

Upcoming Events

FES Seminar Lecture Series: Amity Doolittle “Sanitary Reform and New Haven’s Urban Landscape: an Environmental History of Beaver Ponds Park, 1880-1920”

12:00-1:00, Wednesday, Apr 11. Burke Auditorium, Kroon Hall.



Through the examination of two social movements—the Sanitarian Reform Movement and the City Beautiful Movement—this talk will explore New Haven’s environmental history in the late 1800s and early 1900s. At this time different notions about science, hygiene and a healthy city influenced the shape of the urban landscape.

At one point in time, scientists and sanitarians believed that urban parks could create refuges of pure air, open ventilation and sunshine would also cure the moral corruption of the poor, immigrant and laboring classes. This combination of scientific and cultural beliefs about the links between the environment and human health and morality resulted in paradoxical “sanitary” actions in city planning.

F&ES Masters Student Research Colloquium 2012

Friday, April 13. Kroon Hall – Burke Auditorium

8:00 am	Continental Breakfast
8:30 am	Opening Remarks: Associate Dean James Saiers
8:45 am	Session 1: People and the Managed Landscape
10:30 am	Break
10:45 am	Session 2: Climate, Energy and Technology
12:15 pm	Lunch and Poster Session
1:30 pm	Session 3: Forest Dynamics and Plant Physiology
3:15 pm	Break
3:30 pm	Session 4: Ecosystem Health and Biodiversity
5:15 pm	Closing Remarks
5:30 pm	Reception, Awards Ceremony, and TGIF

Journal Publications

The impact of heat waves on mortality in 7 major cities in Korea.

Authors: Ji-Young Son, Jong-Tae Lee, G. Brooke Anderson, Michelle L. Bell

Published: 2012, Environmental Health Perspectives 120(4), pp 566-571.

Abstract: Background: Understanding the health impacts of heat waves is important, especially given anticipated increases in the frequency, duration, and intensity of heat waves due to climate change.

Objectives: We examined mortality from heat waves in seven major Korean cities for 2000 through 2007 and investigated effect modification by individual characteristics and heat wave characteristics (intensity, duration, and timing in season).

Methods: Heat waves were defined as ≥ 2 consecutive days with daily mean temperature at or above the 98th percentile for the warm season in each city. We compared mortality during heat-wave days and non-heat-wave days using city-specific generalized linear models. We used Bayesian hierarchical models to estimate overall effects within and across all cities. In addition, we estimated effects of heat wave characteristics and effects according to cause of death and examined effect modification by individual characteristics for Seoul.

Results: Overall, total mortality increased 4.1% [95% confidence interval (CI): -6.1%, 15.4%] during heat waves compared with non-heat-wave days, with an 8.4% increase (95% CI: 0.1%, 17.3%) estimated for Seoul. Estimated mortality was higher for heat waves that were more intense, longer, or earlier in summer, although effects were not statistically significant. Estimated risks were higher

for women versus men, older versus younger residents, those with no education versus some education, and deaths that occurred out of hospitals in Seoul, although differences among strata of individual characteristics were not statistically significant. Conclusions: Our findings support evidence of mortality impacts from heat waves and have implications for efforts to reduce the public health burden of heat waves.

Implementing REDD– Lessons from Analysis of Forest Governance

Authors: Peter Kanowski, Constance McDermott and **Benjamin Cashore**

Published: 2011, Special Issue, "Governing and Implementing REDD+", Esteve Corbera, Heike Schroeder, Oliver Springate-Baginski (eds). Environmental Science and Policy, Vol. 14; pp 111-117.

