## Symposium on Justice, Nature and the City

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## Rationale

In his 1996 work, *Justice, Nature and the Geography of Difference* (JNGD), David Harvey brought together a series of debates – including those concerning environmental values, the politics of social and environmental justice, and the future of cities - which are rarely articulated within the same analytical framework. Harvey's work established foundational concepts for understanding how space, time, place and nature are constituted and represented through social practices - not as separate elements but in relation to each other. JNGD called for 'critical ways to think about how differences in ecological, cultural, economic, political, and social conditions get produced ... and we also need ways to evaluate the justice / injustice of the differences so produced' (1996: 5). Crucially, for our purposes, Harvey highlights the production of geographical differences as fundamental to the exploration, and indeed resolution, of contemporary urban problems.

A decade later, and taking Harvey's work as a starting point, this IJURR symposium—which emerges from a session at the 2006 meeting of the RGS-IBG - examines how concepts of justice and nature in urban places are being constructed, reworked and contested - and the extent to which common ground between concerns for social and environmental justice can and is being forged in the city. While concerns for social justice and the social life of cities have long been a mainstay of geographical work, the linking of environmentalism to problems of the city and associated processes of urbanization remains a relatively underdeveloped arena of geographical inquiry (Schweitzer and Stephenson Jr., 2007). Indeed, in 1996 Harvey referred to the integration of the urbanization question into the environmental-ecological question as a *sine qua non* for the twenty-first century (429). The relative neglect of such work is perhaps more surprising given that it is in urban areas where transformations of nature are most visible – both in physical expression and in socio-ecological consequences (Swyngedouw and Heynen, 2003) – and which are becoming increasingly important strategic sites for an array of different forms of environmentalism (White and Wilbert, 2006). Issues of

urban political ecologies and environmental inequalities have only recently begun to gain analytical purchase (e.g. Heynen et al., 2006; Keil, 2003; Walker and Bulkeley, 2006). Keil (2003), for instance, has identified four 'strongholds' of the emerging Urban Political Ecology (UPE) project - an exercise which, although carrying the perils of any such categorisation, does usefully describe this body of work and the central issues and challenges being tackled around the concerns of justice, nature and urban life that we return to below. The first of these strongholds consists of work focused on the political ecology of the Los Angeles / Southern Californian region. Los Angeles, with its volatile and violent environment, has captured the imagination of many urban writers (Keil, 2003: 731) - with authors (such as Davis, 1998; Wolch, Pincentl and Pulido, 2002; Gottlieb, 2001; Walker 2007) offering rich accounts of the history and geography of LA's socionatural environment(s) and through these recasting the way we see the (South Californian) urban landscape. The second body of work, particularly influenced by the work of Erik Swyngedouw, has two primary, and related, interests: i) the articulation of a Marxist theorisation of UPE (Swyngedouw et al., 2002; Kaïka and Swyngedouw, 2000; Castro et al., 2003) and ii) the political ecology of urban water how, through water, nature and society are tied in the production of a sociospatial fabric that privileges some and excludes many (Swyngedouw, 1997: 329). Work in the latter field - now marked by its geographical breadth, covering many cities of the global South as well as North - includes Swyngedouw (1997; 2004) on hydrological modernisation in Guayaguil, Ecuador; Bond (2002) on water resource management in Johannesburg and residual apartheid ecologies; Gandy (2008) on the particularities of capitalist urbanisation and state formation in India, which have given rise to Mumbai's current water infrastructure crisis; and Castro (2004), Loftus (2007) and Bakker (2007) on the consequences (for Mexico City, Durban, and Jakarta respectively) of neoliberal policies, based on the commodification of water resources, for exacerbating existing conflicts and inequalities. A third body of research (originating predominantly from the UK) is directed at a critical engagement with urban and regional environmental and economic policy, including discussion on the political ecological complexities of "local sustainability" (e.g. Gibbs and Jonas, 2000). Finally, the work of a group (predominantly US and UK based) concerned with the UPE of environmental justice (e.g. Agyeman, Bullard and Evans, 2003; Agyeman, 2005; Sze, 2007) addresses issues of

sustainability, justice and the discourse on rights and democracy. Taking our lead from such work, this collection of papers will address and debate the everyday urban nature(s) of environmental in/justice (which have often evaded sustained inquiry), the fundamentally spatial and political basis to claims of injustice and the implications of this work for developing socio-ecologically 'just' cities.

