Drought effects on buffalo numbers in Kruger

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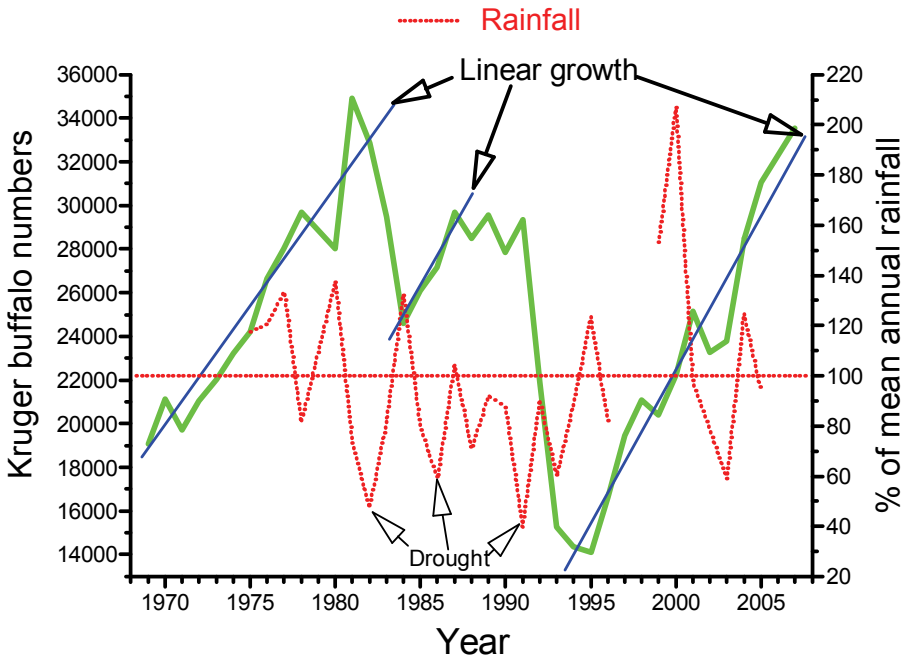

Drought effects on buffalo numbers in the Kruger National Park. Strong evidence for the non-equilibrium dynamics as argued by Ellis & Swift (1988. Journal of Range Management, 41:450-459). An equilibrium system will exhibit density dependent feedbacks on population growth resulting in an asymptotic growth curve. Non-equilibrium systems are controlled by external abiotic drivers such as rainfall rather than internal biotic feedbacks and consequently population growth has no evidence of density dependence (linear growth curves). This is exactly what is observed in the Kruger buffalo population and is caused by the fact that buffalo no longer have access to the high rainfall savannas at the base of the escarpment (regional key resource areas) which would provide more dependable forage during drought and buffer its effects on population numbers. Consequently, animal numbers never rise to levels that affect grass biomass during normal years, as seen in Kruger.

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