



Course Web Page:

<https://sites.google.com/site/waterpolicyinthewestfall2015/>

## Water Policy in the Western US

EnvS 129

Patrick T. Ferraro, Instructor

Syllabus

### *What you will learn:*

- \* How water rights are determined in California and other states.
- The processes available for conflict resolution when engineering decisions are in opposition to environmental regulation
- The roles and responsibilities of key state and federal environmental, land use and natural resource management agencies in water resources protection and flood management
- Financing options, common subsidies, and methods used for externalizing costs for water projects and setting water rates.
- Public participation requirements and strategies for successful water project campaigns
- To participate in the ongoing process of water policy development.

### *Grading*

- 25% Classroom participation: discussion of internet articles on topics of the week.
  - Daily Water news posted on <http://www.bcwaternews.com/bcwn/California/CA082311.html>
  - Please contact editor at [rhellmann@brwncald.com](mailto:rhellmann@brwncald.com) to subscribe free of charge.
- 25% Quizzes- 6 quizzes will be given about two weeks apart. Each quiz will be 5%, but your lowest quiz score will be tossed.
- 25% Paper - Each students will write up to 5000-word paper **summarizing student's participation in current local water issue**. Suggested topics will be offered, but students may select a topic of their own interest. ***Topics are due on Oct 4. Final Papers Due Nov 29.*** Papers must follow paper requirements. (See below)
- 25% Final Exam. Take-home, essay style exam will be given two weeks prior to final class meeting and due on day of final scheduled meeting.

### *Writing for EnvS 129 and use of other sources*

*SJSU policy prohibits representing the work of another as your own. You must give appropriate credit through quotation and citation whenever you use the work of another. For footnotes, they can be at the end of the page, or the end of the paper. Any significant source, even if not quoted, should be listed in the paper. It is not appropriate to turn in a paper that is a collection of quotes; instead the vast majority of the paper should be your own writing.*

The Writing Center in Clark Hall 126 offers tutoring services to San Jose State students in all courses. Writing Specialists assist in all areas of the writing process, including grammar, organization, paragraph development, coherence, syntax, and documentation styles. For more information, visit the Writing Center website at <http://www.sjsu.edu/writingcenter> or 924-2308.

### Disabilities Policy

It is the policy of San Jose State University to provide appropriate accommodations to students who have documented disabilities meeting the eligibility requirements of the Americans With Disabilities Act of 1990. This website provides information on how students need to document disabilities: [http://www.drc.sjsu.edu/student\\_services/document\\_disability.htm](http://www.drc.sjsu.edu/student_services/document_disability.htm)

The following University Policies also apply to this course:

1) Policy S12-3 “Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

2) Course calendar, which includes assignment due dates, quiz dates, date of final exam, is subject to change with fair notice.

3) Policy S12-7 (Consent for Recording of Class and Public Sharing of Instructor Material)

“Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”

- Permission can be obtained in writing or orally, for the whole semester or on a class by class basis.
- In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.

4) S12-7 “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

# **Water Policy in The Western US**

EnvS 129

Patrick T. Ferraro, Instructor  
(subject to change with fair notice)

Class Schedule	Topic
1. Aug 20	Introduction/ Overview of Class
2. Aug 20	<b>Participation</b> in the Development of Water Policy
3. Aug 27	Water Rights, Ecosystem Rights, Public Trust and Endangered Species Act
4. Aug 27	Watershed Protection
5. Sep. 3	Groundwater Management
6. Sep 3 <b>Send Quiz #1</b>	Surface Water Impoundments
7. Sep. 10	Water Quality & Treatment - How Clean is Clean?
8. Sep 10 <b>Quiz #1 Due</b>	Urban Water Distribution, Public vs. Private Systems
9. Sep. 17 <b>Send Quiz #2</b>	Coastal & Marine Protection
10. Sep 17	Urban Stormwater Management
11. Sep 24	Water for Agriculture, Ag Runoff
12. Sep 24 <b>Quiz #2 Due</b>	Water Pricing, Externalizing Costs
13. Oct. 1 <b>Send Quiz #3</b>	Water Use Efficiency, Paying More For Less Water
14. Oct 1	Sewage Treatment & Water Factories
15. Oct. 8	Water Recycling and Reuse
16. Oct. 8 <b>Quiz #3 Due</b>	Desalination and Privatization
17. Oct. 15 <b>Send Quiz #4</b>	Water Project Financing, Public Outreach & <b>Participation</b>
18. Oct 15	The Sacramento-San Joaquin Delta

