The SMART Partnership is a coalition of global conservation organizations, government partners, and individuals committed to conserving biodiversity, reducing the impacts of the illegal trade in natural resources, strengthening conservation law enforcement, and enhancing management of conservation areas.

smartconservationtools.org
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SMART is an inspiring example of global collaboration and partnerships, and the positive impact they can have on research and conservation projects around the world.

—Dan Ashe, President and CEO, Association of Zoos and Aquariums
Welcome to the SMART Annual Report for 2018. We are excited to share our successes with you. SMART has continued to evolve and grow over the past year to meet the needs of the conservation community. We’ve completed major enhancements to the SMART software application, and we’ve seen strong and consistent growth in the number of sites and countries adopting SMART, as well as in the positive impacts SMART is having around the world.

Much of our success in SMART is a direct result of the incredible diversity within our global user community and the range of ways they are using SMART to solve conservation problems. From measuring the success of ranger patrols, to coordinating national deployments of forest monitoring programs, to quantifying fisheries offtake across marine protected area systems, to tracking utility consumption at research facilities, SMART users are adopting and adapting SMART to address the many complex conservation needs at their sites. SMART adoption is also expanding into new parts of the world. For example, the polar bear range states, beginning with Norway (which held its first SMART training in 2018), will begin using SMART in order to standardize their polar bear monitoring systems. Similarly, several Caribbean islands, including Jamaica, Cuba, the Bahamas, and St. Lucia, began implementing or building the foundation for SMART implementation in 2018. The SMART Partnership is excited to see members of the global conservation community embrace the platform and make it their own, and to see the impact SMART is having globally.

The SMART Partnership is gratified to see growing recognition of the value the conservation community places in our tools, training, and materials. Increasing adoption, growing support, an expanding network of partners, and the recent awarding of the William G. Conway International Conservation Award for Innovation all confirm that SMART is helping to revolutionize the practice of conservation. As we look to the year ahead, we are excited by upcoming opportunities and challenges. In 2019, we will be developing artificial intelligence and machine learning approaches to help improve patrol planning and effectiveness, integrating Vessel Monitoring System data for SMART marine applications, introducing a new way to track individual entities and their relationships through SMART Profiles, releasing a new mobile data collection app, and expanding the resources and opportunities for training available to the SMART community.

We want to thank all of you in the SMART Community: the frontline rangers and practitioners who use SMART on a daily basis; those managing protected area networks who integrate SMART data into their management plans; our partners in research and technology who have helped SMART grow from humble beginnings to the global standard for protected area monitoring; and our funders, without whom none of this work would have been possible. To all of our collaborators, partners, colleagues, and friends, we extend our gratitude for your contributions to SMART’s continued success and growth. We are looking forward to another year helping to protect wildlife and secure a future for nature.

Richard A. Bergl (Steering Committee Chair, SMART Partnership)
Drew T. Cronin (Program Manager, SMART Partnership)
INTRODUCTION

SMART: THE GLOBAL LEADER IN PROTECTED AREA MANAGEMENT SOLUTIONS

The Spatial Monitoring and Reporting Tool (SMART; smartconservationtools.org) was developed by the SMART Partnership, a broad consortium of global conservation organizations, to improve the performance of protected areas, both on land and at sea, and help frontline practitioners make better use of their available resources.

Now, SMART has evolved into a holistic protected area management platform, encompassing desktop and online software and mobile data collection, as well as cloud and Internet of Things (IoT) connectivity. SMART helps enforcement officers, rangers, and monitors document where their patrols go, what they see, and how they respond.

Those data are fed into a central database where it can be analyzed, visualized, mapped and reported on in order to help managers understand where the greatest threats are and how best to plan future patrols for maximum impact. This helps them allocate their time and resources more effectively while also feeding clear results back to the rangers themselves. Its success derives from a bottom-up approach, drawing directly on the needs identified by staff working in the field.

All told, SMART makes it possible to collect, store, communicate, and analyze ranger data on illegal activities, biodiversity, enforcement routes, and management actions to better deploy resources and evaluate performance. The tool’s effectiveness has made it the global leader for protected area management solutions — it’s now used at more than 765 sites across more than 60 countries and has been adopted as the national tool for protected area management in 14 countries.

SMART is simple to deploy and use, increases efficiency, and, in a world of limited resources, delivers effective conservation efforts.

CURRENT SMART PARTNERSHIP MEMBERS
Facing significant threats from hunting and habitat loss, gorillas are threatened across their range, making effective protection of the remaining populations a top priority. Through SMART Partnership organizations and their collaborating partners, SMART is now being implemented to help improve protection at more than 50 sites across gorilla range, including national adoption across Gabon, Republic of Congo, and the Democratic Republic of Congo. SMART has become a crucial part of the toolkit for conserving gorillas, not only for monitoring law enforcement efforts in protected areas, but also for large-scale population monitoring across the Congo Basin. SMART has become indispensable for operating gorilla conservation efforts at many of these sites.

“None of what we do in terms of protection of gorillas in Nigeria would be possible without SMART and CyberTracker.”

