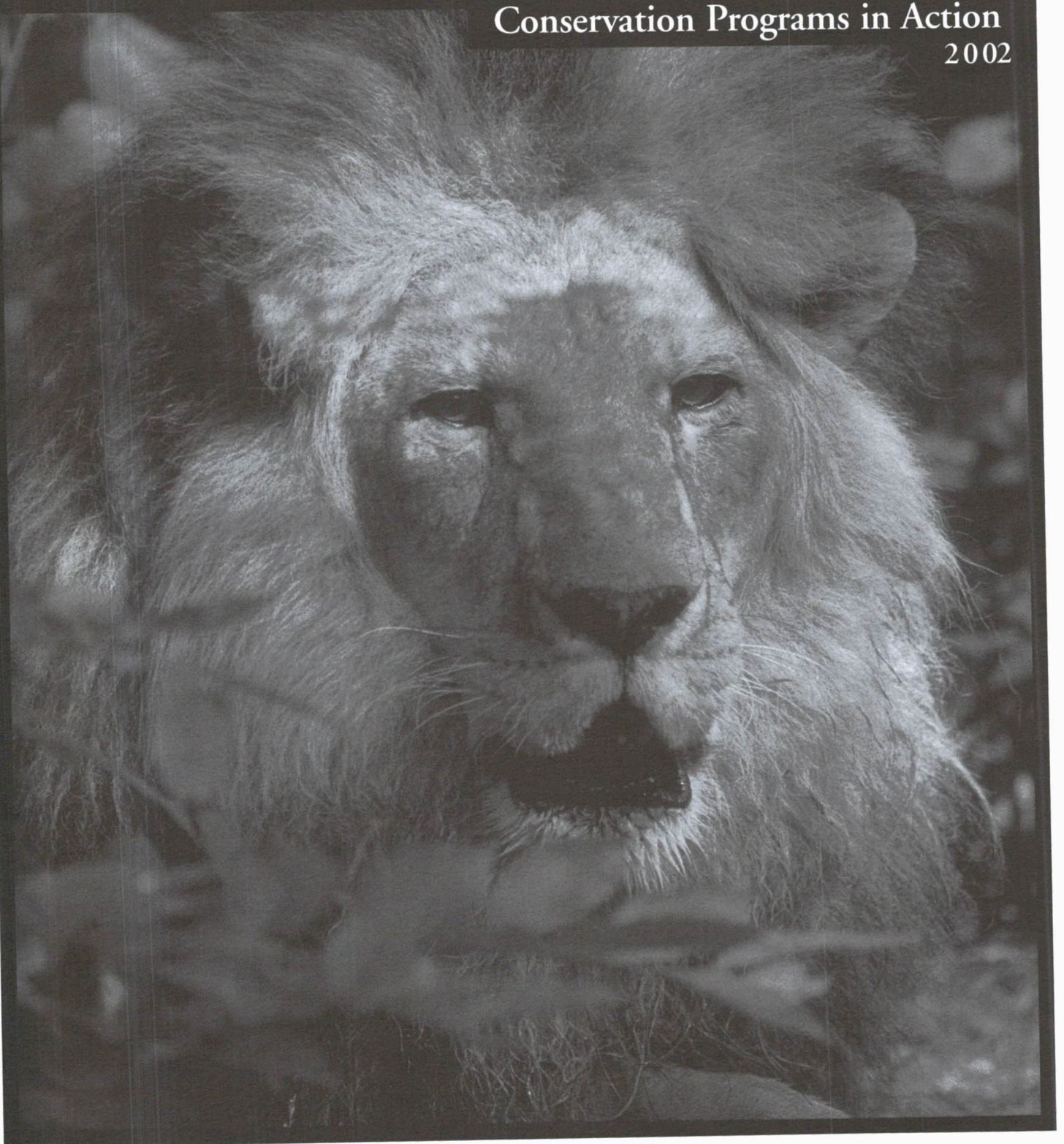


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Conservation Programs in Action

