

EDITORS' CONCLUSION

James McCarthy, Tom Perreault, and Gavin Bridge

Working on this volume has been exciting and instructive. We are struck by the exceptional vibrancy and dynamism of contemporary political ecology: alongside continuing excellent work on long-established and still critically important themes and topics, current research extends the field in new empirical and theoretical directions. In so doing, it continues political ecology's history of challenging and expanding both dominant understandings of how humans interact with their environments, and the methods and frameworks we use for constructing alternative explanations of such relations. With such ferment, the meaning of "political ecology" within geography and cognate disciplines continues to expand rapidly, moving as it has from a term for a relatively narrowly focused and arguably counterhegemonic stream of research within certain key Anglophone institutions, to an institutionally sanctioned umbrella term for critical analyses of "environment"-related research in multiple disciplines, regions, and languages.

Such rapid growth almost inevitably raises theoretical, empirical, and normative questions: What is political ecology now? What currently are the major developments and directions in the field? And what should political ecology do more of, or do better? In considering these questions, we have no interest in easy definitions, border policing, or prescriptive agendas: such exercises are neither interesting nor productive. And we are well aware that much ink has been spilled on the question of "what is political ecology," without the various inductive, deductive, and prescriptive responses proffered settling the question. Nor, indeed, do we wish to provide such closure: we are delighted by the fact that political ecology has become such a diverse and productive field for critical inquiry into and analysis of what we still call – in a self-consciously crude and ontologically inadequate shorthand – nature–society relations. Nevertheless, we do believe that it is interesting and productive, indeed vital, to be reflexive, explicit, and rigorous about where the field stands and where it is going. So, at the end of the process of working on this volume into which the many contributors put so much work, we believe it is important to consider these three legitimate and important questions. Without doubt, others will have different responses to them, or choose to consider other questions altogether. Nevertheless, we offer here our reflections on the roots and characteristics of political ecology, and possible directions for future research.

What is political ecology?

The wide range of empirical topics, theoretical frameworks, and methodological approaches evident not just in this volume, but in other publications, conferences, and initiatives labeled as “political ecology,” understandably raises the question of what, if anything, holds this tremendously diverse body of work together conceptually and methodologically. Political ecology is certainly not a discipline or sub-discipline in a conventional academic sense: its objects of study and analytical frameworks and approaches are too disparate, and indeed its explicitly interdisciplinary character is one of its defining hallmarks and strengths. We could take a purely inductive approach and say simply that political ecology is whatever anyone is doing and calling political ecology. And we recognize that in practice this is how the field is largely identified at any given moment, as well as how its parameters are changed over time. Yet this response seems to us to beg an important question: we might still reasonably and usefully ask whether the self-defined participants in that field have important things in common – whether their having chosen to self-identify and participate under the sign of “political ecology” indicates anything significant about the substantive content of their work and their approaches to it.

We believe that it does, and that there are important commonalities across this diverse body of work. We see political ecology as a theoretical and political lens through which to understand, challenge, and structure further inquiry into nature–society relationships in the contemporary world, with certain methodological preferences following from its dominant theoretical perspectives and normative commitments. While this lens was applied first and most famously to topics such as agrarian dynamics in the context of postcolonial articulations with the global economy, centralized conservation, and resource conflicts and governance (as illustrated in Chapters 2, 3, and 30 by Watts, Wisner, and Neumann respectively, and others in this volume), we believe that it has also proved to have broad and enduring utility, offering analytical insights into and purchase upon a wide range of human–environment relationships. The chapters we have assembled in this volume support this interpretation. Moreover, we contend that some inquiries not necessarily labeled as “political ecology” have used effectively the same lens.

What, then, are the major shared elements of political ecology, to be found in almost all work in this wide field? While different research surely displays the elements below in various proportions and forms, and realizes their goals more or less fully, we believe that these elements deeply inform the great majority of work described as political ecology. More significantly, perhaps, we find it difficult to imagine research that explicitly rejected or argued against them fitting with our sense of the field. Below, we point to five such shared elements that characterize political ecology as a field.