— Andrew Dunn,
Country Director, WCS Nigeria Program
SMART has helped WCS Nigeria to improve the effectiveness of law enforcement patrols and to more efficiently monitor illegal activities at all its sites. Using CyberTracker together with SMART in a complementary way has proved extremely useful. Using CyberTracker on handheld data-capture devices to collect data in the field improved the quality of data collected by rangers. The data collected are downloaded directly onto a laptop and analyzed using SMART, thereby saving time previously spent manually entering data and enabling timely reporting. Using CyberTracker and SMART has led to a significant increase in patrol effort (67%) and a drastic reduction in hunting pressure (71%) at all WCS sites in Nigeria since implementation began.

**CROSS RIVER LANDSCAPE, NIGERIA**

**DJA BIOSPHERE RESERVE, CAMEROON**

The Dja Biosphere Reserve (DBR) of southern Cameroon is one of the largest protected forests in Africa, with over 90% of its area left undisturbed. SMART implementation began in 2015, with ranger teams using CyberTracker on handheld devices to collect data on wildlife and illegal activities. These data are used in planning and target setting for new patrols. Since its implementation, patrol effort and coverage have increased to cover 90% of the DBR followed by increases in arrests and seizures that have contributed to disrupting poaching and other illegal activities. To date, over 80 field rangers have been trained in the use of SMART. To help ensure sustainability of SMART implementation across Cameroon, 10 government SMART focal points have been appointed who will manage a centralized database configured through SMART Connect.

**KAHUZI-BIEGA NATIONAL PARK, DR CONGO**

Kahuzi-Biega National Park (KBNP) is one of five World Heritage Sites in the Democratic Republic of Congo. Together with its surrounding community forest, KBNP is the the main stronghold for the endemic Grauer's gorilla (*Gorilla beringei graueri*), protecting roughly 60% of its 3,000 remaining individuals. One of the three SMART pilot sites in DRC in 2013, implementation quickly evolved to include optimized workflows and mobile data collection, and there are now more than 100 administrators and rangers trained in the use of SMART. Since its implementation, there has been an increase in number of patrols, the gorilla population in the park has remained stable, and SMART results have been used to respond to UNESCO data inquiries, support the prosecution of poachers and other offenders, and enhance strategic planning and interventions. Building on the success of the SMART pilot sites, the DRC protected area authority (Institut Congolais pour la Conservation de la Nature-ICCN) adopted SMART nationally as the solution for protected area management and strategic planning. There are now more than 20 protected areas and reserves across DRC using SMART centrally managed by the SMART Technical Coordination Unit (TCU) under ICCN.
HIGHLIGHTS

**LEADERSHIP**

- 9 smart partners
- 3 governance councils
- 11 task forces

**FOOTPRINT**

- >765 SMART sites
- >60 countries with SMART sites
- 14 national adoption countries

**SOFTWARE**

- 6 major releases
- 16 SMART plug-ins
- >10 software languages

**SUPPORT**

- >40 resources developed
- >135 trainings held
- >1400 people trained in SMART

**COMMUNITY**

- >380 community forum members
- >115 government partner agencies
- >8900 individual software downloads

TIMELINE PHOTO CREDITS: Asian Elephant in Thailand: Adam Oswell | WWF-Thailand; SMART patrol ranger badge: Anton Vorauer | WWF; Ruffed Lemur in Madagascar: R.Isotti, A.Cambone | Homo Ambiens | WWF; Tiger in Bhutan: Emmanuel Rondeau | WWF-UK; Monkey: Nguyen Van Truong | FFI; Lion: Rich Bergl | NC Zoo

Development of SMART software initiated

First global training of trainers
First Asia regional SMART training

Version 1 for LEM released
Regional trainings in Indonesia & Tanzania
Thailand & Gabon adopt SMART at national level

Version 3 released – Ecological Monitoring functionality added
Uganda, Peru, Belize, & Bhutan adopt SMART at national level

Version 4 released – Intelligence functionality added
Democratic Republic of Congo & Philippines adopt SMART at national level
SMART Connect piloting begins

Version 4 developed - Intelligence functionality added
Global Wildlife Conservation joins the SMART Partnership

Version 5 & SMART Connect released
Vietnam adopts SMART at national level and Belize expands national adoption from marine to include all terrestrial protected areas

Republic of Congo, Mozambique, & Zimbabwe adopt SMART at national level
Piloting begins for SMART 6 including new SMART Profiles platform and SMART Mobile powered by CyberTracker
First global advanced SMART training
SMART adoption continues to expand thanks to the support and innovation of our collaborators and partners in the global SMART community. Since its public release in 2013, SMART adoption has expanded more than 10 times, increasing from 65 early-adopting sites to over 765 at the close of 2018. As SMART is freely available to the entire conservation community, there are many additional sites supported by a range of organizations, further increasing the number of active SMART sites. SMART has been deployed across more than 60 different countries in collaboration with more than 115 government partners, and is increasingly scaled from sites to systems, with 14 countries now adopting SMART at the national level.
In 2018, SMART celebrated the first site in Europe, with a training and the foundational preparations for its use to monitor polar bear conflict in Norway.

