

# GLOBAL CONSERVATION



*Thap Lan National Park - Thailand*

**IMPACT REPORT**  
2022 – 2023





## LETTER FROM THE EXECUTIVE DIRECTOR

Dear Friends and Supporters,

Global Park Defense is now a proven, scalable model we can deploy in any endangered national park or marine protected area. Using the latest low-cost surveillance and satellite communications, cloud-based protection systems, and a rigorous methodology, we are building up patrolling and targeted protection in key high-threat areas.

In 2022–2023, we grew the area under Global Park Defense protection to over 24 million acres (nearly 14 million hectares), working in 16 endangered national parks and 10 marine parks in 14 countries.

While large forest and wildlife parks are the majority of our funding and support, marine protection of endangered coastal and island Marine Protected Areas (MPAs) has become a bigger focus of our work recently and has required more resources and efforts to help the most ready and capable areas.

The Global Parks Fund assesses the protection needs of over 400 endangered national parks and marine sanctuaries. There are very few parks today that have the capability to deploy Global Park Defense. Before we make our multi-year investments, we must invest in assessments of the threats, systems, and people, especially regarding the leadership available in the country to lead the efforts.

We have also been adamantly requesting greater national and regional government support for protection, often securing new funding and rangers for improved protection over the long term.

In 2022–2023, Global Conservation added four new GC projects and completed three Global Park Defense deployments, leaving each national park well-protected and financially sustainable. These sites include Murchison Falls National Park in Uganda, Central and Southern Cardamoms National Parks in Cambodia, and Thap Lan National Park in Thailand.

Financial sustainability is an important goal in our work, and we are proud to have helped our partners in Cambodia secure \$40 million in REDD+ Carbon funding and \$15 million in German Legacy Landscape funding for the protection of Cardamoms National Park for decades to come.



*Jeff Morgan at the 2022 Saving the New Wild Gala in San Francisco*

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*Belize's Turneffe Atoll at 300 sq. mi. is a new project in expansion mode*





Francisco Asturias and members of the Genesys Team



This bull elephant will keep his tusks in Mana Pools



Fighting illegal logging in Sierra del Divisor

## HIGHLIGHTS

While many of our successes over the past two years have created critical improvements in patrolling, arrests, prosecutions, park monitoring, community protection, and the deployment of surveillance and communications, I want to highlight six major wins in park and wildlife protection:

- In Mirador National Park, Guatemala, the Genesys team led by Francisco Asturias actively patrol over 28,000 kilometers each year, making numerous arrests and shutting down wildlife poaching and illegal logging over an area of nearly 500,000 acres.
- Mana Pools World Heritage in Zimbabwe achieved its third year of zero poaching of elephants in the National Park, a first in history, which covers 420,000 acres.
- Murchison Falls National Park in Uganda completed its Command Center, Armory, and Jail while deploying radio communications in nearly the entire park and building four new ranger stations.
- Turneffe Atoll in Belize deployed a Marine Monitor radar and integrated it with SMART Patrolling for marine areas, subsequently delivering 24/7 surveillance to nearly half of the archipelago, with planned expansion to the North next year.
- GC opened three new GC projects in the Amazon in Peru and Ecuador, now focusing on joint patrolling with the local communities, Marines, and Park Rangers, who altogether cover hundreds of miles every month against cocaine traffickers and illegal logging.
- The Gordon and Betty Moore Foundation generously provided a grant of \$1.6 million to Global Conservation in order to support four endangered National Parks, which enabled legitimate protection measures for Peru, Guatemala, Borneo, Malaysia, and Cambodia. We are eternally grateful.

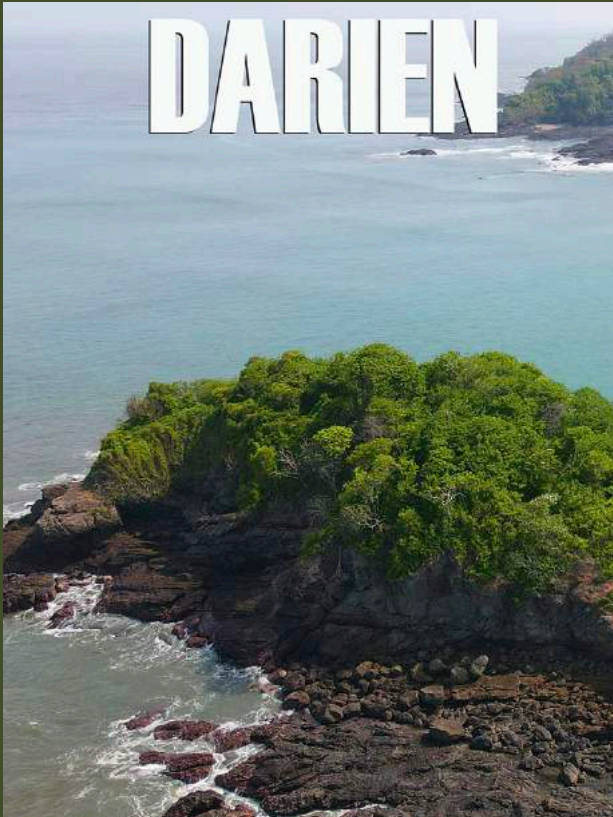
Our goal is to protect 25 endangered national parks in developing countries in the next ten years. Join us in this great mission. It's all possible with your support!

Jeff Morgan  
Executive Director

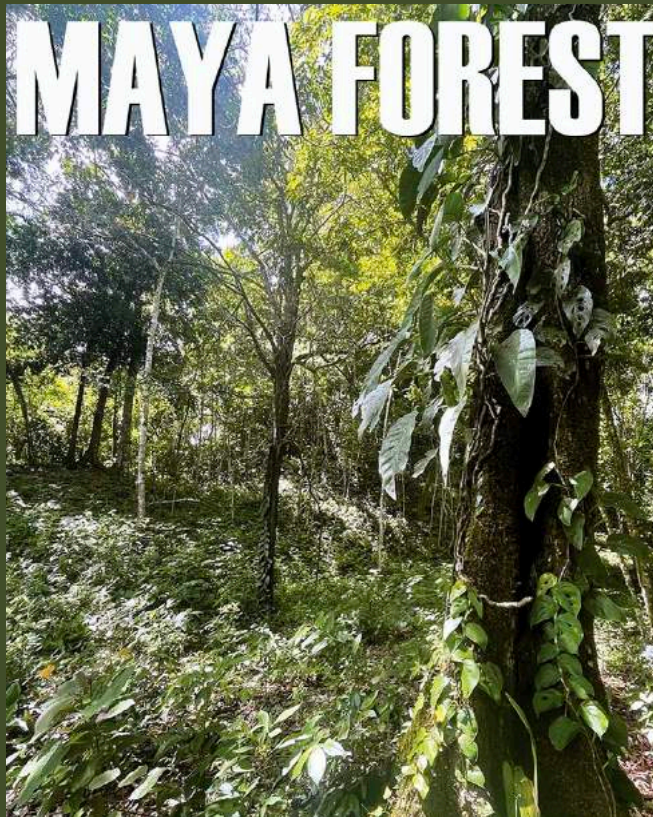


## NEW GLOBAL CONSERVATION PROJECTS

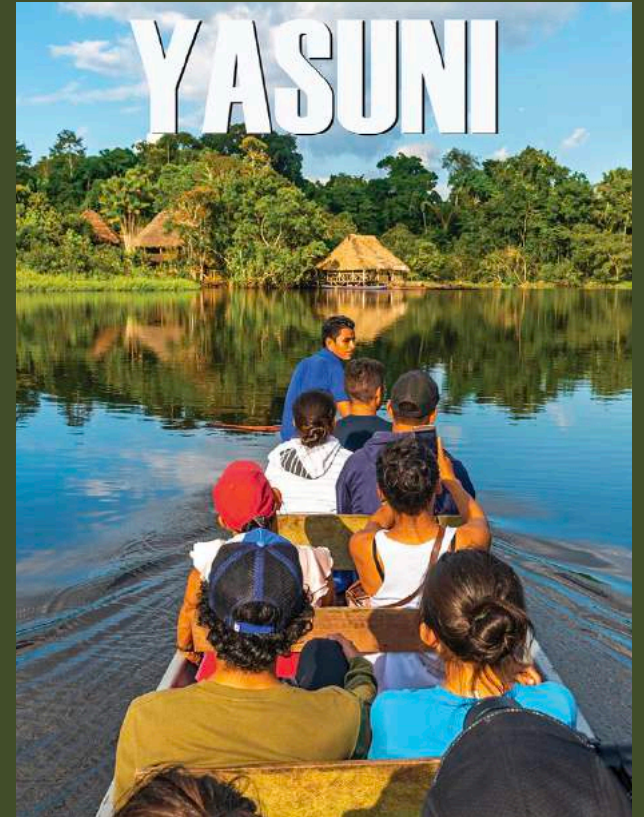
### DARIEN



### MAYA FOREST



### YASUNI





**Turneffe Atoll - Belize:** This remote island was once an outpost for illegal fishermen. Today it serves as a marine warden station run by TASA.  
(Turneffe Atoll Sustainability Association)





## WHERE WE WORK

### ASIA:

1. Cardamom Mountains National Park - Cambodia
2. DAMAI Rainforest Complex - Sabah, Borneo, Malaysia
3. Leuser Ecosystem - Sumatra, Indonesia
4. Thung Yai-Huai Kha Khaeng World Heritage - Thailand
5. Bardiya Banke National Parks - Nepal
6. Komodo National Park - Indonesia

### AMERICAS:

7. La Amistad World Heritage - Costa Rica & Panama
8. Darien National Park - Panama
9. Greater Maya Forest - Belize
10. Mirador National Park - Guatemala
11. The Naso Kingdom - Panama
12. Sierra del Divisor National Park - Peru
13. Otishi National Park - Peru
14. Yasuni National Park - Ecuador

### AFRICA:

15. Dja Faunal Reserve - Cameroon
16. Kidepo Valley National Park - Uganda
17. Mana Pools World Heritage - Zimbabwe
18. Murchison Falls National Park - Uganda
19. Ngorongoro World Heritage - Tanzania

