Diet may be affecting rhino reproduction

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Southern white rhinoceros populations, once thriving in zoos, have been showing severely reduced reproductivity among the captive-born population. San Diego Zoo Global researchers have a possible lead into why the southern white rhinoceros population in managed-care facilities is declining: phytoestrogens in their diet might be contributing to reproductive failure in the females.

"Understanding why the captive white rhinoceros population has been dwindling for decades is an important part of protecting the future of this species," said Christopher Tubbs, researcher with the San Diego Zoo Institute for Conservation Research. "Our work is the first step toward determining if phytoestrogens are involved in this phenomenon and whether we need to reevaluate captive white rhino diets."

After elephants, the southern white rhinoceros is the world's second largest land animal. This rhino species also occupies another list—that of the International Union for Conservation of Nature's "near-threatened" species. Wild populations face poaching and sport hunting, but captive populations of this animal are declining due to reproductive problems in the females. These include cystic endometrial hyperplasia; cervical, ovarian, and uterine cancers; and ovarian cysts.

San Diego Zoo researchers believe the diets of the captive population offers much concern. Specifically, phytoestrogens, such as isoflavinoids found in the alfalfa and soy that they eat, activate their estrogen receptors more than those of the greater one-horned rhinoceros, another captive population that receives a similar diet but has better reproductive

success.

The study, published in the March issue of *Endocrinology,* compares populations that are doing well with populations whose reproductivity is placing them at risk, citing diet as a key difference between the two.

Provided by Zoological Society of San Diego

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