REGIONAL ADOPTION

GLOBAL IMPLEMENTATION SITES & NATIONAL ADOPTION COUNTRIES
All of us working on the technology behind SMART are proud to know we support projects from the Arctic to Zanzibar, and from the Arabian Desert to the Amazon.”

—Jonathan Palmer,
Chief Technology Officer, SMART Partnership
It’s an honor to serve the more than 765 sites around the world using SMART. All of us working on the technology behind SMART are proud to know we support projects from the Arctic to Zanzibar, and from the Arabian Desert to the Amazon. To improve how we support you all, the SMART Support team was launched, and we’re really excited to see how they have supported the community forum, provided deep technical support on SMART Connect installations, and helped the community update translations for the SMART 6 release.

When we started working on SMART, one of the commitments we made was ensuring our tools could be used by any conservation organization irrespective of needs or resources. We feel we’ve delivered on this commitment, with SMART Connect now running both on billion-dollar Cloud infrastructure and also running on $25 Raspberry PI machines. The improvements we have made with the new SMART Mobile application take usability to a new level and together with the SMART Connect APIs, we are supporting data collection varying from limited literacy rangers through to real time integration with Internet of Things devices, like the PantheraCam. A third example of how we build to meet the needs of all our community comes from our efforts to continually enhance the core SMART reporting functionality, while also partnering with Microsoft to implement predictive patrol planning powered by advanced Artificial Intelligence. All these things underline our commitment to meet your needs no matter who you are, where you are, or what resources you have. With the support of the SMART leadership, we are increasingly asking others delivering technology for conservation to ensure their solutions are affordable, accessible, adaptable, and easy to manage.

For much of 2018, our focus was building out the Profiles functionality and creating a new version of the SMART Mobile module. By the time this report goes to print, these will be in the hands of hundreds of users around the globe. The breadth of functionality provided out of the box with SMART is astounding - supporting patrolling, ecological monitoring, mobile data collection, cloud based services, intelligence and case tracking. No other solution comes close to providing the breadth of these services with a simple to deploy suite of applications not requiring code.

So let’s end where we started, saluting the users of SMART around the globe. We have the honor to build solutions for you all. It is an honor, because in return, we see you all deploy locally, adoption nationally, and scale globally.

Jonathan Palmer
Chief Technology Officer, SMART Partnership
SMART products are free, open-source, non-proprietary, & developed to benefit the entire conservation community
SMART has grown to become the global leader in protected area management solutions, offering an integrated suite of powerful tools and services to help conservation practitioners improve management effectiveness and better protect wildlife. These successes are driven by remaining committed to SMART’s guiding principles and ensuring innovation and development are done in close collaboration with the community of users on the frontlines of conservation. In doing so, SMART has been able to adapt to meet the increasing and evolving needs of the user at sites and at scale.

With the development and piloting of SMART 6, SMART now includes multiple platforms, including the global leading desktop protected area management solution, SMART Connect – a cloud solution enabling centralized management and reporting, together with real-time alerts, and SMART Mobile, which drives efficiency with mobile, digitally native data capture powered by CyberTracker.

The SMART platforms offer an expansive suite of SMART modules that fully support the adaptive management cycle. SMART is the only solution that integrates robust analysis with intelligence gathering capabilities, enabling comprehensive planning as a foundation of patrolling. All this is supported by a powerful ecological monitoring module and across the board reporting capabilities that feedback into the management cycle.

- **PATROL**: Monitor and optimize patrolling effort
- **SURVEY**: Rapid capture, collation, and analysis of ecological monitoring data
- **PLAN**: Enhance decision-making and optimize deployment of conservation resources
- **ENTITIES**: Monitor and track entities (e.g., collared animals) in time and space
- **DATABASE**: Consolidate data streams into a centralized hub for holistic PA management
- **INTELLIGENCE**: Advanced relationship and networks analyses to target and reduce wildlife crime
- **MAPS**: Generate maps
- **ALERTS**: Manage and respond to real-time alerts
- **INTEGRATE**: Complement SMART with additional data sources and systems
- **ANALYZE**: Conduct advanced analysis of SMART data, effort, and spatial coverage
- **REPORT**: Demonstrate impact via rapid, standardized, and semi-automated reporting
- **SENSORS**: Manage, visualize, and analyze data from sensors together with patrol data
- **EVENTS**: Internet of Things driven workflows
- **PANetwork**: Centrally manage and deploy SMART at scale
SMART Profiles provides a powerful platform for the management and analysis of multi-source data related to a specific entity or entities (e.g., a poacher or collared rhino) and events, and the spatial and temporal relationships that exist among them. Profiles can be applied to any number of scenarios, such as: recording sightings and developing a profile of individual animals; tracking traffic patterns through park entry points; recording the details of outreach projects in communities; maintaining records of staff participation in training events; managing infrastructure maintenance schedules; tracking incidences of human-wildlife conflict around protected areas; or, managing wildlife law enforcement intelligence data. For management of enforcement data, Profiles provides conservation law enforcement officials with a system to manage offender data that can detail and illuminate the actions, histories, and behaviors of individual wildlife offenders. By helping to improve understanding of the offenders and their patterns of behavior, enforcement officials are able to craft more effective and targeted strategies aimed at preventing offenses in their protected area.
SMART MOBILE

