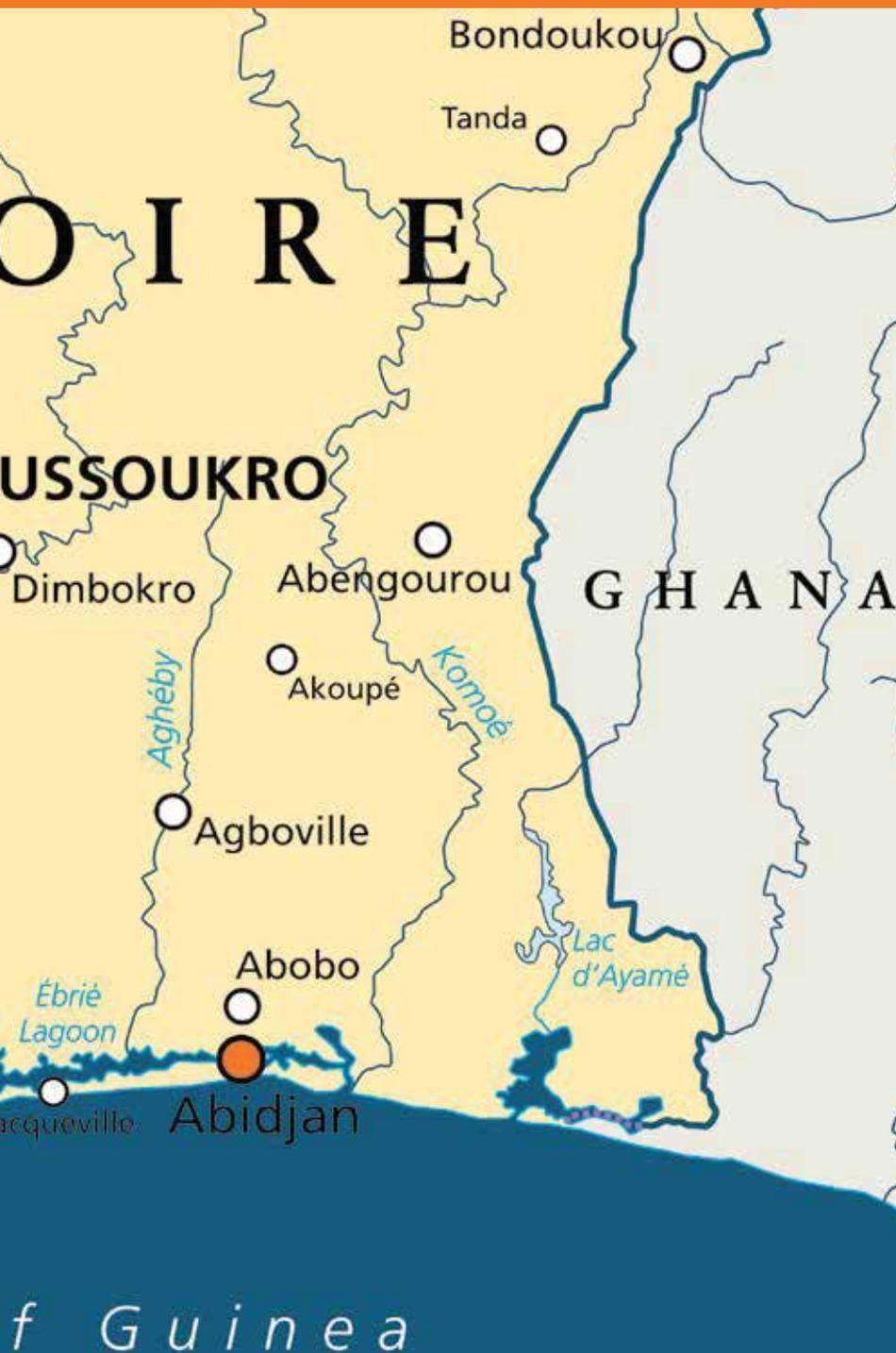


ON THE



BRINK



Conserving a Critically Endangered Crocodile May Also Recover a War-torn Zoo

BY TINA DEINES

I love my job. Right now, I am 30,000 feet over the North Atlantic, going about 550 miles per hour on my way to the Ivory Coast, which is 8,500 miles from my home. Six months ago I never would have thought I would be in this seat, on this plane.

