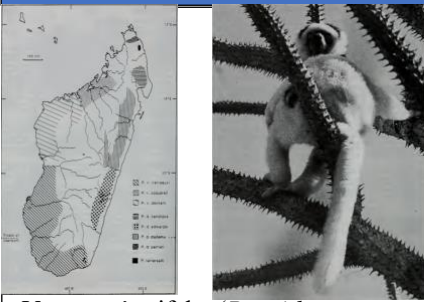


Effect of Human Population Growth on *Propithecus verreauxi* Population in Madagascar from 1985 to 2000

2000

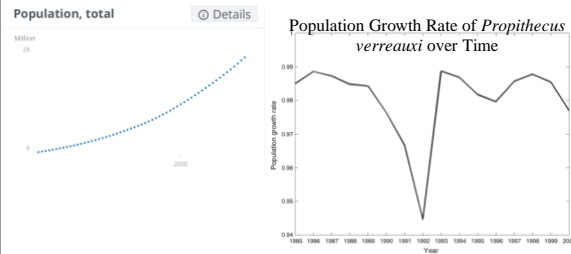
Shirui He

Introduction



Verreaux's sifaka (*Propithecus verreauxi*) lemur lives in the forests of the western and southern part of Madagascar.

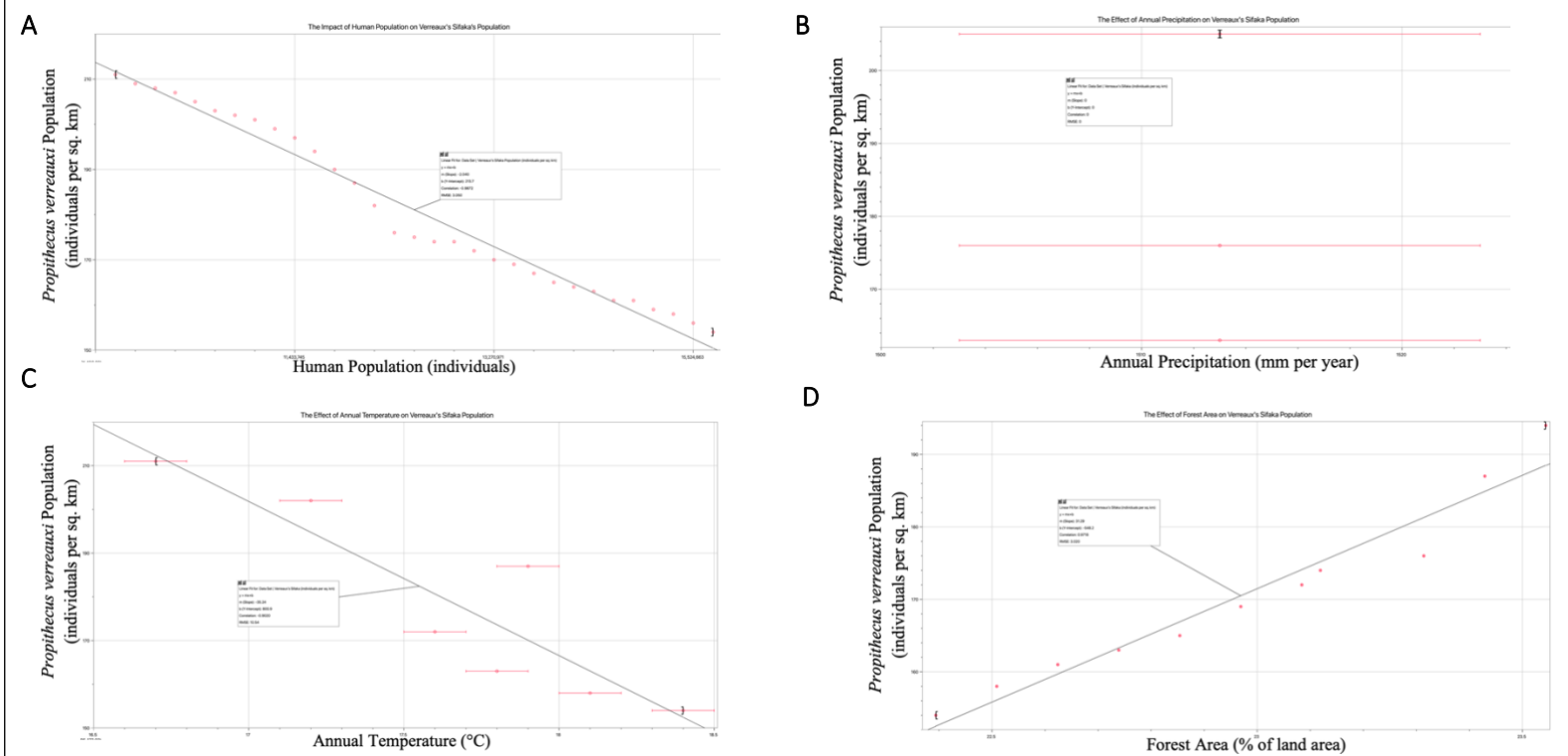
Methodology



POPULATION The total number of *P. v. verreauxi* surviving in the wild is unknown. It is the most widely distributed and probably the most abundant of the subspecies. Counts of the animals at Berenty between 1963 and 1981 indicated that the population there had a stable density of around 150 individuals per sq. km (Jolly, 1972; Jolly et al., 1982; Howarth et al., 1986). The most recent count, in 1985, estimated a density of 211 individuals per sq. km (O'Connor, 1987). In the nearby disturbed forest of Bealoka, also on the Mandrare River, density was only 47 individuals per sq. km (O'Connor, 1987). In Antseranomy, 40-50 *P. v. verreauxi* lived at a density equivalent to 400-500 individuals per sq. km (Sussman, 1972 reported in Pollock, 1979).

Database analysis of population estimates from a previous genetic analysis and a field study was conducted. Qualitative and quantitative data like drought, human hunting, annual precipitation, annual temperature, and forest area were included to account for biotic and abiotic factors.

Results



Discussion

- The lack of data on annual humidity and the resulting lack of correlation
- A study on a lemur species is difficult because of a lack of historical data and heavy terrain despite it being in an isolated geographical location
- A reduction in resources and space such as forest area as a result of human disturbance could potentially lead to a competition, which would then lead to a reduction in *Propithecus verreauxi* population through natural selection

Conclusion

- A significant indirect correlation was present between *Propithecus verreauxi* and *Homo sapiens* population with a r-value of -0.976
- A significant direct correlation was present between the Verreaux's Sifaka's population and forest area, which is a direct human influence on the habitat of *Propithecus verreauxi*
- Although there was a significant negative correlation between the Verreaux's Sifaka's population and the annual temperature, its impact was relatively minor considering the mere approximately overall one-degree change in the annual temperature

References

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- 2) Lawler, Richard R. "Historical Demography of a Wild Lemur Population (*Propithecus Verreauxi*) in Southwest Madagascar." *Population Ecology*, vol. 53, no. 1, Jan. 2011, pp. 229-40.
- 3) Steffens, Travis S., and Shawn M. Lehman. "Lemur Species-specific Metapopulation Responses to Habitat Loss and Fragmentation." *PLOS*.