Mobile data capture powered by CyberTracker

SMART Mobile is SMART’s data collection solution for mobile devices (e.g., smartphones, tablets). SMART Mobile is powered by CyberTracker (CT), itself a leading application for capturing mobile data deployed successfully in hundreds of sites globally. SMART Mobile leverages the functionality of CT by using a GPS enabled mobile device to collect both observations (text or icon based data entry and digital images) and GPS data in a single unit. Observations and GPS data can then be transferred directly into SMART Connect or desktop in semi-automated processes. SMART Mobile represents a significant enhancement to the existing functionality of CT, including: touch/swipe controls; advanced mapping and navigation; natively translated languages and support for all Unicode languages; multiple data point entry on one screen; change patrol metadata on the fly; configure real-time alerts for key observations; and, many other new functionalities.

KEY BENEFITS

- Fully integrated mobile data collection system
- Compatible with Android and iOS
- Supports all Unicode languages
- Natively translated to 24 languages
- Full color icon support
- Upload data directly to SMART Connect
- Modern mapping interface supporting SMART basemaps
- Enhanced Go To functionality leveraging magnetic compass
The SMART+PAWS integration is so exciting because it leverages the latest in AI research and the SMART platform to make cutting-edge technology available to assist counter-poaching efforts in hundreds of protected areas around the world."

—Milind Tambe, Founding Co-director, University of Southern California Center for AI in Society
WHAT'S NEXT?

SMART has a successful track record of iteratively improving existing products, while also innovating and expanding the suite of tools and services available to its user community. In 2019, in addition to continued scaling of tools for SMART marine applications, we are planning to expand and grow in two exciting new areas: integrating artificial intelligence into the SMART platform and scaling SMART use in community managed protected areas.

LEVERAGING SMART & ARTIFICIAL INTELLIGENCE FOR PREDICTIVE PATROL PLANNING

Many sites use SMART globally to help rangers identify likely hotspots of illegal activities, but SMART cannot go one step further to predict where hotspots are likely to occur. Now, SMART is working with a team of researchers to leverage machine learning and artificial intelligence to help make ranger patrols more efficient and effective by developing targeted patrolling recommendations of where rangers are most likely to disrupt illegal activities. The Protection Assistant for Wildlife Security (PAWS), developed by researchers at the University of Southern California Center for Artificial Intelligence in Society, will be fully integrated into SMART, and will leverage the Microsoft Azure cloud platform to analyze massive amounts of SMART and spatial data to suggest the most effective patrols. Preliminary field tests have already returned incredible results: 3x snares encountered and 12x more encounters per kilometer. We're incredibly excited to make this innovative technology available to the entire SMART community and look forward to its rapid adoption globally.

SCALING SMART FOR COMMUNITY MANAGED PROTECTED AREAS

In an extension of SMART's long history of success and the strong momentum behind SMART Marine, there is increasing demand for SMART in community managed protected areas. Around the globe, whether it's fisheries in Cambodia, forest concessions in Guatemala, or polar bear conflict in the Arctic, more and more communities are adopting SMART to manage their protected areas and natural resources. Community-based adoption of SMART has been facilitated by SMART's free, flexible, and user-friendly software, as well as the SMART Partnership's commitment to meeting needs of frontline practitioners, no matter their site, affiliation, or available resources. This commitment, along with the scope and breadth of SMART experience, has helped us understand the unique challenges and needs faced by community managed protected areas globally. In 2019, we will continue to apply SMART expertise to develop materials and training support specifically designed to empower communities to better manage and protect their natural resources.
As SMART adoption has increased and expanded globally, so too has the user community grown to thousands of users around the world.

The SMART Partnership has sought to support and nurture the user community. Today, there is an active and vibrant group of SMART users active online on the SMART Community Forum. The SMART Support Team was recently created to provide additional consistent support to the SMART community through active curation of the Community Forum, dedicated help desk support, and assistance with SMART Connect deployment.

The online SMART community can now quickly and flexibly share ideas, answer questions, contribute workarounds/tools, and flag software issues when they arise. This has helped to make SMART software more useful to more people over time by enhancing community cohesiveness and reducing the time and resources needed from the Partnership to support the community. The Forum and the Support team empower SMART users to help each other, independently seek and provide solutions to challenges, and contribute to innovation and diverse applications of the SMART tool. We are now able to provide rapid and effective support for technical issues and implementations and respond quickly to requests from the community. Solutions and tips are shared with the entire SMART community, ensuring the broad dissemination of answers to questions and the long-term maintenance of a significant SMART knowledge base.
We all have so much to learn from each other and through sharing in the community we can all improve results at our sites around the world.

— Matt Hron, SMART Support Team
It’s an honor to be able to deliver SMART training to the people on the ground who need it most, and through the SMART training taskforce, to create training resources that help users implement skills-focused practical training in the more than 5 SMART sites globally.

