

# Geographic Aspects of Water

## GEO 7334, Spring 2016

**Instructor:** Dr. Jason Julian  
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Office Hours: M & T 1:00-2:30, or by appointment

**Lecture:** Monday 9:30 – 12:20 in ELA 313

**Philosophy of the Course:** Humans have damaged the health of water resources and fluvial ecosystems on a massive scale and are now faced with the challenge of rehabilitating these ecosystems in order to restore their integrity and sustainability. This course examines the efforts to manage watersheds and restore fluvial ecosystems at broad scales, those that encompass multiple regions. Our discussions will use a geographic perspective where we will focus on the scientific, sociopolitical, cultural, and economic challenges associated with watershed management and large-scale ecosystem restoration.

**Catalog Description:** This seminar is a critical analysis of developmental and current literature that define water's critical role in determining the physical and cultural characteristics of the earth. Principal focus will be placed on water's role on land use and as a critical resource.

**Course Objectives:** There are many challenges associated with managing watersheds and restoring fluvial ecosystems at large-scales. Because of landscape diversity and inherent uncertainty, we have to rely on adaptive ecosystem management to make projects scientifically feasible. Because of the large area on which these projects take place, the cultural dynamics and sociopolitics that must be worked out in order for the project to succeed are complicated and usually involve legal battles. Because of the numerous agencies and stakeholders involved, the dollar costs for these projects reach into the billions. When combined, these challenges constrain the ability for success of these large-scale ecosystem restorations. The objectives of this course are to:

- First, understand why these large-scale ecosystem restorations are necessary
- Identify the challenges involved in the process
- Develop explanations for the successes and failures of each project
- Conduct a thorough literature review and produce a journal-quality article under the broad theme of geographic aspects of water

**Required Book:** Doyle, M. and Drew, C. (2008) Large-Scale Ecosystem Restoration: Five Case Studies from the United States. Washington DC: Island Press, 344 pp.

**Additional readings posted on TRACS:** All assigned journal articles will be posted to the TRACS course website at least one week before their scheduled discussion. Discussants are required to send me their chosen articles two weeks before we discuss them in class so that I have a chance to review them beforehand.

**Grading** Your grade in the course will be determined by how many points you accrue out of the total possible 100 points. The final letter grades will be assigned as follows: A = 90-100, B = 80-89, C = 70-79, D = 60-69, F = <60. The points are allocated as follows:

In-class participation	10
Discussant performance 1	10
Discussant performance 2	10
Midterm literature review	15
Short Essay 1	10
Short Essay 2	10
Final presentation	10
<u>Final paper</u>	<u>25</u>
TOTAL	100

### **Discussants**

For Discussant Performance 1, each member of the class will be a co-discussant for one of the weekly set of readings. Discussants are responsible for all the readings for that week. We will pass around a sign-up sheet the first class to schedule discussants. In the first class, we will cover what it means to be a discussant. For Discussant Performance 2, you will select 1-2 articles (related to your literature review and final paper) to be discussed by the class. You will lead the discussion, but the entire class is expected to actively participate. Your selection of paper(s) will be part of your grade, so choose thought-provoking material that will help you finalize the outline for your section of the final paper. All articles must be given to me at least two weeks in advance so I can review them before posting to TRACS.

### **Short Essays**

You will be assigned two short essays that address topics relevant to the readings and our discussions in class. The topics and due dates for these essays are below. The expected length of these essays is 4-5 double-spaced pages, not including diagrams or bibliography. Both essays, as well as the final paper, will be graded on the following:

- (i) Comprehensiveness and accuracy of information presented.
- (ii) Clarity of logic and expression.
- (iii) Feasibility of solutions or scenarios proposed.
- (iv) Synthesis: ability to demonstrate linkages among interrelated ideas and concepts.

#### Short Essay #1 (Due Feb 9 at beginning of class)

First, compare and contrast the challenges faced by the Everglades and Platte River restoration projects. Then explain which project you think has the greatest potential for success and why. Use the book as your primary reference, but you may also use other sources.

#### Short Essay #2 (Due Feb 23 at beginning of class)

Both the Chesapeake Bay and California Bay-Delta restoration projects face tremendous scientific and socio-economic challenges. For each project, discuss which type of challenge (scientific or socio-economic) will be the most difficult to overcome and why. Use the book as your primary reference, but you may also use other sources.

## Literature Review and Final Paper

Together as a class, we will write a journal-quality article based on an extensive literature review, where each student will be responsible for a sub-topic of the theme of the article. During the first two weeks, we will develop this theme, based on student interests related to geographic aspects of water. Each student is responsible for the literature review and write-up of his/her sub-topic. You will work with the professor and rest of the class to develop your literature review and sub-topic, and time has been set aside (i.e. Group article discussions) to discuss your ideas amongst the class. On the final day of class, you will present your literature review and paper (~15 mins each presentation).

