Dear Friends

It is important that there is an enormous emphasis on the ivory crisis but we must remember not all elephants are under the threat of poaching. The Asian elephant, which has more than ten times fewer individuals—30,000 to 40,000 Asian elephants worldwide compared to 400,000 to 500,000 African elephants worldwide—are seldom poached. The majority of Asian elephants are tusks, as only male Asian elephants have tusks and many males are actually born tuskless, so for the Asian elephant poaching for ivory is not the major concern. The major threat to Asian elephants and many populations of African elephants as well is actually habitat loss and human-elephant conflict (HEC). Every day elephants are shot, poisoned, snared, electrocuted, hit by trains, and blown up because their habitat is being taken by large-scale plantations, development concessions for logging/mining/road construction, altered by dams, small-scale farmers and rural villages and much of this development provides commodities for western nations.

Collaborating with local communities is a key factor in the success of conservation programs even as a means to combat poaching. In addition to eliminating poaching and mitigating conflicts between elephants and the people that share the land, we need to improve natural resource management, develop government supported sensible land-use strategies, support actions to eliminate the illegal killing and trafficking of all wildlife (as snares meant for other animals injure and kill elephants too), protect elephant habitats, build capacity of elephant conservationists, develop animal and habitat friendly alternative sources of income such as eco-tourism, create permanent hubs of anti-poaching rangers in the core areas, protect the last surviving “hundred pounder” tuskers (elephant bulls bearing ivory weighing over 100 lbs. per side) by keeping watch on these animals on a consistent basis (see page 13), and the list goes on and on.

In an example of IEF funded project support, in the remote, underdeveloped area of the Lower Zambezi region, entire villages rely on subsistence crops (maize, rape, tomatoes, onions) which are very attractive to elephants. An entire harvest can be lost in one night, along with food storage buildings and housing. HEC leads to huge economic losses through property damage and even human fatalities in the local communities, which in turn result in elephant mortalities through “problem animal control,” retribution killing, and in the general negative view of wildlife in the communities. In this case, a rigorously selected and intensively trained Village Scout (VS) unit conducts patrols in HEC affected areas. Trained not just in wildlife law enforcement but also in elephant behavior, these teams help farmers avoid property and physical damage. GPS information from patrols and HEC incidents are also recorded by the unit and used alongside other information collected to monitor and evaluate the effectiveness of this HEC mitigation project.

Your support has helped us to fund the many projects highlighted in this issue. IEF hopes as you plan your conservation contributions for the upcoming year, you will again consider support of our projects.

Deborah Olson
Executive Director

The International Elephant Foundation is a non-profit organization established in 1998 for the purpose of contributing expertise and providing funds to support elephant conservation programs worldwide, including protection of elephants in the wild and of their habitats, scientific research, education efforts and improvement in intensively managed captive animal care facilities.

The IEF’s board of directors are highly regarded elephant experts experienced in working with African and Asian elephants and affiliated with elephant programs at a variety of organizations internationally, including non-profit and for-profit zoological institutions, zoos, universities and independent entities. Scientific advisors from the fields of medicine, research, academia and elephant management guide and support the IEF board.

Board members contribute their time and expertise, as well as funds, and receive no compensation for time spent on IEF business. Board members’ expertise, time and travel to IEF board meetings are a complete donation to IEF from them personally, their institutions or their sponsors. All financial donations to IEF, a 501 (c) (3) non-profit organization, are tax deductible under U.S. law. Since its founding, approximately 90 percent of funds raised by IEF have gone directly into elephant conservation efforts.

For more information about the International Elephant Foundation go to www.InternationalElephantFoundation.org
Support of anti-poaching teams 9-1 & 9-2 of Northern Rangelands Trust, Conservancies, Kenya

Ian Craig, Director of Conservation, Northern Rangelands Trust

The majority of Kenya’s wildlife lives outside formally protected parks and reserves, with around 25 percent living in the grasslands and forests of northern Kenya. This is an area with a history of violence, insecurity, poaching and grasslands degraded by overgrazing, all of which contributed to dwindling wildlife populations and increasing poverty. The Northern Rangelands Trust (NRT) community conservation model aims to change all this by linking wildlife conservation to improved livelihoods.

