

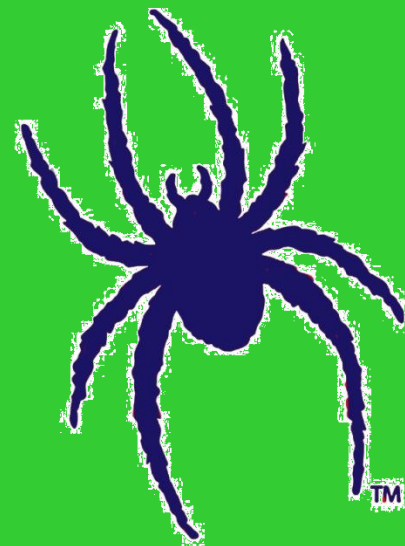


The Changing Contexts and Transboundary Dynamics of Reconciling Conservation and Development in the Amazon Borderlands

David S. Salisbury*, Jorge W. Vela Alvarado**, Cloe R. Franko*

*Department of Geography and the Environment, University of Richmond

**Centro de Investigación de las Fronteras Amazónicas, Universidad Nacional de Ucayali, Peru



Introduction to the Amazon Borderlands

The 12,000 kilometers of international boundaries within the Amazon's lowland rainforest biome form the axis of a borderland region shared by the nine states of Amazonia (Figure 1). These Amazon borderlands contain high concentrations of conservation units and indigenous territories to preserve the transboundary region's rich ecological and cultural diversity (Figures 2 & 3). However, this biocultural diversity is increasingly threatened by advancing development frontiers and a growing global demand for Amazonian resources.

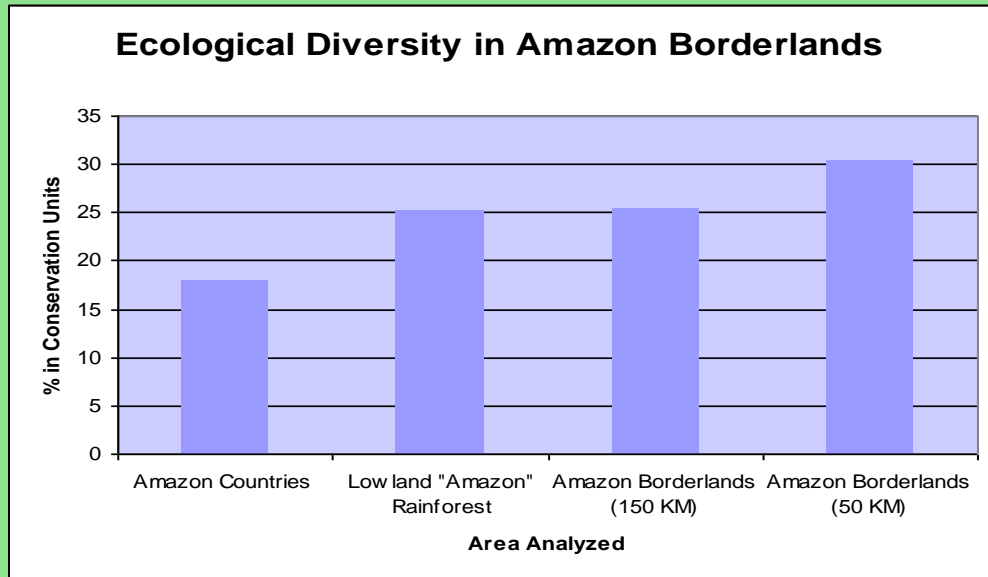


Figure 2: Percentage of area in conservation units in Amazonian countries, lowland rainforest biome, and Amazon borderlands as defined by 150 km and 50 km buffers; analysis conducted by University of Richmond GIS class.

National resource and development policies created in core offices facilitate access and control of these borderland resources, but policy makers have a limited understanding of the complexity and challenges of natural resource management in these remote areas. Faced with these policies, borderland residents rely on transboundary networks of family, friendship, and entrepreneurial connections to adapt their livelihoods and resource management strategies along and across the borderlands.

