Environmental Studies 129
Water Policy in the Western US
Fall 2016

Class Hours:    Monday, Wednesday 1:30 – 2:45 PM
                Dudley Moorhead Hall, Rm 164

Instructor:    Patrick T. Ferraro

Office Hours:  Monday, Wednesday 12:00 – 1:00 PM, Room WSQ 115A

Home Phone:    408-293-1852
E-mail:        PTFerraro5@gmail.com

Catalog Course Description:
Water resource development; federal reclamation policy; water law and water rights; interbasin transfers; Colorado River, Central Valley Project and State Water Project; groundwater overdrafting; agricultural water and water pricing

Course Format:
Students are expected to have completed reading assignments prior to class. Lecture will be supplemented with audio-visual media. A portion of each class will be spent as interactive discussion between instructor and students. Experts may be invited to some of the classes to augment the instructor’s expertise. Field trips will be scheduled as time permits.

Course Text:
With the multitude of topics and levels used to approach these subjects, one suitable textbook covering the entire course outline cannot be specified. Readings from pertinent Internet web sites will be assigned for each class topic. Students will be encouraged to search and review related links to supplement the information provided on the assigned sites and use the information to help generate discussions in the classroom.

The following printed materials are recommended and available for purchase through Amazon.com and for use in the MLK library in the reserve section:

Dam Nation: How Water Shaped The West And Will Determine Its Future
by Steven Grace
First Edition Edition
SBN-13: 978-0762787623
ISBN-10: 0762787627

2.) *Deadbeat Dams: Why We Should Abolish the U.S. Bureau of Reclamation and Tear Down Glen Canyon Dam* Paperback – March 1, 2015
by Daniel P. Beard (Author)

Course Web Page: https://sites.google.com/site/envs129waterpolicysp2016/home

**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.
  * Please contact editor at 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% Policy Development Participation Report - Each students will write up to 5000-word paper summarizing student’s participation in current local water issue. This IS NOT simply a research project. You must report on the contact you made to someone in authority or a group that can influence water policy. Suggested topics will be offered, but students may select a topic of their own interest.
  * Abstracts of Topics are due on Feb 22;
  * Draft reports are due April 27;
  * Final Papers Due May 4
  * Reports 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

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)

<table>
<thead>
<tr>
<th>Class Schedule</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>1. Feb 1</td>
<td>Introduction/ Overview of Class</td>
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<tr>
<td>2. Feb 3</td>
<td>Participation in the Development of Water Policy</td>
</tr>
<tr>
<td>3. Feb 8</td>
<td>Water Rights, Ecosystem Rights, Public Trust and Endangered Species Act</td>
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<tr>
<td>4. Feb 10</td>
<td>Watershed Protection</td>
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<td>5. Feb 15</td>
<td>Groundwater Management</td>
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<tr>
<td>6. Feb 17</td>
<td>Send Quiz #1 Surface Water Impoundments</td>
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<tr>
<td>7. Feb 22</td>
<td>Water Quality &amp; Treatment - How Clean is Clean?</td>
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<td>8. Feb 24</td>
<td>Urban Water Distribution, Public vs. Private Systems</td>
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<td>9. Feb 29</td>
<td>Send Quiz #2 Coastal &amp; Marine Protection</td>
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<tr>
<td>10. Mar 2</td>
<td>Send Quiz #1 Due Urban Stormwater Management</td>
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<tr>
<td>11. Mar 7</td>
<td>Water for Agriculture, Ag Runoff</td>
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<td>12. Mar 9</td>
<td>Quiz #2 Due Water Pricing, Externalizing Costs</td>
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<td>13. Mar 14</td>
<td>Send Quiz #3 Water Use Efficiency, Paying More For Less Water</td>
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<td>14. Mar 16</td>
<td>Sewage Treatment &amp; Water Factories</td>
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<td>15. Mar 21</td>
<td>Water Recycling and Reuse</td>
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<td>16. Mar 23</td>
<td>Quiz #3 Due Desalination and Privatization</td>
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<td>17. Apr 4</td>
<td>Send Quiz #4 Water Project Financing, Public Outreach &amp; Participation</td>
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<td>18. Apr 6</td>
<td>The Sacramento-San Joaquin Delta</td>
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<td>Date</td>
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<td>19. Apr 11</td>
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<td>20. Apr 13</td>
<td><strong>Quiz #4 Due</strong></td>
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<td>21. Apr 18</td>
<td><strong>Send Quiz #5</strong></td>
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<td>22. Apr 20</td>
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<td>23. Apr 25</td>
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<td>24. Apr 27</td>
<td><strong>Draft PP Report Due</strong></td>
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<td>25. May 2</td>
<td><strong>Quiz #5 Due</strong></td>
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<td><strong>Send Final Exam</strong></td>
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<td>26. May 4</td>
<td><strong>Send Quiz #6</strong></td>
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<td></td>
<td><strong>Final Policy Participation Report Due (late submissions accepted until May 9)</strong></td>
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<td>27. May 9</td>
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<tr>
<td>28. May 11</td>
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<tr>
<td>29. May 16</td>
<td><strong>Quiz #6 Due</strong></td>
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<tr>
<td>30. May 18</td>
<td><strong>Final Exam Due by 2:30 PM</strong></td>
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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/envs129waterpolicysp2016/home](https://sites.google.com/site/envs129waterpolicysp2016/home)
Reading Assignments
ES 129 Water Policy in the West
Patrick T. Ferraro, Instructor

