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Marginal Nature: Urban Wastelands and the Geography of Nature

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Marginal Nature: Urban Wastelands and the Geography of Nature

By

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Dissertation

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The science of Geography, which I now propose to investigate, is, I think, quite as much as any other science, a concern of the philosopher.

- Strabo

Acknowledgments

My journey from student to scholar has been measured by milestones of friendship, opportunity, and mentorship. The path appeared wayward to me (and certainly to others) until the writing of this dissertation revealed the relevance of each seeming digression and delay. The geographical symmetry of my life journey is similarly surprising to me. Begun on a bend of the Delaware River across from Philadelphia in a New Jersey town called Riverside, I now live at another riverside on a bend of the Colorado River in Texas. Rivers are fitting metaphors for life journeys, but, in my case, the literal and figurative have converged to help me make sense of the place where I am today. A similar geographical symmetry holds for the relevance of wasteland in this journey. The vacant lots of my childhood in New Jersey, Germany, and Pennsylvania were the best classrooms for learning the wasteland ecology that I am paid to study today. That childhood poking around was pure scientific observation unencumbered by theory or research protocols, and I draw on that practice as I study the wasteland at Hornsby Bend. Thus, hindsight clears the doubts and clarifies the meanders of my life as I sit to take account of another milestone, the completion of this dissertation.

At the start of my scholarly journey, the liberal arts claimed me at Allegheny College in Meadville, Pennsylvania. All students were assigned a professor as an academic advisor, and I was fortunate to have had a philosopher as mine. James F. Sheridan was an expert on Kant, Sartre, and Whitehead, who became my mentor and friend. From my first semester, Jim had me sign up for an independent study with him. This course continued through my years at Allegheny College, and he would feed me books to read and discuss, usually over coffee at the campus grill. We continued these

coffee tutorials after my graduation when I worked for him on an artificial intelligence program. Jim and his friend Al Kern were teaching a computer called Horace to write poetry. Al was a writer and professor in the English Department whose introductory literature course I took my first semester. Al adopted me as well after I announced that Theodore Roethke was my favorite poet (having read one villanelle by him), and Roethke happened to be one of Al's poets. Since I was a double major in Philosophy and Literature and since the nuns in Catholic high school had utilized the fear of God to hardwire my brain with grammar rules, they drafted me to write code in Basic to teach Horace to write sonnets. My main contribution was to draw on my farmyard experience for a series of infamous love sonnets about chickens. From Jim and Al, I learned that scholarship need not be a lonesome pursuit, but it can be sometimes a Platonic dialogue and sometimes a Marx Brothers routine. When not at the grill with Jim and Al, I was learning much about literature from Anne Goodwyn Jones, political science from Giles Wayland-Smith, theology from Brownie Ketcham, and life from Nancy Sheridan, Jim's wife and my advisor. During my junior year in England at Durham University, my Literature tutor, Diana Collecott, filled me with 19th Century British literature and allowed me to argue that Hopkins concept of inscape was a precursor to Whitehead's process philosophy as long as I read Dorothy Wordsworth's journals. I was truly fortunate to have this rich undergraduate experience.

My graduate education began in the Philosophy Department at Ohio University. Art Zucker picked up where Jim left off with weekly tutorials, only now it was philosophy of science and ethics and a bit of Freud. I am grateful to Art for patiently filling in the blanks of my philosophical education and for his Groucho Marxist wit.

Cynthia Hampton balanced my Master's work with large doses of Plato and Aristotle and her insights about the meaning of philosophy. The Department showed great generosity by giving me unique opportunities as a graduate student to learn the craft of teaching philosophy. My experience at Ohio University made it easier for the University of Texas Department of Philosophy to risk a teaching assistantship on me. I arrived in Austin on a blast-furnace August day, and immediately found the cool shadows of the Cactus Café which ever since has been my campus office (thanks, Chris). Ed Allaire made me read Descartes very, very carefully, and Ignazio Angelelli opened me to the wonders of symbolic logic. Both made me a better philosopher, and both showed me kindness as I began to doubt my path in philosophy.

My doubts pushed me to join the Peace Corps in 1990. Because of my agricultural background and Spanish language skills, I was sent to Hungary in the first group of Peace Corps Volunteers in Eastern Europe. The Magyars soon taught me that I was in Central Europe, as we sat at night on the railroad bridge in Nyíregyháza toasting the departure of the Russian troop trains rolling back towards the (then) Soviet Union. Over two years, we mapped the riparian forest of the upper Tisza River, started an environmental NGO, and drank pálinka to warm the morning chill. I return to Hungary as often as I can to our research house in Szabolcs. My geographical career began in those years thanks to my Magyar friends. Imre Vas took me on and off the trails through the Zemplén Mountains. Tibor Szép took me up and down and up and down the Tisza River counting his precious *Riparia riparia*. Nagyon szépen köszönöm, Vastag és Tibi.

I did not yet know that I was also a geographer, but, once back at the University of Texas, I met a displaced philosopher in the School of Architecture, Bob Mugerauer,

who helped me recognize a scholarly world beyond philosophy. He sent me to the geography department where he believed I would find kindred spirits. I am deeply in his debt. Geography was a homecoming for me, and the Department of Geography and the Environment was a wonderful world to discover. My conversion was completed during birding trips to Hornsby Bend with Robin Doughty, Ian Manners, and Barbara Parmenter. They convinced me to begin again as a geographer, and Paul English, Terry Jordon, Karl Butzer, Greg Knapp, and others welcomed this wayward philosopher and encouraged me to join them. Departmental staff has been especially helpful over my time in program, but none more than Dee Dee Barton whose tough love has been welcomed as I waivered over finishing this project. All the members of my doctoral committee have helped me along my path of becoming a geographer. Ken Young supported my development as a biogeographer and his thoughtful feedback on my writing has helped improve this dissertation. Dick Richardson has used all his cattle handling skills to corral me into finishing and has helped me grow as an ecologist and holistic thinker. Ian Manners and Barbara Parmenter broadened my view of the world with their writing about the Middle East and Istanbul, and they have graciously supported my less exotic interest in wastelands. My advisor, Robin Doughty, has taken me from being a nervous philosopher counting coots at Hornsby Bend to this last step in my education as a geographer. Thank you, Robin, for your wisdom, patience, poetry, and pints. Any alacrity and aplomb found in my prose is the result of your careful coaching and rapier edits. You taught me that the best scholarship requires passion for learning. That I still have passion for learning is a testament to your gifts as a teacher and mentor. Thank you.

Since 2000, I have run the Austin Water Utility Center for Environmental Research (AWU-CER) at Hornsby Bend. My position at the AWU was created by Maureen McReynolds and Bill Sellstrom who decided that I was the right person for this work and made me an offer that I did not refuse. I thank them for their support and this opportunity. The research, education, and community projects that I have developed over the last nine years at Hornsby Bend have delayed the completion of this dissertation but enriched it. All of those projects have been collaborative efforts, and my colleagues and friends who have participated in them have helped me more fully understand wasteland ecology and place. My fellow geographer and friend, Rob Fergus taught me to think like a bird and a birder, which are quite different things. He also pestered me like a grackle to finish this dissertation. Thanks to him for his diverse and persistent vocalizations. Since 1996, I have worked with undergraduate interns through our Hornsby Ecological Mentorship Program, and, from making the first trails map to helping mentor at risk students in the Austin Youth River Watch Program, these students have been an inspiration. My colleagues at the Austin Water Utility have supported me as I added this writing to my workload. In particular, Raj Bhattarai, Jody Slagle, and David Greene have indulged my passion for marginal nature, have made bad coffee to stimulate my gray cells, and have encouraged me to skip staff meetings and write. I am fortunate to work with such intelligent, compassionate friends. My debt to each of you is large, and we need to do a road trip soon. In the home stretch, Daryl Slusher, Justin Hearn, Natasha Rosofsky, and Heather Cooke each helped me move forward. Thanks, also, to the staff of the AWU Hornsby Bend Biosolids Management Plant for helping me understand the plant from their perspective and for supporting my work with tractors, mowers, and

conversation over these years. And thanks to Momcat Killmiceski for her loyal companionship in the CER lab, and Jody Denberg for the Sunday morning music.

From the Hornsby Bend and Austin community, I have been helped and encouraged by the many people involved in the CER's projects. John Ingram and Greg Lasley have generously shared their photographs of wildlife at Hornsby Bend, some of which appear in this dissertation, as well as their friendship and conversation. Thank you both for the photos and the kindness. The gifted artist and writer, Margie Crisp, painted the iconic image of Hornsby Bend. I thank her for allowing me to use it as an illustration in *Marginal Nature* and for her friendship. The Hornsby Bend Bird Observatory volunteers have kept the surveys and monitoring going while I sat at the computer. Thanks to Eric Carpenter, Julia and Andy Balinsky, Claude Morris, Bob and Jean Warneke, Peg Wallace, Herb Smith, Priscilla Muir, Chris Masey, Kirsti Harms, Mikael Behrens, Barbara Vinson, Eric Stager, Julia Heskett, Stu Wilson, and everyone who has kept the surveys and workdays going for over 10 years. Thanks as well to the board of the Texas Riparian Association for taking care of business while the president was writing. Thanks to Kathryn Nichols, Will Pickens, Georgianne Moore, Mike Gonzales, Emily Schieffer, Jennifer Walker, and Nikki Dictson. We lost Sari Moyer this year, but I promised her that I would finish, and I felt her spirit prodding me along the way and smiling now as I write these words. The staff of the Austin Youth River Watch and Treefolks has joined me on this journey too, and Scott Harris has helped me understand what it is to be a tree and how to plant thousands each year. Finally, I would like to thank Rob Tranchin from KERA public television, who listened to me talk about marginal

nature while we filmed a documentary on Roy Bedichek, and Rob said, "Kevin, you should write this stuff down!" Here it is, Rob.

