

**FECAL TESTOSTERONE CONCENTRATIONS IN TERRITORIAL AND
NONTERRITORIAL PRONGHORNS AND SOUTHERN WHITE RHINOCEROSES ^{TWS}**

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Testosterone levels are correlated
with aggressive behavior patterns and
onset of the rut in many ungulate

species. The objective of this study was
to investigate if testosterone
concentrations correlated with spatial

organization in males displaying variable spacing systems. In our lab, methodology has been developed to measure reproductive function noninvasively, using fecal and urinary steroid hormone metabolites. We sampled male pronghorn (*Antilocapra americana*) from two populations in which males were organized differently. Males from the more territorial population tended to have higher

testosterone levels. In southern white rhinoceros (*Ceratotherium simum simum*) males, territorial males had significantly higher testosterone levels than nonterritorial males. These results were independent of age. Our preliminary results illustrate the feasibility of noninvasive methodology to study physiological correlates of behavior in wildlife populations.