

## ANNOTATED BIBLIOGRAPHY ON NATURE-SOCIETY RELATIONS IN & OF INTERNATIONAL BORDERS

Over the past few months, we have been conducting a search and initial review of the literature on the intersection of nature-society relations and international borders (what we refer to as the political ecology of international borders) with the broader goal of creating and disseminating an annotated bibliography and formal literature review on the subject. This project is part of a larger **Refugee Research Network (RRN) Cluster on Environment and Development Induced Displacement**. It originated from a desire to place processes and theories of environmental displacement in a broader context, thematically, empirically, and theoretically, in order to better understand these processes and add greater theoretical rigour to their study.

We have an annotated bibliography comprised of 111 publications from 8 disciplines that includes empirical cases from all continents. This provides a broad and interdisciplinary overview of how international borders and ecology/environmental issues intersect and interact. To better organize the wide-range of themes, empirical cases, and disciplines represented by the articles, we have organized them under the following general themes: (a) displacement, (b) cross-border migration, (c) border enforcement/border security, (d) cooperation/conflict, (e) state-making, (f) transboundary natural resource management (TBNRM), (g) borderland environments, and (h) a miscellaneous category. *Importantly, while we single out **displacement** as its own distinct theme, it cuts across all themes listed above.* Furthermore, we address displacement in terms of both direct displacement (as in physical removal from a particular space) and indirect displacement (which would include the loss of livelihoods, migration routes, and access to resources more broadly).

None of these themes are “self-contained” given that there is much overlap between them. As such, many, if not most, articles are categorized under multiple themes, as you will see below. For example, the ways in which border enforcement impacts local ecologies often overlaps with themes concerning migration. Another common overlap is the connection between transboundary natural resource management (TBNRM) and conflict, both in the sense that the latter contributes to conflict and potentially helps resolve it. As mentioned above, displacement can also be found under multiple themes. For instance, the creation of transfrontier parks has led to the forced removal of vulnerable populations; rapid industrialization in certain border regions or cross-border pollution flows have created environmental hazards and injustices that lead to various forms of displacement; and cross-border movement related to displacement can also have ecological impacts.

For themes for which there is already a substantial body of literature (e.g., TBNRM, transborder pollution, environment-conflict nexus) that speaks directly to the intersection of nature-society relations and international borders, we have aimed for a *targeted* selection of texts that best elucidates the most central and consequential aspects of this relationship.

With the completion of this **annotated bibliography**, the **next goal** is to write a **peer-reviewed critical literature review** of the 111 sources that we have compiled (adding any additional sources that may arise) that will enable us to offer an extensive overview of nature-society relations in and of international borders. The literature review will be completed later in 2014. The body of work that looks at the intersection of nature-society relations and international borders is large and spans many disciplines and themes that are distinct yet have many commonalities and points of convergence. As such, this targeted annotated bibliography and the literature review that will follow will provide a useful resource and starting point for those engaging in work at the *intersection of international borders and environmental processes* and provide a broader context for scholars interested in *environmental displacement more broadly*. Both this final annotated bibliography and literature review will be shared with the RRN.

Below you will find the annotated bibliography of articles and chapters that were reviewed, primarily by Francis Massé, as part of this project. The abstracts, or a brief summary

in cases where abstracts are unavailable, are provided along with the general theme(s) under which each article falls.

Sincerely,

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#### **BIOGRAPHIES:**

**Elizabeth (Libby) Lunstrum** is an Associate Professor of Geography at York University, Resident Fellow at the York Centre for International and Security Studies (YCISS) where she is co-founder of the Critical Border Studies Speaker Series, and Scholar at York's Centre for Refugee Studies (CRS) where she is co-coordinator of the Refugee Research Network's (RRN) Cluster on Environmental and Development Induced Displacement. Professor Lunstrum's research and teaching focus on environmental politics, processes of bordering and territorialization, human mobility, and political violence. Her current research examines the politics of environmental displacement, cross-border rhino poaching and border militarization, and labour migration within southern Africa's Great Limpopo Transfrontier Park. She is also beginning a political ecological study of the transformation of Parks Canada with Robin Roth (York University). In addition, she is working on two edited journal collections on environmentally-induced displacement with Pablo Bose (University of Vermont) and an edited collection on the Great Limpopo Transfrontier Conservation Area with Clara Bocchino (University of Pretoria) and Terssa Connor (University of Fort Hare).

**Francis Massé** is a PhD student in the Department of Geography at York University, Graduate Fellow at the York Centre for International and Security Studies (YCISS), and a member of the Refugee Research Network's (RRN) Cluster on Environmental and Development Induced Displacement. Focusing on wildlife conservation in southern Africa, Mr. Massé's research bridges approaches from political geography and political ecology to understand processes of conservation-induced displacement and its more-than-human aspects, including human-wildlife conflict and biosecurity, in Mozambique's Limpopo National Park, part of the larger Great Limpopo Transfrontier Park. He is currently beginning research on the increasing role of the private sector in wildlife conservation and anti-poaching efforts, the ways in which this is reshaping boundaries, and how it is leading to new territorial transformations and scales of conservation governance within and across international borders. He has presented research findings at international conferences in North America and South Africa.

## ANNOTATED BIBLIOGRAPHY ON NATURE-SOCIETY RELATIONS IN & OF INTERNATIONAL BORDERS

Compiled by Francis Massé and Elizabeth Lunstrum  
[article categorization and tagging by Francis Massé]

October, 2013

Abbott, J., Campbell, L. M., Hay, C. J., Næsje, T. F., Ndumba, A., & Purvis, J. (2007). Rivers as resources, rivers as borders: community and transboundary management of fisheries in the Upper Zambezi River floodplains. *Canadian Geographer*, 51(3), 280-302.

A study was conducted to explore the recent convergence of community-based and transboundary natural resource management in Africa. Data were obtained from a survey of fishing settlements on the Namibian and Zambian sides of the Zambezi River. Findings indicated that the low level of management reported throughout the area is characteristic of floodplain fisheries and that a hybrid arrangement could be made amenable to variable intensity of fishing and movement of fishers. Findings suggested, however, that the spatial asymmetry of fishers and fishing effort means it is likely that management at a community level will focus on resource access and use on the Zambian side. Findings are discussed in detail.

Tags: TBRNM, Borderland Environments

Abernethy, V. (1996). Environmental and ethical aspects of international migration. *International Migration Review*, 30, 132-150.

U.S. immigration policy has a beneficent intent. However, recent work suggests that the signal it sends internationally—that emigration can be relied upon to relieve local (Third World) population pressure—tends to maintain high fertility rates in the sending country. This effect is counter-productive because high fertility is the primary driver of rapid population growth. In addition, it appears that the relatively open U.S. immigration policy has resulted in a rate of domestic population growth that threatens both the well-being of American labor and cherished environmental values. Reprinted by permission of the publisher.

Tags: Migration

Babu, S. C., & Hassan, R. (1995). International migration and environmental degradation—the case of Mozambican refugees and forest resources in Malawi. *Journal of Environmental Management*, 43, 233-247.

In light of the effects of Mozambican refugees on forest resources in Malawi, the writers present a model for optimizing the sustainable use of forest tree resources. They derive the optimal conditions for selecting the levels of land clearing for various uses of refugee population. They employ the model parameters to reveal the optimal timing and rate of afforestation that will achieve a dynamic equilibrium of forest tree resources. Policy ramifications of the model results for reducing the environmental degradation of forest resources due to refugees are derived. It is concluded that the general environmental regulation policies that are based on user-pay principles may not be relevant under the refugee situation and that additional intervention is required by the host government and international relief agencies for reversing the trends in deforestation.

Tags: Migration, Displacement

Barney, K. (2012). Land, livelihoods, and remittances: a political ecology of youth out-migration across the lao-thai mekong border. *Critical Asian Studies*, 44(1), 57-83.

This article seeks to draw connections between a political ecology of global investment in resource sector development and a culturally informed understanding of rural out-migration across the Lao-Thai border. The author highlights how the departures of rural youth for wage labor in Thailand and the remittances they return to sending villages are becoming important for understanding agrarian transformations in Laos today. In the first section the author introduces the contemporary context of cross-border migrations across the Lao-Thai Mekong border. The second section shifts focus to a village in Laos's central Khammouane Province, where extended field research was conducted between 2006 and 2009. In this village, youth out-migration to Thailand has become a widespread phenomenon, with nearly every household involved. The segmented cultural and gendered features of this migration and its salience for understanding contemporary transformations in this locale invite a broadening of agrarian studies analysis. The final section expands upon how political ecology can provide such a broader analysis by drawing attention to how extractive resource projects affect local tenure rights and livelihoods, with significant rents captured by the state and resource firms. By making these connections, the author argues there are coercive underpinnings to contemporary Mekong migrations, which may be linked to governance problems in the Lao resource sector.

Tags: Migration, Displacement

Bentley, J., Robson, M., Sibale, B., Nkhulungo, E., Tembo, Y., & Munthali, F. (2012). Travelling Companions: Emerging Diseases of People, Animals and Plants Along the Malawi-Mozambique Border. *Human Ecology: An Interdisciplinary Journal*, 40(4), 557-569.

Humans, animals and plants suffer from similar types of diseases (e.g., fungal, viral etc.). These can 'emerge' as new diseases by expanding their geographical range or by jumping species (from plants to plants, or from animals to humans). Emerging diseases place an additional burden on developing countries which are often struggling to manage the diseases they already have. New diseases spread through weather, insects or other vectors, or by the movement of people, animals or goods. This study examines the role of cross-border travel in the spread of diseases. A survey of travelers and of residents along the Malawi-Mozambique border found that most cross it frequently and that they rarely travel empty-handed, often taking plants and animals with them. People also cross borders seeking medical attention. Attempting to limit travel would hamper an already struggling economy, where many people make a living by producing, processing or transporting plants and animals for food. Cross border travel per se may pose slight danger for the spread of diseases, if governments can collaborate on sharing information about the status of diseases within their border.

Tags: Migration, Borderland Environments

Bilsborrow, R., & Henry, S. (2012). The use of survey data to study migration–environment relationships in developing countries: alternative approaches to data collection. *Population and Environment*, 2012(34), 113-141.

Growing interest in the environmental aspects of migration is not matched by research on their interrelationships, due partly to the lack of adequate data sets on the two together. Focusing on the microlevel, we describe the data required to effectively investigate these interrelationships. Data sources are discussed, including information that should be collected, focusing on household surveys and remote sensing. The main section of the paper describes three alternative approaches to data collection: (a) using existing population and environmental data from different sources, illustrated by Burkina Faso; (b) adding questions to a survey developed for another purpose, illustrated for Guatemala using a DHS survey; and (c) designing a new survey specifically to collect both migration and environmental data to investigate interrelationships, illustrated by Ecuador. Methods used and

summary findings are described, followed by a discussion of their advantages and limitations. We conclude with recommendations as to effective use of each approach as research on migration–environment linkages moves forward.

Tags: Migration

Black, R. (1994). Forced migration and environmental change: the impact of refugees on host environments. *Journal of Environmental Management*, 42, 261-277.

A review of existing research and policy-related assessments of environmental effects of refugee settlement worldwide. Three types of environmental change on which the presence of refugees may have significant effects are highlighted, namely deforestation, land degradation, and water supply and quantity. Evidence of the extent of such changes and their effects on local and displaced populations' use of natural resources is discussed. In addition, potential and actual responses to such changes, both within affected populations and on the part of host governments and international agencies giving assistance to refugees, are considered. Recommendations for research and policy on environmental change in refugee-affected areas are offered.

Tags: Migration, Displacement

Braun, B. (2007). Biopolitics and the molecularization of life. *Cultural Geographies*, 14(1), 6-28.

In what ways can it be said of the molecularization of life that it has made our biological existence a political concern in new ways? This essay examines two different answers to this question. The first, exemplified by the work of Nikolas Rose, suggests that the molecularization of life, together with the individualization of risk, has given rise to a new 'somatic' self, and a new 'ethopolitical' order in which our biological life has become our life's work. The second, most evident in growing concern over 'biosecurity', posits a vulnerable subject, thrown into an unpredictable molecular world characterized by exchange and circulation and full of 'emergent' risks. Whereas the former has arguably led to new forms of governmentality, and new kinds of pastoral power, this paper argues that the latter has been widely taken up as a justification for the global extension of forms of sovereign power whose purpose is to pre-empt certain biological futures in favour of others. An exclusive focus on the former not only risks leaving the latter unexamined, it may leave us unable to consider how the two are related.

Tags: Migration, Border Enforcement/Security, State-making, Misc.

Bury, J. (2007). Mining Migrants: Transnational Mining and Migration Patterns in the Peruvian Andes. *Professional Geographer*, 59(3), 378-389.

This article evaluates the linkages between transnational mining corporations and local migration dynamics in Peru. Changes in migration patterns in the Cajamarca region of Peru over the past decade are examined via a case study of the gold mining operations of Newmont Mining Corporation. The study considers household migration behavior in communities surrounding the mine as well as transformations in regional, national, and international migration patterns. Also examined are the temporal nature of these changing patterns across short, medium, and long-term time periods.

Tags: Migration, Misc.

Büscher, B. (2013). *Transforming the Frontier: Peace Parks and the Politics of Neoliberal Conservation in Southern Africa*. USA: Duke University Press.

International peace parks - transnational conservation areas established and managed by two or more countries - have become a popular way of protecting biodiversity while promoting international cooperation and regional development. In *Transforming the Frontier*, Bram Buscher shows how cross-

border conservation neatly reflects the neoliberal political economy in which it developed. Based on extensive research in southern Africa with the Maloti-Drakensberg Transfrontier Conservation and Development Project, Buscher explains how the successful promotion of trans-frontier conservation as a "win-win" solution happens not only in spite of troubling contradictions and problems, but indeed because of them. This is what he refers to as the "politics of neoliberal conservation," which receives its strength from effectively combining strategies of consensus, anti-politics, and marketing. Drawing on long-term, multilevel ethnographic research, Buscher argues that trans-frontier conservation projects are not as concerned with on-the-ground development as they are purported to be. Instead, they are reframing environmental protection and sustainable development to fit an increasingly contradictory world order.