—Tony Lynam, SMART Training Task Force Lead
We are incredibly proud of the success of the approach we have taken to building SMART capacity globally. By leveraging our partners and extensive user base, we have organically and cost-effectively built an engaged and experienced community that is largely self-sustaining. However, as technologies change and new functionalities are developed, even the most experienced practitioners need additional training. By adhering to a set of guiding principles, which emphasize accessible, open-source materials, we have been able to continually increase the value, utility, and scope of the training materials and services we offer.

SMART training resources continue to evolve and many are available in multiple languages. To date, we have developed over 40 resources to support SMART capacity building efforts globally, including:

- Applied Implementation Manuals
- SMART: A Guide To Getting Started (Terrestrial & Marine editions)
- Conservation Practice Brochures
- SMART Community Forum
- SMART Impact Case Studies

The SMART community has identified increasing accessibility and opportunities for SMART training as a critical priority. The SMART Partnership is committed to delivering solutions to meet this need, and in 2019, we will undertake two major efforts to do so:

1. The Partnership will begin efforts to host a series of global SMART Training of Trainers events annually, rotating locations across Africa, Asia, and the Americas.
2. The Partnership will develop a generalized suite of standard SMART training materials and competencies.
CASE STUDIES

01 ECUADOR

Protecting Amazon rainforest in Yasuni National Park through improved management and effectiveness of monitoring patrols

Yasuni National Park (YNP) staff and officials leveraged national efforts to improve monitoring and management of Ecuador’s protected areas to begin implementing SMART. Since 2015, SMART has been implemented in YNP to monitor and control illegal activities occurring inside the national park and its periphery. YNP has since doubled patrol coverage and used SMART patrol data to identify hotspots and develop a threats map to prioritize patrol deployments and their effectiveness.
02 DR CONGO

Standardizing protocols and improving workflows across the Congo Basin

SMART has helped to standardize patrol protocols and data collection for more than 20 protected areas and community forests in the Democratic Republic of Congo (DRC). In addition, SMART has improved law enforcement, accountability from the field, and motivation of ecoguards. Furthermore, with the establishment of a national technical unit, SMART has enabled the centralization of patrol information at the headquarters of the Congolese Institute for the Conservation of Nature (ICCN), DRC’s protected area authority. This coordination enhanced the political support for protected areas and enabled ICCN to regularly report on the status of protected areas to the national government and international partners.
Use of SMART helps managers better understand the nature and availability of fisheries products to local communities to inform future management actions.

Monitoring and managing small-scale fisheries and enforcing existing regulations, given the existence of numerous landing sites, diverse fishing grounds and seasons, and the dynamic multi-species and multi-gear nature of extractions is notoriously difficult. Researchers and fisheries managers in Belize sought to change this by adapting the near real-time SMART marine enforcement system that has been nationally adopted across the network of marine protected areas in Belize. Using SMART Mobile and Connect, local community researchers collected data on more than 15,000 products (fish and invertebrates) over the last two years. Preliminary analyses indicate that a number of the 65 species examined are overexploited based on the presence of illegal size catch and low proportion of mature individuals. This system, currently in its pilot phase, will eventually be transferred to the national management authority, integrated into existing enforcement patrols, and supplement or replace fleet-wide hard-copy logbooks for formulation of future taxa, gear, temporal, and spatial specific management actions, including more targeted enforcement patrols.
SMART provides a simple and effective system to record catch in the field and easily transfer data to a centralized database for near real-time monitoring and analyses.

– Alexander Tewfik, Marine Conservation Scientist, Wildlife Conservation Society
SMART helps make work easier and more accurate in Kafue National Park

In 2018, the Department of National Parks and Wildlife (DNPW) implemented SMART in Kafue National Park, the oldest and largest national park in Zambia. Patrol teams capture observations in the field using SMART Mobile and then download data directly into SMART for debriefs after patrols. This has simplified and streamlined workflows and increased data accuracy and consistency. SMART has also provided DNPW managers with a holistic understanding of their national park, centralizing data on the level and extent of threats and monitoring of key species (e.g., lions). This has enabled prioritization of patrols and resources to areas facing the greatest threat and increased accountability of rangers.
05 CAMBODIA

SMART approach to protecting Koh Rong Archipelago Marine Fisheries Management Area, Cambodia’s first MPA

Through close collaboration with government officials, Fisheries Administration Cantonment and SMART officers, and three Community Fishery groups, Fauna & Flora International (FFI) enabled the Koh Rong Archipelago Marine Fisheries Management Area (MFMA) to become the first site in Southeast Asia to implement tracked marine patrols using SMART. Koh Rong was designated as Cambodia’s first actively managed large-scale MPA in 2016, and in order to deliver effective enforcement of the zoning scheme, community members and government officials were trained in SMART patrol techniques. This has resulted in 660 patrols since 2015 with 340 detected infractions and the identification of hotspots of illegal activities. The SMART approach has also empowered local stakeholders to actively manage marine resources whilst building vital relationships between government, NGOs, communities, and fishers.
06 CONGO

