**Preliminary Exam Questions: Dr. Dinsmore**

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1. One general perception in our profession is the notion that research without management implications (e.g., theoretical ecology) is of diminished value. I would like you to contrast theoretical and applied ecology, citing specific examples of each from your own areas of research. Should our profession continue to emphasize applied ecological questions, or is some other approach more worthwhile? Your response should demonstrate the breadth of your knowledge in these areas. [~5 Pages]

* introduce and define theoretical and applied ecology (1 paragraph each)
  + intro
  + definition
  + fields of study
  + types of journals
  + examples from my research
* theoretical ecology benefits
  + modeling, simulation
  + hypothesis based, but focused on obtaining a result (file drawer problem)
  + broad and can be applied widely
  + Example of benefits
* theoretical ecology cons
  + too broad can be vague or miss details that apply locally
  + over-use and over-application of theories (ordination)
  + sometimes rely on dangerous assumptions
  + Example of cons
* applied ecology benefits
  + Hypothesis based, but usually focused on presence/absence of effect
  + Usually specific, local (either a single pop. or metapopulations, within a defined region)
  + Methods are often established, technical, robust
  + examples of benefits
* applied ecology cons
  + too narrow of species scope (bass in brushy... affected by many many things)
  + too narrow regional scope (lakes/wetlands/watersheds are super independent)
  + Less innovation of new methods
  + examples of cons
* Compare benefits between methods: overlap and disparities
  + Overlap: hypothesis based, requires observation of natural processes and critical thinking about ecological structure and function
  + Overlap: simulation as benefit to predict outcomes
  + Disparity: applied ecology can more readily use informative prior distributions (similar lakes, similar systems)
  + Disparity: theoretical ecology’s pursuit of knowledge and major theories
* Compare cons between methods: overlap and disparities
  + Overlap: file drawer problem
  + Overlap: over-application of too many methods, leads to less innovation
  + Overlap: may rely on dangerous assumptions
  + Disparity: local vs global
  + Disparity: ??
* **should our profession continue to emphasize applied ecological questions, or is some other approach more worthwhile?**
  + Why it works
  + When it fails
  + Assumptions, bias, etc.
  + Strong conclusion statement on what we can do to make research stronger!