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Title: Human-Environment Geography, Environmental Governance, Forest Ecology and Management

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Major	Human-Environment Geography
Degree	PhD
Course Title	
Type of Document	Qualifying Doctoral Exams Reading List
Year	2013

Pheakkdey Nguon
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Qualifying Doctoral Exams Reading List

Human-Environment Geography

Major Field

Description:

Two of the most prominent theoretical frameworks and conceptual models that address questions on human-environment interactions are rooted in two of the themes that are directly derived from the human-environment tradition in geography. They are: (i) Carl Sauer's Berkeley School of landscape morphology, which eventually lead to the birth of cultural and later political ecology and (ii) Harlan Barrows', later Gilbert White's Chicago School of resource geography, which several decades subsequently became one of the sources that eventually started sustainability science. Therefore, there are three sections in this reading list: (1) roots of and debates in human-environment geography, (2) political ecology, and (3) sustainability science. Overall, the list situates the major themes and debates in human-environment geography, followed by its two sub-fields that further address particular aspects of the human-environment relationships but from very different topical, theoretical and methodological perspectives. Nevertheless, each of these two sub-fields concentrates on questions around how nature/ environment shape human activity at different spatio-temporal scales and vice-versa. Examining questions around this theme is arguably one of the defining aspects of the geographic discipline that still poses great, enduring, intellectual, and scientific challenges, some of which are mutually connected to other disciplines within and outside of geography.

The first section of this reading list begins by tracing the emergence of and the debates in the human-environment tradition in the history of the discipline. It then provides discussions on the various explanations and approaches to understand the nature of this human-environment relationship. The second section follows with an in-depth overview of political ecology – a field that has very deep roots in human-environment geography. In general, political ecology provides an approach to understanding environmental issues that brings together political economy, human agency and material nature. Scholars from

several disciplines, including those outside geography, have used political ecology to frame studies of resources and management challenges that include climate change, conservation, environment and development, and land use. In short, this section traces the critical foundations of political ecology, its theoretical frameworks, debates, and key approaches.

Finally, the third section focuses on the concepts and methods associated with sustainability science. Similar to political ecology, this field is also derived from decades of research on human-environment interactions, and presumes that there is a reciprocal relationship between people and their physical environments. This section is organized around the three major domains of sustainability science. It starts with the history of sustainable development and its many concepts, followed by a section that focuses on the "whats, whys, and hows" of sustainability science. The distinctive knowledge created by sustainability science is use-inspired and, at its best, provides solutions to real-world, often place-based, problems encountered for the needs of a sustainability transition. Thus, the final part of this section centers on linking knowledge systems and policy action concerning global and local solutions to the needs of human well-being and the earth's life support systems.

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Qualifying Doctoral Exams Reading List

Outline (Total: 149 Readings)

Section I: Overviews of Human-Environment Study in Geography

1.1. Early Frameworks in American Human-Environment Geography

1.2. Berkeley School versus Chicago School

1. 3. Rethinking the Hyphen and Dissolving the Divide

1.3.1. Human Dimensions of Global Change

1.3.2. Hybrid Nature, Social Nature, and Socio-Nature(s)

1.3.3. New Ecology, Resilience, and Socio-Ecological Systems

Section II. Political Ecology

2.1. Overviews

2.2. Frameworks and Debates

2.3. Applied Political Ecology

2.3.1. Climate Change

2.3.2. Land Use Change and Deforestation

2.3.3. Livelihoods and Development

2.3.4. Environmental Narratives and History

2.3.5. Conservation and Gender

Section III. Sustainability Science

3.1. Overviews

3.2. Frameworks and Debates

3.3. Applied Sustainability Science

3.3.1. Analyzing causes, consequences and processes

3.3.2. Integrative Methods and Models

3.3.3. Knowledge into Action

Section I: Overviews of Human-Environment Study in Geography

Castree, N., D. Demeritt, and D. Liverman. 2009. Introduction: Making sense of environmental geography. In *A companion to environmental geography*, Castree, N., D. Demeritt, D. Liverman, and B. Rhoads (eds). Malden, MA: Wiley Blackwell, pp 1-15.

Demeritt, D. 2009. Geography and the promise of integrative environmental research. *Geoforum* 40: 127-129.

Grossman, L. 1977. Man-environment relationships in anthropology and geography. *Annals of the Association of American Geographers* 67: 126-144.

Kates, R. 1987. The human environment: The road not taken, the road still beckoning. *Annals of the Association of American Geographers* 77: 525-534.

Pattison, W. 1964. The four traditions of geography. *Journal of Geography* 63: 211-216.

Turner II, B. 1997. Spirals, bridges, and tunnels: Engaging human-environment perspectives in geography. *Ecumene* 4: 196-217.

Turner II, B. 2002. Contested Identities: Human-Environment Geography and Disciplinary Implication in a Restructuring Academy. *Annals of the Association of American Geographers* 92: 52-74.

1.1. Early Frameworks in American Human-Environment Geography

Butzer, K. 1989. Hartshorne, Hettner, and the Nature of Geography. In *Reflections on Richard Hartshorne's "The Nature of Geography".* Entriken, J. and S. Brunn (eds.). Washington, D.C., Association of American Geographers, pp: 35-52.

Davis, M. 1894. Physical geography as a university study. *Journal of Geology* 2: 66-100.

Geddes, P. 1898. The influence of geographical conditions on social development. *The Geographical Journal* 12: 580-587.

Hartshorne, R. 1958. The concept of geography as a science of space from Kant and Humboldt to Hettner. *Annals of the Association of American Geographers* 48: 97-108.

Lewthwaite, G. 1966. Environmentalism and determinism: a search for clarification. *Annals of the Association of American Geographers* 56: 1-23.

Lowenthal, D. 1953. George Perkings Marsh and the American geographical tradtion. *Geographical Review* 43: 207-213.

Peet, R. 1985. The social origins of environmental determinism. *Annals of the Association of American Geographers* 75: 309-333.

Semple, E. 1901. The Anglo-Saxons of the Kentucky mountains. *Geographical Journal* 17: 588-623.

1.2. Berkeley School versus Chicago School

Barrows, H. 1923. Geography as human ecology. *Annals of the Association of American Geographers* 13: 1-14.

Cosgrove, D and Duncan, J. 1993. Commentary on the Reinvention of Cultural Geography. *Annals of the Association of American Geographers* 83: 517-518.

Jackson, P. 1993. Berkeley and Beyond: Broadening the Horizons of Cultural Geography. *Annals of the Association of American Geographers* 83: 519-520.

Koelsch, W. 1969. The Historical Geography of Harlan H. Barrows. *Annals of the Association of American Geographers* 59: 632-651.

Price, M. and M. Lewis. 1993. The Reinvention of Cultural Geography. *Annals of the Association of American Geographers* 83: 1-17.

Sauer, C. 1925. The morphology of landscape. *University of California Publications in Geography* 2: 19-54.

Sauer, C. 1956. The agency of man on earth. In *Man's Role in Changing the Face of the Earth.* W. Thomas (ed.). Chicago: University of Chicago Press, pp: 49-70.

White, G. 1945. *Human Adjustment to Floods:* A geographical approach to the flood problem in the United States. Chicago: University of Chicago Press.

1. 3. Rethinking the Hyphen and Dissolving the Divide

1.3.1. Human Dimensions of Global Change

Adger, N. 2006. Vulnerability. *Global Environmental Change* 16: 268-281.

