

ZOOVIEW

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ELEPHANT CONSERVATION:
TUCSON TO TANZANIA

IN PHOTOS:
BEAR NECESSITIES

Coming Back from the Edge:



By Chris Stidley

If you scratch his belly, Fireball shakes his leg like a dog. It doesn't matter which side you rub, he'll lift his leg. While Dina Corrales loves to give him these caresses, she's careful because she's not stroking a vicious dog but a 4,600-pound southern white rhino.

Students and other groups visiting Reid Park Zoo in Tucson, Arizona, may also have a chance to stroke Fireball. "They get a touch of rhino," said Corrales, a zookeeper. For these supervised encounters, the visitors reach over the barred fence and touch Fireball's tough, dirt-encrusted skin.

The southern white rhino was thought to be extinct in the late 1800s, according to the World Wildlife Foundation. After fewer than 100 animals were found in South Africa in 1895, breeding in zoos and re-introduction to the wild helped their numbers grow to 20,000 today.

While the white rhino is considered a near-threatened species, other rhino species are in greater danger, mainly from poaching and habitat loss. Fewer than 100 Javan and Sumatran rhinos survive in Southeast Asia, according to the World Wildlife Foundation. With 3,000 to 5,000 animals, the black rhino of southern Asia and the greater one-horned rhino of India and Southeast Asia are considered critically endangered.

Protection of animals through conservation is a key mission of the Association of Zoos and Aquariums. This nonprofit uses three ap-

proaches to protect animal species: conservation in the wild, animal management and captive breeding to maintain healthy populations, and education to foster awareness and support among the 183 million visitors to its member facilities each year.

Fireball's home, Reid Park Zoo, is an accredited member of the Association of Zoos and Aquariums and promotes these conservation efforts. "If you're not doing conservation, in my mind you're not a modern zoo," said Jason Jacobs, the zoo's director.

ZOOS STEP IN

Zoos help imperiled species survive. "More and more zoos are actively involved in things like the propagation of rare species," said John Korpowski, a conservation biologist at the University of Arizona.

The 230-plus member zoos of the Association of Zoos and Aquariums care for more than 6,000 species, of which 1,000 are endangered. While the members are primarily in the United States, several are based in Canada, Mexico, the Caribbean, South America and Asia.

The association develops Species Survival Plans to best serve the needs of each species. Reid Park Zoo participates in 43 of the almost 500 plans, including the one for the white rhino.

FATHER FIREBALL

Fireball came to Reid Park Zoo from The Wilds, a safari park in Columbus, Ohio, in 2013. He was 10 years old and had sired 10 calves.

How zoos help save species from extinction



Fireball, a 15-year-old southern white rhino, arrived at Reid Park Zoo in 2013. He is on a breeding break after siring 10 calves. In a few years Fireball may be matched up with females here or at another zoo. Photograph by Kacey SEELOFF

Fireball was moved to Tucson not for a prolonged spring break but to take a temporary pause from fathering. This hiatus, which is part of the rhino Species Survival Plan, helps ensure a genetically healthy population by ensuring that breeding pairs are not closely related and that a variety of animals contributes to the next generation.

The Association of Zoos and Aquariums leverages the power of a much larger breeding population because animals are available from its member facilities. As part of each Species Survival Plan, the association works with animal geneticists to prepare a yearly breeding and transfer plan that is sent to members. "When this comes, the zoo nerds like me get really excited," said Adam Ramsey, an area supervisor at Reid Park Zoo. "I go straight to the page that says what's going on for the zoo at Tucson." When a species gets a breeding recommendation, "That's really exciting," he added.

Health and other concerns are taken into consideration when preparing the breeding and transfer plan. Some Reid Park Zoo animals have been removed from breeding lists because of health conditions. A female white rhino named Yebonga, for example, is too old to deliver a calf safely.

LIVING FREE

While reintroduction efforts for species such as the California condor and black-footed ferret have been successful, many animals that are bred in zoos will not be released in the wild. Fireball and Yebonga, for

example, will spend the rest of their lives in human care.

Low-profile animals, such as small amphibians and insects, are easier for zoos to raise and release, according to Ramsey. These animals, however, are not big draws for the public. "It's hard to get people inspired about these animals, especially if they're standing next to a tiger," Ramsey said.

Pupfish may be small and drab, but many could be maintained in aquariums in back hallways or other small spaces. Visitors might be excited if Reid Park Zoo could release 500 pupfish every year, Ramsey said. "What a powerful message if we could tell our visitors that over 50 percent of our animals are part of a reintroduction program."

Ramsey recognizes the value of these low-profile species. "Every individual is important," he said. "Everything is important to the ecosystem."

FIREBALL'S TIME IN THE SUN

Besides supporting conservation in the wild, zoos will continue to raise rhinos. Reid Park Zoo plans to expand its rhino habitat. Perhaps in a few years, Fireball will have a couple of girlfriends, or he may be moved elsewhere if that is deemed best for the survival of his species.

In the meantime, zookeeper Corrales will continue working with Fireball. "He gets real funny," she said. "He likes to play."

