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The human relationship with nature: rights of animals and plants in the urban context

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“What have they done to the earth? What have they done to our fair sister? Ravaged and plundered and ripped her and bit her, stuck her with knives in the side of the dawn, and tied her with fences, and dragged her down.”

(Morrison, 1967)

1. INTRODUCTION

Most city dwellers tend to go about their daily lives rarely thinking about the impacts their actions might have upon the ‘natural’ world. Maybe this is because in cities there are fewer opportunities for encounters with wild animals and plants, or perhaps it is because we seldom associate nature with cities (Douglas, 1981; Miller, 2005). Our interactions with urban nature are typically limited to:

- (i) exchanges with pets and pests;
- (ii) chance encounters with the few hardy native plants and animals able to co-exist with us, and to;
- (iii) gardening, recreating, or watching nature documentaries on television.

Yet increasing numbers of scholars have begun to suggest that our interactions with nature are formative in how we see the world, how we treat each other and how we relate to the environment that surrounds us (Kibert, 1999; Jackson, 2003; Kellert, 2004; Kahn Jr., 2005; Miller, 2005; Heynen et al., 2006). If this is true, urban dwellers’ diminished interactions with nature and depauperate understanding of the natural world is alarming. For instance Miller (2005: 430) has recently reported that: “adolescents in south... Los Angeles [were] more likely to identify correctly an automatic weapon by its report than they [were] a bird by its call”. With half of the world’s population now living in urban areas such disconnects between urbanites and nature will probably have profound consequences for global ecosystems (Newman et al., 2009). We must begin to rethink human relations with nature lest we cause irreparable harm to ourselves, to the biogeochemical systems that sustain us, and to other species with whom we share planet Earth.

Ethics, rights and values are appealing concepts that hold hope for solutions to our current global environmental crisis – and more specifically to the disquieting loss of species from our cities. But looking to “nature’s rights” for salvation could invite trouble. Not only do many urbanites have a deeply ambivalent relationship with the natural environment, the whole idea of finding redemption through rights is a veritable “Pandora’s Box”. This essay is a foray into the tricky realm of the “moral considerability” of nature (Goodpaster, 1978), and human obligations to animals and plants. It is beyond the scope of the essay to trace the various Western philosophers and philosophies that

have informed debates about whether nature has rights; others have already done that (see for example Dobson, 1995; Coates, 1998; Low and Gleeson, 1998; Torrance, 1998; Varner, 1998; Cafaro, 2001; Palmer, 2001; Hay, 2002; Kahn Jr., 2005). Seeking guidance from the Greco-Roman foundations of Western thought is equally problematic. As we will see, the Greeks were also deeply divided about our relationship with nature. While Aristotle believed that animals had souls, Plato regarded them as the lowest form of life (Glacken, 1967; Plumwood, 1993; Dobson, 1995; Coates, 1998; Torrance, 1998; Hay, 2002). Instead, this essay considers more recent contributions to the natural rights debate from philosophers like Peter Singer, Arne Naess, Luc Ferrie, Donna Haraway and Val Plumwood, lawyers like Christopher Stone, ecologists like Edward Wilson and Tim Flannery, conservationists like Aldo Leopold and Rachael Carsons, environmental historians like William Cronon, and new animal geographers like Jennifer Wolch.

We begin by considering the realities of daily human interactions with nature in urban environments, looking at some of the problematic relationships between people and nature in the city, relationships that date back to at least the Neolithic revolution when humans began to profoundly reconfigure their interactions with nature (Plumwood, 1993; Kellert, 1997; Coates, 1998). As nature became commoditized – capable of exchange and ownership, humans began to see themselves as outside of nature, or at the very least as elevated above plants and animals (Flannery, 1994; Leakey and Lewin, 1996). Next we take a philosophical turn, concisely examining how the Greeks got us into this dilemma, before exploring what we mean by “rights”, “values” and “ethics”. We then probe the implications these ideas have for the moral considerability of nature. The essay concludes by considering the rights of non-endemic species like weeds and feral animals, and highlights some problems associated with trying to use the “rights” concept to determine what belongs where, what should be protected, and what is “out of place” and - by some accounts - should be exterminated. These forays are necessarily cursory, and open more questions than they answer, but we must take care before sentencing other life-forms to death in our cities. If nothing else, pondering the complex and oftentimes contradictory ideas of rights and values might help us make more informed decisions.