Family through genes, marriage, and choice have been traveled the furthest with me. My chosen German siblings, Jens Bolhöfer and Sabina Piatzer, have shared friendship and family since our days in Durham and the discos of Münster, and you both have a part in this work, and I expect to see a German translation of this dissertation soon. I would not be finishing without the support and friendship of Rick McCulley who sent me back to Austin where he did his doctorate with the order to finish mine. Thank you, brother Rick. A UT geneticist and dung beetle expert continued Rick's work, and, with gentle scolding and big sisterly love, Pat Richardson helped me find the strength to finish. Thank you Dick and Pat, for sharing this journey. And my other older siblings, Mac and Maureen McReynolds, modeled the Socratic ideal of intellectual dialogue and good wine. I aspire to live as full and engaged a life as you do. Brother Jody, you have helped shaped my thinking more than you know, and, yes, dogs must have souls. Through genes and marriage, I have benefitted from the encouragement of Andersons, Delbauves, Welshes, and Seusers. The encouragement and love of my brothers and sisters by blood and marriage – Susan, Ben, David, Elise, Stephen, Naoko, Karen, Tim, Beth, Dong Soo – tempered their incessant pestering about whether I was done yet. Thanks guys. My brother-in-law Tim Anderson helped launch me on this scholarly path with conversations about Aristotle while we built pasture fence for his father when we were teenagers. See, Tim, I finally will get my academic post-hole digger. My sister-in-law, Allana Welsh, and her daughter, Sierra, have shared encouragement, love, and strong hugs which helped more than they can know. My late father, Colonel William A.

Anderson, would have delighted in the scatological culmination of my studies. Somewhere out there he is laughing hard enough to spill sparks from his pipe. My mother, Rosemary Anderson, gave me this life and this red beard and the wherewithal to pursue dreams and happiness wherever it took me. That debt is beyond repayment. I love you, Mom.

Within my own household, I must thank our non-human family who are my tutors in phenomenology. The dogs and cats with whom we share our lives teach us that we do live in a world that speaks (and barks and howls and hisses) and that all senses are needed for careful perception of that talkative world. They are true phenomenologists.

Finally, my deepest thanks go to my partner and love, Elisabeth Welsh. Through your love and wisdom, you remind me everyday that the world is enriched by passionate engagement with living and compassionate treatment of all creatures. You are my model for gracefully blending a vocation and an avocation. I love you. I am blessed that you married me. I could not have completed this dissertation and doctorate without you. Thank you, my love, and I promise that Sundays are once more reserved for adventures with you. I and love and you.

Marginal Nature: Urban Wastelands and the Geography of Nature

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The University of Texas at Austin, 2009

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In the United States, the foundational myths of Nature are wilderness and pastoral arcadia. This dissertation examines a different kind of nature that emerges as habitats in urban wastelands and margins. This cosmopolitan community is a hybrid nature that is the unintended product of human activity and nature's unflagging opportunism, which I call marginal nature. Marginal nature is neither pristine nor pastoral, but rather a nature whose ecological and cultural significance requires a reassessment of our narratives of nature. The wastelands are unique sounding boards for measuring perceptions of nature, since these places provoke ambiguous responses of attraction and repulsion. I explore perceptions of wasteland habitat from the perspectives of urban space, urban ecology, and literature about urban nature. The primary methodology of this dissertation is hermeneutical inquiry which reveals the layers of environmental discourse concealing marginal nature beneath language that asks it to be something that it is not. This environmental hermeneutics focuses on key issues of the geography of nature: nonhuman agency, place, and nature/society hybrids. I argue that comprehending the lifeworld of the wastelands requires a reassessment of the concept of place as a coproduction of humans and nonhumans, that is, an ecology of place.

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Introduction to the Margins: the Questions of Marginal Nature

Figure 1.1: Stormwater Ditch Habitat, Austin, Texas[1]

What do shreds and scraps of the natural scene mean, after all, in the shadow of the citified whole? What can one patch of leftover land mean to one person's life, or to the lives of all who dwell in the postindustrial wasteland?

Robert Michael Pyle, *The Thunder Tree*[2]

[1] All photographs and maps by the author unless otherwise noted.
[2] Pyle (1993) p. xvii.

The Meaning of the Margins

This dissertation is a response to these questions from Robert Michael Pyle. They are found in his book about a drainage ditch on the edge of Denver. These questions were not specifically addressed to geographers, but they are distinctly geographical questions about urban spaces that have been little studied by geographers, the shreds and scraps of nature that emerge in urban wastelands and margins. His book is about a personal journey back to the place where his love of nature began. As Pyle admits, the irony for him is that it all began in a weedy drainage ditch in the shadow of the city, but he insists on the legitimacy of nature encounter in overgrown shreds and scraps of land like vacant lots and drainage ditches. In fact, he argues that such places are the key to avoiding an "extinction of experience" of nature for urban children.[3]

However, the way Pyle describes the nature found in vacant lots and drainage ditches reveals a fundamental tension in the American discourse of nature which undermines appreciation for this leftover nature. In his book, Pyle uses a rhetorical sleight of hand to assist his argument for the legitimacy of his encounter with nature in this kind of place, as the "ditch" becomes an "accidental urban wildland."[4] This rhetorical move is an attempt to fit these wasteland habitats into the discourse of American nature in a positive way by using a laudatory trope of American nature, wildland. "Wildland" signals that these overgrown spaces in the built landscape are part of "wild nature" and, therefore, worthy of our affection. But is this accidental kind of nature in wastelands equivalent to the nature in official urban wildlands, gardens, and parks and is it equally worthy of affection?

[3] Pyle (1993) Chapter 9 on extinction of experience.
[4] Pyle (1993) p. xiv.

The Discourse of Urban Nature and Marginal Nature

In the United States, the foundational myths of Nature that we celebrate are the myths of wilderness and pastoral arcadia.[5] They are the foundation of the discourse of American nature from which we assess the value of nature in America. However, we are now predominately a country of urbanites who have only occasional contact with wilderness or pastoral nature. To compensate for this urban depravation, we have incorporated green islands of nature into our cities to allow for contact with approximations of wild and rural landscapes.[6] These deliberate systems of gardens, parks, and preserves are "green space" for formal, mediated encounter with officially managed "pedigreed" nature, which incorporates elements of both wild and pastoral landscapes.[7] Thus, our understanding of what constitutes "official" urban nature in cities is shaped by culturally dominant metaphors of nature. These metaphors valorize urban nature that is either deliberately cultivated in parks and gardens or formally protected as remnants of native landscapes obliterated by the creation of the city in preserves, sanctuaries, and refuges.

Urban nature that falls outside of the categories of official planning is acknowledged positively when it can be discursively altered to fit within these wild or pastoral narratives of nature. Thus, urban "wildlife" is another mediated, managed kind of urban nature found in the city. This urban fauna is judged favorably when it in some way fulfills our expectations of wild or pastoral urban nature or condemned as pestilent when it fails to follow the narrative for good fauna in the city. This narrative of urban

[5] See Marx (1964), Nash (1967), Williams (1973), Oelschlaeger (1991), Schama (1995), Cronon (1995), and Callicott and Nelson (1998) for perspectives on the concepts of pastoral nature and wilderness.
[6] See Schmitt (1969) for a survey of urban manifestations of nature appreciation at the turn of the century.
[7] Hough (1995) p. 6 for more on "pedigreed" nature.

wildlife declares that everyday non-charismatic house sparrows, grackles, and pigeons are urban pests that further degrade the city, but nesting red-tailed hawks and peregrine falcons are redemptive wild additions to the urban scene.[8] However, this categorization of good and bad urban wildlife illustrates the American expectation for urban nature to be decorative "natural" signifiers and to be managed as urban amenities like parks, preserves, and gardens. Moreover, it creates the odd circumstance that upon crossing the city limits a house sparrow or rock dove becomes a "winged rat." The nature/society questions raised by urban fauna are numerous, and they have spawned a great deal of academic attention by geographers and anthropologists.[9] What is marginalized in this new academic narrative of animals in the city is another kind of urban nature which pervades the city.

This other urban nature emerges as a weedy cosmopolitan community in the wastelands and margins of the urban landscape from the central business district to the suburban/rural fringe.[10] This community capitalizes on our neglect and flourishes through its own agency in urban wastelands like vacant lots, sewage ponds, unmaintained roadway and railway verges, derelict brownfields, and untended urban waterways. Although we think of these places as idle and degraded land, this other urban nature is always busy "developing" these sites to its own standards of economy. Taking advantage of an opportunity, those plants out of place that we call weeds colonize the bare earth, sprout from crumbling walls, or force their way through to make root-room in concrete

[8] Winn, *Redtails in Love: A Wildlife Drama in Central Park* (1998) is an example of this genre. The movie, *The Wild Parrots of Telegraph Hill*, exemplified the struggle to fit charismatic nonnative species into the narrative of urban wildlife.
[9] Wolch and Emel (1995), Philo and Wilber (2000) Sabloff (2001), Hinchliffe, et al. (2005), and Johnston (2008)
[10] The phrase "cosmopolitan community" is how the German urban ecologist Herbert Sukopp describes the flora of urban wastelands, Sukopp (1987).

and brick. A diverse community of urban fauna then claims this urban waste space and makes its home among the garbage and the flowers.[11] This unplanned, neglectedurban waste space is far more ubiquitous in the urban landscape than planned, managed, and officially sanctioned open space or green space. This rogue habitat emerges as the everyday backdrop to urban life, and, though half-hidden in the wastelands and margins, it is close at hand for informal, unmediated encounter with nature, as Pyle suggests. But what kind of nature is this ragged, prosaic habitat?