The concept of environmental justice (EJ) is a useful starting point for exploring this nexus of ideas; it is a term that captures the differential exposure to environmental bads and access to environmental goods experienced by different social groups (Schweitzer and Stephenson Jr., 2007). Sociologist Robert Bullard was one of the first academics to study the relationship between the location of hazardous sites and the social characteristics of nearby communities. He found that virtually all landfills in Houston, Texas were located in or near African American neighbourhoods (Bullard, 1983). Many studies followed his initial work – all highlighting the socio-spatial inequities inherent in urban environments and citing practices of urban segregation and housing discrimination as direct contributors to environmental injustice (for an overview see Szaz and Meuser, 1997). The concern of EJ research and activism with the consequences of environmental hazards for marginalised communities brings together questions of social and ecological justice, and in doing so expands our understanding of the 'environment' - away from unspoiled 'natural' areas to include populated urban spaces (Schweitzer and Stephenson Jr., 2007). In this way, EJ work has succeeding in making issues of race, class, culture and gender integral to the discourse and politics of environmentalism, as well as highlighting the ways in which physical environments can affect the quality of life of those who reside in urban places. Other authors have raised concerns about this body of work and the implicit constructions of 'urban', 'nature' and 'justice' contained within it – issues that run through this introduction and the subsequent papers.

Firstly, attention needs to be paid to the ways in which EJ is defined. Here, we must recall that much EJ work has been framed by the specifics of the environmental justice movement in the US (Walker and Bulkeley, 2006). Although the terminology of environmental justice has travelled well beyond the States (for instance Debbané and Keil, 2004; Walker and Bulkeley, 2006) its meaning has remained problematic and heavily contested. In generalised terms we can see EJ either as being closely tied to the movement's origins and a focus on the

socio-spatial distribution of pollution, toxicity and other forms of socio-ecological harm or as being linked to a more encompassing (and perhaps even indiscriminate) set of concerns or principles associated with the multiple sites, forms and processes of injustice – articulated in particular through a sustainability lens (Walker and Bulkeley, 2006; Agyeman, 2002).

Related to this point, we see something of a conflation of environmental and social justice issues, leading many to argue (some would suggest mistakenly) that the solution to the latter is a necessary prerequisite to any attempt to address the former. Whilst the relative lack of agreement and specificity in the terminology and principles of EJ genuinely offers a level of flexibility - and as such a powerful rhetorical resource - it has arguably limited the concept's power as a guide to policy and action. It is a tension between the need to keep things open and fluid - to allow for particularity - and the need to make them solid and categorical - that is, to universalize - that Harvey (1996) himself grapples with. He asks whether it is possible 'ever to talk about justice as anything other than a contested effect of power within a particular place at a given time' (Ibid, 329) but simultaneously recognizes justice as 'a foundational concept that is quite indispensable in the regulation of human affairs' (Ibid, 332). It is precisely these sorts of conceptual ambiguities that have led authors such as Debbané and Keil (2004), developing a critical engagement with urban environmental policy, to reject the search for a universal notion of environmental justice - instead advocating an understanding that is contextually situated. It is a position which acknowledges the farreaching political, economic and ecological networks that create specific instances of environmental injustice, and is one with which we are broadly sympathetic in this symposium.

