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FAS 6355c Fisheries Management

Course Syllabus, Fall 2023, 4 Credits

Lectures for all sections: online

Weekly discussion (on-campus)*: Wednesday 09:00– 10:30 AM, NZ 222

Weekly discussion (online): Wednesday 8:00-9:30 PM Eastern, Zoom Meeting
(*contingent on participation of at least ten students)

Course Description

Integrating scientific, social, political and legal factors in fisheries management.

Overview

Fisheries are an important source of food and recreational opportunities, yet many are in poor shape due to overfishing and/or habitat degradation. Managing fisheries sustainably and restoring fisheries that have been degraded is a complex task that requires a broad set of competencies from fisheries professionals. The course aims to help students develop key competencies including knowledge of essential ecological, social, institutional, and economic dimensions of fisheries management; skills in fisheries systems analysis, interview and social survey techniques, resource assessment and modeling, institutional analysis, participatory planning and reflection-in-action; and a repertoire of case studies. The course also aims to foster motivation for problem solving in an interdisciplinary and participatory manner, critical thinking and innovation. Lectures will be used to outline key concepts and approaches, and laboratories and homework assignments will provide experience in applying key methods. Throughout the course, all students will develop a case study on a fishery of their choice, applying what they have learned, providing concrete examples for class discussions, and eventually providing an independent review and recommendations for the further management of the fishery. Students will also conduct an intervention design practicum aimed at addressing a current fisheries management issue through innovative science and/or professional practice. This interdisciplinary course is intended for graduate or undergraduate students majoring in any subject relevant to fisheries management including fisheries/aquatic science, wildlife, resource economics, geography, and political science.

Course Objectives

- 1) Appreciate the complex, multi-dimensional nature of fisheries management problems and the benefits of integrative-interdisciplinary approaches to addressing them
- 2) Understand key relevant concepts in the areas of fisheries systems, stakeholder characteristics and behavior, fisheries governance, fish stock dynamics, fisheries

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- economics, and management and planning processes
- 3) Gain practical skills in interview and survey methods, institutional analysis, fisheries assessment, economic analysis, and participatory planning.
 - 4) Gain practical experience in analyzing fisheries management issues in a problem- and outcome-oriented, interdisciplinary manner.
 - 5) Strengthen communication skills.
 - 6) Gain practical experience in designing an intervention aimed at addressing a current fisheries management issue through scientifically informed professional practice.

Teaching and learning approach

The course involves both, structured lectures and labs/homework assignments and more open-ended, student-driven learning. From you as a student, the course requires enthusiasm for grappling with complex and poorly defined real-world fisheries management issues (“messes”). Many students enjoy these challenges but some don’t. If you want to be told what to do at all times, are uncomfortable engaging with problems that don’t have a right or wrong answer, then this course may not be for you.

The course is available fully online or in hybrid online and on-campus format, the latter contingent on a minimum of five students participating in the on-campus sessions. All students are expected to attend weekly, synchronous discussion sessions regularly.

Instructors

Dr. Kai Lorenzen (Professor), Fisheries and Aquatic Sciences, SFFFGS, 7922 71st Street, Gainesville, FL 32653. Phone 352-273 3646, Email: klorenzen@ufl.edu,
Web Page: <http://fisheriessolutions.org>.
Office hours: Tuesdays 11 am to 12 noon

Guest lecturers

Dr. Edward Camp, SFRC, UF (fisheries economics)
Dr. Chelsey Crandall, SFRC, UF (communication, conflict management)
Dr. Nia Morales, WEC, UF (quantitative social surveys)

Course delivery

The class is offered in “reverse classroom” mode. Lectures are available online and can be watched at any time within the relevant module. Lectures are complemented with live discussion sessions and various classwork assignments. Discussion sessions are held online in Zoom (voice and video chat). Discussion sessions are an essential part of the class and participation is required and graded.

All students must upload a personal introduction clip and an introduction clip about their case

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study fishery via the VoiceThread system. Students will also use voice thread to upload case study presentations.

All participants are encouraged to maintain contact and discuss questions throughout the course using a suitable means agreed upon at the start of class (e.g. Canvas chat room).

E-learning and distance learning support

A Canvas site is available. Course material and interactive elements are organized as follows:

Announcements

- All important announcements are posted on the Canvas site and copied to your email.

