Today—Spatially Structured Populations
1. What is meant by the term "spatially structured" populations?
2. Give 4 examples of factors that may impose spatial structure.
3. What are the key demographic differences between sources and sinks?
4. Give examples of 2 factors related to habitat that could induce source/sinks.
5. What is an ecological trap?
6. How are protected areas important in maintaining sustainable harvest of wildlife in the tropics?
7. Discuss potential advantages of using no-take reserves as a conservation strategy.
8. Discuss 4 problems with no-take marine reserves.
9. Discuss 4 important considerations for managing areas that are source/sink systems.

Problems with no-take marine reserves:
1) Often spawning ground not known, so don't know if protecting critical areas.
   Source unknown!
2) Many adult fish do not move much; some species may not move out of the reserve.
   No dispersal to harvested sink!
3) Difficult to measure increase in fisheries since larvae disperse over large areas.
4) Difficult to convince fishermen that strategy is increasing/maintaining harvest! ....but community management helps (e.g., locos in Chile)
Concensus: No-take marine reserves work!

Managing areas with sources/sinks:
1) Recognize that have a source/sink system
   • Density as an indicator? Potential problem
   • Critical information? Often hard to obtain
     - B, D rates, dispersal
     - comparison harvest with and without reserve (correlative evidence)
   • Be cautious!
2) Identify and protect (large) source
   • To maintain sink prior to reversing population trend
   • To maintain hunting in sink

Cont. Managing areas with sources/sinks:
3) Deal with the problem in the sink
   • Habitat quantity/quality
   • Overharvest
4) Manage on regional scale
   Public-private partnerships
   Multi-agency partnerships