The second set of issues raised, and linked to the conceptual underpinnings of environmental justice work, rest on the fact that whilst urban environments have been (and continue to be) the focus of much EJ activism and research, few studies have been situated within the larger context of urbanisation and urban research (for an exception see Sze 2007 on New York City). In this respect, a number of authors, many working within what Keil (2003) describes as a Marxist UPE tradition (e.g. Heynen et al., 2006) have been critical of environmental (justice) theory for (largely) ignoring the urban political ecologies that influence many environmental problems. The praxis concerns of environmental justice research can be traced in a literature that remains rooted in local political activism and distributional issues to

the relative neglect of theoretical engagement with the historical structural processes leading to uneven urban environments (Heynen, 2006: 501). Lines of critical research, addressing the UPE of environmental justice, have emerged and are becoming more established (see Pellow and Brulle, 2006; Agyeman et al., 2003; Pulido, 2000). Sze (2007: 9), in a finelygrained history of environmental justice in New York City, argues that the rise of activism is crucially a racialised and local response to the 'the politics of neoliberalism' - economic and development policies that favour deregulation, privatization, and free market approaches currently shaping the urban ecology of postindustrial global cities. Her focus on the histories and effects of particular urban policies for affected communities in terms of their racial and community identity, eschews narrow debate over "race versus class" and overt discriminatory intent (cf. Pulido, 2000). Notwithstanding such examples in the literature, there remains a rather diminished conceptualisation of the socio-ecological and fundamentally political processes that generate environmental and social injustices in urban spaces. The symposium therefore provides an important contribution to this work, and prompts a stronger engagement between EJ research and many of the conceptual questions - centring on politics, social power, institutional configurations, discourses and belief systems - that drive UPE. Swyngedouw (this issue), for instance, is particularly concerned to theorise the 'political' as a fundamental condition for addressing questions of urban environmental injustice. We might add that the issue of scale in the production and identification of in/justice is far from comprehensively addressed in environmental justice research (for some important exceptions see: Heynen, 2003; Debbané and Keil, 2004; Towers, 2000). Indeed, this is a topic that a number of authors in this symposium address. Scale is central to Hillier's account of the folded, networked spaces - the connections of presence and absence - which constitute a singular form of 'just' (or unjust) decision in the context of planning processes (taking the example of debate around the so-called ghost ships of Hartlepool, North-East England), and to Whitehead's exploration of the ordinary environmental injustices produced by a large scale urban forest.

Thirdly, in empirical terms, the focus of the environmental justice movement and the wider research literature has been on particular kinds of pollution – toxics, dangerous contamination and the effects of major environmental hazards such as Hurricane Katrina in

2005 – relying heavily upon symbolic politics and powerful media icons of pollution and disaster (Harvey, 1996). The consequence, we would suggest, is a relative neglect of more mundane and chronic forms of injustice manifest in the urban environment. It is a form of bias in the choice of targets that has led some critics to charge that the concerns of the movement are misplaced, that its politics are based on an iconography and politics of fear, and that its claims have

more to do with moral outrage than the science of impacts (Harvey, 1996: 338)

Returning to the urban, Heynen (2006) comments on the relative absence of the issue of access to natural resources in the environmental justice literature — which he argues is a common injustice for marginalized urban populations. Whitehead (*this issue*) similarly calls for a move away from the environmentalism embodied by much of the EJ literature, which he argues leads to a narrow framing of the spaces of urban environmental injustice in terms of the dramatic and spectacular. Although there is work that goes some way to responding to this characterisation in the US (Brownlow, 2006; Heynen, 2003) and in the UK where we arguably see a stronger research focus on the everyday features of urban landscapes (Stephens et al., 2001; Lucas et al., 2004) - there remains a persistent absence of engagement with the mundane and banal landscapes of in/justice. This is a challenge that is taken up very directly by authors in this symposium. Whitehead and Dooling, in particular, seek to refocus attention on ordinary forms of socio-ecological in/justice in their accounts of access to different kinds of urban nature.

