

Course Syllabus
SWM Intensive: Environmental Water Transactions
UCSB-Bren School of Environmental Science

Instructor: Bruce Aylward, Ph.D.,
Contact: bruce@ampinsights.com
Office hours: By appointment Wednesday to Friday, Bren Hall 3524
Course Meets: Bren Hall Room 1510
Mon. (1/28) 5:30pm – 7:30pm
Tue. (1/29) 5:30pm – 7:30pm
Wen. (1/30) 5:30pm – 7:30pm
Thur. (1/31) 5:30pm – 7:30pm
Fri. (2/1) 9:00am - 12:00pm; 1:00pm-4:00pm

Course:

The course presents the theory and practice of using water rights transactions and water markets to reallocate water, in particular for environmental purposes. The course begins with a brief review of hydrology, water rights and water math as relevant to water transactions. Frameworks for understanding environmental water transactions and water markets are presented along with examples of their application from the western states. Examples and case studies from Oregon and other western states are used to illustrate the theory and methods. The course aims to provide the participant with a survey level introduction to this fast-growing field of water policy and management.

Course Organization:

Part A: Foundations (Monday & Tuesday)

1. Markets and Transactions in Brief
2. Water rights
3. Development and Flows
4. Water Math

Reading: Aylward (2013) Chapters 1-4

Part B. Water Transactions (Wednesday & Thursday)

1. Conceptual Framework for Environmental Water Transactions
2. Water Management Transactions
 - a. Water Management
 - b. Upstream Management
 - c. Conveyance Efficiency
 - d. On-Farm Efficiency
3. Consumptive Use
 - a. Reducing Consumptive Use
 - b. Injury and Third Party Impacts
 - c. Temporary Deals
 - d. Permanent Deals
 - e. Water User Agreements

Reading Aylward (2013) Chapters 5-7

Part C: Water Markets (Friday)

1. Water Markets
2. Market Psychology
3. Water Rights Appraisal/Price Discovery/Auctions
4. Auction Exercise

Readings: Aylward (2013) Chapter 9 and Aylward et al. (2016) “Healthy Water Markets: A Conceptual Framework.”

Part D: Whychus Creek Story and Cost-Effectiveness of EWTs (Friday)

Readings: Aylward (2013), Chapter 8; Aylward and O’Connor (2017), Kendy et al (2018).

Evaluation of Student Performance:

Assignments: Evaluation will be based on class participation and a short in-class essay (Friday).

Reading

Main Texts (also posted on gauchospace):

Aylward, Bruce, ed. 2013. *Environmental Water Transactions: A Practitioner’s Handbook*. Bend, OR: Ecosystem Economics.

<https://static1.squarespace.com/static/56d1e36d59827e6585c0b336/t/577c8f60c534a5bc31221f68/1467781084671/Handbook+Combined.pdf>.

Aylward, Bruce, and Rachel O’Connor. 2018. “Environmental Flow Restoration through Environmental Water Transactions: Case Study of Whychus Creek, Oregon.” Portland, OR: AMP Insights.

<http://www.ampinsights.com/s/Whychus.pdf>.

Kendy, Eloise, Bruce Aylward, Laura S. Ziemer, Brian D. Richter, Bonnie G. Colby, Theodore E. Grantham, Leslie Sanchez, et al. 2018. “Water Transactions for Streamflow Restoration, Water Supply Reliability, and Rural Economic Vitality in the Western United States.” *Journal of the American Water Resources Association* 54 (2): 487–504. <https://doi.org/10.1111/1752-1688.12619>.

Sanchez, Leslie, Bruce Aylward, and Don Springmeyer. 2016. “Truckee-Carson Surface Water Markets in Northern Nevada.” Case Study. Political Economy of Water Markets. Portland: AMP Insights and Ecosystem Economics.

<https://static1.squarespace.com/static/56d1e36d59827e6585c0b336/t/5805464815d5dbb1ab59a06c/1476740688650/Nevada-Truckee-Sanchez.pdf>.

Additional readings on Water Markets

2016 Final Report on Political Economy of Water Markets

Electronic versions can be downloaded from <http://www.ampinsights.com/rock-report>.

Final Report

1. Aylward, Bruce, David Pilz, Megan Dyson, and Carl J. Bauer. 2016. “Healthy Water Markets: A Conceptual Framework.” Portland: AMP Insights and Ecosystem Economics.
2. Aylward, Bruce, David Pilz, and Leslie Sanchez. 2016. “Political Economy of Water Markets in the Western United States.” Portland: AMP Insights and Ecosystem Economics.
3. Pilz, David, Megan Dyson, Bruce Aylward, Carl J. Bauer, and Amy Hardberger. 2016. “Comparative Analysis of Legal Regimes with Respect to Fostering ‘Healthy’ Water Markets.” Portland: AMP Insights and Ecosystem Economics.
4. Aylward, Bruce. 2016. “Water, Public Goods and Market Failure.” Portland: AMP Insights and Ecosystem Economics.

Water Market Case Studies

1. Bauer, Carl J. 2016. “The Evolving Water Market in Chile’s Maipo River Basin.” Portland: AMP Insights and Ecosystem Economics.
2. Dyson, Megan. 2016a. “Addressing Overalllocation and Water Trade in New South Wales, Australia: Namoi Basin Groundwater.” Portland: AMP Insights and Ecosystem Economics.
3. ———. 2016b. “Evolution of Australian Water Law and the National Water Initiative Framework.” Portland: AMP Insights and Ecosystem Economics.
4. Fereday, Jeffrey C. 2016. “Opportunities for Surface Water Right Marketing in Idaho’s Rapidly Urbanizing Treasure Valley.” Portland: AMP Insights and Ecosystem Economics.
5. Hardberger, Amy. 2016. “Texas Groundwater Markets and the Edwards Aquifer.” Portland: AMP Insights and Ecosystem Economics.

6. Pagel, Martha. 2016. "Oregon's Umatilla Basin Aquifer Recharge and Basalt Bank." Portland: AMP Insights and Ecosystem Economics.
7. Sanchez, Leslie, Bruce Aylward, and Don Springmeyer. 2016. "Truckee-Carson Surface Water Markets in Northern Nevada." Portland: AMP Insights and Ecosystem Economics.
8. Young, Richael. 2016. "Smart Markets for Groundwater Trading in Western Nebraska: The Twin Platte." Portland: AMP Insights and Ecosystem Economics.