Resources

- Access to resources such as lecture slides and key readings is via a Canvas web interface, organized by module/week. Lecture slides uploaded for sessions that have not yet been held are preliminary and are normally updated around the time a lecture is given (the course evolves constantly and so do the lectures!).
- Coursework assignments are posted under *Assignments*. Please turn in your coursework through the *Assignments* functionality. (We will accept assignments submitted by email, but only under exceptional circumstances).
- You will receive feedback and grades through the same channel.

VoiceThread

- Use VoiceThread to upload and view clips, presentations etc.

Chatroom

- Please use Canvas chat room to post questions and thoughts of general interest to the class.
- Post your questions for the discussion sessions here – by the previous day at the latest!

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Outline of topics, lectures/activities and recommended readings

Topic	Lecture/activity	Recommended reading
Class introduction, problem definition and synthesis	Introduction to the course: Course overview, student introductions.	
	Discussion: Importance of fisheries, what do we expect from a ‘good’ fishery, how do fisheries measure up, what is the role of professionals in achieving good fisheries?	FAO 2020; Gutierrez et al. 2011; Hilborn 2007b; Post et al. 2002; Welcomme et al 2010; Worm et al. 2009; Asche et al. 2018.
	Course synthesis: Problem-solving in fisheries management	
Fisheries systems	Understanding fisheries systems and identifying options for improving outcomes	Degnbol & McCay 2006; Garcia & Charles 2007; Lorenzen 2008
	Case study presentations and discussions	
	Reflective practice in fisheries management	Schön 1983; Sarewitz 2004; Jentoft 2006
Fisheries governance	Fisheries governance	Sutinen 1999; Hilborn et al. 2005; Ostrom 2007; Branch 2009; Fujita et al. 2010; Gutierrez et al. 2011, NOAA 2007
	South Atlantic Fishery Management Council (SAFMC) Meeting: Class will follow selected parts online	Documents will be on https://safmc.net/
	SAFMC Scientific and Statistical Committee Meeting: Class will follow selected parts online	Documents will be on https://safmc.net/
	Florida FWC Meeting: Class will follow selected parts via the Florida Cannel	Documents will be on www.myfwc.com
	Reforming fisheries management: change and processes	McCay (1989); Grimes (1996); Harris et al. (2007); Shelley (2012); Wondolleck & Yaffee (2000)

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Understanding and engaging stakeholders	Stakeholders as individuals: values, attitudes, assets and drivers of behavior	Salas & Gaertner 2004; Smith et al. 2005; Arlinghaus & Mehner 2006; Hutt & Bettoli 2007
	Qualitative interview studies in fisheries management	Acheson 1982; Weiss 1994; Kuehn et al. 2006; Adkins 2010; Turner 2010; Guion et al. 2011
	Quantitative social surveys (Nia Haynes Morales)	Dillman et al. 2009
	Stakeholder engagement and workshop facilitation (Chelsey Crandall)	Tierny 2011
	Managing fisheries conflicts (Chelsey Crandall)	Covey 1990; Fisher & Uri 1991, Pomeroy et al. 2007; Pomeroy & Rivera-Guieb 2006
	Communicating Fisheries Science (Chelsey Crandall)	Kaplan & Kaplan 2009, Monroe et al. 2009
Quantitative assessment of fisheries status and management options	Fisheries assessment using biomass dynamics models	Hilborn & Walters 1992 (Ch. 8); Haddon 2001 (Ch. 10); Cooper 2006; Methot 2009; Edwards et al. 2012; Lorenzen et al 2016
	Fisheries assessment: Models and data	Hilborn & Walters 1992 (Ch. 10); Haddon 2001 (Ch. 2, 11); Cooper 2006; Edwards et al. 2012
	Economics of fisheries management (Ed Camp)	Milon et al. 1999; Conrad 1999 (Ch. 3); Whitmarsh 2011 (Ch. 2)
Ecosystem, spatial and recreational fisheries management	Ecosystem-based fisheries management	Francis et al. 2006; Hobday et al. 2011; Rice 2011
	Spatial and place-based fisheries management	Fogarty & Botsford 2007; Lorenzen et al. 2010
	Managing recreational fisheries: do different principles apply?	Radomski 2001; Post et al. 2002; Arlinghaus et al. 2007; Arlinghaus et al. 2019; Johnston et al. 2014; TRCP

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		2014; Sutinen & Johnston 2003
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Assessment & Grading

A variety of different assessment approaches will be used, with emphasis on evaluating understanding of key concepts, development of core skills, critical thinking, and creative problem solving. The different assessments and their weighting are:

Lab reports (4)	20%
Case study presentation	20%
Fisheries project design practicum	20%
Participation in discussions	15%
Interim exam	<u>25%</u>
Total	100%

Grading information

Grades will be allocated as: A (93 - 100 %), A- (90 - 92 %), B+ (86 - 89 %), B (82 - 85 %), B- (78 - 81 %), C+ (74 - 77 %), C (67 - 73 %), C- (63 - 66 %), D+ (59 - 62 %), D (55 - 58 %), D- (51 - 54 %), E (< 50 %).