Tags: TBNRM, Displacement, Misc.

Carter, E., Silva, B., & Guzmán, G. (2013). Migration, Acculturation, and Environmental Values: The Case of Mexican Immigrants in Central Iowa. *Annals of the Association of American Geographers*, 103(1), 129-147.

Human–environment geography and geographic research on migration have largely been treated as separate scholarly spheres. Meanwhile, even as recent immigration exerts dynamic changes on American culture, relatively little scholarly work addresses immigrants' attitudes toward environmental issues. In this article, we address the following questions: How do Mexican immigrants perceive and understand the environment and environmental problems? How do environmental values shift or become modified during the process of acculturation in the United States? To answer these questions, we use the results of surveys conducted with Mexican immigrants and their kin in central Iowa. We develop an interdisciplinary theoretical framework based on a modified concept of "environmentality" that incorporates insights from research on environmental values, immigration and acculturation, political ecology, and environmental justice. Based on this analysis, we find that immigrants become socialized to new norms, in part, through environmental practices. They are readily accepting of some U.S. norms around environmental thought and behavior (especially with respect to maintaining public spaces) but critical of others (e.g., the excessive materialism of American consumerism and its impacts on the environment and society). Immigrants draw on their experience of life in Mexico as they acculturate to find the right balance between protecting the environment and looking after human needs.

Tags: Migration, Misc

Chadwick, B. P. (1995). Fisheries, sovereignties and red herrings. *Journal of International Affairs*, 48, 559-584.

Part of a special issue on transcending national boundaries. It is argued that although the intellectual tradition of sovereignty does make international environmental resolutions more complex, it need not prove fatal to them. An explanation of the historical and political reasons for the perceived tension between sovereignty and the environment is presented, and some minority viewpoints that suggest that cooperation is possible are examined. The relationship between democracy and the environment is explored, with the emphasis on how democratic structures can create an information-feedback system that permits them to fit into a cooperative framework for the negotiation of treaties. International and domestic sources of the concept of sovereignty are summarized, and the better protection that sovereignty provides to democratic states, as opposed to nondemocratic states, is demonstrated. It is concluded that where states are democratic, environmental coordination and national sovereignty do not conflict.

Tags: TBNRM, Cooperation/Conflict, State-making

Chester, C. (2005). From conservation diplomacy to transborder landscapes: The protection of biodiversity across North America's borders. *Conservation Practice at the Landscape Scale*, 22(1), 27-34.

Each of North America's two major borders has its respective claim to fame. To the north, the Canada-U.S. border is commonly described as the longest undefended border in the world. To the south, it is often said that the U.S.-Mexico border separates a discrepancy in average income levels greater than any other border on the planet. Yet in contrast to their differences, both borders can claim war, diplomacy, and surficial hydrology as their common origins. And while these hardly constitute original facets in the world history of territorial demarcation, the two borders also share another common characteristic – one that might come as a surprise even to many experienced North American conservationists. This commonality is that both borders are chock full of transborder conservation initiatives.

Tags: TBNRM, Cooperation/Conflict, State-making

Cioc, M. (2009). *The Game of Conservation: International Treaties to Protect the World's Migratory Animals*. Athens, OH: Ohio University Press.

The book provides an environmental history of international treaties meant to conserve migratory animals (specifically whales, mammals in Africa, and birds in North America) with the main argument being that these treaties are best understood as international hunting treaties and not conservation treaties. The book addresses this issue by examining nation parks in Africa, bird conservation in North America and whaling in the Antarctic. In doing so, the book illustrates how boundaries, both physical and political, are transformed in the name of conservation for migratory species and the commercial interests that depends on them and the implications that this has had for both human and animal populations.

Tags: TBNRM, Displacement, Misc.

Clement, N., Ganster, P., & Sweedler, A. (2005). Environment, development, and security in border Regions: Perspective from Europe and North America. In P. Ganster, and D. Lorey (Eds.) *Borders and Border Politics in a Globalizing World* (199-236). Oxford, UK: SR Books.

As the title indicates, this article is concerned with the issues of environment, development, and security in border regions. It reviews the changing functions of international boundaries in the context of the global economy and addresses the multidimensional nature of the transborder relationship. The study relies on perspectives from European and North American borders but offers suggestions for understanding border regional development everywhere.

Tags: Borderland Environments, TBNRM, Cooperation/Conflict, State-making

Collins, T. W. (2010). Marginalization, Facilitation, and the Production of Unequal Risk: The 2006 Paso del Norte Floods. *Antipode*, 42(2), 258-288.

Drawing upon insights from the field of urban political ecology, this article extends the critical hazards concept of marginalization by incorporating a relational focus on facilitation. Facilitation connotes the institutionally mediated process that enables powerful geographical groups of people to minimize negative environmental externalities and appropriate positive environmental externalities in particular places, with unjust socioenvironmental consequences. The article demonstrates the utility of a marginalization/facilitation frame for understanding the production of unequal risk based on a case study of the 2006 El Paso (USA)-Ciudad Juarez (Mexico) flood

disaster. The case study reveals how uneven developments have produced complex sociospatial patterns of exposure to flood hazards and how processes of facilitation and marginalization have created socially disparate flood-prone landscapes characterized by unequal risks. The paper concludes by outlining how the frame presented helps clarify understanding of the production of unequal risk.

Tags: Borderland Environments, Displacement, Misc.

Comaroff, J., & Comaroff, J. L. (2005). Naturing the nation: aliens, apocalypse and the postcolonial state. In T. Hansen & F. Stepputat (Eds.), *Sovereign bodies: citizens, migrants, and states in the postcolonial world* (pp. 120-147). Princeton, NJ: Princeton University Press.

The chapter seeks to understand what an environmental catastrophe can tell us about the meaning of borders and the politics of belonging/nationhood. In an analysis of the Cape Town Blaze and the discourse of alien vegetation it is argued that the full impact of the blaze is not about the fire itself, but the capacity of certain vegetation (invasive alien plants) to signify and reveal anxieties having to do with the nature of the postcolonial state in South Africa, sovereign borders, rights to citizenship, and the meaning of belonging to the nation.

Tags: State-making, Migration, Border Enforcement/Border Security

Cunningham, H. (2010). Gating ecology in a gated globe: Environmental aspects of 'securing our border'. In H. Donnan and T. Wilson (Eds.) *Borderlands: Ethnographic Approaches to Security, Power, and Identity*. (125 – 142). Maryland: University Press of America, Inc.

This chapter argues that an analysis of the political and economic aspects of borders and border practices must entail an environmental component and factor in environmental impacts as well. Using what is termed a border-ecology nexus allows one to investigate the various processes and practices occurring at borders and in border regions with an environmentally-informed perspective that reveals new dimensions of border politics.

Tags: Border Enforcement/Border Security, Borderland Environments, Migration

Cunningham, H. (2012). Permeabilities, ecology and geopolitical boundaries. In T. Wilson and H. Donnan (Eds.) *A Companion to Border Studies* (pp. 371-386). West Sussex, UK: Blackwell Publishing Ltd.

This chapter seeks to explore political bordering its cultural, economic, and political aspects in an ecological context. A focus on the nexus between ecology and borders can help expand our understanding of and approaches to political borders and specifically their permeability or impermeability.

Tags: Borderland Environments, Border Enforcement/Border Security, State-making

de Sherbinin, A., VanWey, L. K., McSweeney, K., Aggarwal, R. M., Barbieri, A., Henry, S., et al. (2008). Rural household demographics, livelihoods and the environment. *Global Environmental Change-Human and Policy Dimensions*, 18(1), 38-53.

This paper reviews and synthesizes findings from scholarly work on linkages among rural household demographics, livelihoods and the environment. Using the livelihood approach as an organizing framework, we examine evidence on the multiple pathways linking environmental variables and the following demographic variables: fertility, migration, morbidity and mortality, and lifecycles. Although the review draws on studies from the entire developing world, we find the majority of microlevel studies have been conducted in either marginal (mountainous or arid) or frontier environments, especially Amazonia. Though the linkages are

mediated by many complex and often context-specific factors, there is strong evidence that dependence on natural resources intensifies when households lose human and social capital through adult morbidity and mortality, and qualified evidence for the influence of environmental factors on household decision-making regarding fertility and migration. Two decades of research on lifecycles and land cover change at the farm level have yielded a number of insights about how households make use of different land-use and natural resource management strategies at different stages. A thread running throughout the review is the importance of managing risk through livelihood diversification, ensuring future income security, and culture-specific norms regarding appropriate and desirable activities and demographic responses.

Tags: Migration

Doherty, B., & Doyle, T. (2006). Beyond Borders: Transnational Politics, Social Movements and Modern Environmentalisms. *Environmental Politics*, 15(5), 697-712.

This introduction considers three themes that recur across the various contributions to this collection. The first is the nature of borders and how these have been affected by the increase in transnational collective action and the growth in the power of transnational institutions. The second is the distinction between environmental movements and the social movement forms of environmentalism.: meaning that not all forms of environmental movement are social movements. The third is the evidence of the diversity of environmentalisms, which leads us to identify three principal kinds of environmental movement, the post-material movements strongest in the United States and Australia, the post-industrial movements that are strongest in Europe and the post-colonial movements of the South.

Tags: Misc.

Duffield, M. (2006). Racism, migration and development: the foundations of planetary order. *Progress in Development Studies*, 6(1), 68-79.

Using Foucault's conception of racism and sovereign power as a point of departure, this paper examines an expansive and centralizing security architecture that interconnects the policing of international migration, the promotion of domestic social cohesion and the search for overseas development. Emerging with decolonization, the basis of this interdependence is a racial discourse that now takes a sociocultural rather than an outwardly biological idiom. The paper argues that this shift presages the collapse of the national and international divide within political imagination. It examines sustainable development as a biopolitical technology for containing a non-insured, that is, self-reliant species-life. Since the end of the cold war, and reinforced by the war on terrorism, the interconnection between racism, migration and development has underpinned an emerging regime of planetary order. While international support for the territorial integrity of the underdeveloped state remains, within such states sovereignty over life has become negotiable and contingent. On this basis, new possibilities present themselves to centralize power through directly linking the local with the local at the level of population. The paper concludes by examining the tendency towards biopolitical tyranny within planetary order.

Tags: Migration, Border Enforcement/Security

Eilenberg, M. (2012). The confession of a timber baron: patterns of patronage on the Indonesian–Malaysian border. *Identities*, 19(2), 149-167.

This article explores the socio-economic significance of patronage at the edge of the Indonesian state. It argues that marginal borders and adjacent borderlands where state institutions are often weak, and state power continuously waxes and wanes, encourage the growth of non-state forms of authority

based on long-standing patron–client relationships. These complex interdependencies become especially potent because of traditionally rooted patterns of respect, charismatic leadership and a heightened sense of autonomy among borderland populations. The article contends that an examination of these informal arrangements is imperative for understanding the rationale behind border people's often fluid loyalties and illicit cross-border practices, strained relationships with their nation states and divergent views of legality and illegality. The article contributes to recent anthropological studies of borders and believes that these studies could gain important insight by re-examining the concept of patronage as an analytical tool in uncovering circuits of licit and illicit exchange in borderlands.

Tags: Borderland Environments, State-making

Elliot, L. (2007). Transnational environmental crime in the Asia Pacific: an 'un(der)securitized' Security problem? *The Pacific Review*, 20(4), 499-522.

While other forms of transnational crime in the Asia Pacific have been securitized – that is, represented by policy elites and security actors as crucial or existential threats to national and regional security – transnational environmental crime has been un(der)securitized. It warrants little mention in regional security statements or the security concerns of individual countries. Yet the consequences of activities such as illegal logging and timber smuggling, wildlife smuggling, the black market in ozone-depleting substances and dumping of other forms of hazardous wastes and chemical fit the (in)security profile applied to other forms of transnational crime. This article surveys the main forms of transnational environmental crime in the Asia Pacific and assesses the 'fit' with a 'crime as security' framework. It shows that transnational environmental crime generates the kinds of 'pernicious effects . . . on regional stability and development, the maintenance of the rule of law and the welfare of the region's people' that the ASEAN Declaration on Transnational Crime identified as matters of serious concern. The analysis draws on securitization theory to understand the lack of a 'securitizing move' and to explain why security elites do not believe the problem warrants serious attention. The possibilities explored here include intellectual inertia, confusion about referent objects, institutional incapacity, mixed policy signals and the exclusion of environmental expertise from a closed community of security elites.

Tags: Border Enforcement/Border Security, Misc.

Ellman, E., & Robbins, D. (1998). Merging sustainable development with wastewater infrastructure improvement on the U.S.-Mexico border. *Journal of Environmental Health*, 60(7), 8-13.

Sustainability has emerged as an important new qualification for environmental infrastructure projects, particularly on the fast-growing and environmentally underserved U.S.-Mexico border. The Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADBank), respectively charged with approving and financing environmental projects on the border, have determined six principle areas in which sustainability plays a role: natural resource management, technical efficiency, natural resource preservation, environmental protection, benefits to low-income residents, and community participation. The Naco Constructed Wetlands/Microenterprise Proposal (NACWEMP), which would build a demonstration scale constructed wetland for wastewater treatment and train community members in three associated microenterprise projects, creatively demonstrates how principles of sustainable development are expressed in actual project implementation.

Tags: Borderland Environments

Erskine, B. (2005). Disaster on the Danube. In P. Ganster, and D. Lorey (Eds.) *Borders and Border Politics in a Globalizing World* (237-245). Oxford, UK: SR Books.

