

EAS 558: Water Policy & Politics

Winter 2020, 3 Credits

Tuesday and Thursday 11:30-1:00 in 1024 Dana

Instructor: Sara Hughes, hughesm@umich.edu, office hours Thursdays after class, 1:00-2:00

Additional hours may be scheduled, or can be made by appointment. Office: Dana G170

Course Overview

Water connects people, land, infrastructure, and the climate and is essential for our health and wellbeing. The choices we make about how and where to use, transport, treat, or leave water resources have social, environmental, and economic consequences. Water also reveals important aspects of power, institutions and science in our political processes and decision making. In this class, we approach water resources from a policy and politics perspective: focusing on decision making processes, power structures, conflicts, and rules. The geographic focus of the course is primarily U.S. with some international examples, cases, and guest speakers. There is also an emphasis on the local and urban dimensions of water policy and politics, though we examine agricultural, state, federal, and international contexts as well.

As an environmental professional or researcher, you will inevitably engage with issues of water policy and politics. This course provides basic knowledge in water policy, tools for evaluating and navigating water politics, and exposure to thought leaders and leadership skills in the field.

Course Goals

1. Be water knowledgeable: Become familiar with the major issues, actors, laws, and policies in the water sector
2. Strengthen policy analysis skills and writing: Understand and be able to independently evaluate the role of institutions, politics, and science in water policy outcomes and proposals.
3. Gain exposure to leadership skills and opportunities in the water sector

Prerequisites

None. Will build on ideas introduced in EAS 562, but content is accessible to all students regardless of prior knowledge or experience with (water) policy.

Overall Structure

The course is divided into three parts:

1. **Part one** will focus on developing background knowledge of the role of power, institutions, and science in water policy decisions and controversies. We will read a range of sources that help to illustrate why and when power, institutions, and science are critical for developing solutions to past and contemporary water challenges.
2. **Part two** will focus on a number of case studies of urban water policy and politics to deepen understanding of the laws and policies that shape water management and apply

our understanding of the role of politics, institutions, and science in developing solutions to challenging water issues.

- a. Part Two A: Urban water
 - i. Drought response and water supply: Los Angeles
 - ii. Safe drinking water: Flint, Michigan
 - iii. Flood management: New Orleans
 - b. Part Two B: Emerging Big Issues in water policy and politics
 - i. Interstate water compacts in a changing climate
 - ii. Sustainability and resilient water infrastructure
 - iii. Governing the water-energy nexus
 - iv. Building a global water policy framework
3. **Part three** will expose students to ideas and experiences around leadership and public engagement in the water sector. This will include:
- a. Learning and practicing leadership skills
 - b. Reading and discussing general-audience books on water policy and politics

Canvas Site

Canvas will be used throughout the course. Readings and handouts will be in Canvas. Grades and any lecture slides will be posted in Canvas.

Late Policy

Late assignments are subject to an automatic penalty of 15% and will not be accepted after 7 days. Extensions can only be granted under exceptional circumstances, usually restricted to provable family or medical emergencies, and require the written permission of the instructor.

Assignments, Due Dates, and Grading

Additional details about the assignments will be provided in class and a handout will be posted on Canvas.

1. Participation in class discussion (15% of final grade)

Assessed at the end of the term.

Students are expected to complete each week's assigned readings and actively participate in class discussions. You are expected to attend each class and arrive on time. Before each class, you should have finished the readings assigned for that day. In order to be sure you are as prepared for class as possible, be sure to complete the readings with a critical eye: What point is the author making? Are the most important aspects of the issue discussed? How does this reading compare to other literature exploring the same topic? To your own ideas and experiences? Can you spot weaknesses in the author's arguments? You may find it easier to participate in class discussions if you take notes as you go.

2. Water politics primer (15% of final grade)

Due January 23

This should be a 2-4 page (short) paper that summarizes the ideas we cover in Part 1 of the course (power, institutions, and science in water policy). The goal is to reflect on these three

dimensions: what they are, what they mean, and why they matter for sustainable water resources. Submit on Canvas.

