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Rural communities must often contend with wildlife such as the gelada monkey and extreme climates. AWF's Classroom Africa schools cleverly uses design features to create a comfortable learning environment, such as woven screens to facilitate airflow in Zambia (below).

The rules of design

"More than other building types, school facilities have a profound impact on their occupants and the functions of the building, namely teaching and learning." So says the Whole Building Design Guide, a program of the National Institute of Building Sciences. Indeed, a literature review by the organization Room to Read concluded there was a link between school infrastructure and factors such as student enrollment, attendance and attainment. Proper ventilation, lighting and noise control in particular seem to have a significant correlation to student learning.

AWF's Classroom Africa program follows these general rules when designing schools:

- Building materials must be chosen based on their thermal mass, resistance to moisture, sustainability and local availability.
- Buildings must be placed with optimal orientation relative to the sun.
- Buildings must be optimally oriented for wind and ventilation purposes.



Addressing the Extremes

Building schools in rural Africa requires design ingenuity to account for climate challenges and the paucity of ideal construction materials

n Ethiopia's Simien Mountains, where elevations reach some 3,600 m (11,811 ft.) above sea level, the climate often veers to the extremes. During the dry season, the days can get hot while the nights can dip down to freezing temperatures. During the rainy season, days and nights alike are chilly.

The climate poses a particular challenge for the local community. After all, building methods remain rudimentary. Electricity doesn't exist. And poverty is prevalent. It's a similar story in certain other parts of Africa as well, making climate a key consideration in the work of AWF's Classroom Africa (formerly the African Conservation Schools) team. The Classroom Africa program works to enhance conservation through education, and does this in part by building or rebuilding primary schools.

A comfortable school

When AWF meets with communities to determine residents' wish lists for a school, climate typically finds its way into the discussion. "Communities will say that it's too hot or too cold in the classrooms of their existing school, too noisy during rains and so on," observes Commode Dushimimana, infrastructure and design manager for the Classroom Africa program and a registered architect.

"In the developed world, these factors would be addressed with such things as insulation, air conditioning and electrical considerations," observes Brian McBrearity, managing director of Classroom Africa. Lacking such options in Africa, building a comfortable school requires a little more ingenuity in design.

Take the new Adisge Primary School being built in the Simien Mountains. The school is being constructed using an earth bag method, where sacks are filled with soil and stacked to form the walls of each building. The bags have high thermal mass—a material's ability to absorb and store heat—allowing the classrooms to remain cool during the day when outside temperatures soar. The earth bags then release heat in the evening. They will be plastered over with a light-colored, limeand-cement mixture to ensure smooth walls and a bright classroom.

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The African Wildlife Foundation. together with the people of Africa, works to ensure the wildlife and wild lands of Africa will endure forever.

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EarthShare

Creating a new reality



t is an unfortunate reality in Africa that the people who have the greatest immediate impact on the continent's natural resources are often the least engaged in discussions around their management. I am talking, of course, about rural communities.

One of the primary ways in which we make sure that communities receive more education in conservation matters is, frankly, through education! Through AWF's Classroom Africa program (formerly called African Conservation Schools), AWF is working to establish quality primary

schools across Africa-schools that also have a distinct conservation connection. These schools allow us to build a conservation foundation within the next generation of African leaders.

To achieve this goal, however, we needed to first tackle more immediate matters. Chiefly: How do we create comfortable learning environments in locations that suffer from extreme climatic conditions but lack in modern construction materials such as insulation and electricity? Read our cover story to learn how our Classroom Africa team is creatively addressing these challenges.

Engaging rural communities in conservation will be even more important as Africa continues to develop

Of course, we need to engage people of all ages, not just youth. So, AWF has made sure that the women at the heart of communities in places such as the Congo Basin are trained in sustainable farming methods, given business coaching to launch alternative enterprises and more. I invite you to read about these efforts on the opposite page—and while you're here, check out a couple of the other ways we're working with communities to support conservation.

Engaging rural communities in conservation will be even more important as Africa continues to develop. But that does not mean we're forgetting our still-critical mission of fighting wildlife trafficking. You may have heard a bit about the Kenyan government's history-making ivory burn back in April. We tell you more about it on page 5, and why the burn was important. And, on page 4, you'll find a story that shows how your support is protecting rhinos.

The stories on these pages provide just a small sampling of how you are helping to create a new reality in Africa—and, ultimately, a better future for people and wildlife alike. We are very grateful for your support.

With heartfelt thanks,

Patrick J. Bergin, Ph.D. Chief executive officer

Your generous contribution to AWF allows us to support alternative livelihoods for people while also providing much-needed protections for wildlife such as the rhino.