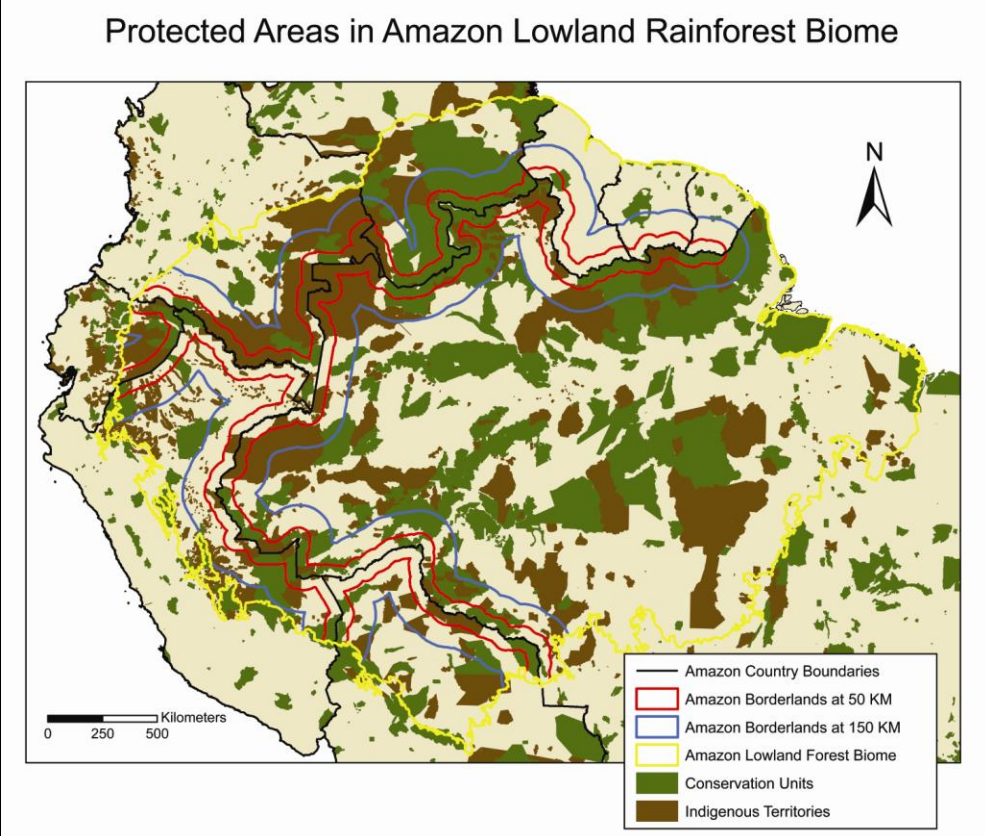


Figure 1: Map of protected areas in the Amazon borderlands

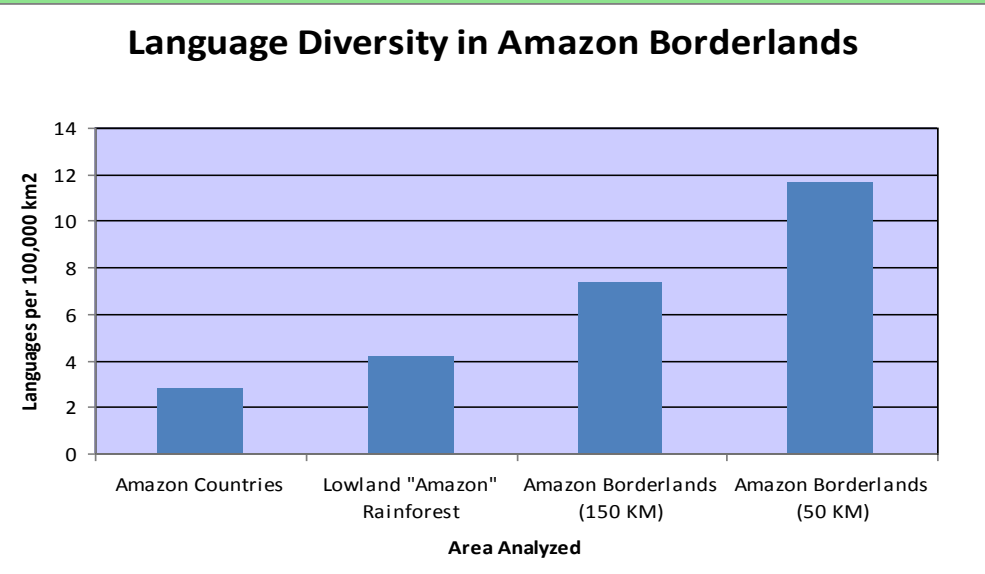


Figure 3: Number of languages per 100,000 km² in Amazonian countries, lowland rainforest biome, and Amazon borderlands as defined by 150 km and 50 km buffers

Case Study 1: Forest Management and Sustainable Logging

The 2000 Peruvian forestry law, #27308, created a new system of forestry concessions in the Peruvian Amazon based on the sustainable harvesting of timber for global and domestic markets. However, government officials mapped these concessions *a priori* in Lima offices onto lands containing colonists, illegal loggers, drug traffickers, indigenous peoples, and forests without the valuable hardwoods outlined in the outdated concession survey.



Figure 5: A *limpiadora*, mobile sawmill, used to refine illegally sawn planks of high value hardwoods



Figure 7: The Brazilian military burns a Peruvian logging camp in 2005. Photo by MMA/IBAMA.

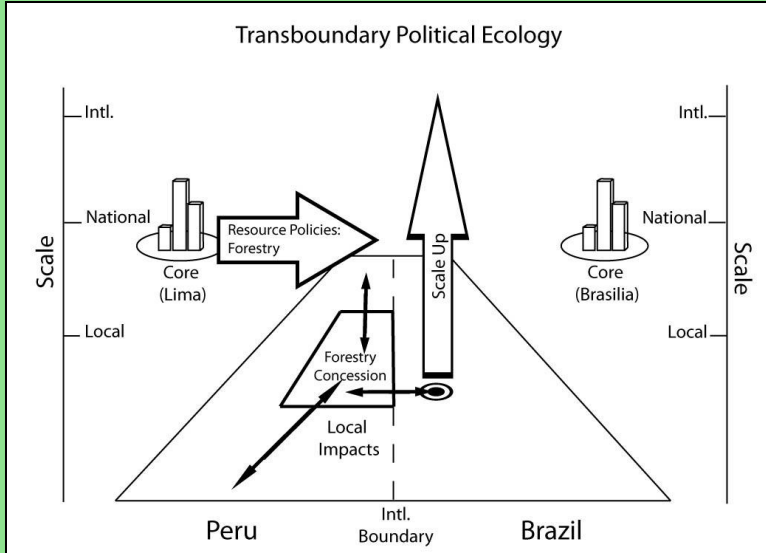


Figure 4: Diagram of multi-scale and transboundary effects of forestry policy in the Amazon borderlands of Peru

This flawed forestry system encouraged loggers to seek the still timber rich borderlands, hire local people, and harvest mahogany and tropical cedar up to the Brazilian boundary and beyond (Figure 4). Loggers used bogus management plans and false transportation permits to launder high value timber chain-sawn into planks inside Brazilian protected areas, carried across the international boundary, and re-sawn on mobile sawmills called *limpiadoras* (Figure 5). In some cases, transboundary entrepreneurial networks facilitated the illegal logging, in others Peruvian residents warned family and friends in Brazil. The Brazilian Asháninka, for example, warned by their Peruvian cousins, mobilized the Brazilian military to capture over 40 Peruvian loggers and burn their camps within Brazilian territory (Figures 6 & 7). These invasions and the subsequent imprisonment of Peruvians required diplomatic negotiations between Brazil and Peru and cast a negative light on South American integration efforts.



