REPUBLIC OF KENYA

WILDLIFE RESEARCH & TRAINING INSTITUTE

Discover Beyond

Research Newsletter

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The Wildlife Research and Training Institute (WRTI) is a state Corporation established under Section 50 of the Wildlife Conservation and Management Act No. 47 of 2013 (WCMA 2013). Headquarters are based in Naivasha, Kenya, with field centres and sub-centres located in key wildlife conservation areas across the country established to address specific agro-climatic research thematic areas as outlined below:

Southern Savannah Landscape Centre:
Based in Tsavo East National Park, with 4 sub-centres in Maasai Mara, Tsavo West, Nairobi and Amboseli

Northern Savannah Landscape:
Located in Meru National Park, with sub-centre in Marsabit

Coastal and Marine Ecosystem Centre:
Located in Malindi with a subcenter in Shimba Hills National Reserve;

Montane/Forest Ecosystem Centre:
Based in Mweiga (Nyeri), with sub-centres in Kitale and Kakamega

Inland Waters and Wetlands Centre:
Located in Naivasha, with sub-centres in Kisumu and Lake Nakuru National Park.

Director/CEO's Note

> **This inaugural issue highlights important milestones and insights from our research teams, collaborations with local communities, national agencies, and international partners.**

To our esteemed partners,

It gives me great pleasure to present the inaugural edition of the *Wildlife Research and Training Institute (WRTI) Research Newsletter.* This platform marks an important milestone in our journey to strengthen the visibility of the Institute's research, innovations, and collaborative efforts in wildlife conservation.

At WRTI, our mission is to conduct and coordinate wildlife research through innovation, knowledge and technology transfer for sustainable wildlife conservation and management, generating and sharing knowledge that informs evidence-based conservation and management of Kenya's rich biodiversity. We aim to showcase the breadth of our scientific work, highlight the contributions of our researchers and partners, and provide timely updates on the progress of our ongoing projects across the country.

This inaugural issue highlights important milestones and insights from our research teams, collaborations with local communities, national agencies, and international partners. Our newsletter is designed to be both an information-sharing resource and a source of inspiration for greater engagement, dialogue, and collective action to protect Kenya's wildlife and ecosystems for generations to come.

I warmly invite you to read, reflect, and share this publication. Your feedback will be invaluable in enriching future editions. Together, let us continue to advance wildlife research as we discover beyond.

Dr. Patrick Omondi, OGW

National Wildlife Census 2024/2025

> **The results of this comprehensive census will be released soon, offering invaluable data to guide Kenya's wildlife conservation and management efforts.**

The Institute, in collaboration with the Kenya Wildlife Service (KWS), and with support from the Ministry of Tourism and Wildlife alongside other conservation partners, successfully conducted the second National Wildlife Census. This landmark exercise was launched in June 2024 and concluded in August 2025. The primary goal of the census was to determine the status, distribution, and trends of wildlife populations across Kenya. It sought to provide a clear understanding of the country's wildlife resources, thereby providing evidence-based conservation planning and policy formulation.

To achieve this goal, the census was guided by several key objectives. These included determining Kenya's wildlife population abundance, distribution, and trends; documenting historical perspectives on species population dynamics and conservation efforts in the country; identifying threats to wildlife conservation and management across different landscapes; suggesting strategies for effective conservation and management of wildlife; and informing the development of immediate action plans to counter fragmentation, and degradation of habitats. Together, these objectives offer critical insights into population dynamics, habitat use, and human-wildlife interactions, while also informing security operations, habitat management, and conservation investments.

The census targeted all of Kenya's major ecosystems including Tsavo, Laikipia-Samburu, Maasai Mara, and Amboseli-Magadi, among others. In addition, the arid regions of Isiolo, Wajir, Garissa, and Lamu were covered, as well as key aquatic ecosystems. To ensure accuracy and scientific rigor, diverse and validated methods were employed. These included aerial counts both

total and sample for extensive savannah landscapes to monitor medium- to large bodied wildlife. Ground-based techniques, such as dung counts for forest elephants, spatially explicit capture-recapture (SECR) for carnivores, and individual identity-based monitoring for rhinos, were also utilized.

