

## Communities I

Are communities organized? (Clements v. Gleason)

Clements – superorganism

Gleason – individualistic

Test: sharp versus gradual boundaries

Few sharp “ecotones” or boundaries between discrete ecosystems

Gleason “won” the argument, but perhaps too much emphasis on individualistic responses?

Energy and nutrient closure in ecosystems as “coevolved” ecosystem function

Functional groups may be more important than individual species in terms of ecosystem organization

Common view that there are no “laws” in ecology, rather ecology is a collection of individual ecosystem and species descriptions

Much new research has emphasized invariant properties of ecosystems

These may arise because of fundamental constraints of conservation of energy and matter (1<sup>st</sup> law of thermodynamics) plus dissipation (2<sup>nd</sup> law of thermodynamics)

$$D = \frac{1}{\sum_i p_i} \quad D = \frac{1}{\sum_i p_i} \quad H = -\sum_i p_i \log p_i \quad H = -\sum_i p_i \log p_i$$