While NRT community conservancies aim to protect all wildlife, elephants in particular are the focus of most conservation security resources. In a time when elephant poaching in Africa has reached the highest level in a decade, NRT’s 2013 elephant mortality report gave conservancies something to celebrate. The proportion of illegally killed elephants in NRT member conservancies dropped 22 percent in 2013, compared to 2012. Success in reducing poaching is likely to be a result of a number of factors:

• Increased investment in, and capacity of, conservancy security operations (furthers training of rangers and commanders, additional vehicles, employment of more rangers in some conservancies).
• The creation of a second multi-conservancy rapid response team 9-2 focusing south of the Ewaso Nigiro river and working closely with KWS. This follows the success of the 9-1 anti-poaching unit, whose main focus is north of the Ewaso Nigiro river.
• Increased social pressure from conservancy boards and communities to expose the criminals in their midst.
• The poaching crisis has also had considerable national and international media attention which has raised awareness of the issue at a conservancy level. In 2010, 85 NRT conservancy rangers were part of the Kenya Wildlife Service (KWS) at its Manyani Field Training School. When these rangers returned to the field, they had the tools to manage the challenges faced by wildlife rangers. Two years later, NRT and KWS paid for a further 245 rangers to attend the three-month course. All NRT rangers graduated with flying colors, having gained skills in gathering and sharing intelligence, monitoring wildlife, managing combat situations and bushcraft. All NRT conservancies now have a team of better equipped rangers, who are vital not only in protecting the wildlife and managing conflict, but also in raising awareness within their communities. There are a number of conservancy rangers that have been accorded Kenya Police Reserve (KPR) status, which means they can carry government weapons while on duty.

NRT Mourns a True Conservation Hero

A brave ranger from NRT’s specialized 9-1 security team lost his life in an exchange of fire with heavily armed cattle raiders on Sunday 11th May. Lédaçama Lardagoon, 36, had been part of the 9-1 team since it was established in 2009. An experienced, talented and dedicated ranger, he will be missed by his team-mates, his family, and his friends. He was given a police burial in his home conservancy of Melako on Thursday 15th May, attended by his family, NRT staff, his fellow rangers, representatives from three county governments, the Kenya Police and the Kenya Wildlife Service. He leaves behind a wife, Mbenevyo, and two young children, Stephano and Nambiyie. The US Ambassador Robert Godec, who visited this area to open the new Nasaalu Headquarters, tweeted his support, saying “Lédaçama Lardagoon, we mourn his death & celebrate his courage & all who make great sacrifices to protect Kenya’s wildlife.”

Disease Risk Analyses for Tuberculosis Detection and Prevalence in Elephants

Michele Miller, DVM, MS, MPH, PhD; Professor; South African Research Chair in Animal Tuberculosis (SARChI)

Understanding the impact Tuberculosis (TB) has on both wild elephants and those managed in human care is important to their long-term survival. The main objectives of this study are to (1) estimate sensitivity, specificity, and predictive values for different diagnostic tests for TB in elephants; 2) identify and quantify risk factors associated with TB infection; 3) develop an evidence-based definition of “exposure”; and 4) create a retrospective database of TB diagnostic test results, TB treatment responses, and outcomes.

A questionnaire was designed for data collection and it was implemented online. All elephants are coded, thus only blinded data will be provided to a TB epidemiologist for analyses ensuring objectivity. As of May 5, 2014, 252 responses have been received for the Elephant TB Risk Assessment Survey and 164 responses have been received for the Elephant TB Diagnostic/Treatment Survey. Since data is still being entered, no formal analyses of data have been started. However, this IEF-funded study has elicited interest from European and Australian zoo veterinarians and the confidential online survey methodology to gather data on risk factors impacting TB as well as the method to gather crucial information on diagnostic test results, treatments and outcomes for TB in elephants in the United States will be made available to those colleagues.

It is anticipated that information on risk factors, diagnostic tests, and treatments gathered as a result of this study will be used to develop evidence-based recommendations for prevention and mitigation of TB in both managed elephants as well as investigative risks to elephant populations in the wild. Results from this study will stimulate and direct future investigations of TB in elephants.

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Schools Awareness Program

Jayantha Jayawardene, Managing Trustee, Biodiversity & Elephant Conservation Trust

There is an urgent need to conserve the wild elephants in Sri Lanka. Creating awareness among children is an important conservation strategy since they are the conservationists of the future. For twelve years, the Schools Awareness Program has visited different schools at the rate of 150 schools per year and visiting over 1,800 schools to date! Each three-hour session starts with a short introduction by the principal of the school, followed by either a lecture on the elephant and its conservation or a lecture on the biodiversity of Sri Lanka. These lectures are aided by multimedia and are always accompanied by a presentation from a local Wildlife Department official. The program messages consist of 1) the importance of elephants in terms of biodiversity and conservation; 2) the ecology, biology and physiology of elephants; 3) the role of the elephant in religion and culture of Sri Lanka; and 4) human-elephant conflict causes and means of mitigation. A question-and-answer session follows the presentation to ensure that the material is understood by the students, and a group discussion encourages future conservation actions. Finally, a set of books on elephants is presented to the school library.

