GE 535 – Global Land Conservation: Theory and Practice

Fall 2018

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Office Hours: Tue 11am – 12:30pm
Thu 1pm – 2:30pm

Time & Location
Tue / Thu, 3:30 – 4:45pm
Room: CAS 114B
Credits: 4

Course Description

This course offers an in-depth treatment of the theory and practice of international and domestic land conservation. Widespread concern for the loss of ecosystem services has led to the adoption of a wide range of conservation instruments that aim to influence human land use decisions. Implemented by public and private actors, these instruments vary in rationale, extent, effectiveness, cost, and impact. Whether you want to make a difference by proposing a new conservation instrument or by advocating for changes to an existing one, you need to understand how these instruments work in theory, how they are implemented in practice, and what impact they have on nature and people.

We will cover all major types of land conservation instruments, including regulatory (e.g. parks and land use zoning), "incentive/market-based" (e.g. conservation banking and direct payments), "integrated" (e.g. community forests and indigenous lands), and "supply chain" approaches (e.g. certification and commodity moratoria). We will start with a multi-scale overview of global drivers of ecosystem loss, their impacts on human wellbeing, and the emergence of responses at international, national, and local levels. We then examine each instrument in turn, covering its history, logic, global extent, involved and affected actors, costs and benefits, and linkages to other instruments. The course will also address important crosscutting issues, such as spatial prioritization, leakage, crowding-out, and strategic interactions. Case studies are drawn from policy instruments implemented in the US and around the world.

Course Objectives

After taking this course, you will be able to:

- **Synthesize** key issues in global and domestic land conservation for diverse audiences, including friends and family, public agencies, international donors, and the interested public.
- **Explain** how local decisions about land use affect both private and public benefits, and how they can be influenced through conservation instruments.
- **Identify** opportunities for action, develop proposals for new instruments, and pitch them to donors or political constituencies in writing and speaking.
- **Evaluate** conservation career pathways in governments, NGOs, donor agencies, foundations, and academia, examine their match with your interests, and identify the skill set that will give you an edge.

BU HUB Learning Outcomes

- **Social Inquiry**: you will learn to use key concepts from social and interdisciplinary sciences to analyze how land conservation works in theory and practice. This includes ways people attach value to conservation outcomes, as well as ways to describe, explain and predict human behavior to help inform projects and policy.
- **Oral/Signed Communication**: you will learn to craft and deliver responsible, considered and well-structured arguments through "problem pitches", the presentation of project proposals, career reflections, and summaries of readings.
- **Research and Information Literacy**: you will engage in self-directed research on the relevance of a conservation issue of your choice, identify potential solutions using a diverse range of information sources, and present results in consecutive steps. You will also research career opportunities using online databases, informational interviews, and data sharing within the class.

Prerequisites

Junior standing or consent of instructor

Instructional Methods and Assignments

This course is designed to help you think independently about "how to make a difference" in conservation, including your potential role in it. Much of your grade will be based on your ability a) to identify and characterize real-life problems in land conservation, b) to develop ideas for (project-size) instruments that might help bring about desired change, and c) to reflect on the budget, skills and information needed to implement such an instrument. You will not be evaluated on the goals you set yourself to achieve (e.g. save a species, protect local livelihoods, create a recreational experience). What matters is how you synthesize diverse sources of information and theory into a persuasive case on how to make a difference in the real world.

Project Proposal (50%)

Suppose a conservation donor, whose interests align with yours, has up to $5 million to spend. What should s/he invest in? You have four months to come up with a proposal. Your project can be academic/analytical, advocacy-based, focused on on-the-ground actions, or any combination of the above. To ensure proper guidance, feedback and advice, the project will be developed in several steps:

10% Problem Identification: a short summary of the issue (400-800 words)

5% Problem Pitch (2 min): persuade the general public (= the class) of the relevance of the issue and the potential of your proposed solution

25% Project Proposal (2500-3500 words): summarize the natural, economic, and social dimensions of the issue, identify knowledge and policy gaps, propose concrete changes, and estimate future impact based on available evidence.

10% Project Presentation (10 min): persuade the donor's board of directors (= the class) of the benefits of your project idea.

Career Reflection (20%)
Is working in conservation an attractive career choice? What skills will make you competitive for the position you want? Get your answers from conservation professionals and scout the market for available positions and skills in demand.

10% Informational Interview: contact two conservation professionals in positions you consider attractive. Learn about their career paths, tasks, skills, salary range for similar positions, benefits, challenges, and recommendations. Summarize insights in a short report (400-800 words) shared with the class.
10% Job Market Research: find advertisements for 10 conservation jobs you consider attractive. Summarize the job requirements in a short report (400-800 words) shared with the class, including pointers towards classes and activities that can help you meet these requirements.