Abstract: The anticipated benefits and co-benefits of REDD+ generated considerable enthusiasm and momentum prior to the Copenhagen Climate Change Conference, and the lack of agreement of a global mechanism for REDD+ at that Conference generated corresponding disappointment. However, experience from earlier forest-related initiatives, and from recent research in environmental and forest governance, suggest ways forward for REDD+ even in the absence of a post-2012 climate agreement. Comparative studies reveal that forest-rich developing countries already have formal forest management requirements that are at least as demanding as those of industrialised countries, and that poor implementation of these requirements is the key constraint to achieving forest conservation and sustainable forest management goals. Experience suggests that mechanisms that focus on enabling the implementation of these already-agreed requirements, and that draw from the lessons of forest certification as well as from PES schemes, are most likely to deliver positive outcomes for both forests and local stakeholders. Together, these lessons suggests that progress can be made towards the REDD+ outcomes envisaged by the Copenhagen Accord by supporting implementation of existing national and sub-national forest policies in ways that are consistent with the principles of good forest governance.

Drought is a recurring challenge in the Middle East

Authors: David Kaniewski, Elise Van Campo, **Harvey Weiss**

Published: 2012, Proceedings of the National Academy of Sciences, (PNAS) March 6, 2012 vol. 109 no. 10 pp 3862-3867. DOI: 10.1073/pnas.1116304109

Abstract: Climate change and water availability in the Middle East are important in understanding human adaptive capacities in the face of long-term environmental changes. The key role of water availability for sedentary and nomad populations in these arid to semiarid landscapes is understood, but the millennium-scale influence of hydrologic instability on vegetation dynamics, human occupation, and historic land use are unknown, which has led to a stochastic view of population responses and adaptive capacities to precipitation anomalies. Within the time-frame of the last two global climate events, the Medieval Climate Anomaly and the Little Ice Age, we report hydrologic instability reconstructed from pollen-derived climate proxies recovered near Tell Leilan, at the Wadi Jarrah in the Khabur Plains of northeastern Syria, at the heart of ancient northern Mesopotamia. By coupling climate proxies with archaeological-historical data and a pollen-based record of agriculture, this integrative study suggests that variability in precipitation is a key factor on crop yields, productivity, and economic systems. It may also have been one of the main parameters controlling human settlement and population migrations at the century to millennial timescales in the arid to semiarid areas of the Middle East. An abrupt shift to drier conditions at ca. AD 1400 is contemporaneous with a change from sedentary village life to regional desertion and nomadization (sheep/camel pastoralists) during the preindustrial era in formerly Ottoman realms, and thereby adds climate change to the multiple causes for Ottoman Empire "decline."

Book and Book Chapter Publications

Book Chapter: The Forest Stewardship Council

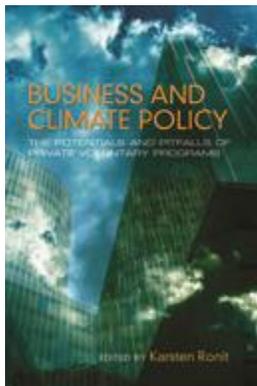


Author: Graeme Auld and **Benjamin Cashore**

Published: 2012, Business Regulation and Non-State Actors: Whose Standards? Whose Development? Peter Utting, Darryl Reed, Ananya Mukherjee-Reed (eds), Routledge: London.

This volume assesses the achievements and limitations of a new set of non-state or multistakeholder institutions that are concerned with improving the social and environmental record of business, and holding corporations to account. It does so from a perspective that aims to address two limitations that often characterize this field of inquiry. First, fragmentation: articles or books typically focus on one or a handful of cases. Second, the development dimension: what does such regulation imply for developing countries and subaltern groups in terms of well-being, empowerment and sustainability? This volume examines more than 20 initiatives or institutions associated with different regulatory and development approaches, including the business-friendly corporate social responsibility (CSR) agenda, “corporate accountability ” and “fair trade” or social economy.

Book Chapter: The Role of Private Voluntary Climate Programs Affecting Forests: Assessing their Direct and Intersecting Effects



Authors: Laura Bozzi, **Benjamin Cashore**, Kelly Levin and Constance McDermott

Published: 2012, Business and Climate Policy: The Potentials and Pitfalls of Private Voluntary Programs, Karsten Ronit (ed), United Nations University Press.