Over the years, comments and program reviews from students, parents and teachers have been very positive. This is a program that can be easily replicated and is a model for educators internationally.
Determining pharmacokinetic characteristics of the antiviral drug ganciclovir in Asian elephants (Elephas maximus)

Luis R Padilla, DVM, Dipl ACZM, Director of Animal Health, Saint Louis Zoo

Elephant Endotheliotropic Herpesvirus (EEHV) can be a fatal disease for elephants in human care and in the wild, and is one of the conditions that can influence the overall health and sustainability of the world’s Asian and African elephant populations. For elephants in human care, it is believed that early detection, appropriate treatment and adequate supportive care are critical to the survival of elephants experiencing an EEHV infection.

The Saint Louis Zoo, in collaboration with the University of Tennessee and with support from the International Elephant Foundation, initiated a first-of-its-kind research project to understand how ganciclovir, one of the few drugs available to treat this devastating disease, is absorbed, metabolized and excreted by Asian elephants. The dosage used to treat these calves was derived from humans, but appropriate dosages and dosing intervals are essential in order to make objective treatment recommendations that balance effectiveness of treatment while minimizing potential drug-induced side effects.

The goals of this project are to determine the pharmacokinetic behavior of ganciclovir in Asian elephants, develop an appropriate dosage and dosing interval to treat EEHV infections in elephants, and to publish the results of this project in a peer-reviewed journal and make the information available to elephant veterinarians and managers internationally. Prior to the initiation of this project, the Saint Louis Zoo funded Dr. Sherry Cox, Director of the Pharmacology Laboratory, to develop and validate a ganciclovir assay for elephant plasma for use in this project.

To date, two elephants have successfully participated in this project with no apparent adverse reactions and a timed sample collection and processing protocol has been developed and successfully implemented. The end result will be refined dosages and dosing intervals of ganciclovir to maintain therapeutic blood levels while minimizing drug-associated side effects.

Plantation of Elephant Food Plants and Natural Barrier Plants

Dr. Ashish Kar, The Energy and Resources Institute (TERI)

Human-elephant conflict, elephant home ranges and elephant corridors are being identified through discussion with the villagers and village heads of Rajapara, Baghmara, Nichimpur, Goleboka, Kinangon, Chakrasila. This information will then be used by villagers to plant elephant food, as well as determining where natural plant barriers will be established in order to prevent human elephant conflict. Seedlings have been procured and are being raised in the project nursery. Planting is scheduled to begin June 2014.

Africa-Asia Elephant Conservation Project

Ravi Corea, Sri Lanka Wildlife Conservation Society; Funded by the Columbus Zoological Society

The concept to share human-elephant conflict mitigation (HEC) techniques between African and Asian elephant range countries was developed by the Sri Lanka Wildlife Conservation Society (SLWCS), Sri Lanka, and Elephants Without Borders (EWB), Botswana, during the 2010 International Elephant Symposium held at the Kwalata Game Reserve in South Africa. The process involved a feedback experience by SLWCS staff to Zimbabwe, Zambia, Namibia and Botswana to observe and discuss HEC with affected communities and share HEC methods that are being used in Sri Lanka. While conflict with elephants seemed a common problem in the African countries we visited with similar issues and concerns as in Sri Lanka, there were also distinct differences that were unique to each country. Agriculture is the main livelihood of rural communities but in the tundra season culture depends completely on rain water, whereas in Sri Lanka irrigation supports the annual rainfall. In addition, there is only one crop growing season in the African countries, whereas in Sri Lanka, farmers can cultivate up to three crops a year depending on rainfall and the amount of water stored in irrigation reservoirs. Lastly, African villagers tend to cluster homes in one area with the fields in another, whereas in Sri Lanka farmers usually live next to the fields they cultivate. Crops species and management methods also differ greatly. African farmers sow their seed and hope for the best while Sri Lankan farmers follow stringent crop management techniques to get the highest yields.

Irrespective of how cultivation was practiced, elephants of both African and Asian elephant range countries raided crops. Since African farmers raise only one crop per year, they deal with crop raiding only during the 5 months growing season. Sri Lankan farmers with up to three cultivating seasons deal with crop raiding throughout the year. Either way farmers in both regions were similarly affected when elephants raided their crops. In Africa, HEC is a huge problem not because it occurs throughout the year, but because one crop raiding event could destroy the entire year’s harvest, especially in years of too much or too little rain fall.

Project partners identified some of the immediate causes of HEC: haphazard land selection and management resulting in scattered settlements and fields that are difficult to protect because of their isolation, setting bushfires, elephant habitat destruction due to shifting cultivation, and river bank cultivation that obstructs elephants from water sources. The following activities were identified as actions people should adapt to minimize HEC:

- Clustering settlements for better protection, e.g. cooperative guarding
- Be vigilant of fire outbreaks and stop bushfires
- Adapt sustainable energy such as solar power
- Use dried cow dung as fuel reducing pressure on forests for firewood
- Practice conservation agriculture methods
- Practice crop rotation and mixed crops
- Use fast maturing crop varieties
- Cultivate away from river banks
- Identify wet and dry season protection protocols.

