

E555 Urban Ecology – Course Calendar, spring 2018, 3cr, Final

E555 Urban Ecology – Topics/Readings, Sp 2018

All papers are located in Canvas Assignments Weekly Folders

**Week #1 January 9 – Welcome to the Workshop and Urban Ecology; Course introduction and all that stuff
Topics – What is Urban; Urban Ecology Themes handout – discussion; Review “The Anthropocene” as needed;
Fischer prepared introductory handout and PPT on urban ecosystems**

Assignment Readings: Before class readings – Week 1 Reading Assignments and Themes, etc. Folders

Check out and register to receive The Nature of Cities blog at <http://www.thenatureofcities.com/>.

From Atlantic Cities “The Rise of Urban Ecology” (see Citations from Rise of UE folder, this is really the good stuff) <http://www.citylab.com/weather/2012/11/rise-urban-ecology/4032/>

See Folder – Anthropocene Readings - Browse as necessary to be sure you are up to speed on this concept per UE.

Pickett et al. 2016. Evolution and future of urban ecological science: ecology in, of, and for the city. *Ecosystem Health and Sustainability* 2(7):e01229. doi:10.1002/ehs2.1229

Fischer BC. 2017. Defining Urban Ecology & the Connection to Urban Forestry. *IAA Newsletter* (Winter), p 14-15.

UE Introduction – 3 media stories that I’ll cover in class, 7p

**Week #2 January 16 – Clean-up lingering course format questions; Intro of Book Review & Research Paper.
Topics this week - Finalizing class definitions of urban, urban ecology, etc.; Discussion of BES reading; First student led discussion of assigned articles; See model briefing paper and student briefing papers;
Assignments of topics/teams (3-4/team) for Wks 3-8 and beyond including possible guest discussants.**

Assigned Readings:

Grove JM et al. 2015. *The Baltimore School of Urban Ecology: Space, Scale and Time for the Study of Cities*. Yale Press, Introductions (vii-xix) and Chapters 1-2.

Pickett, STA., JM Grove. 2009. Urban Ecosystems: What would Tansley Do? *Urban Ecosystems* 12: 1-8.

Grove, J.M. 2009. Cities: Managing Densely Settled Social-Ecological Systems, p281-294. In Chapin, F.S, et.al. *Principles of Ecosystem Stewardship: Resilience-Based Natural Resource Management in a Changing World*. Springer. 402p. ISBN 978-0-387-73032-5 – see model briefing paper by S.K. Mincey

Strauss et al. 2015. Cities and the Environment: Eight Years of Urban Ecology Research and Practice. *Cities and the Environment (CATE)*: Vol. 8: Iss. 2, Article 23. Available at: <http://digitalcommons.lmu.edu/cate/vol8/iss2/23>

Tanner, C.J., et.al. 2014. Urban ecology: advancing science and society. *Front Ecol & Environ* 12(10): 574-581

Week #3 January 23 – Urban Patch Dynamics – readings from last year – may change

Grove JM et al. 2015. *The Baltimore School of Urban Ecology: Space, Scale and Time for the Study of Cities*. Yale Press, Chap 3, 38-76.

Marshall V. 2013. Patch Reflection. *The Nature of Cities*. www.thenatureofcities.com/2013/04/14/aerial-reflection-for-urban-ecology/. Accessed 19 Jan. 2017.

Avins, M. 2013. Baltimore’s Forest Patches: Emerald Assets for Ecosystem Services. 34p. Baltimore Green Space <http://baltimoregreenspace.org/downloads/ForestPatchesWeb.pdf>

Cadenasso M, Pickett STA, Schwarz K. 2007. Spatial heterogeneity in urban ecosystems: reconceptualizing land cover and a framework for classification. *Frontiers in Ecology and the Environment* 5: 80-88.

Week #4 January 30

Grove JM et al. 2015. The Baltimore School of Urban Ecology: Space, Scale and Time for the Study of Cities. Yale Press, Chap 4, 77-112.

Query, T. (2017, Dec 21). Shifting the paradigm: art and ecology unite! The Nature of Cities. Retrieved from <https://www.thenatureofcities.com/2017/12/21/shifting-paradigm-art-ecology-unite/>

Shwartz, A., Turbé, A., Simon, L., & Julliar, R. (2014). Enhancing urban biodiversity and its influence on city-dwellers: an experiment. *Biological Conservation*, 171, 82-90.

Niemelä, J. 2014. Ecology of urban green spaces: The way forward in answering major research questions. *Landscape and Urban Planning* 125: 298-303

Epstein G, Vogt JM, Mincey SK, Cox M, **Fischer BC** (2013) Missing ecology: Integrating ecological perspective with the social-ecological systems framework. *International Journal of the Commons*, 7(2) 432-453. Awarded the 2013 Ostrom Memorial Award for Most Innovative Paper in IJC.