First, political ecology is deeply shaped by the encounter between Marxism and contemporary environmental questions. The field takes as given that capital accumulation and the defining social relations of capitalism, such as private property, commodification, and class structures, produce and drive much environmental transformation, degradation, and conflict in the modern world. It was precisely such a focus on and structural understanding of political-economic connections, relationships, and processes that first and most decisively distinguished political ecology from cultural ecology and other ways of thinking about human–environment relationships. In this context, it is critical to acknowledge that political ecology drew from the beginning on vibrant debates in economic geography and political economy that were emerging from geography’s engagement with Marxism at the time (an argument developed more fully in McCarthy 2012). An important contribution was the distinctive engagement on the part of some Marxist geographers with the environment: on the one hand, works such as Harvey’s (1974) critique of dominant neo-Malthusian environmentalism demonstrated how a Marxist

perspective offered a sharply different, and dialectical, way of thinking about “nature-society” questions, while on the other hand, works such as Walker’s (1973, 1974) analyses of wetland valuation practices wrestled with the ways in which environmental questions presented challenges to elements of Marxist theory. At the same time, geographers sought to develop a specifically geographical Marxism, inventing and refining concepts and approaches such as dependency theory, uneven development, uneven exchange, spatial fixes, and commodity chain analysis, all of which became important components of political ecology’s intellectual framework. Key thinkers in the development of political ecology were all deeply versed in and indeed directly engaged in this conversation between economic geography and Marxism (see, for example, the reflections by Ben Wisner in Chapter 3 in this volume, as well as Chapter 21 by Castree, this volume). Thus, while one common explanation for the emergence of political ecology lies in its immanent critique of cultural and human ecology, we must recognize that this critique was not *sui generis*. Rather, it emerged from a very specific theoretical and political position formed in conversation with Marxist political economy. This is significant in that it means that works by Harvey (1974), Walker (1973, 1974), and other Marxist scholars examining the socionatural metabolism of capitalism in industrialized countries and at global scales are as much a part of the wellsprings of political ecology as the canonical works by Watts (1983a, 1983b), Blaikie (1985), and Blaikie and Brookfield (1987), more commonly cited in this context. While much current work in political ecology may be tacitly post- or neo-Marxist rather than explicitly Marxist, the debt and shared assumptions are clear: can we imagine a work of political ecology framed in terms of neoclassical economics?

Second, political ecology is a form of critique, which is to say it is explicitly normative, and in that context is committed specifically to siding with the marginalized and less powerful in the situation in question. This may seem so obvious as to hardly be worth stating, but it is in fact one of the great divides between political ecology and more mainstream approaches that remain committed to the ideal of objective, value-neutral science and analysis. This commitment also marks one of the ruptures with cultural ecology, which, however strongly its practitioners might have felt personally, retained a professional commitment to objective analysis of human-environment systems as that field understood them. Another critical facet of this commitment is that political ecologists therefore typically make normative judgments about the actors and systems they are studying: taking the side of one group in an inherently agonistic situation means opposing others. Thus, the aim of political ecology is to make an argument that is thoroughly political, as much as one that is theoretical or empirical.

Third, feminist theory and politics have become part of the core of political ecology, shaping central intellectual and political assumptions and commitments of the field. Through a critical engagement with the field’s early Marxism, feminist political ecology by Rocheleau et al. (1996), Carney (1996), Schroeder (1999), and others emphasized the ways in which power relations always operate through multiple, intersecting axes and categories of social difference in any social setting; that people experience differential outcomes depending upon their relationships to those categories; and that those categories are social constructs (see Chapter 40 by Elmhirst, this volume). Disaggregating and denaturalizing analytical units such as “the household,” research in this vein explores the consequences of those dynamics with respect to resource access and control, differential experiences of environmental costs and benefits, attitudes regarding legitimate environmental stewardship, and more. While this line of work focused initially on gender, it led directly to a broader engagement with questions of how identities were socially produced and with what consequences for environmental politics and outcomes, with the categories and consequences of indigeneity, ethnicity, and race becoming prominent topics (see, e.g., Moore et al. 2003; Perreault 2003; Mollet and Faria 2013). Feminist