2002



Understanding the Psychology Behind Conservation • Aiding Wildlife in Africa
Using Technology to Predict Conservation Success

Biota

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FEATURES

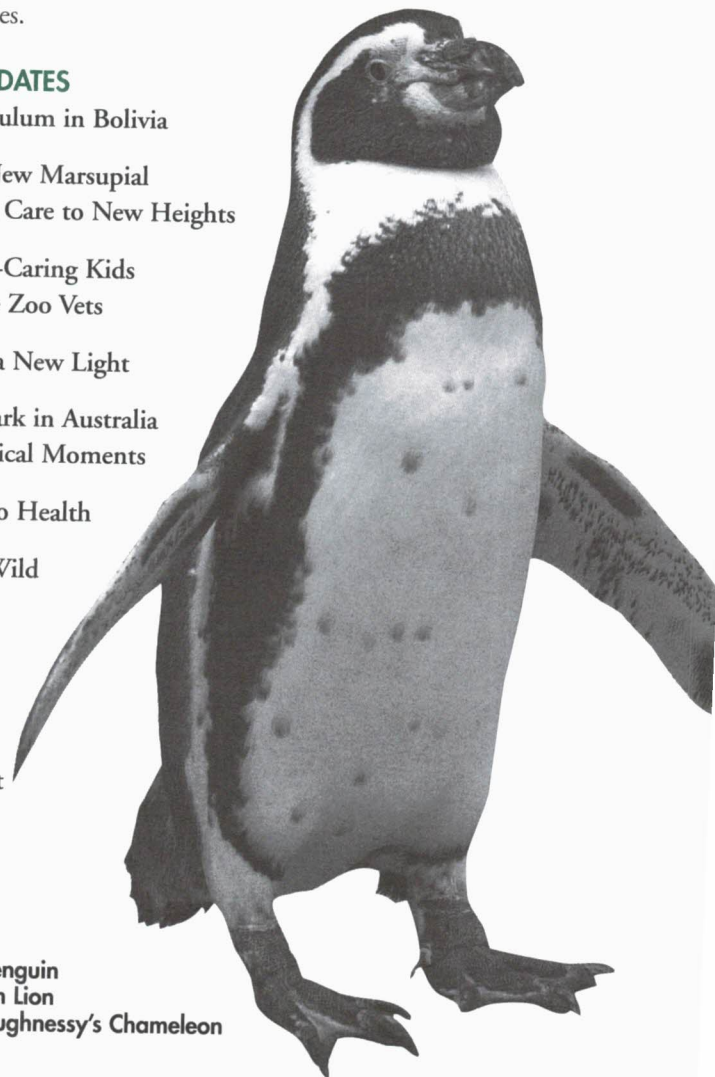
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Right photo: Humboldt Penguin
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Improving Rhino Health

Caring for animals in a zoo setting requires the utmost diligence—particularly when trying to determine the cause of animal health issues. As a leading authority on both captive management of black rhinos and animal nutrition, a natural alliance was born at Brookfield Zoo to investigate concerns about the role of diet in relation to syndromes that affect black rhino health.

Black rhino numbers in the wild have declined dramatically over just the last few decades. This drastically increases the urgency of maintaining healthy and sustainable zoo populations.

“Unfortunately, black rhinos in captive settings have shown a tendency to accumulate inappropriate body stores of iron over their lifetime,” says Dr. Sue Crissey, who heads Brookfield Zoo’s Nutrition Services Department. “This propensity may be associated with disease—and even death.”