Participation (30%)
Reading the required literature and participating in class discussion is crucial for a rewarding learning experience.

10% Summary of Reading: at the beginning of each class, one student provides a brief summary of the reading and facilitates a short group discussion. Students choose their preferred readings at the beginning of the course.
10% Reading Reflections: several readings come with questions to help students reflect on what they have read. Students will send short answers (<1 page) to the instructor at least 2 hours prior to class.
10% Attendance and in-class participation.

Course Materials
There is no textbook required for this class. All readings are available online or will be posted on the course website on Blackboard Learn.

Course Policies
Attendance: Attending lectures is mandatory. Chronic lateness and more than two absences will result in penalties in the participation component of your grade.

Religious Observances: Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please notify me as soon as possible so that the proper arrangements can be made. For details, consult http://www.bu.edu/chapel/religion/ and http://www.interfaithcalendar.org/

Assignment Completion & Late Work: Assignments are submitted online through Blackboard Learn. Assignments turned in late will result in penalties in the grade of your

assignment. If you anticipate difficulties due to documentable extenuating circumstances, please notify me as soon as possible.

Academic Conduct: Plagiarism, submitting the same work for more than one course, deliberately impeding the academic performance of others, and other forms of academic misconduct are serious offenses. Please read the university's Academic Conduct Code for further information about definitions, procedures, and sanctions.

- http://www.bu.edu/academics/policies/academic-conduct-code/
- http://www.bu.edu/cas/students/graduate/grs-forms-policies-procedures/academic-discipline-procedures/

Schedule

Day	**Topic**	**Readings** *italic: voluntary*
Tue 9/4	Introduction	*youtu.be/ATCIvO7N5Uk*
Thu 9/6	Overview I: global change & threats to ecosystem values	**Pimm et al. 2014**, *Foley et al. 2005, Brooks et al. 2006*
Tue 9/11	Overview II: global conservation actors and instruments	*Armsworth et al. 2012, Brockington & Scholfield 2010a, 2010b*
Thu 9/13	Framework: ecosystem services and implications for decisions and policy	**Fisher et al. 2009,** *2008***,** *Guerry et al. 2015*
Tue 9/18	Implementing conservation: trade-offs in conservation policy making	**Bruner et al. 2010,** *McShane et al. 2011*
Thu 9/20	Regulation I: public protected areas	**Watson et al. 2014,** *Meyer et al. 2012*
Tue 9/25	Regulation II: public protected areas: management and enforcement	**Robinson et al. 2010,** *Leverington et al. 2010*
Thu 9/27	Regulation III: private land use regulations	*Soares-Filho et al. 2014***,** *Nolte et al. 2017*
Tue 10/2	Incentives I: land acquisitions for conservation	*Nolte 2018, Land Trust Alliance 2016*
Thu 10/4	Incentives II: conservation easements & tax incentives	**Elkind 2017,** *Merenlender et al. 2004*
Tue 10/9	*No class (substitute Monday Columbus Day)*	-
Thu 10/11	Incentives IIIa: payments for env. services *Due: six job ads entered in online form* *Due: three requests for inf. interviews sent*	**Engel 2016,** *Salzman et al. 2018*
Tue 10/16	Incentives IIIb: payments for env. services	**Börner et al. 2017**, *Ferraro 2008*
Thu 10/18	Cap-and-trade: biodiversity offsets and conservation banking *Due: problem identification reports*	**Bull et al. 2013**, *Wissel & Wätzold 2010*

Tue 10/23	*Guest Speaker: Bob O'Connor, Director, Forest & Land Policy, MA EEA*	-
Thu 10/25	*Student presentations: problem pitches*	
Tue 10/30	Systematic conservation planning: prioritization in theory	*Wilson et al. 2009, Newburn et al. 2006*
Thu 11/1	Data for systematic conservation planning: remote sensing, species, and people *Due: all job market assignments (job ads & interview in form, informational interview report, job market report)*	**Rose et al. 2015***, Meyer et al. 2015*
Tue 11/6	*Workshop: job market research*	-
Thu 11/8	Systematic conservation planning in practice	*Pressey et al. 2013, Armsworth et al. 2006*
Tue 11/13	International: Green Aid & REDD+	**Waldron et al. 2013,** *Angelsen 2010*
Thu 11/15	Integrated I: alternative income generation, integrated cons. & development projects	**Muller & Albers 2004,** *Agrawal & Redford 2006*
Tue 11/20	Integrated II: local governance and community-based conservation	**Blaikie 2006,** *Agrawal & Gibson 1999, Agrawal 2001*
Thu 11/22	*No class (Thanksgiving)*	-
Tue 11/27	Supply chain approaches: certification & moratoria	**Lambin et al. 2018,** *Waldman & Kerr 2013*
Thu 11/29	Evaluation I: evaluation of conservation policies	**Ferraro 2009,** *Ferraro & Pattanayak 2006*
Tue 12/4	Evaluation II: analytical tools to assess the impacts of conservation policies	**Ferraro & Hanauer 2014,** *Margoluis et al. 2009*
Thu 12/6	Open Topic / Course Wrap-Up *Assignment due: project proposal*	-
Tue 12/11	*Student presentations: full projects (1-5)*	-
Thu 12/13	*Student presentations: full projects (6-10)*	-
Tue 12/18	*Student presentations: full projects (11-15)*	-

Readings

Agrawal, A. 2001. Common Property Institutions and Sustainable Governance of Resources. World Development **29**:1649–1672.