theory and anthropological approaches to identity alike have informed this line of work, which has increasingly focused on ideas of intersectionality: the effort to understand all of the above categories as fluid and political creations that always exist and operate in combination. At this point, then, even in political ecological work not explicitly identified as feminist or focused on gender relations, it is commonly accepted that identity categories are socially constructed, dynamic, always shaped by diverse relations of power, and consequential for all environmental interactions and issues. Such insights are now as fundamental a part of the fabric of the field as those originating from Marxist theory, as evident in many of the chapters in this volume.

Fourth, political ecology remains committed to and characterized by largely qualitative and interpretive methods and methodologies (although, to be sure, much work has demonstrated that these can often be fruitfully combined with other research methods). Such approaches dominate in part because, studying marginalized people, political ecologists realize that official records tell only a partial story: what is often at stake is precisely the facts and motivations of resistance, of extra-legal activity, of the grievances and collective desires that give rise to social movements, and so on. It is very difficult to find out what marginalized people think and how they are affected by transformed socionatural relationships without actually talking with them, or attempting to recover or reconstruct such perspectives and effects through painstaking historical work and interpretation (e.g., the pathbreaking work of E.P. Thompson [1975]). In short, as befits a field with deep roots in cultural geography and anthropology, questions of meaning are as important as questions of fact. Such meanings are typically not captured in surveys sent out by central governments or in images taken from orbit. Indeed, for political ecologists, the representations formed on the basis of these latter methods are as much objects of study as they are sources of data (see Chapter 19 by Bryan, this volume). This points to the related fact that political ecology appears committed to a distinctly post-positivist view of science, accepting some of its products as inputs, yet also believing that knowledge production is always inextricably bound up with social relations and operations of power (see Chapters 6 by Robbins and 11 by Zimmerer, this volume).

Fifth, political ecology is likewise attentive to historical and social context. As Diana Davis (Chapter 20, this volume) argues, while relatively focused and intensive case studies may be the norm in the field, a necessary complement to an intensive focus is that those cases must be understood within their broader social and historical contexts. The depth of that temporal lens varies, and has been the subject of some debate: political ecology's specific focus on the transformation of nature–society relations in the context of capitalist modernity has meant that historical attention often focuses on the ways in which nature–society relations have been reshaped through and by specifically modern colonial and post-colonial dynamics.

As we acknowledge above, this constellation of commitments is arguably not unique to work that self-identifies as “political ecology”: much work in, for instance, anthropology, environmental sociology, environmental history, science and technology studies, and other cognate fields shares many or perhaps even all of these attributes, which helps to explain the frequent and fertile interchanges among them and geography – sometimes under the sign of political ecology, and sometimes under other labels. Yet, we still find it useful to sketch the broad commonalities within political ecology as a way to register what we have learned, before moving on to consider where the field is going and what it might consider adding to its agenda.

Current developments and directions

The rapid ferment and expansion so evident in political ecology makes cataloguing or characterizing major new directions in the field challenging. Nonetheless, a handful of themes

and topics stand out as representing clearly new, distinctive, and significant developments in the field's evolution.

The first is that political ecology is an increasingly international and polylinguistic field. As several of the chapters in this volume both represent and discuss (see in particular Chapters 4, 5, and 24 by Leff, Gautier and Kull, and Ulloa respectively), "political ecology" is now a recognized term and organizing principle for research, criticism, and activism in non-Anglophone countries and research traditions, with new journals, conferences, and research networks emerging under the explicit heading of political ecology. These conversations have their own intellectual and political trajectories, rooted in particular literatures, politics, and problems, and it would be a mistake to understand them as merely regionalized expressions of the Anglophone tradition. But all these varieties of political ecology broadly share an intellectual and political commitment to social change and to critiquing dominant structures of political and economic power. Political ecology's growing popularity as a term and as a political and intellectual position is surely rooted in some significant commonalities and cross-fertilization, and the opportunity to develop a more diverse, representative, and multi-faceted political ecology is critical to the field's future. It is also very much in keeping with its intellectual and normative commitments.

