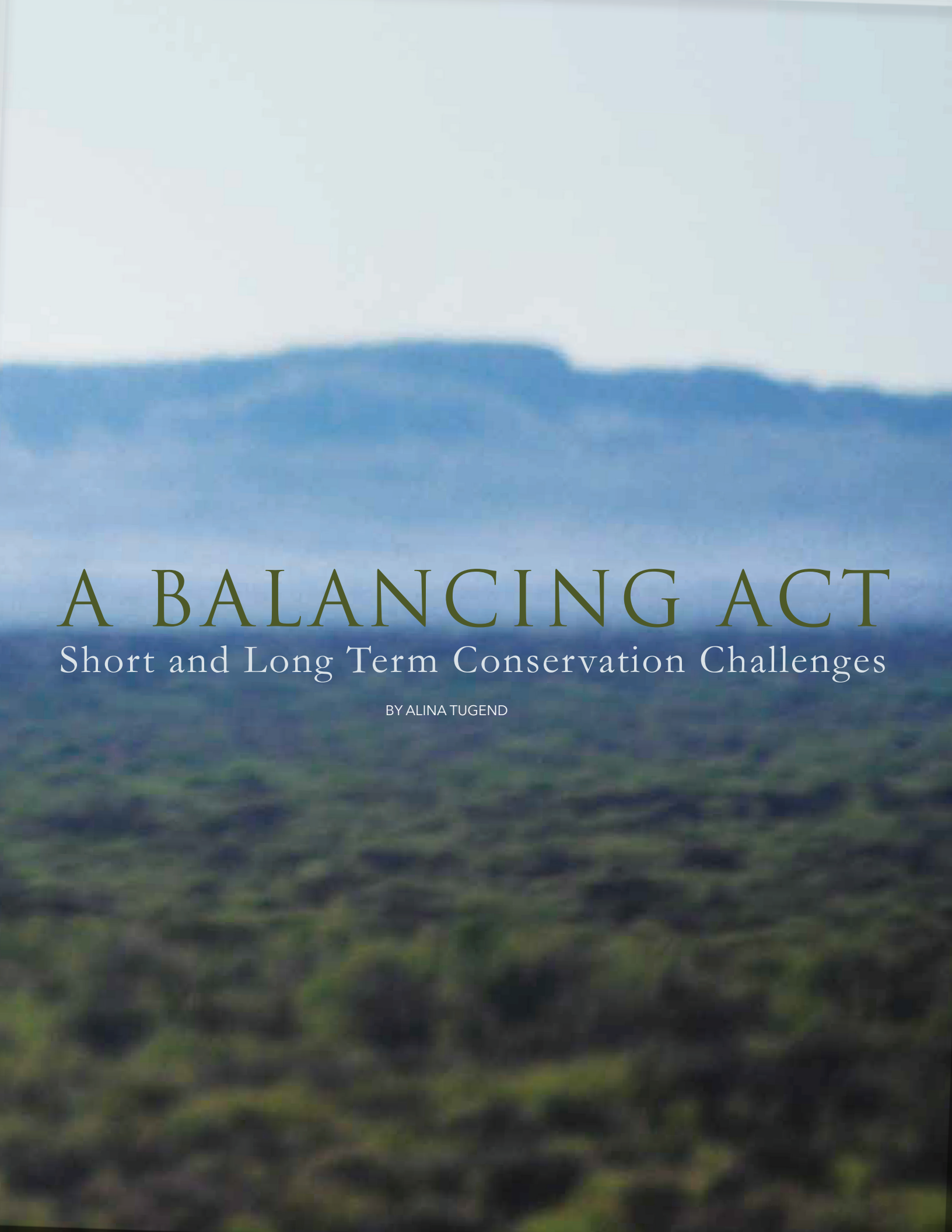
White-backed vulture



A BALANCING ACT

Short and Long Term Conservation Challenges

BY ALINA TUGEND

IT'S AN AGE-OLD DILEMMA:

How do you get people to focus not just on immediate crises but on the underlying causes?

Rescuing stranded sea turtles. Building nests for African penguins. These are important. But addressing the economic and environmental reasons behind the need for such actions is even more of a challenge and one that Association of Zoos and Aquariums-accredited facilities are grappling with through SAFE: Saving Animals From Extinction programs.