AWF roundup



In rural Africa, women and natural resources are inextricably intertwined. Women are the ones who visit the local streams to fetch water. They enter the forest to collect firewood. And they clear wild lands to farm. Yet women inevitably are left out of conservation conversations. Because training women in more sustainable ways to manage natural resources will make a positive impact on the environment AWF is engaging women in many of its capacity-building efforts, including in the Congo landscape. For example, AWF established five women's organizations in key locations in the landscape. The women received 300 kg of improved cowpea and groundnut seeds, 82 improved chicken breeds, 130 ducks and 150 machetes to carry out sustainable agropastoral activities. The 150 female members also participate in forums related to the conservation and development of their land.

"Community-based natural resource management is a game changer for sustainable development, because it enables the rural poor to overcome poverty through knowledge sharing and local stakeholder participation," explains Congo Landscape Manager Hugues Akpona. "It's a bottom-up way of organizing community activities that empowers individuals as well as the collective."

Water harvesting in Kenya

In the Kilimanjaro landscape, expanding human settlement and rapid development is resulting in wetlands suffering water shortages. To counter this, AWF has installed water storage tanks at 28 households in two group ranches in the southern Kenyan landscape. The benefits are multifold: Women who once had to walk upwards of 12 hours for water are now getting clean H₂O right at their doorstep. People no longer have to take water from the area wetland, whose water levels have already lowered over the years. And, women are able to spend more time on their small businesses, such as selling their handiwork to tourists.



Bees for conservation

We all know bees assist with pollination and agriculture. But who knew they could also encourage conservation?

In Uganda's Budongo Forest Reserve, AWF and Jane Goodall Institute in 2014 provided 10 beehives each to 40 households and taught them how to care for the bees and beehives. In return, community members are conducting patrols in the nearby forest, which provides habitat for chimpanzees, and monitoring illegal activities such as tree cutting. Each beehive produces about 30 kg of honey

and 1 kg of honey sells for about 16,000 Ugandan shillings. With two bee harvests taking place each year, beekeepers are likely to earn up to 10 million Ugandan shillings (US\$3,000) per year—a clear benefit that community members are getting from engaging in conservation.



That was the message (in English: Poaching steals from us all) being spread on April 27, when AWF and partner WildAid launched their joint Kenya antipoaching campaign. Because the Kenyan general public has a relatively high awareness of wildlife trafficking, the campaign serves not to educate audiences so much as to urge them to act when they see wildlife crime taking place. The campaign aims to use public service announcements (PSAs), billboards and social media to urge support for the reporting of wildlife crime. The campaign's first PSAs feature Oscar-winning actress Lupita Nyong'o.*Check out the first PSA: www.awf.org/lupita-ivory*

Water & Wildlife Security

Your support has meant steady access to water and greater safety for rhinos and elephants in Kenya's Tsavo Conservation Area

he Tsavo Conservation Area is home to the Ngulia Rhino Sanctuary and the surrounding Intensive Protection Zone (IPZ). Sanctuary rhinos share a 90-sq.-km, fenced-in area with other wildlife, including elephants. Older rhinos are eventually moved out to the IPZ, a non-fenced area around the perimeter of the sanctuary. A corps of specially trained rhino rangers ensure that rhinos continue to enjoy heavy protection in the IPZ.

But significant resources are required to maintain a rhino sanctuary and effectively protect species that are at risk of poaching. For the past two decades, AWF has been providing Kenya Wildlife Service (KWS) with financial or equipment support for Ngulia and the IPZ. Thanks to our donors, we have been able to continue this support in recent years through Urgent Response Fund (URF) grants. The grants have allowed KWS to address issues around water access and enhance security in the sanctuary and the IPZ.

Operations center

To ensure water for the rhinos and elephants in this semi-arid area, KWS used the URF grant to refurbish a long-defunct borehole and outfit it with solar panels and a solar-powered pump. The wildlife authority additionally repaired a nearby water storage tank and pipeline that provided water to points 5 km away from the borehole.

Meanwhile, increased poaching threats in the IPZ had prompted KWS to hire more rangers. The URF grant allowed KWS to purchase 12 binoculars and 30 GPS devices to outfit all rangers.

Finally, though the sanctuary offices are meant to serve as an operations center for the area, they were in terrible repair. Termites had eaten away at the walls of the office building—including the wall to the armory where KWS stored weapons and confiscated ivory. Insufficient solar power meant that the operations center lacked radio power and access to rhino monitoring technology for at least 10 hours each day. KWS rebuilt the Ngulia office, which now features a secure armory and radio room. Upgraded solar panels ensure 24-hour monitoring of the sanctuary and continued communications with rangers stationed in the IPZ.