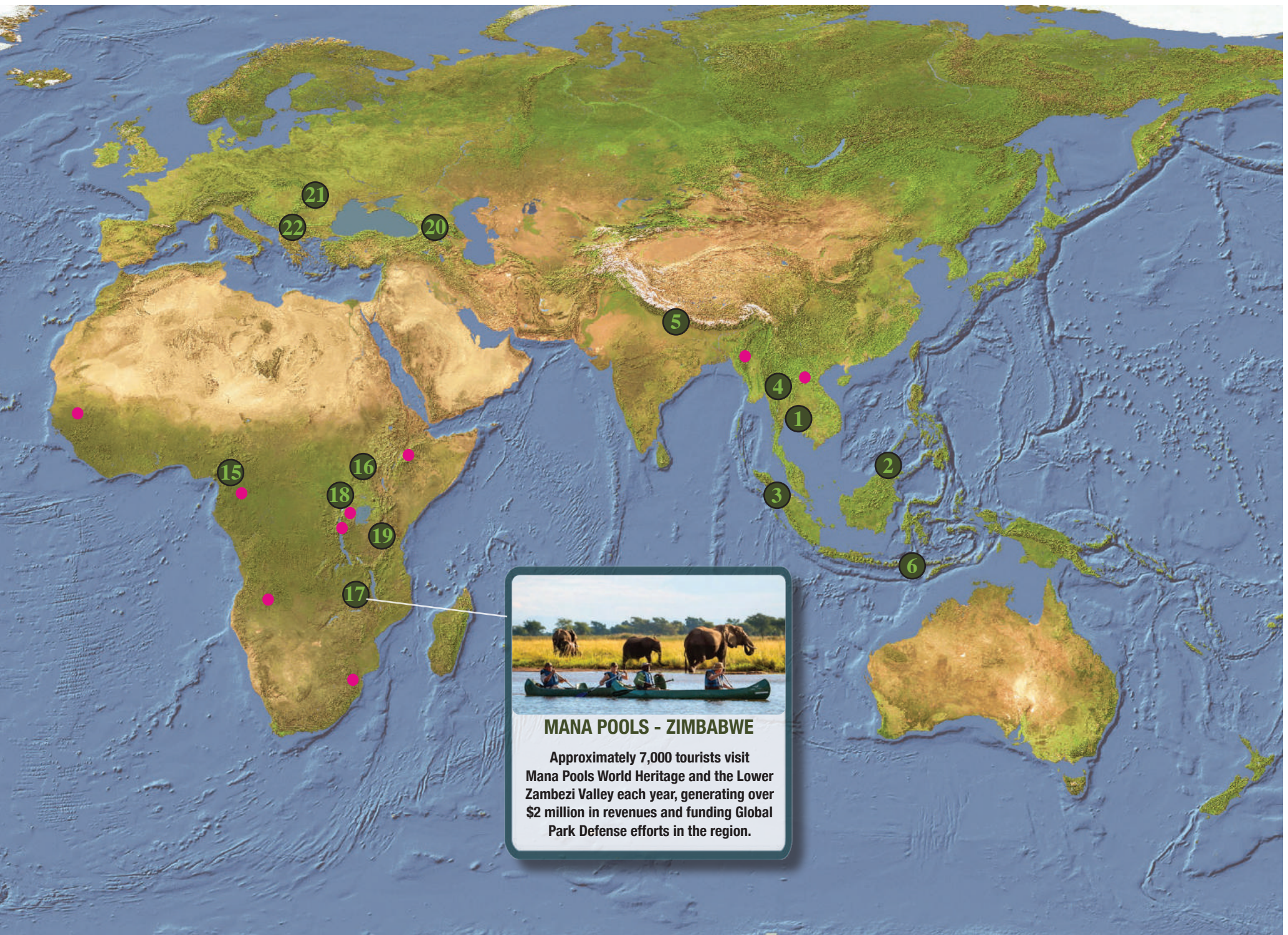
### EUROPE:

20. Borjomi National Park - Republic of Georgia
21. Carpathians National Park - Ukraine
22. Sharr Mountains National Park - Macedonia



ASSESSMENTS ●





#### MANA POOLS - ZIMBABWE

Approximately 7,000 tourists visit Mana Pools World Heritage and the Lower Zambezi Valley each year, generating over \$2 million in revenues and funding Global Park Defense efforts in the region.



## GLOBAL PARK DEFENSE

Using the power of UNESCO World Heritage and national park designation, Global Conservation assists national governments and park authorities in protecting land and marine reserves using the best systems, technologies and training available.

Our program, called Global Park Defense (GPD), is a multi-year method to achieve “No Cut, No Kill” protection and financial sustainability for continued preservation.

Global Park Defense increases ranger patrol and park protection effectiveness in critical ecosystems. It is a scalable system with technology and training tailored to each park, dramatically increasing the effectiveness of rangers and park authorities in protecting their world heritage.

### Selection Criteria

We are highly selective in choosing the projects that we support. For us to implement Global Park Defense, the site must meet the following criteria:

1. An endangered national park or UNESCO World Heritage Site in a developing country
2. Contain critical habitat for megafauna with intact, primary ecosystems
3. Have potential for fundraising and collaboration with other NGOs
4. Have a park authority willing to commit to the Global Park Defense goal of “No Cut, No Kill”, and be willing to fund park border demarcation and communications towers
5. Show excellent potential for sustainable tourism to support permanent protection

POACHERS

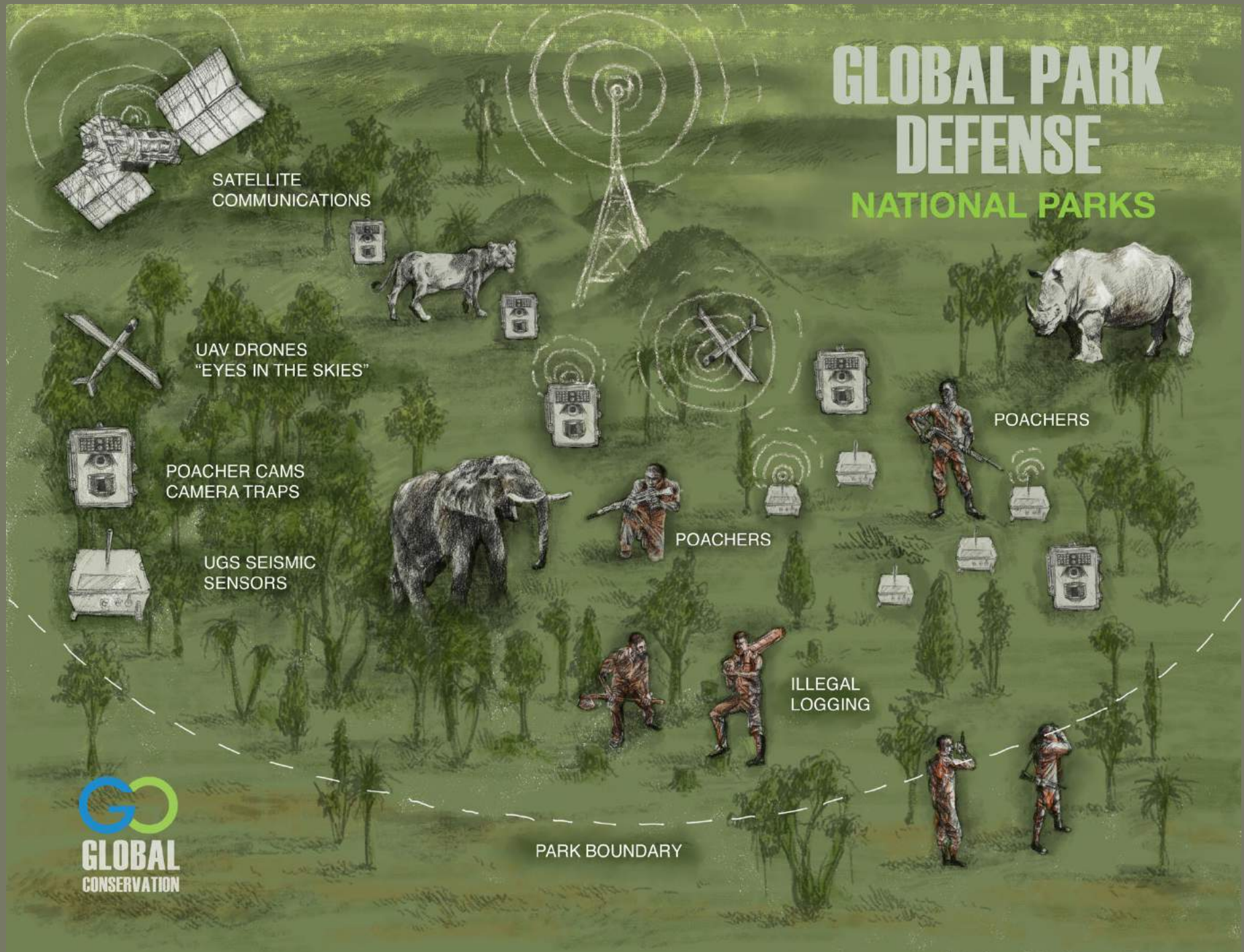
PARK BOUNDARY





# GLOBAL PARK DEFENSE

## NATIONAL PARKS





## FOUR STAGES OF GLOBAL PARK DEFENSE

### PLANNING

#### **Threat assessment, security and surveillance design, ranger deployment strategy**

Before we can begin a Global Park Defense program, it is critical to have a thorough understanding of the threats. Our first step is to conduct a threat assessment, as well as scientific baseline surveys of wildlife populations, which help us to track our progress. We then put together a detailed security and surveillance plan, as well as a strategy for ranger deployment.

### PARTNERSHIPS

#### **Wildlife and forestry, government, telecommunications and co-funding**

Global Conservation brings in critically important co-funders, government and private investment, and strategic partners to assist in conservation finance, park infrastructure and communications, scientific research and community-led tourism.

### PROTECTION

#### **“No Cut, No Kill” protection, financial sustainability for continued preservation**

Our focus on protecting national parks over the last five years included the deployment of:

- Community Involvement
- Equipment and Training
- Park-Wide Communications
- Surveillance
- SMART Patrolling

### SUSTAINABILITY

#### **Governmental budgeting, tourism revenues and park financing**

Global Conservation assists in securing long-term financing to fund park and wildlife protection after our multi-year Global Park Defense projects end. Each Global Park Defense deployment requires US\$400-500,000 over five years for training, equipment and communications systems. Global Conservation requires national governments to increase the number of salaried park rangers and pay all salaries, benefits and insurance.



*Ranger in the Maya Forest  
checking trailcam installation*

*Rangers on foot patrol in  
Thap Lan National Park*





## METRICS FOR MEASURING GLOBAL PARK DEFENSE

**Real Alerts/Real Intelligence** - We measure the number of alerts from the first day that cellular trail cameras are installed. If there are already existing camera traps, we note the number of alerts to date so that we have a baseline. In all cases, we check progress every six months to compare to the previous six months.

**Kilometers Patrolled by Foot and Vehicle** - It is important to keep accurate records of kilometers patrolled for a few reasons. Firstly, since we aim to increase the number of patrols, we need a baseline. Secondly, it's also important to eliminate unnecessary patrol kilometers in areas without criminal activity. Finally, patrolling is also used to measure efficiency. If kilometers patrolled have decreased, but arrests and interdictions have increased, we know that we are patrolling more efficiently. We also want to differentiate and analyze the effectiveness of vehicle vs. foot patrols.

**Number of Interdictions** - Interdictions need to be analysed to establish which of our methods are the most effective. We must keep track of the number of encounters when on patrol vs. interdictions that result from informant tips or camera alerts, etc. Overall interdiction numbers are then compared to the number of resulting arrests and convictions.

**Number of Arrests & Confiscations** - Tracking the number of arrests and confiscations is important, because it gives us the percentage of interdictions/encounters that result in arrests for criminal activity. Confiscating guns, chainsaws, carcasses, drugs, or snares has an impact even without arrests. All confiscated items need to be documented and inventoried for possible future court cases and to monitor the extent of illegal activity.

**Number of Prosecutions & Convictions/Jail Time/Fines** - Stops and arrests will not have the intended impact if the legal system is failing. Convictions give us a measurement of government efficiency and corruption, and give us the opportunity to identify and change outdated laws and obstructions in the legal system. As an example, if many convictions result in small fines and minimal jail time, we know we need to reexamine the structure of the laws pertaining to wildlife protection.

**Public/Media Communications** - The media plays a big role in reducing crime, especially when laws are weak. The media can expose criminals within and outside of the community and make people aware of the issues. It also flushes criminals out of hiding and puts added pressure on family, friends, the community and even other criminals to give information. Other criminals do not want media attention and scrutiny in an area where they may also commit crimes.