This assertive, resistive community is a hybrid type of nature characterized as both weedy and wild. It is the unintended product of human activity and nature's unflagging opportunism, which I call **marginal nature**. Marginal nature in the urban landscape is neither pristine nor pastoral, but rather it is a kind of nature whose ecological and cultural meaning resists containment within the metaphors of nature used to assess it. Remarkably, marginal nature is usually dismissed as weeds, destroyed by restoration efforts, or simply overlooked in accounts of urban nature. If noticed, it is declared to be illegitimate nature out of bounds and in need of control since it is perceived as invading the city. This dark rhetoric of invasion and war reflects its liminal hold on our imagination as a kind of shadow nature in the urban landscape, and only a few nature writers have directly engaged marginal nature as worthy of exploration and praise.

Unofficial Countryside

Richard Mabey's *Unofficial Countryside* published in 1973 is the only example of a book that attempts a comprehensive exploration of nature in urban wastelands and margins albeit in the British cultural context. The book is structured like a classic natural history text about a year of exploring urban nature in the wastelands of London, England.

[11] Leonard Cohen, *Suzanne*.

The conventions of natural history writing are observed with seasonal change monitored and species names listed. However, since this is not the pastoral nature of Gilbert White's Selborne, Mabey is forced to assess the ecological and cultural value of this urban nature on his exploratory rambles.[12] Mabey coins the term, "unofficial countryside," to describe these wasteland sites,

> I have called it the unofficial countryside because none of these places is in the countryside proper, nor were they ever intended to provide bed and board for wildlife. They are all habitats which have grown out of human need. This is a scrappy definition, I know, covering everything from a planned suburban playground to the accidentally green corner of a city-centre parking lot. Yet I think all these places do have one quality in common, and that is that, in them, the labels 'urban' and 'rural' by which we normally find our bearings in a landscape, just do not apply. It is not the parks but the railway sidings that are thick with wild flowers.[13]

It is significant that Mabey, like Pyle, finds his discursive bearings in this landscape by invoking a British metaphor of nature, "countryside." In so doing, Mabey deliberately positions this kind of improper nature within the British narrative of proper nature, which validates the worth of these places as appropriate sites of nature encounter.

However, though utilizing the conventions of British natural history writing, he feels compelled to begin the book with an apology for the comparison, betraying anxiety over the impropriety of his own obvious delight in these wastelands,

> The medium is an account of a year in the unofficial countryside, based chiefly around my personal observations and experiences…the danger in this approach is being tempted into some biological slumming. The habitats I've described in this book are in no way a substitute for the official countryside. Nor are they something to be cherished in their own right, necessarily. The last thing I want to do is to excuse the dereliction, the shoddiness and the sheer wastefulness of much of our urban landscape.[14]

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[12] Mabey has written a biography of White, *Gilbert White: A Biography of the Author of The Natural History of Selborne* (1999).
[13] Mabey (1973), p. 12
[14] Mabey (1973), p. 13

This apology for his biological slumming must be seen within the context of a broader discourse of nature in Western culture where the metaphors of countryside and wildland echo foundational Arcadian myths of the Pastoral and the Wild.[15] These myths of nature form the structure of nature appreciation and, within the literary genre of nature writing, are the cherished standards of measurement for nature worthy of praise. "It is amazing how romantic these pockets of ragamuffin greenery can begin to seem, nestling, like Frances Burnett's *Secret Garden*, behind the factory walls."[16] With unofficial countryside and marginal nature, the return echo does not "necessarily" ring true to the myths since this secret garden cultivates itself amidst the rubble, and this dissonance raises questions about whether this accidental nature is worthy of cherishing. Literally and figuratively, we lose our bearings in assessing the landscapes of marginal nature, and this search for cultural and ecological bearings points to the need for geographical assessment.

Getting our bearings in the urban wastelands is even more difficult within the American context of nature appreciation, because our foundational myth of nature is wilderness, nature untouched by humans.[17] This pristine standard sets up a much sharper conflict over "biological slumming" in American urban wastelands. We will find this same kind of search for discursive bearings and this tendency toward apologetics in the American literature, urban ecology, and urban planning that focuses on nature in urban wastelands. Thus, a geographical exploration of marginal nature must address both the ecology of this kind of urban habitat, and, more fundamentally, the cultural significance of marginal nature within the context of American perceptions of nature.

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[15] See Schama (1995) for landscapes as repositories of cultural memories and expectations of nature.
[16] Mabey (1973) p. 37 and Burnett (1911)
[17] Nash (1982), Oeschlager (1991), Cronon (1995)

The Geography of Marginal Nature – a preliminary mapping

Marginal nature makes its home in the neglected "shreds and scraps" of urban space. This neglect allows "accidental" habitat time enough to gather and grow, and irregular mowing or trimming only reinvigorates the growth of ruderal plants which are well adapted to the nonequilibrium landscapes of urban wastelands and margins.[18] Opportunistic fauna quickly follows to inhabit these pockets of green. Marginal nature thrives on this pattern of disturbance followed by neglect. When attention is turned towards the neglected margins of the city as sites of nature encounter, they become unique sounding boards for measuring perceptions of urban nature, since they provoke ambiguous responses of attraction and repulsion. These responses reveal our deep ambiguity about the value and the meaning of nature in this new urban America. The margins echo back the discursive dualities used to describe them: urban wasteland/urban wildland, degrading/renewing, and more. Thus, wastelands and margins are perceptual ecotones where the boundaries of proper and improper nature meet and merge.

Marginal nature does not fit readily into the narratives of nature by which we judge it. The biological community found in these leftover urban spaces resists and eludes the stories of nature encounter like Pyle's and Mabey's since it is not the kind of nature that we are supposed to cherish. Wasteland is not a passive landscape of sublime delights, but a dynamic landscape of resistant subjects lurking in the shadows of the city. When attention is turned towards the margins, it is obvious that there are other agents besides humans shaping the built landscape, as the landscape of urban waste space is a coproduction of human and nonhuman agents. Human agency creates the built landscape

[18] Ruderal is the botanical term for plant species growing in waste places or, literally from the Latin, in the *rudus* or rubbish.

and provides the neglect which sets the stage for the emergence of marginal nature, but these waste spaces are then shaped and filled through the collaboration of non-humans that take advantage of the opportunity and thrive in spite of periodic disturbance.

This nonhuman agency is perceived both positively and negatively. Some see wastelands as filled with opportunistic, assertive, and transgressive weeds. Others celebrate the creativity, novelty, and resilience of this nonhuman reclamation. Marginal nature reminds us that the built landscape is not just a homogeneous space of human action and domination but a heterogeneous nature/society hybrid. Thus, wastelands provide a new geographical opening to engage the question of human and nonhuman agency and the debates over nature/society hybrids and "inventive life" which preoccupy new geographies of nature.[19] It is through the margins that we make oblique entry into contemporary urban nature/society debates within geography.

The term "marginal nature" is intended to ironically challenge the prevailing assumptions of these nature/society debates which are cloaked in the tangled discourse of postmodern social theory, but also to position it in relation to these debates. Language, metaphor, narrative, and discourse are central to the project of assessing marginal nature, since it resists confinement within the dominant metaphors of nature and eludes and subverts the narratives that attempt to encircle it. As Derrida demonstrated in *Margins of Philosophy*, the margins are both open borders that resist closure and open space for inquiries about the boundaries of knowledge.[20] The figurative, ironic positioning of marginal nature in relation to dominant narratives of nature does not place us outside these narratives, but rather on the fruitful edge, a conceptual ecotone.

[19] See Braun (2008) "Inventive Life" in *Progress in Human Geography* and Hinchliffe (2007) *Geographies of Nature*.
[20] Derrida (1982) p. xxiii.

The primary methodology of this dissertation is hermeneutical inquiry in order to peel back the layers of environmental discourse that have concealed marginal nature beneath language that asks it to be something that it is not. This methodology of environmental hermeneutics also reveals a geographical blind spot.[21] These marginal spaces in the urban landscape have been largely ignored in studies of urban space and place. Some urban planners, ecologists, naturalists, and others have noticed these marginal places as unique nature/society spaces, but, as we will see, none of them is quite sure how conceptually to place the attractiveness of garbage and flowers within the current narratives of nature. They usually portray wastelands and margins as sites that should be reclaimed as preserves, parks, or gardens, that is, as open space for officially sanctioned nature and recreation.[22] My intention with this dissertation is to position marginal nature within the geography of nature and to present an alternative portrayal of urban waste space as places filled with life rather than just open, vacant land awaiting human development. Thus, what follows is a journey through the wastelands along the pathways of language, ecology, space, and place.

The Way through the Wastelands

I am interested in urban wastelands and margins as places of encounter and engagement with nature, where the lifeways of humans and the lifeways of non-humans intersect in the city. I have gone in search of narrative accounts about these encounters and have discovered very different perspectives on the relationship between marginal nature and the rest of urban nature. The key narratives of encounter are distinguished by

[21] Mugerauer, "Language and the Emergence of Environment," in Seamon and Mugerauer (1985)
[22] Berry (1976), *Preservation of Open Space and the Concept of Value*.

their discursive engagements with marginal nature, and these modes engage marginal nature from three key perspectives,

- urban space and design
- urban ecology and science
- urban nature and literature.

This study requires a different interpretation of nature beginning in the margins of the city that starts with an initial geographical question about urban space;

- Where does marginal nature emerge in the urban landscape?

The lively, embodied nature that we will find in these wastelands raises the next question about urban ecology;

- What does marginal nature reveal about the agency of nature in the city?

The assessment of this new resistant, recalcitrant nature emerging in urban margins next requires us to turn to the literature of urban nature and ask;

- How do tales of encounters with marginal nature help us reinterpret the dominant narratives of nature in America?