Class Schedule

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Los Angeles, San Diego Reshaping California Drought Strategy

http://www.voanews.com/content/los-angeles-san-diego-reshaping-california-drought-strategy/3104927.html

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
Water: http://www.youtube.com/watch?v=73GKLVEF90A&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&printsec=frontcover&source=bl&ots=Qm0taQovnz&sig=d1VoMAq84Yc5ShGL2BHE-lpdsYs&hl=en&ei=e0iMSua5GlFsgOJo6y7CQ&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
2. Feb 3  Participation in Developing Water Policy

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

Making Presentations Before the State Water Resources Control Board
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=tLWPylrfJ0&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. Feb 8  Water Rights. Ecosystem Rights, Public Trust, Endangered Species Act

Water Rights-California:
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=ZfPXMIzthlc

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
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 @ UCBerkeley Water Colloquium: (1:09:52)
http://www.youtube.com/watch?v=Ssu47LziUMo&feature=channel

4. Feb 10 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

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

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

5. Feb 15 Groundwater Management
What is Ground Water?

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

Examples of Innovative Approaches that Contribute to Ground-Water Sustainability

Groundwater Depletion Across Nation

Study: San Japaquin aquifers might be in danger. July 24, 2012
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=aU6O9axRws8&feature=channel

*Managing groundwater resources* given by David Todd, President, Todd Engineers and Professor Emeritus, UC Berkeley
http://www.youtube.com/watch?v=vvLxJVHiAR4&feature=channel

**6. Feb 17**

*Surface Water Impoundments*

Water Supply Forecasts:
http://www.wcc.nrcs.usda.gov/wsf/

US Water Use by category:

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=w0hSpnGDoWIswPT0LHvCq&sa=X&oi=book_result](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=w0hSpnGDoWIswPT0LHvCq&sa=X&oi=book_result)

Save The Yampa River From Being Dam'd
[http://www.youtube.com/watch?v=HNGunnMlfQ](http://www.youtube.com/watch?v=HNGunnMlfQ)

**Coho salmon benefit from dam removal on San Mateo County coastal creek**
By Lisa M. Krieger 12/29/2015

Texas’ Thirst for Dams Bucks National Trend, Wendee Holtcamp, Aug. 4, 2011

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

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**7. Feb 22**

**Water Quality & Treatment**

Chlorine by products:

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)

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**8. Feb 24**

**Urban Water Distribution, Public vs. Private Systems**
Water Distribution Power Point
http://galileo.phys.virginia.edu/classes/605.ral5q.spring04/lectures/water_distribution.pdf

Gold and Water in Them Thar Hills

9. Feb 29  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. Mar 2  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

Urban Runoff Pollution Prevention Program/North Santa Clara County:
http://www.scvurppp-w2k.com/default.htm
11. Mar 7  Water for Agriculture, Ag Runoff
Cotton Farming in Tulare Lake:  King of California
http://books.google.com/books?id=QqIFOo8Zx8C&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