In seeking to address these issues, the papers in this symposium bring together research from very different social, historical, political and ecological settings. In this regard, the collection offers a timely insight into the processes, practices and relations by which socio-ecological in/justice is produced, mobilised and contested. Although the collection discusses only the developed world, it does bring together a varied scholarship that focuses on the social and ecological facets of urban environmental in/justice. The papers offer a range of novel theoretical frameworks for rethinking and extending our understanding of socio-ecological justice in urban places. In so doing, the authors raise and seek to address some profoundly important questions about the social and material production of environmental in/justices, as well as the politics and governance of socio-ecological harm

across different spaces, places, scales and times. In the remaining sections of this introduction we explore three overarching themes – on the theorisation, hybridity and spatial politics of socio-ecological in/justice - that run through the contributions to this collection, and consider their implications for arguments about the relationships between justice, nature and the city.

Theorising socio-ecological in/justice and the city

Authors in this collection are concerned to engage, critically, with the ways in which contemporary environmental injustices are produced, identified and addressed within distinctly metropolitan contexts. Each paper develops different, in many cases situated, notions of nature, justice and the urban (also Debbané and Keil, 2004). Swyngedouw, taking the cue of political philosophers and theorists like Žižek, Rancière and Badiou, amongst others, approaches the necessary conditions for tackling questions of urban socio-ecological injustice through the theoretical lens of the 'properly political'. Here, he stresses the need for a move away from a condition of environmental polic(y)ing (or a mode of consensus policy-making where disruption and dissent are minimized) to an environmental politics that enables articulation of (and engagement with) radical dissent and rupture. Dooling uses Agamben's notion of bare life to explore the disconnection between notions of home articulated by homeless people living in Seattle's green spaces and the ideological constructions of home, homeless and public green space espoused by planning agencies and (housed) citizens. She uses this analysis to propose the concept of ecological gentrification, which is explicit in its recognition of the tensions between goals of ecological and social justice. The concept captures the ways in which planning agendas linked to green spaces can lead to the displacement or exclusion of the most economically vulnerable human population – homeless people – whilst simultaneously espousing an environmental ethic. Hillier offers a distinctly relational approach to theorising socio-ecological justice through a Deleuzo-Guattarian cartography which traces the assemblies, multiplicities and trajectories through which dismantling the 'ghost' ships in Hartlepool (UK) was constructed and contested as an issue of social and ecological injustice. Finally, in an analysis of ordinary environmental injustice in the Black Country Urban Forest (located in a wider – UK - region marked by a high level of urban dereliction), Whitehead, drawing on a Lefebvre-inspired interpretation of everyday life and banality, addresses the assumed connection between urban ecological improvement and the achievement of social and environmental justice goals. Like Hillier, he stresses the often problematic mobilisation of concepts of urban social and ecological injustice – which, he suggests, can unwittingly militate against the more everyday concerns of ordinary environmental justice.

In each of these papers, an engagement with novel theoretical approaches for understanding socio-ecological in/justice raises questions about how we conceptualise nature, the city, the subject, and various facets of justice, including rights and responsibilities. The collection demonstrates the rich potential for taking the study of EJ beyond the confines of existing analyses of struggles over the distribution of environmental goods and bads, and in particular the significance of thinking about in/justice in terms of a 'more complex ethical field of inter-material relations' (Whitehead, *this issue*).

Hybrid urban environments / environmental justices:

Terms like 'nature' and 'environment' are, of course, inherently contingent and need to be situated within the wider set of conditions and relations that give rise to them. Harvey (1996: 119), points to a pervasive anti-urban bias in much ecological rhetoric – citing the essentially arbitrary distinction made between the built environments of cities (as un-natural) and the humanly modified environments of rural regions (as natural). In this vein he talks about New York City as a 'created ecosystem' – stressing that human activity cannot be read as external to ecological processes. Indeed, environmental issues have emerged that are specific to the ecologies of urban places (Ibid: 186). The corollary to this, in the context of geography's engagement with nature and the environment, is the now widespread recognition of (urban) natures as simultaneously socially and materially produced (Heynen et al., 2006; Braun and Castree, 1998; Castree, 2005; Gandy, 2002; Harvey, 1996; Keil, 2003; Swyngedouw, 1999). Debate has therefore moved away from the interaction of nature and society towards an approach that recognises that society is constituted through the

transformation of nature and that nature is equally constituted through social change and social labour (Heynen et al., 2006). As a consequence, it is no longer possible, as the authors in this symposium make clear, to talk about the urban and the natural as antagonists.