19. Oct 22	Colorado and Columbia River Projects
20. Oct 22	Quiz #4 Due Owens Valley Water Project
21. Oct 29	Send Quiz #5 Hetch Hetchy Water Project
22. Oct 29	Central Valley Project and San Felipe Division
23. Nov. 5	Central Valley Project Improvement Act
24. Nov. 5	SoCal & South Bay Water Recycling Projects
25. Nov. 12	Quiz #5 Due Water & Power
26. Nov. 12	Send Quiz #6 Integrated Water Resources Planning, Sustainability and Carbon Footprints <b>Term Report Due</b>
27. Nov. 19	International Water Issues & Projects
28. Nov. 19	Flood Protection, FEMA and Watershed Stewardship
29. Dec 3	Quiz #6 Due Send Final Exam Student Presentations
30. Dec 11	<b>Final Exam</b> Due by 2:45 PM, Friday December 11

Quizzes will be emailed to students and returned, when completed, by email only.

Quizzes will also be posted on Course Web Page:

<https://sites.google.com/site/waterpolicyinthewestfall2015/>

**Reading Assignments**  
**ES 129 Water Policy in the West**  
Patrick T. Ferraro, Instructor

Class Schedule	Topic/Online reading assignments
<b>1. Aug 20</b>	<b>Introduction/ Overview of Class</b>

Thinking Globally: Water Distribution

<http://ga.water.usgs.gov/edu/waterdistribution.html>

<http://ga.water.usgs.gov/edu/watercyclesummary.html>

How Much Water Is There On Earth? Magellan Would Be Shocked

<http://www.npr.org/blogs/krulwich/2011/06/23/137346086/how-much-water-is-there-on-earth-magellan-would-be-shocked>

Water: <http://www.youtube.com/watch?v=73GKLVF90A&NR=1>

GOOD: Water:

<http://www.youtube.com/watch?v=HW5eBfZhE4M&feature=related>

Earth in the Balance: 7 Crucial Tipping Points by Jeremy Hsu, 02 March 2011

<http://www.livescience.com/13032-earth-7-tipping-points-climate-change.html>

Partial Text of The Great Thirst: Chapters on Aboriginal California & Spanish Settlement

[http://books.google.com/books?id=7CDVZL\\_AOBUC&dq=1.\)+The+Great+Thirst:+Californians+and+Water,+1770-1990+Hundley&printsec=frontcover&source=bl&ots=Qm0taQovnz&sig=d1VoMAq84Yc5ShGL2BHE-lpdsYs&hl=en&ei=e0iMSua5GlfSsgOJo6y7CQ&sa=X&oi=book\\_result&ct=](http://books.google.com/books?id=7CDVZL_AOBUC&dq=1.)+The+Great+Thirst:+Californians+and+Water,+1770-1990+Hundley&printsec=frontcover&source=bl&ots=Qm0taQovnz&sig=d1VoMAq84Yc5ShGL2BHE-lpdsYs&hl=en&ei=e0iMSua5GlfSsgOJo6y7CQ&sa=X&oi=book_result&ct=)

Good Water History Research Site

<http://wrca.library.ucr.edu/>

UC Water Colloquium Video Library:

<http://library.ucr.edu/wrca/about/ccow.html>

List of CA Water Agencies:

<http://library.ucr.edu/wrca/grants/districts.html>

<b>2. Aug. 20</b>	<b>Participation in Developing Water Policy</b>
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Download

***The Citizen's Guide to Working with the California Water Boards*** (14.9 MB)

<http://www.acwa.com/news/water-news/guide-help-public-participate-water-planning-available>

Making Presentations Before the State Water Resources Control Board  
[http://www.swrcb.ca.gov/board\\_info/meetings/board\\_presentations.shtml](http://www.swrcb.ca.gov/board_info/meetings/board_presentations.shtml)

Successes and Failures in California Water Regulation  
Gary Wolff, Vice Chair, California State Water Resources Control Board  
<http://www.youtube.com/watch?v=tLWPylrrfJ0&feature=channel>

Environmental Justice Coalition for Water's Work Groups  
<http://www.ejcw.org/About/workgroups.htm>