—Matt Eschenbrenner, January 2014 journal entry

This is a story of conservation success, teamwork between two zoos and international partnerships, but it all started with some crocodiles.



Matt Eschenbrenner, supervisor of herpetology at the Albuquerque Biological Park Zoo (ABQ BioPark Zoo) in Albuquerque, N.M., and colleague Dr. Ralph Zimmerman, head veterinarian, embarked on a 19-day journey across the globe in January 2014.

Their destination was the Zoo National d'Abidjan in the Ivory Coast. Their mission was to help save the critically endangered West African slender-snouted crocodile.

Violence and Change

To fully understand the story of the West African slender-snouted crocodile, you have to back up—millions of years. About 8 million years ago, Earth was going through violent and fiery changes along the Cameroon Volcanic Line, and a mountain range formed. Through the work of Dr. Matthew Shirley, the co-regional chair of the International Union for Conservation of Nature (IUCN) Crocodile Specialist Group, herpetologists and conservationists now know that slender-snouted crocodiles were separated on either side of this mountain range. Since then, these two crocodile populations evolved into separate species with very unique traits—West African (*Mecistops cataphractus*) and Central African (*Mecistops sp. nov.*) slender-snouted crocodiles.

Recent surveys show a grim reality for the West African variety, with fewer than 50 confirmed in the wild. It's the least-known crocodile on Earth, but it's also critically endangered due to the bush meat and leather trades, large-scale habitat destruction and competition for fish with artisanal fisheries as fishing nets can entangle crocodiles. In the 1980s, a researcher named W.E. Waitkuwait brought eggs from the rare West African slender-snouted crocs to Zoo National d'Abidjan with the intent of breeding the animals for reintroduction and offering a ray of hope for this rare crocodylian.

However, the Ivory Coast endured two civil wars between 2002 and 2011, with some of the fighting occurring just outside Zoo National d'Abidjan's gates. The war left the Zoo in poor condition, and many animals starved. This was bad news for the already endangered crocs.

Bringing Crocs Back from the Brink

Although Zoo National d'Abidjan houses the world's largest captive population of West African slender-snouted crocodiles, breeding and care were problematic. With limited resources and training, Zoo staff needed outside support.

"They do not have the luxury of multiple zoos within the same country as we do—no place to visit and get ideas, no colleagues that they can email, no classes focusing on animal husbandry," Eschenbrenner said. "They're also using old, beat-up equipment."

Fast forward to 2014 and enter Eschenbrenner, who taught staff how to train and catch crocodiles. He and Zimmerman also tackled nutrition, as the crocodiles were not getting proper nourishment.

Breeding was an issue, so Eschenbrenner shared egg handling and storage techniques. Staff often handled the eggs during incubation, causing the embryos to move and drown. This was a simple fix—Eschenbrenner instructed staff to mark the top of each egg so that "up" was always "up."

While local zookeepers lacked experience, they made up for it with enthusiasm, said Eschenbrenner.

"One thing is for sure—they love their animals, and the knowledge that was passed along was a huge step forward for them," Eschenbrenner said. "The croc guys were awesome. They were there every day working hard."

All the work and training was a success. Less than six months after Eschenbrenner and Zimmerman's departure, 24 baby crocs hatched.

"We were happy, jumping up and down when we found out," Eschenbrenner said. "This is great news when you have so few in the wild—they deserve all the help we can give."

More than Crocodiles

While this partnership started with a focus on crocodile conservation, it didn't end there. Zoo National d'Abidjan is looking to get back on its feet after struggling for years throughout the Ivorian civil wars.

During their 2014 trip, Zimmerman inspected the majority of animals on the grounds.

"I would just kind of go and jump in wherever possible," Zimmerman said. "Almost all of the animals at the Zoo benefited from our visit."



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He also dispensed basic management advice to keepers, who were grateful for the help.

"We got an amazingly good reception from the keepers. They were thrilled to have someone there to help them care for their animals," Zimmerman said. "They were doing the best they could do, but they really never got any training, so anything they could get was helpful for them and the animals."