2. URBAN ANIMALS AND ANIMAL URBANISM

Animals have been crucial to the development of human civilizations, playing major roles in transportation, warfare, fashion, religion, entertainment, communication, companionship and sustenance. For example, the bodies of animals have yielded: fat for soaps, perfumes and cosmetics and flesh, bone, sinews and feathers for food, medical, and religious purposes. We have used skins for clothing, book binding, bags, shoes, drums and furniture; and sinews, bone, teeth, feathers and wool for tools, pens, jewellery, musical instruments, blankets and paintbrushes (Wolch et al., 2003). Animal muscle power has tilled fields, drawn carriages, and hauled timber and stone. In many

ways, our cities are founded on animals (McShane and Tarr, 2007, Shepard, 1997).

Although it has been fashionable throughout the ages to claim that cities are inherently “unnatural”, denying the presence of the myriad species that share urban spaces with us is misleading. Our cities are not “dead zones”; nature clearly permeates our urban environments, and animals still inhabit most cities in surprisingly large numbers (Douglas, 1981; Platt et al., 1994; Davis, 2003; Heynen et al., 2006; Wolch, 2007). Opportunistic species in particular seem to flourish in cities. Our houses, backyards, parks and landfills create many opportunities for a wide variety of plants and animals. Old trees, garden sheds, roof cavities, abandoned vehicles, and decrepit factories provide spaces for hibernation, denning, nesting and foraging. Roof gutters offer a source of drinking water, garden ponds provide habitat for aquatic species, and vacant lots and abandoned car bodies provide shelter and habitat for terrestrial ones (Byrne and Wolch, 2009). Urban environments may actually provide better prospects for the flourishing of some species than many “wildland” areas (Hoffman and Gottschang, 1977; Rebele, 1994; Riley et al., 1998; Schaefer, 2003; Gehrt, 2004; Mannan and Boal, 2004).

In Los Angeles for example, feral parrots screech across suburban skies, in the Hollywood Hills coyotes prey on pets; mountain lions stalk Orange County trail users, and opossums and skunks raise their young in San Gabriel backyards (see figure 1). In downtown New York, falcons dine on pigeons; Londoners share their city with sparrows, foxes, deer and the occasional badger. A multitude of birds and animals still flourish in Australian cities. It is not uncommon to see magpies or crows in inner-city Sydney; kangaroos frequenting suburban golf courses in Perth, Canberra and Brisbane, pythons, possums and fruit bats in Gold Coast yards, with water dragons patrolling the city’s beaches and bull-sharks menacing its canal estates (see figure 2). But human-animal interactions in cities are characterised by both affection and antimony. Many opportunistic species face massive eradication efforts (e.g. seagulls in landfills, Canada Geese near airports and White Ibis in parks) (Belant, 1997; Gosser et al., 1997; Martin et al., 2007). The ability of urban wildlife to coexist with humans depends upon the time, place and scale of human-animal interactions. Issues of seasonality – such as breeding cycles, and the duration, intensity and predictability of interactions are important, as are the types of animals involved, their overall health, and their body size, behavioural adaptability, social group size, age and sex (Seymour et al., 2006; Byrne and Wolch, 2009).

Insert Figure 1 around here

Unfortunately cities can have severe impacts on urban wildlife, typically through exploitation, disturbance, habitat modification and pollution. Exploitation results in the death of animals as a direct result of human interaction, including hunting, trapping, fishing or collection. Disturbance may

be either unintentional (e.g. accidentally scaring a nesting bird) or intentional (e.g. frightening a deer to get a good photograph). Habitat modification typically results from vegetation clearing or damage, the introduction of invasive plant species or the release of diseases, predators or competitors. Pollution may occur in a variety of forms including noise pollution, light pollution, visual intrusion, and air, water and soil contamination (through activities such as applying pesticides, dumping trash, or contaminants from storm-water runoff) (Rich and Longcore, 2006; Seymour et al., 2006). Other negative impacts include electrocution from overhead powerlines, poisoning from insecticides, avicides, or rodenticides, and collision with vehicles or with glass windows. While some animals consequently modify their behavior in cities in response to these problems, for example coyotes and bobcats become more nocturnal in the presence of humans, others are driven away entirely (Byrne and Wolch, 2009).