ISBN-10: 92-808-1214-9

ISBN-13: 978-92-808-1214-5

Climate change has become one of the most important and challenging global policy fields. Attention has primarily focused on the successes and failures of states and intergovernmental organizations but many more actors are involved and contribute to solutions. Business, often seen as spurring climate change, harbours a lot of potential for problem solving. Today, a rich variety of *private voluntary programs* address climate change.

Private voluntary programs are *private* in the sense that they are initiated by and made up of businesses, *voluntary* in the sense that businesses are free to join or leave them, and *programs* in that a variety of formal rules, resources and bodies are often established to administer and evaluate the schemes. *Business and Climate Policy* assesses the potentials and pitfalls of existing private voluntary programs. The contributors evaluate how effectively different programs meet public and private goals at the national and international levels, and across industries. The lessons learned presented in this book can help to design new programs and improve those in existence. Such lessons learned are relevant not only within climate policy, but also within the many other policy fields in which private voluntary programs are active.

Research Spotlight

Stefan Renckens is awarded NSF Doctoral Dissertation Research Grant



What do biofuels, fisheries, fair trade, and organics have in common? They are subject to environmental and social regulation both by public policies and by private certification agencies. Yet the relationship between public and private governance has not been well-studied as it applies to environmental regulations.

Stefan Renckens, a 4th year Ph.D. candidate, was awarded the NSF grant for his doctoral research with Ben Cashore as his advisor, to study how different regulatory institutions interact. His doctoral research focuses on the interaction between EU public policy and private environmental and social regulation.

Between 2003 and 2008, Renckens worked as a researcher and teaching assistant at the Political Science department of the University of Leuven, where he became interested in private governance institutions. In the fall of 2007, he came to Yale FES as a visiting researcher to study certification programs with Ben Cashore and he was admitted to the Ph.D. program in 2008. While developing his perspective on private certification, he found there was little research on how private certification agencies interact with public policy. For instance, as Renckens interviewed decision-makers who develop policy for organic agriculture and fisheries, he found they know very little about each other's work. Furthermore, public policy sometimes incorporates guidelines originally developed by private certifiers— for example in forest management practices and in developing biofuel standards—yet very little research exists for understanding the process by which these policies influence and inform one another.

Being from Belgium, Renckens is interested in studying the interaction between private and public regulation in the European Union (EU). His dissertation project examines the following research question: Why has the EU responded to existing private environmental and social regulation in different issue areas in diverse regulatory ways? Exploring the EU's response in four issue areas (organic agriculture, biofuels, fisheries, and fair trade) will help explain why in some cases the EU has responded strongly by developing its own public certification program, while in other cases it has decided not to intervene at all, or only in a very limited way.

The main contribution of his dissertation is its focus on an underexplored dependent variable, and its potential policy implications. Renckens hopes that his research will help to understand the regulatory responses of public authorities to private environmental and social regulation and will contribute to generating policy relevant knowledge on how public authorities can attain a better integration of public and private policy instruments. Furthermore, it is hoped that this research will generate useful information for initiators of private regulatory programs regarding their design and functioning, resulting in improved policy instruments.

Renckens holds an MPhil from Yale, and MA degrees in Political Science (2002) and Conflict and Peace Studies (2005), and a Complementary Degree in Economics (2003), all from the University of Leuven in his native Belgium. At the Political Science Department of the University of Leuven, he worked as a research and teaching assistant between 2003 and 2006, and as a research fellow of the Flemish Research Foundation (FWO) between 2006 and 2008. As a fellow of the Belgian American Educational Foundation he was a visiting researcher at Yale in the fall of 2007 and at the University of California, Berkeley in the spring of 2008.

