

## PROJECT: HOW ENVIRONMENTAL FACTORS INFLUENCE WILDLIFE POPULATIONS





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As more animals face endangerment, understanding environmental impacts is key. Conservation groups analyze habitat and survival data to identify beneficial or harmful patterns. This helps target efforts like habitat restoration or policy changes. If certain environments prove better for wildlife, efforts are concentrated there. Acting as a conservation data scientist, you'll leverage data to inform conservation decisions by identifying the area where these efforts are needed most urgently.

This project is about both factor analysis and survival analysis. Factor analysis is useful in market research to identify underlying customer preferences, in human resources to understand employee satisfaction drivers, and in finance to assess investment risks by identifying underlying factors. Survival analysis is applied in real-life business contexts like customer churn prediction, analyzing the lifespan of products in the market, and estimating the time to failure for machinery in manufacturing settings.

The `factor_data.csv` and `survival_data.csv` files encompass vital information for analyzing how environmental factors influence wildlife populations.

`factor_data.csv` includes metrics on environmental and biological variables across various habitats:

Variable	Description
<code>AirQuality</code>	Index of air quality in the habitat
<code>Temperature</code>	Scaled average temperature in the habitat
<code>DeforestationRate</code>	Scaled rate of deforestation in the area
<code>SpeciesDiversity</code>	Average number of different species in the habitat
<code>ReproductiveRates</code>	Scaled average reproductive rates of

Variable	Description
	species in habitat
<code>survival_data.csv</code> contains survival details of individual animals or populations, linking back to the environmental conditions:	
Variable	Description
<code>Survival_Time</code>	Time until the event (death) occurs
<code>Censuring_Status</code>	Event observed (1) or censored (0)
<code>Habitat</code>	Five different types of wildlife habitats