Water Reform in California/Environmental Defense Fund's Water Policy Reform Web Page  
<http://www.edf.org/page.cfm?tagID=47523>

### **3. Aug 27**

### **Water Rights. Ecosystem Rights, Public Trust, Endangered Species Act**

Water Rights-California:

[http://www.waterboards.ca.gov/waterrights/board\\_info/water\\_rights\\_process.shtml](http://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.shtml)

Public Trust: philosophical and legal implications for California's future; given by Joseph L. Sax, Professor, Boalt School of Law, UC Berkeley.  
<http://www.youtube.com/watch?v=ZfPXMlztHlc>

Public Trust Doctrine: <http://www.braypapers.com/PTD.html>

Protecting Natural Capital & Ecosystem Services Using Public Trust Doctrine  
<http://ssrn.com/abstract=934393>

Text of TITLE 34 - CENTRAL VALLEY PROJECT IMPROVEMENT ACT  
<http://www.fws.gov/stockton/afrp/title34.cfm>

Text of Endangered Species Act  
<http://wildlifelaw.unm.edu/fedbook/esa.html>

Endangered Species Act, United States, Encyclopedia of Earth  
[http://www.eoearth.org/article/Endangered\\_Species\\_Act,\\_United\\_States](http://www.eoearth.org/article/Endangered_Species_Act,_United_States)

Bad for Species, Bad for People:  
What's Wrong with the Endangered Species Act and How to Fix It  
<http://www.ncpa.org/pub/st303>

Video: RonRobie @ UC Berkeley Water Colloquium: (1:09:52)  
<http://www.youtube.com/watch?v=Ssu47LziUMo&feature=channel>

#### **4. Aug 27**

#### **Watershed Protection**

What is a Watershed?

<http://www.kcet.org/socal/departures/lariver/confluence/river-notes/what-is-a-watershed-anyway.html>

Watersheds

<http://water.epa.gov/type/watersheds/index.cfm>

Earth Focus Episode 39 - American Rivers: Challenges of the Colorado and Potomac

<http://www.youtube.com/watch?v=ktVVBUJnxaA&feature=related> (27:27/VIDEO)

Federal Law: <http://www.nrcs.usda.gov/Programs/watershed/>

Watershed Protection and Flood Prevention Act of 1954

[http://en.wikipedia.org/wiki/Watershed\\_Protection\\_and\\_Flood\\_Prevention\\_Act\\_of\\_1954](http://en.wikipedia.org/wiki/Watershed_Protection_and_Flood_Prevention_Act_of_1954)

Federal Law Perspective:

Obstacles to Watershed Protection:

[http://findarticles.com/p/articles/mi\\_hb3153/is\\_n4\\_25/ai\\_n28666039/?tag=content;col1](http://findarticles.com/p/articles/mi_hb3153/is_n4_25/ai_n28666039/?tag=content;col1)

#### **5. Sep. 3**

#### **Groundwater Management**

What is Ground Water?

<http://pubs.usgs.gov/of/1993/ofr93-643/>

Selected Groundwater Issues

\* Artificial Recharge

\* Freshwater-Saltwater Interactions along the Atlantic Coast

\* Groundwater and Surface-water Interactions

\* Karst

\* Land Subsidence

\* Unsaturated Zone

\* Groundwater Networks

\* Regional Groundwater Studies

<http://water.usgs.gov/ogw/issues.html>

Sustainability of Groundwater Resources

<http://water.usgs.gov/pubs/circ/circ1186/pdf/circ1186.pdf>

Examples of Innovative Approaches that Contribute to Ground-Water Sustainability <http://water.usgs.gov/pubs/circ/circ1186/html/boxg.htm>

Groundwater Depletion Across Nation  
[http://water.usgs.gov/pubs/fs/fs-103-03/JBartolinoFS\(2.13.04\).pdf](http://water.usgs.gov/pubs/fs/fs-103-03/JBartolinoFS(2.13.04).pdf)

Study: San Jpaquin aquifers might be in danger. July 24, 2012  
[http://www.recordnet.com/apps/pbcs.dll/article?AID=/20120724/A\\_NEWS/207240314/-1/rss02](http://www.recordnet.com/apps/pbcs.dll/article?AID=/20120724/A_NEWS/207240314/-1/rss02)

***Water follies: the environmental consequences of groundwater pumping*** given by Robert Glennon, Morris K. Udall Professor of Law and Public Policy, University of Arizona.