- Alisa May

Presentation Award

Charissa Rujanavech (MEM '13) wins University Award at Conference



Charissa Rujanavech (MEM '13) attended the Conference of Earth & Energy Research hosted by the Colorado School of the Mines in Golden, CO on March 28-29 and gave a presentation entitled "Life Cycle Assessment of Charcoal with Cogeneration in Brazil." This research built on the final project Charissa Rujanavech and Howard Chang (MBA/MEM '12) completed for the fall 2011 Life Cycle Assessment Practicum course. The trip was funded by the Kurihara Fellowship and Yale's Center for Industrial Ecology and Charissa's presentation won the "University Award" for the best visiting university student presentation at the conference. The complete results from this project will also be published in the November 2012 special issue of *Energy and Sustainable Development* in collaboration with Professor Rob Bailis.

Grant Awards

Doctoral Dissertation Research in Political Science: Public and Private Regulatory Interactions: EU Responses to Private Environmental Regulation

Sponsor: National Science Foundation - Doctoral Dissertation Research Improvement Grant (Political Science)

PI: Stefan Renckens, Doctoral Student (Benjamin Cashore, advisor)

Amount: \$12,000

Project Summary: This dissertation project aims to understand how different regulatory institutions interact. It will more specifically examine the following research question: Why has the European Union (EU) responded to existing private environmental regulation in different issue areas in diverse regulatory ways? By conducting in-depth, semi-structured interviews during a multiple-month research visit to Brussels, this research project will gather original data from EU officials and decision makers, EU-level and national interest and advocacy groups, representatives from private environmental regulatory programs, journalists and academics. These data will be complemented with data on the decision making processes gathered during desk research and from notes and documents gathered from interviewees and experts. Through careful process-tracing the aim is to identify the causal mechanisms and processes that can explain the observed variation in EU regulatory responses. Conclusions will be based on both within-case analysis and cross-case comparisons.

Managed White-tailed Deer hunts in Northeast National Wildlife Refuges: an analysis of decision-making, adaptive management, and stakeholder involvement

Sponsor: American Wildlife Conservation Foundation

PI: Catherine Doyle-Capitman (Susan Clark, advisor)

Amount: \$2,000

Project Summary: My research examines both the technical and social dimension of implementing public hunting programs in northeastern National Wildlife Refuges (NRWs) for the purpose of managing White-tailed Deer populations. While deer overpopulation has been associated with highly degraded ecological states, many refuge stakeholders are opposed to lethal management, especially in urban-proximate areas where management methods are highly visible. The aim of my study is to elucidate the decision processes used by four urban-proximate, northeastern NWRs in determining hunting to be the most appropriate and effectual means of controlling deer populations. I will also determine how these hunting programs are adapted and amended to contend with changing biological and social factors. Finally, I will determine how refuge and wildlife stakeholder opinions, concerns, and support are differentially weighted in management decisions. The product of this study will be a third-party analysis of how lethal wildlife management is designed and implemented on a federal land system and the degree to which management decisions support or implement public opinion.

NSF Graduate Research Fellowship Program (GRFP) – F&ES Awardees

Awarded Fellowships:

Cornelia Twining (Advisors: David Post and David Skelly) – “When does nutrient loading by anadromous fishes serve as an important driver of ecosystem function in freshwater systems?”

Lily Zeng (Advisor: Chad Oliver) – “Dai Holy Hills: Sanctuaries of Biodiversity in Xishuangbanna, southwest China”

Honorable Mention:

Max Lambert (Advisor: David Skelly) – “Feminized Male Frogs: Interactions between Competition and Pollution”

Dexter Locke (Advisor: Gabe Benoit) – “Neighborhoods as Urban Socio-ecological Patches: A Community Forestry Typology”

Adina Matisoff (Advisor: Amity Doolittle) – “More inclusive environmental and social governance within Chinese oil companies? Case studies from interactions with civil society in Peru”

Alexandra Neinast (Advisor: Eric Sargis) – “Integrative Analysis of the *Cercopithecus mitis* species group: Species Limits and Conservation Implications”