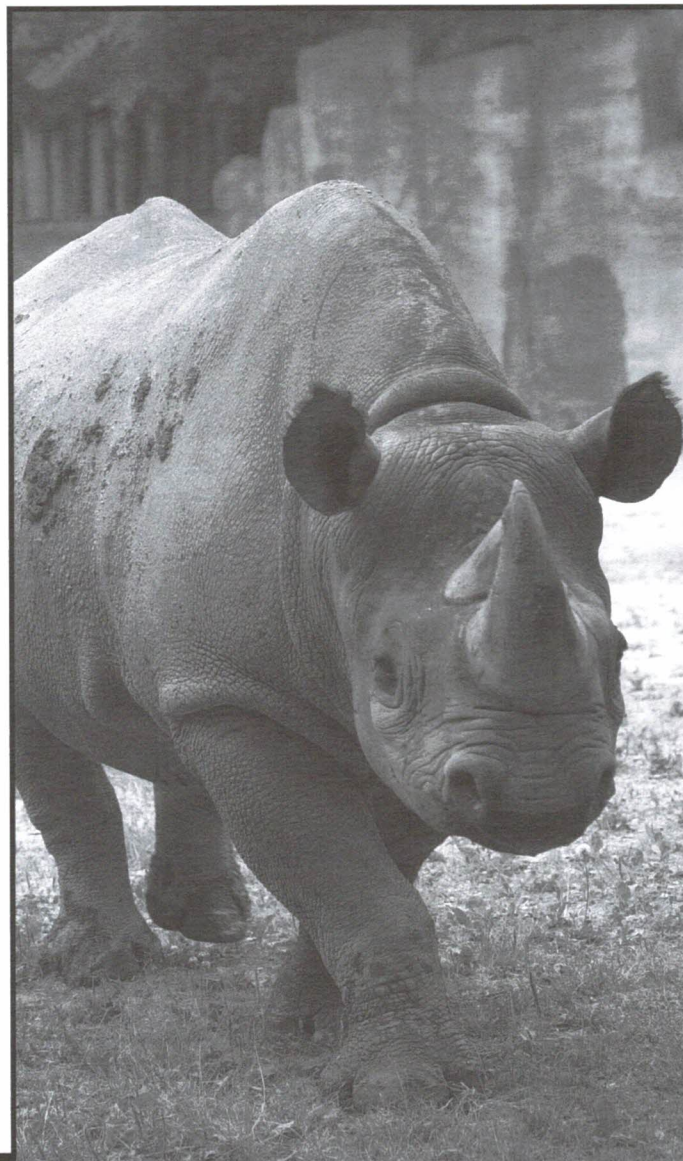
Yet, iron is essential for the body functions of all animals; too little may be just as problematic as too much. The iron accumulation in black rhinos does not appear to be genetic or pathological—meaning it doesn’t pass along family lines or follow a specific disease pattern. This just adds to the importance of the investigations, because there is no way to predict which animals might become ill.

Supported by SOS Rhino and the International Rhino Foundation, Brookfield Zoo and Fort Worth Zoo’s nutritionists, veterinarians, and keepers—with the help of staff at Dallas Zoo, El Coyote Ranch, and Fossil Rim Wildlife Center—are in the midst of a multiyear study. Findings

will guide the development of a diet that aims to reduce the risk of iron overload in black rhinos.

What may be surprising is how little is known about how these animals handle nutrients. Experts speculate that the natural browse of free-ranging rhinos may be lower in iron than their diets in captivity, or may contain compounds (such as tannins) that bind the iron before it is absorbed in rhinos’ systems.

Brookfield Zoo and its partners began by examining a dozen rhinos at the zoos involved in the study. Over several months, the rhinos will be fed a series of different diets, which nutritionists have meticulously constructed. Researchers will analyze fecal and blood samples to see how the different compounds in each diet affect iron storage in the rhinos. As each new piece of information is revealed, results will be shared with rhino caregivers all over the world.



