

**Water and Power (ENVI 252/POLI 252/GEOG 252)
Macalester College, Fall 2019
Tues/Thurs 9:40-11:10am OLRI Room 243**

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Office hours by appointment

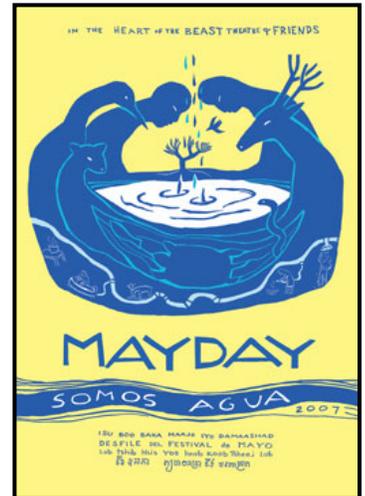
*“When the well is dry, we know the value of water”¹
- Benjamin Franklin*

Course Description

Fresh water has become one of the most fiercely guarded local and global resources. Drawing from the fields of political science, geography, anthropology, history, geology and engineering, this course will take an interdisciplinary approach to studying water resources development. With a focus on large river basins, we will examine historical and emerging challenges to the equitable and sustainable use of transboundary waters. In addition to political borders, we will be concerned with ecological and social boundary crossings.

In the process of studying the dynamics of water development over the last hundred years, we will address a range of controversial topics including energy production, indigenous rights, and cultural preservation. We will also discuss the potentialities and limitations of environmental impact assessments, public participation and government institutional reform.

The first part of the course will introduce students to analytical tools for evaluating the design of water projects and policy. The second part of the course will ask students to apply concepts from Part One toward assessing historical and contemporary case studies from the USA. Part Three will shift our attention to the international scene. We will examine inter-state/intra-state water conflicts and transnational social movements.



In the process of studying water, the main learning goals for this course are:

- **Gain interdisciplinary analytical tools for understanding the confluence of ecological, cultural, social and political perspectives**
- **Gain skills in writing, expert reading, visual and spatial analysis/representation, oral presentation and team work**

¹ Quoted in Roddick, A. 2004. *Troubled Waters*. White River Junction, VT: Chelsea Green Publishing. Page 9.

Student Evaluation

We will do lots of different kinds of writing, reading and presenting in this course. Our texts include research reports, journalistic news, and memoirs. We will learn to approach each of these differently, with attention to argument and evidence. We will also be viewing lots of films.

The writing assignments that correspond with our texts include in-class/low stakes/informal pieces, at-home short reflective writing, in-class collaborative writing for a group project, and formal research writing and presenting.

Students will be evaluated on the basis of 1) attendance and participation (20%); 2) submission of reading reflections and homework assignments (10 in all) by 9pm the night before class or when noted on the syllabus (25%); 3) a quiz (10%); 4) two group projects (10% each); and 5) a final Storymap project (25%).

See the Moodle site for more information on reading responses. The Part One quiz will assess student understanding of key water terms, institutions and ecological processes. We will have two small group projects that involve writing policy briefs. The final research project will involve preparing a “Biography of a River”. For this assignment, you will prepare a Storymap for your chosen river (equivalent to a 6-8 page paper). The Storymaps will be presented in class at the end of semester and will be peer evaluated. The final project grade breakdown is: River Proposal (10%), Workshop Outline (20%), Storymap Presentation (30%), Final submission (40%).

I expect all of the assignments to be turned in on time. Reading responses will NOT be accepted late because it sets us both back in the course. Some reasons I WILL reschedule a quiz of paper submission are: 1) You will be out of town on a Macalester-related event (sports, music, etc.), 2) You are genuinely ill, 3) You must leave town for a family emergency. If you are dealing with a long-term crisis or illness (either you or a family member), I encourage you to come and talk to me so I can better support your work in class and accommodate your needs.

If you submit an assignment late, you WILL be graded down one full step for each day past the deadline. For example, an assignment handed in one day late will begin with a B+; two days late a C+. Late reading reflections will not be accepted because it sets us both back in the course.

Academic Integrity: It is assumed that all members of the class will act with academic integrity and will not engage in behavior such as plagiarism, academic dishonesty, misrepresentation, or cheating. Please refer to the college’s policy on academic honesty. A first offense will cause you to get a failing grade on the assignment, and a second offense means you fail the class. If in doubt about what constitutes cheating or plagiarism, or if stress is causing you to consider this route, please speak to me.

I will assign a **final** term grade by taking the following percentages into account:
90-100% = A 80-89% = B 70-79% = C 60-69% = D

The top 2% of each category will typically receive a “+” (i.e., a score of 88-89% will receive a B+), and the lower 3% of each category will receive a “-” (92% is an A-).

I have high expectations of your work in this course. It is important to know up front that I think an A means OUTSTANDING in all ways – in terms of effort, engagement, comprehension, and skills.

Office hours/appointments

I am available to talk with you about the class material and assignment questions by appointment. You are welcome to stop by my office, but I can't guarantee an 'on the spot' meeting. Emailing questions works as well. I do not necessarily answer emails outside of the typical work day (M-F 9-5 pm), so please do not expect an immediate reply if you email me at 10 pm! I will also use Moodle as a tool for answering questions and disseminating information – please check this regularly.

