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Politics of nature: An overview of political ecology

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TEACHING POLITICAL ECOLOGY

University of California, Berkeley
Department of Geography, July, 1995

Politics of Nature: An Overview of Political Ecology*

Instructor: Peter Walker

1. Introduction

This overview and bibliography reviews some basic ideas and a selection of readings in the field of political ecology. Political ecology has emerged in the last 10-15 years as an effort to address some of the notable weaknesses of the social sciences in addressing questions of how human society and the environment shape each other over time. In the absence of well-developed social models to provide explanations or policy prescriptions, environmental analysis and decision-making have been dominated by technocratic approaches — a fact that scholars in the field of political ecology say explains many of the shortcomings of environmental policy. Yet the social sciences might seem to have only themselves to blame: social theorists have only recently attempted to seriously tackle questions of the interactions between society and nature, and, in many cases, these efforts have clearly been less than fully satisfactory.

Worthy, if limited, efforts to integrate social and environmental analyses have been made in the fields of economics, anthropology and geography. In anthropology and geography, the study of *cultural ecology* (as exemplified by the works of Julian Steward and Carl Sauer in the 1950s) has made major contributions by showing how human societies adapt to and modify their local environments. However,

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cultural ecology's emphasis on closed systems and ecologically based models limited its capacity to address questions of why unsustainable practices might occur, particularly where these are influenced by interactions between local cultures and external social and economic systems. The field of *environmental economics*, which has had the greatest impact on policy, has developed sophisticated tools for assessing environmental "externalities," though the appropriateness of these tools remains a contentious issue. Moreover, economic tools provide only static analyses, and do not address questions of *why* environmental problems are created, for *whom*, and how these change over time.

Political ecology, which grew primarily out of the traditions of cultural ecology and political economy, attempts to address these questions by examining how human practices of resource use are shaped by social relations at multiple levels over time, and the ways that these relations shape and are shaped by the physical environment. Numerous authors have observed that political ecology constitutes less of a theoretically coherent field of study than a loosely knit body of research with broadly similar approaches and concerns. Among these are: (1) the role of the local resource user and the capabilities and "decision-making environment" that affect the ways that resources are used; (2) the ways that local resource use is shaped by social and economic relations at multiple scales (the household, the community, the market, the state, transnational capital); (3) the ways that historical processes have shaped and *continue* to shape these relations; (4) the ways that society and the "natural" or human-modified physical environment mutually shape each other over time. This is what Blaikie and Brookfield, in probably the most frequently cited quotation in political ecology, describe as the "shifting dialectic between...social groups and their physical environment" (Blaikie and Brookfield 1987).

In the literature that has emerged, this "shifting dialectic" has been examined from multiple perspectives, often involving efforts to creatively synthesize multiple theoretical and disciplinary traditions (indeed, if there is a single quality that distinguishes political ecology, it may be this serious effort at interdisciplinary synthesis). As a result, the theoretical boundaries of political ecology are highly porous, drawing on works in political economy, behavioralism, cultural ecology, natural ecology, social movements theory, cultural anthropology, cultural and economic geography, environmental history, feminist theory, and narrative theory — to name a few. (Indeed, some of the works that appear most frequently on political ecology

bibliographies are written by authors who may have never heard of political ecology.)

Partly reflecting this diversity of theoretical traditions and the backgrounds of the scholars working in the field of political ecology, the political ecology literature can be broadly characterized by a number of themes. These include political economy, gender analyses of resource use and studies of the household, environmental and livelihood movements, struggles over social identity and symbolic meaning, discourse and development (in particular, “sustainable development”), social analyses of conservation, and environmental history. These themes are discussed briefly in the following sections. Each section includes a short bibliography of a few representative works in these areas.

In addition to works that fall within the particular themes described above, a number of works have attempted to address political ecology at a general level. These include:

W. M. Adams, *Green Development: Environment and Sustainability in the Third World* (London: Routledge, 1990).

P. M. Blaikie, *The Political Economy of Soil Erosion in Developing Countries* (New York: Wiley, 1985).

P. Blaikie and H. Brookfield, *Land Degradation and Society* (New York and London: Methuen, 1987).

S. Hecht and A. Cockburn, *The Fate of the Forest: Developers, Destroyers, and Defenders of the Amazon* (New York: Harper Perennial, 1990).