In this regard, one of the key insights shared by urban political ecologists, and by the authors in this collection, is that 'the material and symbolic, the natural and the cultural, the pristine and the urban are not dual and separate realities but rather intertwined and inseparable aspects of the world we inhabit' (Keil, 2003; 728). In a similar vein, Swyngedouw (2006) argues for the use of metaphors of the metabolism and circulation of nature. developing ideas of Haraway and Latour on cyborgs and 'hybridity' to politicize processes of urbanisation in a fashion that is complementary to political projects of socio-ecological justice. The papers in the collection work to decentre universal assumptions about (urban) nature and justice and offer more complex understandings which interweave social and material processes. In Whitehead's discussion of the West Midlands' Black Country area and the high levels of land dereliction in this region - a legacy of long-term industrial decline - ordinary injustices are not simply a product of the concentration of unwanted environmental externalities. Rather, 'ordinary injustice is produced at the intersection of these two processes' (Whitehead, this issue). The authors in this collection demonstrate how the hybridity of socio-ecologies demands not only analytical perspectives which are sensitive to the substance of nature as integral to social, economic and political processes, but also an understanding of the diversity of possible relations. The recognition of hybridity also destabilises the taken for granted boundaries around which in/justice is thought to accrue. Dooling makes this point very effectively in her analysis of the use of notions of home articulated by homeless individuals in urban green spaces – arguing that it is only in 'conceptualizing green spaces as complex habitats for non-human and human inhabitants, that the narrow conceptions of home implicit in the design and management of shelter and housing options are challenged'. Hillier calls for 'relational ontologies of social and environmental justice which turn from traditional ontologies of individual, bounded subjects ... to recognize that residents and birds alike are enmeshed in far broader space-time relations '. Such insights offer food for thought for mainstream EJ work concerned with the risks and

rights of individual subjects, suggesting that as we recognise the hybridity of socio-ecological processes, there is a need to embrace more relational ways of thinking about justice.

The spatial politics of urban environmental justice:

Our final theme places the political at the centre of contemporary debates on justice, nature and the city. Political ecologists have been successful in linking politics and economics to the production of environmental degradation, poverty, marginality and vulnerability in the city (Robbins et al., 2001; Swyngedouw et al., 2002; Wolch, 2007; Gibbs, 2002) – drawing out the power relations (whether material or discursive, economic, political, or cultural) through which particular socio-ecological conditions are produced and maintained. In *Heat Wave*, for instance, Eric Klinenberg (2002) takes us inside the anatomy of the Chicago metropolis to conduct what he calls a "social autopsy" of the 1995 heat wave linked to a staggering 739 deaths, particularly among the poor, elderly and reclusive. He examines the social, political, and institutional organs of the city that made this urban disaster worse than it ought to have been – and meant that some neighbourhoods experienced greater mortality than others. Critically, redundant but fragmented city support services catered to the most vocal, proactive, consumers - thereby ensuring neglect of the generally reticent elderly and infirm who led insular lives in a "culture of fear". Social injustices were in this way structurally built into the fabric of the city.