Combating illegal, unreported, and unregulated fishing along the coast of Congo

Since 2016, WCS Congo has supported Congo’s efforts to tackle illegal, unreported, and unregulated (IUU) fishing along its coast. While SMART has been adopted nationally for Congo’s terrestrial protected areas, no efficient monitoring framework had been established for Congo’s marine protected area (MPA) network. In 2018, WCS worked with the Congolese government and other partners to develop a SMART Marine database and train 15 agents in systematic data collection and SMART. The new framework, leveraging SMART, now has a dedicated SMART focal point working daily with the Fisheries Departmental Directorate (DDPA) to implement SMART in Congo’s MPAs, and has helped support a 200% increase in the number of patrols since 2016. Thanks to the use of SMART, managers now have access to the distribution of illegal fishing and details on the main infractions and non-compliant companies. Using these data, the DDPA and the Ministry of Fisheries are now able to analyze and understand the scale of illegal fishing in Congolese waters, and will be working to further strengthen law enforcement in the year to come.
SMART provides first digital records of protection effort and facilitates first assessments of protected area efficiency in Sri Lanka

SMART is helping the Sri Lankan Government to plan and manage its patrolling resources, monitor threats, and identify hotspots for human-wildlife conflict (elephants, leopards) and forest encroachment. The Department of Wildlife Conservation (DWC) began piloting the SMART approach in 2017 across six national parks in southern Sri Lanka. Seventy frontline staff received training in mobile data collection techniques with a further 25 receiving training in database management techniques using SMART software. After one year of implementation, the sites were collecting regular patrol data using rugged smartphones and creating SMART reports to document monthly patrol efforts and results. Building on the success of the pilot, the DWC expanded SMART implementation to a further 13 sites in 2018, with another 10 sites planned for 2019.
Scaling SMART conservation of Peru’s biodiversity nationally

Over the last few years, Peru’s National Service of Natural Protected Areas (SERNANP) focused on the planning, implementing and monitoring processes to improve management of their protected areas, both at the system (National System of Natural Protected Areas, SINANPE) and individual protected area levels. In 2014, SERNANP began implementation of SMART as a tool for managing monitoring and enforcement information. This included initial pilot testing in five protected areas (Manu National Park, Lachay National Reserve, Matsés National Reserve, Tambopata National Reserve, and Machu Picchu Historic Sanctuary). The pilot implementation enabled SERNANP to identify gaps, recommend conditions that protected areas should have to successfully implement SMART, and make adjustments in order to improve patrolling, effective decision making, and management of individual PAs and the entire system. Following successful pilot testing, SERNANP increased the rollout of SMART across 35 protected areas and committed to adopting SMART across its entire protected area network. This success also laid the foundation for further scaling of SMART in individual protected areas as well as national commitments across much of Central and South America.

The Tambopata National Reserve has used SMART to standardize and better manage data produced during monitoring and enforcement activities. Results are used by Reserve staff to monitor human activities inside the protected area and its buffer zone, which in turn, allows them to target interventions in places of the greatest vulnerability and with the highest incidence of infractions. After three years of using SMART, Reserve staff are now migrating to SMART Mobile to minimize errors and streamline workflows. In addition, Reserve staff are now leveraging their expertise to train and provide technical support in the use of SMART to staff from conservation and tourism concessions – areas temporarily granted by the Peruvian government to private organizations for research, environmental education, and ecotourism to ensure conservation - near the protected area.
PARTICIPATORY CONSERVATION OF AMAZONIAN FOREST IN MATSÉS NATIONAL RESERVE

SMART has helped the Matsés National Reserve staff to systematize its patrolling records, which were previously unorganized, facilitating improved management decision making. Systematized patrol data have been used to develop a protected area monitoring and enforcement strategy, which identified eight management sectors. Reserve staff have also prioritized patrols throughout the buffer zone, as data indicated that most threats have occurred there, rather than within the protected area. Most patrolling actions in the buffer zone are developed with support from the native communities who live there, which in turn have the right to use natural resources within the protected area sustainably. Overall, this strategy has led to a more efficient use of resources, with a 30% reduction in the number of patrols between 2015 and 2018, alongside an increase in the number of coordination meetings between the reserve staff and neighboring communities.

CONSERVING DESERT FOOTHILLS IN LACHAY NATIONAL RESERVE

SMART patrol data in the Lachay National Reserve have been key to redefining and prioritizing patrol routes and augmenting patrol frequencies in the Reserve. Participatory work with parkguards to revise patrol strategies have motivated them to improve their work, as they now better see the value of the information they generate. Since 2015, patrol coverage has decreased to 35% of the Reserve, however, the concentration of patrol effort has increased by 10%, as areas with more threats, such as the tourist zone and park borders, are patrolled more regularly. In addition, the collection of key ecological data with SMART, including observations of wildlife, has allowed Reserve staff to generate agreements with local universities for the development of prioritized research, which should help better protect the Reserve.
The strength of the SMART Partnership is collaboration and commitment to a common mission. By leveraging the infrastructure, strength, and capacity of its Partner members and user community, the Partnership has been able to rapidly scale technology solutions and adaptive management strategies across hundreds of conservation areas globally. “The successes of the SMART Partnership are exemplary and will always guide the conservation community’s efforts, toward building stronger technological capacity in protected areas,” says Fabien Laurier, Vice President - National Geographic Labs, “Solutions that are easy to deploy, sustainable, and supported by boots on the ground will ensure the scalability of data-driven conservation globally.”