Attention to the significance of categories and axes of social difference and their consequences for environmental politics and outcomes, broadly understood, continues to expand and deepen. The recent turn towards what we can term, following Sundberg (2011), "posthumanist political ecology" represents an important new direction. The increasing interest in animals and other non-human entities as not merely objects of study or functional elements of ecosystems, but actors in (and perhaps with) their own rights, in investigations of how humans act in and interact with a heterogeneous world, represents an important break with earlier, unabashedly anthropocentric political ecology (see, for example, Chapter 9, this volume; Collard 2014; Shaw et al. 2010; Kosek 2010). There are especially challenging but also rich exchanges on this front between political ecology and political theory – a conversation also developing with respect to topics such as the "post-political" (Chapter 47 by Swyngedouw, this volume) and conceptualizations of climate politics (see, for example, Baldwin 2013).

The past decade or so has also seen an intense research focus on extractive industries and regions, and particularly mining – what Tony Bebbington (2012) has termed "underground political ecologies." While much in this research is quite familiar to political ecology – the focus on primary commodity producing regions and communities in the global south, investigation of how livelihoods and access shift with increasing production for global markets, an emphasis on tensions between the goals of national governments and the impacts on local, often indigenous, communities and territories with respect to policies around natural resources, investment, and exports – the growing focus on subterranean, mineral resources is arguably a significant departure from the studies of agrarian and forest dynamics and conflict so central to the first few decades of political ecology. Among other considerations, mining and fossil fuel extraction are nearly always directly and strongly connected to global political economic relations of exchange and consumption of raw materials and energy. Whereas farming and herding systems, or even conservation efforts may be relatively localized, and only indirectly influenced by broad-scale political economic processes, minerals and hydrocarbons enter directly into global capital flows. So while these processes are inextricably rooted in particular sites of extraction, they also immediately and explicitly connect to national and global scales. Resource extraction has been a research topic in political ecology for decades, but it has become far more central to the field in recent years, at least in part because of mounting global concerns regarding continued extraction of fossil fuels. This interest in the accelerating "torrent of raw materials" drawn into industrial economies links directly to a small but rapidly growing interest within political ecology in shifting geographies of

energy production and consumption – a point of potential rich interchange with economic and resource geographies, industrial ecology (Chapter 28 by Barca and Bridge and 37 by Huber, this volume) and, of course, to climate change.

Climate change is now a central topic in political ecology, and one likely to permeate inquiry in the years ahead (Chapter 23 by Liverman, this volume). The relationship between climate change and political ecology as a field is complex. On the one hand, climate change appears to be just the sort of topic political ecology is tailor-made to study: a host of wrenching, profoundly unjust transformations of nature–society relations, driven by centuries of capitalist dynamics with global consequences, in which the poor and otherwise marginalized will suffer most, but in ways deeply shaped and complicated by local circumstances and specificities. Indeed, political ecology's rapid rise in popularity, as measured by things like specialty group memberships and job descriptions, surely owes much to the fact that it offers a rich, theoretically rigorous, and explicitly political framework through which to investigate and understand such dynamics. There are explicit parallels with and echoes of political ecology's genesis in the 1970s, when it began in large part as an effort to formulate a critical and more nuanced alternative to the sweeping global neo-Malthusian diagnoses of and solutions to environmental crisis. It seems, at first glance, that perhaps this time around more people are listening to its hard-won lessons regarding structurally produced differential vulnerability, the social origins of alleged environmental “drivers,” and the like.