Large water infrastructure projects, such as dams to generate electricity, control floods, or divert water for agriculture, frequently have significant environmental impacts that include

unintended effects. These projects are particularly complex in regions that share water resources – whether river, lake, or underground aquifer – across international boundaries. This article discusses a scheme begun in 1977 by Czechoslovakia (later, Slovakia) and Hungary to construct a dam and related hydraulic works on the Danube River system. By diverting the flow of the Danube into an alternate channel and drying up part of the river, the project risked contaminating the water – which eventually feeds into an aquifer for drinking – with carcinogenic poisons. Fish stocks were also threatened. The project was called off, but when Slovakia became independent in 1993, it decided to move forward. Hungary has challenged Slovakia's decision in the International Court of Justice.

Tags: TBNRM, Cooperation/Conflict, State-making, Displacement

Esty, D. C. (2006). From Local to Global: The Changing Face of the Environmental Challenge. *SAIS Review of International Affairs*, 26(2), 191-197.

Today, environmental policy now must include action on several fronts: local, state or provincial, national, regional, and global. This article maps the drivers behind the globalizing of environmental policy over the past 25 years. Technological advances have revolutionized our understanding of how environmental issues transcend boundaries; economic integration and trade liberalization has made us more interconnected; worldwide communications has allowed us to connect with each other and to once-distant problems, create a global ecological identity, and learn from each other. The policy implication is the need for a more robust international environmental regime to complement conservation and pollution-control efforts at the national and local levels. This regime would build on the success of past international coordination and encourage international collective action to meet environmental challenges that have not yet been adequately addressed. The world needs a multi-tier environmental “governance” structure that “thinks Erskieglobally, acts globally,” as well as regionally, bilaterally, domestically, and locally.

Tags: TBNRM, Cooperation/Conflict

Fall, J. (2005). *Drawing the Line: Nature, Hybridity and Politics in Transboundary Spaces*. Burlington, VT: Ashgate Publishing Company.

This book provides the first comprehensive and critical examination of the spatial assumptions underpinning transboundary protected areas in Europe, at a time of surging global enthusiasm in creating and managing such areas. It explores how the reliance on the natural science approach to space within environmental planning has led to a return to exclusionary discourses in paradoxical contrast to the state claims of designing ‘peace parks’. The book builds a much-needed link between the critical geopolitical literature on boundaries and social approaches to nature and hybridity.

Tags: TBNRM, State-making, Displacement, Misc.

Fall, J. (2011). Natural resources and transnational governance. In D. Wastl-Walter (Ed.), *The Ashgate research companion to border studies* (pp. 627-641). Burlington, VT: Ashgate.

This chapter explores some of the themes emerging in current research around themes of boundless nature and bounded political spaces and people. It explores how natural resources and transnational governance are global phenomena with uneven geographies, constructed in particular places by particular people and with effects in distant places. This chapter will review some of the key themes and scholarship on nature, politics, boundaries and the re-grounding of the nation-state. The aim throughout is not to be comprehensive but rather to give some idea of current debates.

Tags: TBNRM, State-making, Displacement

Fernandez, L. (2009). Wastewater pollution abatement across an international border. *Environment and Development Economics*, 14(1), 67-88.

Part of an issue on game theory's application to environmental and natural-resource problems. A study was conducted to develop a valid and reliable framework for examining the utility of cooperative game theory in determining fair and efficient water allocation strategies among asymmetric actors. Data were obtained from existing information on the Tijuana River as it flows from Mexico into the U.S. Findings indicated that it is more cost-effective to implement pollution abatement strategies upstream in Mexico. Findings suggested that game-theory based models, such as the one developed here, are useful to other worldwide efforts to allocate water resources fairly. Findings are discussed in detail.

Tags: TBNRM, Borderland Environments

Fernandez, L., & Das, M. (2011). Trade transport and environment linkages at the U.S.–Mexico border: Which policies matter? *Journal of Environmental Management*, 92(3), 508-521.

We apply a fixed-effects model to examine the impact of trade and environmental policies on air quality at ports along the U.S.–Mexico border. We control for other factors influencing air quality, such as air quality of cities near the border, volume of traffic flows and congestion. Results show the air quality improved after 2004, when the diesel engine policy was applied. We see mixed results for the trade policy, whose implementation time varies across ports along the international border. Controlling for air quality in cities near the border is essential for assessing the policy contributions to air quality.

Tags: TBNRM, Borderland Environments

Ferradás, C. A. (2004). Environment, Security, and Terrorism in the Trinational Frontier of the Southern Cone. *Identities*, 11(3), 417-442.

This article analyzes the transformations of notions of governmentality, security, and sovereignty behind recent processes of securitization in the trinational frontier of the Southern Cone, which encompasses the cities of Puerto Iguazú (Argentina), Ciudad del Este (Paraguay), and Foz do Iguacú (Brazil). It examines how early concerns with security that were primarily focused on the territorial integrity of nation-states have been replaced with security concerns of a more global nature, which call into question established mechanisms of control, particularly those related to the defense of national borders. It examines how environmental concerns are increasingly becoming conflated with other current forms of securitization such as terrorism, popular unrest, and narcotraffic and it analyzes devastating effects of these processes on peoples of the South, particularly the poor.

Tags: Border Enforcement/Border Security, TBNRM, Borderland Environments, Displacement

Ferreira, S. (2011). One decade of transfrontier conservation areas in southern Africa. In D. Wastl-Walter (Ed.), *The Ashgate research companion to border studies* (pp. 643-663). Burlington, VT: Ashgate.

This article introduces the concept of Transfrontier Conservation Areas (TFCAs); describes the sub-continental contexts for TFCAs; demonstrates the link between conservation and tourism; provides a current status report on the establishment of TFCAs; and, before making some concluding remarks, discusses three critical issues that constrain the *African Dream* of a vast network of protected areas for conservation, travel and recreation.

Tags: TBNRM, State-making

Flesch, A. D., Epps, C. W., Cain Iii, J. W., Clark, M., Krausman, P. R., & Morgart, J. R. (2010). Potential

effects of the United States-Mexico border fence on wildlife: Contributed paper. *Conservation Biology*, 24(1), 171-181.

Security infrastructure along international boundaries threatens to degrade connectivity for wildlife. To explore potential effects of a fence under construction along the U.S.-Mexico border on wildlife, we assessed movement behavior of two species with different life histories whose regional persistence may depend on transboundary movements. We used radiotelemetry to assess how vegetation and landscape structure affect flight and natal dispersal behaviors of Ferruginous Pygmy-Owls (*Glaucidium brasilianum*), and satellite telemetry, gene-flow estimates, and least-cost path models to assess movement behavior and interpopulation connectivity of desert bighorn sheep (*Ovis canadensis mexicana*). Flight height of Pygmy-Owls averaged only 1.4 m (SE 0.1) above ground, and only 23% of flights exceeded 4 m. Juvenile Pygmy-Owls dispersed at slower speeds, changed direction more, and had lower colonization success in landscapes with larger vegetation openings or higher levels of disturbance ( $p \leq 0.047$ ), which suggests large vegetation gaps coupled with tall fences may limit transboundary movements. Female bighorn sheep crossed valleys up to 4.9 km wide, and microsatellite analyses indicated relatively high levels of gene flow and migration (95% CI for  $F_{ST} = 0.010-0.115$ ,  $N_m = 1.9-24.8$ ,  $M = 10.4-15.4$ ) between populations divided by an 11-km valley. Models of gene flow based on regional topography and movement barriers suggested that nine populations of bighorn sheep in northwestern Sonora are linked by dispersal with those in neighboring Arizona. Disruption of transboundary movement corridors by impermeable fencing would isolate some populations on the Arizona side. Connectivity for other species with similar movement abilities and spatial distributions may be affected by border development, yet mitigation strategies could address needs of wildlife and humans.

Tags: Border Enforcement/Border Security, Migration

Girot, P. (2005). Border regions and transborder conservation in Central America. In P. Ganster, and D. Lorey (Eds.) *Borders and Border Politics in a Globalizing World* (247-267). Oxford, UK: SR Books.

Even though the border regions of Central America are home to poor and isolated populations, they also include some of the most important natural areas. After decades of wars, massive human migration, and failed initiatives, the 1990s saw a new focus on sustainable development by Central America's leaders. Border areas will play an important role in any successful regional development effort. With scarce government resources, nongovernmental organizations (NGOs) and grassroots agencies will need to take an active role in implementing plans to protect natural areas and promote economic development in a sustainable way. The problems of protecting natural resources are common throughout the developing world but are particularly difficult in border regions, where two or more governments and nonprofit sectors must coordinate their programs.

Tags: State-making, Borderland Environments, TBNRM

Gleditsch, N. P., Furlong, K., Hegre, H., &vard. (2006). Conflicts over shared rivers: Resource scarcity or fuzzy boundaries? *Political Geography*, 25(4), 361-382.

Countries that share rivers have a higher risk of military disputes, even when controlling for a range of standard variables from studies of interstate conflict. A study incorporating the length of the land boundary showed that the shared river variable is not just a proxy for a higher degree of interaction opportunity. A weakness of earlier work is that the existing shared rivers data do not distinguish properly between dyads where the rivers run mainly across the boundary and dyads where the shared river runs along the boundary. Dyads with rivers running across the boundary would be expected to give rise to resource scarcity-related conflict, while in dyads where the river forms the boundary conflict may arise because river boundaries are fluid and fuzzy. Using a new dataset on shared water basins and two measures of water scarcity, we test for the relevance of these two scenarios. Shared basins do

predict an increased propensity for conflict in a multivariate analysis. However, we find little support for the fuzzy boundary scenario. Support for a scarcity theory of water conflict is somewhat ambiguous. Neither the number of river crossings nor the share of the basin upstream is significant. Dry countries have more conflict, but less so when the basin is large. Drought has no influence. The size of the basin, however, is significantly associated with conflict. Modernization theory receives some support in that development interacted with basin size predicts less conflict, and we find some evidence here for an environmental Kuznets curve. The importance of basin size suggests a possible 'resource curse' effect for water resources.

Tags: TBNRM, Cooperation/Conflict

Grant, J. A., & Quinn, M. S. (2007). Factors influencing transboundary wildlife management in the North American 'Crown of the Continent'. *Journal of Environmental Planning and Management*, 50(6), 765-782.

Jurisdictional boundaries and borders are rarely coincident with ecological systems. The long-term persistence of viable wildlife populations and habitats, especially for highly mobile and migratory species, is contingent upon effective management that transcends administrative boundaries. Although transboundary natural resource management has emerged as a topic of academic and professional discourse, implementation has been hampered by a host of barriers that include institutional, administrative, financial and contextual factors. The Crown Managers Partnership, a collaborative initiative of public land managers in the transboundary Rocky Mountains of Canada and the United States, is exploring the approaches to overcome these barriers. This paper reports on the results of interviews to identify the factors that influence the management of transboundary wildlife and provides a series of recommendations that are specific to the study area context, but are also transferable to other regions. Formalizing the existing partnership, exploring options for expanding participation in the partnership to include non-government interests, engaging third party facilitation, using non-traditional data sources, applying metapopulation ecology theory, and interdisciplinary problem solving are all elements recommended for improved transboundary management and of wildlife in the Crown of the Continent Ecosystem.

Tags: TBNRM

Grineski, S. E., & Collins, T. W. (2010). Environmental injustices in transnational context: urbanization and industrial hazards in El Paso/Ciudad Juárez. *Environment and Planning A*, 42(6), 1308-1327.

A study examined residential patterns of environmental injustice in relation to the location of industrial facilities in the manufacturing complex of El Paso, Texas, and Ciudad Juárez, Mexico. Findings demonstrated remarkable differences in the raw level of industrial wastes encountered by residents on the Mexican side of the border compared with levels on the U.S. side. Findings also revealed diverging patterns of exposure to residential hazards between the two cities: in Mexico, generally marginal neighborhoods, in terms of low social class and higher proportions of migrants to the city, were located farther away from industry, whereas in the U.S. such districts were located closer to industry. Findings and implications are discussed in detail.

Tags: Borderland Environments, Displacement

Hansen, A. (1994). The illusion of local sustainability and self-sufficiency: famine in a border area of northwestern Zambia. *Human Organization*, 53, 11-20.

Sustainability is a complex and sometimes fragile condition, as shown by this case study from Zambia's North-Western Province. The long-term evolution of a cassava-based agricultural system provided enough staple food for a rapidly growing population of immigrants and refugees, but a mealybug

invasion in 1985–1989 destroyed much of the cassava and triggered a famine for many people. The famine, caused by the interaction of ecological, political, and economic factors, demonstrated that locally self-sufficient sustainability was an illusion. Affected villagers tried to cope by growing maize and buying maize imported from other regions. But if they used only local resources, many people could not protect themselves, and they suffered severe food shortages. By 1989, the mealybug had apparently been controlled by a biological control program (as much political as technical) that coordinated institutions on three continents. This case demonstrates that: (1) resourceful villagers are an essential dynamic element in evolving food-production systems and in coping with famine; (2) localities are ecologically, politically, and economically incorporated and vulnerable, rather than being isolated and self-sufficient; and (3) biodiversity is essential in a world of not-yet-recognized pests (and diseases).

Tags: Borderland Environments, Migration, Displacement

Hartmann, B. (2004). *Conserving Racism: The Greening of Hate at Home and Abroad*. Amherst, MA: Hampshire College.

The paper argues that the “greening of hate” – or “blaming environmental degradation on poor populations of color – is on the increase in the US and elsewhere (Hartmann, 2004, pg. 1). In the US the logic is that immigrants are mainly responsible for overpopulation which causes negative environmental impacts from urban sprawl, pollution, wilderness destruction etc. Internationally it is focused on peasants encroaching on ‘pristine’ nature.

Tags: Migration, Misc.

Hassan, M., & McIntyre, G. (2012). Palestinian water: Resources, use, conservation, climate change, and land use. *Digest of Middle East Studies*, 21(2), 313-326.