Burton, I., R. Kates and G. White. 1978. *The Environment as Hazard.* New York: Oxford University Press.

Cutter, S., T. Mitchell and M. Scott. 2000. Revealing the vulnerability of people and places: A case study of Georgetown County, South Carolina. *Annals of the Association of American Geographers* 90: 713-737.

Dow, K. 1992. Exploring differences in our common future(s): The meaning of vulnerability to global environmental change. *Geoforum* 23:417-36.

Hewitt, K. 1980. Book Review: The environment as hazard, by I. Burton, R. Kates and G. White. *Annals of the Association of American Geographers* 70: 306-311.

Kasperson, R. and J. Kasperson. 1996. The social amplification of risk. *Annals of the American Academic Policy and Social Science* 545: 95-105.

Kates, R. 1997. Human Adjustment. In *Ten Geographic Ideas that Changed the World.* S. Hanson (ed.). New Brunswick, NJ: Rutgers University Press: 87-107.

Kates, R., B. Turner II, and W. Clark. 1990. The great transformation. In *The earth as transformed by human action*. New York: Cambridge University Press, pp: 1-20.

Leichenko, R. and K. O'Brien. 2008. Environmental Change and Globalization: Double exposure. Oxford: Oxford University Press.

Liverman, D., B. Yarnal, and B. Turner II. 2004. The human dimensions of global environmental change. In *Geography in America at the dawn of the 21st Century*. Gaile, G. and C. Wilmott (eds.). New York: Oxford University Press, pp: 267-282.

Polsky, C., R. Neff and B. Yarnal. 2007. Building comparable global change vulnerability assessments: The vulnerability scoping diagram. *Global Environmental Change 17:* 472-485.

Schröter, D., C. Polsky and A. Patt. 2005. Assessing vulnerabilities to the effects of global change: An eight step approach. *Mitigation and Adaptation Strategies for Global Change* 10: 573-595.

Turner, B. II and P. Robbins. 2008. Land change science and political ecology: Similarities, differences, and implications for sustainability science. *Annual Reviews in Environment and Resources* 33: 1-22.

Watts, M. 1983. On the poverty of theory: Natural hazards reviewed in context. In *Interpretations of calamity: From the viewpoint of human ecology*. Hewitt, K. (ed.). Boston: Allen Unwin, pp: 231-262.

Wisner, B., P. Blaikie, T. Cannon and I. Davis. 2004. *At risk: natural hazards, people's vulnerability, and disasters.* London: Routledge.

1.3.2. Hybrid Nature, Social Nature, and Socio-Nature(s)

Castree, N. 2001. Socializing nature: Theory, practice, and politics. In *Social nature: Theory, practice, and politics*. Castree, N. and B. Braun (eds.). Malden, MA: Blackwell, pp: 1-22.

Demeritt, D. 2002. What is the 'social construction of nature'? A typology and sympathetic critique. *Progress in Human Geography* 26(6): 767-790.

Haraway, D. 1991. A cyborg manifesto: Science, technology, and socialist-feminism in the late twentieth century. In *Simians, cyborgs and women: The reinvention of nature.* New York: Routledge, pp: 149-181.

Smith, N. 2008. *Uneven development: Nature, capital and the production of space.* Athens: University of Georgia Press.

- Chapter 1: The Ideology of Nature
- Chapter 2: The Production of Nature
- Chapter 3: The Production of Space

Whatmore, S. 2002. Bewildering spaces In *Hybrid geographies: natures, cultures and spaces*. Thousand Oaks, California: The Sage Publication, pp: 1-59.

1.3.3. New Ecology, Resilience, and Socio-Ecological Systems

Berkes, F., J. Colding and C. Folke, (eds.). 2003. *Navigating Socio-ecological Systems: Building Resilience for Complexity and Change.* Cambridge: Cambridge University Press.

Biersack, A. 1999. From the "New Ecology" to the New Ecologies. *American Anthropologist* 101: 5-18.

Gunderson, L. H. and C. S. Holling, (eds.). 2001. *Panarchy: Understanding Transformations in Human and Natural Systems.* Washington, D.C.: Island Press.

Peterson, G. 2000. Political Ecology and Ecological Resilience: An Integration of Human and Ecological Dynamics. *Ecological Economics* 35: 323-336.

Zimmerer, K. 1994. Human geography and the "new ecology": the prospects of integration. *Annals of the Association of American Geographers* 4: 108-125.

Section II. Political Ecology

2.1. Overviews

Bassett, T. 1988. The Political Ecology of Peasant-Herder Conflicts in Northern Ivory Coast. *Annals of the Association of American Geographers* 78: 453-472.

Bebbington, A. J. 2012. Underground political ecologies: The second Annual Lecture of the Cultural and Political Ecology Specialty Group of the Association of American Geographers. *Geoforum* 43: 1152-1162.

Blaikie, P. 1985. *The political economy of soil erosion in developing countries.* New York: Longman Development Studies.

Escobar, A. 1996. Constructing Nature: Elements for a Post-structural Political Ecology. In *Liberation Ecologies.* R. Peet and M. Watts (eds.). London: Routledge, pp: 46-69.

Forsyth, T. 2002. *Critical political ecology: The Politics of Environmental Science*. New York: Routledge.

Robbins, P. 2011. *Political Ecology: A Critical Introduction*. Malden, MA: Blackwell.

Zimmerer, K. and T. Bassett. 2003. Approaching political ecology: society, nature, and scale in human-environment studies. In *Political ecology: an integrative approach to geography and environment-development studies.* New York: Guilford Press, pp: 1-29.

2.2. Frameworks and Debates

Blaikie, P. 2008. Epilogue: Towards a future for political ecology that works. *Geoforum* 39: 765-772.

Bridge, G. 2007. The Economy of Nature: from Political Ecology to the Social Construction of Nature. In *Compendium of Economic Geography*. Los Angeles: Sage Publications.

Escobar, A. 1999. After nature: Steps to an anti-essentialist political ecology. *Current Anthropology* 40:1-30.

Neumann, R. 2009. Political ecology: Theorizing scale. *Progress in Human Geography* 33: 398-406.

Peet, R., Robbins, P., and M. Watts. (eds.). 2012. Introduction: Global nature. In *Global political ecology*. New York: Routledge, pp: 1-50.

Rocheleau, D. 2008. Political ecology in the key of policy: From chains of explanation to webs of relation. *Geoforum* 39: 716-727.

Vayda, A. and Walters, B. 1999. Against Political Ecology. *Human Ecology* 27: 167-179.

Walker, P. 2005. Political ecology: where is the ecology? *Progress in Human Geography* 29: 73-82.

Walker, P. 2006. Political ecology: where is the policy? *Progress in Human Geography* 30: 382-395.

Walker, P. 2007. Political ecology: where is the politics? *Progress in Human Geography* 31: 373-369.

2.3. Applied Political Ecology

2.3.1. Climate Change

Bumpus A. and Liverman, D. 2012. Carbon colonialism? Offets, greenhouse gas reductions, and sustainable development. In *Global political ecology*. Peet, R., Robbins, P., and M. Watts. (eds.). New York: Routledge, pp: 203-225.

Liverman, D. 1990. Drought Impacts in Mexico: Climate, Agriculture, Technology and Land Tenure in Sonora and Puebla. *Annals of the Association of American geographers* 80: 49-72.

