

Rivers & Cities: Reclaiming the Connection

Spring 2020

LA254-002 Topics in Env Planning

Instructor: GM Kondolf

Mondays 12n-2p. Rm 315C Wurster

Offered for the first time this term, the seminar explores river-city relations over time and urban greening/river restoration, drawing on perspectives from fields such as archaeology, landscape architecture, geography, ecology, and sociology.

Background

Most cities are located on rivers, and for very good historical reasons that included navigation/commerce, fisheries, water supply, waste disposal, and quotidian uses such as washing clothes. The identities and distinctive characteristics of many cities are closely tied to their rivers, and the many ways their residents have interacted with their urban waters over history, adapting to floods to gain the advantages of access to the river. In recent decades, urban riverfront projects have become ubiquitous in the developed world, and increasingly promoted in the developing world. Both celebrated as revitalizing neglected urban centers and criticized for displacing the disenfranchised populations, these projects raise questions about what constitutes 'restoration' in the urban context, to what degree natural processes and ecological values can be restored, and how sustainable ecological benefits will be with the urban context. In highly dense cities, the social benefits of restoration likely overshadow the potential ecological benefits, but those social benefits may prove evasive, especially when development plans emphasizing a narrow range of uses (expected to yield short-term profits) are pursued at the expense of diverse activities appealing to diverse user groups. Questions of environmental justice abound as urban greening goals may conflict with the goals of the surrounding neighborhoods, as illustrated by the 'willow wars' in the East Bay. Generally overlooked is the potential that projects restoring natural hydrology and restoring channels may increase human exposure to disease vectors. Finally, attempts to transplant waterfront revitalization approaches from one city to another with different characteristics often fail, owing to differences in scale, fluvial form, and resulting culture that are not adequately accounted for. Thus, there are fundamental questions about the sustainability of these projects, from the hydrologic, ecological, and social perspectives.

Topics covered

River-city relations over time, social connectivity of urban rivers, 'daylighting' rivers & streams, restoring ecology and social connectivity in urban rivers, public health implications, urban greening and environmental justice, managing flood risk in cities (eg, the distinct dilemmas of Paris, New Orleans, Sacramento), aestheticization of river channels, riverfront revitalization around the world (including riverfront promenades and critique of failed projects).

Prerequisites

None *per se*, but students should have some background that can contribute to the class discussion and research topics, and prior exposure to relevant topics. Graduate students from diverse disciplines are encouraged to participate.

Format

Weekly presentations/discussions. Field trip to case study in California.

Requirements

1. Weekly readings, active participation in discussions
2. Your river autobiography (1-2pp on your experiences with rivers, specific interests)
3. Written review of ~ 6 readings on a specific topic of interest to you
4. Independent term project through which you can explore river-city relations in a context of particular interest to you (can be coordinated with topics in LA221, LA289, LA205, or another course). 10-20-pp paper, and presentation to seminar in May.

Detailed Schedule (*Subject to change, additional readings to be posted*)

Readings are posted on bcourses and/or on reserve in Environmental Design Library.

Jan 27 Rivers and cities, course overview

(Class exceptionally begins at 1230 due to DCRP meeting conflict)

Tvedt, T. 2016. Between the hydrological and hydrosocial cycle: the history of cities. pp.91-110 in *Water and Society: Changing Perceptions of Societal and Historical Development*, IB Taurus, London, 292 pp.

Prepare river autobiography for next class

Feb 03 City-river connections in antiquity (Alan Farahani)

Keenan-Jones, D. C. 2013 Large-Scale Water Management Projects in Roman Central-Southern Italy. In *The Ancient Mediterranean Environment between Science and History*, edited by William V. Harris, 233–56. Columbia Studies in the Classical Tradition 39. Columbia University Press, New York. https://doi.org/10.1163/9789004254053_011

Lichtenberger, A and R Raja. 2016. Living with and on the river side: the example of the Roman settlement of Antiochia-on-the-river Chrysorrhoeas formerly called Gerasa. *Water of Life. Festschrift for Peder Mortensen*. Proceedings of the Danish Institute in Damascus 11, eds Kuhlmann Madsen J, Overgaard Andersen N, Thuesen I (Orbis, Copenhagen), pp 98–117.13.

Chinchilla Mazariegos, O. 2018. Technologies of urbanism in Mesoamerica: the pre-Columbian bridges of Cotzumalhuapa, Guatemala. *Antiquity* 92 362: 456–471.
<https://doi.org/10.15184/aqy.2017.228>

Excerpt from: Scarborough, V. 2003. *The Flow of Power: Ancient Water Systems and Landscapes*. SAR Press, Santa Fe.

Feb 10 Urbanization impacts & channel adjustments, Values of nature in urban streams

Walsh et al 2005. The urban stream syndrome: current knowledge and search for a cure. *J N Am Bentholical Association*. 24:706-723.