Click here for UF grading information for students: <http://www.registrar.ufl.edu/hubstudents.html>

Coursework requirements

Introductory clips

All students are required to upload introductory clips about themselves and their case study to Voice Thread.

Lab/homework assignments

Lab/homework assignments are designed to help students exercise key skills in qualitative interviewing, quantitative social surveys, fisheries assessment, and bio-economic analysis. Reports are due within 2 weeks of the assignment being given.

Four lab/assignment reports are required:

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- 1) Qualitative interviews
- 2) Fisheries assessment: biomass dynamics modeling
- 3) Quantitative social surveys
- 4) Bio-economic modeling

Reports should concisely address the questions posed in the assignments in writing, supported by pertinent figures and/or tables. It is not necessary to provide introductory material or describe methods, though knowledge and understanding of both should be evident in the presentation and interpretation of results. Lab reports will normally be around 3-5 pages in length.

Grading criteria: The report answers all questions posed in the assignment in a clear and concise manner. Text is supported by key figures and/or tables, all of which are appropriately labeled, described in a legend and referenced in the text. Interpretation of results shows good understanding of the underlying concepts and methods.

Integrative fisheries case study

All students will develop an integrative case study on a fishery or a fisheries-related natural resource of their choice. Where appropriate, students are encouraged to select problems related to their research or professional practice. The aim of the case study is to conduct and present an integrative-interdisciplinary analysis of the outcomes of a fishery, the factors that led to these outcomes, options for improving management (or sustaining positive outcomes), and generic lessons that can be learned from the case study. Taken together, the case studies will become part of the student's 'repertoire'.

In the spirit of reflective practice, students will develop the case study in multiple steps interspersed with feedback and reflection.

- 1) Identification of case study topic
- 2) Completion of an information checklist summarizing key information on all attributes of the case study and information sources
- 3) Instructor feedback
- 4) Initial case study presentation (VoiceThread)
- 5) Peer and instructor feedback
- 6) Final case study presentation (VoiceThread)

Grading criteria: The presentations provide a clear, integrative and concise assessment of the fishery, possible management responses, and any generic lessons that can be learned from this specific case. Statements are appropriately supported by reference to publications, information from stakeholders, or personal observations. The presentation shows ability to synthesize and critically evaluate information.

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Intervention design practicum

In the practicum, students design an intervention aimed at addressing a fisheries management problem through innovative professional practice. Often, but not always, this intervention will be related to the case study system. Students also have the option of obtaining credit for implementing their projects as part of a special study following the class.

Intervention design involves:

- a clear analysis of the management problem
- a realistic appreciation of what the proposed intervention will contribute to addressing the problem and over what time scale
- a set of well-designed, scientifically and professionally sound, and fully developed intervention activities
- an assessment of resources required to implement the intervention (budget, personnel, etc.)

Proposed interventions may include e.g. interview studies or social surveys, modeling studies involving interaction with stakeholders, conducting stakeholder workshops, or development of educational materials. All proposed activities must be grounded in sound science and professional practice and defined the extent that they are ready to be implemented.

The intervention design practicum is conducted in four steps:

- (1) Drafting of a pre-proposal
- (2) Peer and instructor review of pre-proposals
- (3) Development of the main proposal including consultation with stakeholders, pre-testing of activities etc.
- (4) Submission of final proposal.

The pre-proposal should be about 3 pages in length and include: (a) background; (b) problem definition; (c) aims and objectives; (d) activities; (e) timeline; (f) outputs (g) intended contributions of the intervention to addressing the problem identified. The full proposal should follow the same format and be about 10 pages in length, plus appendices.

Grading criteria: the management problem is clearly identified; the intervention is clearly described, of appropriate scope, and designed to a high standard.

Interim exam

A 'take-home' interim exam will be held in week 9. The exam is open-book and will consist of essay questions.