These actions resulted in the development of the first illustrated field guide to HECs with easy to understand drawings and designed so that it can be easily adapted to regional conditions and languages. This guide will be used to educate and encourage farmers to adapt livelihood practices and behaviors that will promote coexistence with elephants.

The partners realized that mitigating conflict with wildlife in both Asian and African elephant range countries falls into three general categories: 1) changing human behavior and attitudes; 2) implementing or changing existing policies and/or adapting new policies; and 3) improving the coordination and liaising amongst government bodies responsible for land distribution, agriculture development and wildlife management. One of the most profound realizations was that all of the locations visited offered a fantastic opportunity to promote human elephant co-existence.
Conservation of Elephants in Southern Murchison Falls Conservation Area, Uganda

Patrick Agabe, Projects Manager, Uganda Conservation Foundation (UCF)

Poaching in Murchison Falls Conservation Area (MFCA) has been extreme and includes heavily armed gangs targeting elephants for large scale commercial gain, as well as the high volume of indiscriminate bush meat poaching using snares and traps. The poachers have taken advantage of the limited resources and capacity of the Uganda Wildlife Authority (UWA) to enforce the law. This project establishes control of the Bulaya River region in South Eastern MFCA, establishes law enforcement in southern MFCA and improves the management of the southern MFCA elephant population. UCF completed the construction of the Bulaya and Mupina Ranger Posts in Southern MFCA. Both ranger posts were made from two converted shipping containers placed 5 meters apart and roofed with iron sheets. The two ranger posts are partitioned to accommodate up to 12 rangers. Many rangers were deployed at Bulaya Ranger Post permanently and since January 2014, patrols have been occurring on a regular basis, and twenty poacher camps have been destroyed.

Conservation Area Manager of MFCA, Tom Okello says ‘it is the first time UWA is having robust operations in the southern MFCA. So far 28 patrols have been conducted (8 extend- ed, 6 ambushes and 14 rounds) which led to the large scale sweep of the existing snares and metal traps resulting in collection of 103 snares and 12 metal traps’. Since most protected areas suffer from a lack of manpower and law enforcement a select team of rangers received Wildlife Intelligence and Leadership Development (WILD) training that was specially designed for Law Enforcement Officers (LEOs). The main goals of WILD LEO project are:

- To provide ranger commanders with precise information about patrol coverage and the location of illegal activity.
- To provide prosecutors with better courtroom evidence to increase the likelihood that poachers and other criminals will be convicted.
- To collect photographic evidence that better describes the nature of criminal activity inside Uganda’s protected areas. WILD LEO training was conducted by Dr. Andrew Lemieux, an American criminologist teaching at Netherlands Institute for the Study of Crime and Law Enforcement. WILD LEO uses advanced intelligence gathering and analysis techniques to study and prevent criminal activity in Uganda’s protected areas using hybrid geo-location cameras with a GPS unit. This gives UWA law enforcement Commanders added information for making informed deployment decisions. The project encourages intelligence-led patrolling, whereby analysis of monthly patrol coverage, wildlife animals distribution, and illegal activity observations are used to direct patrols. Additionally, the project provides management with up-to-date information of patterns of illegal activities and poachers observed by ranger patrols. When suspects are arrested, the geo-tagged photos, and video statements recorded on the camera provide prosecutors with strong evidence and increase the likelihood of conviction. To date, 50 rangers have been trained in the use of hybrid geo-location cameras, including two crime analysts and two project officers, and 17 geo-location cameras were provided to MFCA plus one desk top computer; Ranger training in elephant data collection and recording occurred and data collecting forms have been distributed to ranger posts of Mubaka, Mupina, Bulaya, Rabongo, Karuma and Waringo. The data collecting forms consist of date, area, site coordinates, evidence of elephant sightings, number of individuals, males, females (young, old) and other remarks. Over the past 2 years, aerial surveys have not reported elephants in the south MFCA. With the increased ranger presence, elephant sightings have recently been reported. In December 2013, a herd of elephants were sighted by rangers in Sambiya river area and they remained near the top of the falls until mid-January, 2014. Another group of six bull elephants coming from Rabongo forest up to Mubaka UWA Headquarters were sighted in February 2014 and remained in the area until the end of March, along with a bon group of about 30 elephants. In the very south of MFCA, a bond group has been recorded well outside the park. This may be the group translocated from the Bulenze community area (80 km south of Murchison Falls National Park in 1995) but now largely resides in MFCA, traversing Rabongo forest area and Budongo forest.