The results of this comprehensive census will be released soon, offering invaluable data to guide Kenya's wildlife conservation and management efforts.

Highlights of the beyond migration project

Mt. Suswa at Risk: How Maasai Cultural Soil Extraction Threatens Wildlife Habitats

> **Visitors to the area often find themselves immersed in vibrant cultural experiences: traditional dress, storytelling, and ceremonies conducted in sacred caves.**

Tucked away on the northeastern edge of a Masai Mara ecosystem, Mt. Suswa is far more than just a scenic crater, it's a vital wildlife corridor, a cultural treasure, and a landscape in urgent need of protection. A recent baseline mammal survey has shed new light on the ecological importance of this region, while also highlighting the challenges threatening its future.

Historically known for its dramatic caldera, volcanic caves, and unique wildlife, Mt. Suswa has long served as a seasonal dispersal area for wildlife. As the easternmost edge of the Mara ecosystem, the area is a crucial pathway for wildlife, especially elephants, that migrate between the Mara and the Amboseli–Magadi landscapes. The terrain is rugged, characterized by hills, lava tubes, and undulating land, but rich in biodiversity and cultural heritage.

To better understand the area's ecological value, the Institute recently conducted a field survey that served as a baseline for future monitoring and research in the area . Along selected transects, researchers observed mammal species using direct sightings, traps, and indirect sightings like dung and tracks. A total of 19 mammal species were recorded that include elands, zebras, hyenas, civet cats and leopards.

Using movement data, elephant activity from collared elephants within the Mara ecosystem was analysed and provided important insights on the movement of elephants across both open plains and closed habitats. This reinforces Mt. Suswa's role as a key link between

fragmented wildlife populations across larger landscapes. In the course of this baseline survey, elephant presence was also noted through indirect sightings, using dung that was partially in the lower zones of the survey area.

Despite its significance, Mt. Suswa faces growing threats largely from anthropogenic activities. Of importance, the land is fully community managed, with the local Maasai acting as stewards of both nature and tradition. Visitors to the area often find themselves immersed in vibrant cultural experiences: traditional dress, storytelling, and ceremonies conducted in sacred caves. A notable cultural site within Mt. Suswa is "Ol Doinyo Nyokie," the "Red Mountain," which holds significant importance for the Maasai community. Here, red ochre is still harvested, a natural resource traditionally used by Maasai women for hair decoration and other cultural practices. This mountain is also famous for extensive lava caves, including the "Baboon Parliament," a natural amphitheater used by baboons, and home to massive bat colonies.

Mt. Suswa stands at a crossroads. With thoughtful, inclusive action, it can remain a thriving refuge for both wildlife and culture. Without it, we risk losing one of Kenya's most uniquely beautiful and ecologically valuable landscapes.

Mammal data collection (Direct live sightings

Indirect observation of Aardvark burrow and fresh Eland droppings.

Mass Coral Bleaching Hits Kenya's Marine Protected Areas

> These reef ecosystems are vital because they support a wide range of marine life, provide important fishery resources for local communities, and attract coastal tourism, which is a key part of Kenya's economy.

Kenya's shallow coral reefs inside Marine Protected Areas (MPAs) have been badly affected by a recent mass bleaching event, raising urgent concerns for their protection. A joint survey team made up of experts from WRTI, Kenya Marine and Fisheries Research Institute (KMFRI), and KWS conducted field assessments after alerts about unusually high sea surface temperatures.

The surveys showed widespread coral bleaching in all four MPAs studied. Sea temperatures had risen as high as 33.1°C, and heat stress reached dangerous levels between 9 and 12 Degree Heating Weeks (DHWs)—a measure of prolonged heat stress that can kill corals. Even coral species that usually withstand heat well, such as Porites and Platygyra, showed serious bleaching, revealing how severe this event was. Among the sites, Kisite Mpunguti MPA suffered the worst damage, especially affecting coral types like Acropora, which are more vulnerable to heat stress.

The study found that while bleaching was severe everywhere, the level of impact varied by location. This suggests that some coral communities may have stronger natural resilience or local conditions that help them cope better. The survey team recommends further research using remote sensing technology (satellite imaging) and ongoing underwater monitoring. This will help track how the reefs recover over time and allow authorities to adapt conservation efforts more effectively.