The sustainability of SMART is secured through the long-term commitment of the nine conservation agencies which collectively form the SMART Partnership. The Partnership is managed by a Steering Committee, which implements work according to the SMART 10-year business plan via three permanent councils: User, Technology, and Fundraising & Marketing. The Partnership is committed to a strong, transparent governance structure, which has fostered a growing and engaged community of users, as well as a sense of trust on the part of the conservation community as a whole.
STEERING COMMITTEE

- **Craig Beech**  
  Programme Manager, New Technologies, Peace Parks Foundation

- **Richard Bergl, Chair**  
  Director of Conservation, Education & Science, North Carolina Zoo

- **Barney Long**  
  Director of Species Conservation, Global Wildlife Conservation

- **Joseph Smith**  
  Executive Director, Conservation Action, Panthera

- **Michael Hoffmann**  
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- **Eric Schmidt**  
  Executive Director, Wildlife Protection Solutions

- **Emma Stokes**  
  Director, Central Africa Program, Wildlife Conservation Society

- **Rohit Singh**  
  Zero Poaching Lead, WWF Wildlife Crime

- **Elsabe van der Westhuizen**  
  Technical Advisor, Gonarezhou Conservation Project, Frankfurt Zoological Society

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- **Clarine Kigoli**  
  Capacity Trainer, Zoological Society of London

- **Drew McVey**  
  East Africa Wildlife Crime Technical Advisor, WWF Kenya

- **Matt Hron**  
  Technology Coordinator, Wildlife Protection Solutions

- **Claire Lewis**  
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- **Rob Pickles**  
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- **Denton Joachim, Chair**  
  Senior GIS Technician—SMART Lead, Peace Parks Foundation

- **Tony Lynam**  
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- **Elsabe van der Westhuizen**  
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- **James Slade**  
  Wildlife Crime Prevention Officer, Global Wildlife Conservation

CHIEF TECHNOLOGY OFFICER

- **Jonathan Palmer**  
  Executive Director of Strategic Technology, Wildlife Conservation Society

PROGRAM MANAGEMENT

- **Drew T. Cronin**  
  Program Manager, SMART Partnership
“The strength of SMART lies in collaboration.”

—Clarine Kigoli, Capacity Trainer, ZSL Kenya
The SMART Partnership is grateful to the following SMART Associates, who have supported, contributed to, or collaborated with the Partnership on significant SMART funding, development, translations, and/or implementation efforts benefiting the broader conservation community.
SMART GOVERNMENT CONSERVATION PARTNERS

SMART Partners and implementing organizations collaborate with more than 115 government agencies in more than 60 countries globally.

Bahamas National Trust
Bangladesh Forest Department
Belize Fisheries Department
National Centre of Management of Fauna Reserves (CENAGREF), Benin
Department of Forest & Park Services, Bhutan
National Service for Protected Areas (SERNAP), Bolivia
Forestry Administration, Cambodia
Ministry of Environment, Cambodia
Fisheries Administration, Cambodia
Ministry of Agriculture, Forestry and Fisheries, Cambodia
Ministry of Forestry and Wildlife, Cameroon
Ministry of Water, Forests, Hunting & Fishing, Central African Republic
Hunchun Municipal Forestry Bureau, China
Northeast China Tiger and Leopard National Park
Heilongjiang Forest & Grassland Bureau
Suiyang Forest Bureau, China
Northeast China Tiger and Leopard National Park
Wangqing Forest Bureau, China
Yunnan Forest Bureau, China
Jilin Forest Department, China
Heilongjiang Forest & Grassland Bureau, China
National Parks Unit (NPU), Colombia
Corporation for the Sustainable Development of Chocó (CODECHOCO)
Corporation for the Sustainable Development of the South of the Amazon (CORPOAMAZONIA)
Ministry of Environment, Colombia
Institute in Congo for the Conservation of Nature, Democratic Republic of Congo
Ministry of Sustainable Development, Forest Economy and Environment, Republic of Congo
Congolese Agency of Fauna and Protected Areas (ACFAP), Republic of Congo
National System of Conservation Areas (SINAC), Costa Rica
Ivorian Office of Parks and Reserves, Côte d’Ivoire
National Center of Protected Areas, Cuba
National Enterprise for the Protection and Conservation of Flora and Fauna, Cuba
Ministry of Environment, Ecuador
National Institute for Forestry Development and Protected Area Management, Equatorial Guinea
National University of Equatorial Guinea
Ethiopian Wildlife Conservation Authority
National Agency for National Parks, Gabon
Georgian Agency of Protected Areas
Wildlife Division, Ghana
Ministry of Agriculture, Livestock, and Food-Directorate of Normativity of Fisheries & Aquaculture, Guatemala
National Council for Protected Areas (CONAP), Guatemala
National Autonomous University of Honduras
Institute for Forestry Conservation, Honduras
Assam Forest Department, India
Forest Department, India
Ministry of Environment and Forestry, Indonesia
Ministry of Maritime Affairs and Fisheries, Indonesia
Office of Natural Resource Conservation Agency (BKSDA-Riau), Indonesia
Jamaican Fish Sanctuary Network
Ministry of Industry, Commerce, Agriculture and Fisheries, Jamaica
Forestry and Wildlife Committee of the Ministry of Agriculture, Kazakhstan
Kenya Wildlife Service
Narok County Government, Kenya
Department of Forest Resources Management, Lao People’s Democratic Republic
Ministry of Natural Resources and Environment, Lao People’s Democratic Republic
Forestry Development Authority, Liberia
Ministry of Environment, Ecology, and Forests, Madagascar
Ministry of Fisheries and Marine Resources, Madagascar
In 2013, the SMART Partnership adopted a governing agreement and a 10-year business plan to ensure the sustainability of the partnership, provide a guide for expansion of our activities, and ensure openness and transparency. In doing so, we committed ourselves to the collective SMART mission and its guiding principles, laying the foundation for the incredible global success we have had, well beyond our original expectations and the scope of what would have been possible by organizations working alone. By taking the Partnership approach and focusing on user-driven, bottom-up development priorities, SMART has been able to adapt and grow with the expanding needs of the conservation community.