This article addresses the future of freshwater resources in the Palestinian West Bank through a discussion of contemporary issues that each plays a vital role in determining the long-term sustainability of freshwater reserves, such as water resource availability, trans-boundary water issues, water reuse and conservation, changes in land use, and the potential impact of climate change on long-term water management. Climate change and changing land use patterns are already altering this region’s water resources. Future predictions regarding the long-term effects of these changes are complex and therefore inherently uncertain. However, the consensus among most studies on this subject indicates that currently water-poor regions such as the Middle East will experience even greater water stress in the future. Nearly all of the freshwater consumed in the West Bank is obtained from local groundwater supplies that are suffering overdraft as well as decreasing water quality. Climate change will exacerbate water stress by increasing overall temperatures, decreasing and fluctuating precipitation, and reducing overall aquifer replenishment. Expanding urbanization will continue to strain freshwater supplies by negatively impacting the quality and quantity of available freshwater. Water management in the West Bank is further complicated by total Israeli control over water resources, which often causes water delivery to Palestinians in this region to be marginalized. This article finds that Palestinian and Israeli water managers must plan for future water crises, which will likely be a result of the combined effects of increasing urbanization and climate change coupled with exponential population growth.

Tags: Cooperation/Conflict, TBNRM

Heininen, L., & Nicol, H. (2007). A new northern security agenda. In E. Brunet-Jailly (Ed.) *Borderlands: Comparing Border Security in North America and Europe* (117-164). Ottawa, CA: University of Ottawa Press.

This chapter analyzes the changing nature of the Arctic security agenda where security has moved

away from a militaristic definition to a more humanistic definition focused on the environment, livelihoods, and food security in response to new challenges. These challenges are increasingly transborder and include issues such as climate change and long-range pollution. Part of this changing security agenda has led to a more integrated Arctic region as borders are brought down to address these emerging challenges.

Tags: Displacement, Cooperation/Conflict, TBNRM, Misc.

Hensel, P. R., Mitchell, S. M., & Sowers, T. E., II. (2006). Conflict management of riparian disputes. *Political Geography*, 25(4), 383-411.

This paper builds on a large literature that explores the linkages between resource scarcity and interstate conflict. Focusing on competing claims over cross-border rivers, we analyze peaceful and militarized techniques used by states to manage river claims, and compare the success of these techniques for resolving the issues under contention. We focus on two key factors to account for variance in the use and effectiveness of conflict management strategies: water scarcity and institutions. We argue that high levels of water scarcity increase the frequency of explicit claims over fresh water, increase the chances of militarized conflict over these claims, and make it more difficult for conflict management institutions to be created or to be effective. We also examine the role of peace-promoting institutions, both river-specific and general institutions, arguing that institutional membership should promote peaceful attempts to resolve river claims. Analyzing data on river claims (1900-2001) from the Issue Correlates of War (ICOW) Project, we find that greater water scarcity increases the likelihood of both militarized conflict and peaceful third party settlement attempts, while river-specific institutions reduce militarized conflict and increase the effectiveness of peaceful settlement attempts.

Tags: TBNRM, Cooperation/Conflict

Hirsch, P. (2009). Revisiting frontiers as transitional spaces in Thailand. *The Geographic Journal*, 175(2), 124-132.

This paper explores the notion of frontiers as 'in-between' spaces that define particular transitions. Three contexts of frontier and their rapidly changing nature form the basis of the analysis. Agricultural frontiers (typically between farmland and forest) are defined by new relations of production and interplays between conservation, shifting modes of agriculture and natural resource use and management. Peri-urban frontiers (between countryside and city) are taken beyond their *desakota/chaan-meuang* locations to a more generic interplay between urbanity and rurality in defining livelihood and identity. National frontiers (between nation states with sharply different political and economic conditions) are transcended from above in the form of new regionalisms, and, from below, in migrations and other transboundary influences and flows. The paper proposes the frontier as both a spatial and temporal heuristic for understanding development and associated societal transitions in Thailand.

Tags: Borderland Environments, Misc.

Hughes, D. M. (2005). Third Nature: Making Space and Time in the Great Limpopo Conservation Area. *Cultural Anthropology*, 20(2), 157-184.

In southern Africa's Great Limpopo Conservation Area, potential nature viewed as ideal habitats for wildlife may be being given more importance than actual nature. This notion of conditional biodiversity—"third nature"—has conservationists and investors inventing nature on a fresh scale that transverses national boundaries in complex ventures to establish ecotourism in the Great Limpopo zone. In their vision of a continent-wide field for white tourists, to be created by fencing out local populations of black peasants, few observers recognize the structural racism involved in the serious material outcomes of these dreams of third nature.

Tags: TBNRM

Hugo, G. (1996). Environmental concerns and international migration. *International Migration Review*, 30, 105-131.

This article focuses on international migration occurring as a result of environmental changes and processes. It briefly reviews attempts to conceptualize environment-related migration and then considers the extent to which environmental factors have been and may be significant in initiating migration. Following is an examination of migration as an independent variable in the migration-environment relationship. Finally, ethical and policy dimensions are addressed.

Tags: Migration, Displacement

Ingram, A. (2009). The geopolitics of disease. *Geography Compass*, 3(6), 2084-2097.

This article reflects on the increasing use of the term geopolitics in discussions of disease. It notes that although the term geopolitics has been used increasingly often, its precise meaning has not received sustained attention. Neither has it been conceptualized in relation to the extensive literature in critical geopolitics. To lay the groundwork for a more considered understanding of geopolitics in relation to disease, the article elaborates upon the senses in which geopolitics has been invoked in recent literature and links them with themes in critical geopolitics. It identifies three intersecting themes, in connection with which issues of geopolitics have been raised: the spatialization of governance, biopolitics and transnational political economies. In discussing these themes, the article identifies a number of questions and avenues for further research. Overall, it argues that there is considerable scope to investigate further the ways in which disease becomes geopolitical. In conclusion, the article raises a series of questions that may serve to connect research on the geopolitics of disease with debates taking place in and around critical geopolitics and geography more generally.

Tags: Border Enforcement/Security, Misc.

Jaksic, F. M., Iriarte, J. A., Jimenez, J. E., & Martinez, D. R. (2002). Invaders without frontiers: Cross-border invasions of exotic mammals. *Biological Invasions*, 4(1-2), 157-173.

We address cross-border mammal invasions between Chilean and Argentine Patagonia, providing a detailed history of the introductions, subsequent spread (and spread rate when documented), and current limits of mammal invasions. The eight species involved are the following: European hare (*Lepus europaeus*), European rabbit (*Oryctolagus cuniculus*), wild boar (*Sus scrofa*), and red deer (*Cervus elaphus*) were all introduced from Europe (Austria, France, Germany, and Spain) to either or both Chilean and Argentine Patagonia. American beaver (*Castor canadensis*) and muskrat (*Ondatra zibethicus*) were introduced from Canada to Argentine Tierra del Fuego Island (shared with Chile). The American mink (*Mustela vison*) apparently was brought from the United States of America to both Chilean and Argentine Patagonia, independently. The native grey fox (*Pseudalopex griseus*) was introduced from Chilean to Argentine Tierra del Fuego. Few spread rates are available: the lowest are 10 km/yr and correspond to American beaver and American mink; intermediate rates are observed in muskrat and rather questionably, in grey fox; the highest rates (10-20 km/yr) are found among European hare and European rabbit. Because of their frequent migration, it is difficult to estimate the natural spread rate for wild boar and red deer. Not all mammal invasions in Chilean and Argentine Patagonia have been methodical advances of species; some involve an overlap of invasion fronts, with advances and retreats, and perhaps with re-invasions to different areas of either country. Because national policies with regard to introduced species may differ between countries sharing porous borders, it seems advisable to coordinate such policies in order to prevent the entry of unwelcome invaders.

Tags: TBNRM, Border Enforcement/Border Security

Jasparro, C., & Taylor, J. (2008). Climate change and regional vulnerability to transnational Security threats in Southeast Asia. *Geopolitics*, 13, 232-256.

Transnational and non-state threats including international organized crime, terrorism, illicit trafficking (in drugs, wildlife, humans, arms, etc.), piracy, infectious disease, and illegal migration flows are major concerns in Southeast Asia. This paper examines IPCC projections for climate change to the region and discusses possible impacts of these changes upon transnational security. Overall, climate change could increase potential vulnerability to various transnational security threats. Southeast Asian livelihood and social systems will be pressured, while state and civil society capacity will be strained. This will intensify existing vulnerabilities to non-state security threats and raise the overall level of vulnerability and risk to both human and state security. Predicted climate change impacts are also likely to strengthen or help revive sub-state networks that have traditionally responded to environmental change and pressure via violence, crime, smuggling, banditry, trafficking, terrorism, and other such activities. This will contribute to the evolution, expansion, and growth of “new” war fighting groups while raising overall vulnerability to non-state threats from local to global scales.

Tags: Cooperation/Conflict, Migration, Displacement

Jerrett, M., Rey, S. J., & Dufournaud, C. (2003). Accounting for the Environmental “Bottom Line” along the U.S.-Mexico Border. *Annals of the Association of American Geographers*, 93(1), 67-88.

The writers investigate the prospects for creating an environmental accounting system—a methodology for quantifying and, if possible, placing a monetary value on the environmental and resource losses and gains that accrue from economic growth—along the U.S.-Mexico border. They review the rationale for environmental accounting, and they provide adjustments to traditional economic accounts that could improve the ability of decision makers to evaluate the environmental and resource dimensions of economic development. They outline three environmental accounting studies that illustrate the potential for environmental accounting along the U.S.-Mexico border.

Tags: Borderland environments, Displacement, Misc.

Johnson, M. A., & Niemeyer, E. D. (2008). Ambivalent Landscapes: Environmental Justice in the US-Mexico Borderlands. *Human Ecology: An Interdisciplinary Journal*, 36(3), 371-382.

How can a single landscape, a shantytown on the US-Mexico border, symbolize environmental devastation for some and progress and ‘the good life’ for others? Our analysis of this landscape and the people who are a part of it highlights the complexities of the environmental justice movement in the current era of neo-liberal economic policies. Although the colonia that we studied, Derechos Humanos, is located on top of an abandoned landfill near an open sewage canal, living here represents a step forward for many residents. However, to many US environmentalists, this landscape represents a toxic wasteland and the people living here are simply victims of border industrialization. Contributing to critical environmental justice studies, our analysis of Derechos Humanos highlights the injustices of the global political economy, creative responses to these forces by individuals most adversely affected by them, and the potential limitations of conventional framings of environmental justice and mainstream Northern environmentalism.

Tags: Borderland Environments, Displacement, Misc.

Jones, K. (2010). From Big Bad Wolf to Ecological Hero: Canis Lupus and the Culture(s) of Nature in the American-Canadian West. *American Review of Canadian Studies*, 40(3), 338-350.

From devil incarnate to ecological saint, Canis lupus, the gray wolf, has proved an object of intense

fascination for the North American imagination. This essay plots changing attitudes toward wolves in four national parks along the Rocky Mountains with a view to exploring ideas about wilderness, conservation policy, animal crossings, and the frontier. Yellowstone and Glacier in the United States and Banff and Jasper in Canada witnessed first the deliberate extermination and then the canonization of wolves in a little over a century. Choosing to follow the contours of the Rockies rather than the latitudes of the nation-state, I compare shifting policy and cultures of nature across boundaries, pointing to the value of transnational perspectives on the history of the American-Canadian West and the necessity of a borderlands approach when studying an animal prone to roaming across our political demarcations.

Tags: TBNRM

Kahn, M. E. (2004). Domestic pollution havens: evidence from cancer deaths in border counties. *Journal of Urban Economics*, 56(1), 51-69.

Domestic pollution havens may grow at state and international borders where there are substantial differences in the intensity of labor and environmental regulations. A new panel data set on cancer death rates is used to test this hypothesis. Cancer death rates from cancers with an environmental component have increased more in low regulation states relative to high regulation states. Relative to interior counties in the same low regulation states, counties that border high regulation states have experienced increased death rates from cancers with an environmental component. Relative to interior counties in the same states, cancer rates are falling at the Mexican border and rising at the Canadian border.

Tags: TBNRM, Misc.

Kazmi, J. H., & Pandit, K. (2001). Disease and dislocation: the impact of refugee movements on the geography of malaria in NWFP, Pakistan. *Social Science & Medicine*, 52(7), 1043-1055.

Studies of the health implications of refugee movements have generally focused on the effects of dislocation on the health of refugees and the impacts on health care provision at the destination. A somewhat more neglected aspect of the refugee-health research has been the impact of refugee flows on the geography of disease, i.e., how the spatial patterns of disease prevalence are modified through the influx and settlement of refugee populations. We examine this issue by examining the changing geography of malaria in Pakistan's North West Frontier Province (NWFP) between 1972 and 1997. Until the late 1970s, the highest incidence of malaria in the region was seen in the southern and eastern parts. During the 1980s, however, two and a half million Afghan refugees entered the NWFP and were housed in tented villages along the border and in some interior areas. As the decade progressed, there was a significant shift in the spatial pattern of malaria, with the regions of highest incidence shifting to the west and north, coinciding strongly with refugee concentrations. Our study draws attention to the manner in which refugee influx and settlement can alter the ecology of the disease system, leading to long-term changes in the geography of malaria.

Tags: Migration, Displacement

Klein, K., & Winickoff, D. E. (2011). Organic regulation across the Atlantic: emergence, divergence, convergence. *Environmental Politics*, 20(2), 153-172.

Battles over the labelling of genetically modified organisms, the use of hormones in livestock production, and geographic indicators reveal persistent differences between the EU and US within the regulatory domains of environment, agriculture and food safety. Comparative studies have shown that culturally specific accountings of risk have fuelled different approaches to regulatory problems across the two jurisdictions. An analysis of organic regulation suggests that these characterisations remain useful, but should not be oversold. Differences in regulatory culture, as well as differences in explicit goals and mechanisms, set organic food regulation on different paths in the EU and US. However,

whereas such differences have led to polarisation in other domains of food regulation, there has been relative convergence with respect to organic standards. Drawing on theories of regulatory convergence, this paper argues that polarisation was averted due to the ability, ultimately, of social movements working within and across borders to influence both sets of regulations, albeit through different channels.