This early report highlights the urgent need to take action in protecting Kenya's coral reefs. These reef ecosystems are vital because they support a wide range of marine life, provide important fishery resources for local communities, and attract coastal tourism, which is a key part of Kenya's economy. Protecting them now will help safeguard biodiversity and livelihoods for the future.

Normal bleaching

Partially bleached

Whole bleached

Recently dead

A Genetic Detective Story to Unlock the Secrets of Kenya's Talking Parrots

> We are now forging ahead to identify the source location and understand the origins of these birds to better secure their future in the wild.

The African Grey Parrot, scientifically known as *Psittacus erithacus*, is an intelligent, grey feathered bird with bright red tail and famous for its incredible ability to mimic human speech. Tragically, their intelligence is the very reason why they are a prime target for the pet trade. This has pushed their wild populations into peril.

Their rangelands are tropical forests in Africa along the equatorial belt. Here in Kenya, the Kakamega Forest is home to these iconic birds. There, they are not only beautiful to look at but play a key role in the ecosystem. They spread seeds that help new trees grow ensuring the forest remains alive. But their numbers are dwindling fast due to habitat loss and relentless capture for the global pet market.

In order to protect these great parrots, we must understand WHERE THE CAPTURED PARROTS ORIGINALLY COME FROM? This is why the Institute's forensics and genetics laboratory has embarked on an exciting scientific project to use the power of DNA to answer this big question. In collaboration with the Kenya Wildlife Service(KWS), We have collected tissue samples from over 900 pet African Grey parrots across Kenya. We are using their DNA to compare to genetic data from wild parrot populations stored in global databases. We intend to build a phylogenetic tree, where parrots from the same region in Africa will cluster together on a "branch". This phylogeographic map

will allow us to pinpoint the likely origin of any bird.

This genetic detective work will tell us a crucial piece of the puzzle and answer questions such as; Where are the parrots originally being taken from? Are they being taken from our own Kakamega forest? Are they coming into Kenya from other countries? This information will provide necessary information for evidence-based decision making on key strategies to inform effective conservation of African Grey Parrots.

What have we discovered so far? Our preliminary analyses have revealed a surprising clue; a significant number of the pet African Grey Parrots in Kenya are highly related. This could suggest that they are being taken from a single specific source population or being bred in captivity for the pet trade. This marks a critical first step in our investigation. We are now forging ahead to identify the source location and understand the origins of these birds to better secure their future in the wild.

A pet African Grey parrot

Our researcher analyzing the samples

How Bamboo is Rebuilding Budalangi's Nzoia Riverbanks

> **What is unfolding in Budalangi is a powerful story of regeneration—driven by science, anchored in community involvement, and nurtured by one of nature's most versatile plants.**

In the flood-prone region of Budalangi, where the Nzoia River has long been both a lifeline and a source of hardship, a quiet transformation is underway. Along its eroded banks, green shoots of bamboo are taking root, signaling the beginning of a remarkable restoration journey.

Launched in June 2024, the project is a partnership between the Institute, Jaramogi Oginga Odinga University of Science & Technology (JOOUST), the Chinese Academy of Sciences (CAS), and UNEP-IEMP. As part of wider Sino-Kenyan cooperation on bamboo technology, the initiative aims to restore riparian zones while uplifting local communities. So far, more than 5,000 bamboo seedlings have been planted along the river, with an additional 8,000 propagated in a revived community nursery. Community participation is central, ensuring that livelihoods benefit alongside ecological recovery.

The effort extends beyond riverbanks into local farms, where bamboo is being integrated into agroforestry systems. Maize intercropped with bamboo has shown resilience, surviving floods that wiped out more vulnerable crops like beans. This demonstrates bamboo's dual role in strengthening food security and ecological restoration.

Bamboo also offers powerful natural defenses against erosion. Its fast-growing, dense root system reinforces the soil, retains moisture, and reduces sediment runoff. These benefits are

being tracked through permanent monitoring sites that measure canopy growth, soil infiltration, and overall ecosystem recovery.