However, there are also reasons to be skeptical of this quick embrace. As Watts (Chapter 2, this volume) argues forcefully, many recent efforts to “mainstream” some elements of political ecology fail to grasp either its original critiques of adaptive and systems thinking (see also Bassett and Fogelman 2012), or the careful and comprehensive social theories out of which they were born. It is impossible, for instance, to reconcile a structural critique of capitalism with an embrace of the “green economy” and the yet more extensive and intensive incorporation of nature into circuits of capital accumulation as a “solution” to climate change. And it is equally impossible to adequately theorize complex social dynamics within the functionalist, putatively universal framework of the now-ubiquitous “resilience cycle” diagrams (Resilience Alliance 2014). Yet, this is precisely what is on offer by a still-hegemonic neoliberalism, the analysis of which with respect to environmental governance has become another major research theme in contemporary political ecology. Thus, Watts' argument, with which we are in full agreement, is that the current popularity of resilience and systems thinking with respect to climate change (and indeed financial markets and a host of other referents) makes some of political ecology's original analytical insights and critiques newly and urgently relevant. It is in part for this reason that we think it worthwhile to articulate and emphasize some of the field's central commitments and points of consensus.

It is relatively easy to list what is new in terms of topics and approaches in political ecology (if hard to do them all justice). What is more difficult, but arguably more critical, is to characterize the broader context in which these trends are occurring, as well as the essential elements of a political ecological critique of that moment. In other words: if a critical and specifically Marxist critique of the particular conjuncture of Cold War geopolitics, early postwar and postcolonial development interventions, and neo-Malthusian environmentalism was integral to the genesis of political ecology as we now understand it, what are the analogous contextual contours to which we respond today, and the key theoretical and political elements of our critical responses? As in the 1970s, we see a global capitalist economy struggling with dramatic shifts in its geographies of production and consumption, with the energetic basis of its metabolism and ongoing expansion, and with potentially dramatic reconfigurations in the location and techniques of hegemonic power. If anything, those struggles are more pronounced and severe,

with the challenges of climate change amplifying and cutting across the standard neo-Malthusian refrain of looming environmental scarcities and conflicts. What is notably different, though, is how thoroughly decades of neoliberalism and neoliberalization have transformed the terms of contestation and debate, even within, sadly, environmental politics themselves (McCarthy and Prudham 2004). One aspect of neoliberalism, we argue, has been an effort to reinvigorate capital accumulation not so much by an internationalization of production and the development of new markets – although those processes, so prominent in the 1970s and following decades, surely continue apace – but by drawing life itself and its creative capacities more directly into circuits of capital, in ways ranging from the emergence of biotechnology as a central sector in contemporary regimes of accumulation (Sunder Rajan 2006) to the marketization and indeed fabrication of “ecosystem services” (Robertson 2004, 2012; Lave 2012). We see the rapidly growing prospect of industrial-scale efforts to geoengineer the biosphere as the next step along this trajectory. In short, rather than accept that living organisms or ecosystems may present limits to capital accumulation, contemporary capitalism seeks instead to rework those organisms and ecosystems in ways conducive to the continued expansion of capital. Finally, it is notable that contemporary responses to the chronic social and environmental insecurity and vulnerability brought about by the expansion of this crisis-ridden system eschew the explicit geopolitical ambitions, centralized planning, and explicit coercion so prominent in the political imaginaries of the *Limits to Growth* era responses to crisis. Rather, current responses, shaped by decades of neoliberal political imaginaries, turn instead on the securitization of privileged lives through permanent states of undeclared war, while encouraging the rest of humanity to utilize adaptation and the cultivation of resilience to survive in a global market economy whose volatility, inequality, and unpredictability are naturalized via references to ecological theories of complex systems (see Chapter 2 by Watts, this volume). In short, while many of the specific contours of the present moment have changed, political ecology’s critiques and contributions remain as relevant as ever: an emphasis on the political economic roots of environmental problems; a rejection of facile and apolitical understandings of human–environment relationships; an insistence on the complexity, historicity, and malleability of social structures and processes; and a commitment to siding with the marginalized continue to be not only relevant but also vitally necessary. In the depths of the neoliberal era, one of the main tasks and contributions of political ecology (as of many related critical agendas) has been to insist, and to demonstrate at times, that alternative and non-capitalist human–environment relationships are possible.