T. E. Sheridan, *Where the Dove Calls: The Political Ecology of a Peasant Corporate Community in Northwestern Mexico* (Tucson: University of Arizona Press, 1988).

D. Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Oxford University Press, 1985).

In addition to these basic texts, a number of articles have presented excellent brief overviews of the origins, status, and critiques of political ecology. These include:

R. L. Bryant, “Political Ecology: An Emerging Research Agenda in Third World Studies,” *Political Geography*, 11, 1, 1992, pp. 12-36.

L. Herskovitz, “Political Ecology and Environmental Management in the Loess Plateau, China,” *Human Ecology*, 21, 4, 1993, pp. 327-353.

D. S. Moore, “Contesting Terrain in Zimbabwe’s Eastern Highlands: Political Ecology, Ethnography, and Peasant Resource Struggles,” *Economic Geography*, 69, 4, 1993, pp. 380-401.

R. P. Neumann, "Political Ecology of Wildlife Conservation in the Mt. Meru National Park, Tanzania," *Land Degradation and Rehabilitation*, 3, 3, 1992, pp. 85-98.

R. Peet and M. J. Watts, "Introduction: Development Theory and Environment in an Age of Market Triumphalism," *Economic Geography*, 68, 3, 1993, pp. 227-253.

The areas of political ecology discussed below are organized by theme as a matter of convenience; in reality, most of the readings that are presented as representative of these themes overlap between various theoretical approaches. A few of the readings are listed in more than one group (which testifies to the somewhat arbitrary nature of these groupings).

2. Political Economy

Political ecology first emerged out of a synthesis of political economy and cultural ecology, and a substantial amount of the political ecology literature retains direct theoretical ties to political economy. This literature asserts that particular social relations of production and exchange translate into patterns of accumulation by certain groups based on the simultaneous appropriation of the surplus value of peasant labor *and* the "natural capital" (or "labor value" of nature) that inheres in the environment (Redclift and Sage 1994; Hayward 1994). This idea — the parallel appropriation of surplus value of labor and the "value" of nature — is central to several major political-economic approaches to understanding the relationship between society and nature.

Perhaps the most widely-known of these approaches is the linking of core-periphery analysis to studies of Third World ecological change, particularly in the case of deforestation in the Amazon (Bunker 1984; Hecht and Cockburn 1989). In the case described by Bunker, the "net flow of matter and energy" (rubber, beef) from Brazilian forests (the periphery) to capitalist consumer economies in the United States and other "core" countries explains the "progressive underdevelopment" and ecological degradation of the Amazon. Hecht and Cockburn provide a similar analysis focusing on the relationship between domestic urban capital in Brazil and the marginalized indigenous and peasant groups of the Amazon forests.

Another analytically powerful political economy approach to understanding social and environmental change is offered by James O'Connor in his theory of the "second contradiction of capitalism" (in M. O'Connor 1994). This idea complements Marx's idea of the "first contradiction of capitalism" (that competition pushes wages to the subsistence level, creating a consumer demand crisis that ultimately

undermines capitalism) by positing a supply-side crisis that inevitably emerges as capitalist competition undermines the “conditions of production,” including the natural environment. Scarcity and mobility of capital and competition from alternative investments force short-term profit motivation to dominate capitalist production, thereby providing no incentive for sustainable resource management or conservation. In addition to pressure on natural resources, competitive profit-motivation drives corporations to use whatever political powers they can muster to avoid contributing to public investments. O’Connor notes that the rest of society, which also needs a healthy environment and other public goods, does not sleep through this corporate raiding of nature and the public commons: increased social activism creates additional costs by increasing expenditures on litigation, three-martini lunches for members of Congress, and so on. This drives up the costs of production, which (in conjunction with a demand-side crisis) ultimately results in a crisis of capitalism. Notably, this represents a sort of corporate parallel to Garrett Hardin’s famous “tragedy of the commons”: sustainable resource management, public education, etc., all represent indispensable conditions of production on which each individual corporation depends. However, short-term profit motivation and failures of institutions of collective action (e.g., government) force collectively irrational behavior that allows the degradation of the commons (nature, labor, infrastructure) and ultimately undermines the conditions of production for all.