Looking ahead, the vision is ambitious yet grounded: expand bamboo planting to upstream catchments, reduce sediment flow from the source, and build a sustainable bamboo-based economy. What is unfolding in Budalangi is more than restoration, it is a story of regeneration, driven by science, anchored in community involvement, and nurtured by one of nature's most versatile plants. The bamboo along the Nzoia River now stands as a symbol of resilience, hope, and a greener, more secure future for the region.

Training and Capacity Building:

Combating Poaching and Illegal Wildlife Trade in Tanzania through integrated approach project

> **A key focus was placed on the proper handling of forensic evidence, which plays a pivotal role in building strong legal cases.**

In a collaborative effort between the institute and the Tanzania Wildlife Research Institute (TAWIRI), a specialized training session was held to enhance the capacity of wildlife law enforcement and research personnel in forensic investigations. Participants were introduced to the critical role of DNA analysis and genetic databases in solving wildlife crime cases. The training covered essential topics such as interpreting DNA reports from government laboratories, evidence collection techniques, and the importance of preserving the integrity of crime scenes and exhibits. A key focus was placed on the proper handling of forensic evidence, which plays a pivotal role in building strong legal cases. The training also underscored the importance of lawful arrest procedures and how forensic evidence can contribute to successful prosecutions, ultimately supporting efforts to combat wildlife trafficking and protect biodiversity.

Wildlife Veterinarian Training Interventions of Wild Animal Health(IWAH)

> The course marked a major milestone in building global capacity for wildlife health interventions and sustainable conservation.

Wildlife Health Bridge Consortium recently concluded a three-week 'Interventions of Wild Animal Health' (IWAH) training at the Institute's Headquarters in Naivasha. This collaborative program,hosted by the Institute, involved global partners like the Zoological Society of London and the University of Edinburgh, trained 27 veterinarians from 13 countries. Participants received specialized instruction in wildlife population monitoring, disease outbreak investigations, and techniques for capture, restraint, and anesthesia. The training combined classroom theory with hands-on fieldwork at Naivasha Wildlife Sanctuary and Hell's Gate National Park, equipping veterinary professionals with critical skills to address wildlife health challenges and enhance ecosystem resilience. The course marked a major milestone in building global capacity for wildlife health interventions and sustainable conservation.

Tracking the Kings of Tsavo: A Novel Era in Lion Ecology

> By tracking lion movements and identifying areas where conflict with local communities occurs, the research will offer actual data to help mitigate clashes, particularly those between lions and livestock along Tsavo's borders.

In the vast, rugged expanse of Tsavo, a groundbreaking initiative has taken flight, one that promises to reshape our understanding of lions and their role in this iconic African landscape. The Tsavo Simba Research Project, a collaborative effort between the Institute , the University of Minnesota, and Macalester College, has launched with an ambitious goal: to understand the ecological dynamics of lions while bolstering local research capacity and fueling real-world conservation efforts.

At the heart of this project lies a multifaceted approach to lion ecology. Researchers will track pride behaviors, territorial boundaries, and movement patterns, all while seeking to understand the intricate relationships lions have with their environment. This data will offer new insights into how Tsavo's lions interact with each other, their prey, and their surroundings. A significant portion of the study will also examine lion predation: how they hunt, what they hunt, and how they contribute to the larger ecosystem as apex predators.

But the project doesn't stop at tracking prey. It also delves into a rarely explored area, carrion ecology. Lions in Tsavo aren't just hunters; they also play a vital role as scavengers, interacting with other carnivores and decomposers at carcass sites. This unique aspect of the study will shed light on how lions contribute to the delicate balance of the ecosystem beyond their role as hunters.

One of the project's most important goals is to tackle human-wildlife conflict. By tracking lion movements and identifying areas where conflict with local communities occurs, the research will offer actual data to help mitigate clashes, particularly those between lions and livestock along Tsavo's borders.

The project also has a global outreach component. In January 2027 and 2028, a two-week field course at the Institute Tsavo Research Centre will provide 12–14 undergraduate students from U.S. universities with hands-on experience in African wildlife research. This will be followed by a one-week software training workshop in March 2028, aimed at enhancing the skills of our scientists in advanced data management and ecological modeling.