Agrawal, A., and C. C. Gibson. 1999. Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. World Development **27**:629–649.

Agrawal, A., and K. Redford. 2006. Poverty, Development, And Biodiversity Conservation: Shooting in the Dark? Wildlife Conservation Society, Bronx, NY.

Angelsen, A. 2010. Policies for reduced deforestation and their impact on agricultural production. Proceedings of the National Academy of Sciences of the United States of America **107**:19639–44.

Armsworth, P. R., G. C. Daily, P. Kareiva, and J. N. Sanchirico. 2006. Land market feedbacks can undermine biodiversity conservation. Proceedings of the National Academy of Sciences of the United States of America **103**:5403–5408.

Armsworth, P. R., I. S. Fishburn, Z. G. Davies, J. Gilbert, N. Leaver, and K. J. Gaston. 2012. The Size, Concentration, and Growth of Biodiversity-Conservation Nonprofits. BioScience **62**:271–281.

Blaikie, P. 2006. Is Small Really Beautiful? Community-based Natural Resource Management in Malawi and Botswana. World Development **34**:1942–1957.

Börner, J., K. Baylis, E. Corbera, D. Ezzine-de-Blas, J. Honey-Rosés, U. M. Persson, and S. Wunder. 2017. The Effectiveness of Payments for Environmental Services. World Development **96**:359–374.

Brockington, D., and K. Scholfield. 2010a. The work of conservation organisations in sub-Saharan Africa. The Journal of Modern African Studies **48**:1.

Brockington, D., and K. Scholfield. 2010b. Expenditure by conservation nongovernmental organizations in sub-Saharan Africa. Conservation Letters **3**:106–113.

Brooks, T. M., R. A. Mittermeier, G. A. B. da Fonseca, J. Gerlach, M. Hoffmann, J. F. Lamoreux, C. G. Mittermeier, J. D. Pilgrim, and A. S. L. Rodrigues. 2006. Global biodiversity conservation priorities. Science (New York, N.Y.) **313**:58–61.

Bruner, A., E. T. Niesten, and R. E. Rice. 2010. Misaligned Incentives and Trade-Offs in Allocating Conservation Funding. Pages 197–214 in N. Leader-Williams, W. M. Adams, and R. J. Smith, editors. Trade-Offs in Conservation: Deciding What to Save. Blackwell Publishing.

Bull, J. W., K. B. Suttle, N. J. Singh, E. J. Milner-Gulland, and A. Gordon. 2013. Biodiversity offsets in theory and practice. Oryx **47**:369–380.

Elkind, P. 2017, December 20. The Billion-Dollar Loophole. Fortune.

Engel, S. 2016. The Devil in the Detail: A Practical Guide on Designing Payments for Environmental Services. International Review of Environmental and Resource Economics **/9**:131–177.

Ferraro, P. J. 2008. Asymmetric information and contract design for payments for environmental services. Ecological Economics **65**:810–821.

Ferraro, P. J. 2009. Counterfactual thinking and impact evaluation in environmental policy. New Directions for Evaluation **2009**:75–84. American Evaluation Association, Fairhaven, MA.

Ferraro, P. J., and M. M. Hanauer. 2014. Advances in Measuring the Environmental and Social Impacts of Environmental Programs. Annual Review of Environment and Resources **39**:495–517.

Ferraro, P. J., and S. K. Pattanayak. 2006. Money for nothing? A call for empirical evaluation of biodiversity conservation investments. PLoS Biology **4**:482–488.

Fisher, B. et al. 2008. Ecosystem Services and Economic Theory: Integration for Policy-Relevant Research. Ecological applications **18**:2050–2067.

Fisher, B., R. K. Turner, and P. Morling. 2009. Defining and classifying ecosystem services for decision making. Ecological Economics **68**:643–653. Elsevier B.V.

Foley, J. A. et al. 2005. Global Consequences of Land Use. Science **309**:570–574.

Guerry, A. D. et al. 2015. Natural capital and ecosystem services informing decisions: From promise to practice. Proceedings of the National Academy of Sciences **112**:7348–7355.