It follows from such work that we cannot neatly define a city or urban place as un/just per se. Hurricane Katrina, which in 2005 hit Southern states in the US, and specifically the city of New Orleans, speaks to the social power relations underpinning such urban ecological disasters and how they are collectively understood – with the social segregation of the city centre, the suburbs and surrounding towns particularly significant in shaping the differential impact of the hurricane on rich and poor (Rydin, 2006: 4; Bakker, 2005). The crisis also raised distinctly political questions about how authorities permitted development in vulnerable locations – and about the trade-offs between the ecological and economic benefits of wetland environments. Whilst Hurricane Katrina, and the political response, prompted intense debate around a host of local planning and governance questions, it also touched on decision

making, and the inadequacies of leadership at much higher political levels. The ensuing 'blame game', centring on individual incompetence, arguably distracted debate from more fundamental questions about the role of the state, and of markets, in producing `natural' disasters that are fundamentally inequitable in their socio-ecological impacts (Bakker, 2005: 798; Braun and McCarthy, 2005). In a similar vein, for Peck (2006: 693), the dominant political narrative that located blame for the disaster in federal bureaucracy and the long term consequences of urban welfarism (reflected in a discourse of personal responsibility and culpability, displacing an earlier emphasis on victimisation) legitimated a renewal programme for New Orleans embodying a new urban agenda of enlarging the role for private enterprise, selective institutional roll-backs focused on the social state, redoubled crime control and an interventionist program of "moral reconstruction" aimed at those stranded in the storm's wake. Katrina is thus a case which speaks very directly to what we might term an ethical imperative of rights and responsibility: that is, how parties in political and civic life construct their social and ecological obligations in relation to the pursuit of the just city (Peck, 2006; Rydin, 2006; Agyeman et al., 2003) and what it actually means (and who is able) to be an urban ecological citizen (Wolch, 2007). It is a set of ethical issues that a number of authors in this collection address. Whitehead, for instance, considers how notions of environmental neglect challenge ideal-type ethical discourses of social responsibility - that is, how the issue of neglect frames a sense of obligation not just in terms of visible harm but also in terms of the consequences of inaction or lack of care that impinge on the everyday. Hiller considers how responsibilities for distant strangers – in the shape of the ship-breakers of South Asia – became entangled with socio-ecological in/justice in Hartlepool as the conflict over the Ghost Ships was enacted. There are, then, no neat boundaries around what constitutes 'urban' in/justice, and, indeed, the spatial politics through which such conflicts are framed can have profound consequences for how they are contested and resolved.

The authors also consider different forms of (post) political response to urban natures and claims of environmental injustice. Swyngedouw presents a radical re-interpretation of urban environmental politics and considers the consequences of a post-political condition for discussions of environmental justice, equality and democracy. He is particularly critical of a neo-liberal vision of environmental governance, a reliance on expert knowledge and

administration and what he terms populist environmentalism (in particular through forms of participatory deliberative practice), which he sees as supporting the established social order and restricting scope for debate, disagreement and dissensus - in short, politics proper. Hillier speaks to these same issues and processes in her analysis of the 'consensual' policymaking surrounding the Hartlepool ghost ships. This is a challenging insight for scholars of EJ for it requires a move beyond seeking to open up the channels of decision-making to 'just' processes of involvement, and rather a recognition of the need to work against and outside current modes of environmental governance in order to properly confront the distinctly political causes of in/justice. Other authors in this collection follow this line of thinking to some degree by challenging the dominant framing of environmental injustice in terms of extreme exploitation of urban nature(s) and urging instead a stronger theoretical and political engagement with the (more) ordinary or banal meanings and spaces of urban in/justice – "that expand and insinuate themselves largely below the radar" (Robbins and Sharp, 2006: 111, also Whitehead, this issue). Such a strategy entails engagement with alternative political spaces where in/justice is contested and configured. Dooling argues that homelessness is a deeply political problem tied closely to the exercise of sovereign power (delivered through policymakers, providers and law enforcement). She offers an account of the ways in which multiple strategies of being-at-home, practised by homeless individuals in the urban green spaces of Seattle, challenged the dominant political construction of ecological justice or gentrification - one which sustained the displacement and exclusion of homeless individuals from urban natures and indeed from policymaking. Tying in with Swyngedouw's analysis of depoliticised environments that fail to seriously tackle questions of urban environmental justice, it is in precisely these spaces of urban nature that our authors argue for, and begin to sketch out, an alternative environmental politics that is built upon a political "space of contestation for those who have no name or no place" (Swyngedouw, this issue).