What should political ecology do more of, or do better?

We wish to close by suggesting several areas where we think political ecology as a field could make important contributions, and perhaps stretch itself in new directions. These grow directly out of the chapters in this volume and our conversations about the field, as well as out of conversations over the years with other colleagues.

First, we think it is critical to continue, and to actively foster, conversations among political ecologists working in different national, regional, and linguistic traditions. This will not be easy and involves far more than just overcoming linguistic barriers (though this is, of course, a crucial first step). The relative lack of interchange between the various traditions in political ecology is rooted in part in the uneven geographies of knowledge production (shorthanded in the inadequate and increasingly dated spatial imaginary of global north and south). This unevenness, in turn, has everything to do with colonial histories: for example, many government-funded regional studies programs in the USA emerged directly out of Cold War politics and the global aspirations of northern elites. At the same time, critical traditions of scholarship on the

mobilization of environment and resources have in many instances been actively suppressed as part of colonial projects to consolidate the national state, as in Chile. One consequence of this and other legacies of colonialism and uneven development is that intellectuals in the global south often remain dependent in important ways upon forms and relations of knowledge production strongly centered in the global north, whether it be the dominance of journals and books published mainly or solely in English, expensive electronic access to restricted library systems, or the locations and structures of conferences and professional networks. Such conditions have tremendous influence on the ways that academic literature – including political ecology – is produced, disseminated, read and taught. Yet simple dependence is far from a complete or accurate characterization of the legacies of the histories above: another consequence is that, by necessity or by choice, some research trajectories and forms of social engagement undertaken by researchers based within the global south on the urban and rural livelihoods of marginalized groups have evolved relatively independently of formal research programs and scholarly trajectories originating in the global north. Often political ecology in all but name by the substantive criteria we lay out above, such work nonetheless has its own dynamics, institutional contexts, and political rationales, which cannot and should not be defined by its relationship to the academic institutions and infrastructures of the global north. The post-colonial encounter between these contextually evolved practices of research and political ecology programs emanating from the global south and the more commonly recognized “political ecology” written and circulated primarily by academics in the global north is a complex one, characterized by relations of dominance, independence, and hybridization. Finding ways to overcome these power relations and engage in these cross-language conversations will be difficult, and will involve much more than just reading works in translation. It also requires an acknowledgement on the part of Anglophone researchers of their privileged position in relation to the means of knowledge production. We are emphatically *not* suggesting such scholars turn away from an engagement with the global south, or what others have characterized as the majority world. Far from it. Rather, we call for those whose academic practices are both a consequence of, and constitutive of, the dominance of the global north to acknowledge the structural inequities within with they work, and for political ecologists from the whole range of geographic and institutional locations to find meaningful ways to transcend these obstacles.

Second, we would encourage political ecologists to explore more direct engagements with policy and political practice alike – from work with state agencies or NGOs, to work with social movements and direct action activists. While the specific forms, decisions, and commitments of this co-production of environmental knowledge cannot be discussed in general terms, we are deeply sympathetic to the arguments made by Loftus (Chapter 13, this volume) regarding the need for “political ecologies of practice” and Bebbington (Chapter 15, this volume) on the instability of the distinction often made between political critique and the actual construction of policy. Following from these points, political ecologists may find they can further their objectives by being more willing to speculate about the future as part of their work (in addition to their more traditional role in critiquing), and to suggest, endorse, and contribute to the development of specific visions and plans (see Chapter 7, this volume). The field’s ability to travel beyond the academy has been limited, in part, by a tendency to eschew specific contributions to discussions, beyond the articulation of general principles, regarding how the future might or should look.