Works in political ecology that focus on political economy include:

S. G. Bunker, “Modes of Extraction, Unequal Exchange and the Progressive Underdevelopment of the Extreme Periphery: The Brazilian Amazon, 1600-1980,” *American Journal of Sociology*, 89, 5, 1984, pp. 1017-1064.

D. Harvey, “The Nature of Environment: The Dialectics of Social and Environmental Change,” *Socialist Register*, 29, 1993, pp. 1-51.

T. Hayward, “The Meaning of Political Ecology,” *Radical Philosophy*, 66, Spring, 1994, pp. 11-20.

M. O’Connor, ed., *Is Capitalism Sustainable? Political Economy and the Politics of Ecology* (New York: Guilford Press, 1994).

D. Pepper, *Eco-socialism: From Deep Ecology to Social Justice* (London: Routledge, 1993).

S. Stonich, “*I Am Destroying the Land!*”: *The Political Ecology of Poverty and Environmental Destruction in Honduras* (Boulder, CO: Westview Press, 1993).

M. J. Watts, "Social Theory and Environmental Degradation: The Case of Sudano-Sahelian West Africa," in Y. Gradus, *Desert Development: Man and Technology in Sparselands* (Dordrecht: D. Reidel Publishers, 1985).

M. J. Watts, "Drought, Environment and Food Security: Some Reflections on Peasants, Pastoralists and Commoditization in Dryland West Africa," in M. H. Glantz, *Drought and Hunger in Africa: Denying Famine a Future* (Cambridge: Cambridge University Press, 1987), pp. 171-211.

M. J. Watts, "Review of *Land Degradation and Society*, by Piers Blaikie and Harold Brookfield, 1987," *CNS*, Issue 4, June, 1990.

3. Gender and the Household

Political ecology asks not only what kinds of social relations shape the ways people use natural resources, it also asks how *different* groups of people are affected in different ways. In particular, political ecology considers gender-differentiated uses and relationships to the environment, and how broader social relations affect women's use of the environment as compared to men's. These analyses often focus on the divisions of labor and rights between men and women within the household. In this, political ecology overlaps significantly with studies of ecofeminism. Indeed, the political ecology literature can be thought of conceptually as an expansion of the central theme of ecofeminism: while ecofeminism asserts that there are parallels between the exploitation of the environment and the exploitation of women, political ecology expands this idea to include other marginalized groups (Third World peoples, politically disadvantaged ethnic groups, and so on). Political ecology stresses the same arguments offered by ecofeminists that there is a need to view environmental issues from the perspective of gender. For example, in societies where men are increasingly leaving rural areas for urban wage employment, women are increasingly responsible for the management of environmental resources in rural areas. The ability of women to use these resources in a sustainable way depends in part on how rights and duties are culturally assigned between and women. Often, women's rights are inadequate to meet the challenges posed by their new duties as resource managers (Rocheleau 1995). In many cases, conservation programs are predicated on gender inequality, and in these cases contradictions between women's and men's interests and the environment must be reconciled if conservation programs are to succeed.

Examples of gendered analyses in political ecology include:

J. Carney and M. J. Watts, "Manufacturing Dissent: Work, Gender, and the Politics of Meaning in a Peasant Society," *Africa*, 60, 2, 1990, pp. 207-241.

C. Jackson, "Environmentalisms and Gender Interests in the Third World," *Development and Change*, 24, 4, October, 1993, pp. 649-677.

D. Rocheleau, "Gender and Biodiversity — A Feminist Political Ecology Perspective," *IDS Bulletin — Institute for Development Studies*, 26, 1, 1995, pp. 9-16.