Accommodation

I am committed to providing assistance to help you be successful in this course. Reasonable accommodations are available for students with documented disabilities. Please meet with **Josie Hurka**, who coordinates services for students with disabilities. It is important to meet with her at the beginning of the semester to ensure that your accommodations are approved and in place to begin the semester successfully. She can be reached jhurka@macalester.edu. Additional information regarding the accommodations process for students with disabilities can be found at: www.macalester.edu/studentaffairs/disabilityservices/

Student Health and Well-being:

College life is stressful for most students. I know that you do a lot every day in and for our community. It is important to acknowledge any stressors you may be facing, which can be mental, emotional, physical, financial, etc., and how they can have an academic impact. If you are having difficulties maintaining your well-being, please don't hesitate to contact me to find support.

Readings/Assignments: <http://moodle.macalester.edu> is where you will find readings, assignments, helpful weblinks and announcements. Check it frequently!

All readings are available through the Moodle page. I reserve the right to add/change the reading assignments during the course.

Summary of Topics and Readings (Subject to Change)

** Denotes when a reading reflection or homework assignment is due*

Part I: Keywords and Processes for Water Politics & Management

Tues Sept 3: Syllabus and Moodle with Prof. Louisa Bradtmiller

Thurs Sept 5: Course Introduction and discussion of short story "The Tamarisk Hunter"

***Tues Sept 10:** The Social Construction of Hydrology, Scarcity and Drought

- J. Linton. 2008. "Is the Hydrologic Cycle Sustainable? A Historical–Geographical Critique of a Modern Concept," *Annals of the Association of American Geographers*, 98(3): 630–649.

- J. C. Padowski et al. 2015. "Assessment of human–natural system characteristics influencing global freshwater supply vulnerability," *Environmental Research Letters* 10(10). (11 pages).

- Please also explore the WWF water risk filter at <http://waterriskfilter.panda.org/> Scroll through the maps and data/methods sections.

***Thurs Sept 12: Watershed Democracy and/or Hydraulic Civilizations**

Read in this order:

- D. Worster. 1985. "The Flow of Power through History" in *Rivers of Empire*. NY: Oxford Press. Pp. 19-60.
- D. Worster. 2006. "Watershed Democracy: Recovering the Lost Vision of John Wesley Powell" in M. Leybourne and A. Gaynor (eds) *Water: Histories, Cultures, Ecologies*. Crawley: UWA Press. Pp 3-14.
- K. Warne. "A Voice for Nature," *National Geographic*, April. See online version for photos.

~Workshopping reading responses in class

Tues Sept 17: Food-Energy-Water Nexus

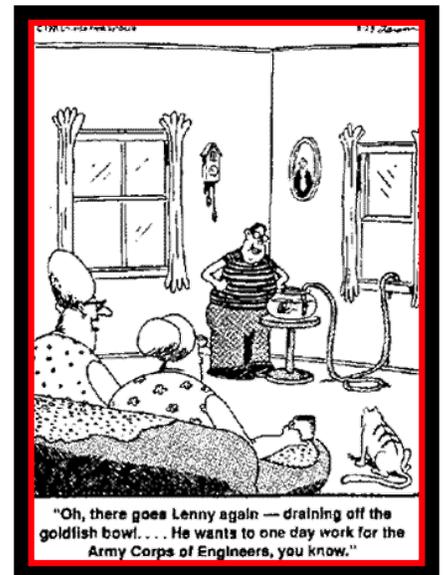
- A. Y. Hoekstra and M. M. Mekonnen. 2012. "The water footprint of humanity," *Proceedings of the National Academy of Sciences*, Vol 109(9): 3232–3237.
- J. Barnes. 2013. "Water, water everywhere but not a drop to drink: the false promise of virtual water," *Critique of Anthropology* 33(4): 371–389.

Thurs Sept 19: Water impoundments and diversions

I'll provide directions on how/which to skim:

- S. Postel and B. Richter. 2003. "Chapter 1: Where Have All the Rivers Gone?" and "Chapter 2: How Much Water Does a River Need?" in *Rivers of Life*. Washington, DC: Island Press. Pp. 3-41; 42-78.
- J. L. Wescoat, and G. F. White. 2003. "Chapter 4: Natural Waters", "Chapter 8: River Channels and Floodplains" and "Chapter 9: Impounded Rivers and Reservoirs" in *Water for Life: Water Management and Environmental Policy*. Cambridge: Cambridge Univ. Press. Pp 47-64; 139-159; 160-185.
- Leslie, J. 2018. "After a Long Boom, an Uncertain Future for Big Dam Projects," *Yale* 360.
- H. Fountain. 2019. "Where Glaciers Melt Away, Switzerland Sees Opportunity," *NY Times* (read the online version for the simulations)

~Introduce themes for the first group project



***Friday Sept 20-Saturday 21: Mississippi: An Anthropocene River.** Choose one event to attend and Post an event summary on Moodle by Monday Sept 23 10pm.