Tags: TBNRM, Misc.

King, B. (2009). Conservation Geographies in Sub-Saharan Africa: The Politics of National Parks, Community Conservation and Peace Parks. *Geography Compass*, 4(1), 14-27.

Sub-Saharan Africa has been the location of intense conservation planning since the colonial era. Under the auspices of wilderness protection, colonial authorities established national parks largely for the purpose of hunting and tourism while forcibly evicting indigenous populations. Concerns about the ethical and economic impacts of protected areas have generated interest in community conservation initiatives that attempt to include local participation in natural resource management. In recent years, the anticipated loss of biodiversity, coupled with the integration of ecological concepts into planning processes, has generated interest in larger-scale initiatives that maximize protected habitat. Central to this shift are transboundary conservation areas, or Peace Parks, that involve protected territory that supersedes national political borders. This study provides a review of national parks, community conservation, and Peace Parks, in order to understand the development politics and governance challenges of global conservation. Although these approaches are not mutually exclusive, the study asserts that they represent major trajectories to conservation planning in Sub-Saharan Africa and other parts of the developing world. In considering the histories of these models in Sub-Saharan Africa, I argue that conservation planners often prioritize economic and ecological factors over the political circumstances that influence the effectiveness of these approaches. The study concludes by suggesting that an analysis of these three models provides a lens to examine ongoing debates regarding the employ of conservation as an economic development strategy and the challenges to environmental governance in the 21st century.

Tags: TBNRM, Displacement

King, B., & Wilcox, S. (2008). Peace Parks and jaguar trails: transboundary conservation in a globalizing world. *GeoJournal*, 71(4), 221-231.

An increasingly utilized strategy for expanding conservation in the developing world has been the promotion of protected areas that supersede national borders. Alternatively known as transfrontier biosphere reserves, transfrontier or transboundary conservation areas, or Peace Parks, these protected areas are aggressively advanced by conservation agencies for their purported ecological and economic benefits. This article provides a comparative assessment of two case studies to understand the various impacts of transboundary conservation. The Great Limpopo Transfrontier Park, which unites protected areas in South Africa, Mozambique and Zimbabwe, is contrasted with efforts to protect jaguars along the United States–Mexico border. We argue that while these cases are promising for the purposes of biodiversity protection, they demonstrate that transboundary conservation can minimize political context, contributes to the hegemony of international conservation agendas, and remains closely linked to economic neoliberalism and decentralization in the developing world.

Tags: TBNRM, Displacement

Kortelainen, J. (2010). The European green belt: Generating environmental governance - Reshaping border areas. *Quaestiones Geographicae*, 29(4), 27-40.

The article focuses on the European Green Belt (EGB), which refers to efforts to create a network of conservation areas along the borderline that used to divide Europe into the socialist and capitalist

blocks. The EGB initiative attempts to link ecologically valuable areas as continuous ecological networks that cross the entire continent. The EGB is divided into three sub-regions: the Fennoscandian and Baltic Green Belt in the North and along the coastline of the Baltic Sea, the Central European Green Belt, and the South-Eastern European Green Belt. The EGB network is studied as a form of environmental governance, and its formation and furtherance are linked with the environmental governance discussion. In addition, the article aims to show that EGB governance is changing the meaning of the former Iron Curtain borders. The borders have been transnationalised since they have become parts of international networks seeking to develop borderless ecological zones. However, the EGB process maintains and reproduces the borders, as the process itself depends on the availability of suitable border areas.

Tags: TBNRM, Cooperation/Conflict

Kratovits, A. (2002). Driving Forces of the Emergence and Maintenance of Estonian-Russian Bilateral Environmental Cooperation Regime in the 1990s *TRAMES: A Journal of the Humanities & Social Sciences*, 6(2), 173-191.

The present article argues that despite the generally strenuous relations between Estonia and the Russian Federation, which affected also relations between environmental authorities, the need to collectively manage problems associated with the shared natural resource—Lake Peipsi has outweighed “hard politics” considerations and a successful bilateral environmental cooperation regime was created in mid-1990s. The existence of a large and ecologically valuable shared natural resource of broader international importance, together with an active knowledge-oriented group, which is ready to engage in policy mission for the sake of this natural resource (the epistemic community), have played a vital role in the emergence and maintenance of cooperation between the state actors.

Tags: Cooperation/Conflict, TBNRM

Krivilev, V. A., Pashennykh, F. S., & Shilkina, O. A. (2005). Regional Problems of Ecology in the CIS. *Problems of Economic Transition*, 47(12), 58-64.

Part of a special issue on interregional and transborder cooperation between the Commonwealth of Independent States (CIS) and Russia. The writers discuss the ecological problems that the CIS has inherited from the Soviet period and examine the dangers posed to member countries. They point out that, because ecological disasters do not adhere to geographical borders, organizational, technical, and economic measures to deal with them must be coordinated across regions. They outline some counteraction measures.

Tags: TBNRM, Cooperation/Conflict, State-making

Larson, B. M. H. (2005). The war of the roses: demilitarizing invasion biology. *Frontiers in Ecology and the Environment*, 3(9), 495-500.

Biologists need to continuously reflect upon the ethical and rhetorical dimensions of their language when communicating about invasive species. In particular, is current language likely to promote social cohesion and, consequently, effective and appropriate action towards invasive species? To address this question, I focus on prevailing militaristic and combative metaphors within invasion biology. I argue that these metaphors are problematic because (1) they lead to an inaccurate perception of invasive species; (2) they contribute to social misunderstanding, charges of xenophobia, and loss of scientific credibility; and (3) they reinforce militaristic patterns of thought that are counterproductive for conservation. Therefore, while these metaphors may effectively motivate conservation action in the short term, they could be ineffective in the long term. Alternatives to militarism will better promote realistic management and conservation goals in a multicultural context.

Tags: Border Enforcement/Border Security, Migration, Misc.

Lasky, J. R., Jetz, W., & Keitt, T. H. (2011). Conservation biogeography of the US-Mexico border: A transcontinental risk assessment of barriers to animal dispersal. *Diversity and Distributions*, 17(4), 673-687.

Aim Humans have dramatically transformed landscapes along the US-Mexico border. We aim to assess the risk of barriers that may significantly impede animal migrations within this ecologically sensitive region. Location United States and Mexico. Methods We examined the intersection of current and possible future barriers along the border with the geographic ranges of 313 amphibian, reptile and non-volant mammal species. We considered the areas of intensive human land use and 600km of pedestrian fence as current barriers along the border. We evaluated the impacts of two scenarios of dispersal barriers - continuation of existing and construction of new barriers - and identified species vulnerable to global and local extinction. Results Among the species most at risk from current barriers are four species listed as threatened globally or by both nations, 23 species for which the larger of their two national subranges is 105km<sup>2</sup> and 29 species whose ranges cross the border only marginally. Three border regions, California, Madrean archipelago and Gulf coast, emerge as being of particular concern. These regions are characterized by high overall species richness and high richness of species at risk from existing barriers and from construction of potential new barriers. Main conclusions New barriers along the border would increase the number of species at risk, especially in the three identified regions, which should be prioritized for mitigation of the impacts of current barriers. The species we identified as being potentially at risk merit further study to determine impacts of border dispersal barriers.

Tags: Border Enforcement/Border Security, TBNRM, Migration

Leibenath, M., Blum, A., & Stutzriemer, S. (2010). Transboundary cooperation in establishing ecological networks: The case of Germany's external borders. *Landscape and Urban Planning*, 94(2), 84-93.

Many voices call for better transboundary coordination and management of ecological networks. Little, though, is known about the kind of transboundary cooperation currently going on in establishing ecological networks across European borders. The objective of the present research is to gain an empirical overview of transboundary cooperation in establishing ecological networks on Germany's external borders, to analyse reasons why such cooperation is launched and why some border regions seem to be more active in this than others, and finally to identify shortfalls in current practice and potential remedies. The empirical analysis is guided by a theoretic framework which includes hypotheses on: (1) the institutional context, (2) structural and situational contexts, (3) actors with their resources, orientations and interests, (4) actor constellations, and (5) ideas, symbols and discourses. The methodology consists of a literature review, a comprehensive internet survey in combination with exploratory expert interviews, and a series of semi-structured, open-ended, in-depth interviews. We identified 34 transboundary cooperation projects in establishing ecological networks across Germany's external borders in the period 2003-2007, the majority of which was located at Germany's western borders. Many factors that had been derived theoretically were borne out by the interviews. However, hypotheses on the influence of NGOs and on international institutions and organisations seem to be of specific explanatory value. In practical terms we recommend intensifying the flow of knowledge and information between practitioners in this field and strengthening the ties between ecological network planning and spatial planning in transboundary contexts.

Tags: TBNRM, Cooperation/Conflict

Lopez-Hoffman, L., Varady, R. G., Flessa, K. W., & Balvanera, P. (2010). Ecosystem services across borders: A framework for transboundary conservation policy. *Frontiers in Ecology and the Environment*, 8(2), 84-91.

International political borders rarely coincide with natural ecological boundaries. Because neighboring countries often share ecosystems and species, they also share ecosystem services. For example, the United States and Mexico share the provisioning service of groundwater provided by the All-American Canal in California; the regulating service of agave crop pollination by long-nosed bats; and the aesthetic value of the North American monarch butterfly, a cultural service. We use the Millennium Ecosystem Assessment (MA) to elucidate how drivers in one country can affect ecosystem services and human well-being in other countries. We suggest that the concept of ecosystem services, as articulated by the MA, could be used as an organizing principle for transboundary conservation, because it meets many of the criteria for successful transboundary policy. It would frame conservation in terms of mutual interests between countries, consider a diversity of stakeholders, and provide a means for linking multiple services and assessing tradeoffs between uses of services.

Tags: TBNRM

Lowry, W. R. (2009). Policy Changes on Canada's Rivers: Different but not Isolated. *Review of Policy Research*, 26(6), 783-800.

I address two questions in this article. First, how do policy changes to Canada differ from those in the United States? Second, are such changes isolated from American influence? I argue that Canadian policy changes will be more driven by subnational bureaucrats, more dependent upon fortuitous alignments of interest and institutions, and less quickly emulated by other jurisdictions than policy changes in the United States. I will also argue that policy changes in Canada are not completely isolated from those in the United States, not given the ability of ideas to cross international borders to change the framing of issues. I examine these arguments in the context of changing river management policies in British Columbia and Ontario.

Tags: TBNRM, Cooperation/Conflict

Lunstrum, E. (2010). Reconstructing history, grounding claims to space: history, memory, and displacement in the Great Limpopo Transfrontier Park. *South African Geographical Journal* 92(2): 129-143.

The recent creation of Mozambique's Limpopo National Park (LNP) and its integration into the larger Great Limpopo Transfrontier Park (GLTP) promise to effect profound political, social, and ecological changes. These range from removing sections of the international border fence and restocking wildlife in the LNP to the planned relocation of several thousand people living within the park. These transformations have inspired complex, conflicting excavations of the past. This paper investigates how history and memory are deployed as strategic political resources to justify competing claims to space, in this case the rural village of Massingir Velho slated for relocation and the larger GLTP/LNP. Official GLTP history strategically rationalizes the creation of a transnational park that is rich in wildlife and tourist opportunities and a vehicle for addressing multiple past violences. Residents of Massingir Velho who are critical of the planned relocation reconstruct a strikingly different history. They draw on intimate place-based and lived memories of two prior displacements to question the legitimacy of the current round of relocation. In short, historical excavations and reconstructions ground claims to space to both reinvent it, for example in the form of a transfrontier park, and to contest such spatial transformations. The mobilization of history, in short, actively shapes present and future spaces and possibilities.

Tags: TBNRM, Borderland Environments, Cooperation/Conflict, Displacement

Lunstrum, E. (2013). Articulated sovereignty: extending Mozambican state power through the Great Limpopo Transfrontier Park." *Political Geography* 36: 1-11.

Since its inception in 2001 and subsequent integration into the tri-national Great Limpopo Transfrontier Park (GLTP), Mozambique's Limpopo National Park (LNP) has been progressively transformed into a functioning wildlife park. Standing behind this transformation has been a profound expansion of Mozambican state power over and through the park. While this reinforces predictions in the early transfrontier conservation literature, it stands in tension with observations that these projects threaten state power. I address this tension by developing the concept of articulated sovereignty, which understands sovereignty as a heterogenous set of powers that are produced through often unequal interactions with other actors, including foreign or extra-territorial actors. In short, sovereignty is articulated through these interactions. I draw from this to show that the same partnerships that seem to threaten sovereignty in some respects in fact shore up the power of the Mozambican state in other respects. I focus in particular on the foreign-assistance-enabled extension of state power through the development of legal and technical capacity, park administration and infrastructure, a ranger force, and the relocation of communities beyond park borders. I additionally draw on articulated sovereignty to show that the state and territory, like sovereignty, are built through various articulations with extraterritorial partners, thus drawing into question the sovereignty-state-territory triad. I close by reflecting on the utility of articulated sovereignty beyond the realm of conservation. In short, articulated sovereignty sheds light on both the sovereignty complexities of transfrontier conservation projects like the LNP/GLTP and how sovereignty actually plays out in the world.

Tags: TBNRM, State-Making, Borderland Environments, Displacement

Macknick, J. E., & Enders, S. K. (2012). Transboundary Forestry and Water Management in Nicaragua and Honduras: From Conflicts to Opportunities for Cooperation. *Journal of Sustainable Forestry*, 31(4-5), 376-395.