There are now 19 SAFE programs, said Shelly Grow, AZA's vice president of conservation and science. While many of the efforts targeted at saving specific species already existed—and AZA-accredited facilities were involved—SAFE offers the community a way to better coordinate conservation efforts.

"They've really started to grow," she said. "Multiple zoos and aquariums have come together to say, 'what are we going to accomplish for this species over the next three years?'"

And that means calculating short-term versus long-term needs.

"How do you balance the need to respond to the existing animals that are there," Grow said, "while also addressing the long-term, much bigger, more complex threats that exists?"

Take for example, the sea turtle. The Virginia Aquarium and Marine Science Center in Virginia Beach, Va., and its partners in the NOAA Greater Atlantic Region (Virginia to Maine) have recovered more than 2,600 live stranded sea turtles—primarily juvenile Kemp's ridleys and loggerheads—in the last ten years. The turtles are considered endangered or threatened, depending on what part of the world it lives.

"And that's just in our region," said Mark Swingle, director of research and conservation for the Aquarium. "Not every one of those animals have survived, but thousands have."

Institutions, including his, worked together for years as the sea turtle working group, but it was a more informal process; now they are in the process of establishing a SAFE program for sea turtles.

But Swingle knows that saving individual turtles, no matter how necessary, is not going to sustain the population.

"For long-term conservation, we need to talk about protecting nesting beaches and important foraging habitats, as well as reduce the incidental catch of sea turtles in commercial fisheries. We need education and we may need common-sense regulations."

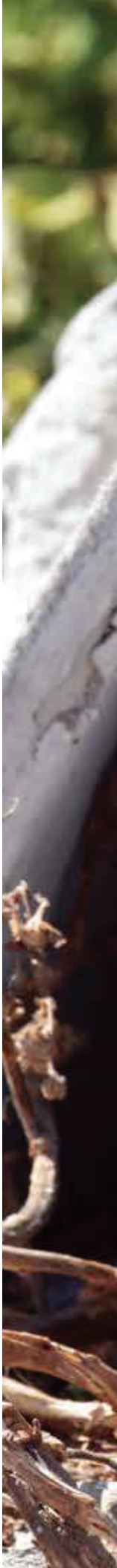
Another team, the SAFE African penguin program focused on a solution to the disappearance of natural burrow nests dug into the guano and used by penguins on offshore islands in South Africa and Namibia. The team is also concentrating on other challenges the penguins face: a depletion of food in their fishing grounds due to overfishing and climate change, marine debris, and the encroachment of people into the habitats.

Over the last century, the penguins have faced a 99 percent drop in population, said Kevin Graham, bird supervisor for the Dallas Zoo in Dallas, Texas, and the coordinator for the SAFE Artificial Nest Development Project. One of the main reasons is that people stripped off the guano to use as fertilizer.

While efforts to give the penguins homes are not new, Graham said, the process is now far more scientific. The goal is not just to protect eggs, but create a usable habitat.

The SAFE program, working with, among others, the Dyer Island Conservation Trust and the Pan-African Association of Zoos and Aquaria "came up with 15 different designs constructed from multiple material types and we tested all of those," he said. They needed designs and material that would not only provide protection from predators but also a stable internal environment.

The highest performers were tested and the penguins apparently liked them almost as much as the guano nests—meaning more than half of the nests had chicks raised in them. Construction has now started on the first 2,500 nests, which cost about $50 each and are all made in South Africa. They are expected to be ready in February with more to come in the near future.



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"AZA-accredited facilities have allocated more than $5 million between 2014 and 2017 in conservation and research activities related to coral reefs, including more than $2 million specifically for elkhorn and staghorn ... "

The guano harvesting no longer occurs, but due to the significant declines of so many seabird species, it will take decades before it will build up again. So, the nests have to be a long-term solution. "You can't match Mother Nature," Graham said, "but we're giving them a place to call home."

One of the newest SAFE programs works with staghorn and elkhorn coral. The Caribbean coral has fallen victim to white band disease, a contagious disease that destroyed up to 95 percent of the staghorn and elkhorn coral in the 1970s and 1980s.