Figure 6: A Brazilian Asháninka leader points to the Peruvian forestry concessions, in orange, abutting the boundaries of Brazil and his titled indigenous territory. Photo by Marcio Sztutman, The Nature Conservancy.

Case Study 2: Coca Cultivation and Eradication

Global demand for coca based derivatives fuels the continued cultivation and trafficking of coca in Peru. Since the mid 1980s, coca cultivation has expanded into the Amazon borderlands of Peru, partly in response to eradication efforts in the coca growing regions along the eastern slopes of the Andes. The establishment of coca boomtowns, *caseríos cocaleros*, in the borderlands encourages local land managers to invest in a coca crop capable of making five times the earnings of the most lucrative legal alternative. While coca cultivation improves income, transportation networks, and education for the residents of *caseríos cocaleros*, cultivation also brings negative social impacts such as increased violence, prostitution, gambling, and drug use, in addition to negative environmental impacts such as forest fragmentation and chemical contamination. However, the greatest negative impact to a coca-growing community is eradication.

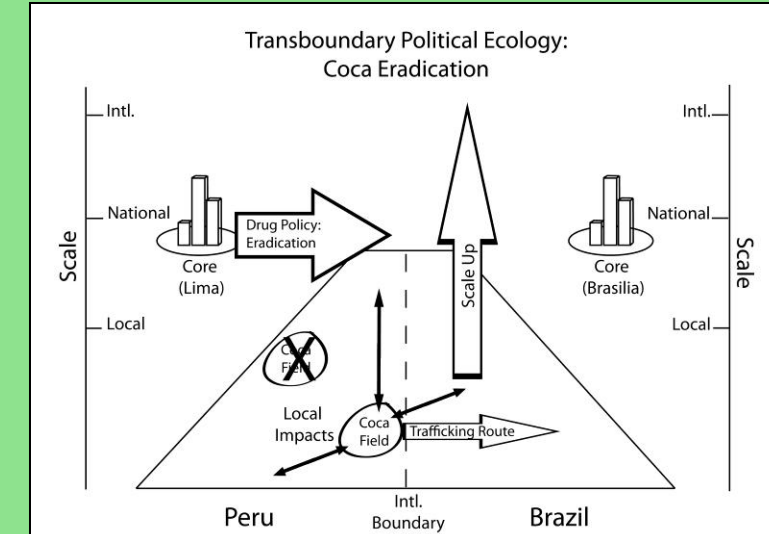


Figure 10: Diagram of multi-scale and transboundary effects of coca eradication policy in the Amazon borderlands of Peru

Eradication encourages some coca farmers to relocate to increasingly isolated locations in the borderlands where negative social and environmental impacts penetrate protected areas, indigenous territories, and neighboring countries (Salisbury and Fagan forthcoming) (Figure 10). Indeed, some Brazilian borderland residents commute to Peruvian coca processing centers and are paid in coca paste which they then sell in their hometowns (Maia 2005). In 2008 the first coca field was recorded in Brazil, heightening tension between Brazil and the neighboring coca producing countries of Colombia, Bolivia, and Peru (Duffy 2008).



Figure 8: The *cocacho* is a tool created specifically to manually uproot coca plants in the Peruvian Amazon. Photo by CORAH.