*Jeff Morgan, on patrol with TASA, approaches fishermen in Turneffe Atoll*

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*Global Park Defense methods led to the arrest of poachers in California*





## SCIENCE-BASED PARK & WILDLIFE PROTECTION

### Species Facing Extinction

Science is a crucial component of Global Park Defense. Tracking wildlife populations over time is an excellent way to assess progress, as well as to detect illegal activity. When we begin a GPD project, we start with a baseline wildlife population assessment. Then, we can compare all future assessments to that baseline to determine whether our conservation efforts are proving successful. If we detect a sudden change in a species' population, it may indicate increased poaching pressure, an increase in indirect impacts such as logging, or a landscape-scale change such as fire, pollution, or a natural disaster.

Knock-on effects can also happen. A drop in predator numbers will often cause a rise in prey animal species. Once we detect such a change, we can start searching for the cause.

### Baseline Population Studies

Without ecological monitoring, we can't possibly know what we need to protect or how to measure the success of our efforts. For each of our projects, we fund wildlife population baseline estimates and four-year progress studies.

Global Conservation's mission is to protect endangered UNESCO World Heritage Sites and national parks in developing countries. By protecting the entire ecosystem, we protect all species. We are not single species-focused, but support protection and science for select critically-endangered keystone species in our projects. We are funding scientific studies, including baseline population studies and threat assessments, to protect these species facing extinction. The species we're protecting include:

**Orangutan:** There are three known species of orangutan, and GC project sites have two of them. These highly intelligent apes are among our closest relatives, sharing 97% of our DNA. Unfortunately, they are highly-endangered and may be the first great apes to go extinct in modern times.



*Biologist Dr. Olena Slobodian in Carpathian National Park in Ukraine*

**African Wild Dog:** African wild dogs, also known as painted dogs or painted wolves, are the largest canids in Africa and the second largest in the world after wolves. Historically destroyed as "problem animals" because of conflicts with livestock, their populations have long been declining and they are now considered Endangered. There are only around 1,400 mature wild dogs left in the wild.

**Komodo Dragon:** Fewer than 3,500 Komodo dragons remain. They once lived across a huge range, spanning Indonesia's islands and Australia, but since the 1970s, Komodo National Park has been

the only place in the world where they can be found. Often weighing more than 300 pounds, these giant lizards can grow up to 10 feet long, run as fast as 12 miles (19 km) per hour, smell blood from almost 6 miles away, and deliver a powerful bite with venom strong enough to kill a human.

**Sunda Pangolin:** So few of these mysterious animals remain that scientists have been unable to estimate their population. Sunda pangolins are one of the world's most trafficked mammals. Over a million pangolins worldwide are estimated to have been poached from the wild since 2000. They are predicted to decline by an additional 80% in the next two decades if they are not protected. GC is working across five national parks and World Heritage Sites in Asia to save this critically endangered species.

**Sumatran Rhino:** As few as 80 Sumatran rhinos survive in the wild, making them one of the rarest, most endangered mammals in the world. We're working to help protect the largest surviving population in the Leuser Ecosystem of Indonesia.

**Indochinese Tiger:** Only 220 Indochinese tigers remain in the wild, with most of them in Thailand. The Indochinese tiger is a critically-endangered population of tiger native to Southeast Asia, though it now only occurs in Thailand and Myanmar.







# NEW HOPE FOR TIGERS





## WINNING THE ROSEWOOD WARS

Thailand has been ground zero of the Rosewood Wars. Constantly under pressure from illegal logging, wildlife poaching, land clearing and illegal settlement, Thailand has managed to hold its line on biodiversity loss, keeping its last few hundred tigers alive in the process.

The national parks and wildlife sanctuaries contain most of the last virgin Siamese rosewood tracts in the world. In 2010, Thap Lan National Park became a battleground for rangers trying to stop poaching syndicates from cutting down the last rosewood forests to satisfy the ever-increasing demand from China's wealthy elite for rosewood furniture.

Without urgent intervention, Thailand's forests were facing annihilation. Armed multinational syndicates from Cambodia and Vietnam were moving into Thailand's protected areas with virtual impunity, threatening the whole country's very sovereignty.

In 2016, Global Conservation partnered with WCS Thailand to undertake a 4 year Global Park Defense program to eliminate the illegal logging of rosewood and wildlife poaching in Thap Lan National Park, one of Thailand's largest UNESCO World Heritage Sites and a critical habitat for tigers. With Global Conservation's support, WCS Thailand worked with the Department of Parks and Wildlife to deploy Global Park Defense.

Using a network of hundreds of real-time cellular trail cameras and SMART patrolling systems backed by the Thai military, Thap Lan National Park was able to track and intercept illegal rosewood poachers and give the country a fighting chance to save their forests. Over the next 5 years the initiative became a major success story and a model for conservation in Southeast Asia.

As the illegal logging stopped, so did the poaching of prey species and this led to a steady increase in tiger numbers and biodiversity across several of Thailand's world heritage protected areas. Thailand is now the only country in Southeast Asia with a tiger population that is increasing. Its wildlife corridors and protection strategies are setting new standards for the rest of Asia, and the sightings of new families of tigers in Thap Lan National Park and Umphang Wildlife Sanctuary in Thailand's Western Forest Complex on the border with Myanmar is giving new hope for their recovery.

Thailand's ability to address poaching and biodiversity loss on this level is an uncommon but promising model on how other countries can use Global Park Defense to achieve meaningful success in park and wildlife protection in an age of rapidly accelerating threats. With government leadership, NGO support and cutting-edge technology, Asia's forests and their magnificent wildlife can have a viable future.



*From the Global Conservation short film  
"Winning the Rosewood Wars"  
by Paul Hilton*





## COMMUNITY PROTECTION

Global Conservation's core values of human dignity, trust and equity are a major part of the success of its programs. For example, we hire people from local communities and indigenous tribes as Ecoguards, giving them dignified employment and elevating their community leadership role. Global Park Defense allows park managers, together with indigenous tribes, to protect their ancestral lands from colonizers and poachers.

As Community Ecoguards, park rangers, and technicians all work together with law enforcement to protect their forests, a climate of trust and mutual support is developed, a win-win for conservation. To further our impact, we are sharing our goals and activities with communities in full transparency. At the same time, we defer to local communities on matters related to the deep culture and ancestral knowledge, while also supporting the communities' autonomy and self-determination as land managers.

### Case Study: La Amistad International Park and the Naso People of Panama

#### Introduction:

The Cordillera de la Talamanca is the highest and wildest non-volcanic mountain range in Central America. The geological history of the Talamancas can be read in the glacial cirques, amphitheater-like valleys carved by ice, and the glacial lakes nestled within them. Still, water shapes this landscape as countless rivers and creeks spring to life here, forming spectacular waterfalls.

Much of this mountain range is protected by La Amistad International Park (Parque Internacional La Amistad, PILA), a transboundary protected area and World Heritage Site that is shared between Costa Rica and Panama. Covering more than 570,000ha across those two countries, including a 15 km-wide buffer zone, it's the largest nature reserve in Central America.

#### Natural and Cultural History:

PILA protects a mosaic of diverse habitats, including tropical lowland forests, cloud forests, high-altitude peatlands, and even the northernmost occurrence of the tundra-like páramo ecosystem on Earth. Its peaks are like islands in the sky, isolated from one another across the ages, allowing new species to separate and evolve. As a result, this varied landscape has birthed an unusual richness of species and an extraordinary number of endemic species found nowhere else on Earth.

*(at right top to bottom) Life in La Amistad has changed little in centuries, Ceremonial spears are cultural icons, Naso Kingdom women in homemade clothing*







La Amistad protects virgin forests in Costa Rica



Camera traps were installed and are now being monitored



Global Conservation fully-sponsored the Binational Patrol

## Case Study: La Amistad International Park (cont.)

Now, PILA is an incredible biodiversity resource for both the region and the world, harboring about 20% of Central America's and about 60% of Costa Rica's species diversity. La Amistad covers 15% of the total protected area of Costa Rica and protects more virgin forest than all of the other parks in Costa Rica combined.

Our work included different ASP management activities which were carried out for prevention, protection, and controlled patrols both inside and outside PILA. That includes fixing posts, going on walking and river tours, vehicle patrols, patrols in Indigenous Territories with Resource guards, and inter-institutional patrols, which support the Alturas de Cotón farm in the Las Tablas Protection Zone and the Subregion in response to SITADA complaints.

Global Conservation is proud to have fully sponsored this Binational Patrol, providing complete support in terms of food provisions during mountain tours for all participants, including the Covirenas and Indigenous Guarda Recursos. The event allowed us to address critical conservation issues, promote cooperation between nations, and protect the natural habitats in the region.

Additionally, we managed to establish an institutional presence in places with a high incidence of illegal acts. Experiences were exchanged, such as how to carry out a patrol, strategies, equipment to use, documentation, approaching people, etc.

### PATROLLING BY THE NUMBERS:

- 438.29 Kilometers by Foot (272.34 miles)
- 129.72 Kilometers by Quadricycle (80.60 miles)
- 68,039.80 Kilometers by Pickup (42,277.97 miles)
- For a total of 815 hours spent patrolling

Special operations were carried out at the beginning of the year and Holy Week, with an institutional presence in different sectors of PILA and its buffer zone. They achieved seizures of Palmito de Montaña, firearms, wildlife hunting tools, and other equipment.

The patrol of the trans-Talamanca is carried out in the company of six indigenous bodyguards, COVIRENAS from Ujarrás, who provide essential logistical support from Global Conservation. They also georeferenced with GPS Points to later make a study of an alternative route or a new tourist trail.

Camera traps were installed and monitored in order to watch the periphery of the park, where hunters have been observed entering the protected wilderness area.





### Case Study: La Amistad International Park (cont.)

With the help of volunteers from neighboring communities, it was possible to maintain trails, remove invasive weeds, improve infrastructure, and support the administrative office. In addition, vehicle maintenance is continuous so that the transports are in the best condition for the officials.

#### GC Helps to Fight Fires in National Parks Critical to Protecting Intact Forests:

There was a fire emergency in La Amistad National Park in Panama. The forest fire affected around five hectares of the park and had spread to many areas outside of it. More than 200 firefighters worked to control the fire and prevent it from spreading further.

Global Conservation provided support with essential supplies like anti-fire bombs, meals and snacks, water, and other necessary items for the firefighters and over 100 volunteers.

The fire was finally extinguished within the PILA, confining the fire to only seven hectares within the park.

#### A New Wave of Ecotourism:

PILA has now become a specialized hub of ecotourism that focuses on wildlife viewing and photography tours, with fitting accommodations for world travelers. Panama is one of the greatest biological hotbeds on Earth. It's home to a breathtaking array of wild animals, including hundreds of bird species, six species of wild cats (including jaguars and jaguarundis), poison dart frog species, capybaras, giant river otters, and many more.





## Case Study: Indigenous Community Protection for Otishi National Park, Peru

At the invitation of the government of Peru and two local indigenous communities, we have begun deployment of Global Park Defense for Otishi National Park, in the province of Manu, in Madre de Dios, along with two adjacent indigenous communal reserves.

In 2002, following 18 years of constant struggle, part of their ancestral territory was recognized as a natural protected area, called the Amarakaeri Communal Reserve. Global Conservation will work with both the Otishi National Park authorities and the Amarakaeri Communal Reserve to improve forest and wildlife protection, while enabling indigenous land use and game harvesting.

Their territory is the basis of their existence as it is the space for their “Vida plena” (full life), which includes all areas where they hunt, fish, cultivate and gather, and where they develop the social and spiritual aspects of their lives. Their ancestral lands host some archaeological remains which illustrate the deep, millennium-long relationship that these Peoples have with the Madre de Dios region.

