Themes in (Disease) Ecology

1. All self replicating things (e.g., organisms, epidemics) are capable of exponential growth, under unlimiting conditions
2. Finite resources and energy flows place limits on organisms' growth and numbers (and distributions)
3. Abiotic conditions place limits on organisms' growth and numbers and distributions

Themes in (Disease) Ecology

4. Species interact with one-another along a spectrum from parasitic to mutualistic; where along the spectrum an interaction exists is context dependent
5. Groups of interacting species comprise communities that can be stable or dynamic, diverse or depauperate, and have emergent properties
6. Perturbations that affect one species (e.g., from a pathogen, invasive species, extinction) can have cascading impacts on the whole community

Themes in (Disease) Ecology

7. Many key processes (e.g., nutrient cycling, epidemics) can be thought of as fluxes or flows between pools or compartments; the science is then understanding what controls the rates of those fluxes and sizes of the pools.