Liverman, D. 2009. Conventions of Climate Change: Constructions of danger and the dispossession of the atmosphere. *Journal of Historical Geography* 35:215-404.

Lovell, H and Liverman, D. 2010. Understanding carbon offset technologies. *New Political Economy* 15: 255-273.

Miller, C. A. 2004. Climate Science and the making of a Global Political Order. In Jasanoff, S. (ed.). States of Knowledge: the coproduction of science and the global order. New York: Routledge.

2.3.2. Land Use Change and Deforestation

Geist, H., and E. Lambin. 2002. Proximate causes and underlying driving forces of tropical deforestation. *Bioscience* 52 (2):143-150.

Jarosz, L. 1993. Defining and explaining tropical deforestation: Shifting cultivation and population growth in colonial Madagascar (1896-1940). *Economic Geography* 69: 366-379.

Klooster, D. 2006. Environmental certification of forests in Mexico: the political ecology of a nongovernmental market intervention. *Annals of the Association of American Geographers* 96:541-565.

Peluso, N. 1992. The political ecology of extraction and extractive reserves in East Kalimantan, Indonesia. *Development and Change* 23: 49-74.

Prudham, S. 2003. Taming trees: Capital, science, and nature in Pacific Slope tree improvement. *Annals of the Association of American Geographers* 93: 636-656.

2.3.3. Livelihoods and Development

Bebbington, A. 1999. Capitals and capabilities: A framework for analyzing peasant viability, rural livelihoods and poverty. *World Development* 27: 2021-2044.

Bebbington, A. 2000. Re-encountering development: livelihood transitions and place transformations in the Andes. *Annals of the Association of American Geographers* 90: 495-520.

Bebbington, A. and S. Batterbury. 2001. Transnational livelihoods and landscapes: political ecologies of globalization. *Ecumene* 8: 369-492.

Redclift, M. 2005. Sustainable development (1987-2005): An oxymoron comes of age. *Sustainable Development* 13: 212-227.

Scoones, I. 2009. Livelihood perspectives and rural development. *Journal of Peasant Studies* 36: 171-196.

2.3.4. Environmental Narratives and History

Batterbury, S. and A. Bebbington (eds.). 1999. Environmental histories, access to resources and landscape change. *Land Degradation and Development* 10(4).

Cronon, W. 1992. A Place for Stories: Nature, History, and Narrative. *Journal of American History* 78: 1347-1376.

Cronon, W. 1996. The Trouble with Wilderness: Or, Getting Back to the Wrong Nature. *Environmental History* 1**:** 7-28.

Fairhead, J. and M. Leach. 1995. False forest history, complicit social analysis – Rethinking some West African environmental narratives. *World Development* 23: 1023-1035.

Leach, M. and R. Mearns. 1996. Environmental Change and Policy. In *The Lie of the Land: Challenging Received Wisdom on the African Environment*. Oxford: James Curry, pp: 1-34.

2.3.5. Conservation and Gender

Nightingale, A. 2006. The nature of gender: work, gender, and environment. *Environment and Planning D: Society and Space* 24: 165-185.

Rocheleau, D., B. Thomas-Slayter and E. Wangari. (eds.). 1996. *Feminist political ecology: Global issues and local experiences*. New York: Routledge.

- Chapter 1: Gender and environment: A feminist political ecology perspective
- Chapter 13: Feminist Political Ecology: Crosscutting themes, theoretical insights, policy implications

Rocheleau, D. and L. Ross. 1995. Trees as tools, trees as text: Struggles over resources in Zambrana-Chacuey, Dominican Republic. *Antipode* 27: 407-428.

Schroeder, R. 1993. Shady practice: gender and political ecology of resource stabilization in Gambian garden/orchards. *Economic Geography* 69: 349-365.

Section III. Sustainability Science

3.1. Overviews

Bettencourt, L. and J. Kaur. 2011. Evolution and structure of sustainability science. *Proceedings of the National Academy of Sciences* 108: 19540-19545.

Clark, W. and N. Dickson. 2003 Sustainability Science: The emerging research program. *Proceedings of the National Academy of Sciences* 100: 8059-8061.

Holdren, J. 2008. Science and technology for sustainable well-being. *Science* 319: 424-434.

Kates, R., T. Parris, and A. Leiserowitz. 2005. What is sustainable development? *Environment* 47: 9-21.

Kates, R., W. Clark, et al. 2001. Sustainability Science. *Science* 292: 641-642.

Lubchenco, L. 1998. Entering the Century of the Environment: A New Social Contract for Science. *Science* 279: 491-497.

Parris, T. and R. Kates. 2003. Characterizing a sustainability transition: Goals, targets, trends and driving forces. *Proceedings of the National Academy of Sciences* 100: 8068-8073.

Raven, P. H. 2002. Science, sustainability, and the human prospect. *Science* 297: 954-958.

Stokes, D. 1997. *Pasteur's Quadrant: Basic Science and Technological Innovation.* Washington, DC: Brookings Institution Press.

Wilbanks, T. 1994. Sustainable development: A geographic perspective. *Annals of the Association of American Geographers* 84: 541-556.

World Bank, 2003. *World Development Report: Sustainable Development in a Dynamic World.* Washington, D.C.: The World Bank.

- Chapter 3: Institutions for Sustainable Development
- Chapter 9: Pathways to a Sustainable Future

3.2. Frameworks and Debates

Crutzen, P. and E. Stoermer. 2000. The 'Anthropocene'. *Global Change Newsletter* 41: 17-18.

Daily, G., T. Soderqvist, et al. 2000. The value of nature and the nature of value. *Science* 289: 395-396.

Hardin, G. 1968. The tragedy of the commons. *Science* 162: 1243-1248.

Leiserowitz, A., R. Kates, and T. Parris. 2006. Sustainability values, attitudes, and behaviors: A review of multinational and global trends. *Annual Review of Environment and Resources* 31: 413-444.

Liu, J., T. Dietz, et al. 2007. Complexity of coupled human and natural systems. *Science* 317: 1513 – 1516.

Millennium Ecosystem Assessment. 2005. Summary for decision makers. In *Ecosystems and Human Well-being: Synthesis*. Washington, D.C.: The Island Press, pp: 1-24.

Raskin, P., C. Electris, and R. Rosen. 2010. The century ahead: Searching for sustainability. *Sustainability* 2: 2626-2651.

Raudespp-Hearne, C., G. Peterson, et al. 2010. Untangling the environmentalist's paradox: Why is human well-being increasing as ecosystem services degrade? *Bioscience* 60: 576-589.

Schellnhuber, H., P. Crutzen, W. Clark, C. Martin and H. Hermann. 2004. *Earth Systems Analysis for Sustainability*. Cambridge, MA: MIT Press.

- Chapter 1: Science for Global Sustainability: Toward a New Paradigm
- Chapter 19: Institutions, Science and Technology in the Transition to Sustainability
- Chapter 20: Group Report: Sustainability

Turner, B. II, R. Kasperson, et al. 2003. A framework for vulnerability analysis in sustainability science. *Proceedings of the National Academy of Sciences* 100: 8074-8079.

White, L. Jr. 1967. The historical roots of our ecological crisis. *Science* 155: 1203-1207.

3.3. Applied Sustainability Science

3.3.1. Analyzing causes, consequences and processes

Dasgupta, S., A. Mody, and D. Wheeler. 1995. Environmental regulation and development: A cross-country empirical analysis. *Policy Research Working Paper 1448*. Washington, D.C.: World Bank.