In the mountainous western border region of Nicaragua and Honduras, a lack of integrated forestry, water, and land-use policies has contributed to a series of interrelated conflicts both within and across country borders. These conflicts are manifested in increases in illegal deforestation, forest fires, and deteriorating surface water resources. Although problems appear most obviously in terms of natural resource shortages, the root of the problems is often the inadequate decision-making process. In this study, we use a problem-oriented approach to describe three natural resource conflicts, analyze the decision-making and social processes contributing to these conflicts, and offer recommendations by describing how a bi-national community-based water monitoring regime could improve data collection and the inclusivity of the decision-making process.

Tags: TBNRM, Cooperation/Conflict

Martin, A., Rutagarama, E., Cascao, A., Gray, M., & Chhotray, V. (2011). Understanding the co-existence of conflict and cooperation: Transboundary ecosystem management in the Virunga Massif. *Journal of Peace Research*, 48(5), 621-635.

This article contributes to our understanding of transboundary environmental management regimes through the application of an analytical framework that facilitates an exploration of the co-existence of conflict and cooperation. Rather than framing conflict and cooperation as mutually exclusive states at opposite ends of a spectrum, we seek to understand the ways in which cooperation can exist at the same time as conflict. We apply this framework to a study of conservation management in a transboundary area at the intersection of the Democratic Republic of Congo, Rwanda and Uganda. We identify two actual and one hypothetical phase of conflict-cooperation relations, in a landscape notorious for some of the worst violence of the last two decades. We map the evolution of phases of transboundary protected area management against the evolving security context, and we find that this approach has greater explanatory power than previous approaches that polarize conflict and

cooperation. In particular, it helps us to understand the drivers of environmental cooperation, including the evolving characteristics of that cooperation. This new way of understanding the relationship between environmental management and security also enables us to reconsider the potential for environmental management to be instrumental in working towards interstate security objectives, for example through peace parks. We don't find that the 'low politics' of environmental management should be seen as a predictable and manageable determinant of international relations. But an understanding of the coexistence of conflict and cooperation does also point to a more complex, non-linear relationship between low and high politics.

Tags: TBNRM, Cooperation/Conflict

Mather, C., & Marshall, A. (2011). Biosecurity's unruly spaces. *The Geographic Journal*, 177(4), 300-310.

This paper is about the geopolitics of animal health governance. Through a biosecurity event in South Africa's pig sector we examine changes in the way the governance of disease risk is configuring intra-national spaces. Our case suggests an emerging geopolitics of animal health, one that is defined not by differences between nations but by a more complex patchwork of 'secure' and 'unruly spaces'.

Tags: Border Enforcement/Security, Misc.

Maye, D., Dibden, J., Higgins, V., & Potter, C. (2012). Governing biosecurity in a neoliberal world: comparative perspectives from Australia and the United Kingdom. *Environment & Planning A*, 44(1), 150-168.

International trade poses a serious and growing threat to biosecurity through the introduction of invasive pests and disease: these have adverse impacts on plant and animal health and public goods such as biodiversity, as well as food production capacity. While international governmental bodies such as the World Trade Organization (WTO) recognise such threats, and permit governments to protect human, animal, and plant life or health, such measures must not be applied in a way that is restrictive to trade. This raises a fundamental (but little-examined) tension between effective biosecurity governance and the neoliberal priorities of international trade. In this paper we examine how such tensions play out in the different political and geographical contexts of Australia and the United Kingdom. A comparative approach enables close scrutiny of how trade liberalisation and biosecurity are coconstituted as compatible objectives as well as the tensions and contradictions involved in making these domains a single governable problem. The comparative analysis draws attention to the policy challenges facing Australia and the UK in governing national biosecurity in a neoliberal world. These challenges reveal a complex geopolitics in the ways in which biosecurity is practised, institutionalised, and debated in each country, with implications for which pests and diseases are defined as threats and, therefore, which commodities are permitted to move across national borders. Despite efforts by the WTO to govern biosecurity as a technical matter of risk assessment and management, and to harmonise national practices, we contend that actual biosecurity practices continue to diverge between states depending on perceptions of risk and hazard, both to agricultural production and to rural environments as a whole, as well as unresolved tensions between internationalised neoliberalism and domestic concerns.

Tags: Border Enforcement/Security, Misc.

McIntyre, D. L., & Weeks, J. R. (2002). Environmental impacts of illegal immigration on the Cleveland national forest in California. *Professional Geographer*, 54(3), 392-405.

Since the inception of Operation Gatekeeper along the U.S.-Mexico border, there has been an increase in environmental impacts on the Cleveland National Forest, in eastern San Diego County, California,

This is almost certainly due to an increase in the number of undocumented immigrant., using the area as a gateway to the interior of the United States. In this research, we use the tools of geographic information systems (GIS) to measure the scope and extent of this impact, focusing on the creation of illegal trails and the impact of illegal campsites and campfires on the environment of the Descanso Ranger District within the national forest. Our finding., suggest that between the start of Operation Gatekeeper in late 1994 and the end of the study period in 1999, there were 72 meters of new trail created per 1,000 unauthorized immigrants, accompanied by 656 square meters of area disturbed per 1,000 immigrants, fifty kilograms of litter left behind per 1,000 immigrants, eleven illegal campfires per 1,000 immigrants, and 1.7 hectares burned by wildfires attributed to illegal immigrants.

Tags: Migration

Meierotto, L. M. (2012). The Blame Game on the Border: Perceptions of Environmental Degradation on the United States-Mexico Border. *Human Organization*, 71(1), 11-21.

As a result of the combined impacts of shifts in immigration policies and increased Homeland Security, the United States-Mexico border region has become increasingly degraded in environmentally protected areas. Such activities include migrant and smuggler traffic as well as a corresponding influx of Border Patrol agents, vehicles, fence, and wall construction and high-tech security systems. Disparate parties are quick to assign blame: on the one hand, "dirty Mexicans" are identified as corrupting a pristine environment as they leave behind garbage and human waste. On the other hand, Border Patrol is often identified as a major perpetrator of environmental damage at the border, driving off-road and subjecting the fragile desert landscape to fence and wall construction and security-related traffic. In this paper, based on ethnographic fieldwork conducted between 2007 and 2009 at Cabeza Prieta National Wildlife Refuge, adjacent to the United States-Mexico border, I discuss the ways in which different perceptions of degradation are linked to broader social and political norms and can, at times, even reinforce negative ethnic stereotypes regarding the threat and impact of Mexican-origin immigration.

Tags: Migration, Border Enforcement/Border Security

Milgroom, J., & Spierenburg, M. (2008). Induced volition: Resettlement from the Limpopo National Park, Mozambique. *Journal of Contemporary African Studies*, 26(4), 435-448.

This paper focuses on the resettlement process taking place in the context of the creation of the Limpopo National Park in Mozambique, which is part of the Great Limpopo Transfrontier Park. About 27,000 people are currently living in the park; 7000 of whom are meant to be resettled to areas along the margins of the park. The Mozambican government and donors funding the creation of the park have maintained that no forced relocation will take place. However, the pressure created by restrictions on livelihood strategies resulting from park regulations, and the increased presence of wildlife has forced some communities to 'accept' the resettlement option. Nevertheless, donors and park authorities present the resettlement exercise as a development project. In the article we describe how the dynamics of the regional political economy of conservation led to the adoption of a park model and instigated a resettlement process that obtained the label 'voluntary'. We analyse the nuances of volition and the emergent contradictions in the resettlement policy process.

Tags: Displacement, TBNRM

Mumme, S. P. (2003). Environmental politics and policy in U.S.-Mexican border studies: developments, achievements, and trends. *Social Science Journal*, 40(4), 593-606.

The study of environmental politics and policy on the U.S.-Mexican border is barely more than 30 years old. This interdisciplinary field has grown substantially since the 1970s, however, and now generates a substantial literature addressing a range of environmental media, politics, and policy problems within

and across the international boundary. While most of this effort is descriptive and normative, focused on understanding institutional arrangements and practices, new areas of emphasis and new theoretical approaches have emerged in the 1990s that are attracting greater scholarly attention. This essay describes the development of the field from the 1970s to the present, pointing to particular achievements and trends that will doubtlessly shape future research in the area.

Tags: Borderland Environments, Border Enforcement/Security

Munthali, S. M. (2007). Transfrontier conservation areas: Integrating biodiversity and poverty alleviation in Southern Africa. *Natural Resources Forum*, 31(1), 51-60.

Sub-Saharan Africa continues to face the daunting challenge of alleviating poverty) due to slow economic growth. In southern Africa, most countries are adopting policies that promote the integration of biodiversity conservation and rural development to contribute to rural poverty alleviation. Numerous approaches have been undertaken in this endeavour including Tran frontier Parks (TFPs) and Transfrontier Conservation Areas (TFCAs). This paper discusses some of the limitations of the TFPs. In conclusion I posit that unlike TFPs, which are state controlled and managed, TFCAs, which promote multi-land use and multi-stakeholder participation are attainable and have a higher probability of sustaining biodiversity conservation and contributing to the alleviation of rural poverty, if: (i) areas of high biodiversity conservation within communal areas can be identified, zoned and leveraged to biodiversity conservation and managed in partnership between the communities and the private sector; (ii) local communities can secure legal rights to their customary land being devoted to biodiversity conservation and use such pieces of land as collateral in negotiating partnerships with the private sector in developing conservation-based enterprises; (iii) junctional community natural resource governance institutions can be established and empowered to represent their constituencies in securing fair equity from profits made from sustainable use of the conserved biodiversity assets and tourism businesses; (iv) concerted effort can be invested in developing and implementing family ill planning and fertility reduction strategies that would slow down human population growth to levels that can be sustained by the available natural resources; and (v) if sustainable financing mechanisms can be developed, and the governance of protected areas occurring in the TFCAs can be broadened to include other stakeholders.

Tags: TBNRM

Nevins, J. (2004). Contesting the Boundaries of International Justice: State Counter-mapping and Offshore Resource Struggles Between East Timor and Australia. *Economic Geography*, 80(1), 1-22.

The ongoing struggle between East Timor and Australia over access to and control of the oil and natural gas resources contained within the seabed between the two countries is manifest in the form of contested boundaries. Each side attempts to buttress its claim through, among other means, competing cartographic representations. In examining this case study, this article asserts that what has come to be known as counter-mapping is not limited to the activities of nonstate actors and social movements that are struggling over resources and territory within a particular nation-state. Relatively weak states also can and do engage in such activities in challenging other states. Given the nature of power relations within the realm of international affairs and the weakness of international judicial mechanisms, however, counter-mapping as a resource-claiming device and tactic of relatively marginal states can be only one tool in a larger strategy that resists and/or challenges the status quo. The results of the strategy are thus contingent not merely on the authoritativeness of alternative maps and the rightness of the position on which these maps are based, but, what is more important, on the use of social power and the concomitant ability to determine the scope and scales of the conflict, as well as the larger context in which the struggle unfolds. By highlighting the importance of social power, scale, and scope, the case study presented here provides analytical, strategic, and tactical tools for those who are

engaged in or are examining countermapping-type struggles of both the social-movement and state sorts.

Tags: Cooperation/conflict, State-making, Misc.

Nevins, J. (2008). *Dying to live: A story of U.S. immigration in an age of global apartheid*. San Francisco, CA: City Lights Books.

The book uses a personal story of a migrant and his family to highlight the plight of those crossing the US-Mexico border illicitly, and who are often pushed to cross through the perilous desert connecting California and Mexico. In doing so the book explores the increasing build-up of US border security and migration enforcement and its impacts on migrants and their families connecting issues of globalization, migration, border security and human rights.

Tags: Migration, Displacement, Border Enforcement/Security

Noe, C. (2010). Spatiality and 'borderlessness' in transfrontier conservation areas. *South African Geographical Journal*, 92(2), 144-159.

This article offers a critique of transfrontier conservation areas (TFCAs) by focusing on the conception of borders in the proposition of these areas. It claims that the conception of borders as fences that should be removed masks the actual process of bordering that accompanies the creation of TFCAs in different socio-economic and ecological settings. Using the local realities in southern Tanzania where the borders of neither the state nor the protected areas are marked by physical fences, this paper demonstrates how proponents of TFCAs engender new borders that affect the livelihoods of local residents. The assumption that TFCAs follow natural borders is problematic, in that borders are a human creation that are also spatially bounding. This paper draws on conceptual insights from border studies to engage with narratives in transfrontier conservation. Empirically, it uses the experience of the ongoing process of establishing the Selous-Niassa wildlife corridor, which is a cog in the creation of the Selous-Niassa TFCA across Tanzania-Mozambique border.

Tags: TBNRM

Nyers, P. (2012). Commentary-Moving Borders: The Politics of Dirt. *Radical Philosophy*(174), 2.

Through an analysis of the securitization of dirt in specific border zones, this paper demonstrates how dirt, or inanimate objects, have agency, or a force or direction of their own. This analysis gives us insight into the mobility of borders and of objects across borders and how inanimate objects like certain 'natures' are entangled in and influence this process.

Tags: Border Enforcement/Border Security, Migration, Borderland Environments, Displacement

Oglethorpe, J., Ericson, J., Bilsborrow, R., & Edmond, J. (2007). *People on the move: reducing the impact of human migration on biodiversity*. Washington, D.C.: World Wildlife Fund and Conservation International Foundation.

Human migration poses huge challenges to conserving the Earth's rich biodiversity, yet conservationists are often unsure about what steps, if any, they can take to reduce its negative impacts. Conservation International (CI) and World Wildlife Fund-US (WWF) undertook this review to explore the scope of negative impacts and possible interventions.

Tags: Migration

Pangsapa, P., & Smith, M. J. (2008). Political Economy of Southeast Asian Borderlands: Migration, Environment, and Developing Country Firms. *Journal of Contemporary Asia*, 38(4), 485-514.