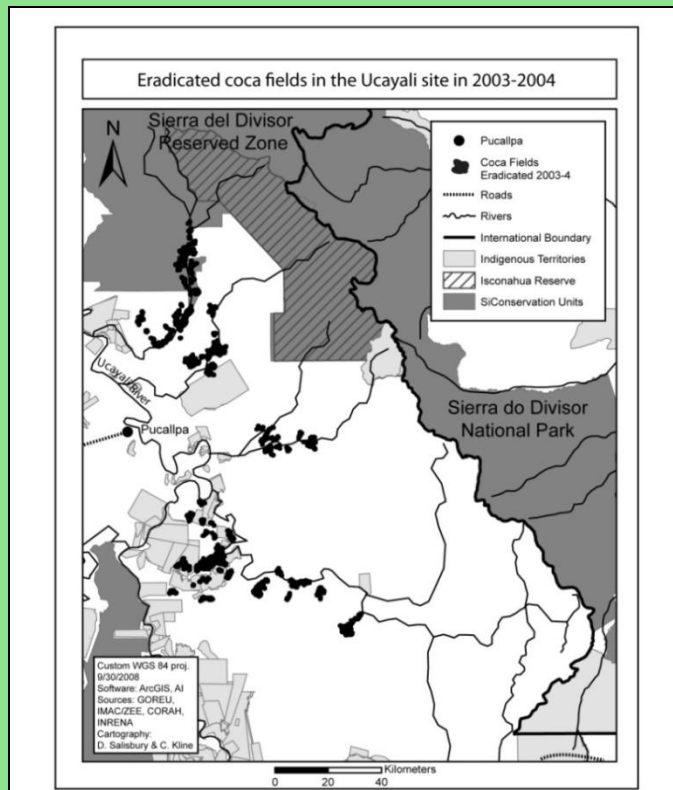


Figure 9: Coca fields eradicated in 2003 and 2004 in the Ucayali watershed of the Amazon borderlands

Case Study 3: Border Military Settlement Projects

Brazil and Peru's geopolitical vision for the Amazon included the establishment of military settlement projects, *fronteras vivas* (Figure 11), to populate their respective borderlands and dissuade encroachment from neighboring countries (Figure 12). Thus, the rational resource management strategies of colonists brought to populate and protect the Peruvian border included trespassing, stealing, and smuggling from neighboring Brazil, potentially requiring diplomatic damage control, and exposing *fronteras vivas* policy as a geopolitical

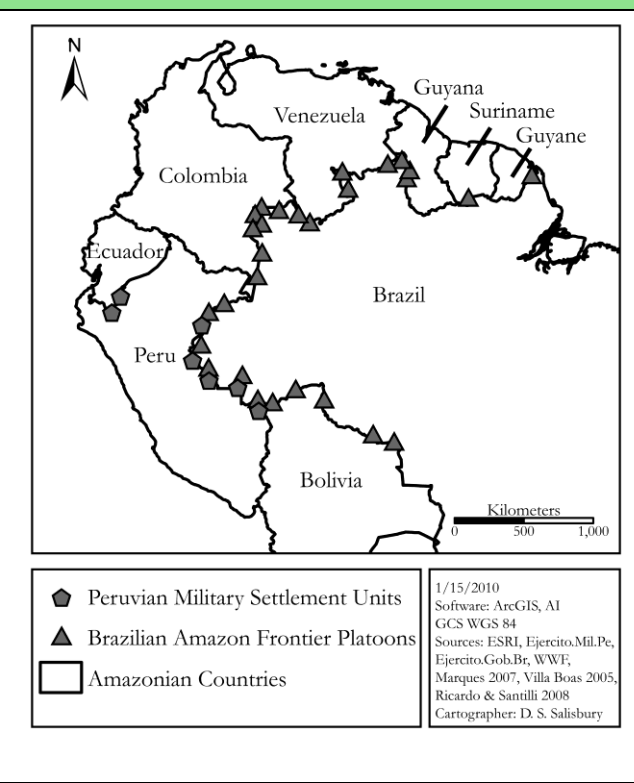


Figure 12: The 35 military border bases along the international boundaries of the Brazilian and Peruvian Amazon



Figure 11: The corrugated tin gate of a Military Rural Settlement Project (UMAR) in the Amazon borderlands of Peru

liability (Figure 13). Our field work in one such isolated Peruvian outpost revealed the isolated and largely abandoned colony, resigned to not receiving promised services, roads, and land titles, to rely mostly on forest-based income (67%) centered on the illegal harvesting of natural resources (timber, skins, and bush meat). The colony's harvesting of natural resources took place in both Peru and Brazil while resource trade engaged not only Peruvians but also Brazilians inhabiting the neighboring national park.