***Tues Sept 24: Urban Water Supply and Sanitation – Fieldtrip to Wastewater Plant with the Water Bar**
Post fieldtrip homework assignment due by Friday Sept 27 5pm.

Thurs Sept 26: Water laws, agencies and commissions

- T. Cech. 2005. "Chapter 8: Water Allocation Law" and "Chapter 9 "Federal Water Agencies" in *Principles of Water Resources*. Hoboken, NJ: John Wiley & Sons. Pp. 211-281.

~Quiz review in class

Tues Oct 1: In Class Quiz on Keywords, Processes and Institutions

Part II: The American Case – Politics and Environmental History

*** Thurs Oct 3: The Colorado River, the American West and Manifest Destiny**

- M. Reisner. 1986. "Chapter Four: An American Nile (I)" in *Cadillac Desert*. NY: Penguin. Pp 120-144.
- M. Doyle. 2018. "Part Two: Sovereignty and Property," in *The Source: How Rivers Made America and America Remade Its Rivers*. NY: W.W. Norton.

- In class screening of scenes from *Cadillac Desert*

~More details on the Future Mississippi group project

***Tues October 8: The Columbia Basin: Conservation, Development and Restoration**

- Watch film *DamNation* (available for streaming on Netflix and also on Media reserves)
- M. Richtel. 2016. "To Save Its Salmon, California Calls in the Fish," *NY Times*.

***Thurs October 10: Water Privatization and Bottled Water Battles**

- Selections from P. Gleick. 2014. *Bottled and Sold*.
- In class screening of scenes film *Tapped*

Tues October 15: What happened in Flint? Deconstructing the Case

- M. Smith. 2016. "Flint wants safe water" *NY Times*.
- NPR documentary "Not Safe to Drink" (53 mins)

Thurs October 17: Fieldtrip – Paddleboat Ride

Tues October 22: Storymap Introduction and Groupwork Time (includes in class group work time)

See Moodle folder for readings and resources about the Mississippi.

Tues Oct 29: Mississippi Group Presentations

Part III: International Experiences – Connecting the Local and Global

*** Thurs Oct 31: Pro-Poor Water and the Privatization Debates – focus on South Africa**

- N. Laurie "Pro-Poor Water? Privatisation and Global Poverty" *Geoforum* Vol 38 (5): 753–755.
- A. von Schnitzler. 2008. "Citizenship Prepaid: Water, Calculability, and Techno-Politics in South Africa," *Journal of Southern African Studies*, Vol 34(4): 899-917.

*** Tues Nov 5: Gender, Water and Sanitation – focus on South Asia**

Read in this order:

- K. O'Reilly. 2010. "Combining sanitation and women's participation in water supply: an example from Rajasthan," *Development in Practice*, Volume 20 (1): 45-56.
- D. Joshi. 2005. "Misunderstanding Gender and Water", in A. Coles and T. Wallace (eds) *Gender, Water and Development*. NY: Berg Publishers. Pp. 135-153.

~Introduce Red/Dead Sea group project

Thurs Nov 7: Making More Water – focus on Singapore

- C. Barnett. 2011. "On Songbirds and Sewage" in *Blue Revolution: Unmaking America's Water Crisis*. Boston: Beacon Press. Pp. 121-138.

Skim these two:

- K. Irvine et al. 2015. "How High's the Water, Mama? A Reflection on Water Resource Education in Singapore," *HSSE Online* 4(2) 128-162.

- C. Fishman. 2011. "The Yuck Factor," in *The Big Thirst*. NY: Free Press. Pp. 145-181.

~River Storymap proposal due in class

Tues Nov 12: Charity and Water Infrastructure (and some Groupwork time)

- M. Chafkin. 2013. "A Save-the-World Field Trip for Millionaire Tech Moguls," *NY Times Magazine*. August 8. Pp. 1-13.

Also visit your assigned group: *The Water Project*, *People Water* or *H2O for Life*

Thurs Nov 14: Red/Dead Groupwork

Tues Nov 19: Red/Dead Group Presentations

Thurs Nov 21: Storymap Workshop

~ Map Outline due in class

***Tues Nov 26: Cambodia and the Mekong River with guest speaker Dr. Courtney Work**

- M. Kummu et al. 2014. "Water balance analysis for the Tonle Sap Lake-floodplain system," *Hydrological Processes* Vol 28(4): 1722–1733.

- A. S. Roberts. 2015. "Lost in Transition: Landscape, ecological gradients and legibility on the Tonle Sap floodplain," in S. Milne & S. Mahanty (eds.), *Conservation and Development in Cambodia: Exploring Frontiers of Change in Nature, State and Society*. New York: Routledge.

Tues Dec 3: Storymap presentations in class

Thurs Dec 5: Storymap presentations in class

Tues Dec 10: Water as a Human Right Discussion

- Pradhan, R. and R. Meinzen Dick. 2010. "Which Rights are Right? Water Rights, Culture and Underlying Values" in *Water Ethics*, ed. Peter G. Brown and Jeremy J. Schmidt. DC: Island Press. Pp. 39-58.

**** FINAL Storymaps due on Friday Dec 13 by 5pm on Moodle**