## References

Agyeman, J. (2005) Sustainable Communities and the Challenge of Environmental Justice.

NYU Press, New York.

Agyeman, J., R. Bullard and R. Evans (2003) *Just sustainabilities: development in an unequal world*. The MIT Press, Cambridge, MA.

Agyeman, J. (2002) Constructing environmental (in)justice: transatlantic tales. *Environmental Politics* 11, 31-53.

Bakker, K. (2005) Trickle Down? Private sector participation and the pro-poor water supply debate in Jakarta, Indonesia. *Geoforum* 38, 855-868.

Bakker, K. (2005) Katrina: the public transcript of 'disaster'. *Environment and Planning D: Society and Space* 23, 795-802.

Braun, B., and J. McCarthy J (2005) Hurricane Katrina and abandoned being. *Environment and Planning D:* Society and Space 23, 802 – 809

Bond, P. (2002) Unsustainable South Africa: environment, development and social protest.

Merlin Press, London

Braun, B., and N. Castree (1998) *Remaking reality: nature at the millennium. Routledge*, London.

Brownlow, A. (2006) Inherited fragmentations and narratives of environmental control in entrepreneurial Philadelphia. In N. Heynen, M. Kaika and E. Swyngedouw (eds.), *In the* 

Nature of Cities: Urban Political Ecology and the politics of urban metabolism, Routledge, Abingdon, Oxon.

Bullard, R. (1983) Solid waste sites and the Houston black community. *Sociological Inquiry* 53, 273-88.

Castree, N. (2005) Nature. Routledge, London

Castro, J.E. (2004) Urban water and the politics of citizenship: the case of the Mexico City Metropolitan Area during the 1980s and 1990s. *Environment and Planning A*, 327-346.

Castro, E., M. Kaika, and E. Swyngedouw (2003) Water for cities: A political-ecology perspective - London, UK: structural continuities and institutional change in water management. *European Planning Studies*, 11, 283–295.

Davis, M. (1998) *Ecology of Fear: Los Angeles and the Imagination of Disaster*. Metropolitan Books, New York.

Debbané, A. and R. Keil (2004) Multiple disconnections: environmental justice and urban water in Canada and South Africa. *Space and Polity* 8, 209-225

Dobson, A. (1998) *Justice and the environment: conceptions of environmental sustainability* and dimensions of social justice. Oxford University Press, Oxford.

Gandy, M. (2008) Landscapes of disaster: water, modernity, and urban fragmentation in Mumbai. *Environment and Planning A* 40, 108-130.

Gandy, M. (2002) Concrete and clay: reworking nature in New York City. The MIT Press, Cambridge, MA

Gibbs, D. and A. Jonas (2000) Governance and regulation in local environmental policy: The utility of a regime approach. *Geoforum* 31, 299–313.

Gibbs, D. (2002) Local Economic Development and the Environment. Routledge. London.

Gottlieb, R. (2001) *Environmentalism Unbound: Exploring New Pathways for Change*. MIT: Cambridge, MA.

Harvey, D. (1996) *Justice, nature and the geography of difference*. Blackwell Publishers, Oxford.

Heynen, N.C. (2003) The scalar production of injustice within the urban forest. *Antipode* 35, 980-998.

Heynen N. (2006) Green urban political ecologies: toward a better understanding of inner-city environmental change. *Environment and Planning A* 38, 499-516

Heynen, N., M. Kaika and E. Swyngedouw (eds.) *In the nature of cities: urban political ecology and the politics of urban metabolism*. Routledge, Abingdon, Oxon.

Keil, R. (2003) Progress report: Urban Political Ecology. Urban Geography 24, 723-738.

Klinenberg, E. (2002) *Heat Wave: A Social Autopsy of Disaster in Chicago*. University of Chicago Press, Chicago.