"Neither the sanctuary nor the IPZ experienced any rhino poaching in 2015," reports Robert Obrein, assistant director in charge of Tsavo Conservation Area. "This is projected to continue due to the enhanced security measures in place."

AWF provided an Urgent Response Fund to Kenya Wildlife Authority to make sure access to water was readily available for the elephants and rhinos that travel this semi-arid area.



To Sell or Not to Sell?

For AWF, selling rhino horn is out of the question. But there are some who want to consider it

vold legalizing the rhino horn trade save rhinos? Noting that all options must be weighed in the fight against rhino poaching, the South African government appointed a panel earlier this year to consider the question. Proponents say that flooding the market with legal rhino horn could undercut black market prices and reduce the attractiveness of this industry for criminals. AWF was among those who filed arguments against legalization. Our reasons:

 Rhinos reproduce slowly, but a growing number of people in China and Vietnam can afford to buy rhino horn. Demand would soon outstrip supply and lead again to poaching to feed an insatiable market.

- **2. A legal trade could be construed** as an implicit endorsement of the false claim that rhino horn cures an array of diseases.
- **3. Legal rhino horn sales** could provide cover for the laundering of illegal rhino horn, complicating law enforcement efforts.

South Africa has decided it would not seek to lift the international ban on rhino horn trade. In a new twist, Swaziland will be seeking permission at the September meeting of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (or CITES) to sell its own 330-kg stockpile of horn.

Burn, Baby, Burn

Kenya sets alight 105 tons of elephant ivory to cast a blistering spotlight on Africa's wildlife trafficking crisis and urge global players to act

t was the burn to end all ivory burns: 105 tons of elephant ivory and 1.35 tons of rhino horn, set aflame to make a very public declaration that wildlife is worth more alive than as trinkets for human use or consumption. On April 30, the country that had conducted the first-ever ivory burn back in 1989 once again made history—this time as the nation conducting the world's largest ivory bonfire.

VIPs from around the world, including the presidents of Gabon and Uganda, and across the conservation community attended the event in a show of support. The burn was not without its detractors, however. Some argued that Kenya should have sold the ivory— which could reportedly have fetched upwards of US\$50 million—and used the revenues to develop the country.

"I agree with those who argue that Kenya is a very poor country," President Uhuru Kenyatta acknowledged at the burn. "But Kenya is also a very rich country in terms of the heritage that God has given us, and we intend to protect it. Some are passing judgment that we are doing the wrong thing. I would rather wait the judgment of future generations, who I am sure will appreciate the decision that we have taken today."

As an organization, AWF stood in support of this sentiment. Said AWF President Kaddu Sebunya, who attended the event, "We are losing elephants and rhinos across Africa at an unsustainable rate. This historic event draws global attention to the illegal wildlife trade, and it has already sparked a national discussion in Kenya and beyond about this issue. With the right political commitment and support of law enforcement, we can move toward a zero tolerance approach to wildlife crime."

AWF provided burn-specific support in other ways. We provided financial backing as an event sponsor. Further, AWF seconded an employee to Kenya Wildlife Service (KWS) for several weeks to help with communications efforts around the burn. During his remarks at the April 30 event, KWS Director General Kitili Mbathi gave special recognition to AWF for its significant assistance.

Highest possible protections

Kenya's Kenyatta acknowledged that the burn by itself will not end the ivory trade. In addition to closer cooperation amongst African elephant range states, Kenyatta said a "direct attack on the trade in ivory" was needed to halt the slaughter of elephants.

To that end, the Kenyan president announced that—at the next meeting of the Convention on International Trade in endangered Species of Wild Fauna and Flora (CITES), which regulates the trade in wild animals and plants—his government will propose that all African elephants be uplisted to Appendix I. Appendix I listing offers the highest level of protections to faunal and floral species under CITES. It essentially removes the opportunity to engage in international trade of these species.

Elephant populations in Botswana, Namibia, South Africa and Zimbabwe are currently categorized as Appendix II species, because their populations are more plentiful than elsewhere on the continent. Though international trade in ivory is illegal, the Appendix II listing has allowed these Southern African governments to twice sell their ivory stockpiles in one-off sales approved by CITES. Many conservationists believe that these sales renewed a demand for ivory, ultimately leading to the current crisis.

"An Appendix I listing would send an absolutely clear message that the trade in ivory must come to an end and that our elephants must be protected," Kenyatta declared.