But these factors are not the only determinants of animal-flourishing in cities. Ideologies surrounding the control of nature underpin many of our interactions with urban plants and animals, and are central to how we perceive and behave towards them. In her examination of the multiple meanings of domestication, Kay Anderson (1997) has argued that all animal practices are connected to power and identity. Zoos for instance are not just stationary animal exhibits; they are central to the formation of human and even national identity –representing colonial conquest over exotic species and places. And certain animal practices conceal undercurrents of power; there are strong connections between race, gender and representations of ‘animality’ (Anderson, 1997).

Insert Figure 2 around here

For example, observing that Nazi Germany was the first country to develop nature conservation legislation, French philosopher Luc Ferry (1995) has shown how Nazi environmentalism was born not of enlightened ethics but rather paranoia over foreign incursion and a xenophobic drive to protect the ‘purity’ of the Aryan nation. Animal geographer Chris Philo (2000) has similarly shown how in the nineteenth century, particular urban places such as slaughterhouses, animal markets and proximate working class residents became coded as “impure”, “unhygienic”, “promiscuous” or even “wild and savage” based upon the putative habits of the animals that inhabited these spaces. More recently, Jennifer Wolch – also an animal geographer - and her colleagues have noted that in the United States, some Asians and Latinos have been maligned for animal practices that transgress White cultural norms; practices such as dog-eating, some types of hunting, and some religious activities which stigmatise these groups as “other”, “beastly” and even “inhuman” (Wolch et al., 2003). So what are the origins of these ideas of nature?

3. ORIGINS OF WESTERN DOMINATION OF NATURE

A longstanding intellectual and moral schism between humans and “nature” has underpinned much Western thought (Collingwood, 1960). We inherited this dualistic thinking from philosophers like Plato, Kant and Descartes (Plumwood, 1993), thinkers who believed that humans were “rational” creatures whereas animals and plants were riven by base instincts. While there is insufficient space to visit all these thinkers in any detail here, two warrant closer attention – Plato and Descartes.

According to the late Val Plumwood (1993) – a philosopher and ecofeminist – the ontological separation of human from nature can be traced back to Greek philosophy and to Plato specifically. Plumwood has unravelled the evolution of dualistic thinking in Western culture to show how Plato (and later Descartes) endowed Western thought with a series of dualisms including, among many others, the separation of mind from body, male from female, master from slave, rationality from emotion, universal from particular, and culture from nature (Plumwood, 1993: 43). A hierarchical reasoning underpins these dualisms, positing one as superior to the other, and naturalizing multiple oppressions such as sexism, racism and speciesism (Singer, 2002).

Dualistic thinking is inherently premised upon what Plumwood calls “backgrounding” and “denial”; the dominant and oppressive ignores its dependence upon the subordinated, and backgrounds it to privilege the “master view”. For example, Plato saw the rightful place of humans as being with “the divine”, yet militarism, misogyny and elitism underpinned much of his thought. Plato regarded women as primitive, chaotic, emotional, incompetent, animal-like and gripped by base appetites (Plumwood, 1993: 77). Strikingly, Plato also thought that animals descended from humans in a bizarre evolutionary inversion: animals’ lack of reason deformed their bodies and drew them close to the earth, away from the divine above (one does wonder though how he resolved the transgressions of birds). Indeed, the deprecation of nature, evident in much of Plato’s writing, stems from his ideal(ist) ontology which valued death over life, denied dependency on the natural world, and promoted hyperseparation.

René Descartes, a Seventeenth Century French philosopher, mathematician and pre-Enlightenment thinker, has also been strongly influential in shaping the dualistic thinking undergirding modern human-animal interrelations. Like Plato, Descartes saw reason, the opposite of nature, as separating humans from animals. But for Descartes, the “basis of [the] mind [shifted] from rationality to consciousness” (Plumwood, 1993: 112) and being “unconscious”, nature was thus rendered mindless. Denying animals as “mindful” beings, Descartes recast them as organic machines, to be controlled and used. As machines, animals could feel no pain, removing the “possibility for mutual recognition and exchange” (Plumwood, 1993: 117). For Descartes, since animals could possess no “true” sensation, even their “aliveness” came into question. His mechanistic conception of nature paved the way for

contemporary understandings of humans as being outside nature, and contemporary practices that result in the thoughtless destruction of countless animal and plant lives.