Opinion: Why California's drought matters
Managing agriculture by government fiat puts the nation and world at risk

Pollution from agriculture
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

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. Mar 9  Water Pricing, Externalizing Costs

Napa City Council to address water rate hike
Recycled Water Pricing/San Jose/SBWR: http://www.sanjoseca.gov/sbwr/rates.htm


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

14. Mar 16  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


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

15. Mar 21  Water Recycling and Reuse

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

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

16. Mar 23 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

Gold and Water in Them Thar Hills

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

17. Apr 4 Water Project Financing,
Public Outreach & Participation
MWD Video: Thirst:
http://www.youtube.com/watch?v=6Hc6lDaWako&feature=related

18. Apr 6 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

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.centralvalleybusinessetimes.com/stories/001/?ID=19004

Pat Ferraro Blog Posts:
http://neverthirstpatferraro.blogspot.com/2008/06/fixing-sacramentosan-joaquin-delta.html

Saving the West Coast's Largest Estuary/EDF Delta Web Page
http://www.edf.org/page.cfm?tagID=574

19. Apr 11 Colorado and Columbia River Projects
Drought in the Colorado River Basin

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. Apr 13  

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=QesBtxLvwWY&feature=fvw

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

21. Apr 18  

Hetch Hetchy Water Project

Part 1: Rebuilding the Historic Hetch Hetchy Regional Water System
Paul Mazza and Daniel Jaimes — Dec 28, 2011

Temples of Water
http://neverthirstpatferraro.blogspot.com/2008/08/temple-of-water.html

Hetch Hetchy Valley: Water and California's Future; given by Sarah Null, Doctoral Student, Geography, UC Davis; Spreck Rosekrans, Economic Analyst, Environmental Defense; and Jay Lund, Professor of Civil and Environmental Engineering, UC Davis.
http://www.youtube.com/watch?v=8gHjGqzBqdQ&feature=related

Restore Hetch Hetchy
http://www.hetchhetchy.org/resources.html#education

U.S. Supreme Court
UNITED STATES v. CITY AND COUNTY OF SAN FRANCISCO, 310 U.S. 16 (1940)

Supreme Court decision holding the City of San Francisco is violating the Raker Act by selling electrical power from the Hetch Hetchy dam.

Congressman Wants to Raise Hetch Hetchy Rent a Thousandfold
Proposal would increase San Francisco's annual fee to $34 million from $30,000
By John Upton, January 5, 2012
http://www.baycitizen.org/water/story/raise-rent-hetch-hetchy-water/
22. Apr 20 Central Valley Project and San Felipe Division

Effluent for the Affluent/Inside Poop of San Felipe Aqueduct
http://neverthirstpatferraro.blogspot.com/2008/06/effluent-for-affluentinside-poop-on-san.html

23. Apr 25 Central Valley Project Improvement Act

Central Valley Project Improvement Act (CVPIA)
http://www.usbr.gov/mp/cypia/

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

2012 Draft CVPIA Annual Workplans
http://www.usbr.gov/mp/cypia/docs_reports/awp/2012/index.html

Alien invaders, endangered natives, and declining fisheries: a history of fish in the upper San Francisco estuary; given by Peter Moyle, Professor of Fish Biology, UC Davis. http://www.youtube.com/watch?v=5Ri2PF_u40I&feature=channel


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

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. May 2 Water & Power
LADWP In Crisis Video; http://www.youtube.com/watch?v=67UxjCrjeao&feature=related
SCVWD Failure to Develop Hydro Power:  

26. May 4  
Integrated Water Resources Planning, Sustainability and Carbon Footprints

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


27. May 9  
International Water Issues & Projects

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  

28. May 11  
Flood Protection, FEMA and Watershed Stewardship

Fear of FEMA Revisited  

Federal Emergency Management Agency  
From Wikipedia  

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. May 16  ..............................................................  Student Presentations

May 18  Final Exam Due between 12:15 PM and 2:30 PM on Friday, May 18  
Final Exam should submitted by email only to ptferrar05@gmail.com as MS Word file with .doc or .docx suffix