3. Policy brief for decision makers (Part 1 is 20% of final grade, Part 2 is 35% of final grade)
Part 1 due February 25; Part 2 due March 26

The policy brief is a common advocacy and communication tool in the environmental field. It serves as a way to succinctly communicate the importance of an issue and a preferred policy solution. For this assignment, you will choose a topic (and audience) for your policy brief. I will provide some examples and possible topics on Canvas, but you are very free to choose your own. See the resources below for additional guidance on writing policy briefs:

<https://writingcenter.unc.edu/tips-and-tools/policy-briefs/>

<https://www.cdc.gov/policy/polaris/training/policy-resources-writing-briefs.html>

See IPCA handout on Canvas as well

Part 1 of the policy brief will be a two-page summary of your topic or problem, your audience, the reason why this topic or problem is important, and the policy solution you are interested in forwarding. You should also include five sources that will support your research. At this stage you will get feedback from two of your peers that will inform your final policy brief. Your grade will be based on the assessment of two of your peers. Bring a hard copy to class.

Part 2 is the final policy brief. It should be between 5 and 8 pages, referenced, and include some informative graphics (figures, tables, diagrams, etc.). See the links above for additional guidance, and we will discuss in greater detail in class. Bring a hard copy to class.

4. “Book report” and report out in class (15% of final grade)

Due April 14

We will read, between us as a class, six general audience books on water policy and politics. You will each choose which of these books you would like to read (**one book**). We will spend two class sessions discussing these books and you will be expected to contribute significantly to the discussion of your book. You will also turn in a 5 page “book report” that outlines the overall argument of the book and assesses its value to the public conversation around water policy and politics. Further details will be discussed in class. Submit on Canvas.

Detailed Schedule:

Assigned materials are posted on Canvas or link is provided.

Part I: Power, Institutions, and Science in Water Policy and Politics

Thursday, January 9: Why is water a political problem?

Center for Sustainable Systems, University of Michigan. 2019. “U.S. Water Supply and Distribution Factsheet.” Pub. No. CSS05-17.

Hoekstra, Arjen Y., and Mesfin M. Mekonnen. 2012. "The Water Footprint of Humanity." *Proceedings of the National Academy of Sciences* 109 (9): 3232–37. <https://doi.org/10.1073/pnas.1109936109>.

Tuesday, January 14: Power and its Role in Water Policy and Politics

Molle, François. 2009. "Water, Politics and River Basin Governance: Repoliticizing Approaches to River Basin Management." *Water International* 34 (1): 62–70. <https://doi.org/10.1080/02508060802677846>.

Yazzie, Melanie K., and Cutcha Risling Baldy. 2018. "Introduction: Indigenous Peoples and the Politics of Water." *Decolonization: Indigeneity, Education & Society*. 7(1): 1-18.

Thursday, January 16: Institutional Dimensions of Water Policy and Politics

Smith, J. Craig, and Scott M. Ellsworth. 2016. "Public Trust vs. Prior Appropriation: A Western Water Showdown." *Nat. Resources & Env't* 31: 18.

Gerlak, Andrea K. 2006. "Federalism and U.S. Water Policy: Lessons for the Twenty-First Century." *Publius: The Journal of Federalism* 36 (2): 231–57. <https://doi.org/10.1093/publius/pji032>.

Hoornebeck, John A. 2005. "The Promises and Pitfalls of Devolution: Water Pollution Policies in the American States." *Publius: The Journal of Federalism* 35 (1): 87–114. <https://doi.org/10.1093/publius/pji005>.

Tuesday, January 21: Science and its Role in Water Policy and Politics

Jacobs, Katharine, Louis Lebel, James Buizer, Lee Addams, Pamela Matson, Ellen McCullough, Po Garden, George Saliba, and Timothy Finan. 2016. "Linking Knowledge with Action in the Pursuit of Sustainable Water-Resources Management." *Proceedings of the National Academy of Sciences* 113 (17): 4591–96. <https://doi.org/10.1073/pnas.0813125107>.