An example of a domain in which political ecologists could make just such contributions is in the consideration of future energy geographies, another topic ripe for attention. As Bridge et al. (2013) and others have argued, the coming years are likely to see dramatic reconfigurations of energy complexes at every scale and throughout the globe. Such reconfigurations will be

inevitably political, and they will be about questions at the heart of political ecology: who will make decisions about how to use the environment; who will benefit and who will bear the costs of such uses; how will historical patterns of land uses, claims, and rights shape what happens in the present and future; how will such reconfigurations work through and either reinforce or alter existing categories or axes of difference within social formations; and more. Political ecologists are extremely well suited to contribute to the investigation of such questions, and to develop convincing arguments for more equitable and sustainable versions of new energy complexes.

Related to this point, we believe political ecology has to engage substantively with the shifting configurations of the global economy, including the rise of the so-called ‘BRICSAM’ (Brazil, Russia, India, China, South Africa, ASEAN states, and Mexico) countries and the implications for global resource flows, environmental conflicts and social movements, and more. To name one prominent but hardly isolated example, Chinese investments rival (and in some instances have surpassed) those of the US and EU in some Latin American, African, and Asian countries. This global reconfiguration of capital flows demands a deep re-thinking of the north–south conceptual scaffolding upon which much of political ecology has been constructed. We have used and reproduced the terms and imaginary of “global north and south” here, in part because other alternatives such as “minority and majority worlds” are equally and problematically binary, while also glossing over important historical and geographical configurations. And, like all authors in this domain, we must at times use shorthand terms to refer to vastly complicated social realities. Yet we find such dichotomous frameworks increasingly inadequate for contemporary political ecology, and we especially suggest that a geographical imaginary organized around northern, industrialized domination and exploitation of a predominantly agrarian global south, while still capturing much, is no longer adequate to the world in which we live, or to the range of topics that contemporary political ecology ought to investigate.

Closing thoughts

While much has changed about the world in the 40-plus years since the emergence of political ecology as a field of research and praxis, the core commitments of the field have never been more relevant. Political ecology’s theoretical commitments to Marxist, feminist, and postcolonial analysis; its commitment to intensive, post-positivist research methods; and its strong normative commitment to social justice, are all the more urgent in the face of contemporary capitalism and diverse state projects of territorialization and securitization in the name of environment, energy, and resources. The specific empirical foci of political ecology have changed considerably in the past 40 years, as scholars have trained their attention on emerging ecologies and scales of social and ecological relations. Given the restless nature of global capitalism and socio–environmental relations, together with the changing (and increasing) demands of the academy, we have no doubt that political ecology will continue to evolve in numerous ways. Indeed, we welcome these changes and are excited by the prospect of what is to come. Whatever directions the field may take in the future, our hope and expectation is for a political ecology that is at once more global in its orientation – embracing the field’s diverse linguistic and regional traditions, scales of analysis, empirical foci, and epistemological approaches – and more thoroughly engaged in practice, policy, and activism. In short, the more political ecology changes, the more we believe its core commitments remain the same. To paraphrase Marx (1975; see also Chapter 13 by Loftus, this volume), we call for a political ecology that strives not only to interpret the world as it is, but which continues to work actively to change it.

