerts reach response teams directly inside their EarthRanger interface. When a tagged vulture enters another team's area, that team sees it on their own EarthRanger instance in real-time through

EarthRanger-to-EarthRanger sharing. Each organization controls what it shares and with whom. A bird tagged by one partner becomes a shared signal for many, extending the reach of every tag in the network. Vultures know no boundaries, and neither does the system.

Since mid-2023, the network has detected 46 wildlife poisoning events and 30 poison baits across Southern African project sites. Beyond poisoning, EITS now identifies vultures feeding on animals caught in snare lines, guiding field teams to areas too remote to patrol routinely. Bateleur eagles have recently been added, and the network now covers nearly a third of the African continent.

With multiple African vulture species facing extinction and most pairs raising just one chick per year, there is no margin for slow responses or siloed information. The Kruger rescue worked because years of relationship-building across organizations, governments, and disciplines produced a network that could move together. The network took years to build. The rescue took hours.

# Tracking cougars across tribal and federal lands

Cougars on Washington State's Olympic Peninsula are losing genetic diversity, putting their long-term health at risk. Hemmed in by ocean, sea, river, and a major interstate highway to the east, the Peninsula is fast becoming an island for a species that needs room to roam. One male wandered 800 miles searching for a way off before returning to where he started. The Olympic Cougar Project is working to change that, building wildlife corridors through Tribal nations and across highways to link cougar populations for generations to come.

Led by Panthera in

collaboration with the Lower Elwha Klallam, Skokomish, Makah, Jamestown S'Klallam, Port Gamble S'Klallam Tribes, the Quinault Indian Nation, and the Washington State Department of Transportation, the project has tracked 160 cougars across Washington State using EarthRanger. Most cougar deaths in the region stem from conflict with livestock, making coexistence as important to the project's mission as connectivity. The challenge is scientific and logistical: how do teams from different nations and organizations share data and act on it together?



Movement analysis runs continuously, generating alerts when an animal's GPS pattern suggests a bed site or kill and triggering field investigations to document prey selection, denning behavior, and more. Proximity alerts notify researchers when cougars come into close contact, giving them a window into courtship and competition. The platform's geofence capability alerts team members when a cougar enters Tribal lands, crosses into Olympic National Park, or approaches a major highway, prompting targeted fieldwork before conflict escalates. Camera trap images from field sites across the Peninsula, uploaded manually by fieldworkers or automatically for cameras with remote transmission, feed into the same view, supporting abundance estimates for cougars and five other culturally important species.

For a project spanning multiple nations and organizations across a vast landscape, the team points to EarthRanger's ability to facilitate collaboration as one of its

most important contributions. A real-time and shared operational picture supports equitable inclusion and participation across all team members, regardless of varying technical expertise. Alerts clear once a field crew has visited a site, preventing duplicate responses across teams. Integrated tools give every partner access to everything happening across the project at any time, supporting the maps, reports, and analysis the Olympic Cougar Project uses for publication and outreach.

"With the development of our EarthRanger platform, efficient data analyses, data visualisation, and information dissemination across collaborating partners enabled true collaboration previously impossible because of equitable access to information in real-time," said Mark Elbroch, Panthera's Director of the Puma Program.

The project contributes to the Washington State Wildlife Habitat Working Group and the Washington State Wildlife Connectivity Action Plan, informing proposed corridors and infrastructure priorities including wildlife bridges and underpasses across western Washington.

EarthRanger helps bring that picture together. The nations and organizations that built this collaboration make it matter.



Soham Bhattacharyya / Ocean Image Bank / Mangrove Photography Awards

## The next ten years

### Jes Lefcourt

Director of EarthRanger

**P**redicting the next ten years is impossible, but preparing for them is not. More and more, your work in conservation depends on data from collars, surveys, sensors, and community reporting, and analyzing them in a useful timeframe remains a real hurdle for people already carrying full workloads in the field. The challenge ahead is not the amount of information you collect, but how quickly you can turn it into insights that support confident decisions on the ground, at a moment when conservation demands faster interpretation than ever before.

Our immediate focus is to close that distance. We cannot meet the critical issues of our time without approaches that allow people and organizations to work from a common foundation. Too much effort is still lost to duplicated work, parallel systems, and data that cannot move across teams or landscapes. If we want to make real progress, we need common ground, not isolated fixes.

We must scale in a way that reduces complexity for the people using technology. As data grows, our vision is to see more people in the field, not pulled away from it. Being in the landscape matters. Seeing ecological change firsthand sharpens judgment and fuels the intuition that

often leads to breakthroughs. Technology should take on more of the organizational load so you can ask better questions and advance your understanding further. It should move us beyond tracking incidents toward influencing our actions and ensuring our strategies are successful. It should not detach us from the places we protect, but rather further deepen our connections to them.

