ENST 310: Sustainable Fisheries Management
Spring 2023, TTH 11:00-12:20 pm
Section 33017; 4 units
Location: WPH 207
Instructor: Dr. David Ginsburg, Professor, Teaching, ENST
Preferred Pronouns: he, him
Office: CAS 116
Office Hours: Tues 2:00-3:30 pm. Make an appointment via Calendly: https://calendly.com/ginsbuda
Email: dginsbur@usc.edu

Course description
Fisheries are an important source of food and livelihood for societies across the planet. Yet many fisheries are in decline or collapse due to overfishing and habitat degradation. This course will present the historical and modern significance of fishing to society, the causes and implications of fisheries decline, as well as current and proposed strategies for achieving sustainable seafood for the future. *Recommended preparation: ENST 100*

Classroom ground rules
- Share responsibility for including all voices in a conversation
- Listen respectfully to your classmate's and your instructor's viewpoints
- Be open to changing your perspectives based on what you learn from others
- Understand that we are bound to make mistakes in this space
- Understand that your words have effects on others
- Take group work during class and outside of lecture seriously
- Understand that your classmates may have different experiences from your own
- Make an effort to get to know your classmates
- Understand that there are different approaches to solving problems

Course learning objectives
Student learning objectives for this course are aligned with those of the ENST Program. In particular, students will:
- Learn about the physical, chemical and biological aspects of fisheries
- Discuss fishery issues facing the environment from a scientific and social perspective
- Examine how environmental issues affect humans from multiple perspectives
- Study fisheries through policy, science and human behavior
- Apply quantitative reasoning skills and analytical methods to fisheries-related data

Course modality
ENST 310 will be taught as a synchronous, in-person course and you are expected to be present for each lecture section. Recorded lectures will not be provided to students via Zoom (or any other platform) unless accomodations have been requested and/are required via OSAS. Students that miss class are expected to get notes from their classmates.

Students are expected to comply with all aspects of USC's COVID-19 policy. Failure to do so may result in removal from the class and referral to Student Judicial Affairs and Community Standards.

This course will primarily use Blackboard (Bb) for communication, information and turning in assignments. PDF copies of lecture slides and links to topics discussed during class will be made available on Blackboard

after each lecture is completed. Additional readings will be assigned throughout the semester and will be announced in class, posted on Blackboard and via email messages sent to the class. During some lectures, we will work with spreadsheet data (using MS Excel; see link for tutorial) and run simple simulations or experiments as either a class or asynchronously.

Required readings
- Primary literature articles corresponding to each lecture are outlined on the Course Schedule (see below) and are available for download via Blackboard.

Description and assessment of exams, assignments, etc.
You will be graded on the basis of your performance on exams, written assignments, course activities and participation during lectures. If there is a scheduling conflict with an exam, assignment or activity you must notify me via email at least two-weeks in advance to see if alternative arrangements can be made. If it is an excused absence (official USC travel, medical reasons, religious observation, etc.), I will do my best to provide you with a way to obtain the associated points. Otherwise, no make-ups will be allowed. If you miss an exam, quiz, activity, etc., you will receive a zero for that assignment.

Exam questions will be drawn from course readings, lecture materials and any related assignments, activities and discussions. Two separate exams (midterm and final) are scheduled over the course of the semester. The final exam is partially cumulative and will be comprised of ~20% cumulative and 80% new material covered in the course.

Both the midterm and final will be administered in the classroom electronically via Blackboard (specific details will be discussed/posted closer to the date on the course schedule). Therefore, each student is *required* to bring a laptop computer to class on the day of the midterm and final (If you need to borrow a computer – see the USC Computing Center Laptop Loaner Program website for details). During exams, students are NOT allowed to work as a group, use notes, books, mobile devices, etc. Failure to comply with exam policies will result in a zero on that specific exam.

All assignments must be submitted by the stated deadlines. Late assignments will have 20% deducted each 24 hours, with the first 24 hr deduction starting 15 min after the deadline. Poll everywhere will be used for in-class quizzes, which will be graded on participation alone (provided you answer at least 75% of the questions for a given poll). No make-ups for in-class polls will be allowed.