References

- Baldwin, A. 2013. Vital ecosystem security: emergence, circulation, and the biopolitical environmental citizen. *Geoforum* 45: 52–61.
- Bassett, T. and C. Fogelman 2012. Deja vue or something new? The adaptation concept in the climate change literature. *Geoforum* 48: 42–53.
- Bebbington, A. 2012. Underground political ecologies: the second annual lecture of the Cultural and Political Ecology Specialty Group of the Association of American Geographers. *Geoforum* 43(6): 1152–1162.
- Blaikie, P. 1985. *The Political Economy of Soil Erosion in Developing Countries*. London: Routledge.
- Blaikie, P. and H. Brookfield 1987. *Land Degradation and Society*. London: Methuen.
- Bridge, G., S. Bouzarovski, M. Bradshaw and N. Eyre 2013. Geographies of energy transition: space, place and the low-carbon economy. *Energy Policy* 53: 331–340.
- Carney, J.A. 1996. Converting the wetlands, engendering the environment: the intersection of gender with agrarian change in Gambia. In: Peet, R. and Watts, M. (Eds.), *Liberation Ecologies: Environment, Development, and Social Movements*. London: Routledge, pp. 165–187.
- Collard, R.C. 2014. Putting animals back together, taking commodities apart. *Annals of the Association of American Geographers* 104(1): 151–165.
- Harvey, D. 1974. Population, resources and the ideology of science. *Economic Geography* 50(3): 256–277.
- Kosek, J. 2010. Ecologies of empire: on the new uses of the honeybee. *Cultural Anthropology* 25(4): 650–678.
- Lave, R. 2012. *Fields and Streams: Stream Restoration, Neoliberalism, and the Future of Environmental Science*. Athens: University of Georgia Press.
- Marx, K. 1975. *Early Writings*. London: Pelican.
- McCarthy, J. 2012. The political economies of political ecology. In: J. Peck, T. Barnes and E. Sheppard (Eds.), *The New Companion to Economic Geography*. Oxford: Wiley-Blackwell, pp. 612–625.
- McCarthy, J. and S. Prudham 2004. Neoliberal nature and the nature of neoliberalism. *Geoforum* 35(3): 275–283.
- Mollett, S. and C. Faria 2013. Messing with gender in feminist political ecology. *Geoforum* 45: 116–125.
- Moore, D., J. Kosek and A. Pandian, eds. 2003. *Race, Nature, and the Politics of Difference*. Durham, NC: Duke University Press.
- Perreault, T. 2003. “A people with our own identity”: toward a cultural politics of development in Ecuadorian Amazonia. *Environment and Planning D: Society and Space* 21(5): 583–606.
- Resilience Alliance 2014. Adaptive cycle. www.resalliance.org/index.php/adaptive_cycle. Accessed October 2, 2014.
- Robertson, M.M. 2004. The neoliberalization of ecosystem services: wetland mitigation banking and problems in environmental governance. *Geoforum* 35(3): 361–373.
- Robertson, M. 2012. Measurement and alienation: bringing ecosystems to market. *Transactions of the Institute of British Geographers* 37(3): 386–401.
- Rocheleau D., B. Thomas-Slayter and E. Wangari, eds. 1996. *Feminist Political Ecology: Global Issues and Local Experiences*. London and New York: Routledge.
- Schroeder, R. 1999. *Shady Practices: Agroforestry and Gender Politics in The Gambia*. Berkeley: University of California Press.
- Shaw, I., P. Robbins and J.P. Jones. 2010. A bug's life and the spatial ontologies of mosquito management. *Annals of the Association of American Geographers* 100(2): 373–392.
- 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.
- Sunder Rajan, K. 2006. *Biocapital: The Constitution of Post-Genomic Life*. Durham, NC: Duke University Press.
- Thompson, E.P. 1975. *Whigs and Hunters: The Origin of the Black Act*. London: Allen Lane.
- Walker, R.A. 1973. Wetland preservation and management on Chesapeake Bay: the role of science in natural resource policy. *Coastal Zone Management Journal* 1(1): 75–101.
- Walker, R.A. 1974. Wetland preservation and management: a rejoinder – economics, science and beyond. *Coastal Zone Management Journal* 1(2): 227–233.
- Watts, M.J. 1983a. On the poverty of theory: natural hazards research in context. In: K. Hewitt (Ed.), *Interpretations of Calamity: From the Viewpoint of Human Ecology*. Boston: Allen & Unwin, pp. 231–262.
- Watts, M.J. 1983b. *Silent Violence: Food, Famine, and Peasantry in Northern Nigeria*. Berkeley: University of California Press.