Manski, Charles F. 2019. "Communicating Uncertainty in Policy Analysis." *Proceedings of the National Academy of Sciences* 116 (16): 7634–41. <https://doi.org/10.1073/pnas.1722389115>.

Head, Brian W. 2010. "Reconsidering Evidence-Based Policy: Key Issues and Challenges." *Policy and Society* 29 (2): 77–94. <https://doi.org/10.1016/j.polsoc.2010.03.001>.

Thursday, January 23: Federal Water Legislation

****Water politics primer due****

Keiser, David A., Catherine L. Kling, and Joseph S. Shapiro. 2019. "The Low but Uncertain Measured Benefits of US Water Quality Policy." *Proceedings of the National Academy of Sciences* 116 (12): 5262–69. <https://doi.org/10.1073/pnas.1802870115>.

Tiemann, Mary. 2010. "Safe Drinking Water Act (SDWA): Selected Regulatory and Legislative Issues." 7–5700. CRS Report for Congress.

https://www.everycrsreport.com/files/20100727_RL34201_02803714b17c457557d002d8030da73ce4a5d059.pdf.

Contaminate Candidate List. Visit the EPA's website for Contaminant Candidate List and familiarize yourself with the process of designing the CCL.

<http://water.epa.gov/scitech/drinkingwater/dws/ccl/>

Joe Whitworth: "50 years of the Wild & Scenic Rivers Act reveals we've got work to do"

<https://www.thefreshwatertrust.org/50-years-of-the-wild-scenic-rivers-act-reveals-weve-got-work-to-do/>

Part IIA: Case Studies of Urban Water Policy and Politics

Tuesday, January 28: Los Angeles: Water for a Thirsty City

Hundley, Norris Jr. 2001. *The Great Thirst: Californians and Water: A History*. Berkeley and Los Angeles, CA: University of California Press. pp. 123-171.

Thursday, January 30: Los Angeles: Transition to a Sustainable City?

Hughes, Sara, Stephanie Pincetl, and Christopher G. Boone. 2013. "Understanding Major Urban Transitions: Drivers and Dynamics in the City of Los Angeles." *Cities: The International Journal of Urban Policy and Planning* 32: 51–59.

van Roon, Marjorie. 2007. "Water Localisation and Reclamation: Steps towards Low Impact Urban Design and Development." *Journal of Environmental Management* 83 (4): 437–47. <https://doi.org/10.1016/j.jenvman.2006.04.008>.

Tuesday, February 4: New Orleans: Land Use, Flood Control, and Risk

Rogers, J. D. 2008. "Development of the New Orleans Flood Protection System Prior to Hurricane Katrina." *Journal of Geotechnical and Geoenvironmental Engineering* 134 (5): 602–17. [https://doi.org/10.1061/\(ASCE\)1090-0241\(2008\)134:5\(602\)](https://doi.org/10.1061/(ASCE)1090-0241(2008)134:5(602)).

Johnson, Glenn S. 2008. "Environmental Justice and Katrina: A Senseless Environmental Disaster." *Western Journal of Black Studies* 32 (1): 42–52.

Thursday, February 6: New Orleans: Recovery and Resilience

Campanella, Thomas J. 2006. "Urban Resilience and the Recovery of New Orleans." *Journal of the American Planning Association* 72 (2): 141–46. <https://doi.org/10.1080/01944360608976734>.

Crow, Deserai A., Elizabeth A. Albright, Todd Ely, Elizabeth Koebele, and Lydia Lawhon. 2018. "Do Disasters Lead to Learning? Financial Policy Change in Local Government." *Review of Policy Research* 35 (4): 564–589.

Tuesday, February 11: (Guest lecture: International contexts (Larissa Larsen))

Thursday, February 13: (Guest lecture: Navigating the science-policy interface (Bill Currie))

Tuesday, February 18: Flint Water Crisis

Watch Frontline Report: "Flint's Deadly Water"

<https://www.pbs.org/wgbh/frontline/film/flints-deadly-water/>

Pauli, Benjamin. Forthcoming. "Flint Water Crisis." *WIREs Water*

Thursday, February 20: Flint in Context: Power and politics in safe drinking water

Switzer, David, and Manuel P. Teodoro. 2017. "The Color of Drinking Water: Class, Race, Ethnicity, and Safe Drinking Water Act Compliance." *Journal - American Water Works Association* 109 (December): 40–45. <https://doi.org/10.5942/jawwa.2017.109.0128>.