Zimmerman delivered much-needed expertise regarding feeding procedures. For example, after euthanizing a critically-ill female bushbuck and performing a necropsy, an accumulation of plastic bags were found in her stomach from zookeepers having tossed plastic bags full of food into her exhibit.

The posthumous discovery created a learning experience and served as a warning, teaching the keepers to change how they present food to the animals.

In another instance, Zimmerman was able to suggest practices for scattering food such that dominant animals in a vervet monkey troop could no longer take more than their fair share of the food.

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Left: Blood draws revealed a healthy crocodile population.

Below: Tests showed young crocodiles were low on calcium which led to recommended dietary improvements.

Right: Exams revealed all the Zoo's yearling crocs were male. Staff hopes the lowering of incubation temperatures will produce females.

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Return to Africa

In September 2015, ABQ BioPark Staff Veterinarian Dr. Carol Bradford, Zookeeper II Kelsey Rowe, Construction Fabrication Installer Clovis Perea, Senior Zookeeper Chaz Moxley and Eschenbrenner returned to Zoo National d'Abidjan.

Since the partnership began, Zoo National d'Abidjan has welcomed 50 new hatchlings. Bradford administered parasite checks, physical exams and blood draws for the site's crocodiles, which revealed a healthy adult croc population. The juvenile crocodiles' habitat also had made leaps and bounds since Eschenbrenner and Zimmerman's initial visit.

But the exams also revealed challenges—all of the Zoo's yearling crocs are male. BioPark staff hopes their recommendation of lowering temperatures during incubation will produce female hatchlings. The young crocodiles were also low on calcium, and Bradford recommended dietary improvements.

Bradford said she has high hopes for the Zoo's crocodiles, which she wants to ensure stay healthy.

"I really, really hope to stay very involved with the crocodile program," Bradford said. "With the success of the yearlings, I feel that the Abidjan Zoo is staying on track."

The next step for the yearlings is to get a taste of the wild life—Shirley is currently identifying suitable release sites in the Ivory Coast. This phase of the project will materialize when the young crocs become larger.



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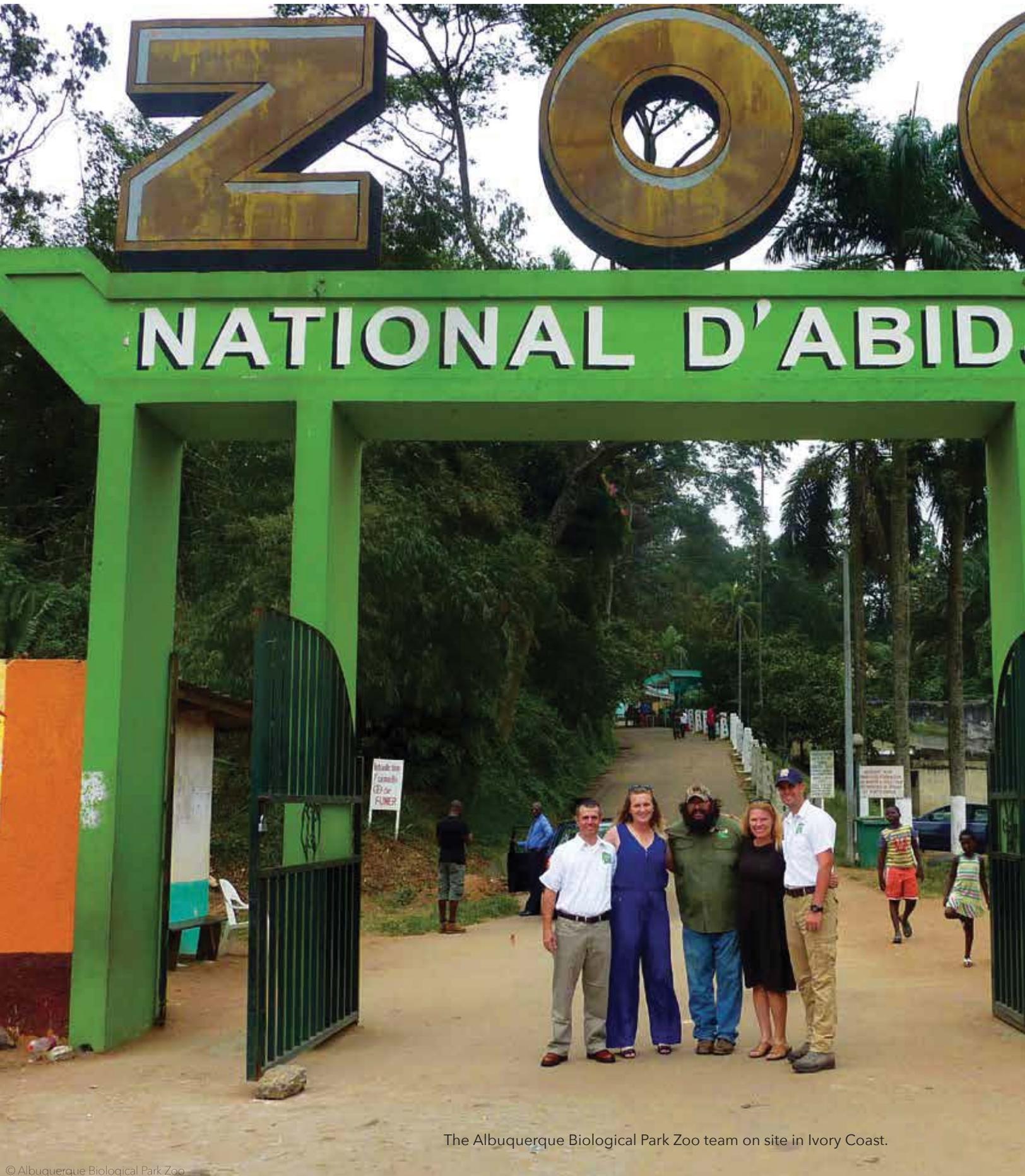
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It (Still) Takes a Whole Zoo