But Marxist geographer David Harvey (2000) in his essay on architects, bees and “species being”, has cautioned us to the perils of dualistic thinking. He says that we have much in common with organisms like beavers, termites and even cyano-bacteria, organisms that also modify their environments for their own benefit. And a bevy of scientists have recently corroborated these ideas, adding to overwhelming evidence that humans are less unique than we once thought, with startling discoveries that challenge the indelible marks of humanity (e.g. emotion, planning, self-awareness). Our supposedly “human” qualities may not be so exclusive. We share many of our capabilities with other animals. Cuttlefish can conceal their private “conversations” from conspecifics (Palmer et al., 2006); crows are able to solve difficult spatial problems (Emery and Clayton, 2004); some primates appear capable of pre-meditated actions (e.g. chimpanzees that cache stones to throw at zoo visitors) (Osvath, 2009); and elephants may be self-aware (Plotnik et al., 2006).

Whether these examples offer glimpses into the “souls” of other organisms – as Aristotle would have it (Collingwood, 1960) - or simply reflect genetic adaptations and predispositions is open to debate. What these radical findings challenge though is entrenched and archaic notions that non-human organisms are incapable of feeling pain, having emotions or planning for the future. Based on findings like these, some scientists including biologist Edward O. Wilson and ecologist Stephen Kellert have argued that humans have a kinship with non-human species – a ‘biophilia’, and as fellow animals and ‘ecological citizens’ we are morally obliged to care for other species (Wilson, 1992; Kellert, 1997, 2004). Arguably what makes us different is this capacity for caring – our ability to ponder our impacts, and to contemplate the “rightness”, “goodness” or “appropriateness” of our actions. This is why some people believe that the idea of “animal rights” is the solution to our environmental problems.

4. THE RIGHTS OF URBAN ANIMALS AND THE BOUNDARIES OF MORAL CONSIDERABILITY

Clearly, our ideas of ‘nature’ inform how we interact with nature (Talbot and Kaplan, 1984; Kellert, 1997; Kaplan and Kaplan, 2008; Matsuoka and Kaplan, 2008). Most ordinary people – conditioned by philosophers like Bentham, Kant, and Descartes see no problem with using ‘natural resources’ to benefit humanity, even if this means harming other species (Dobson, 1995; Low and Gleeson, 1998; Palmer, 2001; Hay, 2002). The problem seems to be inconsistencies in what we see as our obligations to nature, and incommensurable differences in the ethics and values we use to guide how we treat other organisms. For instance, we may protest the bashing of fur seals or harpooning of whales – donating money to organisations like Sea

Shepherd to intervene on our behalf, but then conveniently overlook the destruction of tropical rainforests when we purchase teak furniture for our lounge-rooms or use palm sugar in our kitchens (Low and Gleeson, 1998). We often struggle when we try to determine how best to consider the “rights” of other species inhabiting our urban environments. Possibly this may have something to do with the whole concept of “rights”.

4.1 Does nature have right?

Does nature have rights? Are plants and animals worthy of moral considerability? What are the moral obligations of humans to nature? These questions have ignited fierce and impassioned debates among philosophers, ecologists, clergy, property developers, town planners, conservationists, aboriginal peoples and many others. The notion of the “rights” of nature and of ecological ethics and values fits within a frame known as ecological justice (Baxter, 2005). Ecological justice is a philosophical and moral position that addresses how humans relate with non-human species and the natural world. Sometimes called justice to nature, it seeks to delineate our moral obligations to other species. Justice here refers to the idea of fair treatment, of equity or even equality. Many proponents of ecological justice assert that nature has intrinsic value – it is valuable in and of itself, outside of any benefits to humans or human measures of worth. Many ecological justice advocates also acknowledge the interconnections and mutual interdependence of all species. They follow in footsteps of Aldo Leopold (1989: 225) who stated that: “a thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.” Some commentators like lawyer Christopher Stone have even sought to expand this domain of “moral considerability” beyond humans to encompass animals, plants and even inanimate objects like rocks, rivers and oceans (Stone, 1972), with mixed results – a point we return to shortly.