We strongly believe that great things are accomplished through partnership. The best solutions not only empower individuals, but they also enable, encourage, and benefit from collaboration between teams, organizations, and even countries. We're embracing a better-together approach to how we operate. The SMART-EarthRanger Conservation Alliance is central to how we meet the next decade. The scale and speed of conservation today require coordination that no single platform or organization can deliver alone. For EarthRanger, this marks a shift from supporting individual sites to participating in a coordinated, global effort to strengthen how these places are managed. SERCA is a commitment to the community of people stewarding these landscapes, expanding practitioners' capacity through shared services and tools. And, of course, we'll leverage

and integrate with the newest technologies as they become available and viable. Satellite imagery and drones have and will continue to change your ability to monitor remote places. AI will dramatically change how all of us work—and we're excited about some of the new AI-powered capabilities coming to EarthRanger later this year. It's difficult to foresee what's out five or ten years from now, but we look forward to working with you to incorporate those new capabilities into your workflows.

The next ten years will demand tighter coordination and tools that can evolve as quickly as the landscapes we are all trying to understand and protect. We recognize that you have daunting challenges ahead. We hear and heed the call to help and will be there to support you along the way.

### SERCA

The SMART-EarthRanger Conservation Alliance (SERCA) facilitates adaptive management, long-term data collection, planning, and analysis with real-time intelligence — giving conservationists one free, connected approach to decisive data-driven action.

## Deployment partners

EarthRanger's Deployment Partners provide the regional expertise, hands-on training, and sustained local support that make the platform effective in practice. Their work helps conservation teams move from initial setup to confident, consistent use, and their feedback from the field continues to inform how EarthRanger develops.

51 Degrees • African Parks • Alinea Network • Blue Rhino • Center for Conservation Innovations Philippines (CCIPH) • Chengeta Wildlife • Connected Conservation Foundation • Conservación Amazónica (ACCA) • Conservation International • Conservation Outcomes • Contemplate Wild • ConTech Africa • Fondo de Conservación del Eje Neovolcánico, A.C. • Forgotten Parks Foundation • Fundación ProAves • Global Conservation • Kinetic 6 • La Red de Observadores Ciudadanos A.C. (ROC) • LEAD Conservation • Mesa de ONG's • Comanejadoras de Áreas Protegidas de Honduras (MOCAPH) • Mara Elephant Project • Mozambique Wildlife Alliance • Off-grid Consulting Ltd. • Okoa Maliasili • Parcs de Noé • Peace Parks Foundation • ProNatura Noroeste • Resolve Wildlife • Rewilding Europe • Rouxcel Technology • Southern African Wildlife College • Space for Giants • Uganda Conservation Foundation • WildAid • Wildlife Act • Wildlife Crime Prevention • Wildlife Dynamics • Wildlife Protection Solutions

**It's an honor  
to support  
the people  
protecting our  
planet.**



# About Paul G. Allen

Philanthropist,  
Microsoft co-founder

EarthRanger would not exist without Paul Allen.

His belief that technology could and should protect the natural world made this possible. Ten years later, that conviction lives in the work.



# Allen Institute for AI

EarthRanger is a product of Ai2, the nonprofit AI research institute founded by Paul G. Allen. Thanks to their support, EarthRanger has

grown with ambition, remained free to use, and continued to evolve to meet the real-world needs of conservation.



# Team



Founding members, from left to right:

**Jake Wall**, Co-founder, Director of Data Analytics • **Ted Schmitt**, Co-founder, Senior Director, Product & Business Development  
**Chris Jones**, Senior Manager, Engineering • **Chris Doehring**, Lead Software Engineer • **Dennis Schneider** Support Manager, Technical  
**Karen Goodfellow**, Lead UX Designer



Current team members:

Aclaina Pacheco • Alan Calvillo • Alex Chavarria • Alex Morling • Alina Daati • Anderson Arendt • Andres Albarracin • Arky AR • Beezie Kansteiner • Bruce Jones • Camila Saturnino • Cassidy Trier • Charles Stern • Crystal Nam • Daniel O'Neill • Daniel Zendejas • Dewald van Wyk • Doug Poirier • Elian Adams • Ernesto Mancilla • Gaby Ledesma • Hugo Habel • Janice Dow • Jes Lefcourt • Jordan Steward • Jordi van Oort • Joshua Krautwurst • Leonardo Orihuela • Luis Chávez • Marcos Davidovich • Mariano Martinez • Mathias D'haen • Patsy Iturbe • Ray Rao • Ryan Hattingh • Stephen Daspit • Tebogo Kgongwana • Tiffany Wong • Tony Lynam • Victor Luján • Yun Wu



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