Vogt JM, Epstein GB, Mincey SK, Fischer BC, McCord P. 2015. Putting the “E” in SES: unpacking the ecology in the Ostrom social-ecological system framework. *Ecology and Society* 20.

Week #5 February 6

Grove JM et al. 2015. The Baltimore School of Urban Ecology: Pixels, Plots and Parcels: Data Issues and Strategies. Yale Press, Chap 5, 113-143.

Cook, W. M., Casagrande, D. G., Hope, D., Groffman, P. M. and Collins, S. L. (2004), Learning to roll with the punches: adaptive experimentation in human-dominated systems. *Frontiers in Ecology and the Environment*, 2: 467–474.

Hampton, S. E., C. A. Strasser, J. J. Tewksbury, W. K. Gram, A. E. Budden, A. L. Batcheller, C. S. Duke, and J. H. Porter. (2013). Big data and the future of ecology. *Frontiers in Ecology and the Environment*. 11(3): 156-162.

https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.highlight/abstract/457/report/F Final Report: A Hierarchical Patch Dynamics Approach to Regional Modeling and Scaling EPA Grant Number: R827676

Stefanov, William L. “Remote Sensing of Urban Ecology at the Central Arizona-Phoenix Long Term Ecological Research Site.” ALN No. 51: Stefanov: RS and Urban Ecology at CAP LTER Site, Arid Lands Newsletter, June 2002.

Week #6 February 13

Grove JM et al. 2015. The Baltimore School of Urban Ecology: Cholera in London and Urban Tree Canopy in Baltimore: Linking Science and Decision Making Through Patch Dynamics. Yale Press, Chap 6, 144-171.

Cooper, G., Liberti, A., & Asch, M. (2016). Replanting Durham's Urban Forest. Pages 39-45.

Nodjimbadem, Katie. “The Racial Segregation of American Cities Was Anything But Accidental.” Smithsonian.com, Smithsonian Institution, 30 May 2017.

<https://dukespace.lib.duke.edu/dspace/handle/10161/11899> --> Megan

https://ac.els-cdn.com/S0169204614000310/1-s2.0-S0169204614000310-main.pdf?_tid=6007c1ca-0d0b-11e8-b6b0-00000aab0f6b&acdnat=1518120503_a8f0865bc47c77d011ddeeca1a9b456d -- Mary

<https://www.smithsonianmag.com/history/how-federal-government-intentionally-racially-segregated-american-cities-180963494/> -- Joanna

<file:///C:/Users/bufische/Desktop/Unhealthy%20Landscapes.pdf> - Robert

Week #7 February 20

Grove JM et al. 2015. The Baltimore School of Urban Ecology: Metacities and an Urban Land Ethic. Yale Press, Chapter 7, 172-192.

O'Sullivan, F. *Paris Plans a Suburban Forest Five Times the Size of Central Park*. CityLab, 2018.
Wagner, J. *The Land Ethic Evolved*. Center for Humans and Nature.

McGrath, B., Marshall, V. (2009). New patterns in urban design. *Architectural Design* 79(6): 48–53.

McGrath, B.; Pickett, S.T.A. The Metacity: A Conceptual Framework for Integrating Ecology and Urban Design. *Challenges* 2011, 2, 55-72.

Week #8 February 27 – Urban Birds

Dale, S. (2018). Urban bird community composition influenced by size of urban green spaces, presence of native forest, and urbanization. *Urban Ecosystems*, 21, 1-14.

Dowling, J.L., et al. (2011). Comparative Effects of Urban Development and Anthropogenic Noise on Bird Songs. *Behavioral Ecology*.

Hager et al. (2017). Continent-wide analysis of how urbanization affects bird-window mortality in North America. *Biological Conservation* 212: 209-215.

Clucas, B., J. Marzluff. “Attitudes and Actions toward Birds in Urban Areas: Human Cultural Differences Influence Bird Behavior.” *The Auk*, vol. 129, no. 1, 2012, pp. 8–16., doi:10.1525/auk.2011.11121.

Hostetler, M. “A Matter of Scale: Connecting Human Design Decisions with Decisions Made by Wildlife.” *The Nature of Cities*, The Nature of Cities, 15 Jan. 2014, www.thenatureofcities.com/2014/01/15/a-matter-of-scale-connecting-human-decisions-with-decisions-made-by-wildlife/.

Week #9 March 6 - Book review presentations

March 12-16 Spring Break

Week #10 March 20 – Urban Ecosystem Health

Maintaining Functioning Urban Ecosystems Can Significantly Improve Human Health and Well-Being

Kathryn Campbell, Victoria. <https://www.thenatureofcities.com/2012/11/07/maintaining-functioning-urban-ecosystems-can-significantly-improve-human-health-and-well-being/>

Grimm, N., et al. (2008). Global Change and the Ecology of Cities. *Science*. Vol 319, pgs 756 – 760.

Alberti, M (2010). Maintaining ecological integrity and sustaining ecosystem function in urban areas. *Current Opinion in Environmental Sustainability* 2: 178-184.