There are several foundations of ecological justice. Religious grounds posit humans as custodians of the natural world; they are typically founded on humans’ moral responsibility to other species, which stem from supernatural entities (God, Buddha, Allah, Dreamtime beings etc.) (Low, 1999; Palmer, 2001; Baxter, 2005). Instrumental grounds – founded on Jeremy Bentham’s idea of utility – that is the greatest good for the greatest number – acknowledge that current and future generations of humans are reliant upon the natural world for their needs (e.g. food, medicine & clothing) and nature should be protected to prevent the mental, physical or emotional suffering of other humans. Finally, rights-based notions of ecological justice are founded on the idea that an individual is deserving of moral and legal protection.

Christopher Stone (1972: 451) suggests that several criteria must be satisfied for rights to exist. First, a public body must be able to hold an individual, corporation or other entity accountable for their actions. Second, there must be “procedural safeguards” to ensure that if an entity is wronged, it has recourse to punitive action. Third, for rights to exist an entity must also be able

to initiate legal actions, courts must recognize that the entity is capable of being harmed/injured, and “relief” or remedial actions must benefit the entity.

But a problem with rights thinking is that extending rights to animals is inherently anthropocentric and represents an egoistic extension of the human self (Plumwood, 1993: 179), tantamount to erasing the “otherness” of animals. Similar problems occur with most deep ecology thinking, which results in what Plumwood (1993: 160) refers to as a blurring of the boundaries between self and other: “[a] difference-denying assimilation” of nature and “devouring [of] the other” (Plumwood, 1993: 192). Another issue is that proponents of rights typically apply them to the individual (Regan, 1999), whereas many environmental problems occur at the level of ecosystems. What this means is that animal rights activists consider that a feral fox may be worthy of being protected from poisoning due to the pain it would suffer, but a vulnerable ecosystem will have no rights-based protection.

Worse still, if we extend rights to nature, we can get into some pretty ridiculous quandaries. For instance, what right does a lion have to eat a zebra? (Regan, 1999). What right do we have to grow vegetables, undertake experiments or take vaccines? Should bacteria be able to sue us for taking antibiotics, or mold for cleaning our bathrooms? And what rights might the atmosphere have against pollution, even from volcanoes? Perhaps the best approach is to do away with the concept of rights altogether and to look for better alternatives. But what are these alternatives? Goodpaster (1978: 316) offers us a clue; he suggests that we must move beyond notions of whether a being is capable of experiencing suffering to considering whether a being has a drive, intentionality or other purpose to live. As if anticipating some of the problems described here, Goodpaster argues that although there are: “limits to the operational character of respect for living things....the regulative character of...moral consideration...[for] all living things asks...for sensitivity and awareness, not for suicide” (Goodpaster, 1978: 324).

5. CONCLUSION: ARE ANIMALS JUST “STRANGE PEOPLE”?

Drawing on some of the scientific evidence discussed earlier in this essay, the new animal geographers tell us that animals have subjectivity and agency (Philo and Wilbert, 2000). They are capable of complex thoughts and emotions, can resist human interventions, will follow their own agendas, and have their own will to flourish. Animals and even plants are not automatons driven by instinct or biochemical processes alone – they actively interact with their environment in complex ways. To paraphrase Wolch et al. (2003), people, animals and plants are enmeshed in intricate webs of relations upon which their mutual wellbeing depends.

To arbitrarily discriminate against animals and plants then, on the basis of supposed “inherently innate characteristics” like sentience, cognition, emotion or genes can take us into very troubling moral and legal terrain. Inter-species

organ transplants, zoonotic diseases, genetically modified crops, human-animal tissue cultures, and other transgressions of species boundaries have blurred the distinction between human, animal and plant – we are increasingly living in a hybridized or “cyborg” world where machines act intelligently, animals speak in sign language, and genes can be patented by multi-national corporations (Haraway, 1997). A rights-based approach to human-nature interrelations creates all sorts of irreconcilable dilemmas. Is a person with pig organs still human? Is someone whose ear has been grown on the back of a mouse still a person (Haraway, 1997)? Why does severely mentally disabled child have moral status when a more intelligent octopus does not (Singer, 1999, 2002)? And could self-aware computers be murdered? What about the moral considerability of species we designate as feral or weeds, simply because they are “out of place”? Whatever the ecological harm these species might cause, do we really have the “right” to exterminate them? Could alternatives such as immuno-contraception or predator-aversive conditioning work better than mass-poisoning, shooting, trapping and infection with viral-control agents – and the pain and suffering they cause (Gustavson et al., 1974; Miller et al., 1998)? As Wolch et al. (2003: 192) argue: “[s]ince humans cannot be disentangled from non-humans, non-humans, [are] best seen as ‘strange persons’ to be treated...in the same way as human groups”.

