

## Things to know for the Fish Management final exam

The final exam will cover lecture material from 18 October through 1 December. This includes all readings from Fisheries Techniques and the online readings. There will not be any quantitative problems (i.e., no calculations or formulae to memorize), but you should understand how to interpret data, how to draw figures from class, and key components of the equations we discussed. There will not be specific questions about the management plans or questions requiring detailed knowledge of the book reports. However, you should be able to answer general essay questions about the topics covered in the plans, the book reports, and the case studies.

- 1) Understand the various problems that can affect habitat in lakes
  - a. Know their cause and the problems for fishes
  - b. Be able to suggest both quick and long-term management actions for the problems
  - c. Know specific problems that can arise from shoreline development (Schindler et al.)
- 2) Understand the various problems that can affect habitat in streams and rivers
  - a. Know the cause and the problems for fishes
  - b. Be able to suggest both quick and long-term management actions for the problems
  - c. Understand the linkages between multiple variables in streams and rivers
- 3) Regulations
  - a. Know the general history of the use of regulations
  - b. Know why regulations are used - both general reasons and specific objectives
  - c. Be familiar with the different regulation options
    - i. When they might be used
    - ii. What their goal may be
    - iii. Why they may or may not work
- 4) Stocking
  - a. Know the history in stocking trends (why stocking increased, what has changed as far as stocking practices in general)
  - b. What are the important factors to consider when implementing a stocking plan?
- 5) Introduced species
  - a. Why are species introduced?
  - b. What are the primary methods for controlling introduced species that become NIS?
  - c. Know some of the details about what methods work best and why and why some methods are risky.
- 6) Endangered species management and non-intuitive responses (George et al. and Pine et al.)
  - a. What are the key “rules” for endangered species management?
  - b. Be prepared to give examples of when management has failed and why.
- 7) Case studies
  - a. Be ready to read and analyze a short story and dataset to answer questions about fisheries management
  - b. You will not need a calculator, but you should know the various metrics we discussed in class and have a general idea of what are good and bad values
  - c. THINK and WORK slowly and deliberately. Consider the objectives, goals or questions. Consider the values presented. Consider what is realistic.