In response to continual invasions from coca plantations, mining, illegal logging and land clearing in the 1980s the Indigenous communities created a multi-ethnic alliance called Federación Nativa del Río Madre de Dios y Afluentes (or FENAMAD for short) to protect and preserve the ancestral territories of Harakbut domain.

Our common objective is the conservation of the biological diversity and ecosystems of the Cordillera Vilcabamba in order to conserve the stability and integrity of the soils and the water of the Ene, Tambo, Apurimac and Urubamba rivers, and for the direct benefit of the Indigenous Communities adjoining these sacred rivers.

### *Apurimac River*



*Ashaninka people on the Ene River*

*Responsible ecotourism supports communities*







The ever-elusive jaguar is well-camouflaged for the jungle



The last population of orange-breasted falcons live here



Mexico's Secretary of Environment Maria Luisa Albores

## Case Study: The Calakmul Biosphere Reserve

### Introduction to The Calakmul Biosphere:

Mirador National Park, part of the Mirador-Calakmul Ecosystem of Guatemala and Mexico, which is a crucial piece of the Maya Biosphere Reserve, contains a stunningly biodiverse rainforest ecosystem. Large populations of elusive jaguars and threatened white-lipped peccaries live here, alongside pumas, tapirs, ocelots, agoutis, brocket deer, and rare harpy eagles.

Mirador's southern limestone cliffs is the last place in the world with viable populations of the orange-breasted falcon, and the park is on a critical flyway for birds migrating from central and eastern North America. It also has a rich cultural history; the ruins of the ancient Maya city of El Mirador lie here, including the impressive La Danta pyramid. The National Park of Mirador is located in the heart of the second-largest extension of tropical forests in America (only to Mas Amia); it is part of the Mayan jungle that includes the protected natural areas of Mexico, Belize, and Guatemala.

The Calakmul Biosphere Reserve (decreed a Reserve on May 23, 1989) has a total of 723 thousand hectares. It's a part of the Heart of La Selva Maya, which also includes Balam Ki, Balam Ku, Mirador National Park, and the Rio Bravo/Belize Mayan Forest.

This region deserves special attention for its great biological diversity, which includes more than 80% of the plant species of the entire Yucatan Peninsula, as well as 350 species of birds and almost 100 species of mammals. It is home to several species of large vertebrates in danger of extinction in Mexico.

### A Gran Calakmul Announcement by President of Mexico: GC Funds Major Expansion

The Secretary of the Environment, María Luisa Albores, presented the "Gran Calakmul" region, which will have a total of 1.5 million hectares and will be the second largest terrestrial tropical forest reserve in the world after the Amazon, in Brazil.

The major expansion of the Calakmul Biosphere Reserve will include two new Divisions of Park Rangers (30 rangers and 2 Directors).

Global Conservation has funded nearly \$100,000 per year over the past 6 years for Global Park Defense deployment in Calakmul Biosphere Reserve, just North of Mirador National Park, which has enabled them to lead this expansion.







## Case Study: The Calakmul Biosphere Reserve (cont.)

The GC-funded Park and Wildlife Protection is stopping illegal logging cartels from destroying Mexico's last intact tropical forest in Chetumal.

Campeche itself, located in the Greater Calakmul Region, will be the first tropical forest reserve and the second largest in the world, after the Amazon in Brazil.

### Capacity Building:

30 park rangers from the RB Calakmul, Balam Ku, and ADVC teams have been trained for more than 60 hours in the following topics:

- Save rangers in protected natural areas and human rights
- First aid and rescue in remote areas
- Basic courses in fighting forest fires
- Using the SMART monitoring tool
- Forest legislation and wildlife

### Protection Along the Border Line: Mexico – Belize – Guatemala:

Two international tours were carried out along the border lines of Mexico, Belize, and Guatemala, where more than 30 park rangers from the following protected natural areas participated: Parque Mirador Rio Azul, Calakmul, Balamku, PROFEPA, and Rio Bravo in Belize. They traveled more than 100 kilometers from the border during the tour.

### Surveillance Tours in the Calakmul Biosphere Reserve:

The park rangers have carried out 80 surveillance tours in the core area of the Reserve of the Calakmul Biosphere in coordination with security authorities. In total, they have traveled approximately 6,500 kilometers. Additionally, it's been reported that the Rangers' presence alone while patrolling is scattering poachers and making them run.

Among other poachers, anti-poaching efforts are particularly focused on working to shut down Chinese syndicates, which operate in many different countries. "Right now, they haven't shown up," says Mirador Park Director Francisco Asturias. "We've been hitting them so hard that every time they show up, we're there. We catch them, and we put them in jail. So, right now, they don't really want to be in [La Selva Maya]."



*Without protection every last tree would be cut down in Calakmul*

*La Selva Maya is centered by the borders of Mexico, Belize and Guatemala*





## Case Study: The Calakmul Biosphere Reserve (cont.)

Supporting the Protection of Jaguars Throughout the Heart of La Selva Maya:

Illegal hunting of jaguars and their prey is a major threat to the survival of this keystone species. As well, habitat loss is pressuring jaguars into smaller and smaller areas. Over 80% of the Maya Biosphere Reserve has been lost in just 20 years.

GC is funding a multi-year scientific study, which will obtain reliable and comparable density estimates, which are key to monitoring wildlife populations across space and time. For the first time in Guatemala and in the Maya Biosphere, we obtained the data needed to accurately detect jaguar population declines, estimate threats, and implement the appropriate conservation interventions needed.

Amigos de Calakmul Community REDD+ Program, Mexico:

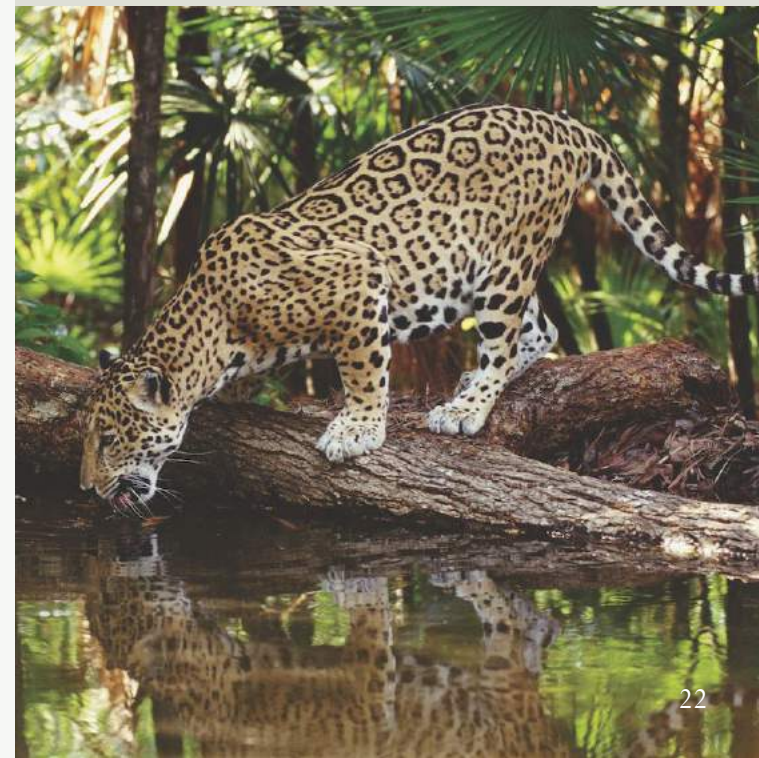
The Amigos de Calakmul (ACAC) Community Forestry REDD+ Project provides critical resources and incentives for the indigenous landowner communities, known as Ejidos, to protect their forests through the sale of carbon credits and other funding sources. The program area is located around the buffer zone of the Calakmul Biosphere Reserve (CBR) on the Yucatán Peninsula in the Campeche state of Mexico. Livelihood options for Ejidos living in the buffer zone are extremely limited.

Due to land-use regulations, the only development activity allowed is sustainable, low-impact logging; however, the income from these activities is often not enough to meet the subsistence needs of the communities, let alone allow for economic growth. As a result, the local Ejido communities are often forced to turn to illegal, environmentally destructive activities, such as slash-and-burn agriculture, to make a living. In the face of severe economic decline, Ejidos may also sell or lease the land to timber companies or other agro-economic corporations, whose practices threaten forest health and the biodiversity of this region.

In order to provide a viable income alternative to leasing their land for unsustainable practices, ACAC offers competitive, permanent conservation lease agreements with the Ejidos. These agreements allow the Ejidos to maintain ownership of their forests and require them to refrain from engaging in environmentally destructive activities. In return, combined with profits generated from the sale of carbon credits, the conservation agreements ensure that Ejidos receive annual compensation that is either equivalent to or, in many cases, greater than what they would receive from leasing their land to a logging operation.



*Our advisor Dr. Gerardo Ceballos has conducted jaguar population studies in Calakmul for years*







## Case Study: The Calakmul Biosphere Reserve (cont.)

The primary objectives of this project are threefold:

1. Mitigate climate change by reducing carbon dioxide emissions from land use activities that result in deforestation and forest degradation;
2. Improve community livelihoods, especially for women, by providing alternative livelihood activities and carbon finance, and;
3. Contribute to biodiversity conservation by protecting forests and assisting in the natural regeneration of forests as a means of improving wildlife habitat in the program area.

### Community Benefits:

The Ejidos families engaged in the project will have income-generating opportunities both in the forest extensions and within their towns. The protection activities within the forest areas include community patrolling, which is performed by the Ejidos after they receive training and support on enforcement practices and field-based technology. Support is also provided for Ejidos to develop businesses from the sustainable production of non-timber forest products, such as resins, honey, and medicinal plants, providing new employment and income-generating activities for the Ejidos families.

Project activities also support improving agricultural practices and social programs. Many Ejidos live on subsistence-based farms and depend on adequate crop production for food security. Activities will include the promotion of agroforestry systems and conservation agriculture to improve yields and crop diversity while increasing climate resilience. The project may also implement other important social programs, such as water management, clinics, and educational services, depending on available funding. Gender empowerment and inclusion are key components in the implementation of program activities.

As studies demonstrate, the inclusion of women in conservation and training on improvements in agricultural production techniques leads to lower migration rates and improved livelihoods overall for Ejidos families. As part of the terms of the conservation agreements, women are required to be fully represented in the governance of the Ejidos and provided direct access to the benefits of the project.

*(left) Ejidos family farmer*



## Case Study: DaMaI World Heritage

### Introduction to the DaMaI Complex:

The Danum-Maliau-Imbak Rainforest Complex or DaMaI in short, is a vast area totaling one million hectares with multiple land uses. These areas come together to form a forest reserve, which consists of the three core conservation areas: Danum Valley Conservation Area (DVCA), Maliau Basin Conservation Area (MBCA) and Imbak Canyon Conservation Area (ICCA). To address most of the issues and concerns in managing biodiversity in DaMaI, a simple 5-year initiative was formulated and an MOU was signed in October 2017 with the state government of Sabah.

The overall goal of this initiative is the protection of biodiversity with the following objectives:

- Support the protection of biodiversity in DaMaI Rainforest Complex.
- Enhance the capacity of the dedicated teams and other forest rangers in DaMaI.
- Support efforts in nominating DaMaI Rainforest Complex as a World Heritage site.

