

**ESM 296**  
*Bren School of Environmental Science and Management*

***Sustainable Water Markets***  
***Advanced Topics in Environmental Management***

Course Information and Syllabus

Fall 2017

**Instructor:** Robert Wilkinson, Ph.D. Phone: 805 893 8768  
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**Class Time:** Monday 5:00pm-6:15pm, one Saturday short course, and participate in 2-day symposium

**Class Location:** Bren 1510

**Office:** Bren 4426

**Office Hours:** Mondays 3:30pm-4:30pm and by appointment

**Course Description:**

Water markets have emerged as an important policy tool for efficiently allocating and distributing water resources in the context of climate change, environmental impacts, demographic changes, and increased demand for water supplies. This course will provide students with an overview of water markets and the role of water law, policy, science, and the broader context in which water markets operate. Bren faculty, fellows, alumni, and guest speakers associated with the Sustainable Water Markets program will guide students in discussions of relevant readings and case studies that highlight the role of water markets in water policy and their potential for improving water reliability, quality, and the environment.

**Grading:**

The course grade will be based on the following point scale:

Class Participation	750
Short Paper	250
Total Points	1000

**Readings:**

- Readings are assigned for each class session. They will be available on-line.

**Resources:**

- Water policy clippings: Please sign up right away for the following free clipping service: "DWR's California Water News is distributed to California Department of Water Resources management and staff, for information purposes, by the DWR Public Affairs Office." For reader's services, including new subscriptions, please email your request to [DWR WATER NEWS EDITORS](#).

**Optional:**

- Maven's blog <http://mavensnotebook.com/>
- Circle of Blue <http://www.circleofblue.org/> (sign up for free info and check web site)

**Useful Resources:**

- Pacific Institute <http://pacinst.org/>
- Public Policy Institute of California. <http://www.ppic.org/>
- California Water Foundation [www.cwea.org](http://www.cwea.org) and <http://californiawaterfoundation.org/page.php?id=107>
- Western Resources Advocates <http://www.westernresourceadvocates.org/about/>
- UC Davis, Center for Watershed Sciences <https://watershed.ucdavis.edu/org/center-watershed-sciences?destination=node/13>
- CA DWR <http://www.water.ca.gov/>
- USGS <http://water.usgs.gov/> (A good web site for information on US water.)
- US Bureau of Reclamation <http://www.usbr.gov/mp/cvo/index.html>
- Data Exchange <http://cdec.water.ca.gov/index.html>
- Reservoirs <http://www.water.ca.gov/serp.cfm?q=reservoir+conditions&cx=001779225245372747843%3Amxwnbjgliw&cof=FORID%3A10&ie=UTF-8>
- State Water Board [http://www.waterboards.ca.gov/waterrights/board\\_info/water\\_rights\\_process.shtml#public](http://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.shtml#public) and <http://www.waterboards.ca.gov/waterrights/404.shtml?>

**Water Glossaries:**

- [Water Basics Glossary](#)
- [Hydrologic Definitions](#)
- [Water Science-Glossary of Terms](#)
- [National Water Quality Assessment Glossary](#)
- [Glossary of Water-Quality Monitoring Terms](#)
- [Water Resources Data - Definition of Terms](#)
- [Glossary of water-use terminology](#)
- [A-Z Index of Hydrologic Terms](#)

# Summary Course Calendar

**Oct 2 Introduction to Sustainable Water Markets and Overview of Course**

**Oct 9 The Logic of Water Market Contributions**

Readings:

- Alvar Escriva-Bou, Henry McCann, Ellen Hanak, Jay Lund, Brian Gray, 2016. Accounting for California's Water <http://ppic.org/main/publication.asp?i=1206>
- Ellen Hanak, Brian Gray, Jay Lund, David Mitchell, Caitrin Chappelle, Andrew Fahlund, Katrina Jessoe, Josué Medellín-Azuara, Dean Misczynski, James Nachbaur, and Robyn Suddeth, 2014. *Paying for Water in California* <http://www.ppic.org/main/publication.asp?i=1086>
- Peter Culp, Robert Glennon, Gary Libecap, 2014. Shopping for Water: How the Market Can Mitigate Water Shortages in the American, Hamilton Project Brief, Stanford, [http://www.hamiltonproject.org/papers/shopping\\_for\\_water\\_how\\_the\\_market\\_can\\_mitigate\\_water\\_shortages\\_in\\_west/](http://www.hamiltonproject.org/papers/shopping_for_water_how_the_market_can_mitigate_water_shortages_in_west/)