Development and Support of an Elephant Conservation Center, Myanmar

In February of 2014, the International Elephant Foundation signed a three-year Memorandum of Understanding with the Myanmar Timber Enterprise (MTE), a department of the Ministry of Environmental Conservation and Forestry of the Republic of the Union of Myanmar. Through this collaboration, IEF and MTE will develop the Myaung Hlay Wun elephant camp into an Elephant Conservation Center (ECC). Experts of raw timber, including seals, have generated over $1 billion in revenue to Myanmar and have been the major source of income supporting most of this country’s 5,000 elephants held in human care and their mahouts. Asian elephants have been used for hundreds of years to help fell trees and to drag massive logs out of the forest. The government department MTE currently owns and manages about 3,000 elephants. This year the government of Myanmar banned the illegal collection of elephants and 17 elephants were logging quotes at a desire to protect the remaining forest and to stimulate the econ- omic industry of lumber mills and carpentry. This move has been applauded by most conservationists but it requires a multi-year strategy to ensure the long-term care and training of the elephants and assisting in important conservation efforts. Many different activities for this camp are being investigated from eco-tourism to human-elephant conflict mitigation. The new IEF-MTE program will use captive elephants to provide education during forest monitoring and patrol activities, as a tool for gaining local community inter- est, and driving away crop raiding wild elephants.

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Large Elephant Monitoring Project
Sumatra Conservation Response Units (CRU)
Elana Pranata, Veterinary Society for Sumatran Wildlife Conservation

Conservation Response Units (CRU) are composed of captive elephants and their mahouts, government forest rangers, and the local community who are hired as permanent staff to strengthen the connection between the CRU and the surrounding communities. Elephants provide transportation during patrol activities, are a tool for gaining local community interest, and drive away crop raiding wild elephants when conflict incidents arise. Each CRU conducts patrols for 7-10 consecutive days a month during which CRU team members record sightings or evidence of illegal activities, human-wildlife conflicts and wildlife presence.

Way Kambas National Park (WKPN) is located on the southeastern coast of the LAMpung Province in Sumatra, Indonesia and provides one of the last viable habitats for the Sumatran elephant. Today it is home to nearly 200 elephants, which is about 10% of the estimated remaining wild population of Sumatra. The Park is also home to populations of endangered Sumatran rhinoceros, Sumatran tiger, Malay tapir, sun bear, and the endemic white-winged duck. Significant human encroachment has led to the degradation and decline of elephant habitat, thereby increasing incidents of Human Elephant Conflict (HEC). HEC occurs frequently in many areas where the Park borders farmland, causing loss of crops, destruction to houses and other property, and even loss of human lives—in turn this results in retaliation against wild elephants.

In 2013, 117 days of patrolling and habitat monitoring occurred. During this time, the CRU teams discovered illegal loggers and poachers. One of the illegal activities of the forest was poaching of deer and boar. Some members of the local community were also used for poaching of deer and boar. Significant human encroachment has led to the degradation and decline of elephant habitat, thereby increasing incidents of Human Elephant Conflict (HEC). HEC occurs frequently in many areas where the Park borders farmland, causing loss of crops, destruction to houses and other property, and even loss of human lives—in turn this results in retaliation against wild elephants.

In 2013, the CRU had to herd wild elephants back into the Park 33 times. In one case, a herd of about 50 elephants moved to cross the border river and invade the adjacent farmland about 1km from the CRU camp. The local community was invited to the new base camp to introduce the CRU and the elephants, and explain the purpose of the CRU. The local people were also encouraged to follow forest patrols to get a better understanding of the work of the CRU team. Furthermore, the CRU teams assisted local communities in developing skills for HEC mitigation by providing information about tools and strategies. Community-based guarding is as crucial for keeping elephants out of crops as the CRU. After several community meetings to discuss mitigation methods and local participation, the CRU team continued monitoring this group, and were able to block several attempts by the herd to enter into the adjacent harvestable rice fields.

From the very beginning of the project, one goal was the participation of the local community. First the CRU informed the people about the objectives of their work in informal meetings. After the construction of the CRU base camps was finished, the local community was invited to the new base camp to introduce the CRU and the elephants, and explain the purpose of the CRU. The local people were also encouraged to follow forest patrols to get a better understanding of the work of the CRU team. Furthermore, the CRU teams assisted local communities in developing skills for HEC mitigation by providing information about tools and strategies. Community-based guarding is as crucial for keeping elephants out of crops as the CRU.

Large Elephant Monitoring Project
Richard Moller, Co-founder and Chief Conservation Officer, Tsavo Trust

This elephant monitoring project works to provide extra protection for Tsavo’s elephants with special emphasis on the region’s iconic 100-pounder tuskers—elephant bull elephants—beauty worthy of more in excess of 100 lbs per side. During the four reconnaissance flights carried out by an illegal international ivory trade, the Tsavo region in southern Kenya hosts the planet’s last viable gene pool for these magnificent giants among the living.