Dietz, T., E. Ostrom, and P. Stern. 2003 The struggle to govern the commons S*cience*. 302: 1907-1912.

Kates, R., and T. Parris. 2003. Long-term trends and a sustainability transition. *Proceedings of the National Academy of Science* 100: 8062-8067.

Lebel, L., A. Contreras, S. Pasong, and P. Garden. 2004. Nobody knows best: Alternative perspectives on forest management and governance in Southeast Asia. *International Environmental Agreements: Politics, Law and Economics* 4: 111-127.

Lenton, T., H. Held, E. Kriegler, J. Hall, W. Lucht, S. Rahmstorf, and H. Schellnhuber. 2008. Tipping elements in the Earth's climate system. *Proceedings of the National Academy of Sciences* 105: 1786-1793.

Van Zeijl-Rozema, A., R. Corvers, R. Kemp, and P. Martens. 2008. Governance for sustainable development: A framework. *Sustainable Development* 16: 410-421.

2.3.2. Integrative Methods and Models

Janssen, M. and E. Ostrom. 2006. Empirically based, agent-based models. *Ecology and Society* 11: 37.

Lynam, T., W. de Jong, D. Sheil, T. Kusumanto, and K. Evans. 2007. A review of tools for incorporating community knowledge, preferences, and values into decision making in natural resources management. *Ecology and Society* 12: 5.

Mitchell, R., W. Clark, D. Cash and N. Dickson (eds). 2006. *Global Environmental Assessments: Information and Influence*. Cambridge, MA: MIT Press.

- Chapter 1: Evaluating the Influence of Global Environmental Assessments
- Chapter 2: Science or Salience: Building an Agenda for Climate Change
- Chapter 4: Whose Experts? The Role of Geographic Representation in Global Environmental Assessments
- Chapter 11: Information and Influence

National Research Council, Panel on Strategies and Methods for Climate-Related Decision Support. 2009. Effective decision support: Definitions, principles, and implementation. In *Informing Decisions in a Changing Climate*. Washington, D.C.: National Academies Press, pp: 33-69.

Ostrom, E. and H. Nagendra. 2006. Insights on linking forests, trees, and people from the air, on the ground, and in the laboratory. *Proceedings of the National Academy of Sciences* 103: 19224-19231.

York, R., E. Rosa, and T. Dietz. 2003. STIRPAT, IPAT and ImPACT: Analytic tools for unpacking the driving forces of environmental impact. *Ecological Economics* 46: 351-365.

Young, O., E. Lambin, et al. 2006. A portfolio approach to analyzing complex human-environment interactions: Institutions and land change. *Ecology and Society* 11: 31.

2.3.3. Knowledge into Action

Anderies, J., A. Rodriguez, M. Janssen, and O. Cifdaloz. 2007. Panaceas, uncertainty, and the robust control framework in sustainability science. *Proceedings of the National Academy of Sciences* 104: 15194-15199.

Bebbington, A. and J. Bury. 2009. Institutional challenges for mining and sustainability in Peru. *Proceedings of the National Academy of Sciences* 106:17296-17301.

Cash, D., W.Clark, et al. 2003. Knowledge systems for sustainable development. *Proceedings of the National Academy of Sciences* 100: 8086-8091.

Carpenter S., H. Mooney, et al. 2009. Science for managing ecosystem services: Beyond the Millennium Ecosystem Assessment. *Proceedings of the National Academy of Sciences* 106: 1305-1312.

Clark, W., J. Jäger, J. Eijndhoven, and N. Dickson (eds). 2001. *Learning to Manage Global Environmental Risks: The Social Learning Group*. Cambridge, MA: MIT Press.

- Chapter 1: Managing Global Environmental Change: An Introduction
- Chapter 9: Southern Skies: The Perception and Management of Global Environmental Risks in Mexico
- Chapter 16: Monitoring in the Management of Global Environmental Risks
- Chapter 21: Knowledge and Action: An Analysis of Linkages Among Management Functions for Global Environmental Risks
- Chapter 22: The Long-term Development of Global Environmental Risk Management: Conclusions and Implications for the Future

Folke, C., T. Hahn, P. Olsson, and J. Norberg. 2005. Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources* 30: 441-473.

Kriegler, E., B. O'Neill, S. Hallegatte, T. Kram, R. J. Lempert, R. H. Moss and T. Wilbanks. 2012. The need for and use of socio-economic scenarios for climate change analysis: A new approach based on shared socio-economic pathways. *Global Environmental Change* 22**:** 807-822.

Ostrom, E. 2007. A diagnostic approach for going beyond panaceas. *Proceedings of the National Academy of Sciences* 104: 15181-15187.

Ostrom, E. 2009. A general framework for analyzing sustainability of social-ecological systems. *Science* 325: 419-422.

Timmer, V. and C. Juma. 2005. Taking root: Biodiversity conservation and poverty reduction come together in the tropics. *Environment* 47: 24-44.

Van Kerkhoff, L. and L. Lebel. 2006. Linking knowledge and action for sustainable development. *Annual Review of Environment and Resources* 31: 445-477.

Watts, D. 2002. A simple model of information cascades on random networks. *Proceedings of the National Academy of Science* 99: 5766-5771.

Pheakkdey Nguon
Graduate School of Geography, Clark University
Qualifying Doctoral Exams Reading List

Environmental Governance

First Minor Field

Description:

This reading list stands at the interface of two broader strands of academic inquiry, governance theory and earth systems analysis. Selected readings are divided into three sections. The first section starts by investigating the theoretical potential and pitfalls of the way in which governance is conceptualized. Although it is not uniformly defined in the social sciences, in this list, governance refers to the ideas, practices and institutions through which decisions are determined. Therefore, this section of the list engages with diverse literatures to analyze the core elements in the architecture of governance theory. These include: institutions, interests and ideas.

The second section centers the focus of the list on environmental governance, a major topic in contemporary academic and policy domain. The need to focus on environmental governance is indisputable, given the increasingly rapid and diverse transformations of environments around the world at all scales by human activity and the many unintended consequences of such transformations. Therefore, the goal of this section is to explore how multiple scales and types of environmental governance intersect with each other. Readings selected for this section also deal with a host of exceedingly complex questions behind this simple notion of environmental governance. Questions such as: How do scholars theorize environmental governance and explain the progress and problems of such endeavor? What is meant by environmental governance? For what ends is the environment governed? How is environmental governance connected with other major trends in contemporary society?

The final section of this list focuses on one of the most imperative global environmental governance challenges: climate change. Climate change serves as an excellent case to understand the complexities of governing an environmental concern that requires the involvement of most academic disciplines at multiple spatial and temporal scales. The first part of this section provides an overview on the contemporary concerns and debates in global environmental governance. Specific to the governance of climate change, readings in the second part examine

the key issues, theoretical frameworks, and policy analyses that underlie the main negotiating tracks including those of targets and timetables for greenhouse gas emission reductions, the differentiation of responsibility among countries, the role of flexible mechanisms including carbon financing schemes.