Loftus, A. (2007) Working the socio-natural relations of the urban waterscape. *International Journal of Urban and Regional Research* 31, 41-59.

Lucas, K., G. Walker, M. Eames, H. Fay and M. Poustie (2004) *Environment and social justice: rapid research and evidence review*. Sustainable Development Research Network, Policy Studies Institute, London.

Peck, J. (2006) Liberating the city: between New York and New Orleans. *Urban Geography* 27, 681-713.

Pellow, D.N., R.J. Brulle (2005) *Power, Justice and the Environment: A* critical appraisal of the Environmental Justice Movement. MIT Press, Cambridge, MA.

Pulido, L. (2000) Rethinking environmental racism: white privilege and urban development in Southern California. *Annals of the Association of American Geographers* 90, 12-40.

Robbins, P., and J. Sharp (2006) Turfgrass subjects: the political economy of urban monoculture. In N. Heynen, M. Kaika and E. Swyngedouw (eds.), *In the Nature of Cities: Urban Political Ecology and the politics of urban metabolism,* Routledge, Abingdon, Oxon.

Robbins, P., A, Polderman and T. Birkenholtz (2001) An ecology of the city. *Cities* 18, 369-380.

Rydin, Y. (2006) Editorial: Justice and the geography of Hurricane Katrina. Geoforum 37, 4-6.

Schweitzer, L. and M. Stephenson Jr. (2007) Right answers, wrong questions: environmental justice as urban research. *Urban Studies* 44, 319-337

Stephens, C., S., S. Bullock and S. Scott (2001) *Environmental justice: rights and means to a healthy environment for all*. Special Briefing Paper 7, ESRC Global Environmental Change Programme.

Swyngedouw, E. (2006) Metabolic urbanization: the making of cyborg cities. In N. Heynen, M. Kaika and E. Swyngedouw (eds.), *In the Nature of Cities: Urban Political Ecology and the politics of urban metabolism,* Routledge, Abingdon, Oxon.

Swyngedouw, E. (2004) Power, nature, and the city. The conquest of water and the political ecology of urbanization in Guayaquil, Ecuador: 1880-1990. *Environment and Planning A* 29, 311-332.

Swyngedouw, E. (1997) *Social Power and the Urbanization of Water.* Oxford University Press, Oxford.

Swyngedouw, E., M, Kaika and E. Castro (2002) Urban water: a political-ecology perspective. *Built Environment* 28, 124-137.

Swyngedouw, E. and N.C. Heynen (2003) Urban political ecology, justice and the politics of scale. *Antipode* 35, 898-918.

Szaz, A. and M. Meuser (1997) Environmental inequalities: literature review and proposals for new directions in research and theory. *Current Sociology* 45, 99-120.

Sze, J. (1997) Noxious New York: The Racial Politics of Urban Health and Environmental Justice. MIT Press: Cambridge, MA.

Towers, G. (2000) Applying the political geography of scale: grassroots strategies and environmental justice. *Professional Geographer* 52, 23-36.

US General Accounting office (1983) Siting of hazardous waste landfills and their correlation with racial and economic status of surrounding communities. Government Printing Office, Washington DC.

Walker, R.A. (2007) *The Country in the City: The Greening of the San Francisco Bay Area*. University of Washington Press, Seattle, WA.

Walker, G. and H. Bulkeley (2006) Editorial: geographies of environmental justice. *Geoforum* 37, 655-659.

White, D. and C. Wilbert (2006) Introduction: technonatural time-spaces. *Science as Culture* 15, 95-104

Wolch, J. (2007) Green Urban Worlds. *Annals of the Association of American Geographers* 97, 373–384

Wolch, J., Pincetl, S., and L. Pulido (2002) Urban nature and the nature of urbanism. In M. J. Dear (ed.) *From Chicago to L.A.: Making Sense of Urban Theory*. Thousand Oaks, CA: Sage, 367–402.