### Course Policies

**Attendance Policy:** You are required to attend all class sessions. You are responsible for all materials and announcements made in class. Each unexcused absence will result in points deducted from your course participation grade.

**Electronic Devices:** Electronic devices such as laptops and tablets (but NOT smartphones) are allowed in class as long as they are being used for viewing class materials and taking notes. If you are caught using electronic devices for any other reason, then you will forfeit your right to use electronic devices in class for the rest of the semester. These other reasons include, but are not limited to, social networking, texting, email, and viewing non-GEO 7334 material. If I find that your electronic device is distracting or prevents you from paying attention in class, I will ask you to refrain from its use. If you are expecting a life and death announcement from an immediate family member, please notify me before class of that situation.

**Learning Outcomes:** The Department of Geography's Student Learning Outcomes for all departmental programs may be reviewed at: <http://www.geo.txstate.edu/about/apr.html>.

**Texas State University Honor Code** (<http://www.txstate.edu/effective/upps/upps-07-10-01.html>)

*Learning and teaching take place best in an atmosphere of intellectual fair-minded openness. All members of the academic community are responsible for supporting freedom and openness through rigorous personal standards of honesty and fairness. Plagiarism and other forms of academic dishonesty undermine the very purpose of the university and diminish the value of an education. Specific sanctions for academic dishonesty are outlined in **Texas State Student Handbook**.*

**Students with Special Needs/Disabilities:** If you have a condition that requires special accommodation (as documented by the Office of Disability Services) in order to successfully complete the course, you must notify the Office of Disability Services (located at LBJ 5-5.1; ph. 512.245.3451) **AND the instructor** in a written memo (or email) before the end of the second week of classes. Failure to do so may result in the necessary accommodations not being made. *Texas State University San Marcos is dedicated to providing these students with necessary academic adjustments and auxiliary aids to facilitate their participation and performance in the classroom* (<http://www.txstate.edu/effective/upps/upps-07-11-01.html>).

**Academic Testing for Students with Disabilities** (<http://www.txstate.edu/trec/atsd/accessAtsdTS.html>).

*Students who are approved for testing accommodations have the option of using Academic Testing for Students with Disabilities (ATSD) office to take in-class tests or quizzes with their accommodations. Any student who schedules a test(s) with ATSD must schedule tests during the in-class scheduled test time (or seek an exception from the instructor) and are expected to take the test at ATSD. If a student schedules to take test with ATSD but decides that they will take the test in the classroom, the student will be responsible for notifying the ATSD and the instructor prior to the class start time.*

**Professionalism:** Our society considers a "professional" as a person who is responsible for the quality, integrity, and implications of his/her work. In the Department of Geography, we consider our students to be "professionals in training." Course requirements are intended to bring the conduct and the quality of work of students in our programs up to professional standards. Students are responsible for attending class on time, reading the assignments, and completing the assigned projects on time in an aesthetic and thorough manner. We assume that students are aware of, and practice common courtesy and the consideration of others that are necessary for a civil society and that are expected of professional persons. For additional information on Texas State University policy on student conduct, we encourage you to consult the university Policy and Procedures Statement on: Courteous Behavior, Classroom Civility, Classroom Disruption, Suspension from Class and Sexual Harassment. <http://www.provost.txstate.edu/pps/policy-and-procedure-statements/4-teaching/pps4-02.html>.

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## COURSE TOPICS AND TENTATIVE SCHEDULE

<b>Date</b>	<b>Topic</b>	<b><u>Readings (before class)</u></b>
Jan 19	Introduction and How to read and write scientific articles, and lead a discussion?	
Jan 26	Water Resources, Watershed Science, and Ecosystem Restoration	
Feb 2	Everglades and socioeconomics of ecosystem restoration	<u>LSER Intro &amp; Part 1</u>
Feb 9	Platte River and adaptive ecosystem management	<u>LSER Part 2</u>
Feb 16	California Bay-Delta and sociopolitics of ecosystem restoration	<u>LSER Part 3</u>
Feb 23	Chesapeake Bay and scientific challenges of ecosystem restoration	<u>LSER Part 4</u>
Mar 1	Mississippi Basin and watershed connectivity	<u>LSER Part 5 &amp; Conclusion</u>
Mar 8	Water-related Ecosystem Services	<u>Brauman (2007) article</u>
<b>Mar 15</b>	<b>NO Class – Spring Break</b>	
Mar 22	Dr. Adam Riggsbee guest lecture on Environmental Markets	<u>Reading TBD</u>
<b>Mar 29</b>	<b>NO Class – AAG; Work on Literature Review</b>	
Apr 5	Group 1 article discussions; <b>Midterm Literature Reviews due</b>	
Apr 12	Group 2 article discussions	
<b>Apr 19</b>	<b>NO Class – Work on Final Paper</b>	
Apr 26	Student Presentations; Final Papers Due	