Rhino Behavior Study

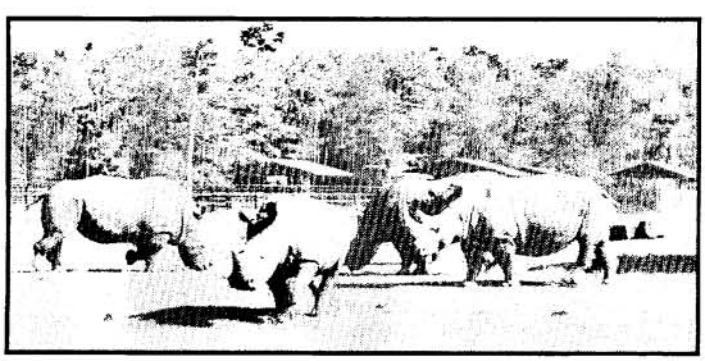
By Renee Hodgden

Wallow, snarl, prod, nurse, play, graze, horn rub. These are just a few of the myriad behaviors that can be seen or heard while spending time watching the rhinos at White Oak Conservation Center. Since July 1995, the African rhinos at White Oak have been the subject of a behavioral study - a project supported by a research partnership between White Oak Conservation Center, Zoo Atlanta, and the Georgia Institute of Technology.

There is an urgent need for increasing our fundamental knowledge base for all rhinoceros species because of precariously low, wild population levels and uncertain captive reproductive success. Working in tandem, the American Zoological Association (AZA), Rhinoceros Advisory Group, and the International Rhino Foundation recommend pursuing research in the areas of rhino health, nutrition, reproduction, behavior, ecology, systematics, and field conservation. To help meet these goals, I am comparing various aspects of the social, reproductive, neonatal, and developmental behavior of the black rhino (*Diceros bicornis michaeli*) at Zoo Atlanta, the black rhino (*Diceros bicornis minor*) and the white rhino (*Ceratotherium simum simum*) at White Oak Conservation Center for my dissertation research in psychology at Georgia Tech.

The objectives of this project are: 1) to meet IRF research priorities, including ethogram development, social behavior descriptions, estrus, and pregnancy determinations, subspecies characterization, and neonatal development description; 2) to meet White Oak's research priorities for African rhinos by determining the aforementioned behavioral traits of individual rhinos for application to current management practices; and 3) to adopt an ethological approach for the description and analysis of African rhino behavior.

At the level of basic research, this project considers the behavioral differences derived from different ecological pressures for the black and white rhinos and the effects these differences may have on captive reproduction and survival. In addition, subspecies comparisons will be made between *D. b. michaeli* and *D .b. minor*. Although Zoo Atlanta and White Oak black rhino populations are small, they represent a starting point for determining behavioral differences which may be significant in defining ecological conservation units.



White Oak's white rhinoceros occupy a spacious enclosure where they can graze on ample supplies of fresh grass.

From an applied perspective, this research can be used to develop management strategies to aid captive reproduction and survival. Since little is known of the captive behavior of these species, comparisons of captive behaviors to behaviors of free-ranging rhinos may indicate strengths and deficiencies in captive populations. Because White Oak has earned recognition for successful African rhino reproduction, behavioral studies of these successfully managed populations can serve as templates for other captive conservation efforts. Thus, not only will this research be directly beneficial to White Oak and Zoo Atlanta, but this information will also be added to the general knowledge of behavioral biology for captive African rhino management.

Black rhinos make good use of the natural browse made available from the Center's tree farm project which produces forage for browsing species at White Oak.

Several data collection techniques are concurrently being employed for this study in order to gain the most information from as many sources as possible. The primary form of data collection comes from daily observation of individual rhinos. All rhinos at White Oak are included in this study. In addition to the systematic observational data that I am collecting, the rhino keepers complete daily questionnaires on the rhinos. Analysis of these surveys will aid captive management by pinpointing what keepers recognize as generalized behavioral and physical characteristics of estrus, pregnancy, and parturition. Fecal samples are being collected from the female black rhinos for later analysis to correlate behavioral cues that coincide with or predict physiological estrus and parturition. Occasional nighttime behavioral observations and audio and video recordings are also included in this project.

Video recordings are intended for the analysis of introductions and breedings, but we received a pleasant surprise in being able to capture on film the birth of the newest member of the white rhino herd, Maggie. Any day of the week, you can find her wallowing, squeaking, prodding, suckling, playing, grazing, and horn rubbing. For an avid rhino watcher like me, it just doesn't get any better than this!