**Oct 14 (Saturday) Special short course, Foundations for Sustainable Water Markets 10:00am-5:30pm Dean's Conference Room**

We will cover the basics of water law framing water markets, economics and the logic of markets, infrastructure and the physical mechanisms for water transfers, and framing conditions and constraints for water markets

Readings:

- Hanak, Ellen, Jay Lund, Barton "Buzz" Thompson, W. Bowman Cutter, Brian Gray, David Houston, Richard Howitt, Katrina Jessoe, Gary Libecap, Josué Medellín-Azuara, Sheila Olmstead, Daniel Sumner, David Sunding, Brian Thomas, and Robert Wilkinson, 2012. *Water and the California Economy*. Public Policy Institute of California. <http://www.ppic.org/main/publication.asp?i=1015>
- PPIC, Just the Facts, California's Water Market [http://www.ppic.org/main/publication\\_show.asp?i=1177](http://www.ppic.org/main/publication_show.asp?i=1177)
- Ellen Hanak and Elizabeth Stryjewski, 2012. *California's Water Market, By the Numbers*, [http://www.ppic.org/content/pubs/report/R\\_1112EHR.pdf](http://www.ppic.org/content/pubs/report/R_1112EHR.pdf)
- California Constitution. Article 10, Section 2. [http://www.leginfo.ca.gov/const/article\\_10](http://www.leginfo.ca.gov/const/article_10)

**Oct 16 The Role of Rate Structures and Revenues**

Guest Speaker: Sanjay Gaur, Vice President, Raftelis

**Oct 23 Group Project Brainstorming led by Lili**

**Oct 30 State Laws Governing Water Markets**

Readings:

- Stanford University, Environmental Water Rights Transfers: A Review of State Laws, 2015 <http://waterinthewest.stanford.edu/sites/default/files/WITW-WaterRightsLawReview-2015-FINAL.pdf>
- NYU Law Review, Missing Water Markets: A Cautionary Tale of Governmental Failure, 2015 [http://www.nyuelj.org/wp-content/uploads/2015/09/Casado\\_ready\\_for\\_the\\_website\\_SR.pdf](http://www.nyuelj.org/wp-content/uploads/2015/09/Casado_ready_for_the_website_SR.pdf)

**Nov 6 Policy Reform to Facilitate Markets**

Readings:

- Public Policy Institute of California, Allocating California's Water: Directions for Reform, 2015 [http://www.ppic.org/content/pubs/report/R\\_1115BGR.pdf](http://www.ppic.org/content/pubs/report/R_1115BGR.pdf)
- The Hamilton Project and Stanford University, Shopping for Water: How the Market can mitigate water shortages in the American West, 2014 [http://www.hamiltonproject.org/assets/files/how\\_the\\_market\\_can\\_mitigate\\_water\\_shortage\\_in\\_west.pdf](http://www.hamiltonproject.org/assets/files/how_the_market_can_mitigate_water_shortage_in_west.pdf)

**Nov 13 Briefing on Symposium**

**Nov 17-18 Sustainable Water Markets Symposium**

**Nov 22 no class**

**Nov 27 Why and How Market Approaches May Play Out**

Readings:

- Richter, Brian, 2016. *Water Share: Using water markets and impact investment to drive sustainability*. The Nature Conservancy. <https://global.nature.org/content/water-share>
- Richter, Brian, 2014. *Chasing Water: A Guide for Moving from Scarcity to Sustainability* Island Press. (Chapter 1, free download) <http://islandpress.org/ip/books/book/islandpress/C/bo9492254.html>
- Association of California Water Agencies, Recommendations for Improving Water Transfers and Access to Water Markets in California, 2016 [http://www.acwa.com/sites/default/files/post/regulatory-affairs/2016/04/acwa-water-transfers-and-markets-recommendations\\_april-2016.pdf](http://www.acwa.com/sites/default/files/post/regulatory-affairs/2016/04/acwa-water-transfers-and-markets-recommendations_april-2016.pdf)

**Dec 4 no class**