Overview of assignments and activities
- **Article analysis:** Approximately 0.5-1 page article summary (single spaced) from either the primary or secondary literature, which is based on a topic covered in class. Students will critically read an article and provide written answers to questions, which they will submit individually via Blackboard. Students will discuss their findings during lecture on the day each assignment is due. Five separate article summaries are scheduled over the course of the semester (9 pts each; 45 pts total).

- **Data analysis:** For this assignment, students will independently analyze (via Excel) a specific environmental and/or fisheries dataset and submit (via Bb) a 1-2 page written summary (single spaced) of their experimental results and conclusions (which we will subsequently discuss during class). Write-ups will include a discussion on the health and sustainability of and/or ecosystem of a given fishery based on what we have learned in class. Two separate data assignments (Alaskan

groundfish and Bahamian conch) are scheduled over the course of the semester (45 pts each; 90 pts total).

- **Fisheries presentation:** This is a group assignment in which students (two per group) will present a fisheries-related topic (instructor approved) that is unrelated to the material being covered in class. Students will present their topic orally (10 min) during lecture and submit a written summary via Bb (1-2 pages, single spaced). Each group presentation is worth a total of 65 points (5 points topic submission, 40 points oral presentation and 20 points written summary) and will be scheduled on three different days over the course of the semester (see Course Schedule for details).

Grading breakdown

Assignment	Points	Grade %
Midterm exam	100	22%
Final exam	125	27%
Article analyses (5 x 9 pts)	45	10%
Data analysis #1: Alaskan groundfish	45	10%
Data analysis #2: Bahamian conch	45	10%
Fisheries presentation	65	14%
Participation (activities, discussions, etc.)	35	8%
TOTAL	**460**	**100%**

Grading scale
Final course grades will be determined based on the percentage of points earned as outlined below. This scale may be adjusted depending on the progress of the class. If course taken as a "Pass" grade, you must earn a letter grade of C- or greater (see above) in course. A final point score at or below a D+ grade will result in a "No Pass".

A	94-100	C	73-76
A-	90-94	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	59 and below

Additional policies
Routine attendance and active participation are an important part of each class session. Participation will be evaluated via thought exercises, reading assignments and in-class quizzes. You are responsible for information, announcements, date changes and any other course material presented, regardless of your participation and/or presence in the classroom.

The use of phones and other devices for text messaging, email, social media use, and web-browsing is not permitted in class except where required for in-class work. Students are encouraged to use a paper notebook and pen for recording notes.

Course schedule

For the best learning experience, you are expected to have read the assigned material by the date it is discussed in class. Articles, supplemental readings and in-class data sets will be posted online via Blackboard. If you have to miss class make sure you arrange to get notes and announcements from one of your classmates. The readings and schedule of topics may be adjusted throughout the semester depending on progress of the class.