Fireball will continue playing in the Tucson sun, giving visitors an up-close experience and following Corrales around like a 4,600-pound dog. ■

Wildlife Conservation

Crashing into



Fireball is one of the southern white rhino at Reid Park Zoo. The large hump on his neck and shoulders is a mass of muscles that moves his massive head and horn.

the future



TOP LEFT: A closeup of Fireball's eye reflects a camera flash. **TOP RIGHT:** Southern white rhinos like Fireball have a wide mouth typical of grazers. In their African homeland, southern white rhinos feed exclusively by grazing. **ABOVE:** Wild white rhinos can run at speeds up to 31 mph. Fireball, 15, sometimes dashes around the habitat, while Yebonga (not pictured), 44, leads a quieter life.

Story and photographs by Kacey Seeloff

Reid Park Zoo is home to two southern white rhinos: Fireball, a 15-year-old male, and Yebonga, a 44-year-old female. The two gentle herbivores, which share their habitat with three small Speke's gazelles, will be among the first of many animals that will benefit from the passage of the temporary tax initiative approved by Tucson voters in November 2017. In coming years Reid Park Zoo plans to expand the rhino habitat and bring in more rhinos, said Sue Tygielski, the zoo's general curator.

One goal for such an expansion is to allow Reid Park Zoo to take part in the Species Survival Plan for white rhinos. This program oversees the breeding of captive animals to ensure healthy, genetically diverse animals within member zoos.

Fireball arrived at Reid Park Zoo in 2013, partly to give Yebonga companionship. Fireball's transfer to Tucson gave him a rest after siring 10 calves. While Fireball waits to return to breeding, the 4,600-pound animal has become a popular attraction at Reid Park Zoo. ■

CHARTING A WHITE RHINO'S ANCESTRY

By Tony Perkins

The greatest tales of survival are not always found in adventure novels. Sometimes, they are recorded in the pages of a studbook that charts the family history of a zoo animal.

One of the best stories of species survival in the 20th century is that of the southern white rhino.

The animals were almost hunted to extinction, but according to the World Wildlife Federation, fewer than 100 rhinos were found in South Africa and then relocated to breed and form new populations.

The white rhino no longer faces immediate extinction, and zoos worldwide are dedicated to keeping the species off the endangered species list for good.

A key role for zoos in this conservation effort is keeping studbooks, which record the lineage of every wild animal in their care. The data are essential to a zoo's ability to document demographic and genetic information and prevent inbreeding.

FOR THE RECORD

Zoos don't just want animals to survive. They want them to thrive.

In the case of the white rhino, that's a big responsibility. White rhinos are the second largest land mammal on the planet—after elephants. Adult rhinos weigh between 4,000 and 6,000 pounds, according to the International Rhino Foundation. The organization says 20,000 white rhinos live in protected areas and private game reserves, mostly in South Africa, Namibia, Zimbabwe and Kenya. The animals can live to the age of 50.

Zoos worldwide consider species conservation among their top responsibilities, focusing on collecting and maintaining genetic information, implementing breeding programs and educating the public about the importance of healthy captive populations.

years. Fireball already had an extensive track record when he arrived in Tucson in 2013, having sired 10 calves in The Wilds, a safari park in Ohio.

Part of Fireball's reproductive success lies in his health, which studbook specialists monitor constantly. A studbook keeper doesn't just track an animal's family tree but also records information about the animal's nutritional intake and helps veterinary technicians discover short-term and long-term health problems.

"Medical records are important for studbooks because they determine whose genes go where," said Elaine

Corbus, a veterinary technician at Reid Park Zoo. "If [medical] issues are present, what are the benefits and the risks for passing those genes on?"

In this sense, studbook keepers also help zoo personnel match up animals for breeding. The Association of Zoos and Aquariums Regional Studbook documents entire demographic histories of animals within member institutions. If certain animals are known to have genetic issues, decisions can be made to prevent them from reproducing and delivering the same abnormalities to future populations. It is one way that zoos have managed to keep species like the white rhino healthy and growing over the past 20 years.

Studbooks enable zoos to work together to protect endangered species by increasing their numbers through breeding programs. Area supervisors say they shift animals not just to keep their facilities interesting for visitors but also to help preserve the genetic diversity of each species. "It's a monumental task to keep track of the genetics of thousands of animals," said Reid Park Zoo director Jason Jacobs.

Thanks to these breeding programs and careful record-keeping, animals like white rhinos will stay off the endangered species list. ■



In the late 1800s overhunting almost wiped out southern white rhinos. Today, zoos are dedicated to keeping them off the endangered species list. Photograph by Nick SMALLWOOD

Detailed record-keeping allows zoos to follow an animal's history from birth through death. "Our keepers take daily notes that go into the record for every animal," said Rebecca Edwards, an area supervisor at Tucson's Reid Park Zoo. By observing patterns of behavior over several years, for example, keepers can pinpoint breeding signs for a particular animal during a particular season.

STUDBOOKS: DEEPER THAN A DIARY

The white rhino with the most significant studbook at Reid Park Zoo is Fireball, a 4,600-pound male rhino that has contributed a lot to the growth of the species in recent