What we are left with then is the need for a “situated” or “relational” ethics”, an ethics that recognizes the interconnections between human, animal and plant, an ethics that is context-dependent (Warren, 1999). Such an ethics will enable us to break out of the constraints of dualistic thinking, and recover notions of both continuity and difference with the natural world, without falling into the trap of assimilation. We need an ethics premised upon the idea of mutualism, a virtue-based ethics of care (Michel, 1998), where respect, sympathy, concern, gratitude, kinship/friendship and love guide our actions towards nature. An integral part of such an ethics is recognizing nature’s telos or intentionality through the drive of other species for growth and flourishing.

But genuinely recognising and coexisting with urban nature – what Wolch (1996) has termed “zoöpolis” – is challenging. Pet euthanasia, wildlife extermination, pest eradication, pollution and ecosystem appropriation will need to give way to new practices that include plants and animals within the circle of moral considerability – an ethics of caring and respect based on kinship but also difference. Urban forests, wildlife corridors, adaptive re-use of buildings, green-roofs, ecological restoration, permaculture and other practices central to sustainable cities will take us some of the way towards zoöpolis. But we will also need to change land use regulations, landscaping practices, building design, transportation systems, food production and distribution, medical technologies, cosmetic manufacturing and energy generation to actively accommodate the needs of non-human species who share our cities (Wolch, 2007). Perhaps most of all, we will need to engender a relational understanding of the natural world where humans and human practices are reconfigured as part of nature – not apart from nature.

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- 111 for related topics and biography = 5,663.

References

- Anderson, K. (1997) "A walk on the wild side: a critical geography of domestication", Progress in Human Geography 21, 463-485.
- Baxter, B. (2005) A Theory of Ecological Justice, London: Routledge.
- Belant, J.L. (1997) "Gulls in urban environments: Landscape-level management to reduce conflict", Landscape and Urban Planning 38, 245-258.
- Byrne, J. & Wolch, J. (2009) "Urban habitats / nature," in Thrift, N. & Kitchin, R. (eds.) International Encyclopedia of Urban Geography, New York: Elsevier, forthcoming.
- Cafaro, P. (2001) "Thoreau, Leopold, and Carson: toward an environmental virtue ethics", Environmental Ethics 22, 3-17.
- Coates, P. (1998) Nature: Western Attitudes Since Ancient Times, Berkeley: University of California Press.
- Collingwood, R.G. (1960) The Idea of Nature, New York: Galaxy Books.
- Davis, M. (2003) Dead Cities: And Other Tales, New York: The New Press.
- Dobson, A. (1995) Green Political Thought, London: Routledge.
- Douglas, I. (1981) "The city as an ecosystem", Progress in Physical Geography 5, 315-367.
- Emery, N.J. & Clayton, N.S. (2004) "The mentality of crows: Convergent evolution of intelligence in corvids and apes", Science 306, 1903 -1907.
- Ferry, L. (1995) The New Ecological Order, Chicago: University of Chicago Press.
- Flannery, T. (1994) The Future Eaters: An Ecological History of the Australasian Lands and People, Kew, Victoria: Reed Books.
- Gehrt, S.D. (2004) "Ecology and management of striped skunks, raccoons and coyotes in urban landscapes," in Fascione, N., Delach, A. & Smith, M.E. (eds.) People and Predators: From Conflict to Coexistence, Washington, D.C.: Island Press, 81-104.
- Glacken, C.J. (1967) Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the end of the Eighteenth Century, Berkeley: University of California Press.
- Goodpaster, K. (1978) "On being morally considerable", The Journal of Philosophy 75, 308-325.
- Gosser, A.L., Conover, M.R. & Messmer, T.A. (1997) Managing problems caused by urban Canada geese, Logan, Utah: Berryman Institute, Utah State University.
- Gustavson, C.R., Garcia, J., Hankins, W.G. & Rusiniak, K.W. (1974) "Coyote predation control by aversive conditioning", Science 184, 581-583.
- Haraway, D.J. (1997) Modest Witness@Second Millennium
FemaleMan© Meets OncoMouse™, New York: Routledge.
- Harvey, D. (2000) Spaces of Hope, Berkeley: University of California Press.
- Hay, P. (2002) Main Currents in Western Environmental Thought, Sydney: University of New South Wales Press.
- Heynen, N., Kaika, M. & Swyngedouw, E. (Eds.) (2006) In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism, London: Routledge.