Lambin, E. F. et al. 2018. The role of supply-chain initiatives in reducing deforestation. Nature Climate Change **8**:109–116. Springer US.

Land Trust Alliance. 2016. The 2015 National Land Trust Census Report. Land Trust Alliance, Washington, DC.

Leverington, F., K. L. Costa, J. Courrau, H. Pavese, C. Nolte, M. Marr, L. Coad, N. Burgess, B. Bomhard, and M. Hockings. 2010. Management effectiveness evaluation in protected areas – a global study. Second edition 2010. University of Queensland, Brisbane, Australia.

Margoluis, R., C. Stem, N. Salafsky, and M. Brown. 2009. Design Alternatives for Evaluating the Impact of Conservation Projects. Pages 85–96 in M. Birnbaum and P. Mickwitz, editors. Environmental program and policy evaluation: Addressing methodological challenges. New Directions for Evaluation.

McShane, T. O. et al. 2011. Hard choices: Making trade-offs between biodiversity conservation and human well-being. Biological Conservation **144**:966–972. Elsevier Ltd.

Merenlender, A. M., L. Huntsinger, G. Guthey, and S. K. Fairfax. 2004. Land Trusts and Conservation Easements: Who Is Conserving What for Whom? Conservation Biology **18**:65–76.

Meyer, C., H. Kreft, R. Guralnick, and W. Jetz. 2015. Global priorities for an effective information basis of biodiversity distributions. Nature Communications **6**:1–8. Nature Publishing Group.

Meyer, S. R., M. L. Johnson, and R. J. Lilieholm. 2012. Land Conservation in the United States: Evolution and Innovation Across the Urban–Rural Interface. Urban–Rural Interfaces: Linking People and Nature **5775**:225–255.

Muller, J., and H. J. Albers. 2004. Enforcement, payments, and development projects near protected areas: how the market setting determines what works where. Resource and Energy Economics **26**:185–204.

Newburn, D. A., P. Berck, and A. M. Merenlender. 2006. Habitat and open space at risk of land-use conversion: Targeting strategies for land conservation. American Journal of Agricultural Economics **88**:28–42.

Nolte, C. 2018. Buying forests for conservation: contours of a global trend. Current Opinion in Environmental Sustainability **in review**.

Nolte, C., B. Gobbi, Y. le Polain de Waroux, M. Piquer-Rodríguez, V. Butsic, and E. F. E. F. Lambin. 2017. Decentralized Land Use Zoning Reduces Large-scale Deforestation in a Major Agricultural Frontier. Ecological Economics **136**:30–40. Elsevier B.V.

Pimm, S. L., C. N. Jenkins, R. Abell, T. M. Brooks, J. L. Gittleman, L. N. Joppa, P. H. Raven, C. M. Roberts, and J. O. Sexton. 2014. The biodiversity of species and their rates of extinction, distribution, and protection. Science (New York, N.Y.) **344**:1246752.

Pressey, R. L., M. Mills, R. Weeks, and J. C. Day. 2013. The plan of the day: Managing the dynamic transition from regional conservation designs to local conservation actions. Biological Conservation **166**:155–169. Elsevier Ltd.

Robinson, E., A. Kumar, and H. J. Albers. 2010. Protecting Developing Countries' Forests: Enforcement in Theory and Practice. Journal of Natural Resources Policy Research **2**:25–38.

Rose, R. A. et al. 2015. Ten ways remote sensing can contribute to conservation. Conservation Biology **29**:350–359.

Salzman, J., G. Bennett, N. Carroll, A. Goldstein, and M. Jenkins. 2018. The global status and trends of Payments for Ecosystem Services. Nature Sustainability **1**:136–144. Springer US.

Soares-Filho, B. et al. 2014. Cracking Brazil's Forest Code. Science **344**:363–364.

Waldman, K. B., and J. M. Kerr. 2013. Limitations of Certification and Supply Chain Standards for Environmental Protection in Commodity Crop Production. Annual Review of Resource Economics **6**:140404112315006.

Waldron, A., A. O. Mooers, D. C. Miller, N. Nibbelink, D. Redding, and T. S. Kuhn. 2013. Targeting global conservation funding to limit immediate biodiversity declines. Proceedings of the National Academy of Sciences **110**:1–5.

Watson, J. E. M., N. Dudley, D. B. Segan, and M. Hockings. 2014. The performance and potential of protected areas. Nature **515**:67–73.

Wilson, K. A., M. Cabeza, and C. J. Klein. 2009. Fundamental Concepts of Spatial Conservation Prioritization. Pages 16–27 in A. Moilanen, K. A. Wilson, and H. P. Possingham, editors. Spatial conservation prioritisation: quantitative methods and computational tools.

Wissel, S., and F. Wätzold. 2010. A conceptual analysis of the application of tradable permits to biodiversity conservation. Conservation Biology **24**:404–11.