April 2014 was an especially good month for identification of large tuskers within the Tsavo Conservation Area. Three new bull elephants were identified, one of which was seen twice in 2013, but not positively identified until now. These bulls were coded AR1, BA1, and the single-tusked K2. Including these, a total of 12 large tuskers were observed and relevant details were recorded in our database: SA1 (2 times), DI1 (2 times), DA2 (1 time), S10 (1 time), WS1 (2 times), SA2 (1 time), WA1 (1 time), BA1 (1 time), and BA2 (1 time). These observations were made from three bases, all within or near the CRU camps, the CRU teams mobilized the local people and mahouts to get a better understanding of the work of the CRU team.

In 2013 the CRU Bungur team conducted community-based crop guarding activities 340 times. All approaches made by elephants to cross the border were effectively repelled. Community crop guarding also occurred in Tegal Yoso and 5 times elephants succeeded in entering cultivated areas. All of these incidents happened in August 2013 indicating that Tegal Yoso is still an HEC hot spot, especially close to and around the harvesting season. Therefore to strengthen local capacity in Tegal Yoso, community-based crop guarding will be a special focus in 2014.

Since the CRUs have become active, local communities have been able to cultivate their farmland and harvest crops even from fields close to the border of the Park. In the past, many of these fields had been abandoned due to the constant crop destruction. Regular forest patrols and the existence of the CRU units have not only reduced HEC incidents and consequently prevented the illegal killings of wild elephants but has also led to a better understanding by the local people for conservation needs and correspondingly reduced illegal activities of the forest.
Elephants are greatly loved by many for their numerous behaviors that seem so human, as well as for their uniquely beautiful appearance. Unfortunately one of their most distinctive features, the tusks, have been the cause of the devastation of elephant popu-
lations in some areas of Africa. The tusks are actually modified incisor teeth and like all man-
imal incisors, the teeth have pulp cavities filled with highly vas-
cularized tissue and tiny nerve branches extending about the length of the task. The task is a multi-purpose tool—grow-
ing almost 7 inches a year and used to dig for water, salt, and roots; debark a tree; and defense or competing for mates. In ad-
dition to their tusks, an elephant will have four molars, with a molar located in each jaw. Lat-
er in life, a single molar can be 10-12 inches long and weigh more than eight pounds.

An elephant’s molar is wide and flat, perfect for grinding. The surface of the molar dif-
fers between Asian and African elephants. The ridges on the chewing surface of an Asian el-
phant’s molar will run in parallel lines, while the ridges on an African elephant’s molar will form a diamond shape. This diamond shaped led taxonomists to name the genus for African elephants, “Lox-
odonta”, which in Latin refers to this diamond shape.

There is no real tooth socket. As a molar is formed and ultil-
ed by the jaw it passes through the jaw from back to front in a conveyor belt fashion.

There are only four molars in use in an elephant’s mouth at any one time, but an elephant may go through six sets of mo-
olars in its lifetime. The final set typically erupts when the animal is in its early forties and must last for the rest of its life. After these last sets of molars wear smooth, an elephant will have difficulty chewing and processing food, which in turn begins to contribute to a decline in the animal’s overall physical health. Ultimately the progres-
sion of teeth can dictate the length of an elephant’s life.

Elephants have been killed for their tusks for many genera-
tions but the current explosive illegal worldwide demand for ivory has caused an uncon-
trolled slaughter, the like which has never been seen before. Poachers have become better equipped with high-powered rifles, immediate communi-
cation and improved trans-port. In addition, these illegal operations are often funded by organized crime or rogue military forces. After years of fighting this war with ivory poachers, many of the giant bulls of Africa, and now entire family groups of el-
phants, lie dead or are dying daily with their faces hacked off because their incisor teeth are coveted by humans for decorative pieces and jewelry.

The world is finally beginning to pay attention to this tragedy and individuals, conservation groups, politicians and govern-
ments are working together to stop the demand, eliminate the killing, and prosecute the off-
denders. Poaching is finally receiving the media attention it warrants but the fight to pro-
tect elephants continues to be an uphill battle in part because the story about conserving el-
phants for future generations is not just about poaching.

We must find solutions to human-elephant conflict, and protect elephant habitat and his-
toric migration routes in order to secure Asian and African ele-
phant populations for the world of our children’s children.

**Alleviating Human-elephant conflict in Nkaha Game Manage-
ment Area, Kafue National Park, Zambia**

Human-elephant conflict has escalated in recent years and communi-
ties have become increasingly disgruntled, which may directly relate to poaching of elephants in Kafue National Park, while also creating an environment where commun-
ity members choose not to re-
evail information about poaching events to government authorities. New cost-effective methods to al-
leviate human-elephant conflict are needed to build relationships between wildlife authorities and community members and help farm-
ers and elephants live in harmony. To develop new tools to allevi-
ate human-elephant conflict, this project trial experimental fences that use flashing lights to deter elephants from maize crops and investi-
gates options for new cash-crops that elephants find unpalatable.

