Population Growth

Biology

Exponential and logistic growth, and what carrying capacity means.

Exponential (J-curve)

- Unlimited resources
- Rate proportional to size
- Rare and temporary
- Invasive species, bacteria in fresh medium

Logistic (S-curve)

- Limiting factors take effect
- Levels off at carrying capacity (K)
- Lag, log, stationary phases
- The realistic pattern

THE DIFFERENCE THAT MATTERS

Density-dependent factors — food, disease, competition — increase with population size. Density-independent ones, like weather, do

Carrying capacity is not fixed: it changes with resource availability, and can be exceeded temporarily before a crash.