- Hoffman, C.O. & Gottschang, J.L. (1977) "Numbers, distribution, and movements of a raccoon population in a suburban residential community", Journal of Mammalogy 58, 623-636.
- Jackson, L.E. (2003) "The relationship of urban design to human health and condition", Landscape and Urban Planning 64, 191-200.
- Kahn Jr., P.H. (2005) "Encountering the other", Children, Youth and Environments 15, 392-397.
- Kaplan, R. & Kaplan, S. (2008) "Bringing out the best in people: a psychological perspective", Conservation Biology 22, 826-829.
- Kellert, S. (1997) Kinship to Mastery: Biophilia in Human Evolution and Development, Washington, D.C.: Island Press.
- Kellert, S. (2004) "Ordinary nature: the value of exploring and restoring nature in everyday life" in Shaw, W.W., Harris, L.K. & Vandruff, L. (Eds.) 4th International Urban Wildlife Symposium, Tucson, Arizona: The University of Arizona.
- Kibert, C.J. (Ed.) (1999) Reshaping the Built Environment: Ecology, Ethics and Economics, Washington, D.C.: Island Press.
- Leakey, R. & Lewin, R. (1996) The Sixth Extinction: Patterns of Life and the Future of Humankind, New York: Anchor Books.
- Leopold, A., Schwartz, C.W. & Finch, R. (1989) A Sand County Almanac, and Sketches Here and There, New York: Oxford University Press.
- Low, N. (Ed.) (1999) Global Ethics and Environment, London: Routledge.
- Low, N. & Gleeson, B. (1998) Justice, Society and Nature: An Exploration of Political Ecology, London: Routledge.
- Mannan, R.W. & Boal, C.W. (2004) "Birds of prey in urban landscapes," in Fascione, N., Delach, A. & Smith, M.E. (eds.) People and Predators: from Conflict to Coexistence, Washington, D.C.: Island Press, 105-117.
- Martin, J.M., French, K. & Major, R.E. (2007) "The pest status of Australian white ibis (*Threskiornis molucca*) in urban situations and the effectiveness of egg-oil in reproductive control", Wildlife Research 34, 319-324.
- Matsuoka, R.H. & Kaplan, R. (2008) "People needs in the urban landscape: Analysis of Landscape and Urban Planning contributions", Landscape and Urban Planning 84, 7-19.
- McShane, C. and Tarr, J.A. (2007) The Horse in the City: Living Machines in the Nineteenth Century, Baltimore: Johns Hopkins University Press.
- Michel, S.M. (1998) "Golden Eagles and the environmental politics of care," in Wolch, J. & Emel, J. (eds.) Animal Geographies: Place, Politics and Identity in the Nature-Culture Borderlands, London: Verso, 162-187.
- Miller, J.R. (2005) "Biodiversity conservation and the extinction of experience", Trends in Ecology and Evolution 20, 430-434.
- Miller, L.A., Johns, B.E. & D.J., E. (1998) "Immunocontraception as a wildlife management tool: some perspectives", Wildlife Society Bulletin 26, 237-243.
- Morrison, J. (1967) "When the music's over" Strange Days, Los Angeles, California: Elektra Records.
- Newman, P., Beatley, T. & Boyer, H. (2009) Resilient Cities: Responding to Peak Oil and Climate Change, Washington, D.C.: Island Press.
- Osvath, M. (2009) "Spontaneous planning for future stone throwing by a male chimpanzee", Current Biology 19, R190-R191.
- Palmer, J.A. (Ed.) (2001) Fifty Key Thinkers on the Environment, London: Routledge.