Other factors have also contributed on a local level, such as coastal development and pollution from fertilizers. Climate change, with warming sea temperatures, also is having a negative effect.

AZA-accredited facilities have allocated more than $5 million between 2014 and 2017 in conservation and research activities related to coral reefs, including more than $2 million specifically for elkhorn and staghorn, said Bart Shepherd, senior director of the Steinhart Aquarium in San Francisco, Calif. With the new SAFE program, the objective is to grow coral and "maximize genetic diversity so that we can bring the population back robust enough to fend off future diseases and other threats."

Because these corals only spawn once a year, it's tricky. But researchers know when those nights are, so they can collect the eggs and sperm, then mix them together to cross-fertilize, grow them until they become coral juveniles, then place them back in the sea.

"The short-term project is to make sure there are healthy populations throughout the region and an abundance of large, sexually mature populations that can spawn," Shepherd said. "The long-term approach is to address these regional and global environmental threats."

One of the ongoing efforts is to find a way to plant corals back on reefs so it is far less laborious than it currently is, using trained divers.

"We need to move into a world where we're like Johnny Appleseed, where we're sowing by the thousands to reach the scale we need," he said.

A more difficult sell is the African vulture SAFE project, which encompasses six vulture species, which are all endangered or critically endangered, said Corinne Kendall, curator of conservation and research with the North Carolina Zoo, in Asheboro, N.C. The SAFE program was approved last year and includes zoos and non-governmental organizations in the United States and several countries in Africa.

Focused on South Africa, Botswana, Tanzania and Kenya, the effort is primarily aimed at stopping vulture deaths that occur when they eat animal carcasses that have been poisoned.

The poisoning is done both as a retaliatory killing against, say, a lion, that has eaten someone's cow, and by poachers who douse carcasses of elephants and others with pesticides to deliberately poison vultures and other birds. That's done to stop vultures acting as a beacon to law enforcement indicating that there is a carcass, Kendall said. "In one recent case, a poisoning killed six lions and more than 70 vultures."

In addition, vulture heads are used in traditional medicine in some African countries, where they are believed to help people see into the future.

Six years ago, the vulture was uplisted because of the rapid declines and the ability for the poisonings to kill large numbers of birds in a small amount of time.

Vultures aren't exactly warm and fuzzy, and it's hard to rally the public to worry about their decline. But "they play a really critical role in the environment," said Kendall. By removing dead animals, they're also removing the potential for disease to spread, and because they are birds feeding on mammals, they are much less likely to transmit disease such as anthrax, rabies and tuberculosis, she said.

Vultures feeding on an elephant carcass

They also eat fast and a lot—carcasses are their whole diets and they remove about 70 percent of available carrion in some ecosystems.

"For our SAFE program, the short-term goals are to stop the poisoning," she said, and train rangers so they can respond faster, learn how to care for sick birds and dispose of the poisoned carcasses properly. "There's a lot of evidence that if you get to carcasses faster, even if it's poisoned, it won't harm as many birds."

Tagging birds helps provide information about when a poisoning happens and how many birds have been affected. In addition, the program is working with communities to build stronger fences and safer places to keep cattle as a way to reduce the incentives for poisoning.

Another objective of the SAFE program, Kendall said, is to raise awareness of the issue among people in the United States, by distributing educational material on the plight of African vultures.

"We want to both raise money and get them to know about lesser-known conservation issues," she said. There are similar problems in the U.S. in that if you poison rats, which are then eaten by hawks and eagles, killing those birds.

"Rats are considered vermin, but in some African villages, lions are considered vermin," said Kendall. "When poison is used as a way to get rid of these vermin, it can have dangerous consequences whether you are in the United States or in an African country."

"When we respond to stranded animals and then release them, that is incredibly impactful to the general public," said Swingle. "It's something they can see and they respond very powerfully to that. I'm a firm believer that the stranding, rehab and recovery, while it plays a minor role in the overall recovery of sea turtle populations, plays a major role in the engagement of the public in issues surrounding sea turtle recovery in general."

Alina Tugend is a writer based in Larchmont, N.Y.