Memorial University of Newfoundland
Department of Ocean Sciences Graduate Course Winter Semester January 2023

OCSC 7400 Fisheries Resource Management

Instructor: Dr. Joe Wroblewski, Dept. Ocean Sciences, Memorial University
E-mail: jwroblew@mun.ca
Office hours (in person or by Webex): 1 hour before and after scheduled class time
Please use jwroblew@mun.ca for emailing the instructor.

3 hours of lecture (Tuesday and Thursdays from 1-2:30 pm) per week

Classes held in room C4011 in the Physics Chemistry Building on campus

Course Outline

Course Description:
This Graduate Studies course takes a global view of marine fisheries resource management. The objectives, principles and quantitative theories of fisheries management are reviewed. Classroom discussions include the role of industry, federal and regional governments, and non-governmental organizations (NGOs) in managing living marine resources, both wild stocks and aquacultured species. The course has a special focus on how fishery managers could adjust to the risks associated with anthropogenic climate change.

Evaluation method:

Assignments (3 calculation problems, each worth 25%)	75%
Class presentation	25%

All readings are available online through the Brightspace shell for the course.
Reference Books:
Chalmers, A. 1999. *What Is This Thing Called Science.* 3rd Ed, Hackett Publishing Co., Inc., Indianapolis/Cambridge. 266 p.

Hilborn, R. and C.J. Walters. 1992. *Quantitative Fisheries Stock Assessment: choice, dynamics and uncertainty.* Chapman and Hall, N.Y. 570 p. (2nd Edition published in 2001).

Topic 1:
Define fisheries management, fisheries ecology, fisheries stock assessment
The difference between fisheries science and fisheries management
Wroblewski, J. 1983. The role of modeling in biological oceanography. Ocean Science and Engineering 8(3): 245-285.

Hilborn and Walters, 1992. Chapters 1 and 2, pages 1-43.

Chalmers, 1999. Chapters 1 and 2.

Nielsen, K.N. et al., 2018. A framework for results-based management in fisheries. Fish and Fisheries 19: 363-376.

Topic 2:
Type I errors; Type II errors in fisheries science.
Dayton, P.K. 1998. Reversal of the burden of proof in fisheries management. Science 279: 821 – 822.

Peterman. R.M. 1990. Statistical power analysis can improve fisheries research and management. Can. J. Fish. Aquat. Sci. 47: 2-15.

***Topic 3*:**
Define "adaptive management"
Parma, A.M. et al. 1998. What can adaptive management do for our fish, forests, food and biodiversity? Integrative Biology: 16-26.

Hilborn, R. and C. Walters. Chapter 17, pages 487-514.

Define "ecosystem-based fishery management"
Pikitch, E.K. and 16 others. 2004. Ecosystem-based fishery management. Science Vol. 305: 346-347.

Public policy and scientific uncertainty
Hilborn, R., J.-J. Maguire, A.M. Parma and A.A. Rosenberg. 2001. The Precautionary Approach and risk management: can they increase the probability of successes in fishery management? Can. J. Fish. Aquat. Sci. 58: 99-107.

Define "risk assessment, decision analysis"
Francis, R. and R. Shotton. 1997. "Risk" in fisheries management: a review. Can. J. Fish. Aquat. Sci. 54: 1699-1715.

***Topic 4*:**
The role of NGOs in promoting sustainable fisheries and aquaculture
Marine Stewardship Council
Aquaculture Stewardship Council

***Topic 5*:**
Canada's Fisheries Act
Canada's proposed Aquaculture Act

***Topic 6*:**
Canada's Oceans Act

***Topic 7*:**
Canada's Species at Risk Act
Wade, P.R. 1998. Calculating limits to the allowable human-caused mortality of cetaceans and pinnipeds. Marine Mammal Science 14: 1-37

Land Acknowledgement, Memorial University
We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.