R. A. Schroeder, "Shady Practice: Gender and the Political Ecology of Resource Stabilization in Gambian Garden/Orchards," *Economic Geography*, 69, 4, 1993, pp. 349-365.

4. Environmental and Livelihoods Movements

In addition to asking how particular social relations affect specific groups of resource managers (women, men, minorities), political ecology also examines how particular groups seek to influence social relations and access to resources. One of the more important critiques of political ecology (as well as political economy) has been the observation that peasants are often portrayed as passive victims of an all-powerful world system. Domination by an exogenous political economy has been emphasized, sometimes at the expense of providing a sense of how poverty and degradation are reproduced over time, or how peasants might struggle against this fate (Watts 1990). Recent studies of local environmental and livelihoods struggles have helped to fill this gap by exploring the multiple forms of organization and protest by which local groups attempt and in many cases succeed in taking their fate into their own hands (Hecht and Cockburn 1989; Peluso 1992; Friedmann and Rangan 1993). Because local groups have both sophisticated local environmental knowledge and direct incentives to sustain the productivity of the environment on which their livelihoods depend, it is argued that local control is the most promising route toward a truly sustainable development (Redclift and Sage 1994). Local social actions and struggles for control over resources are often seen as the seeds of an alternative pattern of sustainable development based on local perceptions, need, and self-management.

However, local livelihoods struggles are not unproblematic, and the enthusiasm to embrace local movements in many cases appears to have glossed over important internal contradictions and differentiations within local groups. Rangan (in Friedmann and Rangan 1993), for example, describes how the Chipko movement in India resulted not in greater local control and improvements in livelihoods but in bitterness

and increasing poverty. The Chipko movement was transformed from a livelihood struggle into an ideological battle waged as much by western academics, activists, and western-educated Indian environmentalists as by local peasants. This led to draconian national policies that denied virtually all local access to resources, resulting in a deterioration of the livelihoods of the local community. The result was also an increase in “criminal” activities and “poaching” of the forest by local people (see also Peluso 1992). This suggests that environmental policies that ignore the livelihood needs of local communities are not only morally questionable, but are also unlikely to achieve their conservationist goals (Neumann 1992). While this dramatic example may not be representative, it does point to issues that call for greater attention — namely, the role of local differentiation and internal struggles within communities, and the ways in which particular strategies for gaining political power may involve unexpected and unwelcome dynamics.

Some of the political ecology literature on environmental and livelihoods movements includes:

L. E. Anderson, *The Political Ecology of the Modern Peasant: Calculation and Community* (Baltimore: Johns Hopkins University Press, 1994).

J. Friedmann and H. Rangan, *In Defense of Livelihood: Comparative Studies on Environmental Action* (West Hartford, CT: Kumarian Press, 1993).

S. Hecht and A. Cockburn, *The Fate of the Forest: Developers, Destroyers, and Defenders of the Amazon* (New York: Harper Perennial, 1990).

N. L. Peluso, *Rich Forests, Poor People: Resource Control and Resistance in Java* (Berkeley, CA: University of California Press, 1992).

5. Struggles over Meaning

The case of Chipko described by Rangan and other studies of local movements suggest the importance of the use of cultural and historical meaning in shaping struggles over local resources. Peluso (1992) describes the resistance of Javanese forest communities to the “criminalization” of their forest-based livelihoods based on their interpretations of historical reciprocity between the state (or the king) and peasant communities. Because the modern Indonesian state had, in their view, failed to uphold its end of this reciprocal arrangement, it had invalidated the traditional social contract. The resistance of the local community derived its strength from a reversal of the discourse of “criminalization;” in the view of the community, it was the state, not

the local people, that was acting “illegally.” Thus, struggles over resources are often translated into struggles over history and cultural meaning.