As with the last visit, the BioPark team helped more than just the crocodiles at the Zoo. Bradford investigated the patas monkey troop, which was having significant health problems. Bradford discovered the monkeys were heavily parasitized, and she developed a deworming program and nutrition improvement plan.

The BioPark crew also helped the chimpanzees migrate from a holding area to a new exhibit. Months earlier, the chimp enclosure collapsed on two sides, and the holding area did not have readily available water—this made cleaning impossible and forced staff to carry drinking water twice daily by hand to the chimpanzees.

"The chimp move was really big," Bradford said. "The conditions of the holding area were not good—not good for the chimps and very difficult for the keepers. The change will improve the overall health and well-being of the animals."



The Albuquerque Biological Park Zoo team on site in Ivory Coast.



... Zoo National d'Abidjan staff members weren't the only beneficiaries of the partnership... "It reminded us to put our noses to the grindstone and do what we're here for, which is taking care of the animals ..."

In addition to the chimp relocation, Rowe helped the chimp keeper with social groupings so that more compatible individuals are housed together.

Moxley and Perea also offered expertise across the Zoo—Moxley facilitated hoofstock and big cat training and enrichment, and Perea helped local construction staff spruce up the crocodile habitat with a filtration system able to supply clean water.

Broadening Their Horizons

Throughout the civil wars, things were rough for Zoo National d'Abidjan zookeepers—during this time of chaos, they slept at the Zoo near their animals to ward off opportunists who were looking to kill and eat the animals.

Although they still work six days a week, things are looking up.

Zoo National d'Abidjan's assistant director attended the Association of Zoos and Aquariums' (AZA) Croc School in April. He received a scholarship to pay for the trip to Florida and is the first attendee from Africa.

Zoo National d'Abidjan also benefitted from new gear gifted by the BioPark crew, including work boots for the crocodile keepers, work shirts, a camera, a tablet, a second reptile incubator and numerous veterinary supplies.

But Zoo National d'Abidjan staff members weren't the only beneficiaries of the partnership.

"For me, it was a huge eye opener about how lucky we have it, and I'm grateful for the things I have here at the BioPark—the resources I have," said Eschenbrenner.

Zimmerman agreed.

"It reminded us to put our noses to the grindstone and do what we're here for, which is taking care of the animals," he said. "When you see someone who really cares about their animals and who is struggling, it just makes you appreciate what you have more."

Tina Deines is the communications officer at the Albuquerque Biological Park Zoo.