Brookfield Zoo’s nutritionists, veterinarians, and keepers are working with other zoos to develop a diet that reduces iron storage in black rhinos, saving them from a potentially toxic health problem.

conservation updates

Respecting the Wild in Wildlife

Opportunities for people to interact with free-ranging marine mammals are increasing, with more than 20 whale and dolphin species targeted worldwide. Yet a comprehensive study of this form of nature tourism by Brookfield Zoo conservation biologist Dr. Amy Samuels and colleagues found that these activities can be harmful to the animals. Her findings have helped inform U.S. and Australian policies aimed at reducing the potentially detrimental effects of feeding, touching, or swimming with cetaceans (whales and dolphins) in the wild.

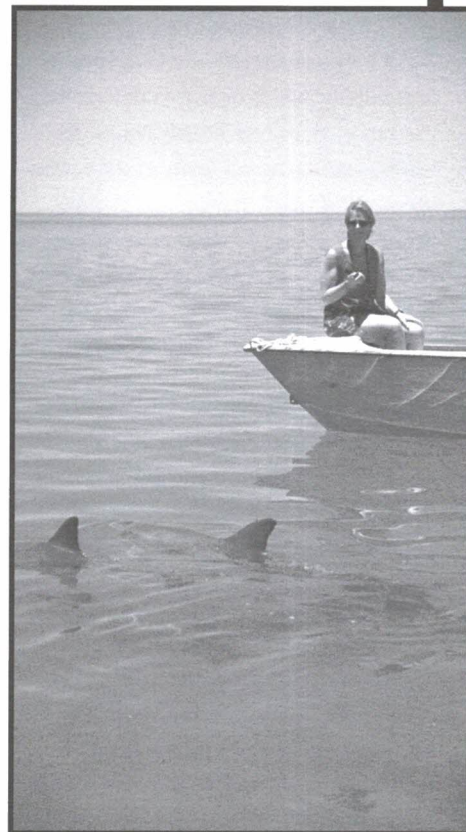
“Juveniles may be especially at risk,” says Dr. Samuels. “At the life stage in which immature cetaceans should be learning survival skills, like hunting or taking caution around boats, many may be learning to interact with people instead.”

In 1998 and 2000, Dr. Samuels was lead author of reports that encouraged the Marine Mammal Commission, in its role as “watchdog” of the U.S. Marine Mammal Protection Act, to inform Congress that intentional human-cetacean interactions in the wild may cause harm or death to people or marine mammals.

Subsequently, this evidence of violation of federal protections for free-ranging marine mammals led the Commission to recommend to the National Marine Fisheries Service (NMFS) the prohibition of human-cetacean interactions in the wild not covered in current regulations. NMFS is studying hundreds of letters received from the public on this issue.

Dr. Samuels has been involved in this research for many years. In 1993, she discovered the harmful effects of food provisioning on a wild, juvenile male dolphin fed by tourists at Monkey Mia Bay in Western Australia. Her report to local wildlife managers, and the subsequent death of the dolphin due to his dependency on people, were significant factors that led to improved management of tourist activities in order to protect the dolphins.

Dr. Samuels and zoo researcher Cindy Flaherty, with support from the Western Australian government, continue to monitor the effects of tourism on dolphins at Monkey Mia. And, thanks to support from the Chicago Zoological Society, the zoo’s Chicago Board of Trade Endangered Species Fund, the Marine Mammal Commission, NMFS, the Western Australia Department of Conservation and Land Management, and the Woods Hole Oceanographic Institution, their long-term field studies on the behavior of juvenile dolphins will help strike a balance between people’s desire to get close to cetaceans in a wild setting, and the survival needs of the animals.



Brookfield Zoo conservation biologist Dr. Amy Samuels’ research on human-dolphin interactions has become a model for methodologies used to study the effects of nature tourism on cetaceans.

Other marine mammal research is conducted through the Chicago Zoological Society’s (CZS) Sarasota Dolphin Research Program, headed by Dr. Randall Wells (right). His work with CZS staff, graduate students, and colleagues highlights the impact of human activities on bottlenose dolphins in Florida. Their studies will help conserve dolphins and other species sharing the habitat.