A particularly important aspect of cultural “meaning” in contests over natural resources is social identity and access to social “networks.” Pioneering work has been done in Africa (Peters 1984, 1992; Berry 1989, 1993; Carney and Watts 1990) showing how rights to resources are actively re-configured through contests and negotiations between and within social groups. In many Third World cultures, control over resources is often associated with social identity. Ownership of land, for example, may rest not with individuals but with social groups. In negotiations over resources and historical “rights,” it is the rights of groups and membership within these groups that become the focal point of contestation. Therefore, to establish or protect their access to resources, people invest in establishing or solidify their position within social networks (these networks may include descent groups, political parties, relations to chiefs or nobles, professional societies, and so on). Contests over resources are often waged through struggles over which groups have particular historical claims, and which individuals have legitimate claims to membership within these groups. Importantly, these claims are not timeless or absolute — “tradition” is used selectively, and cultural meaning is actively and strategically constructed.

Studies that examine the role of cultural meaning in resource conflicts include:

S. Berry, “Social Institutions and Access to Resources” *Africa*, 59, 1, 1989, pp. 41-55.

S. Berry, *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa* (Madison: University of Wisconsin Press, 1993).

J. Carney and M. J. Watts, “Manufacturing Dissent: Work, Gender, and the Politics of Meaning in a Peasant Society,” *Africa*, 60, 2, 1990, pp. 207-241.

D. S. Moore, “Contesting Terrain in Zimbabwe’s Eastern Highlands: Political Ecology, Ethnography, and Peasant Resource Struggles,” *Economic Geography*, 69, 4, 1993, pp. 380-401.

N. L. Peluso, *Rich Forests, Poor People: Resource Control and Resistance in Java* (Berkeley: University of California Press, 1992).

P. E. Peters, “Struggles over Water, Struggles over Meaning: Cattle, Water, and the State in Botswana” *Africa*, 54, 3, 1984, pp. 29-49.

P. E. Peters, "Manoeuvres and Debates in the Interpretation of Land Rights in Botswana," *Africa*, 62, 3, 1992, pp. 413-434.

6. Ideology and Scientific Discourse

Just as history and cultural meaning become part of the politics of resource control, the political ecology literature also stresses the role of ideology and science in shaping our perceptions and use of nature. The ways that we view nature and generate, interpret, and communicate the "science" of environmental problems is deeply embedded in particular cultural and ideological constructions, which have particular political implications. The job of scientists and policy-makers is to put together diverse information and to make sense out of it. In both industrialized and Third World societies, environmental analysis and policy-making are dominated by people whose training and cultural experience is based on western ideological and scientific traditions. In these traditions, nature and society are viewed as separate realms, rather than as different aspects of a single relationship. Moreover, nature is seen as "waste" — raw nature is an incomplete project, handed down by God to be tamed through human rationality in the name of progress (see Glacken 1967). These ideological traditions obscure the dependence of human societies on maintaining the integrity of natural systems (Cronon 1991), and give moral weight to interventions that apply rational (i.e. western) scientific principles to environmental management.

Thus, western ideology and science imply that the power to regulate human interactions with the environment should reside with scientific-bureaucratic authorities. Because this bureaucratic-scientific class has its distinctive ideological perspectives and political concerns (Taylor and Buttel 1992), the placing of authority over human-environmental interactions in the hands of this group necessarily has political implications. In southern Africa, for example, Beinart (1984) illustrates how British colonial conservation policies were based on essentially racist constructions of native "abuse" of the land, and were influenced by dubious scientific theories and "facts."

Among the many scientific discourses that play key roles in shaping resource use, the political ecology literature has focused in particular on the concept of "sustainable development." The much-noted ambiguity of this term has contributed to its popularity by allowing people with different concerns to read their own meanings into it. Thus, the implications of sustainable development will ultimately depend on how it becomes defined through practice (Lele 1991). However, a number of observers have noted that this practice has already taken a particular form: increasingly, "sustainable development" appears to

mean using various policy tools and technological “fixes” to make the development status quo a little greener (putting a thin layer of “green paint” on the edifice of development, as Lele puts it).