These three questions delineate separate pathways into the wastelands which are distinguished by distinct (though related) discursive engagements with marginal nature.

The first pathway winds through narratives of urban space and nature where city planners, landscape architects and environmentalists delineate the officially sanctioned spaces for nature in the city. Urban wastelands and margins are literal "shreds and scraps" of space that pervade the urban landscape. These waste spaces are assessed negatively by traditional narratives of good and bad urban space; for this is wasteland and "vacant or derelict land" in need of planning and management.[23] However, there are,

[23] Bowman and Pagano (2004), Engler (2004) High and Lewis (2007)

also, counter-narratives about the social and ecological attractions of these spaces. The challenge for this counter-narrative is to incorporate wastelands within the narrative of good open space in the city. Traditional narratives of proper spaces for urban nature turn marginal nature into villain, since marginal nature does not know its place. The boundaries of officially sanctioned natural spaces are continuously transgressed by weedy marginal nature, both literally and figuratively, as it emerges from the margins and "invades" these spaces. The exploration of urban waste space will reveal how a paradox arises as human meddling makes them more acceptable and accessible.

The second pathway starts with the discourse of urban ecology which treats the urban landscape as an ecosystem. Urban ecology holds the potential for a more neutral reading of marginal nature as a functional part of the urban ecosystem. Wastelands and margins fit well within the traditional narrative of urban ecology and in the broader discourse of ecology, which recognizes nonequilibrium as the dominant metaphor of ecosystem dynamics and which focuses more on function than community composition.[24] Within European urban ecology, there is a rich history of urban wasteland research and an open engagement with marginal nature by ecologists who argue that it is an appropriate subject for scientific study comparable to wilderness.[25] In European urban ecology, degraded nature is reinterpreted as a unique nature/society hybrid, variously described as "cosmopolitan communities" reflecting the cosmopolitan mission of the city or as a kind of new "fourth nature" emerging in wastelands.[26] In the United States, we find more negative readings of urban wasteland ecology. The negativity in America is based on the priority to conserve native habitats and endangered species through the

[24] Gilbert(1989), Kendle and Forbes (1997), Wheater (1999), Zimmerer (2000), and Adams et.al. (2006)
[25] Kowarik (2005)
[26] Sukopp (2002), Lachmund (2003), and Kowarik (2005)

eradication of invasive nonnative species.[27] The prominence of native species issues is reinforced by the leading roles of restoration ecology and conservation biology. Marginal nature does not fare well within American agendas to conserve and restore native nature in metropolitan areas where transgressive weeds are the foreign enemy in the narrative of restoring presettlement habitats.

The third pathway follows Mabey, Pyle and other nature writers as they encounter and experience marginal nature. The discourse of American urban nature literature is also dominated by the narrative of restoration of urban nature through the protection and restoration of native species and habitats. The discursive challenge for writers who are attracted to urban wastelands is to find language that celebrates the weeds and their lifeworlds. Like Mabey, these writers struggle with whether marginal nature is something to be cherished in its own right. With apologies for biological slumming, these writers find themselves drawn to such rogue habitats, but they grow preoccupied with the literary effort of reconciling their attraction to nature in wastelands and margins with their commitment to the foundational myths of wilderness and pastoral nature. Literally, they struggle to come to terms with this type of nature, that is, to enclose marginal nature within traditional rhetorical boundaries of nature in American literature. Part of their discursive strategy is to shift from the general issue of nature in urban space to a particular engagement with nature in this kind of urban wasteland place. Thus, this literature is both about particular nonhumans that the authors encounter and the novel attractions of these kinds of urban settings. This shift from space to place is a critical turn towards a deeper understanding of the nature-society hybrid marginal nature. It points the way forward along the pathway toward a different geographical engagement with

[27] Peterson (1999) and McKinney (2002)

urban nature that responds to calls for deep ethnographies focused on the constitutive practices of nature.[28]

These three discursive pathways converge in place, and the journey of this dissertation ends in a wasteland place that exemplifies marginal nature and the three discursive engagements that we will explore. The last stop on this journey into marginal nature is an attempt to provide an account that focuses on the practices of nature encounter which occur at an urban wasteland. The place is Hornsby Bend in Austin, Texas which is a sewage recycling facility that is also the most popular birding site in the city.[29]

Figure 1.2: Aerial image of Hornsby Bend, 2002

[28] This is the argument put forward in Johnston (2008) "Beyond the clearing: towards a dwelt animal geography."
[29] Bonta (1997), Grant (2007), and McNally (2007)

Hornsby Bend is a rich assemblage of wasteland habitats and a profound nature/society hybrid where industrial waste treatment converges with conservation, education, research, and recreation. The 1200 acre site is owned by the Austin Water Utility and the purpose of the facility is to recycle all of the sewage sludge produced by the City of Austin. The property stretches along three and half miles of the Colorado River as it flows out of Austin, and it is a mixture of bottomland fields, ponds, sewage farm fields, sewage treatment structures, old dumpsites, and abandoned structures.

Figure 1.3: Hornsby Bend facility entrance sign

The sewage ponds were built in the 1950s, and they have been a birding destination since 1959. I first came to Hornsby Bend for birding in 1995, and I was struck by the incongruities of the place where huge brown piles of treated sludge, euphemistically called biosolids, and aromatic compost form a backdrop for eager groups

of birders chasing shorebirds around the algae-rich ponds. By 2000, I was working at Hornsby Bend as the coordinator of the Austin Water Utility Center for Environmental Research which oversees ecological monitoring and research at the site.[30] By 2003, I was living in a house at Hornsby Bend as part of a project that I direct which converts houses at the site into offices for environmental NGOs. The trajectory of my deep involvement with this wasteland place still surprises me, but it matches my ever-growing wonder at the complexity of the human and non-human community that I find here.

Figure 1.4: Compost area and digester complex at Hornsby Bend

Hornsby Bend has a diverse human community. The Austin Water Utility has a staff of 40 to 50 employees who view Hornsby Bend functionally. For them, it is

[30] Information about the programs and projects of the AWU Center for Environmental Research can be found at http://www.ci.austin.tx.us/water/cer2.htm

primarily a place of work, and the work is sewage treatment and recycling. All of the city's sewage sludge, which is the solid material removed from wastewater, is pumped to the facility, and then anaerobically digested to kill pathogens and decrease odors. These biosolids are then either applied to hay fields on site or composted. The compost is made from the biosolids and all of the city's yard waste, which is brought to the facility by the Solid Waste Department.[31] Thus, this wasteland is the ultimate destination for several waste streams and the embodiment of the urban metabolism that so preoccupies urban political ecologists. To the staff of Hornsby Bend, urban metabolism translates into the literal flows of waste arriving each day which they must treat and recycle twenty-four hours a day. As one of them, I know Hornsby Bend as my workplace where I help take samples of biosolids and compost for testing in the onsite laboratory, and where I take soil and groundwater samples each year to monitor the environmental health of the site.

However, my favorite waste-work is taking temperatures in our compost piles where the aerobic organisms heat the piles to over 55° C. The composting is done on concrete which covers 40 acres of the facility, and the 500 foot long compost piles stretch across a landscape of gray cement and brown compost, truly a bleak and hard wasteland. And yet, atop the warm piles, killdeer attempt to nest each spring and complain bitterly as you chase them down the pile while doing your rounds. On older compost piles, mushrooms by the thousands sprout, white on brown. They are outward expressions of the unimaginable microbial fecundity and biodiversity inhabiting our compost piles. These uncharismatic microorganisms are also workers at Hornsby Bend, collaborators in the waste treatment and recycling process.

[31] More about this compost and the treatment facility at http://www.ci.austin.tx.us/water/dillointro.htm

Figure 1.5: Birders at the Hornsby Bend sewage ponds

For most of the birders and other visitors, this Hornsby Bend work-world is unknown, and the waste landscape is just the odiferous backdrop for nature encounter. I am part of this human community, too, although my nature observation is now both a vocation and an avocation. Hornsby Bend is famous for bird species diversity and rarities which send birders into a frenzy of bird chasing, as rare phalaropes or flycatchers appear then elude observation.[32] The site is located on the central flyway for North American bird migration, and it has a concentrated diversity of habitats on its 1200 acres. This geographical combination works to draw birds and other fauna to the site. However, all the habitats on the site are examples of marginal nature, such as the literal wastelands of the composting area, treatment structures, sludge storage basins, ponds, and sewage farm fields and the regrowth of unmaintained bottomland fields and fencelines, as well as

[32] See Fergus (1999) for the history of birds and birding at Hornsby Bend and the Hornsby Bend Bird Observatory website for bird survey data www.hornsbybend.org

the gravel pits which encircle the site. None of these habitats are promoted as conservation priorities by the Sierra Club or the Nature Conservancy,[33] and yet Hornsby Bend is celebrated as the best place in the Austin area to observe birds and explore nature.[34] For nature encounter, many of the first time visitors to Hornsby Bend come by my office asking for directions to the bird sanctuary or nature preserve, and they stand in my office doorway dumbfounded to realize that they have arrived at a sewage facility. They came in search of nature, and they typically look doubtful that a sewage facility is anything like nature. This dissertation is my response to their doubt about finding nature at a wasteland.

Figure 1.5: Hornsby Bend Sewage Ponds

[33] The Audubon Society has begun to recognize the significance of wastelands for birding, see Grant (2007).
[34] McNally (2007)

Hornsby Bend is an ironic place where its primary purpose of industrial waste treatment and recycling supports rich and varied habitats. In turn, these habitats are primarily the result of nature emerging on its own and forming wetlands and woodlands where mowing and maintenance does not occur. The multiplicity of modes of engagement with nature at Hornsby Bend combine with the complexity of meanings entangled with the "practices" of nature found there: functional, aesthetic, educational, scientific, industrial, and more. This polysemy and my unique access to the place make Hornsby Bend an ideal example of America's cultural ambivalence about urban wastelands and marginal nature. I will return to Hornsby Bend in the last chapter, but first we must explore the conceptual possibilities for placing marginal nature within the cultural narratives of nature.