As SMART has evolved into the global standard for protected area management, we've been able to ensure core costs are met through guaranteed annual cash contributions and in-kind commitments of time and effort from each of the Partner organizations. This approach has assured the Partnership has maintained a revenue stream that is over three times SMART's fixed costs annually, while still innovating and embracing new and emerging technologies.

In 2018, we began a year-long planning process to review lessons learned in order to adapt our approach and business plan to evolving user needs and technologies. This process will draw directly from needs expressed by SMART practitioners around the world and will ensure that SMART continues to serve as an essential tool for conservationists globally. We look forward to telling you more about our plans for SMART in 2020 and beyond in next year's annual report, and to delivering on our mission for many years to come.
The SMART Partnership - in collaboration with key supporters, such as the Gordon and Betty Moore Foundation, Liz Claiborne Art Ortenberg Foundation, USFWS, USAID, KFW/COMIFAC/PPECF, National Geographic, and Microsoft - has raised resources to fund critical activities, as well as countless hours in staff time and in-kind resources that have been invested to ensure the long-term support of SMART.

### FINANCIAL SUMMARY 2018

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<thead>
<tr>
<th>REVENUE</th>
<th>EXPENSES</th>
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</thead>
<tbody>
<tr>
<td>Retained Partnership Contributions</td>
<td>Solutions, Training, &amp; Services</td>
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<tr>
<td>Retained Fundraised</td>
<td>Partnership Development &amp; Management</td>
</tr>
<tr>
<td>2018 Partnership Contributions</td>
<td>Fundraising &amp; Communication</td>
</tr>
<tr>
<td>2018 Fundraised</td>
<td>TOTAL EXPENSES</td>
</tr>
<tr>
<td><strong>TOTAL REVENUE</strong></td>
<td><strong>TOTAL EXPENSES</strong></td>
</tr>
<tr>
<td>$1,111,800</td>
<td>$1,034,245</td>
</tr>
</tbody>
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**TOTAL REVENUE 2018**
- 12% Retained Partnership Contributions
- 55% 2018 Partnership Contributions
- 12% Retained Fundraised

**TOTAL EXPENSES 2018**
- 76% Solutions, Training, & Services
- 22% Partnership Development & Management
- 2% Fundraising & Communication

**Retained Partnership Contributions**
- $236,310

**Retained Fundraised**
- $132,000

**2018 Partnership Contributions**
- $615,690

**2018 Fundraised**
- $127,800

**Solutions, Training, & Services**
- $779,790

**Partnership Development & Management**
- $230,835

**Fundraising & Communication**
- $23,620

**TOTAL EXPENSES**
- $1,034,245

**BALANCE**
- $77,555

BACK COVER: from left to right (ROW 1): Daniel Alarcon | WCS; Thomas Cristofoletti; Julie Larsen Maher | WCS; (ROW 2): Drew Cronin | SMART Partnership; © Jaap van der Waarde | WWF–Netherlands; Zafer Kizilkaya | Mediterranean Conservation Society; (ROW 3): Emily Darling | WCS; Rich Bergl | NC Zoo; Julie Larsen Maher | WCS; (ROW 4): Tony Lynam | WCS; Ola Jennersten | WWF-Sweden; WCS Belize (ROW 5): Day’s Edge Productions | WWF; James Slade | GWC; Julie Larsen Maher | WCS; (ROW 6): Tony Lynam | WCS; naturepl.com | Mark Carwardine | WWF; AndreBaertschi | WCS