Outline (Total: 87 Readings)

Section I: The architecture of governance theory

1. The key elements: Institutions, Interests and Ideas

Section II: Environmental governance

1. Theorizing environmental governance
2. Domains of environmental governance

    2.1. International agreements and regimes

    2.2. Civil society

    2.3. Market actors and mechanisms

    2.4. Information and consumer choice

    2.5. Communities and informal rules

    2.6. Discourses, governmentality and subject formation

Section III: Global environmental governance

1. Contemporary concerns and debates
2. Governing Climate Change

Section I: The architecture of governance theory

1. The key elements: Institutions, Interests and Ideas

Alcántara, C. H. de. 1998. Uses and abuses of the concept of governance. *International Social Science Journal* 155: 105–13.

Bebbington, A. 2007. Social capital and development studies II: can Bourdieu travel to policy? *Progress in Development Studies* 7: 155-162

Blyth, M. 2003. Structures Do Not Come with an Instruction Sheet: Interests, Ideas, and Progress in Political Science. *Perspectives on Politics* 1: 695-706.

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Crawford, S. and E. Ostrom. 1995. A Grammar of Institutions. *The American Political Science Review* 89: 582-600.

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Granovetter, M. 1983. The Strength of Weak Ties: a network theory revisited. *Sociological Theory* 1: 201-233.

Hall, P. 1997. The role of interests, institutions, and ideas in the comparative political economy of the industrialized nations. In *Comparative Politics: Rationality, Culture, and Structure*. Lichbach, M. and A. Zuckerman (eds) Cambridge: Cambridge University Press, pp. 174-208.

Kersbergen, K. van and F. van Waarden. 2004. 'Governance' as a bridge between disciplines: Cross-disciplinary inspiration regarding shifts in governance and problems of governability, accountability and legitimacy. *European Journal of Political Research* 43: 143–171.

Mahoney, J. and K. Thelen. 2011. *Explaining institutional change: ambiguity, agency, and power.* Cambridge: Cambridge University Press.

North, D. 1991. Institutions. *The Journal of Economic Perspectives* 5: 97-117.

Ostrom, E. 1990. *Governing the Commons: The Evolution of Institutions for Collective Actions.* Cambrdige: Camrbidge University Press.

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- Summary for Policy Makers
- Chapter 1: Institutions and Environmental Change: The Scientific Legacy of a Decade of the Institutional Dimensions of Global Environmental Change Research
- Chapter 3: Evaluating the Performance of Environmental Institutions: What to Evaluate and How to Evaluate it?
- Chapter 8: Contributing to the Science-Policy Interface: Policy Relevance of Finding on the Institutional Dimensions of Global Environmental Change

Section II: Environmental governance

1. Theorizing environmental governance

Adger, N. 2001. Scales of governance and environmental justice for adaptation and mitigation of climate change. *Journal of International Development* 13: 921-931.

Boykoff, M., Bumpus, A., Liverman, D., and Randalls, S. 2009. Theorizing the carbon economy: introduction to the special issue. *Environment and Planning A* 41: 2299 – 2304.

Bridge, G. 2008. Global production networks and the extractive sector: governing resource-based development. *Journal of Economic Geography* 8: 389-419.

Bulkeley, H. 2005. Reconfiguring environmental governance: towards a politics of scales and networks. *Political Geography* 24: 875-902.

Jonas, A. and G. Bridge. 2003. Governing nature: the re-regulation of resources, land use planning, and nature conservation. *Social Science Quarterly* 84: 958-962.

Liverman, D. 2004. Who governs, at what scale and at what price? Geography, environmental governance and the commodification of nature. *Annals of the Association of American Geographers* 94: 734-738.

2. Domains of environmental governance

2.1. International agreements and regimes

Bebbington, A., D. Lewis, S. Batterbury, E. Olson and S. Siddiqi. 2007. Of texts and practices: empowerment and organizational cultures in World Bank-funded rural development programmes. *Journal of Development Studies* 43: 597-621

Downie, D. 2004. 'Global environmental policy: governance through regimes.' In Axelrod et al. (eds.) *The Global Environment: Institutions, Law, and Policy*: 64-82.

Finnemore, M., and K. Sikkink. 1998. International norm dynamics and political change. *International Organization* 52: 887–917.

Mitchell, R. 2003. International environmental agreements. A survey of their features, formation and effects. *Annual Review of Environment and Resources* 28:429–461.

Tussie, D. 1999. The environment and international trade negotiations: Open loops in the developing world. *The World Economy* 22: 535–545.

Vogler, J. 2003. Taking institutions seriously: how regime analysis can be relevant to multilevel environmental governance. *Global Environmental Politics 3: 25-39.*

Young, O. 2011. Effectiveness of international environmental regimes: Existing knowledge, cutting-edge themes, and research strategies. *Proceeding of the National Academy of Sciences* 108: 19853-19860.

2.2. Civil society

Bebbington, A. and J. Farrington. 1993. Governments, NGOs and agricultural development: perspectives on changing inter-organizational relationships. *Journal of Development Studies* 29: 199-219.

Betsill, M., and E. Corell. 2001. NGO influence in international environmental negotiations: A framework for analysis. *Global Environmental Politics* 1: 65–85.

Jepson, P. 2005. Governance and accountability of environmental NGOs. *Environmental Science and Policy* 8: 515-524.

Keck, M., and K. Sikkink. 1998. *Activists beyond Borders: Advocacy Networks in International Politics*. Ithaca, N.Y.: Cornell University Press.

- Chapter 1: Transnational Advocacy Networks in International Politics
- Chapter 4: Environmental Advocacy Networks

McCormick, J. The role of environmental NGOs in international regimes. In Axelrod et al. (eds.) *The Global Environment: Institutions, Law, and Policy*: 83-102.

Mitlin, D., S. Hickey and A. Bebbington, 2007. Reclaiming Development? NGOs and the Challenge of Alternatives. *World Development* 35: 1699-1720

2.3. Market actors and mechanisms

Cashore, B. 2002. Legitimacy and the privatization of environmental governance: how non–state market–driven governance systems gain rule–making authority. *Governance* 15: 503-529.

Clapp, J. 2003. Transnational corporate interests and global environmental governance: negotiating rules for agricultural biotechnology and chemicals. *Environmental Politics* 12: 1-23.

Falkner, R. 2003. Private environmental governance and international relations: exploring the links. *Global Environmental Politics* 3: 72-87.

Gareau B. J., DuPuis E., 2009. From public to private global environmental governance: lessons from the Montreal Protocol's stalled methyl bromide phase-out. *Environment and Planning A* 41: 2305 – 2323.

Levy, D., and P. Newell. 2002. Business strategy and international environmental governance. *Global Environmental Politics* 2: 84–101.

Pattberg, P. 2005. The institutionalization of private governance: How business and non-profits agree on transnational rules. *Governance: An International Journal of Policy, Administration, and Institutions* 18: 589–610.

2.4. Information and consumer choice

Boer, J. de. 2003. Sustainability Labeling Schemes: The Logic of Their Claims and Their Functions for Stakeholders. *Business Strategy and the Environment* 12: 254-264.

Goodman, M. 2010. The mirror of consumption: Celebritization, developmental consumption and the shifting cultural politics of fair trade. *Geoforum* 41:104-116.

Klooster, D. 2010. Standardizing sustainable development? The Forest Stewardship Council's plantation policy review process as neoliberal environmental governance *Geoforum* 41: 117-129.

Mol, A. 2006. The environmental state and informational governance. *Nature and Culture* 1: 36-62.

Mutersbaugh, T. and Lyon, S. 2010. Transparency and democracy in certified ethical commodity networks. *Geoforum* 41: 27-32.