Date	Topic	Readings
Jan 10	Fisheries: Intro & Overview	
Jan 12	Fisheries: Fisheries Succes in Bristol Bay, AK	Hilborn 2006
Jan 17	Sustainability: MSY, Environ Change & Regime Shifts	Hilborn et al. 2015; Finley & Oreskes 2013
Jan 19	Sustainability: MSS, Ecosystems & Ecolabeling	deYoung et al. 2008; Jacquest & Pauly 2022
Jan 24	Management: Traditional & Western Models, Modern Fisheries Management; **Article analysis #1**	*Hilborn & Ovando 2014*; Beddington et al 2007
Jan 26	Management: Community Management, Regulatory Processes, Deciding What Works	Duarte et al. 2020
Jan 31	**Data Analysis #1: Alaskan groundfish (Excel)**	**In-Class Activity (see Bb)**
Feb 02	Fishing Rights: The Commons, EEZs & Limited Entry	Jackson et al. 2001; Pauly et al. 2002
Feb 07	Fishing Rights: ITQs & Other Allocation Methods	Costello et al. 2010
Feb 09	Global Fisheries: Gloom and Doom; **Article analysis #2**	*Worm et al. 2006*; Meyers & Worm 2003
Feb 14	Global Fisheries: A Sustainable Future Exists	Hilborn 2010; Melnychuk et al. 2021
Feb 16	Environmental Impacts of Fishing: From Trawling to Extinctions	Worm et al. 2009; Pauly et al. 1998
Feb 21	**Fisheries Presentations #1: Groups 1-5**	**In-Class Activity (Peer Evals)**
Feb 23	****MIDTERM EXAM: 11:00 am 12:20 pm****	
Feb 28	Recreational Fisheries: Impacts & Management	
Mar 02	Mixed-Species Fishing & Bycatch; **Artcle analysis #3**	
Mar 07	Forage Fish: Bust and Boom I	
Mar 09	Forage Fish: Bust and Boom II	
Mar 14	*Spring Recess – No Class*	
Mar 16	*Spring Recess – No Class*	
Mar 21	**Data Analysis #2: Bahamian conch (Excel)**	**In-Class Activity (see Bb)**
Mar 23	Illegal, Unregulated & Unreported Fishing	
Mar 28	Seafood Certification and NGOs: Northern Cod & Best Intentions	
Mar 30	Seafood Certification and NGOs: Commercial Fisheries & Consumer Confusion; **Artcle analysis #4**	
Apr 04	Ecosystem-Based Management & MPAs I	
Apr 06	**Fisheries Presentations #2: Groups 6-10**	**In-Class Activity (Peer Evals)**
Apr 11	Ecosystem-Based Management & MPAs II	
Apr 13	Aquaculture & Fisheries Enhancement; **Article analysis #5**	
Apr 18	Ocean Climate Change: What's Known & What's Next	
Apr 20	The Future of Ocean Fisheries	
Apr 25	Lecture topic: TBA	
Apr 27	**Fisheries Presentations #3: Groups 11-15**	**In-Class Activity (Peer Evals)**
May 09	****FINAL EXAM: 11:00 am to 1:00 pm****	

About the instructor
Dr. David Ginsburg is a Professor (Teaching) of Environmental Studies at the University of Southern California and a Research Associate in Invertebrate Zoology (Echinoderms) at the Natural History Museum of Los Angeles County. Ginsburg oversees undergraduate research projects across a range university- and externally-funded (ARPA-E, NSF) initiatives. He holds a Ph.D. in Marine Environmental Biology (USC), M.S. in Chemical Ecology (Univ of Guam) and B.A. in Biology from UC Santa Cruz, and has worked in a variety of marine environments from tropical coral reefs and temperate kelp forests to polar benthic habitats. Prior to joining the USC faculty, Ginsburg was a postdoctoral researcher in UCLA's Department of Civil and Environmental Engineering and a Marine Policy Fellow with NOAA. His teaching is focused on environmental studies and sciences, which includes hands-on learning and research experiences in the classroom and field. His awards include the USC Provost's Prize for Teaching with Technology and the Steven B. Sample Mentoring and Teaching Award.

Statement on academic conduct and support systems

Academic Integrity
USC is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor.

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity's website, and university policies on Research and Scholarship Misconduct. If you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution, please contact me.

Students and disability accommodations

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. Contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support systems

Counseling and Mental Health: (213) 740-9355 – 24/7 on call. Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

988 Suicide and Crisis Lifeline: 988 for both calls and text messages – 24/7 on call. The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

Relationship and Sexual Violence Prevention Services (RSVP): (213) 740-9355(WELL) – 24/7 on call. Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX): (213) 740-5086. Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment: (213) 740-5086 or (213) 821-8298. Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS): (213) 740-0776. OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention: (213) 740-0411. Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion: (213) 740-2101. Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency: (213) 740-4321 (UPC) / (323) 442-1000 (HSC) – 24/7 on call. Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety: (213) 740-6000 (UPC) / (323) 442-1200 (HSC) – 24/7 on call. Non-emergency assistance or information.

Office of the Ombuds: (213) 821-9556 (UPC) / (323-442-0382 (HSC). A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice: (323) 442-2850 or otfp@med.usc.edu. Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.