Borderland zones in Southeast Asia have become sites of growing economic investment for developing country, intraregional, and transnational corporations. Deregulation has contributed to the exploitation of natural and human resources by such firms in an unsustainable and unjust way. The flows of people and natural resources across borders are intimately linked. Furthermore, the association of these factors has been politically facilitated by the interested governments' acceptance of the porosity of territorial boundaries and the imperative to export environmentally degrading development projects into neighboring countries where political mobilization on environmental issues is much less effective. Case studies on resource extraction, dam and reservoir construction, and working conditions in apparel firms demonstrate how developing country companies adhere to the codes of conduct on corporate responsibility on human rights, labor standards, and environmental sustainability within the context of the governance of the global supply chain.

Tags: Borderland Environments, Migration, Displacement

Peluso, N. L., & Vandergeest, P. (2011). Political Ecologies of War and Forests: Counterinsurgencies and the Making of National Natures. *Annals of the Association of American Geographers*, 101(3), 587-608.

We examine the significance of a specific type of political violence — counterinsurgency — in the making of political forests, providing a link between literatures on the political ecology of forests and the geographies of war. During the Cold War, particularly between the 1950s and the end of the 1970s, natures were remade in relation to nation-states in part through engagements with “insurgencies” and “emergencies” staged from forested territories. These insurgencies represented alternative civilizing projects to those of the nascent nation-states; they also took place in historical moments and sites where the reach of centrifrically focused nations was still tentative. We argue that war, insurgency, and counterinsurgency helped normalize political forests as components of the modern nation-state during and in the aftermath of violence. The political violence also enabled state-based forestry to expand under the rubric of scientific forestry. Military counterinsurgency operations contributed to the practical and political separation of forests and agriculture, furthered and created newly racialized state forests and citizen-subjects, and facilitated the transfer of technologies to forestry departments. The crisis rhetoric of environmental security around “jungles,” as dangerous spaces peopled with suspect populations, particularly near international borders, articulated with conservation and other national security discourses that emerged concurrently. Counterinsurgency measures thus strengthened the territorial power and reach of national states by extending its political forests.

Tags: State-making, Displacement, Misc.

Raman, S., & Tutton, R. (2010). Life, Science, and Biopower. *Science Technology & Human Values*, 35(5), 711-734.

This article critically engages with the influential theory of "molecularized biopower" and "politics of life" developed by Paul Rabinow and Nikolas Rose. Molecularization is assumed to signal the end of population-centred biopolitics and the disciplining of subjects as described by Foucault, and the rise of newforms of biosociality and biological citizenship. Drawing on empirical work in Science and Technology Studies (STS), we argue that this account is limited by a focus on novelty and assumptions about the transformative power of the genetic life sciences. We suggest that biopower consists of a more complex cluster of relationships between the molecular and the population. The biological existence of different human beings is politicized through different complementary and competing discourses around medical therapies, choices at the beginning and end of life, public health, environment, migration and border controls, implying a multiple rather than a singular politics of life.

Tags: Migration, Border Enforcement/Border Security

Ramutsindela, M. (2007). *Transfrontier Conservation in Africa: at the confluence of capital, politics and nature*: CABI.

The book suggests that an adequate analysis of transfrontier conservation initiatives in Africa would have to go beyond explaining specific cases and the circumstances surrounding them if we are to achieve a comprehensive understanding of these initiatives. This is imperative, not least because TFCAs provide the platform on which various interests are pursued at, and between, various scales. The book challenges the emerging and common view of TFCAs as a southern African phenomenon or, at worst, a South African experience. Instead, it argues that TFCAs should be understood in the context of the intersections between the environmental movement and the private sector, and the place and role of the state – individually and collectively – in those intersections. It concludes that events and processes that shaped TFCAs and their emergence in Africa are not perfectly discrete, but are linked to the trajectories of environmentalism and associated practices in a changing socio-political environment.

Tags: TBNRM, Cooperation/Conflict, Displacement

Ramutsindela, M., & Noe, C. (2012). Scalar thickening: Wildlife management areas and conservation scales in southeast Tanzania. *Singapore Journal of Tropical Geography*, 33(1), 137-151.

The debate on scale in geography has yielded nuanced concepts that have enhanced scale analysis and methodologies for scale-related research. Despite this advancement, questions still linger on the value of scale as a geographical vocabulary, partly because scalar analyses remain predicated on hierarchies, which have limited explanatory power. In this paper we draw on insight from political ecology to affirm and expand on the usefulness of scale for geographical inquiry and for engaging with contemporary people-environment relations. In particular, the paper appreciates that ecology is at the core of methodological questions pertaining to the explanation of these relations and is increasingly involved in the construction of biodiversity discourses and strategies that rely heavily on conceptions of, and pronouncements on, scale. We use the concept of scalar thickness as a way of thinking about how spaces of conservation are organized and the propensity of scales to coalesce at various stages of scale-producing processes. We argue that wildlife management areas in Tanzania have played a pivotal role in the thickening of the micro scale in the southeast region. These areas constitute the scale at and through which global conservation agendas are implemented and natural resource rights and benefits are contested.

Tags: TBNRM

Rodgers, G. (2009). The faint footprint of man: Representing race, place and conservation on the Mozambique-South Africa borderland. *Journal of Refugee Studies*, 22(3), 392-412.

The integration of South Africa's existing Kruger National Park with Mozambique's newly-established Limpopo National Park signified an important milestone in the development of the Great Limpopo Transfrontier Park. Marketed as an example of the African Renaissance-in-action, this move towards a transnational 'mega-park' has promised an enlightened approach to conservation and regional economic development. For Mozambique, the LNP is a highly visible post-war initiative, attracting much needed investment to a remote and under-developed part of the country. This article addresses the tensions created around people living within this new Park and considers how these tensions contribute towards shaping the LNP as a space of conservation. Specifically, it contrasts an official programme to promote 'voluntary resettlement' from the LNP - which represents local 'communities' not only as incompatible with the interests and intentions of conservation but also as fundamentally separable from it - with more historically entrenched local experiences and narratives of conservation. These

narratives, drawn primarily from Mozambican migrants and refugees in South Africa, represent livelihoods and lifeworlds as intimately enmeshed in the historical development of conservation on the borderland. Relentless Mozambican intrusions into the KNP over more than a century asserted their place on this conservation landscape, albeit on terms that were profoundly alienating and marginalizing. The article argues that contested representations over belonging within this unfolding conservation regime are likely to reproduce local understandings of conservation in terms of continuities of racial politics and colonial expansion.

Tags: TBRNM, Displacement, Migration, State-making

Rossiter, D. A. (2011). Leave the lemons at home: towards a political ecology of border space. *Geopolitics*, 16(1), 107-120.

This paper presents a political ecology approach to the study of borders through consideration of a lemon's travels in contemporary North American border space. Following discussion of recent work on the dynamic, multi-scalar, and process-based character of modern borders, I suggest that such critical approaches could be usefully augmented by drawing on ideas about socio-material networks advanced by Bruno Latour. By adopting a political ecology framework, border scholars would be able to consider more fully the materiality of borders and bordering processes. Through the example of the lemon, I demonstrate that in constructing the fruit as a particular socio-material artifact that embodies multiple threats to US national space, it and its carrier become implicated in the regulation of political-economic and geopolitical networks that are seemingly far removed from the object of concern.

Tags: Border Enforcement/Border Security

Saldana, T. M. (2012). Water rituals on the Bravo/Grande River: A transnational political and ecological inheritance. *Journal of Political Ecology*, 19(1), 57-69.

The Mexico-US border region is home to a particular hydraulic tradition with important social, cultural and environmental dimensions. This article discusses the ways that European, indigenous and mestizo colonists from central Mexico reshaped the borderlands as they molded Mesoamerican irrigation systems to the arid landscapes of the region. Small-scale irrigation systems conserve humidity and protect against heat and cold, and allow the reproduction of plants that constitute an important source of biodiversity, as well as a viable economic strategy for small-scale farmers. Religious festivals and rituals, together with social organizations, bring people together in communities around these irrigation systems. The author argues that these traditions are alive and well in many places, and constitute a shared inheritance of sustainable adaptation for people on both sides of the national-state divide.

Tags: Borderland environments, Misc.

Salisbury, D., Gutiérrez, L., Carlos, L., & Jorge, W. (2010). Fronteras Vivas or Dead Ends? The Impact of Military Settlement Projects in the Amazon Borderlands. *Journal of Latin American Geography*, 9(2), 49-71.

The geopolitical initiative of creating military settlement projects, *fronteras vivas* (living borders), along isolated stretches of the Amazon borderlands transforms land use and livelihoods in unexpected ways. A case study in the Peruvian Amazon explores the natural resource management, household economics, and political geography of a borderland military base and associated settlement. Results find the military settlement project's transboundary impacts create opportunities for international conflict in an age of South American integration.

Tags: Borderland Environments, State-making, Misc.

Salisbury, D. S., Lopez, J. B., & Vela Alvarado, J. W. (2011). Transboundary political ecology in

Amazonia: History, culture, and conflicts of the borderland Ashaninka. *Journal of Cultural Geography*, 28(1), 147-177.

International boundaries in the lowland Amazon forest were historically drawn according to the scramble for natural resources. This paper uses a case study from the Peruvian and Brazilian border and the Ucayali and Jurua watersheds to understand the political ecology of a border process from contact to 2004. Results demonstrate how global resource demand and ecological gradients drove boundary formation and the relocation of indigenous labor to the borderlands. Forgotten in the forest after the fall of rubber prices, the borderland Ashaninka emerged to challenge loggers incited by the global demand for high grade timber. The transboundary impacts of this resource boom highlight discrepancies between the Brazilian and Peruvian Ashaninka's ability to mobilize power. A transboundary political ecology framework is necessary to grasp the heterogeneity and dynamism of natural resource management along boundaries and borderlands forged and tempered by historical resource booms.

Tags: Borderland Environments, Cooperation/Conflict

Sayre, N. F., & Knight, R. L. (2010). Potential effects of united states-mexico border hardening on ecological and human communities in the malpai borderlands: Diversity. *Conservation Biology*, 24(1), 345-348.

This paper argues that the hardening of the border and related build up of border patrol on the part of the US along the US-Mexico border has negative ecological (as well as human) consequences. Looking specifically at the Malpai borderlands in South-east Arizona the article describes and highlights how the US Secure Fence Act and subsequent border security processes has impacted local ecologies.

Tags: Border Enforcement/Border Security, Migration

Shellabarger, R., Peterson, M. N., & Sills, E. (2012). How conservation and humanitarian groups respond to production of border security on the Arizona-Sonora border. *Local Environment*, 17(4), 481-493.

US policies for securing the border with Mexico are driven by multiple political concerns, including the desire to control illegal trade and immigration in a way that conveys "border security" to a national audience. Highly visible border enforcement near urban centres and via the border fence has pushed migrants into far less visible and remote wilderness areas, driving both ecological degradation and a humanitarian crisis. This study employed ethnographic methods to explore how natural resource agency employees and humanitarian volunteers in Altar Valley Arizona perceived and responded to the production of border security. We found that both groups recognised human rights and environmental concerns, although they assigned different priorities and addressed them through conflicting means. As in other cases where consumers are separated from production practices, there was a general consensus among informants that it was important to raise the consciousness of the national audience about the negative externalities of producing border security.

Tags: Border Enforcement/Security, Migration, Borderland Environments, Displacement

Sheridan, T. E. (2001). Cows, condos, and the contested commons: The political ecology of ranching on the Arizona-Sonora borderlands. *Human Organization*, 60(2), 141-152.

Despite the rapid urbanization of the Arizona-Sonora borderlands, cattle ranching continues to play a major, if increasingly contested, political, economic, and ecological role in the region. Unlike other industries, technological manipulation has failed to increase productivity in the range cattle industry. The constraints of aridity and climatic variability have not been overcome. Ranchers on both sides of the border therefore need access to large tracts of land to secure the natural forage their cattle need.

Spain and Mexico both recognized communal as well as private forms of tenure, even though neoliberal reforms are weakening *comunidades* and *ejidos*. The United States, in contrast, has no communitarian tradition, and U.S. homestead laws never allowed individuals to preempt enough of the public domain to support a cow outfit. Instead, grazing allotments on both federal and state lands provide ranchers with exclusive rights to forage. Those rights are increasingly challenged by some environmentalists, who want cows off public lands. Faced with rising land prices, unstable markets, an unpredictable climate, enormous estate taxes, and increasing political uncertainty over their access to public lands, many ranchers choose or are forced to sell their private land to real estate developers or subdivide it themselves. The resulting fragmentation of the landscape and increasing densities of people deplete water resources and make large-scale ecosystem management, including the preservation of wildlife corridors and the reintroduction of fire, difficult if not impossible.

Tags: Borderland Environments, Displacement

Sigman, H. (2002). International Spillovers and Water Quality in Rivers: Do Countries Free Ride? *American Economic Review*, 92(4), 1152-1159.

An empirical analysis offers evidence that international spillovers significantly impair water quality in rivers. Findings indicate that stations upstream of international borders outside the European Union (EU) have higher pollution than other stations and that stations on international borders may also exhibit higher pollution, although this effect is not robust to the inclusion of country effects. Further, the EU seems to have successfully ameliorated free-riding: one cannot overlook the fact that stations upstream of internal EU borders have typical pollution levels. This evidence of free-riding indicates that cooperation has not developed between nations sharing rivers, which does not bode well for more complex cooperation negotiations, such as those surrounding greenhouse gases.

Tags: TBNRM, Cooperation/conflict

Simpson, A. (2007). The Environment - Energy Security Nexus: critical analysis of an energy 'love triangle' in Southeast Asia. *Third World Quarterly*, 28(3), 539-554.

A study was conducted to analyze the energy love triangle" between Thailand, Burma, and Laos in Southeast Asia. Data were obtained from a review of the literature and fieldwork concerning three cross-border energy projects: Yadana Gas Pipeline, Burma–Thailand; Nam Theun 2 Dam, Laos–Thailand; and Salween River Dams, Burma–Thailand. Findings demonstrated how Thailand allows its more authoritarian neighbors to deal with the problems of setting up a transnational energy project and imports the resulting energy. Findings revealed that, rather than safeguarding local communities from deprivation, such projects often exacerbate existing social tensions and conflict, hasten environmental degradation, and intensify various manifestations of insecurity.

