

Study Questions and Reading Guide: Kareiva & Marvier, Chapter 15
Conservation Biology
Spring 2011

Reading: Although this chapter focuses on fisheries, many of the themes are broadly applicable to other notions of overexploitation and sustainability. This is a very important chapter and is at the heart of the main interests of one of the text's authors.

I. Terms to know:

fishery	overharvest	Maximum sustainable yield (MSY)	stock
Sequential depletion	Fishery overcapacity	Stock assessment model	Bycatch, incidental take, "take"
Fishing down the web	Marine Protected Areas (MPA)	aquaculture	Individual Transferable Quota (ITQ)

II. Questions:

1. What demographic factors are most associated with overharvest beyond simply excessively large takes? Relate this to what you learned earlier in the course in the population biology unit.
2. We will go over the concept of MSY in some detail in class. Review earlier work we did on density dependent growth of populations to be ready for this discussion, if you need to review.
3. What are typical ways used to limit harvest (take) in fisheries (p 369)?
4. What would be the effect of misestimating the yield curve (for example see fig. 15.2)? How would one estimate a yield curve? Are catch data reliable? Why or why not?
5. How does one control for changes in fishing effort and other issues related to overcapacity of a fishing industry?
6. Why do fishery management schemes fail so often – and when do they succeed?
7. How is bycatch typically measured and what determines how accurate bycatch measures are? What is a TED (and what does it stand for)? What are some other devices used to reduce by-catch and why are these often unpopular with fishermen (and relate this to the notion of the commons)? Has there been success in reducing bycatch?
8. How does fishing down the food chain supposedly work and what evidence is there for and against it?
9. What is ecosystem-based fishery management, how does it differ from typical fishery management, and why does it fail so often?
10. Explain and critically evaluate MPAs and ITQs.
11. Critique aquaculture in terms of its promises, shortcomings and future.