2.5. Communities and informal rules

Agrawal, A. and Chhatre, A. 2006. Explaining success on the commons: community forestry governance in the Indian Himalaya. *World Development*. 34: 149-166.

Agrawal, A. and C. Gibson. 1999. Enchantment and disenchantment: the role of community in natural resource conservation. *World Development* 17: 629-649.

Bebbington, A., L. Dharmawan, E. Farmi and S. Guggenheim, 2006. Local capacity, village governance and the political economy of rural development in Indonesia. *World Development* 34: 1958-1976.

Li, T. 2002. Engaging Simplifications: Community-Based Resource Management, Market Processes and State Agendas in Upland Southeast Asia. *World Development 30:* 265.

Ostrom, E. et al. 1999. Revisiting the commons: local lessons, global challenges. *Science* 284: 278-282.

Weber, E. 2000. A new vanguard for the environment: grass-roots ecosystem management as a new environmental movement. *Society and Natural Resources* 13: 237-259.

2.6. Discourses, governmentality and subject formation

Adger, N., *et al*. 2001. Advancing a political ecology of global environmental discourses. *Development and Change* 32: 681-715.

Agrawal, A. 2005. Environmentality: community, intimate government and the making of environmental subjects in Kumaon, India. *Current Anthropology* 46: 161- 181.

Dowling, R. 2010. Geographies of identity: climate change, governmentality and activism. *Progress in Human Geography* 34: 488-495.

Watts, M. 2004. Resource curse? Governmentality, oil and power in the Niger Delta, Nigeria. *Geopolitics* 9: 50-80.

Yeh, E. 2005. Green governmentality and pastoralism in Western China: converting pastures to grasslands. *Nomadic Peoples.* 9: 9-29.

Section III: Global environmental governance

1. Contemporary concerns and debates

Biermann, F. 2007. Earth system governance as a crosscutting theme of global change research. *Global Environmental Change* 17: 326-337.

Biermann, F., K. Abbott, S. Andresen, et al. 2012. Navigating the Anthropocene: Improving Earth System Governance. *Science* 335: 1306-1307.

DeFries, R., E. Ellis, et al. 2012. Planetary Opportunities: A Social Contract for Global Change Science to Contribute to a Sustainable Future. *Bioscience* 62: 603-606.

Galaz, V., F. Biermann, et al. 2012. 'Planetary boundaries' exploring the challenges for global environmental governance. *Current Opinion in Environmental Sustainability* 4: 80-87.

Liverman D. 1999. Geography and the Global Environment. *Annals of the Association of American Geographers* 89: 107-124.

Liverman, D. and Roman Cuesta R. 2008. Human interactions with the Earth system: People and pixels revisited. *Earth Surface Processes and Landforms* 33: 1458-1471.

Rockström, J., W. Steffen et al. 2009. A safe operating space for humanity. *Nature* 461: 472-475

Young, O. 2008. The Architecture of Global Environmental Governance: Bringing Science to Bear on Policy. *Global Environmental Politics* 8: 14-32.

2. Governing Climate Change

Abbott, K. and D. Gartner. 2011. The Green Climate Fund and the Future of Environmental Governance. *Earth System Governance Working Paper*, No.16.

Agarwal A. 2008. *The role of local institutions in adaptation to climate change*. Report to the World Bank.

Backstrand, K. 2008. Accountability of Networked Climate Governance: The Rise of Transnational Climate Partnerships. *Global Environmental Politics* 8: 74-102.

Baer P., Harte J., et al. 2000. Equity and Greenhouse Gas Responsibility. *Science* 289: 27-29.

Giddens, A. 2011. *The Politics of Climate Change*. Cambridge: Polity Press.

Gupta, J. 2009. Climate change and development cooperation: Trends and Questions. *Current Opinion in Environmental Sustainability* 1: 1-7.

Hepburn, C. and N. Stern. 2008. A new global deal on climate change. *Oxford Review of Economic Policy* 24: 259-279.

Liverman D. 2009. The geopolitics of climate change: avoiding determinism, fostering sustainable development. *Climatic Change* 96: 7-11.

Najam, A., S. Huq, and Y. Sokona. 2003. Climate negotiations beyond Kyoto. Developing country concerns and interests. *Climate Policy* 3: 221–231.

National Academy of Sciences. 2010. *Informing an Effective Response to Climate Change.* Panel report for America's Climate Choices (Liverman, D). Washington D.C.: National Academies Press.

New, M., D. Liverman and K. Anderson. 2009. Mind the gap. *Nature,* 143-144.

Ott, H. E., W. Sterk and R. Watanabe 2008. The Bali Roadmap: New Horizons for Global Climate Policy. *Climate Policy* 8: 91-95.

Parry, M., N. Arnell, T. McMichael, et al., 2001. Millions at risk: defining critical climate change threats and targets. *Global Environmental Change* 11: 181-183.

Richardson K, Steffen W., and Liverman, D. 2011. *Climate Change: Global Risks, Challenges and Decisions.* Cambridge: Cambridge University Press.

- Chapter 15: Integrating adaptation, mitigation and sustainable development
- Chapter 17: The human-Earth relationship: past, present and future

Schmidt, J., N. Helme, J. Lee, M. Houdashelt and N. Höhne 2008. Sector-based approach to the post-2012 climate change policy architecture. *Climate Policy* 8: 494-515.

Stern, N. and C. Taylor 2007. Climate change: risk, ethics and the Stern Review. *Science* 317: 203-204.

World Bank, 2008. *Development and Climate Change: A strategic Framework for the World Bank Group.* Washington, D.C.: The World Bank.

World Bank, 2010. *World Development Report: Development and Climate Change.* Washington, D.C.: The World Bank.

- Overview: Changing the Climate for Development
- Chapter 1: Understanding the Links between Climate Change and Development
- Chapter 8: Overcoming Behavioral and Institutional Inertia

Pheakkdey Nguon
Graduate School of Geography, Clark University
Qualifying Doctoral Exams Reading List

Forest Ecology and Management

Second Minor Field

Description:

Forests are among the most important ecosystems on Earth. They provide a wide range of environmental services, including biodiversity conservation, water supply management, carbon sequestration, flood control, and protection against soil erosion and desertification. About 10 million people worldwide are employed in forest management and conservation and it is estimated that 1.6 billion people—including more than 2,000 indigenous cultures—depend on forests for their livelihoods (CIFOR, 2012). Therefore, understanding how forest ecosystems function and how they change in response to human activities and natural Earth system disturbances are important themes in contemporary natural sciences. Beyond having inherent scientific value, such knowledge has become integral to national and international policies and practices of ecosystem management. One of the prominent examples concerns policy aiming at reducing emissions from deforestation and forest degradation in developing countries (REDD+). However, the interacting effects of climate change, increased settlement in forests, and other forces have led to difficult questions regarding what is actually driving change in forest ecosystems and what management strategies are most appropriate for polices such as REDD+. In this context, this reading list is divided into two main sections.

The first section examines the predominant and classic forest ecology literature which provides the foundation for contemporary ecological understanding of forest ecosystems. This section also explores contemporary literature to illustrate recent trends in forest ecology and management research. Readings in this section are organized under three topics. They are: (1) Foundations of forest ecology, (2) Ecosystem concepts, and (3) Contemporary environmental issues in forest ecosystems. The second section of this list explores readings that focus on understanding the various drivers of deforestation in nature and how these drivers interact at various levels and places. Readings are selected to answer two key questions. They include: (1) how do drivers of deforestation vary across scales and continents? and (2) how can global policy frameworks, such as REDD+ policy, be shaped to enable equitable, effective and efficient actions that tackle drivers of deforestation at national and sub-national levels?