**Support to Joint Conservancy Anti-poaching Team of Northern Rangelands Trust (NRT) to Protect African Elephants in North-
ern Rangelands, Kenya**

NRT develops the capacity and self-sufficiency of its constituent com-

munity conservancies in biodiversity conservation, natural resource ma-

nagement and protection, and natural resources based enterprises. The ongoing and increasing threat of elephant poaching in the Laikia-

ia-Siolo-Samburu ecosystem (with the second largest population of elephants in Kenya) is the primary conservation need addressed by this project. The increased effectiveness of the joint anti-poaching team supported by this project has led to significant declines in ele-
phant poaching throughout NRT and reversed the trend which had been steadily increasing throughout 2012. The presence of the joint anti-poaching team has also helped improve the civil and government security response to the theft of livestock and highway banditry as the same people are frequently involved in all three activities.

**Disseminating Lessons Learned and Building Capacity through Pachyderm**

Pachyderm is an essential vehicle for publishing manuscripts by el-
phant range State researchers, thereby assisting in developing capacity at the scientific and managerial level within the African elephant range.

**Development of Orma Community Wildlife Conservancies (Satellite communications & Tracking System), Kenya**

The Orma Conservancy is in the early stages of development which will result in increased security, better economic prospects, and im-
proved access to water, healthcare and education, while working to con-
serve elephants and other wildlife. Through proactive anti-poach-
ing operations, this Conservancy will increase and enlarge the safe disper-
sal range for Tsavo’s elephant population, securing important seasonal feeding grounds and re-open historical migration routes. In ad-
dition to deterring poachers from Somalia, the Conservancy will deter poachers from within the resident community by ensuring that people benefit meaningfully from conservation enterprises, creating an incentive to protect elephants. This project will fund a communi-
cations system, as without communications, the entire Conservancy project cannot progress.

**Large Elephant Monitoring Project, Kenya**

Tsavo’s last surviving “hundred pounder” tuskers (elephant bulls bearing ivory weighing over 100 lbs. per side) are in peril. Due to the recent increase in elephant poaching, this action-oriented project will individually identify on a regular and consistent basis the known large bull elephants of Tsavo via light aircraft. Data will be collected dur-
ing reconnaissance flights then shared with Kenya Wildlife Services
and Save The Elephants for research and elephant management pur-
poses. Through this project the profile of Tsavo’s large elephants will be
raised and the interest generated for these animals will attract more
funds to protect them and draw more Kenyan and international tour-
stists to this region which will in turn protect the bulls from poachers.

**Mounting**
**of**
**Horse**
**Patrol**
**Anti-poaching**
**Unit**
**for**
**Mount**
**Kenya**

This project will enhance the capa-
city of law enforcement per-
sonnel to detest the level of
poaching and other illegal activi-
ties mainly but not limited to the
high altitude areas of the northern
section of Mount Kenya using the
already established Horse Patrol
Team.

This project will decrease illegal activity on Mount Kenya and, in particular, reduce incidences of elephant and bush meat poaching; work with the Kenya Wildlife Service to secure the areas of the National Reserve between Meru and Sisirin which have become subject to indiscriminate
and habitat destruction within the high altitude zone; increase awareness
and conservation education within the communities living in and
around Mount Kenya; and improve the links between stakeholders of
Mount Kenya and wildlife NGO’s so that response times, intel-
ligence-gathering and information sharing can be improved for the benefit
of Mount Kenya’s wildlife.

**Serengti**
**Human**
**Elephant**
**Conflict**
**Mitigation**
**Program**

Poaching and destroying wildlife natural habitats by setting bush fires,
cutting down trees for timber, woodfuel and charcoal have triggered
critical human-elephant conflict involving over 30,000 people living
in 16 villages that border the Serengeti National Park in Bunda dis-
trict. This project will address the root causes of the conflict—poverty
and lack of conservation education—through village meetings about
conservation and habitat utilization, lessons about family planning,
and the development of an exemplary chili pepper and ginger farm
in Bukore village. Strategies for repelling the elephants from the vil-
lage crops, producing alternative incomes through the sales of chili
and ginger, and the development of a community fire-station will help
farmers avoid property and physical damage. GPS information
from patrols and HEC incidents will be also be recorded by the
unit and used alongside other information collected to monitor and
evaluate the effectiveness of this HEC mitigation program.

**ASIA**

**Building National Consensus for Asian Elephant Conservation**
**in Cambodia**

Habitat loss and degradation is a significant issue for Asian ele-
phants in Cambodia as increas-
ing amounts of natural habitats
are converted to economic land
concessions throughout the
country, including inside and
adjacent to protected areas. The
Cardamom Mountains Land-
scape holds a core population
of Asian elephants yet to date there has been few targeted conserva-
 tion efforts and little is known about this globally important popula-
tion. Given the long-term goal of the project is to develop a monitoring
program for Asian elephants in the southern Cardamoms and to ensure
conservation efforts of this core population are strategic, effective and
adaptive.

