

## **Mediterranean-Climate Landscapes IAS C229 & LA C229**

### ***Reforming Water Management: Lessons from Europe for California***

Selected Wednesdays 6-8p, Location TBA Wurster Hall

Instructors: Matt Kondolf, Juliet Christian-Smith

Curriculum development: Kristen Podolak

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### ***--- DRAFT SYLLABUS AS OF DEC 12, 2008 -----***

*Jan 21 Course overview, What is Mediterranean? Damming Mediterranean-climate rivers*

*Jan 28 Overview of water management in the US/California and the EU  
WFD river basin assessment, setting goals. Sausal Ck case study.*

*Feb 10 Tuesday TITLE Jennifer McKay (Calif Water Colloquium, 5.30-7pm, GSPP)*

*Feb 11 The Australian Mediterranean climate (Karl Kullmann, discussion by Jennifer McKay)*

*Feb 18 WFD water economic principles, challenges  
Adapting to climate change: EU, California – Michael Hanemann*

*Feb 25 Member state progress reports*

*Mar 11 Portugal: regions, rivers, restoration (Pedro Pinto)*

*Mar 18 Applying WFD principles in US context (Ted Grantham)*

*Apr 01 Topic presentation and discussion*

*Apr 11-12 field trip to Russian and Garcia Rivers*

*Apr 15 Term project progress reports, Portugal trip preview*

*May 09 Symposium*

*May 26 appx depart to Portugal*

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Instructor bios, office hours, online readings, and other course information:

[http://landscape.ced.berkeley.edu/~kondolf/courses/LA229/229\\_Website.html](http://landscape.ced.berkeley.edu/~kondolf/courses/LA229/229_Website.html)

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## Assigned Readings

Batalla, R.J., C.M. Gomez, G.M. Kondolf., 2004. River impoundment and changes in flow regime, Ebro River basin, northeastern Spain. *Journal of Hydrology*, 290, 117-136.

Conacher, A.J., Sala, M., 1998. *Land degradation in Mediterranean environments of the world. Nature, extent, causes and solutions*. John Wiley and Sons, Chichester, 491 pp.

EUROPA website on the WFD: [http://europa.eu.int/comm/environment/water/water-framework/index\\_en.html](http://europa.eu.int/comm/environment/water/water-framework/index_en.html), section entitled "WFD - introduction and overview." Under the section entitled "Implementing the Directive" Strategic Document (December 2004): "[Moving to the next stage in the Common Implementation Strategy for the Water Framework Directive - Progress and Work Programme 2005/2006](#)".

European Environmental Bureau and WWF report. 2006. EU Water Policy: Making economics work for the environment. Survey of the economic elements of the Article 5 report of the EU Water Framework Directive.

<http://www.eeb.org/activities/water/200605-EEB-WWF-snapshot-III-WFD-economics.pdf>

European Environmental Bureau RSPB and Pond Conservation. 2006. [European Environmental NGO Technical Review of the Water Framework Directive Intercalibration Process](#). <http://www.eeb.org/activities/water/200609-NGO-review-WFD-Intercalibration.pdf>

European Environmental Bureau and WWF report. 2004. *EU WATER POLICY: Making the Water Framework Directive work, The Quality of National Transposition and Implementation of the Water Framework Directive at the end of 2004*.

<http://www.eeb.org/activities/water/making-WFD-work-February05.pdf>

Gasith, A., and V.H. Resh, 1999. Streams in Mediterranean climate regions: abiotic influences and biotic responses to predictable seasonal events. *Annual Review of Ecology and Systematics*, 30.

Grantham et al in review

Heinz, I., M. Pulido-Velasquez, J.R. Lund, and J. Andreu. 2006. Hydro-economic Modeling in River Basin Management: Implications and Applications for the European Water Framework Directive. *Water Resources Management* DOI 10.1007/s11269-006-9101-8.

Kaika, Maria. 2003. The Water Framework Directive: A New Directive for a Changing Social, Political and Economic European Framework. *European Planning Studies*, 11 (3).

Kallis and Butlerb, 2001. The EU water framework directive: measures and implications. *Water Policy* 3 (2001) 125–142

Kondolf, G.M. River restoration and meanders. 2006. *Ecology and Society* 11(2) article 42 [online] <http://www.ecologyandsociety.org/vol11/iss2/art42/ES-2006-1795.pdf>

Kondolf, G.M., and R.J. Batalla. 2006. Hydrological effects of dams and water diversions on rivers of Mediterranean-climate regions: Examples from California. In C. Garcia and R.J. Batalla (eds.) *Catchment dynamics and river processes: Mediterranean and other climate regions*. Elsevier, London. pp.197-211.

Kondolf, G.M., A. Boulton, S. O'Daniel, G. Poole, F. Rahel, E. Stanley, E. Wohl, A. Bang, J. Carlstrom, C. Cristoni, H. Huber, S. Koljonen, P. Louhi, and K. Nakamura. 2006. Process-based ecological river restoration: Visualising three-dimensional connectivity and dynamic vectors to recover lost linkages. *Ecology and Society* 11(2) article 5 [online] <http://www.ecologyandsociety.org/vol11/iss2/art5/ES-2006-1747.pdf>

Moss, Timothy. 2004. The governance of land use in river basins: prospects for overcoming problems of institutional interplay with the EU Water Framework Directive. *Land Use Policy* 21, 85–94.

Piegay, H., Gregory, K.J., Bondarev, V., Chin, A., Dalhstrom, N., Elozegi, A., Gregory, S.V., Joshi, V., Mutz, M., Rinaldi, M., Wyzga, B. and Zawiejska, J., 2005. Public perception as a barrier to Introducing wood in rivers for restoration purposes. *Environmental Management* 36(5):665-674.

Scheuer, S., editor 2005. EU Environmental Policy Handbook: A Critical Analysis of EU Environmental Legislation. Chapter IV.5 [http://www.eeb.org/publication/chapter-4\\_5.pdf](http://www.eeb.org/publication/chapter-4_5.pdf)

Swyngedouw, E., Ben Page, and Maria Kaika. Achieving Participatory Governance: Sustainability and Policy Innovation in a Multi-Level Context Crosscutting Issues in the Water Sector.

## **Other Relevant Readings**

California State Lands Commission, 1993. *California's rivers: a public trust report*. Sacramento. 334 pp.

Hecht, B., 1994. South of the Spotted Owl: restoration strategies for episodic channels and riparian corridors in Central California, Western Wetlands. In: Kent, D.M. and Zentner, J.J. (eds.). *Selected proceedings of the 1993 Conference of the Society of Wetland Scientists*, 104-117.

Inbar, M., 1992. Rates of fluvial erosion in basins with a Mediterranean type climate. *Catena*, 19, 393-409.

Kondolf, G.M. 1998. Lessons learned from river restoration projects in California. *Aquatic Conservation*. 8:39-52