Su, M. et. al (2012). Urban Ecosystem Health Assessment and Its Application in Management: A Multi-Scale Perspective. *Entropy* 15(1): 1-9.

Week #11 March 27 – Urban Wetlands

Ehrenfeld, J. G. (2000). Evaluating wetlands within an urban context. *Ecological Engineering*. 15: 253-265.

Antos et al. (2006) Unauthorised human use of an urban coastal wetland sanctuary: Current and future patterns. *Landscape and urban planning*.

Macintosh, E. (2018). Sponge Cities – How Urban Wetlands Reduce Flood Risk. Metamag – European Environmental Bureau. <https://metamag.org/2018/02/08/sponge-cities-how-urban-wetlands-reduce-flood-risk/>

Amerasinghe, P., Dahm, M. (2018) 15 Ways Wetlands Are Vital for Cities, Food, and People – A Photo Essay from Sri Lanka. CGIAR – Water, Land and Ecosystems <https://wle.cgiar.org/thrive/photo-stories/15-ways-wetlands-are-vital-cities-food-and-people-%E2%80%93-photo-essay-sri-lanka>

Hettiarachchi M., K. Athukorale, S. Wijekoon, A. Alwis, (2014) "Urban wetlands and disaster resilience of Colombo, Sri Lanka", *International Journal of Disaster Resilience in the Built Environment*, Vol. 5 Issue: 1, pp.79-89, <https://doi.org/10.1108/IJDRBE-11-2011-0042>

Week #12 April 3 – B'ton Panel – See bios of four visitors

Ambrey, C., Baker, D., Bryne, J., & Matthews, T. 2016. "Here's How Green Infrastructure can Easily be Added to the Urban Planning Toolkit" [Web Blog post]. Retrieved March 30, 2018, from <http://theconversation.com/heres-how-green-infrastructure-can-easily-be-added-to-the-urban-planning-toolkit-57277>.

Arosemena, G. (2017, September 10). The Sustainability Challenge of Feeding Cities [Web log post]. Retrieved March 29, 2018, from <https://www.thenatureofcities.com/2017/09/10/sustainability-challenge-feeding-cities/>

Article: http://fes.forestry.oregonstate.edu/sites/fes.forestry.oregonstate.edu/files/PDFs/Tynon2014_JPRA.pdf

Burg, N. (2015, July 28). What we've lost: the community impact of invasive species. *Model D Media*. Retrieved from <http://www.modeldmedia.com/features/DNR-What-Weve-Lost-072815.aspx>

Week #13 April 10 – Urban Carnivores

Athreya V, Odden M, Linnell JDC, Krishnaswamy J, Karanth U (2013) Big Cats in Our Backyards: Persistence of Large Carnivores in a Human Dominated Landscape in India. *PLoS ONE* 8(3): e57872. doi:10.1371/journal.pone.0057872

Weckel, M, Wincorn A (2016). Urban conservation: The northeastern coyote as a flagship species. *Landscape & Urban Planning*.

Gibbens S. (2018). How City-Dwelling Leopards Improve Human Health. *National Geographic*. Retrieved from: https://news.nationalgeographic.com/2018/03/mumbai-leopards-sanjay-gandhi-national-park-stray-dogs-rabies-spd/?utm_source=facebook.com&utm_medium=referral

Heimbuch J. (2017). Navigating Coexistence with Urban Coyotes. *Urban Coyote Initiative*.

Bateman PW & Fleming PA (2012). Big city life: carnivores in urban environments. *Journal of Zoology*, 287, 1-23.

"Strangers in Paradise" Podcast by RadioLab, <http://www.radiolab.org/story/stanger-paradise/>

Week #14 April 17 – Urban Streams

Sun, G. & Caldwell, P. (2015). Impacts of Urbanization on stream water quantity and quality in the United States. *Water Resources Impact* 17:1

McKenna, John. 2017. 'Daylighting'- the new trend that's transforming cities. *World Economic Forum*. Retrieved from: <https://www.weforum.org/agenda/2017/09/daylighting-is-a-new-trend-that-s-transforming-cities/>

Christensen, J. (2018, February 20). Can the L.A. River Avoid 'Green Gentrification'? *City Lab*. Retrieved April 15, 2018, from <https://www.citylab.com/equity/2018/02/can-the-la-river-avoid-green-gentrification/553613/>

<https://news.nationalgeographic.com/news/2010/05/100517-fish-urban-river-restoration-water/>

<https://www.citylab.com/equity/2015/08/the-hidden-health-dangers-of-buried-urban-rivers/400442/>

<https://www.thenatureofcities.com/2015/03/17/daylighting-and-restoring-urban-streams-ponds-and-wetlands-can-provide-huge-ecological-and-social-benefits-are-such-restorations-worth-it-what-are-the-pitfalls-how-can-we-demonstrate-these-ben/>

Week #15 April 24 - Research Paper Presentations, discuss final Reflections to Burney after Semester.