Already, 10 lions have been collared with satellite GPS trackers, enabling researchers to monitor their movements in real time. With every step, the Tsavo Simba Research Project brings us closer to understanding the intricate lives of Tsavo's lions, helping shape more effective conservation strategies, fostering global scientific collaboration, and ensuring the lions' future in a rapidly changing world

Advancing Sustainable Agriculture— Innovative Bio-Stimulant Research

> **This research opportunity marks a significant milestone in her career and further strengthens WRTI's position as a leader in advancing science-based solutions to Africa's environmental challenges aligning with the objectives of the Institute's Strategic Plan (2023-2027).**

Dr. Priscillar Mutungi, a WRTI biological scientist with expertise in microbial bioprospecting for sustainable agriculture and industrial biotechnology wins a postdoctoral fellowship, and joins other fellows at the International Centre for Genetic Engineering and Biotechnology (ICGEB) in Cape Town, South Africa, to develop bio stimulants for sustainable agriculture. This prestigious opportunity comes through the ICGEB Bio-Inoculants for Food Security in Africa (B-INOC) Fellowship Programme, aimed at advancing training, global scientific mobility, and capacity-building for researchers, particularly from the Global South.

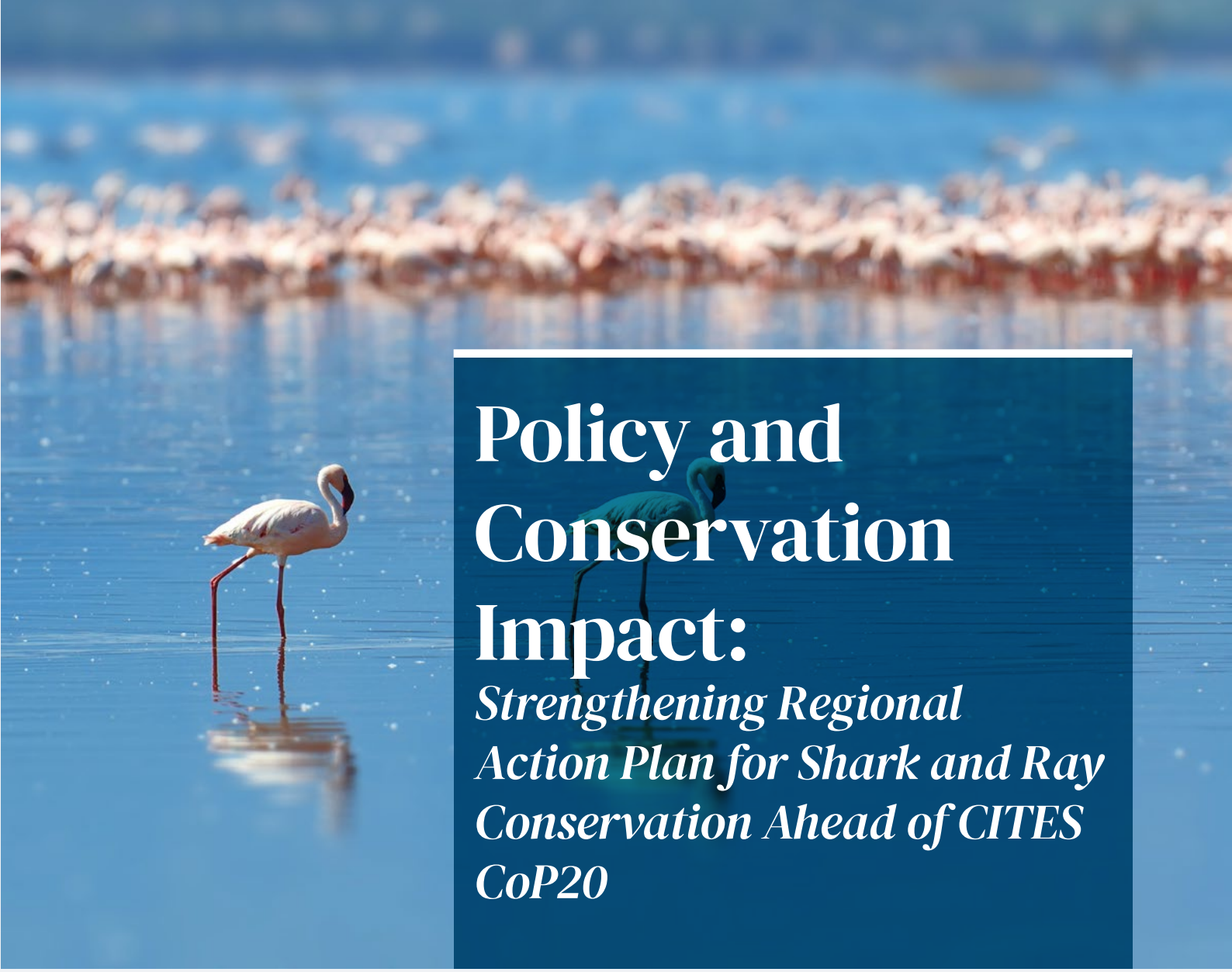
Her research is focused on developing crop bio-stimulants from endophytic