<http://www.youtube.com/watch?v=aU609axRws8&feature=channel>

***Managing groundwater resources*** given by David Todd, President, Todd Engineers and Professor Emeritus, UC Berkeley

<http://www.youtube.com/watch?v=vvLxJVihAR4&feature=channel>

## **6. Sep. 3 Surface Water Impoundments**

Water Supply Forecasts:

<http://www.wcc.nrcs.usda.gov/wsf/>

US Water Use by category:

<http://water.usgs.gov/pubs/circ/2004/circ1268/htdocs/text-total.html>

***Rotten foundations - the Reclamation Act and urbanization of the west*** - given by Gray Brechin, noted historian and author of Imperial San Francisco: Urban Power, Earthly Ruin. <http://graybrechin.net/>

<http://www.youtube.com/watch?v=HPETYHEtJwk&feature=channel>

***When myth trumps history: the Reclamation Bureau and the family farm, 1902-1935*** given by Donald Pisani, Merrick Professor of History, University of Oklahoma.

<http://www.youtube.com/watch?v=HnpInB5JfkU&feature=channel>

***Big Dams of the New Deal Era:***

<http://books.google.com/books?id=XP5LkSQMM5QC&dq=Big+Dams+of+the+New+Deal+Era:+A+Confluence+of+Engineering+And+Politics&printsec=frontcover&source=bl&ots=DN05ukAk->

[p&sig=YukG6MBQ4pTC9w1hHyC0kVnZkZQ&hl=en&ei=w0h-SpnGDoWlswPT0LHvCg&sa=X&oi=book\\_resul](http://www.youtube.com/watch?v=HNGunnMlIfQ)

Save The Yampa River From Being Dam'd  
<http://www.youtube.com/watch?v=HNGunnMlIfQ>

Texas' Thirst for Dams Bucks National Trend, Wendee Holtcamp, Aug. 4, 2011  
<http://www.miller-mccune.com/environment/texas-thirst-for-dams-bucks-national-trend-34541/>

Student Video: Failure of Grand Teton Dam: (Grade A)  
<http://www.youtube.com/watch?v=kqCkyrin3bk&feature=related>  
Student Video: Failure of Grand Teton Dam: (Grade B)  
<http://www.youtube.com/watch?v=u2beeXgvQlk&feature=related>  
Video of Grand Teton Dam Failure:  
<http://www.youtube.com/watch?v=KEdM6Ys6spA>

## **7. Sep. 10** Water Quality & Treatment

Chlorine by products:  
<http://www.southerndatastream.com/thm/index.html> - Introduction

Restoration - Watershed Initiative Video  
Urban Runoff P2: Southern CA marsh protection-20 minute thumb video:  
[http://www.algalita.org/watershed\\_mov.html](http://www.algalita.org/watershed_mov.html)

## **8. Sep 10** Urban Water Distribution, Public vs. Private Systems

Water Distribution Power Point  
[http://galileo.phys.virginia.edu/classes/605.ral5q.spring04/lectures/water\\_distribution.pdf](http://galileo.phys.virginia.edu/classes/605.ral5q.spring04/lectures/water_distribution.pdf)

Gold and Water in Them Thar Hills  
<http://neverthirstpatferraro.blogspot.com/2008/09/flow-movie.html>

## **9. Sep. 17** Coastal Protection

California Colloquium on Water: Douglas

Saving the coast: A job that's never done; given by Peter Douglas, Executive Director, California Coastal Commission; Examines desalting plant impacts

<http://www.youtube.com/watch?v=fvFZ5cqH9KM&feature=related>

Coastal Communities and the Blue Planet

Meg Caldwell, Woods Institute for the Environment, Stanford University

<http://www.youtube.com/watch?v=5qffYm46L5U>

## **10. Sep 17 Urban Stormwater Management**

PRINCIPLES OF FLOOD MANAGEMENT AND FLOODPLAIN RESTORATION

<http://www.friendsoftheriver.org/fotr/BeyondFloodControl/no1.html>

<http://www.friendsoftheriver.org/fotr/BeyondFloodControl/no2.html>

<http://www.friendsoftheriver.org/fotr/BeyondFloodControl/no3.html>

<http://www.friendsoftheriver.org/fotr/BeyondFloodControl/no4.html>

CA Dept. of Water Resources Floodplain Management

<http://www.water.ca.gov/floodmgmt/lrafmo/fmb/>

Low Impact Development – Sustainable Storm Water Management

[http://www.waterboards.ca.gov/water\\_issues/programs/low\\_impact\\_development/index.shtml](http://www.waterboards.ca.gov/water_issues/programs/low_impact_development/index.shtml)