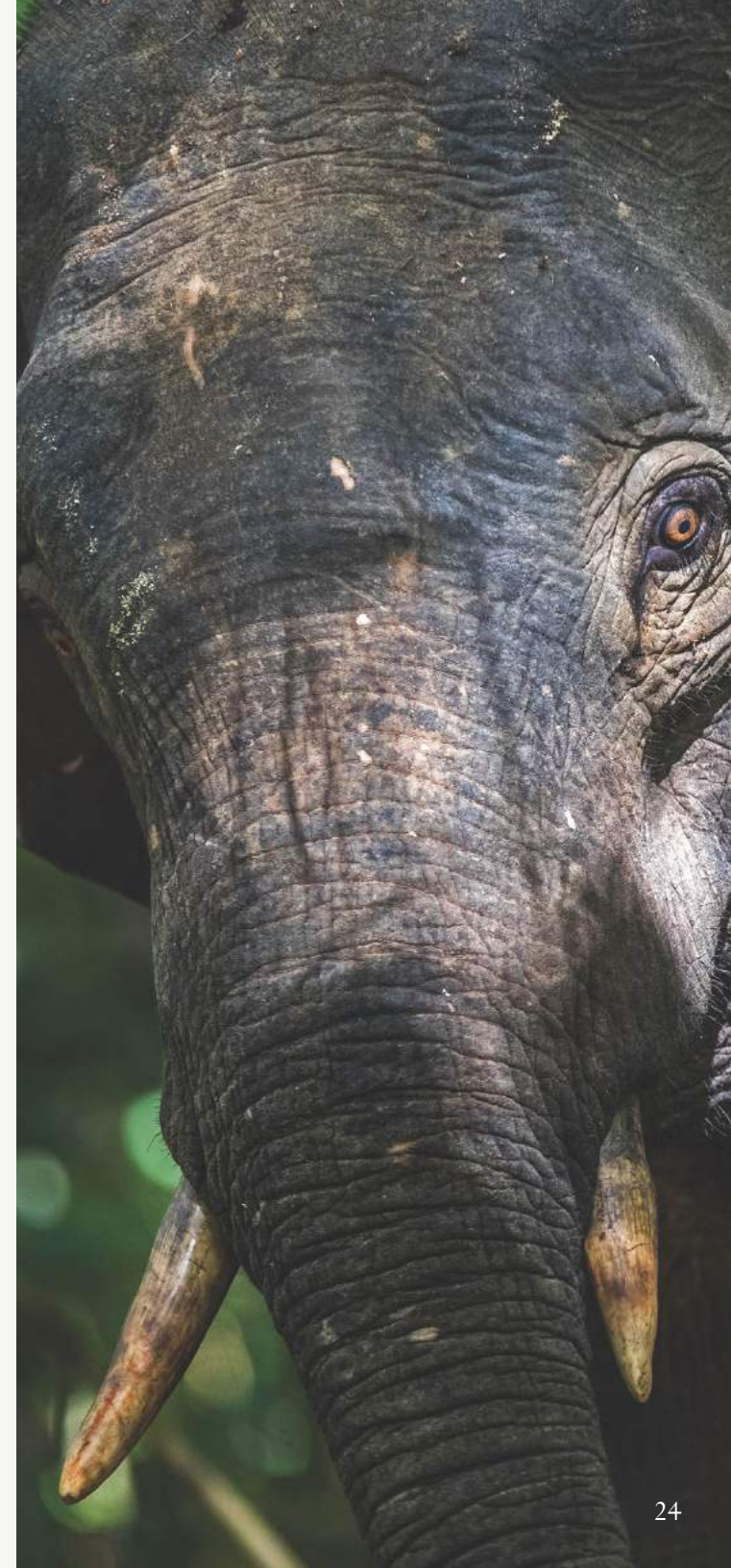
### Our work in DaMaI Rainforest Complex:

Major progress has been achieved over the past four years to secure nearly one million acres of tropical forest and wildlife habitat in the Heart of Borneo.

Prior to Global Conservation, this landscape was a collection of disparate logging concessions with three disconnected conservation areas with no real protection. No trucks, no patrols, and no ranger teams were in place to protect against wildlife poaching decimating key species, including elephants, bantengs, clouded leopards, orangutans, and hornbills. Rhinos are already extinct in this region.

Led by Sabah Environmental Trust (SET), Global Conservation signed a five-year MOU with Sabah Forestry Department and Sabah Foundation to deploy Global Park Defense to build a unified national park and secure a nomination for UNESCO World Heritage.

*(right) DaMaI Rainforest Complex is home to the last 1,500 Borneo Pygmy Elephants on the planet*





## Case Study: DaMaI World Heritage (cont.)

### Cellular Trailcam Surveillance

On roads and trails used by poachers, a real-time network of Cellular Trailcams were deployed giving critical intelligence on illegal activities.

### SMART Patrolling

Planning and executing patrols and collecting biodiversity information are now fully automated, enabling intelligent decisions on how and where to deploy protection resources.

### Rapid Response PROTECT Team

Combining key personnel from three organizations with new patrol vehicles and park-wide communications, rapid interdictions can now respond to threats.

### UNESCO World Heritage Nomination

The Federal Ministry of Tourism, Arts and Culture (MoTAC) supports the application to first make DaMaI a world heritage site (under Act 645) in order to facilitate its progression towards being accorded a UNESCO World Heritage Site status.

### Biodiversity Recovery

After decades of large-scale logging decimating many areas of the DaMaI Rainforest Complex, replanting of native forests is bringing back healthy habitats, and wildlife is coming back. Scientific wildlife population baseline studies and giving critical insight into the health of species and movements for corridor design.

With over 70% of Sabah state having been logged, DaMaI Rainforest is one of the last intact tropical forests with potential to conserve species and conserve for future generations.

### Patrol Coverage

Since the first MOU came to an end on 31st December 2021, an extension has been proposed through 2026 to improve the protection of one of Sabah's largest forest estates, the DaMaI Rainforest Complex. This initiative provides support for the state government to measure and solve gaps in the enforcement and protection of the protected areas. The extension also brings in Sabah Wildlife Department (SWD) to the MOU so as to strengthen the team's capacity to combat illegal activities in the DaMaI Rainforest Complex.



*These dedicated rangers have been trained in Global Park Defense*

The three core conservation areas, DVCA, MBCA, and ICCA, are patrolled by dedicated rangers who've also received further training to boost their skills in monitoring, enforcement, and understanding of related technologies, which helps them reduce and mitigate forest crimes such as encroachment and poaching activities.

### Arrests and Prosecutions

14 people were arrested suspected of illegally entering forest preserves to hunt wildlife, including protected species, after a patrol team discovered an active poacher campsite in Gunung Rara near the Nurod Urod Forest Reserve. The Sabah Forestry Department's (SFD) Protect Unit arrested five suspects and confiscated two vehicles with sambar deer and wild boar carcasses at the Tiagau Forest Reserve, Luasong. Nine more suspects, including three locals, were arrested in the Maliau Basin Conservation Area buffer zone shortly after.



## Case Study: DaMaI World Heritage (cont.)

### Successes in Numbers

• • • • •

DaMaI patrol 33 times, 35 patrol days

Joint patrol 16 times, 20 patrol days

Installed 57 camera traps

Arrested 5 poachers (one with HWW license!) Confiscated 35 live bullets, 2 shotguns

Destroyed 18 illegal camps and 2 boats

Identified 1 important hotspot - illegal gold mining

Global Conservation supported Sabah Environmental Trust and the Yayasan Sabah Group with the purchase of six ATVs and three Nissan trucks for help with their patrolling and enforcement in DaMaI.

### CAMERA TRAPPING SUMMARY

The preliminary analysis was performed with these four objectives:

- To determine the population and abundance of the two iconic species in the study area.
- To determine the body conditions of the two iconic species from available images captured by camera traps.
- To identify the presence and distribution of other medium and large mammals (e.g. deers, wild boars, Sun bears, etc.) in the study area.
- To establish suitable plots for artificial salt licks that can be developed in the future as an attraction for nature-based tourism.

### Species captured on camera traps:

Bornean Banteng:

Female - 354

Male - 175

Total - 529

Bornean Elephant:

Female - 89

Male - 38

Total – 127



*Global Conservation purchased three trucks and six ATVs to expand patrols*

*The Bornean Banteng*







Confiscated chainsaws show the extent of illegal logging inside Cardamom Park boundaries



Jeff Morgan presents Wildlife Alliance Founder Suwanna Gauntlett with Lifetime Achievement Award

## Case Study: Cardamom National Park

### Introduction to Central Cardamom Mountains National Park:

Central Cardamom Mountains National Park (CCMNP) consists of over 400,000 hectares of dense monsoon forest, melaleuca wetlands, mangroves, and a vast network of estuaries and rivers that course across the mountain slopes and into the Gulf of Thailand. Rivers in the CCMNP provide drinking water for more than 30,000 people and support rice and fish production in the lowland agricultural plains, ensuring food security for many of Cambodia's monetarily poorest people.

The Cardamom rainforest has the greatest watershed value of any forest in Cambodia, with a staggering rainfall of 3,500-4,500mm per year due to its dense evergreen forest cover and its position along the Gulf. Protecting this continuous forest canopy and the flow of water from the forest to the coast is a conservation priority for Cambodia.

Despite its protected status, illegal land clearing and wildlife poaching continue to threaten this park. Cambodia faces some of the highest deforestation rates of any country in the world: over 15% of its forest has been cleared over the past 10 years.

Thousands of wildlife snares, which conservationists call "walls of death" for their ability to create fatal barriers to wildlife, are confiscated every year in the Cardamom region. In the depths of the unexplored forest, such activities are difficult to stop without daily aerial and satellite monitoring. Further, because of its highly desirable real estate location, industrial and community-level land grabbing and wildlife poaching continue to threaten Cardamom's biodiversity daily.

To protect this park, Global Conservation, Conservation International (CI), and the Ministry of Environment are deploying new technologies, including command and control, cellular trailcameras, aerial surveillance, and targeted ranger patrols for increasing the effectiveness of forest and wildlife protection.

Wildlife Alliance builds rangers' professional capacity and provides full support for their livelihoods. This enables them to focus completely on their duties and creates a culture of zero tolerance for corruption.

*(right) Park rangers on patrol with our partners Wildlife Alliance in Cardamom National Park*







## Case Study: Cardamom National Park (cont.)

### Summary of Progress:

With support from Global Conservation, Conservation International continued to provide support for protected area management and law enforcement in the CCMNP and the Biodiversity Conservation Corridor. With the Ministry of Environment (MoE) and Provincial Departments of Environment (PDoE) as the main implementing partners, CI continued to support eight MoE officers and twelve PDoE officers, as well as to provide technical support, oversight and funds for supplies and salary supplements for 42 rangers to patrol CCMNP from six ranger stations.

### 2022 KEY ACTIVITIES AND OUTCOMES

#### Patrol Activities:

- 42 rangers (one female ranger) from 6 stations conducted patrols covering a total of 24,422 km (6,271 km by car, 2,202 km by foot, 434 km by boat, and 15,515 km by motorbike).
- Each station achieved over 100% of the patrol plan and overall target activities. This includes 747 patrols, 1,012 days, and 265 nights. Deforestation hotspots have been checked and processed and the legal documents sent to PDoEs and provincial courts.
- 2 offenders were arrested for land clearance, 18 people were educated due to entering the PA without permission, 3 people were fined due to illegal logging transportation.
- 49 cases of illegal logging were encountered, totaling 32 m<sup>3</sup> of timber (14.95 m<sup>3</sup> of 15 cases were collected and confiscated to store at ranger stations, and 17.50 m<sup>3</sup> from 34 cases were left and destroyed at scenes as it was impossible to transport).
- 103 locations of illegal land encroachment were identified totaling 1,267.13 hectares being cleared.
- 50 cases of illegal land clearing, and 2 cases of illegal timber logging were sent to court.