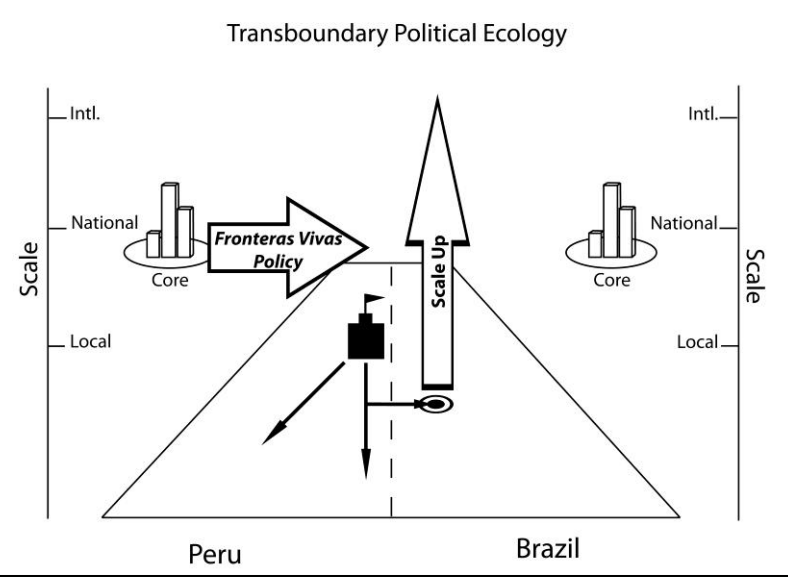


Figure 13: Diagram of multi-scale and transboundary effects of military colonization policy in the Amazon borderlands of Peru

Conclusions

These three case studies demonstrate the transboundary impact of national policies on local natural resource management in the Amazon borderlands. Local land managers on both sides of the border make rational decisions according to the opportunities and constraints presented by these policies in a borderland context. Transboundary networks of friends, family, and entrepreneurial connections, in addition to borderland resource knowledge help local people use the presence of the political boundary and multiple policies and political systems to their advantage. However, these local borderland adaptations to national policies may also have connotations at the international scale due to the provocative political nature of transboundary impacts. These impacts and adaptations promise to increase as development continues to advance in the biologically and cultural diverse Amazon borderlands. A transboundary political ecology framework may prove helpful in reconciling conservation and development in the bioculturally diverse political borderlands of Amazonia.

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Acknowledgements

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Transboundary Political Ecology

Here we define transboundary political ecology (TPE) as a necessarily multi-scalar framework suitable for investigating the complex web of connection between local people, the environment, and policy across political borderlands. This definition sits within our inclusive understanding of political ecology as a vibrant and wide ranging field of inquiry (Peet and Watts 2004; Zimmerer and Bassett, 2003; Robbins 2004; Paulson and Gezon 2005). Our specific inductive approach begins with grounded local level fieldwork (Butzer, 1989) followed by progressive contextualization (Walters and Vayda, 2004), and the scaling up to the policy level (Schmink and Wood, 1987), to better understand the context for the local decisions of the land manager (Blaikie and Brookfield, 1987). In these three case studies we analyzed local resource management decisions being made within the context of national policies on geopolitics, coca eradication, and forest management. Yet, in the borderlands, local impacts may be simultaneously transboundary. The TPE framework allows us to analyze local transboundary impacts and networks to not only understand the unique role the international boundary plays in providing opportunities and constraints for access and control of resources, but also to place these impacts and networks not only within the context of national policy but also foreign relations.

Methods

In 2004 we conducted field research in 9 communities in the Ucayali watershed of the Peruvian borderlands over a 10 month period. Within each community we purposively selected households to capture the diversity of geographical distribution, length of residence, gender and age of the community's residents. Field methods consisted of a combination of participatory methods, ethnography, participant observation, and point collection with a GPS. Field research was followed by key informant interviews with state officials, document research, qualitative remote sensing, and GIS analysis in 2004-2009.