Urban Runoff Pollution Prevention Program/North Santa Clara County:

<http://www.scvurppp-w2k.com/default.htm>

## **11. Sep 24 Water for Agriculture, Ag Runoff**

Cotton Farming in Tulare Lake: *King of California*

[http://books.google.com/books?id=QqIFOo8ZXx8C&dq=King+of+California%2BMark+Arax&printsec=frontcover&source=bl&ots=Qhd8iRRjbn&sig=zmdaLEWy6xRMfPrjndeTOqF9eV0&hl=en&ei=KReLSo6iCo7KsQPUyvDJDQ&sa=X&oi=book\\_result&ct=result&resnum=1#v=onepage&q=&f=false](http://books.google.com/books?id=QqIFOo8ZXx8C&dq=King+of+California%2BMark+Arax&printsec=frontcover&source=bl&ots=Qhd8iRRjbn&sig=zmdaLEWy6xRMfPrjndeTOqF9eV0&hl=en&ei=KReLSo6iCo7KsQPUyvDJDQ&sa=X&oi=book_result&ct=result&resnum=1#v=onepage&q=&f=false)

Ag water use Efficiency: SCVWD web page:

<http://www.valleywater.org/programs/agriculture.aspx>

Pollution from agriculture

[http://www.naturegrid.org.uk/rivers/gt\\_stour\\_case\\_study-pages/plln-frm.html](http://www.naturegrid.org.uk/rivers/gt_stour_case_study-pages/plln-frm.html)

Tropical Storm May Have Kept Gulf 'Dead Zone' in Check,

By PAUL QUINLAN of Greenwire, August 1, 2011

<http://www.nytimes.com/gwire/2011/08/01/01greenwire-tropical-storm-may-have-kept-gulf-dead-zone-in-25367.html>

Pollution from Forestry

Lawmakers aim to overrule court on water runoff,

By STEVE BROWN, Capital Press, August 01, 2011

<http://www.capitalpress.com/oregon/SB-logging-runoff-080511-art>

## **12. Sep 24** Water Pricing, Externalizing Costs

Napa City Council to address water rate hike

[http://napavalleyregister.com/news/local/council-to-address-water-rate-hike/article\\_6a80f8f6-bcb8-11e0-80a3-001cc4c002e0.html](http://napavalleyregister.com/news/local/council-to-address-water-rate-hike/article_6a80f8f6-bcb8-11e0-80a3-001cc4c002e0.html)

Recycled Water Pricing/San Jose/SBWR:

<http://www.sanjoseca.gov/sbwr/rates.htm>

## **13. Oct. 1** Water Use Efficiency: Paying More For Less Water and More Growth

Hi Tech Water Efficiency:

<http://www.sanjoseca.gov/esd/PDFs/SVMGfinalreport.pdf>

6 Simple Ways to Bring the Water Revolution Home

[http://www.yesmagazine.org/issues/water-solutions/6-simple-ways-to-bring-the-water-revolution-home?utm\\_source=junjul10&utm\\_medium=email&utm\\_content=subs&utm\\_campaign=6wysHdr](http://www.yesmagazine.org/issues/water-solutions/6-simple-ways-to-bring-the-water-revolution-home?utm_source=junjul10&utm_medium=email&utm_content=subs&utm_campaign=6wysHdr)

US EPA Water Sense <http://www.epa.gov/watersense>

#### **14. Oct. 1** Sewage Treatment & Water Factories

Wastewater Treatment: <http://ga.water.usgs.gov/edu/wwvisit.html>

Onsite systems/Austin: <http://www.ci.austin.tx.us/wri/faq.htm>

San Jose-Santa Clara WPCP: <http://www.sanjoseca.gov/esd/wastewater/water-pollution-control-plant.asp>

Treatment Plant Operators: Occupational Outlook Handbook, 2010-11 Edition  
<http://www.bls.gov/oco/ocos229.htm>

GHG Emissions from Treatment Plants: Video: Dr. Perry McCarty @UCBerkeley  
Water Colloquium: <http://www.youtube.com/watch?v=15S4teA2l-M&feature=channel>