TOP: In addition to conducting a history-making ivory burn in April, the Kenyan government will soon be requesting greater international protections for the African elephant.



TOP: Earth bags-bags filled with soil-provide the insulation for Adisge Primary School's walls and help regulate temperatures inside classrooms that could otherwise become chilly. RIGHT: A curved building design helps encourage air flow at Ilima Conservation Primary School, making sure children can stay focused on learning rather than the hot temperatures outside.

Continued from page 1

Meanwhile, the truss, which supports the roof, was designed in such as way to allow natural light in, add aerial space to the classroom and incorporate ventilation. The galvanized iron roofing—which will allow rainwater to run down for collection into rainwater tanks—will be padded with a layer of lightweight straw insulation. The straw, purchased from local Adisge households, will be fitted between trusses to further mediate temperatures. It will also serve to muffle noise during the rainy season.

Heat, cold, sun and wind

Four schools currently round out AWF's Classroom Africa portfolio: Adisge Primary School in Ethiopia's Simien Mountains; Lupani Community School in southern Zambia; Ilima Primary School in the Democratic Republic of the Congo; and Manyara Ranch Primary School in northern Tanzania.

"Each of those four schools exists in a unique climatic landscape," explains McBrearity. "Adisge has high altitudes, wind and cold. Lupani presents a riverine setting that bounces between dry and humid. Ilima is in a rainforest, so it's wet, humid and hot. Manyara Ranch, though a dry, savanna landscape, suffers from erosion from the rainy season. So we have quite a few—and different—challenges that we've used design elements to address."

Like Adisge, Lupani School required building materials with a high thermal mass to regulate against hot daytime temperatures. When AWF broke ground on an addition to the school last year, it chose clay bricks that would create thick walls and guard against classroom overheating. The expansion was completed earlier this year, featuring an extra classroom, a principal's office and a community room. "The school was already thriving due to our support over the years. But it has truly become a model for other schools in the district, and the education board secretary is thrilled," says McBrearity.

For Ilima, the school's location in the middle of a tropical rainforest presented ventilation concerns. The solution: a curved building that encourages the movement of air from one end to the other.

And then there's Manyara Ranch School. Due to a combination of severe rainy seasons and long dry seasons, the foundations on the school buildings had eroded over time. Manyara Ranch is located near a small fault line, so the existence of low-level earthquakes must also be taken into account.

AWF is in the process of overhauling the buildings on campus, using light-gauge steel to frame out each building. "This method of framing and the lightweight nature of the walls will make the buildings very safe in the event of an earthquake," explains Dushimimana, noting that having minimal joints helps maximize wall strength.

And if all of these climatic factors weren't enough, there's also the need to ensure the schools supported by AWF's Classroom Africa program convey a conservation image. This is achieved through the use of local materials, signage talking about the ecosystem, landscaping that makes use of endemic vegetation, nature trails and playground equipment that may be wildlife themed.

Through such thoughtful design—in combination with strategic teacher training and conservation education programming the Classroom Africa schools appear to be cementing that critical conservation message.

A Promising Landscape

Cameroon offers a microcosm of the continent's faunal and floral diversity, but also its challenges too

★ C ameroon has often been called "Africa in miniature" because it mirrors so much of the continent's diversity. This Central African nation hosts roughly 90 percent of all the ecosystem types

found in Africa—including a coastline, mountains, savanna, desert and tropical rainforests. It is also home to savanna species such as lion and giraffe and primates such as chimpanzee and western lowland gorilla.

According to AWF Vice President Charly Facheux—who actually hails from the mountainous western part of the country—Cameroon offers a promising landscape for AWF involvement. Not only is there the appealing biodiversity, but the government, lacking resources and capacity, genuinely needs conservation support. AWF also has a foothold in the country. We have been providing technical and financial support to wildlife authorities in Dja Faunal Reserve and Campo Ma'an National Park. Faro National Park serves as a natural next step for AWF engagement in the country.

"Faro is essentially a transfrontier area that spans over to Gashaka Gumti National Park in Nigeria," explains Facheux. "It also has savanna wildlife, unlike Dja and Campo Ma'an, which are both forest habitats."

Unfortunately, Boko Haram is a real, if occasional, danger in northern Cameroon. In February, an AWF team took a scoping visit to the region to realistically determine the area's security levels and get a better sense of how we could support conservation efforts there.

What the team found was not quite what they had imagined. On the one hand, no visible security threats existed. Team members found the area safe enough to operate without a military escort. On the other hand, work in the park was practically nonexistent. The Faro warden is not based on site so only occasionally visits the park. The rangers did minimal patroling due to lack of equipment. Finally, of the 500-km route into the park, only the first 30 from the main entrance are useable. "Less than 10 percent of the park is really monitored," says Facheux.