Chapter 2

Varieties of Possibility: the Narratives of Nature and the City

Figure 2.1: Gravel Pit at Hornsby Bend

This is the landscape that nobody wants. It's my cup of rejection:
Driven to this unformed scraggly ignored backlot, this not-quite
Prairie, not-quite thicket, not even natural corner of
Texas, the hardscrabble left butt of a demoralized nation,
It is my choice and my pleasure to cherish this haphazard wilderness.
No, it's not even "wild" – it's a neglected product of artifice.
Come, let us walk by an improvised lakeshore, be given a vision:
Beaches of black dust, beautiful white ghosts, this drowned forest…

- Frederick Turner, *Texas Eclogue*[1]

[1] Turner (1999) first stanza

Introduction – The Varieties of Possibility for Marginal Nature

Figure 2.2: Red-eared slider turtles
Waller Creek, Austin, Texas

Does our discourse of urban nature allow a space for marginal nature to emerge literally and conceptually? The problem is that we use the metaphors of wilderness and pastoral nature to construct a conceptual framework for nature appreciation and writing, for science and conservation, for environmental management and protection, and then we expect "nature" to measure up to these standards or be regarded as a thing degraded, demeaned, or deceased.[2] This framework limits the possibilities for marginal nature in the city by setting expectations for the kinds of nature, the wild and the pastoral, welcomed in the urban landscape. The task of this dissertation is to examine why and

[2] McKibben (1989) *The End of Nature*. For the argument that nature untouched by humans has ceased to exist.

how this other urban nature has been marginalized in the discourse of nature and to argue for its significance as a part of the urban landscape. The first step towards its acceptance is to understand the conceptual map of urban nature. This assessment reveals varieties of possibility for urban nature delineated by narratives of nature and the city. Since the narratives of nature/society form the structure of these varieties of possibility, it is important to reassess these narratives so that marginal nature may emerge from the constrictions of our root metaphors of nature.

The implied comparisons of metaphor rely on the implications of the comparison to generate new meaning. For metaphors to succeed, they must "both warp us away and return us to the world," and their "bidirectionality" leads to the creation of new meaning.[3] As Jackson's poem demonstrates, this "not even natural" marginal nature resists bidirectionality with the dominant metaphors of affection for nature. The "not even natural" wasteland pales in comparison to scenic wilderness and is decidedly not a primeval nor a rural retreat. This "neglected product of artifice" is more than a human artifact, but we ignore or reject it through strict adherence to the root metaphors of American nature. In his poem, you see Jackson's struggle to find metaphors that account for his cherishing this "haphazard wilderness" that is not even "wild." His encounter with this landscape of marginal nature leads him to sort through metaphors like a field guide to nature discourse, searching for language that rings true to this wasteland/wildland place. All of us who cherish similar wasteland sites know his struggle to articulate the meaning of this marginal nature. As Evernden insists,

> We evolve, so to speak, through metaphor: one day the world is respoken, and a new being is released. Whether or not we have reached this point, whether there

[3] Buell (1995) and much more about the bidirectionality of metaphor in Ricoeur (1975)

> actually is the possibility of a re-imagining of things, we cannot know: perhaps our constant mass-media chatter is sufficient to drown out any rival vocabularies.[4]

Marginal nature must be respoken to release this new being from the shadows of the urban wasteland.

My review of narratives of nature is not a comprehensive account of all possible narratives, but focuses on ones relevant to understanding how marginal nature fits into the discourse of urban nature.[5] This prelude to our journey into marginal nature is necessary, because, as Marjorie Hope Nicolson has shown, "We see in Nature what we have been taught to look for; we feel what we have been prepared to feel."[6] Carolyn Merchant frames this issue of environmental perception in terms of cultural stories,

> Narratives form our reality. We become their vessels. Stories find, capture, and hold us. Our lives are shaped by the stories we hear as children; some fade as we grow older, others are reinforced by our families, churches, and schools. From stories we absorb our goals in life, our morals, and our patterns of behavior.[7]

These patterns of behavior for nature recreation, environmental management, urban design, scientific study, and nature appreciation are deeply influenced by stories about good and bad nature. Thus, these narratives determine our expectations for encounters and engagements with marginal nature, and they set the conditions for its emergence from the shadows of awareness. Since narrative is the key to understanding our place in nature, the interpretation of these texts of nature is a necessary component of my response to the question of marginal nature. This project is one of "environmental hermeneutics" where we look at how language facilitates the awakening of perception of

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[4] Evernden (1992) p. 124.
[5] For more thorough accounts of narratives of nature and environmental imagination can be found in Buell (1999), Merchant (2003), Satterfield and Slovic (2004) and see Cronon (1992) "A Place for Stories: Nature, History, and Narrative" for the explanatory role of narrative.
[6] Nicolson (1959), p.1.
[7] Merchant (2003) p. 3.

the environment.[8] The project for environmental hermeneutics is to understand how and why we come to interpret environments in particular ways, and how these interpretations inform our understandings of the roles, values, and meanings of those environments. Mugerauer characterizes hermeneutical explanation as, "finding the valid criteria for polysemy within the fluid variety of possibilities.[9]

In this case, we are searching for the valid criteria for how marginal nature fits within the fluid variety of possibilities for the narratives of nature in America. This is not just a deconstructive language game, because hermeneutics has ontological implications since it discloses the framework of our experience of the world. Although this world is one of open polysemy, of meanings and implications that extend beyond our intentions and our temporally bound understandings, it is not endlessly open but is bounded by "horizons of understanding" which create a contextual "hermeneutical circle" within which new meaning emerges and expands the boundaries of understanding. Gadamer defined the horizon of understanding as "the range of vision that includes everything that can be seen from a particular vantage point," and this visual metaphor fits well with a geographical inquiry that is grounded in a particular vantage point from which to reinterpret the urban landscape.[10] New understanding emerges as a "fusion of horizons" where past and present contexts come together to make something new of living value.

Urban wastelands do not appear a promising vantage point for this project of reinterpreting nature in America, but they offer a view from the margins of the nature/culture debates as well as from the margins of the city. Language, metaphor, narrative, and discourse set the boundaries of imagination for appreciation of nature, and

[8] Mugerauer, "Language and the Emergence of Environment," in Seamon and Mugerauer (1985)
[9] Mugerauer (1995) p. Xxvii.
[10] Gadamer (1976) p. 121.

yet marginal nature eludes and subverts the narratives of nature that encircle it. I believe that we can and must reimagine nature in America, and we must do this reinterpretation within the boundaries of urban landscapes where most Americans live. I focus my exploration of marginal nature on discourse and narrative because this analysis of environmental perception requires a renewal of emotion, memory, and language as tools for explanation. The interpretive task requires close attention as to how language positions marginal nature within traditional narratives of nature. This positioning can be understood as a way of building the plot of the narrative. Plots structure our perceptions of reality, or as Ricoeur describes it, "To make up a plot is already to make the intelligible spring from the accidental, the universal from the singular, the necessary or the probable from the episodic."[11] Entrikin has argued for a geographical epistemology based on "emplotment" in which objective "facts" and the intentional engagement of a geographer with a place are combined, "to draw together agents and structures, intentions and circumstances, the general and the particular, and at the same time seek to explain casually." [12] He is positioning this explanatory methodology in relation to other modes of explanation in the social sciences, and this narrative mode of explanation complements the objective detachment of explanation in the physical sciences by explicitly grounding the narrative in place.[13] My narrative of marginal nature is grounded in the wastelands and margins of cities. A review of narratives of nature and their role in geographical explanation will strip away the camouflage masking assumptions about urban nature and reveal a geographical blind spot in our perceptions of the urban landscape.

[11] Ricoeur (1983) p. 41.
[12] Entrikin (1991) pp. 25-26.
[13] Entrikin (1991) pp. 25-26.

Iterative natures

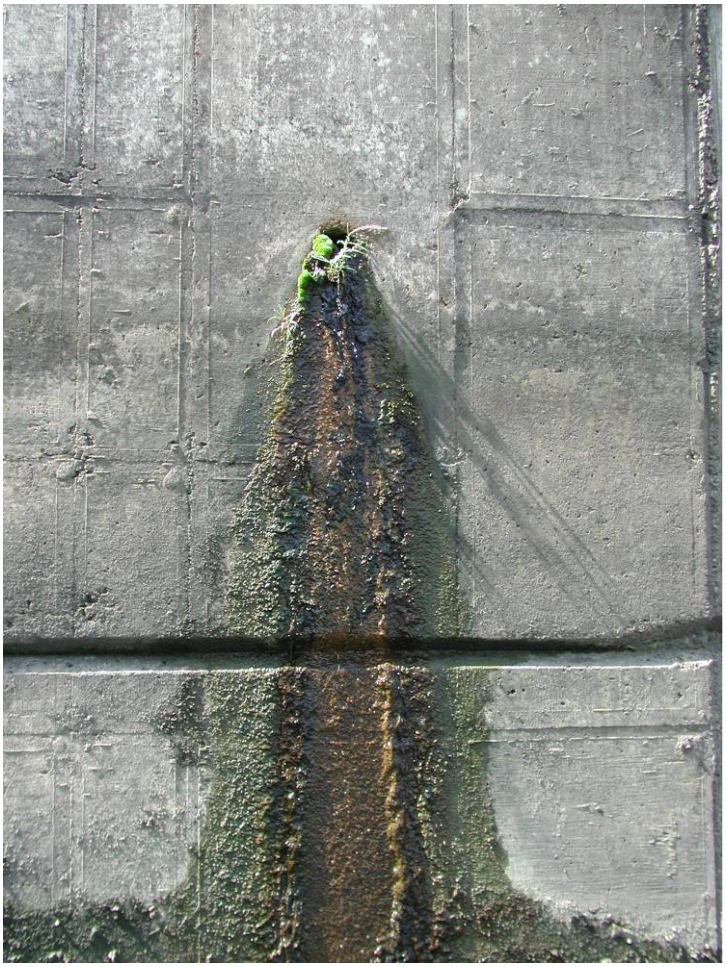

Figure 2.3: Wall flora, Austin, Texas

> **Oh, how great and divinely limiting is the wisdom of walls. This Green Wall is, I think, the greatest invention ever conceived. Man ceased to be a wild animal the day he built the first wall; Man ceased to be a wild man only on the day when the Green Wall was completed, when, by this wall we isolated our machine-like, perfect world from the irrational, ugly world of trees, birds, and beasts.**
>
> **- Eugene Zamyatin, *We*[14]**