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Qualifying Doctoral Exams Reading List

Outline (Total: 85 Readings)

Section I: Dynamic Forest Ecosystems

1. Foundations of forest ecology

2. Ecosystem concepts

3. Contemporary environmental issues in forest ecosystems

    3.1. Overviews

    3.2. Carbon cycle

    3.3. Disturbances

        - Insect outbreaks

        - Fire

        - Interacting disturbances

    3.4. Policy considerations

Section II: Addressing Deforestation

1. Natural and anthropogenic drivers of deforestation

2. Designing an effective, efficient and equitable REDD+ policy

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Qualifying Doctoral Exams Reading List

Section I: Dynamic Forest Ecosystems

1. Foundations of forest ecology

Baker, W. 1992. The landscape ecology of large disturbances in the design and management of nature reserves. *Landscape Ecology* 17: 181-194.

Clement, F. 1936. Nature and Structure of the Climax. *The Journal of Ecology* 24: 252-284.

Gleason, H. 1926. The individualistic concept of the plant association. *Bulletin of the Torrey Botanical Society* 53: 7-26.

Kinglands, S. 1991. Foundational Papers: Defining Ecology as a Science. In *Foundations of Ecology: Classic Papers with Commentaries.* Chicago and London: The University of Chicago Press.

Real, A. and S. Levin. 1991. Theoretical Advances: The Role of Theory in the Rise of Modern Ecology. In *Foundations of Ecology: Classic Papers with Commentaries.* Chicago and London: The University of Chicago Press.

Simberloff, D. and L. Abele. 1976. Island biogeography and conservation practice. *Science* 191: 285-286.

Swetnam, T., Allen, C., Betancourt, J. 1999. Applied historical ecology: Using the past to manage for the future. *Ecological Applications* 9: 1189-1206.

Tansley, A. 1935. The use and abuse of vegetational concepts and terms. *Ecology* 16: 284-307.

Veblen, T., Hadley, K., Nel, M., Kitzberger, T., Reid, M., Villalba, R. 1994. Disturbance regime and disturbance interactions in a Rocky Mountain subalpine forest. *Journal of Ecology* 82: 125-135.

White, P. and S. Pickett 1985. Natural disturbance and patch dynamics: an introduction. *In* The Ecology of Natural Disturbance and Patch Dynamics. Orlando, FL, U.S.A., Academic Press, Inc.: 3-13.

White, P. and A. Jentsch. 2001. The Search for Generality in Studies of Disturbance and Ecosystem Dynamics. *Progress in Botany* 62: 399-450.

2. Ecosystem concepts

Alcamo, J., et al. 2003. *Ecosystems and human well-being: A framework for assessment/ Millennium Ecosystem Assessment.* Washington D.C.: The Island Press.

Balvanera, P., G. Daily, P. Ehrlich, T. Ricketts, S. Bailey, S. Kark, C. Kremen, and H. Pereira. 2001. Conserving biodiversity and ecosystem services. *Science* 291: 2047.

Carpenter, S. and Turner, M. 1998. At Last: A Journal Devoted to Ecosystem Science. *Ecosystems* 1: 1-5.

Costanza, R., R. D'Arge, R. de Groot, et al. 1997. The value of the world's ecosystem services and natural capital. *Nature* 387: 253-260.

Daily, G., T. Soderqvist, et al. 2000. The value of nature and the nature of value. *Science* 289: 395-396.

Holling, C. 1973. Resilience and Stability of Ecological Systems. *Annual Review of Ecology and Systematics* 4:1-23.

Milne, B. 1998. Motivation and Benefits of Complex Systems Approaches in Ecology. *Ecosystems* 1: 449-456.

Pimm, S. 1984. The complexity and stability of ecosystems. *Nature* 307: 321-326.

3. Contemporary environmental issues in forest ecosystems

3.1. Overviews

Allen, C., A. Macalady, et al. 2010. A global overview of drought and heat-induced tree mortality reveals emerging climate change risks for forests. *Forest Ecology and Management* 259: 657-856.

Dale, V., Joyce, L., et al. 2001. Climate change and forest disturbances. *Bioscience* 51: 723-734.

Holling, C., and Meffe, G. 1996. Command and control and the pathology of natural resource management. *Conservation Biology* 10: 328-337.

Keane, R., P. Hessburg, P. Landres, and F. Swanson. 2009. The use of historical range and variability (HRV) in landscape management. *Forest Ecology and Management* 258:1025-1037.

Landres, P., Morgan, P., and Swanson, F. 1999. Overview of the use of natural variability concepts in managing ecological systems. *Ecological Applications* 9: 1179-1188.

Long, J. 2009. Emulating natural disturbance regimes as a basis for forest management: A North American view. *Forest Ecology and Management* 257:1868-1873.

Scheffer, M., Carpenter, S., Foley, J., Folke, C., and Walker, B. 2001. Catastrophic shifts in ecosystems. *Nature* 413: 591-596.

Turner, M., Baker, W., Peterson, C., and Peet, R. 1998. Factors influencing succession: Lessons from large, infrequent natural disturbances. *Ecosystems* 1: 511-523.

3.2. Carbon cycle

Dixon, R., Browne, S., Houghton, R., Soloman, A., Trexler, M., Wosniewski, J. (1994) Carbon pools and flux of global forest ecosystems. *Science* 263, 185-190.

Kurz, W., C. Dymond, G. Stinson, G. Rampley, E. Neilson, A. Carroll, T. Ebata, and L. Safranyik. 2008. Mountain pine beetle and forest carbon feedback to climate change. *Nature* 452: 987-990.

Malhi, Y., D. Baldocchi and P.Jarvis. 1999. The carbon balance of tropical, temperate and boreal forests. *Plant, Cell and Environment* 22: 715-740.

Pregizter, K. and E. Euskirchen. 2004. Carbon cycling and storage in world forests: biome patterns related to forest age. *Global Change Biology* 10: 2052-2077.

Zarin, D. J. 2012. Carbon from Tropical Deforestation. *Science* 22: 1518-1519.

3.3. Disturbances

Insect outbreaks

Berg, E., Henry, J., Fastie, C., Volder, A., and Matsuoka, S. 2006. Spruce beetle outbreaks on the Kenai Peninsula, Alaska, and Kluane National Park and Reserve, Yukon Territory: Relationship to summer temperatures and regional differences in disturbance regimes. *Forest Ecology and Management* 227: 219-232

Dordel, J., M. Feller, and S. Simard. 2008. Effects of mountain pine beetle (Dendroctonus ponderosae Hopkins) infestations on forest stand structure in the southern Canadian Rocky Mountains. *Forest Ecology and Management* 255: 3563-3570.

Flint, C. 2007. Changing forest disturbance regimes and risk perceptions in Homer, Alaska. *Risk Analysis* 27: 1597-1608.

Logan, J., Regniere, J., and Powell, J. 2003. Assessing the impacts of global warming on forest pest dynamics. *Frontiers in Ecology and the Environment* 1: 130-137.

Rocca, M. and W. Romme. 2009. Beetle-infested forests are not "destroyed". *Frontiers in Ecology and the Environment* 7: 71-72.

Fire

Bowman, D., J. Balch, et al. 2009. Fire in the Earth System. *Science* 324:481-484.