This technical approach and policy tinkering cannot resolve the fundamental ecological contradictions of standard growth-and market-oriented development policy (Redclift and Sage 1994; Lele 1991). These contradictions reflect the structure of the global economic systems which transfers value from labor, capital, and natural resources in the periphery to corporations and consumers in the core countries. Redclift (1987), for example, argues that sustainability cannot be achieved without a fundamental restructuring of development (“it is impossible,” he says, “for accumulation to take place within the global economic system we have inherited without unacceptable environmental degradation”). Development practices such as the promotion of peasant export commodity production and market liberalization often have had serious negative impacts on local environments in the Third World. The language of sustainability has done little to resolve these contradictions. Development organizations promote various technical and planning efforts to internalize the “externalities” involved in these policies, but these tools of western neoclassical economics are inadequate for addressing the complex physical and social interrelationships in tropical ecosystems.

Moreover, these models represent particular western ontological and epistemological traditions that cannot adequately account for the value of nature as experienced in the daily lives of people, for whom the environment is integrated into complex webs of material, social, and cultural cosmology (Redclift and Sage 1994). “Sustainable” development efforts built on western concepts that conflict with local perceptions and knowledge of the environment will almost certainly fail, and are likely to involve significant environmental costs. Thus, achieving true sustainability will require both a fundamental redefinition and restructuring of development, *and* a greater sensitivity and respect for local perceptions and knowledge of nature.

Political ecology writings on discourse and sustainable development include:

W. Beinart, “Soil Erosion, Conservationism, and Ideas about Development in Southern Africa,” *Journal of Southern African Studies*, 11, 2, 1984, pp. 52-83.

W. Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1991).

- W. Cronon, "A Place for Stories: Nature, History, and Narrative," *The Journal of American History*, 78, 4, 1992, pp. 1347-1376.
- C. Glacken, *Traces on the Rhodian Shore* (Berkeley: University of California Press, 1967).
- D. Harvey, "The Nature of Environment: The Dialectics of Social and Environmental Change," *Socialist Register*, 29, 1993, pp. 1-51.
- S. M. Lele, "Sustainable Development: A Critical Review," *World Development*, 19, 6, 1991, pp. 607-621.
- M. Redclift, *Sustainable Development: Exploring the Contradictions* (London: Methuen, 1987).
- M. Redclift and T. Benton, *Social Theory and the Global Environment* (London: Routledge, 1994).
- M. Redclift and C. Sage, *Strategies for Sustainable Development: Local Agendas for the Southern Hemisphere* (New York: J. Wiley and Sons, 1994).
- P. J. Taylor and F. H. Buttel, "How Do We Know We Have Global Environmental Problems? Science and Globalization of Environmental Discourse," *Geoforum*, 23, 3, 1992, pp. 405-416.
- M. Turner, "Overstocking the Range," *Economic Geography*, 69, 4, 1993, pp. 402-421.
- K. Zimmerer, "Soil Erosion and Social (Dis)courses in Cochabamba, Bolivia: Perceiving the Nature of Environmental Degradation," *Economic Geography*, 69, 4, 1993, pp. 312-327.

7. Conservation

Another theme that has emerged from the political ecology literature is a critical examination of environmental conservation. Numerous authors have observed that conservation policy in the colonial era reflected a unique combination of political maneuver, racism, technological blunder, and western cultural constructions of nature (Beinart 1989, 1990). Above all, conservation has been, and *remains*, a deeply political realm. In British southern Africa, for example, conservation policies and constructed ideologies of an ecologically ignorant and destructive native culture were directly aimed at restricting African access to areas favored for white hunting. Similarly, native agricultural practices were said to be ecologically destructive, resulting in policies that implemented conservation practices based on western experience (which often proved to be deeply technologically flawed in the context of tropical ecological conditions). Similarly, western cultural constructions of a mythical "first nature" devoid of human occupation contributed to the expulsion of native people from extensive parks and reserves. These ideologies have

contributed to bitter conflicts between communities and governments over resource control. Peluso (1993), for example, describes how the Kenyan government has used helicopter gunships provided by international conservation groups for battling poachers to attack its political rivals (the government conveniently labels these groups as "poachers"). This bitter history has contributed to a climate of resentment in which conservation policies are often viewed with deep and well-founded antipathy (at best, apathy) by local groups. Unless ways are found to meet conservationist goals without harming the interests of local people, conservation cannot succeed (Neumann 1992; Peluso 1993).

