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Measuring the sonic, infrasonic and seismic soundscape of the Southern White Rhinoceros (*Ceratotherium simum simum*) at a wildlife park conservation center

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Many creatures, including the myopic rhinoceros, depend upon hearing and smell to determine their environment. Nature is dominated by biophonic and geophonic sounds quickly absorbed by soil and vegetation, while anthrophonic urban soundscapes exhibit vastly different physical and semantic characteristics, reflecting off hard geometric surfaces, distorting and reverberating, and becoming noise. Noise damages human physiologically, including reproductively, and likely damages other mammals. Rhinos vocalize sonically and infrasonically but audiograms are unavailable. They generally breed poorly in urban zoos, where infrasonic noise tends to be chronic. Biological and social factors have been studied but little attention if any has been paid to soundscape. To comprehensively describe the rhinos' sonic, infrasonic and seismic environment at Fossil Rim Wildlife Center, one of the few U.S. facilities to successfully breed white rhinos in recent years, I began by comparing the sound metrics at different times of day in categories, for example, during visitation hours versus park closure. Further analysis will seek particular parameters known to be injurious to humans, plus those already known to impact animals. Later, the soundscapes of other facilities could be compared to seek correlations between their soundscapes and the health and well-being of the rhinos within their care.