Human artifice separates us from nature. In Zamyatin's dystopian vision of a totalitarian city, this separation was the perfect culmination of modernity. Where nature is the primordial, pristine given, human touch transforms it through our proclivity to farm

[14] Zamyatin (1921)

and to build. This distinction between the given and the modified is the most persistent sense of the word nature, "nature is all that is not man-made; the natural state of anything is its state when not modified by man."[15] As we settled and developed urban societies, the city rose as the ultimate expression of human artifice, and nature is limited to fixed sites within the built landscape. A classical reading of nature places less weight on authenticity and pristine nature, and so the creation of pastoral nature is viewed as an improved second nature emerging from first nature through the beneficial cultivation of the earth. Divine sanction underwrites the human dominion over nature, but, in the classical reading, humans work cooperatively with first nature to improve it. "Man cooperates with nature and ever improves on its pristine condition; the changes which he has made and is to make are in fact part of the divine purpose in creating the world."[16] In the classical narrative of second nature, the teleological assumption of a divine purpose for humankind and a design for the natural world allows for the possibility that human artifice improves upon rather than degrades pristine first nature.

The result is a second nature viewed as a fulfillment of the promise of the earth – an earth to be organized and perfected by the creature at the top of the Great Chain of Being.[17] For Cicero the implication of this status was clear,

> We enjoy the fruits of the plains and of the mountains, the rivers and the lakes are ours, we sow corn, we plant trees, we fertilize the soil by irrigation, we confine the rivers and straighten or divert their courses. In fine, by means of our hands we essay to create as it were a second world within the world of nature.[18]

[15] C.S Lewis, 'Nature', in *Studies in Words* (1960) pp. 45-46.
[16] Glacken (1967) p.144.
[17] Lovejoy (1964)
[18] Cicero, (1979) p. 260.

This second world is the pastoral world of cultivated beauty and divine sanction where we mimic the creative power of the gods themselves.[19] Within the discourse of geography, second nature is the cultural landscape, including agricultural fields, ornamental gardens, and managed forests, but also cities, reservoirs, roads, bridges, and the entire infrastructure and all the paraphernalia of human habitation.[20]

The gardens and parks of the classical cities of Greece and Rome incorporated the pastoral into the urban. Later, during the Renaissance, the concept of the garden as a recreated or "third nature" emerged.[21] This nature was an aesthetic creation fashioned of human interventions with the raw material of nature organized, altered and perfected through art. Third nature refers to gardens and designed landscapes where matters of aesthetics and symbolism were its primary purpose. Although gardens can reflect or refer to first nature, they are often elaborated from the forms of second nature, both urban and agricultural. In this way "a third nature" suggests an attitude about the world, where humans create an aesthetic world in their own image - ruling, conceiving, and forming art from nature.

The pastoral myth in the urban landscape justified incorporating parkland in modern cities, but, with the end of the Renaissance, the shift from divine teleology to the materialism of modern science engendered a different reading of second nature.[22] This counter narrative has roots in Aristotle's definition of humans as "rational animals" where our intellect, our unique "human nature" separates us from the rest of nature. Classical understandings of the natural and the artificial viewed the assertion of the

[19] See Glacken (1967) for a full accounting of the Classical notion of second nature, pp. 114-169.
[20] Sauer (1925) and Zimmerer (2000) for cultural landscape as second nature in the context of nature conservation.
[21] Dixon Hunt (2000) and Lazarro (1990)
[22] Schmitt (1969)

rational animal's control over irrational nature as the divinely ordained work of humankind.[23] The works of that human nature, both intellectual artifacts and built landscapes are human "customs" that demarcate a world within a world, and, as our view of nature shifted from the divine sanction of ancient Greek cosmology to the mechanistic, materialist cosmology of the modern age, there developed a new reading of second nature from the human perspective. As Pascal put it in 1660, "But what is nature? For is custom not natural? I am much afraid that nature is itself only a first custom, as custom is a second nature."[24] Yet human custom was creating an industrialized world, a second nature that transformed our relationship to "only" first nature as we shifted from an agrarian society to an industrial society, from classical cosmology of a continuum of beings to Judeo-Christian cosmology of human dominion over first nature and, later, to the scientific materialism of the industrial world. By the 1800s, we see the completion of this shift in narrative, with Marsh's *Man and Nature* documenting and lamenting human impacts on first nature at midcentury, and Marx and Hegel providing a philosophical narrative of transformation of human nature and nature itself.[25] Thus, the reversal of polarity between the natural and the artificial that sets nature as the perfect world and the machine world of humans as the dystopia is a recent modern development which relies on the belief that the perfect world is untrammeled nature outside the walls of the city.[26]

The growth of the industrial city and the shift from feudalism to capitalism is the stage for revisiting the story of second nature and recasting it as a dark mechanistic narrative. This historical materialist narrative is a totalizing vision where all of nature is

[23] Glacken (1967)
[24] Pascal, Blaise, Pensées, trans. By W.F.Trotter (New York: Random House, 1941)(first published 1660) p. 36.
[25] Thomas (1983) for a complete account of the history of modern sensibility towards nature.
[26] Thomas (1983)

transformed by a new form of economic relations. Georg Lukács articulates the Marxist interpretation of this new reading of the transformation from first nature to second nature as a historical process which produces modern second nature out of the world of feudalism. Lukács describes this historical progression where first nature is reduced to material resources and capitalist commodities with use value only, and second nature emerges as, "a more soulless, impenetrable nature than feudalism ever was."[27] Degradation of pristine nature and separation from authentic natural space turns the city into a space meant to exclude "real" nature in this narrative.[28] The artificial becomes the product of dark, satanic mills as the production of urban space separates humans from natural space. We come to live inside the machine, with nature held at bay outside the city walls as in Zamyatin's dystopian vision of a city surrounded by a green wall. As Lefebvre puts it in *The Production of Space*,

> Nature, destroyed as such, has already had to be reconstructed at another level, the level of "second nature" i.e. the town and the urban. The town, anti-nature or non-nature and yet second nature, heralds the future world, the world of the generalized urban. Nature, as the sum of particularities which are external to each other and dispersed in space, dies. It gives way to produced space, to the urban.[29]

This Marxist reading of second nature as a "maturation" of artifice in the urban is the culmination of a shift from pastoral second nature as cooperative, beneficial, divinely sanctioned artifice to artificial second nature as the capitalist production of urban space in which we all live in the "shadow of the citified whole."

These two contradictory readings of second nature persist in urban studies, and the materialist Marxist reading influences the work of urban environmental historians,

[27] Lukács (1983) p.19
[28] Crowe (1995) p.230.
[29] Lefebvre (1976) p. 15.

urban political ecologists, and other "critical" geographers.[30] Even leaving behind overt Marxist influence, human geography persists in taking as a starting point the presuppositions of this narrative of iterative natures where second nature is cast as the degradation of first nature. In his environmental history of Chicago, Cronin utilizes this framework of first and second nature, but acknowledges that the assumption of this narrative is challenged by the reality of urban nature, "this distinction has its uses, but it too slips into ambiguity when we recognize that the nature we inhabit is never just first or second nature, but rather a complex mingling of the two."[31] His use of the distinction leads Cronin to focus on nature as material flows shaping the landscape of Chicago and the surrounding region, but he fails to follow-up in this book on his insight that in reality the nature we inhabit is a "complex mingling" of first and second nature rather than just second nature. His insight raises the question of just what kind of nature this "complex mingling" is that we experience in our everyday urban lives.

Further iterative natures? The Postmodern narrative and beyond

The narrative of iterative natures implies the possibility of more, emergent natures in the series. We have already seen that Italian Renaissance garden design utilized the aesthetic idea of a "third nature" to describe the artifice of ornamental gardens. Modernism undid the divinely inspired third nature of Renaissance gardens by discarding the religious desire for divine mimesis in the world in favor of a scientific materialism focused on perfecting the mechanisms of nature and exploiting them for human ends. Postmodernism allows for a reinterpretation of the iterative narrative, but the postmodern

[30] Smith (1984) and Harvey (1993) both utilize this Marxist reading of second nature.
[31] Cronon (1991) p. xix.

narrative of nature adopts the Marxist iterative sequence of first nature followed by the totalizing degradation of second nature. As Jameson, echoing Pascal, famously asserts, "Postmodernism is what you have when the modernization process is complete and nature is gone for good. It is a more fully human world than the older one, but one in which 'culture' has become a veritable 'second nature.'[32] The echoes of Pascal merge with the voices of modernity announcing the social creation of nature in a world thoroughly dominated by human artifice.[33] From the postmodern perspective, modernity was the movement away from the lost pristine materiality of first nature through the "deterritorialization" of capitalism onward to the post-industrial wasteland. Deleuze and Guattari see this progression as an irreversible process,

> One can never go far enough in the direction of deterritorialization: you haven't seen anything yet - an irreversible process. And when we consider what there is of a profoundly artificial nature . . . we cry out, 'More perversion! More artifice!' - to a point where the earth becomes so artificial that the movement of deterritorialization creates of necessity and by itself a new earth.[34]

One postmodern version of this hyper-artificial "new earth" sees a new virtual nature as the logical progression onward from the degraded artifice of second nature.

