Environment: Directions and Issues

Examples:

- **decision support in natural resource management**
  (efficient forestry, mining, wildfires, etc)

- **decision support in conservation**
  (wildlife corridors, reserve planning)

- **computational theory to aid ecological sciences**
  (large data sets on species presence/absence,
  clustering/classification)

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  how to gather it, how to optimize with it

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- What data has already been collected? ← use it first!

- High costs of acquiring new data?
  (simulation, field experiments)

- Sample/sample paths with spatial structure?

- Leverage knowledge about biological/ecological structure to specialize processes like adaptive sampling, optimal variance-reduction sampling, etc

- Conservation: generalize concepts of high-cost sampling (options expire while we plan)

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of solutions
of methods
with respect to data
with respect to model assumptions (evolving science)
planning: climate change

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- Problem formulation:
  Understanding space of politically-viable policies
  Working within provence of receptive management agencies

- Understanding incentives:
  private/public partnerships
  feedback with peer-benchmarks
  lotteries to encourage good behavior
  public education and engagement