Discussion meetings

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Discussion meetings are held weekly for all students. The meetings are synchronous voice meetings in Zoom or in-person (when offered) with occasional screen sharing. The purpose of the meetings is to discuss the topics covered in lectures, lab/homework assignments and any other issues or questions that may arise in the course of the class.

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Schedule

Note: details of the schedule may change in response to external circumstances or pedagogical needs of the course. Always check Canvas for the most current version.

Week (starting)	Lectures	Lab/ assignment	Integrative case study	Design practicum
1 (8/21)	Fisheries Management: Introduction Understanding Fisheries Systems (I & II)	Introductory clip on VoiceThread		
2 (8/28)	Fisheries Governance (I, II & III) Stakeholders as Individuals (I & II)		Topic	
3 (9/04)	Qualitative Interview Studies in Fisheries Management	Assignment Interviewing opens		
4 (9/11)	Reforming Management: Change and Process <i>SAFMC Council Meeting 9/11-14</i>		Information checklist	
5 (9/18)	Fisheries Assessment Using Biomass Dynamics Models (I & II)	Assignment Biomass Dynamics opens		
6 (9/25)	Managing Fisheries Conflicts Communicating Fisheries Science			
7 (10/02)	Social Survey Design and Implementation Engaging Stakeholders: Meetings and Workshops <i>FWC Commission Meeting 10/4-5</i>	Assignment Social Surveys opens	Presentation (due 10/08)	

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Week (starting)	Lectures	Lab/ assignment	Integrative case study	Design practicum
8 (10/09)	Case study presentations Synthesis of presentations <i>SAFMC Snapper-Grouper AP Meeting</i>		<i>Peer feedback on pres.</i>	
9 (10/16)	Interim exam (open 10/14-10/22)			Pre-proposal (due 10/20)
10 (10/23)	Managing Recreational Fisheries Recreational Fisheries Allocation <i>SAFMC SSC Meeting</i>			
11 (10/30)	Fisheries Economics	Assignment Economics opens		<i>Peer feedback on pre-prop.</i>
12 (11/06)	Ecosystem-Based Management Spatial and Place-Based Management			
13 (11/13)	Reflective Practice in Fisheries Management			
14 (11/20)	No lectures or discussion meetings (Thanksgiving)		Final presentation (due 11/20)	
15 (11/27)	Discussion on design projects			Final proposal (due 11/30)
16 (12/04)	Class Synthesis: Problem-Solving in Fisheries Management			

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Textbooks

There are no required text books, but students may refer to the following for many aspects of the course:

Charles, A.T. 2001. *Sustainable Fishery Systems*. Wiley-Blackwell, London.
Haddon, M. 2011. *Modelling and Quantitative Methods in Fisheries*. Chapman and Hall, London.

Key readings

- Acheson, J.M. (1975) Fisheries management and social context: the case of the Maine lobster fishery. *Transactions of the American Fisheries Society* 104: 653-668.
- Adkins, T.J. (2010) Fishing for masculinity: Recreational fishermen's performances of gender. M.A. Thesis, Kent State University. 64pp.
- Allison, E.H. & Ellis, F. (2001) The livelihoods approach and management of small-scale Fisheries. *Marine Policy* 25: 377-388.
- Arlinghaus, R. & Mehner, T. (2006) Determinants of management preferences of recreational anglers in Germany: Habitat management versus fish stocking. *Limnologica* 35: 2-17.
- Arlinghaus, R. et al. (2007) Understanding the complexity of catch-and-release in recreational fishing: an integrative synthesis of global knowledge from historical, ethical, social, and biological perspectives. *Reviews in Fisheries Science* 15: 75-167.
- Arlinghaus, R. et al. (2019). Opinion: Governing the recreational dimension of global fisheries. *Proceedings of the National Academy of Sciences* 116: 5209-5213.
- Asche, F. et al. (2018). Three pillars of sustainability in fisheries. *Proceedings of the National Academy of Sciences* 115: 11221-11225.
- Branch, T. (2009) How do individual transferable quotas affect marine ecosystems? *Fish and Fisheries* 10: 39-57.
- Charles, A.T. (2001) *Sustainable Fishery Systems*. Oxford: Blackwell Science.
- Cochrane, K.L., Andrew, N.L. & Parma, A.M. (2011) Primary fisheries management: a minimum requirement for provision of sustainable human benefits in small-scale fisheries. *Fish & Fisheries* 12: 275-288.
- Conrad, J.M. (1999) *Resource Economics*. Cambridge University Press.
- Cooper, A. (2006) *Guide to Fisheries Stock Assessment: from Data to Recommendations*. University of New Hampshire/NH Sea Grant.
- Covey, S.R. 1990. Principles of Empathic Communication. In *The Seven Habits of Highly Effective People*. New York: Simon and Schuster.
- Dillman, D.A., Smyth, J.D. & Christian, L.M. (2009) *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. Wiley: Hoboken, N.J. 499 pp.
- Degnbol, P., & McCay, B. J. 2006. Unintended and perverse consequences of ignoring linkages in fisheries systems. *ICES Journal of Marine Science* 64: 793-797.