- Palmer, M.E., Calvé, M.R. & Adamo, S.A. (2006) "Response of female cuttlefish *Sepia officinalis* (Cephalopoda) to mirrors and conspecifics: evidence for signaling in female cuttlefish", Animal Cognition 9, 151-155.
- Philo, C. & Wilbert, C. (Eds.) (2000) Animal Spaces, Beastly Places: New Geographies of Human-Animal Relations, London: Routledge.
- Platt, R.H., Rowntree, R.A. & Muick, P.C. (Eds.) (1994) The Ecological City: Preserving and Restoring Urban Biodiversity, Amherst, MA.: The University of Massachusetts Press.
- Plotnik, J.M., de Waal, F.B.M. & Reiss, D. (2006) "Self-recognition in an Asian elephant", Proceedings of the National Academy of Sciences of the United States of America 103, 17053-17057.
- Plumwood, V. (1993) Feminism and the Mastery of Nature, London: Routledge.
- Rebele, F. (1994) "Urban ecology and special features of urban ecosystems", Global Ecology and Biogeography Letters 4, 173-187.
- Regan, T. (1999) "Mapping human rights," in Low, N. (ed.) Global Ethics and Environment, London: Routledge,
- Rich, C. & Longcore, T. (2006) Ecological Consequences of Artificial Night Lighting, Washington, D.C.: Island Press.
- Riley, S.P.D., Hadidian, J. & Manski, D.A. (1998) "Population density, survival, and rabies in raccoons in an urban national park", Canadian Journal of Zoology 76, 1153-1164.
- Schaefer, V. (2003) "Green links and urban biodiversity – an experiment in connectivity" in Brace, S.a.F., D. (Ed.) The Georgia Basin / Puget Sound Research Conference, Vancouver, BC.: Puget Sound Action Team.
- Seymour, M., Byrne, J., Martino, D. & Wolch, J. (2006) Green Visions Plan for 21st Century Southern California: A Guide for Habitat Conservation, Watershed Health, and Recreational Open Space. 9. Recreationist-Wildlife Interactions in Urban Parks, Los Angeles, CA.: University of Southern California, GIS Research Laboratory and Center for Sustainable Cities.
- Shepard, P. (1997) The Others: How Animals made us Human, Washington, D.C.: Island Press.
- Singer, P. (1999) "Ethics across the species boundary," in Low, N. (ed.) Global Ethics and Environment, London: Routledge,
- Singer, P. (2002) Animal Liberation: A New Ethics for Our Treatment of Animals, New York: Harper Collins.
- Stone (1972) "Should trees have standing? - Towards legal rights for natural objects", Southern California Law Review 45, 450-501.
- Talbot, J.F. & Kaplan, R. (1984) "Needs and fears: The response to trees and nature in the inner city", Journal of Arboriculture 10, 222-228.
- Torrance, R.M. (Ed.) (1998) Encompassing Nature, A Sourcebook: Nature and Culture from Ancient Times to the Modern World, Washington, D.C.: Counterpoint.
- Varner, G. (1998) In Nature's Interests?: Interests, Animal Rights and Environmental Ethics, Oxford: Oxford University Press.
- Warren, K. (1999) "Care-sensitive ethics and situated universalism," in Low, N. (ed.) Global Ethics and Environment, London: Routledge,
- Wilson, E.O. (1992) The Diversity of Life, New York: W.W. Norton and Company.
- Wolch, J. (1996) "Zoopolis", Capitalism Nature Socialism 7, 21-47.
- Wolch, J. (2007) "Green urban worlds", Annals of the Association of American Geographers 97, 373-384.

Wolch, J., Emel, J. & Wilbert, C. (2003) "Reanimating cultural geography," in Anderson, K., Domosh, M., Pile, S. & Thrift, N. (eds.) Handbook of Cultural Geography, London: Sage.

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Bibliographical Note

Dr Jason Byrne is a lecturer in Griffith University's School of Environment on Australia's Gold Coast. His research interests include urban political ecologies of greenspace, environmental justice, and geographies of the nature-society interface. Jason has collaborated with researchers in the USA and China, investigating equitable access to urban parks, the obesogenic characteristics of urban environments and urban greenspace services for climate change adaptation. He has written widely on the topic of urban nature.

Figures



Figure 1 – Opossum (*Didelphis marsupialis*) traversing a backyard fence in San Gabriel, California



Figure 2 – Water dragon (*Physignathus lesueurii*) sunbathing on a Gold Coast metropolitan beach, Australia