The short-term goals of this project are to collect critical
information to enable a monitoring program to be established, to
improve human Asian elephant coexistence, and to inform the develop-
ment of a comprehensive Asian elephant national action plan.

**Capacity Building to Strengthen Management of Captive El-
ephants in Laos**

This project will reduce the illegal capture and trade of wild and cap-
tive elephants through the registration and micro-chipping of captive
elephants. To date the team has successfully micro-chipped 442 el-
ephants. This project will also include the distribution of Elephant
Identity Cards, training of mahouts in basic healthcare, and the dis-
ssemination of information within mahout communities promoting
long term care; breeding opportunities, and a socio-economic alterna-
tive to logging.

**Comparative Study of Wild Elephant Social Behavior in Sri
Lanka**

This project will study the social behavior of elephants at Uda Walawe
and Minneriya National Parks (MNP) to create photographic identi-
 fication of individuals using that study area, and collect behavioral
and demographic data on age structure, births and deaths. In addition, workshops for wildlife managers will be conducted to
work on policy decisions across the entire habitat of the Asian and African
elephant.

**Finding Possibilities of Re-opening Elephant Corridors in
Northwestern Wildlife Region, Sri Lanka**

The northwestern Province supports nearly 20 percent of the esti-
 mated elephant population of Sri Lanka. This elephant population is
scattered in small pockets of habitats as small herds and individu-
aIs. Large areas of land have been cleared and extensively planted
with crops that are palatable to elephants such as banana and rice.

This project will seek strategies for reopening elephant corridors in
the northwestern wildlife region, identify the locations of existing el-
phant corridors and isolated elephant populations, and identify the
areas for development that will not block the natural migration routes
and do not harm the natural food sources of the elephants.

**Identification of Elephants in Conflict with People Using Mo-
lecular Techniques, India**

Human-elephant conflict in-
volves a variety of factors which are ecological as well as biological
factors that determine the behav-
ioral response of individual ele-
phants to the increasingly human
dominated landscape. Mitigation
measures need to be developed
based on an understanding of the
exact nature of the conflict on a local or regional scale for them to
be effective.

This study will identify crop-raiding elephants to gain a better understanding of the acute levels of conflict in the Kodagu
district of Karnataka, by analysing behavioral and demographic data
of crop raiders and non-raid-
ers. The project will also use DNA
fingerprinting for identifying
the proportion of crop raiders versus non-raid-
ers, the proportion of ha-
thal raiders versus occasional
raiders, and the proportion of male
versus female crop raiders in the region. Results will provide valuable
information to devise measures for reducing crop raid such as deter-
rinig a few habitual raiders that may be causing most of the damage
versus building more barriers if raiding is found to be largely opportun-
istic. These observations would also have wide-ranging lessons for the
study of elephant-human conflict, and subsequently, for inform-
ing policy decisions across the entire habitat of the Asian and African
elephant.

**Publication of the Gajah, the Journal of the Asian Elephant
Specialist Group**

Gajah is the journal of the IUCN/Asian Elephant Specialist Group. Gajah shares best practices and builds capacity amongst managers, conservationists, researchers and to those interested in the manage-
ment and conservation of the Asian elephant, both wild and those
in human care.

**Schools Awareness Program, Sri Lanka**

Human-elephant conflict is a growing problem in Sri Lanka as ele-
phant habitats continue to be cleared to make space for crop plantations
for food and other. This conflict leads to human and elephant deaths and damage to crops and property. A 20-year average, recorded by the Department of Wildlife
Conservation, shows that 150 elephants and 65 humans are killed each year. In many cases, humanely needed if elephants are to be saved. The Schools Awareness Program has pre-
semed curriculum at 1,500 schools in the last 10 years and addresses
the value of elephants, the causes of conflict, how to minimize the conflicts, and stresses the need for conservation.

Sumatra Elephant Conservation Response Units, Indonesia

This ongoing IEF proj-
etic tissue and other clinical samples provides information about the
diseases with the aim of generating
elephants and habitat

EX SITU

Determining Pharmacokinetic Characteristics of the Antiviral Drug Ganciclovir in

Asian Elephants

Appropriate dosages and dosing intervals to maintain therapeutic

IEEH Viral Genomics and Pathogenesis.

The three most common and useful techniques for studying viruses are not applicable for IEEH. However, the genomes of EEHVs by PCR amplification and DNA sequencing directly from necro-

Asian Elephants

Drug Ganciclovir in

Determining Pharmacokinetic Characteristics of the Antiviral

Thank you for your support!
The International Elephant Foundation would like to extend our gratitude to the following individuals and organizations for their contributions in 2013. Your donations help us to continue the support of African and Asian elephant in both the wild and in human care for generations to come.

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EXPRESS NEWS

Asian Elephant Conservation in China

Asian Elephants

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