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- Edwards C.T.T., Hillary R.M., Levontin P., Blanchard J. & Lorenzen K. (2012) Fisheries assessment and management: a synthesis of common approaches with special reference to deepwater and data-poor stocks. *Reviews in Fisheries Science* 20: 126-153.
- Essington, T.E., Beaudreau, A.H. & Wiedenmann, J. (2006) Fishing through marine food webs. *Proceedings of the National Academy of Science* 103:3171-3175.
- FAO (2020) State of World Fisheries and Aquaculture. Rome, FAO.
<http://www.fao.org/publications/sofia/2020/en/>
- Fisher, R. and W. Ury. 1991. *Getting to Yes: Negotiating Agreement Without Giving In*. Chapters 1 and 3.
- Fogarty, M.J. & Botsford, L.W. (2007) Population connectivity and spatial management of marine fisheries. *Oceanography* 20: 112-123.
- Francis, R.C., Hixon, M.A., Clarke, M.E., Murawski, S.A. & Ralston, S. (2007) Ten commandments for ecosystem-based fisheries Scientists. *Fisheries* 32: 217-233.
- Fujita, R.M., Honey, K.T., Morris, A., Wilson, J.R. & Russell, H. (2010) Cooperative strategies in fisheries management: integration across scales. *Bulletin of Marine Science* 86: 251-271.
- Garcia, S.M. & Charles, A.T. (2008) Fishery systems and linkages: implications for science and governance. *Ocean and Coastal Management* 51: 505-527.
- Garcia, S. & Rosenberg, A. (2010) Food security and marine capture fisheries: characteristics, trends, drivers and future perspectives. *Philosophical Transactions of the Royal Society B* 365: 2881-2896.
- Grimble, R. & Wellard, K. (1997) Stakeholder methodologies in natural resource management: a review of principles, contexts, experiences and opportunities *Agricultural Systems* 55: 173–193
- Grimes, S.R. (1996) The 1994 net ban constitutional amendment: A case study of fisheries management in Florida. M.S. Thesis, Texas A&M University.
- Gutierrez, N.L., Hilborn, R. & Defeo, O. (2011) Leadership, social capital and incentives promote successful fisheries. *Nature* 470: 386–389.
- Haddon, M. 2001. *Modelling and Quantitative Methods in Fisheries*. Chapman and Hall, London.
- Harris, J.M. et al. (2008) Redressing access inequities and implementing formal management systems for marine and estuarine subsistence fisheries in South Africa. In: *Fisheries Management: Progress Towards Sustainability* (Ed. T.R. McClanahan & J.C. Castilla). Wiley.
- Hilborn, R. (2007a) Defining success in fisheries and conflicts in objectives. *Marine Policy* 31: 153-158.
- Hilborn, R. (2007b) Moving to sustainability by learning from successful fisheries. *Ambio*, 36: 296-303.
- Hilborn, R. & Walters, C. (1992) *Quantitative Fisheries Stock Assessment*. New York: Chapman & Hall.
- Hilborn, R., Orensanz, J.M. & Parma, A.M. (2005) Institutions, incentives and the future of fisheries. *Philosophical Transactions of the Royal Society B*, **360**: 47-57.