McKenzie Wark takes the postmodern reading beyond the end of nature to its logical immaterial end and proposes a new iteration of nature in the new virtual worlds of cyberspace – a virtual third nature. This new nature beyond materiality takes the form of the unbounded virtual world of information flows of cyberspace and computer simulated worlds inspired by SimEarth,

> Second nature, which appears to us as the geography of cities and roads and harbours and wool stores is progressively overlayed with a third nature of information flows, creating an information landscape which almost entirely

[32] Jameson (1991) p. 1
[33] Evernden (1992)
[34] Deleuze and Guattari (1983) p..321

> covers the old territories…both postmodernism in theory and cyberspace in literature are explorations of the landscape of third nature.[35]

The pure escape of this move to an immaterial third nature is logically appealing, but, like the shadows on the cave wall, there is a Platonic tension in a move away from the materiality of the cave wall into the shadows of simulated worlds. Tellingly, when Wark attempts to engage the actual "complex mingling" of urban nature in his everyday landscape in Australia, his commitment to the postmodern narrative of second nature blinds him to the unique actualization of a new nature emerging in a Sydney brushland preserve,

> 'Nature' might…be saved (here), but only at the price of including it in a system of human valuation, as a 'standing reserve' of instrumental value rather than as an autonomous terrain in its own right. Even more ironically, what may be saved is rather the sign of nature than nature itself. A bit of harbourside scrub, playground for feral cats and dogs, is hardly nature. It is already in effect a kind of second nature, a terrain transformed by traces of social activity.[36]

The bit of harborside scrub and the feral cats and dogs are reduced to "hardly nature" rather than recognized as autonomous agents resisting reduction to mere "signs" of nature. This reading of the urban landscape as the neutral "terrain transformed by traces of social activity" allows only human agency to count, and reduces non-humans to objects with only instrumental value. This assumption about the uniqueness of human agency leads Wark and other postmodern geographers to fail to see the traces of the resistance of nature evident in the urban landscape – the regrowth of scrub and the hardy habitat of feral cats and dogs. Here again, in this postmodern narrative of nature, humans are atop the Great Chain of Being, although now we have used our status to end nature

[35] Wark (1994) p.120
[36] Wark (1994) p. 122-23

rather than to improve it, and nature is powerless to respond. Humans are left to amuse ourselves with the simulated third nature flickering on our computer screens.

Given his postmodern presumption that nature is gone and his intention to show how a new nature is a merely virtual one, Wark's blindness to an emergent wasteland habitat in Sydney is no surprise, but it does suggest an alternative iterative move which takes the agency of nature seriously. With a nod to the methodology of Marx, an alternative reading of third nature stays within the material world of urban ecology and recognizes a dialectical comingling of iterative natures resulting in a synthesis of another nature. This synthesis is another way to understand marginal nature and relies on collaboration and coproduction between human and non-human agents. As we will see, this alternative progression has precedent in similar moves made by European urban ecologists who have employed the narrative of iterative natures to describe the ecology of urban wastelands. Still, the hold of pristine first nature as the root metaphor of American nature presents a great barrier for appreciation of marginal nature in American cities. The American idea of wilderness as untrammeled nature is threatened by the shadow of the city as urbanization sprawls across the land. This cultural construction relies on the belief that there was untrammeled nature before Europeans arrived in America.[37] Despite the debunking of the myth of Pre-Columbian wilderness,[38] the belief persists that there once was an American Eden that was undone by the arrival of Europeans.[39] This concept of wilderness as a Lost Eden sets up a misanthropic exclusion of humans from nature which relies on the persistent root idea of the natural as the antithesis of the cultural.[40]

[37] Oeschlaeger (1991)
[38] Deneven (1992) "The Pristine Myth: The Landscape of the Americas in 1492"
[39] Merchant (2003) p. 3.
[40] Williams (1980)

However, as Thoreau formulated our dilemma, Americans look toward this mythic wilderness as our "West and our Wild", and our paradoxical quest is both to tame the wild and preserve it, "The West of which I speak is but another name for the Wild; and what I have been preparing to say is, that in Wildness is the preservation of the world. Every tree sends its fibers forth in search of the Wild. The cities import it at any price."[41] We look out from our American cities with longing for that pristine natural world and import vestiges of the wilderness as "nature preserves" and persist in misreading Thoreau's words so that wildness is equated with wilderness. In Cronon's 1995 essay, "The Trouble with Wilderness or, Getting Back to the Wrong Nature," he argues that Americans need to reassess the role of the foundational myth of wilderness as the standard of nature in America and abandon the polarizing dualism between wilderness as natural and all else as artificial. Instead, Cronon argued that "we need to embrace the full continuum of a natural landscape that is also cultural, in which the city, the suburb, the pastoral, and the wild each has its proper place, which we permit ourselves to celebrate without needlessly denigrating the others."[42]

His call to embrace the full continuum of the landscapes of nature triggered a "great new wilderness debate" in America.[43] Cronin's key point was that the polarized discourse of nature denigrates the lifeworld of humans as an unredeemable place. The language itself, the discourse of nature, frames the varieties of possibilities for what

[41] Thoreau, "Walking," in Glick (1993) p. 348.
[42] Cronon (1996), pp 88-89.
[43] Documented in Callicott and Nelson (1998)

counts as "nature" and this framework of metaphors and narratives blocks appreciation for nature in the broad continuum of the nature/society landscapes in which we live.[44] Cronin stirred controversy for his questioning the American concept of wilderness as the standard of authenticity for the natural, but he was not questioning the ecological value of wilderness areas or the cultural need for the experience of untrammeled nature. Rather, he questioned the effects of our fixation on authenticity.

The American narrative of the natural and the wild reads this way: that which is closer to the wilderness is more authentically natural. The cultivated is less natural, more artificial, and the leftover shreds and scraps in the city are hardly natural at all. The standard of authenticity imposes a measurement for everyday landscapes that dismisses them as degraded nature. With most Americans now living in cities we try to discursively redeem mundane nature through the use of language like "the wildness in our own backyards" to grant some standing to urban or suburban nature (even Cronin succumbs to this rhetorical trick). Denigration is built into the discourse of American nature, from poetry and prose to conservation biology and restoration ecology, because "we fetishize the pristine and the wild, the remnant and the rare over the everyday landscapes in which we live."[45] In so doing, we declare our experience of nature in everyday urbanized landscapes as inauthentic.

As we have seen, the origins of this bipolar discourse predate the discovery of "wilderness" in the New World and its fixation in the American mind.[46] However, it is in American culture that the polarity of natural and artificial supports this narrative of

[44] For more on narrative and nature see Cronon, "A Place for stories: Nature, History, and Narrative." (1992)
[45] Cronon (1995) p. 87.
[46] Nash (1967)

authenticity that invokes religious language emerging from Romantic and Transcendentalist traditions. As Cronin describes it,

> Wilderness is the natural, unfallen antithesis of an unnatural civilization that has lost its soul. It is a place of freedom in which we can recover the true selves we have lost to the corrupting influences of our artificial lives. Most of all, it is the ultimate landscape of authenticity. Combining the sacred grandeur of the sublime with the primitive simplicity of the frontier, it is the place where we can see the world as it really is, and so know ourselves as we really are – or ought to be.[47]

We can only find our true selves in nature, and everyday we live false lives amidst unnatural urban landscapes. Thus, in America, we find the full reversal of Zamyatin's modernist narrative of the dystopian city as rational refuge behind walls that protect us from a threatening, irrational world. The reversal sets the stage for a narrative in which the urban landscape must be redeemed by an infusion of authentic nature. As Thoreau pointed out, American cities import first nature into the degraded second nature of cities in order to offer urbanites experiences of nature meant to redeem a fallen landscape.

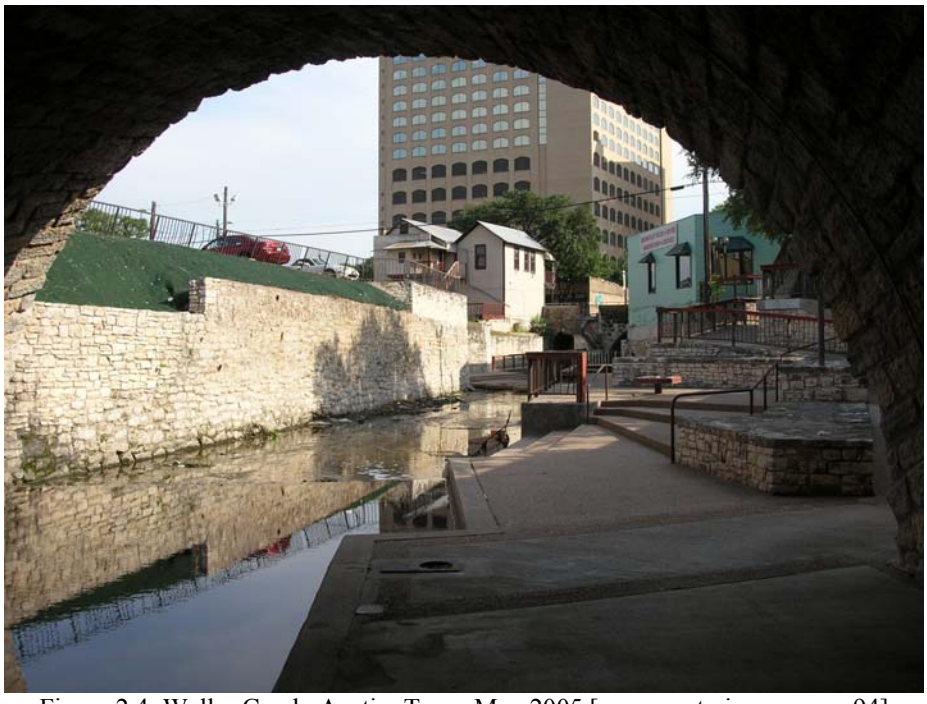

Figure 2.4: Waller Creek, Austin, Texas May 2005 [compare to image page 94]