#### **15. Oct. 8** Water Recycling and Reuse

Video: ***Water In an Endless Loop***, Water Reuse Association  
<http://vimeo.com/9333749> (23:59)

Water Recycling and Reuse: The Environmental Benefits  
<http://www.epa.gov/region9/water/recycling/>

US EPA Guidelines for Water Reuse  
<http://www.epa.gov/ORD/NRMRL/pubs/625r04108/625r04108chap1.pdf>

Recycled Water Frequently Asked Questions  
[http://www.pvwma.dst.ca.us/project\\_operations/recycled\\_water.shtml#q1](http://www.pvwma.dst.ca.us/project_operations/recycled_water.shtml#q1)

Grey Water: <http://www.oasisdesign.net/greywater/>

#### **16. Oct. 8** Desalination and Privatization

Desalination, With a Grain of Salt: A California Perspective  
Heather Cooley: Senior Researcher, Pacific Institute.  
<http://www.youtube.com/watch?v=HFvyxwzADd0>

Desalination issues in the United States; given by Kevin Price, Manager of the Water Treatment Engineering Research and Development Group, U.S. Bureau of Reclamation. [http://www.youtube.com/watch?v=neS\\_mX9GqJA](http://www.youtube.com/watch?v=neS_mX9GqJA)

Gold and Water in Them Thar Hills  
<http://neverthirstpatferraro.blogspot.com/2008/09/flow-movie.html>

Merger agreement: American Water Works will merge with a subsidiary of RWE AG  
<http://www.aquamedia.at/templates/index.cfm/id/1461>

**17. Oct. 15** Water Project Financing,  
Public Outreach & Participation

MWD Video: *Thirst*:  
<http://www.youtube.com/watch?v=6Hc6lDaWako&feature=related>

**18. Oct 15** The Sacramento-San Joaquin Delta &  
The Peripheral Canal

California's Delta Water Blues, January 3, 2011m Miller-McCune  
<http://www.miller-mccune.com/science-environment/californias-delta-water-blues-26552/#>

Debating the Delta (56 min. PBS video)  
<http://vids.kvie.org/video/2017614881/>

Hell and high water in the Delta: The fate of California's water supply hub  
[http://www.youtube.com/watch?v=0\\_VJyCHG-iE&feature=channel](http://www.youtube.com/watch?v=0_VJyCHG-iE&feature=channel)

Confluence, Confusion, or Catastrophe: Prospects for Ending the Delta Stalemate  
<http://www.youtube.com/watch?v=QXhZZwtSrLk>

Sacramento-San Joaquin Delta: An Ecosystem & Water Delivery System in Crisis  
California Colloquium on Water - Richard M. Frank  
<http://www.youtube.com/watch?v=CkhkSPoF-WU>

VIDEO: Worries about peripheral canal dominate

<http://www.centralvalleybusinesstimes.com/stories/001/?ID=19004>

Pat Ferraro Blog Posts:

<http://neverthirstpatferraro.blogspot.com/2008/06/fixing-sacramentosan-joaquin-delta.html>

<http://neverthirstpatferraro.blogspot.com/2009/05/another-challenge-for-henry-waxman-salt.html>

Saving the West Coast's Largest Estuary/EDF Delta Web Page

<http://www.edf.org/page.cfm?tagID=574>

### **19. Oct 22** Colorado and Columbia River Projects

*Grand Coulee Dam 70 Years Later: What can we learn* Leonard Ortolano & Katherine Kao Cushing; 2002 Water Resources Development, Vol 18, No. 3, pages 373-390; Reprinted with permission in EnvS 129 Course Reader  
Download reprint from 2011 EnvS 129 web site page Lecture #10: Colorado & Columbia River Projects: <https://sites.google.com/site/envs1292011waterpolicy/>

### **20. Oct 22** Owens Valley Water Project

The Owens Valley Land Grab

<http://www.usc.edu/libraries/archives/la/scandals/owens.html>

Parts of Cadillac Desert Video Series:

Expansion of L. A. - destruction of Owens River & Valley

<http://www.youtube.com/watch?v=CN1VYCczw9U>

Construction of the Owens Valley Project

<http://www.youtube.com/watch?v=QesBtxLwvWY&feature=fvw>

Water & Power, Wm Kahrl, 1982, UC Press, Berkeley

[http://books.google.com/books?id=DH\\_hxwAD\\_2UC&dq=Water+and+Power+William+Kahrl&printsec=frontcover&source=bn&hl=en&ei=HRaLSsiMCISuswPjnczBDQ&sa=X&oi=book\\_result&ct=result&resnum=4 - v=onepage&q=&f=false](http://books.google.com/books?id=DH_hxwAD_2UC&dq=Water+and+Power+William+Kahrl&printsec=frontcover&source=bn&hl=en&ei=HRaLSsiMCISuswPjnczBDQ&sa=X&oi=book_result&ct=result&resnum=4 - v=onepage&q=&f=false)

### **21. Oct 29** Hetch Hetchy Water Project

Part 1: Rebuilding the Historic Hetch Hetchy Regional Water System

Paul Mazza and Daniel Jaimes — Dec 28, 2011

<http://www.trenchlessonline.com/index/webapp-stories-action/id.2038/title.part-1:-rebuilding-the-historic-hetch-hetchy-regional-water-system>



## Northern CA & South Bay Water Recycling Projects

Recycled Water: Conveying the Message to Non-Water Experts; given by Roy Herndon, Chief Hydrogeologist, Orange County Water District  
<http://www.youtube.com/watch?v=gy7m1VZi90U>

Planet LA – Water  
[http://www.youtube.com/watch?v=Mwppb\\_zCLJE&feature=related](http://www.youtube.com/watch?v=Mwppb_zCLJE&feature=related)

US Bureau of Reclamation Awards More Than \$2 Million to Fund 13 Title XVI Feasibility Studies in the San Francisco Bay Area, August 01, 2011  
<http://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=36943>

South Bay Water Recycling: <http://www.sanjoseca.gov/sbwr/>

Rules and Regulations:  
<http://www.sanjoseca.gov/sbwr/rulesandregulations.htm>

**25. Nov. 12** **Water & Power**  
LADWP In Crisis Video; <http://www.youtube.com/watch?v=67UxjCrjeao&feature=related>

SCVWD Failure to Develop Hydro Power:  
<http://neverthirstpatferraro.blogspot.com/2008/07/water-and-power.html>

**26. Nov. 12** **Integrated Water Resources Planning,  
Sustainability and Carbon Footprints**

A Clear Blue Future  
<http://www.nrdc.org/water/lid/>

Report: Arid West Can Help Meet Its Water Needs While Reducing Energy Use  
<http://www.nrdc.org/media/2009/090811.asp>

**27. Nov. 19** **International Water Issues & Projects**

The Right to Water  
<http://www.gci.ch/en/communication/news/news-of-green-cross-international/33-news/652-the-right-to-water>

Thirsty South Asia's river rifts threaten "water wars"

<http://www.reuters.com/article/2012/07/23/us-water-southasia-idUSBRE86M0C820120723>

The Role of Water Policy in Mexico: Sustainability, Equity, and Economic Growth Considerations

<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/LACEXT/0,,contentMDK:21219224~pagePK:146736~piPK:146830~theSitePK:258554,00.html>

## **28. Nov 19 Flood Protection, FEMA and Watershed Stewardship**

Fear of FEMA Revisited

<http://neverthirstpatferraro.blogspot.com/2009/01/fear-of-fema-revisited.html>

Federal Emergency Management Agency

From Wikipedia

[http://en.wikipedia.org/wiki/Federal\\_Emergency\\_Management\\_Agency](http://en.wikipedia.org/wiki/Federal_Emergency_Management_Agency)

Report: Criticism of FEMA's Katrina response deserved

<http://www.cnn.com/2006/POLITICS/04/14/fema.ig/index.html>

Smart Growth 2 (Flooding)

<http://www.youtube.com/watch?v=uAuGZ615TrM&feature=related>

Smart Growth 3 (Flooding)

<http://www.youtube.com/watch?v=HaPoQO-aWQA&feature=channel>

Smart Growth 4 (Flooding) <http://www.youtube.com/watch?v=hecs9BzwH00&feature=channel>

## **29. Dec. 3 Student Presentations**

### **Dec 11 Final Exam Due between 2:45 PM and 5:00 PM on Friday, Dec 11**

Final Exam should be submitted by email only to [ptferraro5@gmail.com](mailto:ptferraro5@gmail.com) as MS Word file with .doc or .docx suffix