Hughes, Sara. Forthcoming. "Flint Michigan and the Politics of Safe Drinking Water in the U.S."

Tuesday, February 25: Peer review exercise: Part I of Issue Brief

****Part 1 of Issue Brief due****

Part IIB: Evaluating Emerging Issues in Water Policy and Politics

Thursday, February 27: Interstate Compacts in a Changing Climate

****Deadline for choosing book for book report****

[SKIM] Hall, Noah. 2011. "Interstate Water Compacts and Climate Change Adaptation." *Great Lakes Law*

Schlager, Edella, and Tanya Heikkila. 2011. "Left High and Dry? Climate Change, Common-Pool Resource Theory, and the Adaptability of Western Water Compacts." *Public Administration Review* 71 (3): 461–70. <https://doi.org/10.1111/j.1540-6210.2011.02367.x>.

Schwartz, John. 2019. "Amid 19-Year Drought, States Sign Deal to Conserve Colorado River Water." *The New York Times*, 2019.

*Tuesday, March 10: Groundwater Pumping and Politics
(Guest Lecture: Jon Allan)*

Upholt, Boyce. 2015. "An Interstate Battle for Groundwater." *The Atlantic*, 2015. <https://www.theatlantic.com/science/archive/2015/12/mississippi-memphis-tennesee-groundwater-aquifer/418809/>.

Glennon, Robert. 2007. "Tales of French Fries and Bottled Water: The Environmental Consequences of Groundwater Pumping Remarks." *Environmental Law* 37 (1): 3–14.

Thursday, March 12: Financing Drinking Water Infrastructure

Levin, Ronnie B, Paul R Epstein, Tim E Ford, Winston Harrington, Erik Olson, and Eric G Reichard. 2002. "U.S. Drinking Water Challenges in the Twenty-First Century." *Environmental Health Perspectives* 110 (Suppl 1): 43–52.

Tiemann, Mary. 2018. *Drinking Water State Revolving Fund (DWSRF): Overview, Issues, and Legislation*. Congressional Research Service.

Tuesday, March 17: Water Affordability

Teodoro, Manuel P. 2019. "Water and Sewer Affordability in the United States." *AWWA Water Science* 1 (2): e1129. <https://doi.org/10.1002/aws2.1129>.

Recchie, Joseph, Anna Recchie, John A. Powell, Laura Lyons, Ponsella Hardaway, and Wendy Ake. 2019. "Water Equity and Security in Detroit's Water and Sewer District." Berkeley, CA: Haas Institute for a Fair and Inclusive Society, University of California, Berkeley.

Podcast: Customer Assistance Programs and Their Expanding Importance with Stacey Isaac Berahzer
<https://thewatervalues.com/2017/10/17/customer-assistance-programs-expanding-importance-stacey-isaac-berahzer/>

Thursday, March 19: Collaborative Water Governance

Sabatier, Paul A., Will Focht, Mark Lubell, Zev Trachtenberg, Arnold Vedlitz, and Marty Matlock. 2005. *Swimming Upstream: Collaborative Approaches to Watershed Management*. Cambridge, Massachusetts: MIT Press. (Chapters 2 and 9)

Ulibarri, Nicola. 2015. "Tracing Process to Performance of Collaborative Governance: A Comparative Case Study of Federal Hydropower Licensing." *Policy Studies Journal* 43 (2): 283–308. <https://doi.org/10.1111/psj.12096>.

Tuesday, March 24: Governing the Water-Energy Nexus

Hamiche, Ait Mimoune, Amine Boudghene Stambouli, and Samir Flazi. 2016. "A Review of the Water-Energy Nexus." *Renewable and Sustainable Energy Reviews* 65 (November): 319–31. <https://doi.org/10.1016/j.rser.2016.07.020>.