Doorstep of modernization

Monitoring is more routine at Dja and Campo Ma'an, thanks in large part to AWF efforts over the past two years. Under the African Apes Initiative, we have provided wildlife authorities in both locations ecological monitoring equipment and training. But challenges continue in this southern part of Cameroon as well.

"Africa is on the doorstep of being completely modernized and overwhelmed by development. And Cameroon is on the frontlines of this trend," explains Jef Dupain, AWF's technical director for West and Central Africa, who oversees the African Apes Initiative.

With such development could come increased poaching in places like Dja and Campo Ma'an. AWF is therefore working with the wildlife authority to secure a designated area in each park. In Faro, we are hoping to start work sometime in the coming year. Initial focus will be on developing a general management plan, upgrading the first 150 km of the main road and developing ranger capacity.

Ultimately these efforts will strengthen AWF's ability to engage leaders at the policy level. "We need to say to governments that conservation is not a luxury—it is a part of people's livelihoods and a country's overall well-being," Facheux explains. With our growing experience in "Africa in miniature," AWF will be in a good position to get them to listen.

BELOW: Chimpanzees are among the many species in Cameroon whose lush habitat is under threat from development.



wildlife WATCH Ethiopian Wolf

ho knew wolves live in Africa? But it turns out there is indeed one native wolf species on the continent: the Ethiopian wolf, which, like its name implies, is found exclusively in the Ethiopian highlands.

The Ethiopian wolf has a tawny fur coat, short snout, long legs and pointed ears, looking much like a fox or jackal. And, contrary to that oft-cited "lone wolf" reputation, this wolf species is quite social. It typically lives in packs made up of extended male family members and one to two females. When a female gives birth, all pack members work together to raise and protect her pups.

The Ethiopian wolf is a loner when it comes to hunting, but even here it may rely on others for help. According to researchers, the Ethiopian wolves that live in the Simien Mountains appear to have developed a beneficial relationship with the area's geladas monkeys: The noise and activity from the geladas' grazing distracts rodents, allowing the Ethiopian wolf to successfully hunt them. The wolves, in turn, do not bother to prey on baby geladas. Individuals are reportedly twice as successful in capturing rodents when hunting near a gelada herd.

Sadly only about 500 to 600 Ethiopian wolves remain, making the species Africa's most endangered carnivore. Between growing pressures from livestock and agriculture, and infrastructure development, the Ethiopian wolf continues to lose more of its habitat.

AWF is implementing a number of conservation efforts in Simien Mountains and Bale Mountains National Parks, two Ethiopian wolf strongholds. An Urgent Response Fund to a local partner is providing rabies vaccinations to the Ethiopian wolf, which can contract the disease from herding dogs, and engaging local communities to become Wolf Ambassadors. And, through our subsidiary, African Wildlife Capital, AWF is investing in high-end ecolodges in both parks that help create jobs from nature-based tourism. These activities will incentivize people to help protect this unique wolf species.—*Samantha Rose*

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A new NBC News show, "On Assignment"—an offshoot of "Dateline"—premiered on May 8. The premier episode included a story on chimpanzee conservation, particularly AWF's efforts in the Bili-Uele Protected Area Complex in northern Democratic Republic of the Congo.

Watch at: http://bit.ly/bili-chimps



Sniffing out wildlife criminals

what's new ONLINE

Less than a year after graduating, the eight detection dog-and-handler teams trained by AWF have already made 19 separate busts—and counting. This includes not only elephant ivory, but also pangolin scales and even bushmeat discoveries. These teams are stationed in Kenya and Tanzania; we're currently training the next class of dogs and handlers, who will deploy to Uganda and Mozambique.

Get an exclusive look into the lives of these wildlife heroes: www.awf.org/canine-units

PLEDGE Oil extraction threatens mountain gorillas

Virunga National Park in the Democratic Republic of the Congo is not only a World Heritage Site, but also one of the last remaining strongholds for the world's remaining mountain gorillas. Unfortunately, the Virunga landscape is under threat from potential oil exploration and activity. Though oil company Soco International gave up its oil license in Virunga in November 2015 after an international outcry, the Congolese government has not said whether it will reissue the oil permit for that area. Meanwhile, the Ugandan government received several bids this February for oil exploration in areas that border Virunga National Park.

Sign the pledge to protest the exploitation of this World Heritage Site: www.awf.org/stop-extraction