bacteria, which are designed to enhance plant resilience, improve nutrient uptake, and boost stress tolerance, critical qualities for crops facing the challenges of climate change and soil degradation. The project aligns with global priorities, including the Kunming-Montreal Global Biodiversity

Framework, addressing pressing issues like climate-smart agriculture, biodiversity conservation, and food security.

This research opportunity marks a significant milestone in her career and further strengthens WRTI's position as a leader in advancing science-based solutions to Africa's environmental challenges aligning with the objectives of the Institute's Strategic Plan (2023-2027).

The collaboration between the Institute, ICGEB, and international partners represents a major step forward in enhancing scientific capacity, fostering innovation, and supporting both national and continental priorities in biodiversity conservation and climate adaptation.



Policy and Conservation Impact:

Strengthening Regional Action Plan for Shark and Ray Conservation Ahead of CITES CoP20

> A key focus was placed on the proper handling of forensic evidence, which plays a pivotal role in building strong legal cases.

In August 2025, the Western Indian Ocean (WIO) Region Pre-CITES CoP20 Workshop on Sharks and Rays convened by government representatives and technical experts in Mombasa, Kenya. The workshop aimed to enhance regional cooperation on the conservation and sustainable use of these vital marine species. Among the participants were researchers from the Institute.

The meeting was held in preparation for the upcoming 20th Conference of the Parties (CoP20) to the Convention on International Trade in Endangered Species (CITES), scheduled for November 2025. The workshop provided a critical platform for sharing scientific insights, building technical expertise, and aligning regional positions on key proposals. Of the 51 proposals submitted to CoP20, seven directly address sharks and rays, underscoring the global urgency as nearly 40% of these species face threats from overfishing, habitat degradation, and unregulated trade.

Participants explored emerging tools for species identification and traceability, highlighting the importance of reliable data and scientifically grounded Non-Detriment Findings (NDFs) in guiding CITES decisions. The workshop also emphasized the need for stronger cooperation under regional and international frameworks, including the Nairobi Convention, the Indian Ocean Tuna Commission (IOTC), Western Indian Ocean Marine Science Association (WIOMSA), and other multilateral environmental agreements.

A strong call was made for inclusive conservation approaches that engage and support coastal communities, Indigenous Peoples, and Local Communities (IPLCs). The outcomes of the workshop are expected to inform a regional action plan and technical roadmap to drive collaborative efforts for the protection of sharks and rays across the WIO region.

Upcoming Events and Announcements

- **The launch of the National Wildlife Census (2024-2025) Report**
- **The Commissioning of the Coastal and Marine Research Centre.**

Photo Gallery

The Institute , Macalester College and the University of Minnesotta during the launch of the Tsavo Simba Project.

Strengthening areas of collaboration with IFAW

Highlights from the scientists retreat at the Lake Naivasha Resort.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Lake Naivasha


WILDLIFE

Highlights from the meeting between the Institute's senior management and a team from Equity Bank during a courtesy visit to explore potential areas of collaboration.


5Y-BWB

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