*(at right top to bottom) Trail cams monitor wildlife and provide park protection, Illegal land clearing and timber logging offenses are being prosecuted*





### Case Study: Cardamom National Park (cont.)

- 1 elongated tortoise (*Indotestudo elongata*) was released, and 5 kg of wild pig (*Sus scrofa*) was destroyed.
- 33 illegal camps were destroyed (1 illegal settlement, 13 illegal huts, 10 illegal logging camps, and 9 illegal poaching camps).
- 66 chainsaws and 1 small sawmill were collected, confiscated, and destroyed.
- 21 illegal vehicles were confiscated (1 excavator, 2 trucks, 1 vehicle, and 17 motorbikes).
- 106 land clearance prohibition signs were posted between the boundary of farmland and forest.
- 68 species of wildlife were directly observed during patrols.
- 690 traps and snares were collected and destroyed, including 7 bird nets, 7 civet traps, 288 nylon snares, 27 small bow snares, 351 small wire snares, and 10 wire snares (motorbike brake cable).
- 7 illegal hunting tools were confiscated including 4 air guns and 3 home-made guns.
- 8 sets of illegal fishing gears were collected and destroyed.

### SUSTAINABLE LIVELIHOOD DEVELOPMENT

Community consultations for project FPIC and REDD+ planning and implementation:

CI conducted 56 village consultations with 2103 villagers (1008 female) across 24 villages which are set in four communes within Pursat and Kampong Speu provinces. The consultations sought to inform the communities of the Central Cardamom REDD+ Project and to gain Free Prior and Informed Consent from the communities to initiate project implementation. Consent was gained from all 24 villages.

*(right) Near Osoam Village in Koh Kong Province*







### **Case Study: Cardamom National Park (cont.)**

Socio-economic livelihoods assessments:

CI conducted village level sketch mapping with 24 villages through workshops with 299 community members (96 female). The sketch mapping process gathered relevant village information and mapped community land use and resources. The sketch mapping was used as an engagement tool for new communities where CI has not been present and will later be utilized to inform the village-level development initiatives.

Value chain and field assessments:

A value chain scoping assessment was conducted to identify opportunities and constraints to improve the incomes of small-scale farmers in the project area. Four potential products, including Banana, Cardamom, Orange, and Rice were selected for conducting further value chain analysis. 97 participants (41 female) joined the interviews and focus group discussion in 9 villages in Kampong Speu, Koh Kong and Pursat province.

Implementation of sustainable livelihoods:

CI continues to support a butterfly farm enterprise in Tatei Leu community. In this reporting period, CI worked with Banteay Srey Butterfly Center to provide a technical training to the Spean Kdar Butterfly Enterprise, focusing on butterfly production and enterprise operations. The enterprise continues to produce and release butterflies, while keeping a strong relationship with BBC with a vision to sell to them once international flights carrying live animals start again.

Additional targeted livelihoods interventions will be informed by the results from the value chain and agricultural assessments. The assessments will identify products and systems which are both economically and environmentally suitable to focus on, for example Cardamom production, processing and sale within an agroforestry system for communities within a Community Protected Area, or chicken production for landless households who are high risk profiles for illegal forest activities.

### **CONSERVATION TECHNOLOGY TRAINING**

Train PDoE management team and rangers in SMART:

*(left) Eco-tourists at the Banteay Srey Butterfly Center near Siem Reap, Cambodia*



## Case Study: Cardamom National Park (cont.)

CI conducted a trainer of trainer (TOT) training to 33 MoE and PDoE managers and rangers from seven provinces. The training aimed to strengthen the capacity of these focal people in using and training others on the use of SMART law enforcement activities.

CI provided training to 24 Officers and Rangers from Koh Kong, Kampong Speu and Pursat, aimed at strengthening their capacity to observe and record patrol data and better understand how to use the SMART app with a smart phone.

CI supported 41 rangers to use up-to-date deforestation data to plan future law enforcement activities in Pursat, Koh Kong and Kampong Speu Provinces.

## BIODIVERSITY SCIENCE

A holistic and long-term biodiversity monitoring plan for the CCMNP is being developed. In this reporting period, the plan has been drafted and presented to MoE and other conservation stakeholders for feedback and input. The monitoring plan will align with the REDD+ verification and validation methodology and will allow for robust biodiversity monitoring over the next 15 years.

To support the development of the REDD+ Project, CI conducted 23 forest inventory and bird surveys within this period. The data collected will be used for both monitoring of biodiversity in CCMNP, and to calculate carbon amounts for the REDD+ Project.

A targeted camera trap study was conducted at specific sites within CCMNP. A team of 22 local community members and rangers supported the work and were trained by CI in the deployment and use of camera traps.

## SAFEGUARD SYSTEM

Set up and implement a grievance redress mechanism enabling complaints to be tracked and addressed:

A grievance mechanism was established covering all participating villages. This mechanism provides several access points (grievance boxes, telegram, facebook etc.) which the communities can use to submit any grievances directly caused by project activities. CI has also established the systems used for collecting, assessing and responding to grievances. During this reporting period 30 grievance boxes were installed in 24 villages and 1346 village members were made aware of the system.

*(right) 23 bird surveys were conducted at Cardamom*



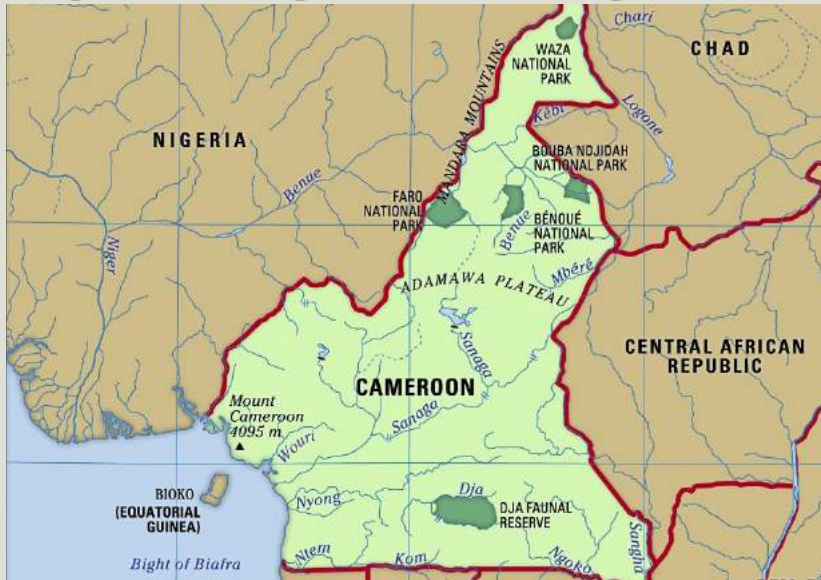


# Global Conservation in AFRICA





# DJA FAUNAL RESERVE



The Dja Faunal Reserve is the last bastion for forest elephant survival in Cameroon. After losing over 200,000 forest elephants in the past 20 years, only a few thousand remain in the Congo Basin outside of Gabon.

Here, Global Conservation is entering into our first projects in Central Africa, where we will deploy Global Park Defense to address critical threats to Dja World Heritage Park in Cameroon, Minkébé National Park in Gabon, and their connected landscapes.

Due to its UNESCO World Heritage status, Dja Faunal Reserve has received solid support from the European Union and won numerous legal battles against deforestation. Until now, protection of elephants has not been a priority – and some would say it's almost too late. Our plan is to deploy Global Park Defense to protect this forest and allow its elephant numbers to increase 30% in the next five years.

The Dja Faunal Reserve is believed to be one of Africa's most species-rich rainforests, although little is known about most groups of plants and animals. More than 1,500 plant species are known to grow in the reserve, and at least 107 mammals live among them, including megafauna like forest elephants, bongos and leopards.

At least 14 of those mammals are primates, including several endangered species such as the western lowland gorilla, chimpanzee, white-collared mangabey, mandrill and drill. Very few places in Africa support such a high diversity of primates.

The wildlife & habitat of this very important forest ecosystem are threatened by illegal logging, commercial hunting of ivory from forest elephants, bushmeat hunting, agro-industrial plantations, mining and infrastructure development. Despite its largely intact primary forest habitat, the animals are being poached at alarming rates.

One of the most alarming trends in the Dja ecosystem is the steep decline of critically endangered African forest elephants. Only 219 elephants are estimated to remain in Dja; nearly 10,000 of them lived here in the year 2000, representing a 97% decline in the population in around 20 years.

Unfortunately, poaching has continued despite sustained efforts by the Cameroon Ministry of Forest and Wildlife and their partners to stop it. Poaching is often carried out by organized criminal syndicates who cross between Cameroon and Gabon.

The number of critically endangered western lowland gorillas has also declined from over 6,000 in 2015 to just 1,258 as of 2018. Like elephants, gorillas are targets for poachers, who sell their meat in towns and cities.





## Dja Faunal Reserve

Global Conservation is investing in a 5-Year Global Park Defense program to achieve ‘No Cut, No Kill’ protection within the Dja Faunal Reserve. Rangers from both Dja World Heritage Park in Cameroon and Minkébé National Park in Gabon will work together against the criminal syndicates that are killing tens of thousands of forest elephants. Our goal is to increase the number of elephants in Dja by 30% over the next 5 years, and to stop elephant poaching entirely within Dja.

We will build Dja’s first Command Center, establish community protection units in four villages bordering the park, and purchase ranger transport vehicles for effective rapid response to intelligence and surveillance by Dja Rangers and Community Ecoguards.

Our focus is to radically improve protection and enforcement capability of the government wildlife service, together with improving infrastructure and logistics to respond effectively to the threats facing Dja, especially for the last remaining elephants.

To accomplish this, GC will provide support for proactive patrols and response to illegal activity. We will improve use of intelligence and rapid response of park rangers and law enforcement personnel to effectively address threats facing these parks in close coordination with the Cameroon MINFOF, ANPN Gabon, Police, Gendarmerie and Customs.

Global Conservation conducted an initial assessment in Dja in November and December 2021. This involved several field visits, discussions with staff, and random skills tests. It is critical that Global Conservation assists Dja to strengthen anti-poaching, protection and enforcement.

### Key Goals

- Build a regional program working in Dja World Heritage Park in Cameroon
- Strengthen capacity (e.g. training, equipment) for site-based protection by MINFOF law enforcement officers in the Dja Complex and with ANPN Gabon Rangers
- Increase patrol coverage and frequency in important areas for wildlife
- Enable cross-border collaboration and information sharing to investigate and disrupt transnational wildlife trade
- Engage local communities in the fight against illegal logging and wildlife poaching



*Rangers patrol the Dja River, which surrounds most of the park*

*Rangers in Dja Faunal Reserve arrest a suspected poacher*





## PROGRESS TO DATE

- Global Conservation has established its main operational base in Lomié, from where all the activities in GC target areas will be managed. We renovated the building and established a control room.
- To facilitate the deployment of the team and data collection, the Dja Conservation Service was equipped with field equipment including 6 PDAs, 6 solar panel kits, 6 power banks, 1 laptop, 6 tents, 40 uniforms, 40 raincoats, 20 berets, 20 belts, 20 pairs of boots and 20 pairs of rainboots.
- In February 2022, Dja received a donation of 20 Patagonia uniforms from the Thin Green Line Foundation and Global Conservation.
- Over 180 Ecoguards were trained in SMART across a total of three training sessions over the last 6 months to ensure effective patrolling using the SMART approach.
- We also provided on-the-ground training in GPS use, compass use, map reading and forest navigation in order to ensure teams respect itineraries and mission targets.
- Following intense training of Dja Wildlife Reserve ecoguards by UK-based patrol training services providers (Retarius, Veterans 4 Wildlife, etc.), Global Conservation has embarked on a refresher training of all active ecoguards.
- More than 300 law enforcement agents were trained in wildlife law in 2021, and 63 cases have gone to trial.
- Global Conservation has carried out in collaboration with ZSL and MINFOF an analysis of threats using data from SMART patrols and data from a recent Dja faunal inventory.
- In order to ensure patrol missions are safe, Global Conservation has provided additional In-Reach devices to the Dja conservation service for each patrol because mobile coverage in Lomié is unreliable for calls and even SMS.
- We have increased patrol coverage to more than 80% of the reserve and are ensuring that regular SMART-based patrol plans and reports are generated.
- We have implemented a robust wildlife monitoring system for mandrills, big cats, elephants, and great apes.