Schoennagel, T, T. Veblen, D. Kulakowski, A. Holz. 2007. Multidecadal climate variability and climate interactions affect subalpine fire occurrence, western Colorado (USA). *Ecology* 88: 2891-2902.

Schoennagel T, Veblen T., and Romme W. 2004. The interaction of fire, fuels, and climate across Rocky Mountain forests. *BioScience* 54: 661–76.

Westerling, A., H. Hidalgo, D. Cayan, and T. Swetnam. 2006. Warming and earlier spring increase western U.S. forest wildfire activity. *Science* 313:940-943.

Zumbrunnen, T., H. Bugmann, M. Conedera, and M. Burgi. 2009. Linking Forest Fire Regimes and Climate-A Historical Analysis in a Dry Inner Alpine Valley. *Ecosystems* 12:73-86.

Interacting disturbances

Axelson, J., R. Alfaro, et al. 2009. Influence of fire and mountain pine beetle on the dynamics of lodgepole pine stands in British Columbia, Canada. *Forest Ecology and Management* 257: 1874-1882.

Derose, R. and J. Long. 2009. Wildfire and spruce beetle outbreak: Simulation of interacting disturbances in the central Rocky Mountains. *Ecoscience* 16: 28-38.

Donato D., Fontaine J., Campbell J., et al. 2006. Post-wildfire logging hinders regeneration and increases fire risk. *Science* 311: 352.

Fleming, R., J. Candau, and R. McAlpine. 2002. Landscape-scale analysis of interactions between insect defoliation and forest fire in Central Canada. *Climatic Change* 55: 251-272.

Jenkins, M., E. Hebertson, W. Page, and C. Jorgensen. 2008. Bark beetles, fuels, fires and implications for forest management in the Intermountain West. *Forest Ecology and Management* 254: 16-34.

Kulakowski, D., P. Bebi., and C. Rixen. 2011. The interacting effects of land use change, climate change, and suppression of disturbances on landscape forest structure in the Swiss Alps. *Oikos*. 120: 216–225.

Kulakowski, D., C. Matthews, et al. 2012. Compounded disturbances in subalpine forests in western Colorado favor future dominance by quaking aspen (Populus tremuloides). *Journal of Vegetation Science*. DOI: 10.1111/j.1654-1103.2012.01437.x.

Kulakowski, D. and T. Veblen. 2007. Effect of prior disturbances on the extent and severity of wildfire in Colorado subalpine forests. *Ecology* 88: 759-769.

Lynch, H., Renkin, R., Crabtree, R., and Moorcroft, P. 2006. The influence of previous mountain pine beetle (Dendroctonus ponderosae) activity on the 1988 Yellowstone fires. *Ecosystems* 9: 1318-1327.

3.4. Policy considerations

Brown R., Agee J., and Franklin J. 2004. Forest restoration and fire: principles in the context of place. *Conservation Biology* 18: 903–12.

Diaz-Balteiro, L. and C. Romero. 2008. Making forestry decisions with multiple criteria: A review and an assessment. *Forest Ecology and Management* 255: 3222-3241.

Dellasala, D., J. Williams, C. Williams, and J. Franklin. 2004. Beyond smoke and mirrors: a synthesis of fire policy and science. *Conservation Biology* 18: 976-986.

Lindenmayer D., Foster D., Franklin J., et al. 2004. Saving forests or saving fiber? Salvage harvesting policies after natural disturbance impairs ecosystem and species recovery. *Science* 303: 1303.

McKenzie D, Gedalof Z, Peterson DL, and Mote P. 2004. Climatic change, wildfire, and conservation. *Conservation Biology* 18: 890–902.

Moore, S., T. Wallington, et al. 2008. Diversity of current ecological thinking: implications for environmental management. *Environmental Management* 43:17-27.

Outcalt, K. 2008. Lightning, fire and longleaf pine: Using natural disturbance to guide management. *Forest Ecology and Management* 255:3351-3359.

Section II: Addressing Deforestation

1. Natural and anthropogenic drivers of deforestation

Allen, J. and Barnes, D. 1985. The Causes of Deforestation in Developing Countries. *Annals of the Association of American Geographers* 75: 163-184.

Bawa, K. and S. Dayanandan. 1997. Socio-economic factors and tropical deforestation. *Nature* 386: 562-563.

Boucher D., Elias P., Lininger K., May-Tobin C., Roquemore S., and Saxon E., 2011. *The root of the problem. What is driving deforestation today?* Union of Concerned Scientists, Cambridge, MA USA

DeFries, R., T. Rudel, M. Uriarte, and M. Hansen. 2010. Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nature Geoscience* 3: 178–181.

Meyfroidt, P., Rudel, T. and Lambin E. 2010. Forest transitions, trade and the global displacement of land use. *Proceedings of the National Academy of Sciences* 107: 20917–20922.

Poffenberger, M. 2009. Cambodia's forests and climate change: Mitigating drivers of deforestation. *Natural Resources Forum* 33**,** 285-296.

Rudel, T. 1989. Population, Development, and Tropical Deforestation: A Cross-national study. *Rural Sociology* 54: 327-338.

Rudel, T., R. DeFries, G. Asner, and W. Laurance. 2009. Changing drivers of deforestation and new opportunities for conservation. *Conservation Biology* 23:1396–1405.

2. Designing an effective, efficient and equitable REDD+ policy

Angelsen, A., editor. 2008. *Moving Ahead with REDD: Issues, Options and Implications*. Center for International Forestry Research. Bogor: Indonesia.

Angelsen, A., M. Brockhaus, M. Kanninen, E. Sills, W. Sunderlin, and S. Wertz-Kanounnikoff, editors. 2009. *Realising REDD+: National strategy and policy options*. Center for International Forestry Research. Bogor: Indonesia.

Angelsen, A., M. Brockhaus, W. Sunderlin, and L. Verchot, editors. 2012. *Analyzing REDD+: Challenges and choices*. Center for International Forestry Research. Bogor: Indonesia.

Blom, B., T. Sunderland, and D. Murdiyarso. 2010. Getting REDD to work locally: lessons learned from integrated conservation and development projects. *Environmental Science and Policy* 13:164-172.

Brown, A. 2012. REDD costs and uncertainties. *Nature Climate Change* 2: 570.

Busch, J., R. Lubowski, et al. 2012. Structuring economic incentives to reduce emissions from deforestation within Indonesia. *Proceedings of the National Academy of Sciences* 109: 1062–1067.

Corbera, E. and Schroeder, H. 2011. Governing and implementing REDD+. *Environmental Science and Policy* 14: 89-99.

Kanowski, P., C. McDermott, and B. Cashore. 2011. Implementing REDD+: lessons from analysis of forest governance. *Environmental Science and Policy* 14: 111-117.

Merger, E., M. Dutschke, and L. Verchot. 2011. Options for REDD+ Voluntary Certification to Ensure Net GHG Benefits, Poverty Alleviation, Sustainable Management of Forests and Biodiversity Conservation *Forests 2*: 550-577.

Miles, L. and Kapos, V. 2008. Reducing Greenhouse Gas Emissions from Deforestation and Forest Degradation: Global Land-Use Implications. *Science* 320: 1454-1455.

Nepstad, D., D. McGrath, and B. Soares-Filho. 2011. Systematic Conservation, REDD, and the Future of the Amazon Basin. *Conservation Biology* 25:1113-1116.

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