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- Hobday et al. (2011) Ecological risk assessment for the effects of fishing. *Fisheries Research* 108: 372–384.
- Hutt, C.P. & Bettoli, P.W (2007) Preferences, Specialization, and Management Attitudes of Trout Anglers Fishing in Tennessee Tailwaters. *North American Journal of Fisheries Management* 27: 1257-1267.
- Jentoft, S. (2006) Beyond fisheries management: The *Phronetic* dimension. *Marine Policy* 30: 671-680.
- Johnston, F.D., Arlinghaus, R. & Diekmann, U. (2013) Fish life history, angler behaviour and optimal management of recreational fisheries. *Fish and Fisheries* 14: 554-579.
- Kaplan, S. & Kaplan, R. (2009) Creating a larger role for environmental psychology: The Reasonable Person Model as an integrative framework. *Journal of Environmental Psychology* 29: 329-339.
- Kuehn, D.M., Dawson, C.P.& Hoffman, R. (2006): Exploring fishing socialization among male and female anglers in New York's Eastern Lake Ontario area. *Human Dimensions of Wildlife: An International Journal* 11: 115-127
- Lorenzen, K. (2008) Understanding and managing enhancement fisheries systems. *Reviews in Fisheries Science* 16:10-23.
- Lorenzen, K., Steneck, R.S., Warner R.R., Parma, A.M., Coleman, F.C. & Leber, K.M. (2010) The spatial dimensions of fisheries: putting it all in place. *Bulletin of Marine Science* 86: 169-177.
- Lorenzen, K. et al. (2016). Stock assessment in inland fisheries: a foundation for sustainable use and conservation. *Reviews in Fish Biology and Fisheries* 26: 405-440.
- McCay, B.J. (1989) Co-management of a clam revitalization project: the New Jersey "spawner sanctuary" project. In: *Co-operative Management of Local Fisheries* (Ed. E. Pinkerton). UBC Press.
- Methot, R. D. (2009). Stock assessment: operational models in support of fisheries management. In *The Future of Fisheries Science in North America* (pp. 137-165). Springer, Dordrecht.
- Milon, W.J., Larkin, S.L. & Erhardt, N.M. (1999) Bioeconomic models of the Florida commercial spiny lobster fishery. Sea Grant Report Number 117, Florida Sea Grant College Program, Gainesville, Florida.
- Monroe, M.C., Oxarat, A., McDonell, L. & Plate, R. (2009) Using community forums to enhance public engagement in environmental issues. *Journal of Education for Sustainable Development* 3: 171-182.
- National Academies of Science, Engineering, and Medicine (NASEM). (2021) *Data and Management Strategies for Recreational Fisheries with Annual Catch Limits*. Washington, D.C.: The National Academies Press.
- NOAA (2007) *Magnuson-Stevens Fishery Conservation and Management Act*. Public Law 94-265.
- Ostrom, E. (2007) A diagnostic approach for going beyond panaceas. *Proceedings of the National Academy of Sciences* 104: 15181-15187.
- Pido, M.D., Pomeroy, R.S. Garces L.R. & Carlos, M.B. (1996) *A Handbook for Rapid Appraisal of Fisheries Management Systems*. Manila, ICLARM.

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- Pomeroy, R.S. & Berkes, F. (1997) Two to tango: the role of government in fisheries co-management. *Marine Policy* 21: 465-480.
- Pomeroy, R.S. & Rivera-Guieb, R. (2006) *Fishery Co-Management: A Practical Handbook*. Wallingford, CABI Publishing.
- Pomeroy, R. et al. 2007. Fish wars: conflict and collaboration in fisheries management in Southeast Asia. *Marine Policy* 31: 645-656.
- Post, J.R. et al. (2002): Canada's recreational fisheries: the invisible collapse? *Fisheries* 27: 6-17
- Prager, M.H. & Shertzer, K.W. (2010) Deriving acceptable biological catch from the overfishing limit: implications for assessment models. *North American Journal of Fisheries Management* 30: 289-294.
- Prince, J. (2010) Rescaling fisheries assessment and management: a generic approach, access rights, change agents, and toolboxes. *Bulletin of Marine Science* 86: 197-220.
- Radomski, P.J., Grant, G.C., Jacobson, P.C. & Cook, M.F. (2001). Visions for recreational fishing regulations. *Fisheries* 26: 7-18.
- Rice, J. (2011) Managing fisheries well: delivering the promises of an ecosystem approach. *Fish and Fisheries* 12, 209-231.
- Salas, S. & Gaertner, D. (2004) The behavioural dynamics of fishers: management implications. *Fish and Fisheries* 5: 153-167
- Sarewitz, D. (2004) How science makes environmental controversies worse. *Environmental Science & Policy* 7: 385-403.
- Schön, D.A. (1983) *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books. 374 pp.
- Shelley, P. (2012) Have the managers finally gotten it right? Federal groundfish management in New England. *HeinOnline - 17 Roger Williams U. L. Rev.* 21.
- Smith L.E.D., Nguyen-Khoa, S. & Lorenzen, K. (2005) Livelihood functions of inland fisheries: policy implications in developing countries. *Water Policy* 7: 359-383.
- Sutinen, J.G. (1999) What works well and why: evidence from fishery-management experiences in OECD countries. *ICES Journal of Marine Science* 56: 1051-1058.
- Sutinen, J.G., & Johnston, R.J. (2003). Angling management organizations: integrating the recreational sector into fishery management. *Marine Policy* 27: 471-487.
- TRCP (2014) *A vision for managing America's saltwater recreational fisheries*. Washington DC: Theodore Roosevelt Conservation Partnership. <http://www.trcp.org/assets/pdf/Visioning-Report-fnl-web.pdf>
- Tierney, J. 2011. Do you suffer from decision fatigue? New York Times article, August 17 2011.
- Turner, D.W. (2010) Qualitative interview design: a practical guide for novice investigators. *The Qualitative Report* 15(3): 754-760. <http://www.nova.edu/ssss/QR/QR15-3/qid.pdf>
- Walters, C.J. (2007) Is adaptive management helping to solve fisheries problems? *Ambio* 36: 304-307
- Weiss, R.S. (1994) *Learning from Strangers: The Art and Method of Qualitative Interview Studies*. Simon & Schuster, New York.
- Welcomme, R.L., Cowx, I.G. Coates, D. Béné, C., Funge-Smith, S., Halls, A.S. & Lorenzen, K. (2010) Inland capture fisheries. *Philosophical Transactions of the Royal Society B* 365:

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2881-2896.

Whitmarsh, D. (2011) *Economic Management of Marine Resources*. London: Earthscan.

Wondolleck, J.M. & Yaffee, S.L. (2000) Making Collaboration Work: Lessons from Innovation in Natural Resource Management. Island Press. (Summary article in: Conservation in Practice 1: 17-24).

Worm, B. et al. (2009) Rebuilding global fisheries. *Science* 325: 578-585.

Young, E., & Quinn, L. (2002) Writing Effective Public Policy Papers: Guide for Policy Advisers in Central and Eastern Europe. Local Government and Public Service Reform Initiative.

Policies and Requirements

This course plan and syllabus are subject to change in response to student and instructor needs. Any changes will be clearly communicated in advance through Canvas.

Late Submissions & Make-up Requests

It is the responsibility of the student to access on-line lectures, readings, quizzes, and exams and to maintain satisfactory progress in the course. Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

Communication Courtesy and Professionalism

Just as in any professional environment, meaningful and constructive dialogue is expected in this class and requires a degree of mutual respect, willingness to listen, and tolerance of opposing points of view. Respect for individual differences and alternative viewpoints will be maintained in this class at all times. All members of the class are expected to follow rules of common courtesy, decency, and civility in all interactions. Failure to do so will not be tolerated and may result in loss of participation points and/or referral to the Dean of Students' Office.

Semester Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning.

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At approximately the mid-point of the semester, the School of Forest, Fisheries, & Geomatics Sciences will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required but encouraged. This is not the UF Faculty Evaluation!

At the end of the semester, students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Academic Honesty Policy

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct or appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated.

Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

Inclusive Learning Environment

This course embraces the University of Florida’s Non-Discrimination Policy, which reads, The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race,

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creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act.

If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see the instructor or refer to the Office of Multicultural & Diversity Affairs website: <http://multicultural.ufl.edu>.

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources

For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:

- Learning-support@ufl.edu | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFFGS Academic Hub <https://ufl.instructure.com/courses/303721>

Student Life, Wellness, and Counseling Help

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- Counseling and Wellness resources <http://www.counseling.ufl.edu/cwc/>
- U Matter, We Care <http://www.umatter.ufl.edu/>
- Career Connections Center <http://career.ufl.edu/>

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- Other resources are available at <http://www.distance.ufl.edu/getting-help> for online students.

Student Complaint Process

The School of Forest, Fisheries, & Geomatics Sciences cares about your experience and we will make every effort to address course concerns. We request that our online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered. You can also submit feedback anytime at <https://ffgs.ifas.ufl.edu/contact/>.

If you have a more urgent concern, your first point of contact should be the Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to UF administration:

- Students in online courses: <http://www.distance.ufl.edu/student-complaint-process>
- Students in face-to-face courses: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>