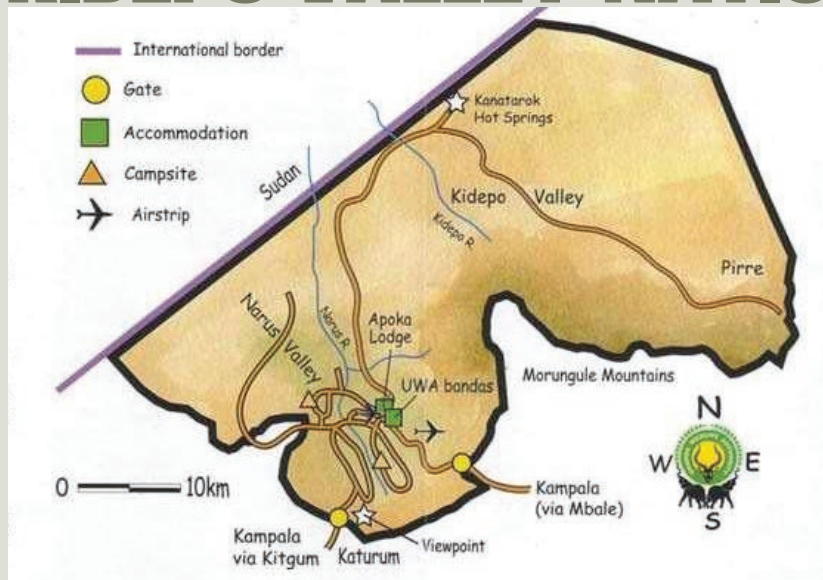
*The donated uniforms are made by  
Patagonia for the park rangers*

*We have put protections in place  
for the great apes in Dja*





# KIDEPO VALLEY NATIONAL PARK



In Uganda, Global Conservation is helping to improve protected area management. Operations and staff are only based within Kidepo Valley National Park, yet wildlife spends 50% of its time outside. Poaching outside of the park is high.

For UWA to have a successful program outside of the park, and transboundary management connecting to the Northern Rangeland Trust conservancies in Kenya, their core management capability must be expanded beyond the park. The foundations of protected area management must be established at Kidepo HQ, including the Joint Operations Command Centre and a digital radio system that covers the park and surroundings.

In addition, UWA's capabilities (initiated 4 to 5 decades ago) must be realigned to the threats and priorities of today. Until now, UWA has simply used existing and outdated facilities, with no communications and operations management systems in place to support effective real-time management.

Global Conservation is supporting Uganda Conservation Foundation (UCF) to work with the Northern Rangeland Trust (NRT) to develop a successful transboundary network of 40+ communities for wildlife conservation and improved livelihoods.

## Primary Objectives

- Deploying Global Park Defense and installing the same foundations of park management as Global Conservation enabled in Murchison Falls National Park.
- Construction of a Joint Operations Command Centre and digital radio network, and deployment of the EarthRanger park protection system. This will allow for protection well beyond the boundaries of the park.
- Supporting scientific reintroduction & protection of rhino to northern Uganda.
- Assisting Northern Rangeland Trust on plans to expand the success of NRT's 40+ Kenyan conservancies across the border into northeast Uganda, linking these landscapes for both communities and wildlife.







# MANA POOLS NATIONAL PARK



Due to the hard work of Zimbabwe's Bushlife Support Unit and Mana Pools National Park Authority, with our support, this year rings in good news – a 4th consecutive year with no elephant poaching in Mana Pools World Heritage Site!

Global Conservation celebrates supporting park and wildlife protection for the past four years through deployment of Global Park Defense with our partners: Bushlife Conservancy and the Akashinga Rangers which work together to stop wildlife poaching and illegal activities in and around Mana Pools.

Bushlife Conservancy itself provides vehicles, fuel, camping equipment, medical resources, and more to the rangers at ZimParks who work tirelessly to stop the poaching of elephants and all other wildlife.

Mana Pools National Park and World Heritage Site is one of Africa's most renowned game-viewing destinations. It's here that the floodplain of the Lower Zambezi River turns into a broad expanse of water after each rainy season attracting a myriad of wildlife as the flood recedes.





## Mana Pools World Heritage

These 2,500 square kilometers of the park, which includes river frontage, islands, sandbanks, and pools, flanked by forests of mahogany, wild figs, and baobabs, is one of the least-developed national parks in Southern Africa.

This is also the last national park in Africa where visitors can get permits to walk unescorted among big game, encountering painted dogs on the hunt, elephants standing on their hind feet to access the tastiest leaves, and the occasional armored pangolin.

The Zambezi Valley has historically been plagued by rampant elephant poaching. By 2014 a survey was completed that showed how elephant numbers had decreased 40% from 18,000 in 2002 to 11,000 in 2014.

Bushlife is run by conservationists Nick and Desiree Murray. The organization's operations cover the Lower Zambezi Valley, an area of 10,000 square kilometers. Bushlife works in close coordination with Zimbabwe Parks and Wildlife personnel to help patrol remote areas, identify, detain and arrest poachers, monitor prosecutions and sentencing, and recover and rehabilitate stolen wildlife.

Global Conservation's support has funded ranger patrol rations, fuel, and vehicle maintenance, enabling Bushlife to deploy rangers on anti-poaching activities in the Mana Pools, Sapi, Nykasanga, Rifa, and Marongora areas. Global Conservation has also provided a Thuraya Satellite Network and Galaxy S8 smartphones to improve communications among ranger teams and for data collection while on patrol.

*Nick Murray*



*These painted dog pups will become pack hunters in time*

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*Bushlife rangers relocating a lion that entered a village*







*Snares like this were common  
in Mana Pools until a few years ago*

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*Zebras are an important indicator species  
inside the park boundaries*



## Mana Pools World Heritage

Regular patrolling and presence of rangers has been a big deterrent to poachers both inside and outside of the park. There have been at least four cases where early warning by informants kept poachers out of the Lower Zambezi Valley. Bushlife operates two vehicles with intelligence officers and funds covert operations with fuel, informant payments, and other operational costs.

Despite fears that poaching would increase due to the Coronavirus pandemic, our partners, in their support of National Parks rangers and law enforcement, have been able to maintain their zero-poaching streak in Mana Pools National Park. Fewer tourists can lead to increased poaching, as more poachers are able to enter parks undetected. Excluding the pandemic years, normally about 7,000 tourists visit this area each year, generating vital revenues for park protection. Although the market in ivory was banned in China in 2018, the black market continues to thrive, with a kilogram of ivory selling for as much as \$2000 USD.

### We have five primary goals in supporting Global Park Defense in Mana Pools:

1. Deployment of Global Park Defense systems, logistics, rations, anti-poaching equipment, and communications for all park rangers.
2. Achieving 'No Cut, No Kill' within the park by increasing arrests and jail sentences.
3. Increase size of Mana Pools National Park to protect adjacent high biodiversity areas by 30-50%.
4. Increasing wildlife populations for endangered indicator species in five years towards carrying capacity.
5. Training of park rangers on Global Park Defense technologies and systems for rapid response and targeted patrolling.



# NGORONGORO WORLD HERITAGE



## Warriors for Wildlife: Community-Led Protection

The pandemic had massive impact on popular tourist areas like Ngorongoro Crater, a UNESCO World Heritage Site in Tanzania. Tourism revenues went to nearly zero for two years and the NCAA is facing major financial problems, with nearly no capacity to manage the over 90,000 humans and 500,000 cattle living around the famous Ngorongoro Crater.

With support from Global Conservation, African People & Wildlife (APW) and its partners – including the Ngorongoro Conservation Area Authority (NCAA) and local communities – will foster communication and collaboration between rapid response anti-poaching teams managed by the protected area and a specialized network of community Warriors for Wildlife. This will create a bridge between local pastoralists and wildlife authorities.

Global Conservation's support of this project is an investment in one of our world's most diverse and ecologically important places, ensuring the continued development and practice of conservation that marry strong community engagement and wildlife protection with technology-based solutions.

*"I talk with my community about how we can come together to create long-lasting solutions for living with wildlife. Because I've created a lot of trust within my community, I see a bright future for big cats."* — Elihuruma Lothi, Warrior for Wildlife





## Ngorongoro World Heritage

This new GC Project will work with the NCAA to train and support up to 12 rapid response anti-poaching teams, who will also specialize in APW's unique community engagement approach. Enhanced community involvement and outreach leads to improvements in human-wildlife conflict mitigation, sustainable natural resource management, and critical species protection.

Proactive protected area patrol teams that are equipped with state-of-the-art technology informed by the Global Park Defense model and who engage more productively with local community members are more effective at reducing illegal activities. With capacity building in risk management and conflict resolution, the NCAA anti-poaching teams will improve their collaboration with communities while fulfilling their law enforcement missions.

### Key project activities and needs include:

- **Training NCAA zonal rapid response teams in effective community engagement and human-wildlife conflict mitigation**
- **Supporting NCAA zonal rapid response teams with state-of-the-art equipment and wildlife monitoring systems as well as regular field training in anti-poaching**
- **Building a community network of Warriors for Wildlife for anti-poaching and human-wildlife conflict mitigation support, supplied with state-of-the-art equipment and regular training**
- **Providing technology, resource, and equipment support including laptop computers, tablets, smart phones, GPS, data packages, radios, monitoring platforms (e.g. EarthRanger), trail cams and wildlife surveillance packages**
- **Anti-poaching patrol support for routine and rapid response to all incidents — regular patrols, poaching incidences, human-wildlife conflict, and community emergencies**

Critical project funding will target trainings, anti-poaching patrol costs, support for Warriors for Wildlife, data collection, and key equipment and technologies.



## African People & Wildlife

### What is Warriors for Wildlife?

The Warriors for Wildlife team provides rapid response to human-wildlife conflict events across 30 communities in northern Tanzania. Using the ArcGIS Online suite of apps and tools, the Warriors, who are young people from local Maasai communities, report from the field on livestock attacks, large carnivore presence, and Living Wall requests. ArcGIS data collection applications transmit the data from a smartphone app to a cloud-based server in real time, allowing APW staff to quickly determine human-wildlife conflict hotspots and direct field staff to areas where tensions are highest.

Because Warriors for Wildlife were born and raised where they work in northern Tanzania, they understand the unique challenges faced by the local people. When a human-wildlife conflict event occurs, Warriors are often able to defuse the situation and prevent their fellow community members from retaliating against wild animals. They also work to change long-held negative perceptions about lions and other wildlife, offering solutions and guidance for a peaceful coexistence.