Background reading on Line 5

<https://flowforwater.org/line5/>

<https://www.detroitnews.com/story/news/politics/2019/12/19/what-line-5-shutdown-means-michigan-energy-enbridge/4334264002/>

Thursday, March 26: Trends Toward a Global Water Policy Framework

****Part 2 of Issue Brief due****

Conca, Ken. 2006. *Governing Water: Contentious Transnational Politics and Global Institution Building*. Cambridge, MA: MIT Press. Chapter 1

UN Water. 2013. "Water Security & the Global Water Agenda."

file:///Users/hughesm/Downloads/analytical_brief_oct2013_web.pdf.

Water Sustainable Development Goals

<https://www.sdgfund.org/goal-6-clean-water-and-sanitation>

Tuesday, March 31: Global Water Policy and Politics in an Urban Era

Garrick, Dustin, Lucia De Stefano, Winston Yu, Isabel Jorgensen, Erin O'Donnell, Laura Turley, Ismael Aguilar-Barajas, Xiaoping Dai, Renata de Souza Leão, and Bharat Punjabi. 2019. "Rural Water for Thirsty Cities: A Systematic Review of Water Reallocation from Rural to Urban Regions." *Environmental Research Letters* 14 (4): 043003.

McDonald, Robert I., Pamela Green, Deborah Balk, Balazs M. Fekete, Carmen Revenga, Megan Todd, and Mark Montgomery. 2011. "Urban Growth, Climate Change, and Freshwater Availability." *Proceedings of the National Academy of Sciences* 108 (15): 6312–6317.

Immerzeel et al. 2019. "Importance and vulnerability of the world's water towers," *Nature*

Part III: Leadership and Engagement as Water Professionals

Thursday, April 2: Leadership: What does it mean to be a water leader?

Podcast: "Water Leadership with Pat Mulroy"

<https://thewatervalues.com/2017/08/01/water-leadership-pat-mulroy/>

TED Talk: "On the Power of Leading by Two" by Dan Mulhern

https://www.youtube.com/watch?time_continue=810&v=JGSJykKJl3c&feature=emb_logo

Excerpt from "Everyday Leadership" by Dan Mulhern (will be posted)

Tuesday, April 7: Leadership exercise: Building skills and visioning our water leadership approach

Thursday, April 9: Engagement, Leadership, and Coalition Building
(Guest lecture: Laura Rubin)

Tuesday, April 14: Book Reviews
****Book Reviews due****

- Gleick: Water Policy for the Twenty-First Century
- Clark: The Poisoned City
- Kuhn: Science Be Dammed

Thursday, April 16: Book Reviews

- Arax: The Dreamt Land
- Annin: Great Lakes Water Wars
- Doyle: The Source

Tuesday, April 21: Charting a future for sustainable and equitable water policy
McConnell, Allan. 2010. "Policy Success, Policy Failure and Grey Areas In-Between,"
Journal of Public Policy, 30(3): 345-362.

Cosgrove, William J. and Daniel P. Loucks. 2015. "Water management: Current and future challenges and research directions," *Water Resources Research*, 51: 4823-4839.

Academic and professional integrity

Students are expected to understand and follow Rackham guidelines for academic and professional integrity. Take a few moments to familiarize yourself with these rules, outlined here: <https://www.rackham.umich.edu/current-students/policies/academic-policies/section10>

Students should pay particular attention to rules regarding plagiarism and original work. Students may work together on assignments, may ask for help from students or others outside the class, and may draw on any information in the library or on the internet. However, the assignment that you present and turn in must be your own individual work in your own words. **You may not borrow from published work in any assignments without clearly attributing it to the authors.** The way to attribute ideas or results in published work is to cite the source. If you copy a source word for word, cite the source and *also* put the text in quotation marks. Similarly, you may clearly cite work that you find on web pages (list the URL and the date as you would a citation), but you may not borrow text, figures, or other graphics from a web page without clearly attributing it to the source.