Gurnell, A, M Lee, C Souch. 2009. Urban Rivers: Hydrology, Geomorphology, Ecology and Opportunities for Change. *Geography Compass* 1/5 (2007): 1118–1137, 10.1111/j.1749-8198.2007.00058.x

Meyer, JL, MJ Paul, WK Taulbee. 2005. Stream ecosystem function in urbanizing landscapes. *Journal of the North American Benthological Society* 24: 602-612.

Additional References:

Paul, M.J., Meyer, J.L., 2001. Streams in the Urban Landscape. *Annu. Rev. Ecol. Syst.* 32, 333–365. <https://doi.org/10.1146/annurev.ecolsys.32.081501.114040>

Kaushal, S.S., Belt, K.T., 2012. The urban watershed continuum: evolving spatial and temporal dimensions. *Urban Ecosystems* 15, 409–435. <https://doi.org/10.1007/s11252-012-0226-7>

Fletcher, T.D., Vietz, G., Walsh, C.J., 2014. Protection of stream ecosystems from urban stormwater runoff: The multiple benefits of an ecohydrological approach. *Progress in Physical Geography: Earth and Environment* 38, 543–555. <https://doi.org/10.1177/0309133314537671>

Booth, D.B., Fischenich, C.J., 2015. A channel evolution model to guide sustainable urban stream restoration: An urban channel evolution model. *Area* 47, 408–421. <https://doi.org/10.1111/area.12180>

Stein, E.D., Federico, F., Booth, D.B., Bledsoe, B.P., Bowles, C., Rubin, Z., Kondolf, G.M., Sengupta, A., 2012. Hydromodification Assessment and Management in California (No. Technical Report 667). Southern California Coastal Water Research Project.

Feb 17 Holiday

Feb 24 Social connectivity, Social Connectivity of East Bay Creeks (Rich Walking)

Kondolf, GM, P Pinto. 2017. The social connectivity of urban rivers. *Geomorphology* 277:182-196. <http://dx.doi.org/10.1016/j.geomorph.2016.09.028>

Mar 02 Urban greening and urban gentrification

Angelo, H. 2019. The greening imaginary: urbanized nature in Germany's Ruhr region. *Theory and Society* 48:645-669.

Dooling, S. 2009. Ecological gentrification: a research agenda exploring justice in the city. *International Journal of Urban and Regional Research* 33.3: 621-639.

Curran, W, and T Hamilton. 2012. Just green enough: contesting environmental gentrification in Greenpoint, Brooklyn. *Local Environment* 17(9): 1027-1042.

Mar 07-08 (Sat-Sunday, optional): [The Shape of the Land](#) conference (with presentation by Georges Descombes). Student registration \$25

Mar 09 Balancing ecological restoration and social enhancement: The Aire River corridor. discussion with Georges Descombes & Elissa Rosenberg

Watch film: 'Draw me a river' on the restoration of the Aire River, Geneva, directed by Michel Faure (at <https://vimeo.com/308663079> password 20181229).

Descombes, G. 2018. Designing a Rivergarden (pp.9-13)

Rosenberg, E. 2018 The canal and the river (pp.53-61)

Kondolf, GM. 2018. The Aire's free space: a geomorphic perspective (pp.169-179)

all in Descombes, G. 2018. *Aire: the river and its double*. Park Books. (on reserve ED Library)

Mar 16 Environmental justice in urban river projects (Rich Walkling)

Mar 23 Spring break

Mar 30 Homelessness along streams (Saneta Devuono-Powell)

Reading TBD

Apr 06 No class

Apr 13 Urban waterfront promenades (Elizabeth Macdonald)

Macdonald, E. 2018. Chapters 4 and 14 in *Urban Waterfront Promenades*. Routledge, New York. (on reserve in ED Library)

Apr 20 Urban riverfront renewal projects, Managing floods in cities

Pinto, PJ and GM Kondolf. 2020. The fit of urban waterfront interventions: matters of size, money and function.

Pinto et al. 2018. Managing Floods in Mediterranean-Climate Urban Catchments: Experiences in the San Francisco Bay Area (California, USA) and the Tagus Estuary (Portugal), in Serra-Llobet A, Kondolf GM, Schaefer K, Nicholson S. (eds) 2018. *Managing flood risk: innovative approaches from big floodplain rivers and urban streams*. Palgrave Macmillan, London, 162 pp.

DeGroot et al. 2018. Managing Floods in Urban Catchments: Experiences in Denver Area (Colorado, USA) and Geneva (Switzerland), in Serra-Llobet A, Kondolf GM, Schaefer K, Nicholson S. (eds) 2018. *Managing flood risk: innovative approaches from big floodplain rivers and urban streams*. Palgrave Macmillan, London, 162 pp.

Apr 25 Saturday Field trip to urban stream(s), SF Bay region

Apr 27 Public health implications of urban greening & stream restoration (Nick Skaff)

Reading TBD

May R&R week (TBD) Present term projects, Social Science Matrix, 8th floor Barrows Hall