# CREATURES UNITED

ANIMALS ARE DISAPPEARING  
IN HUGE NUMBERS. IF THEY GO,  
SO WILL WE — **AND OUR PLANET.**



We are excited to announce the launch of Creatures United, a ground-breaking campaign that will change the face of conservation. Creatures United is an alliance between corporations, NGOs and other organizations who are joining forces to create a disruptive, social- first communications platform designed to increase awareness, convene community, educate citizens, drive behavior change and raise funds for vital conservation projects focused on reversing the global threat to our biodiversity.

The campaign will use animated animal characters, voiced by celebrities. We will also leverage NFTs to create, build and engage community around Creatures United, raising funds for its mission and projects. Running beneath every campaign will be an ongoing program of resources, education and tools to help all of us to move towards nature-positive behaviors in every aspect of our lives.

## Key Steps:

**Convene** - Convening the leading companies from different industries who want to drive innovation at a product or service level to become part of the solution.

**Fund** - Massive funding-engine through NFTs that will directly support habitat conservation & nature restoration projects, a campaign for nature, and a fund for content and storytelling about biodiversity.

**Amplify** - Elevating and amplifying the existing work of NGOs/academic institutions/businesses/ leaders in this field.

**Educate** - Raising awareness of biodiversity loss through high profile, research-based campaigns. Educating citizens about the link between their actions and biodiversity.

**Act** - Encouraging collective responsibility through specific behavior changes and citizen action.



*Dr. Gerardo Ceballos helps newborn crocodiles out of their eggs on a remote island in Turneffe Atoll, Belize*

## Creatures United Founder:

Dr. Gerardo Ceballos is Senior Researcher at the Institute of Ecology of the UNAM, an institution where he has been employed since 1989. He received his degree in biology at the Autonomous Metropolitan University. After graduate studies at the University of Wales, he received his doctorate at the University of Arizona. His academic interests include animal ecology, biogeography and conservation of nature. He has directed nineteen thesis projects, thirteen master's, and five PhDs.

He is a member of several scientific societies including the Mexican Academy of Sciences, the American Association for Ecology, and the Mexican Association of Mammalogy. Some of his books include: The Annihilation of Nature, The Endangered Birds of Mexico, Endangered Animals of Mexico, Wild Mammals of Mexico, Biodiversity, Ecosystems and Conservation in Northern Mexico, Mexican Nature, and Wildlife Mexican.



## MARINE PROJECTS

1. Gulf of California World Heritage - Mexico
2. Jardines de la Reina National Park - Cuba
3. Machalilla National Park - Ecuador
4. Palau Northern Reefs - Micronesia
5. Turneffe Atoll Marine Reserve - Belize
6. Coiba National Marine Park - Panama
7. Miloi'i Sustainable Fishing Area - Hawai'i (not shown)
8. La Jolla Marine Protected Area - California
9. Channel Islands Marine Protected Area - California
10. Dangermond Res. Marine Protected Area - California

## ASSESSMENTS ●

### AMERICAS

Anacapa, Channel Islands, California  
 Catalina Island, California  
 Naples Long Reef, California  
 Klamath, California  
 Coal Oil Point, California  
 Galapagos, Ecuador  
 Manzanillo, Costa Rica  
 Osa Peninsula, Costa Rica  
 Tayrona National Park, Colombia  
 Isla del Espiritu Santo, Mexico

### ASIA

American Samoa  
 Sipadan, Malaysia  
 Bunaken, North Sulawesi, Indonesia  
 Dalawan National Marine Park, Indonesia  
 Nan Mandol, Micronesia  
 El Nido, Philippines  
 Fakarava, French Polynesia  
 Rote Island, Savu Sea, Indonesia  
 Tuvalu, South Pacific  
 Vavau, Tonga  
 Kimbe Bay, Papua New Guinea  
 Ari Atoll, Maldives  
 Lembah Strait, Indonesia  
 Similan Islands, Thailand  
 Wakatobi, Indonesia  
 Misool, Raja Ampat, Indonesia  
 Taveuni, Fiji  
 Nusa Penida, Indonesia





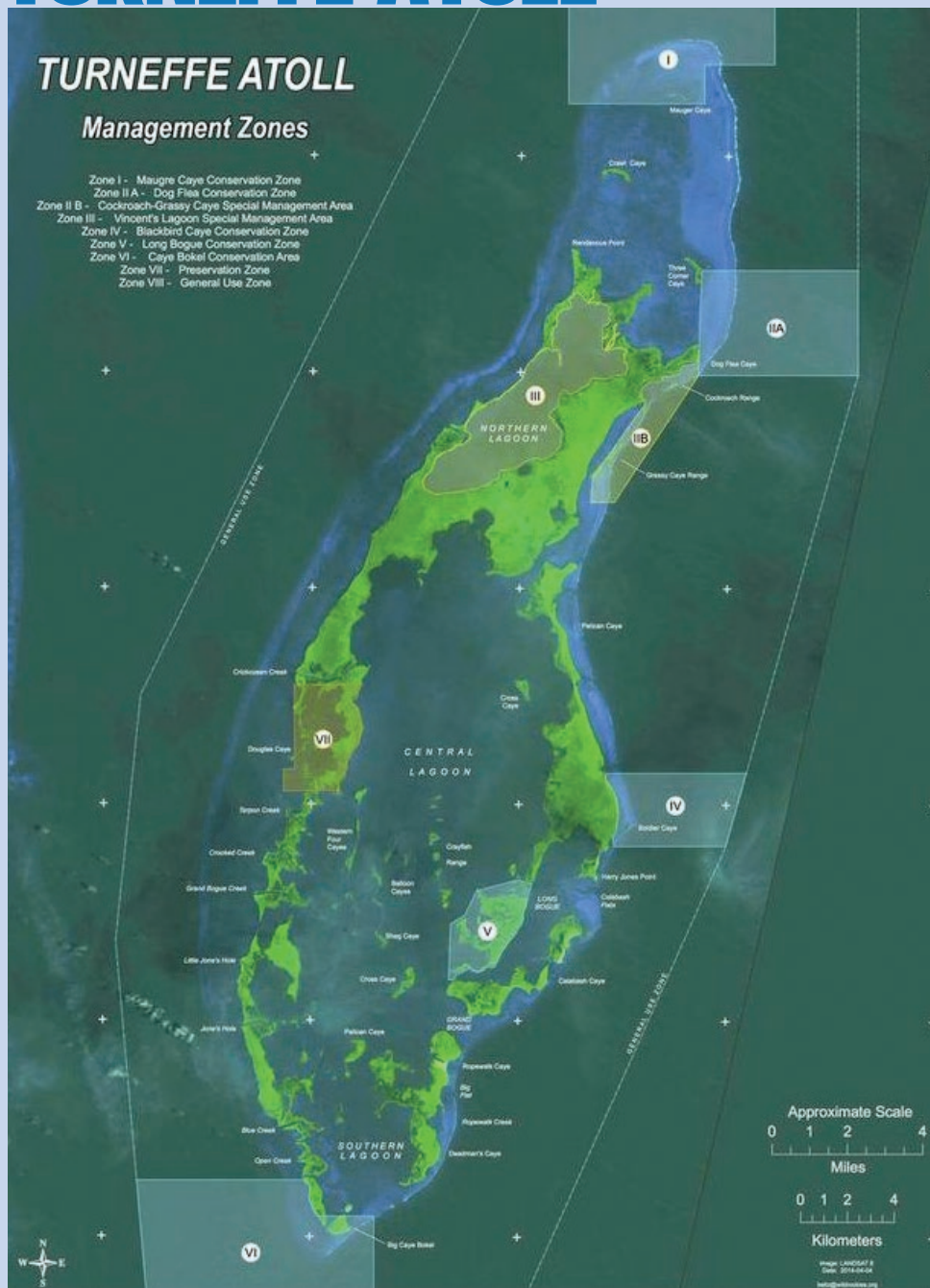


#### **PALAU NORTHERN REEFS**

Global Conservation is supporting the Ngarchelong Rangers in Palau's Northern Reefs with Global Park Defense systems and training. These reefs are among the best-preserved marine areas in Palau.



# TURNEFFE ATOLL



A land and seascape consisting of highly productive flats, creeks, and lagoons dotted by more than 150 mangrove islands, Turneffe Atoll in Belize is a nature network. Home to more than 500 species of fish, 65 species of stony corals, sea turtles, manatees, dolphins, seabirds, and other wildlife, this is one of the most important marine ecosystems in the Mesoamerican Reef, and also serves as a model for other coastal and island MPAs.

Its diverse marine and terrestrial ecosystems are considered to be globally outstanding. Surrounded by deep ocean, most coastal and marine ecosystems are well-represented, with seven broad ecosystems and thirteen fine ecosystems identified and mapped.

Turneffe is an excellent example of the high degree of ecosystem interconnectivity that is key for healthy and productive reef systems.

Within the conservation zone of the Marine Reserve, commercial fishing is not allowed. No-take recreational activities, such as snorkeling, scuba diving, and kayaking are permitted within this zone. Sport fishing is allowed but only with a valid license, and only as catch and release.

Global Conservation is supporting the deployment of Marine Monitors on the North and South ends of Turneffe Atoll to provide 24/7 monitoring for real-time response to potential illegal activities both day and night.





## Turneffe Atoll

The M2 system has been deployed at the Caye Bokel base, a private property overseen by Turneffe Atoll Sustainability Association (TASA) personnel to monitor the four types of vessels authorized in the marine reserve. Alerts of potential illegal activities along with photos and videos are sent to the Director and Head of Protection, ensuring threats can be quickly evaluated and ranger teams can respond quickly.

Turneffe Rangers now conduct regular and strategic patrols using SMART and have begun the deployment of drones as well as vessel-monitoring systems with voluntary fishermen.

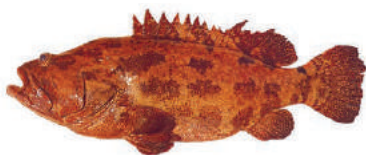
## 2022 PATROL EFFECTIVENESS

- Number of M2 Alerts: 277
- Number of Patrols: 168 (1 every 2-3 days)
- Total length of Patrols: about 5,450 nautical miles
- Average per patrol: 32.6 nautical miles
- Sightings: 1139, averaging 3.12 per day
- Inspections: 474, 41.7% of the sightings
- Wildlife Confiscations: Five confiscations of spiny lobster (121 kg), five confiscations of ciguatoxic fish species (57 kg)
- Prosecutions: Ten fines of CUP\$5,000 each

### Ciguatoxic Fish Species



Black Fin Red Snapper



Tiger Grouper



Lyretail



Leopard Coral Grouper



Areolated Coral Grouper



Moray Eel



Left to right: Jeff Morgan, Francisco Asturias & Dr. Gerardo Ceballos





# HOW YOU CAN HELP



[globalconservation.org](http://globalconservation.org)

## Critical Funding Levels (annual)

\$250,000 to Sponsor a REDD+ Carbon Project

\$100,000 to Protect an Endangered National Park

\$50,000 to Protect an Endangered Marine Park

\$25,000 to Create a Park Master Plan

\$25,000 to Fund a Command Center

## \$10,000 Funding Level (annual)

- Create an Ecotourism Plan
- Deploy SMART Patrols
- Fund a Ranger Team

(UAV Drones, Satellite Phones, Trailcams, Trauma Kits)

Please contact Jeff Morgan if you would like to deploy your funding to a specific park or region. We look forward to hearing from you!





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