Works on conservation in political ecology include:

W. Beinart, "Soil Erosion, Conservationism, and Ideas about Development in Southern Africa," *Journal of Southern African Studies*, 11, 2, 1984, pp. 52-83.

W. Beinart, "The Politics of Colonial Conservation," *Journal of Southern African Studies*, 15, 2, 1989.

W. Beinart, "Empire, Hunting, and Ecological Change in Southern and Central Africa," *Past & Present*, 128, August, 1990, pp. 162-186.

M. Colchester, "Slave and Enclave: Towards a Political Ecology of Equatorial Africa," *The Ecologist*, 23, 5, 1993, pp. 166-173.

M. Colchester, "Pirates, Squatters, and Poachers — The Political Ecology of Dispossession of the Native People of Sarawak," *Global Ecology and Biogeography Letters*, 3, 4-6, 1993, pp. 158-179.

J. Fairhead and M. Leach, "Contested Forests: Modern Conservation and Historical Land Use in Guinea's Ziam Reserve," *African Affairs*, 93, 373, 1994, pp. 481-512.

D. S. Moore, "Contesting Terrain in Zimbabwe's Eastern Highlands: Political Ecology, Ethnography, and Peasant Resource Struggles," *Economic Geography*, 69, 4, 1993, pp. 380-401.

R. P. Neumann, "Political Ecology of Wildlife Conservation in the Mt. Meru National Park, Tanzania," *Land Degradation and Rehabilitation*, 3, 3, 1992, pp. 85-98.

N. L. Peluso, "The Political Ecology of Extraction and Extractive Reserves in East Kalimantan, Indonesia," *Development and Change*, 23, 4, 1992, pp. 49-74.

N. L. Peluso, "Coercing Conservation? The Politics of State Resource Control," *Global Environmental Change*, 3, 2, 1993, pp. 199-217.

R. A. Schroeder, "Shady Practice: Gender and the Political Ecology of Resource Stabilization in Gambian Garden/Orchards," *Economic Geography*, 69, 4, 1993, pp. 349-365.

P. Utting, "Social and Political Dimensions of Environmental Protection in Central America," *Development and Change*, 25, 1, January, 1994, pp. 231-259.

8. Environmental History

All of the themes of political ecology described above are included in the field of environmental history, which applies historical perspective to studies of human and environmental interactions. Cronon (1993) identifies four contributions made by environmental history. First, environmental history has emphasized that history happens in a physical context. This approach avoids old environmental determinisms, but stresses that there exists a two-way relationship in which humans affect nature, but that nature (whether "first nature" or human-constructed landscapes) also influences human actions. Second, environmental history emphasizes that relationships between humans and the environment are never static, but are always shifting. Third, all knowledge of the environment is socially constructed. There exists a real physical nature "out there," but what is important is how we perceive it and hence how we interact with it, and this is filtered through multiple cultural lenses. In Cronon's environmental history of colonial New England, for example, radically different perceptions of nature between native Americans and Europeans shaped their very different interactions with nature. Finally, Cronon suggests that environmental history plays a key role not in predicting the future based on the past, but in providing "parables" that show multiple possibilities.

Some important works and discussions of environmental history include:

W. Beinart, "Empire, Hunting, and Ecological Change in Southern and Central Africa," *Past & Present*, 128, August, 1990, pp. 162-186.

W. Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983).

W. Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1991).

W. Cronon, "The Uses of Environmental History," *Environmental History Review*, 17, 1993, pp. 6-17.

R. Peet and M. J. Watts, "Introduction: Development Theory and Environment in an Age of Market Triumphalism," *Economic Geography*, 68, 3, 1993, pp. 227-253.

D. Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Oxford University Press, 1985).