Tags: TBNRM, Displacement

Smart, A., & Smart, J. (2012). Biosecurity, quarantine and life across the border. In T. Wilson and H. Donnan (Eds.) *A Companion to Border Studies* (354-370). West Sussex, UK: Blackwell Publishing Ltd.

This article is an “empirical attempt to bring the plants, animals and microbes back in to the study of borders, always already there and in the operation of borders.” The paper’s main intervention is to read outside the area of border studies in areas where “borders are acknowledged as having affected that issue” but are not considered border studies per se (i.e. colonial medicine, ecology of invasive species, biosecurity) to gain a broader insight into

borders and border processes. Important themes identified are quarantine, biosecurity and risk, and life across the border.

Tags: Border Enforcement/Border Security, Migration

Sorrensen, C. (2012). A history of transboundary storm water flows: flooding, tunnels, and the spatial incongruity of the U.S.-Mexico border. *Journal of Historical Geography*, 38(4), 447-457.

The benefits of transnational flows and the concern for national security have framed development in the U.S.-Mexico borderlands since the formative beginnings of both nations. As national discourses, trade and security work against each other in borderland spaces, the former requiring openings in the border, the later seeking to control it. This paper considers the material implications of these discourses on the border landscape with particular attention to historical boundary development, urbanization, and impacts of chronic flooding. It argues that material discursive dynamics not only constitute the contemporary landscape, but create spatial incongruities that influence the impacts of natural processes, such as storm water flow. Using the southern Arizona border as a case study, the paper uses archival research to explore the historical geography of chronic flooding in the twentieth century and the shift in dynamics of flooding due to border boundary build up.

Tags: Borderland Environments, State-making

Spiereburg, M., Steenkamp, C., & Wels, H. (2006). Resistance of local communities against marginalization in the Great Limpopo Transfrontier Conservation Area. *Focaal*, 14(47), 18-31.

The Great Limpopo is one of the largest Transfrontier Conservation Areas (TFCAs) in the world, encompassing vast areas in South Africa, Zimbabwe, and Mozambique. The TFCA concept is embraced by practically all (international) conservation agencies. The rationale for the support is that the boundaries of ecosystems generally do not overlap with those of the nation-state. Their protection requires transnational cooperation. By arguing that local communities living in or close to TFCAs will participate and benefit economically, TFCA proponents claim social legitimacy for the project. However, analysis shows that communities first have to live up to rigid standards and requirements set by the international conservation authorities, before they are considered 'fit' to participate. Communities attempt to resist this type of marginalization by forming alliances with (inter)national development and human rights NGOs, with mixed results.

Tags: TBNRM, Displacement

Spiereburg, M., Steenkamp, C., & Wels, H. (2008). Enclosing the Local for the Global Commons: Community Land Rights in the Great Limpopo Transfrontier Conservation Area. *Conservation And Society*, 6(1), 87-97.

The Great Limpopo is one of the largest Transfrontier Conservation Areas (TFCAs) in the world, encompassing vast areas in South Africa, Zimbabwe and Mozambique. By arguing that residents living in or close to the TFCA will participate in its management and benefit economically, TFCA proponents claim social legitimacy for the project. The establishment of the Great Limpopo required negotiations among the three nation states, different government departments within these states and various donors contributing funds. This article explores how these negotiations and interactions affected the institutional choices made with regards to the management of the Great Limpopo and how these shaped the control and benefits of local residents. This article examines the differences among the different actors in terms of power and capacities, which are often ignored in the promotion of TFCAs. By comparing the experiences of local residents in the South African part of the TFCA with those in Mozambique, the cases show how international negotiations interact with national policies of decentralisation to shape and sometimes even disable local government institutions.

Tags: TBNRM, Displacement

Sundberg, J. (2011). Diabolic Caminos in the Desert and Cat Fights on the Rio: A Posthumanist Political Ecology of Boundary Enforcement in the United States-Mexico Borderlands. *Annals of the Association of American Geographers*, 101(2), 318-336.

This article makes the case for addressing nonhumans as actors in geopolitical processes such as boundary making and enforcement. The challenge of this line of argumentation is to account for nonhumans as actors without enacting dualistic ontologies that locate the natural and social in separate realms. To address this methodological challenge, I present a posthumanist political ecology. I elaborate my argument and methodological approach in relation to my research on the environmental dimensions of U.S. border security. Specifically, I examine how deserts, rivers, Tamaulipan Thornscrub, and cats deflect, disrupt, and obstruct the daily practices of boundary enforcement, leading state actors to call for more funding, infrastructure, boots on the ground, and surveillance technology. As my research illustrates, taking nonhumans seriously as actors alters explanations for the escalation of U.S. enforcement strategies.

Tags: Border Enforcement/Border Security, Migration

Swain, A. (1996). Displacing the conflict: environmental destruction in Bangladesh and ethnic conflict in India. *Journal of Peace Research*, 33, 189-204.

Recently, a substantial amount of research has been devoted to establishing that environmental destruction itself may be the cause of conflict. Conflicts may arise directly due to scarcity of resources caused by environmental destruction, and can also be the potential consequence of environmentally forced population migration. India and Bangladesh are in a long-standing dispute over the sharing of the waters of the River Ganges. Since 1975, India has been diverting most of the dry-season flow of the river to one of her internal rivers, before it reaches Bangladesh. At Farakka, this has affected agricultural and industrial production, disrupted domestic water supply, fishing and navigation, and changed the hydraulic character of the rivers and the ecology of the Delta in the down-stream areas. These trans-border human-inflicted environmental changes have resulted in the loss of the sources of living of a large population in the south-western part of Bangladesh and have necessitated their migration in the pursuit of survival. The absence of alternatives in the other parts of the country has left no other option for these Bangladeshis but to migrate into India. The large-scale migration, from the late 1970s, of these Muslim migrants into Hindu-dominated India has culminated in a number of native-migrant conflicts in the receiving society. The Indian state of Assam, which received a large proportion of these migrants, was the first to experience conflict. Conflicts between natives and migrants have now spread to other parts of India and have become a major issue for politically rising Hindu organizations. As this study determines, environmental destruction not only creates resource scarcity conflicts, it can also force the people to migrate, thus leading to native-migrant conflicts in the receiving society.

Tags: TBNRM, Displacement, State-making, Cooperation/Conflict

Tisdell, C. A. (1995). Asian development and environmental dilemmas. *Contemporary Economic Policy*, 13, 38-49.

Although the rapid economic growth in the Asia-Pacific region provides economic hope for the region's low-income countries, it raises international environmental dilemmas and may be unsustainable. Important environmental issues for the region include the preservation of the region's natural resources, the conservation of its living resources, and the maintenance of biodiversity. Other environmental concerns include Asia's rapid urbanization and the prospect of increased international and cross-boundary conflicts regarding the use of natural resources as Asian economic growth continues. Markets and market reform alone are not sufficient to tackle

Asia's economic problems, and institutional and other reforms are needed as well. The belief that economic growth that ignores the environment is permissible, even in low-income countries, must be rejected. In fact, there is a strong case for high-income countries to back the environmental conservation efforts of low-income states.

Tags: State-making, TBNRM, Cooperation/Conflict

Wadley, R., & Eilenberg, M. (2005). Autonomy, identity, and 'illegal' logging in the Borderlands of West Kalimantan, Indonesia. *The Asia Pacific Journal of Anthropology*, 6(1), 19-34.

Borderland identity and traditional community autonomy affect the practice of 'illegal' logging and the impact of regional autonomy among the Iban along the upper Kapuas borderland in West Kalimantan, Indonesia. We examine these issues with attention to the historical development of the Kalimantan Iban as a border people, their struggle to maintain control over their traditional forest resources under the fluctuating power of the Indonesian state and their approaches in dealing with regional and cross-border interests in the harvesting of their forests.

Tags: Borderland Environments, State-making, Misc.

Warchol, G. L., Zupan, L. L., & Clack, W. (2003). Transnational Criminality: An Analysis of the Illegal Wildlife Market in Southern Africa. *International Criminal Justice Review.*, 13, 1-27.

Transnational crime, the illicit procurement, transportation, and distribution of commodities across international borders, is an area of increasing interest for criminologists. Most of the current research focuses on drug trafficking, human smuggling, and money laundering. However, one serious type of transnational crime, the large-scale exploitation and theft of natural resources, has yet to be studied in detail by criminologists. This article reports the results of a descriptive criminological analysis of a specific kind of transnational criminality involving the theft of natural resources—the transnational illegal wildlife trade. The findings include a description of the organization and operation of the illicit wildlife market and profiles of the participants and their motivations and methods.

Tags: TBNRM, Misc.

Weaver, T. (2001). Time, space, and articulation in the economic development of the U.S.-Mexico border region from 1940 to 2000. *Human Organization*, 60(2). 105-120.

Concepts of world-system and articulation of modes of production are used to analyze the economic development of the U.S.-Mexico border region. The designation of centers and of periphery, semiperiphery, and core depends on the nature of the economic activity, where it takes place, and the destinations of the value derived. Assignment of periphery and semiperiphery changes, depending on where the resource is produced, distributed, consumed, and where capital accumulation occurs, as well as to the nature of the commodity. For example, maquilas that assemble products in peripheral regions are tied to plants (semiperipheries) on the U.S. side of the border, from which they receive components to assemble and where they deliver the finished product, but also to transnational corporations in other parts of the U.S. where profit accrues in centers. Production, distribution, and consumption centers exist in the core, periphery, and semiperiphery, where these activities take place. The following topics are reviewed as commodities and articulatory mechanisms: agricultural development, urbanization, labor, the retail and tourism industries and the contraband trade, and the establishment of the Border Industrialization Program.

Tags: Borderland Environments, State-making, Displacement

Westing, A.H. (1998). Comment – Establishment and management of transfrontier reserves for conflict prevention and confidence building. *Environmental Conservation*, 25(2), 91-94.

This article provides a brief commentary and overview of why states would engage in trying to establishing transfrontier reserves. He puts forward two main reasons; 1) to achieve environmental security, and 2) to achieve political security. Furthermore, these two goals should be achievable if transfrontier reserves are going to be successful.

Tags: TBNRM, Cooperation/Conflict

Wittmayer, J. M., & Buscher, B. (2011). Conserving Conflict? Transfrontier Conservation, Development Discourses and Local Conflict Between South Africa and Lesotho. *Human Ecology*, 38(6), 763-773.

This paper describes and analyses how discourses of conservation and development as well as migrant labour practices can be understood as transnational dynamics that both cement and complicate transnational relations. It also looks into how these dynamics articulate with, shape and are being shaped by 'the local'. Focusing on the north-eastern boundary of Lesotho in the area of the 'Maloti-Drakensberg transfrontier conservation and development project', we show how conflictual situations put the ethnographic spotlight on the ways in which 'local people' in Lesotho deal with dual forces of localisation and transnationalisation. We argue that they accommodate, even appropriate, these dual pressures by adopting an increasingly flexible stance in terms of identity, alliances, livelihood options and discourses.

Tags: TBNRM, Cooperation/Conflict, Displacement

Wolmer, W. (2003). Transboundary conservation: the politics of ecological integrity in the Great Limpopo Transfrontier Park. *Journal of Southern African Studies*, 29(1), 261-278.

Recent years have witnessed the emergence of an ostensibly surprising coalition of interests around the notion of Transboundary Natural Resource Management (TBNRM) in Southern Africa. Deep green 'bioregionalists', conservation biologists and neo-liberal development advocates have found common cause in espousing the re-establishment of ecological integrity across 'artificial' frontiers and administrative boundaries. TBNRM has effects far beyond the realms of biodiversity protection and 'natural resource management'. It is bound up with regional debates on national sovereignty, land reform and poverty alleviation. This article explores the ideological, political and economic rationales for TBNRM with particular reference to Zimbabwe's involvement in the flagship Great Limpopo Transfrontier Park initiative, spanning Zimbabwe, South Africa and Mozambique. It investigates the competing agendas, and points of conflict surrounding the initiative at global, national and local levels, and explores the potential impact on agrarian livelihoods.

Tags: TBNRM, Displacement

Woods, K. (2011). Ceasefire capitalism: military–private partnerships, resource concessions and military–state building in the Burma–China borderlands. *Journal of Peasant Studies*, 38(4), 747-770.

Since ceasefire agreements were signed between the Burmese military government and ethnic political groups in the Burma–China borderlands in the early 1990s, violent waves of counterinsurgency development have replaced warfare to target politically-suspect, resource-rich, ethnic populated borderlands. The Burmese regime allocates land concessions in ceasefire zones as an explicit postwar military strategy to govern land and populations to produce regulated, legible, militarized territory. Tracing the relationship of military–state formation, land control and securitization, and primitive accumulation in the Burma–China borderlands uncovers

the forces of what I am calling 'ceasefire capitalism'. This study examines these processes of Burmese military–state building over the past decade in resource-rich ethnic ceasefire zones along the Yunnan, China border. I will illustrate this contemporary and violent military–state formation process with two case studies focusing on northern Burma: logging and redirected timber trade flows, and Chinese rubber plantations as part of China's opium substitution program.

Tags: Borderland Environments, State-making, Displacement, Misc.

Zabelina, I. A., & Klevakina, E. A. (2012). Environmental and Economic Aspects of Natural Resource Use and Problems of Cross-Border Cooperation in Regions of Siberia. *Problems of Economic Transition*, 55(7), 39-48.

Based on extensive statistical data, the authors analyze economic development and processes of environmental change in regions of the Siberian Federal Okrug. They find considerable inequality in the distribution of economic results and the concomitant environmental load, and they assess some prospects for cross-border cooperation.

Tags: TBNRM, Cooperation/Conflict