[47] Cronon (1995) p.80

Narrative of Redemptive Urban Nature

Figure 2.5: Zilker Park, Austin, Texas

> **The West of which I speak is but another name for the Wild; and what I have been preparing to say is, that in Wildness is the preservation of the world. Every tree sends its fibers forth in search of the Wild. The cities import it at any price.**
>
> **-Henry David Thoreau, Walking**[48]

The Arcadian myth of Western culture[49] portrays the wild and the cultivated as places of "unpredictable exhilaration" and of "bucolic rest"[50] which stand outside the city offering refuge and respite from the bleak urban landscape, and they are then deliberately invited into the city through design and practice.[51] The tensions between these two types of Arcadia play out not only in the landscape designs of the great urban parks like New York's Central Park but also in the vernacular landscape of the suburban lawn.

> Arguably, *both* kinds of arcadia, the idyllic as well as the wild, are landscapes of urban imagination, though clearly answering to different needs. It's tempting to see the two arcadias perennially defined against each other; from the idea of the park (wilderness or pastoral) to the philosophy of the front lawn (industrially

[48] Thoreau, "Walking," in Glick (1993) p. 348
[49] Schmitt (1969), Schama (1995), Glacken (1967)
[50] Schama (1995)
[51] Schmitt (1969)

> kempt or drifted with buttercups and clover); civility and harmony or integrity and unruliness?[52]

The narrative of redemptive urban nature is the story of nature which is deliberately incorporated into urban design as a tonic for body and spirit. Space for nature is created to provide recreation for physical health and to allow contact with officially sanctioned nature for mental health. This narrative presupposes the framework of iterative natures with preserves, parks, and gardens established for imaginative urban landscapes of wild first nature and pastoral second nature. The further presupposition is that the urban industrial second nature is degradation in need of redemption. The aesthetic background to this narrative is the Romantic view of sublime nature transforming the human spirit through emotional encounters with scenic nature.

At first, these parklands were established with the Romantic view that the therapeutic value of landscaped parks was "supposed to provide for passive contemplation of restful scenery."[53] Frederick Law Olmsted is a key protagonist in this narrative. His belief in the beneficial effects of natural scenery to ameliorate the evil of the city manifests itself as the great urban parks of New York, Boston, and other American cities – with the prime example being Central Park in New York City. His intention was to create a scenic island of natural beauty amidst the sea of urban ugliness, "an urban pastoral vision of social stability and aesthetic harmony."[54] He designed the park and its pastoral landscape to have a soothing psychological effect on urbanites stressed by life in the city. However, these redemptive intentions were not immediately understood by urbanites unfamiliar with the Romantic aesthetic,

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[52] Schama (1995) p. 525
[53] Schmitt (1968) p. 68
[54] Gandy (2002) p. 11 see "Pastoral Ideology" in Buell (1993) and Leo Marx (1964)

> Crowds of people wandering idly about in the middle distance of its visitas effectively destroyed the connotation of the country. Warnings to "Keep off the Grass" were simply aggressive efforts to preserve the unspoiled look of rural scenery by funneling the public from one vantage point to another along the old pathways of the Romantic garden.[55]

Thus, these parklands required complex mediation and control to get the public to appreciate the sanctioned redemptive values of the landscape.

However, then and now, recreational transgressions from pathways and across boundaries is still a problem for parklands and preserves – though now it involves not just walking on the grass but also the transgressions of people on mountain bikes and roller blades and other contrivances of the American fitness culture as they ignore signs and fences meant to control use of this space. One starting point of that recreational culture was the development of the playground movement in the late 1800s which focused not just on those educated bourgeoisie who could appreciate passive landscape contemplation or vigorous walks along sanctioned pathways but on "factory workers and children of the poor" who needed "vigorous movement far more than they needed tranquility and rural scenery."[56] From the reformers leading the playground movement came an alternative narrative of redemptive urban nature that represented a different urban nature aesthetic which found little attraction in Romantic solitude and quiet contemplation,

> To those who accepted urbanism as a way of life and not an unfortunate accident, it was the empty landscape and not the crowded street that was unnatural. Love of solitude signified a social maladjustment, akin to high fences and gate keepers…Parks were not for the re-creation of lost identity…but for play.[57]

[55] Schmitt (1968) p. 69.
[56] Schmitt (1968) p. 73.
[57] Schmitt (1968) p. 74.

Thus, the theme of recreation and proper use in this narrative continues be problematic as disputes still rage over appropriate use of open spaces in cities, and these conflicts result in land managers and park police (and environmentalists) who enforce codes of propriety and boundaries. That the American environmental movement is overwhelmingly a white, urban movement means that often this enforcement of propriety has class and racial overtones. Their code of proper nature recreation excludes playing loud music, littering, and other improper behaviors. That social minority groups often fail to follow the environmentalist code is seen to demonstrate that they do not understand how to appreciate nature.[58] Hence, parklands and nature preserves have become sites of control and surveillance with strict rules of propriety.

The two themes of this narrative of redemptive urban nature reemerge in the stories of encounters with marginal nature. Both themes are about propriety. Firstly, the aesthetics of redemptive nature is grounded in the wild and pastoral landscapes that Olmsted and other early urban parkland designers established as the norm for appropriate urban nature. In this narrative, nature that fails to meet that standard also fails to fulfill the redemptive purpose of proper urban nature. Secondly, conflicts over the proper use of these open spaces emerged from the start and continue today. These conflicts are entangled with the complexity of the cosmopolitan mix of classes and races in American cities. The practice of nature appreciation and recreation is not uniform across these groups, and, when not welcomed in sanctioned urban nature spaces, people seek out alternative spaces for engaging nature in their own ways – often in urban wastelands and margins.

[58] Ewert, Chavez, and Magill (1993)

Narrative of Restorative Urban Nature

Figure 2.6: AWU Center for Environmental Research habitat restoration garden at Hornsby Bend

> **The Garden of Eden story has shaped Western culture since earliest times and the American world since the 1600's…for many Americans, humanity's loss of the perfect Garden of Eden is among the most powerful of all stories…We become actors in a storyline that has compelled allegiance for millennia…**
>
> **- Carolyn Merchant, Reinventing Eden[59]**

The narrative of restorative urban nature is couched in the discourse of science and nature appreciation that is sometimes tinged with Romantic expectations and the rhetoric of the redemptive narrative. However, unlike the parkland and garden focus of the redemptive narrative, this is an ecological narrative about the whole of the city conceptualized as an "urban ecosystem" where nature is thoroughly enmeshed with the

[59] Merchant (2003) p. 3

urban landscape. It is a narrative about nature as an essential part of the design and management of a city and about appropriate and inappropriate nature in the urban ecosystem.

One version of this narrative focuses on urban design and landscape architecture, and Ian McHarg is the main protagonist. With the publication of *Design with Nature* in 1969, McHarg formalized a design practice that prioritized incorporating nature throughout the urban landscape and promoted "landscape architecture as the instrument of environmentalism."[60] McHarg insisted that urban design should find its "rules" in nature and those rules emerged from the scientific study of nature where ecologists provide "not only an explanation, but also a command."[61] Through ecological inventory as a "diagnostic tool", McHarg advocated a comprehensive scientific understanding of the components of a site placed within the ecological context of a region. This privileging of science and ecology met resistance within architecture, but McHarg helped bring together ecological planning and design which influenced later architects and planners to promote deliberate incorporation of nature in cities to enhance ecosystem function.[62] In so doing, a new narrative of urban nature emerged focused on restoring ecological function to the damaged urban ecosystem by including nature in urban design.

This urban design version of the restoration narrative emerges from a positive view of cooperation with nature and pastoral ideals of improvement of nature, but it also presumes human control over nature and a scientific, mechanistic manipulation of nature for our own ends. Nature is likened to a "living machine," and the city is deliberately and elaborately designed to incorporate nature in the built landscape rather than to exclude

[60] Spirn (2000), p.92.
[61] McHarg (1997) p. 321.
[62] Sprin, (2000) 113.

it.[63] Spirn characterizes the design with nature approach as one which sees nature as permeating the built landscape and a force to be deliberately used to enhance "the health, safety, and welfare of every resident."[64] McHarg and the urban designers that he has influenced seek to restore nature in urban space as an ameliorative response to degradation of the original ecosystem upon which the city was built. Using the ecological inventory, this indigenous ecosystem is remembered and restored as functional "green space" amidst urban space. In this design with nature version, the restoration privileges native flora and fauna as the authentic nature to restore in the city, but its designs do not exclude non-native species from the city.

The restoration narrative has another version which focuses exclusively on the recovery of indigenous ecosystems through the restoration of habitats in urban landscapes. This version is also an ecological narrative with a similar starting point in landscape architecture, but, in America, this version of the narrative emerges in part from the work of the landscape architect Jens Jensen who advocated conservation of native species. Working in Chicago and the Midwest in the early 1900s, Jensen promoted the use of native plants in gardening and the exclusion of non-native species. He also promoted conservation of remnants of native habitat and active restoration of those remnants in Chicago region.[65] Jensen was one of the most influential designers to popularize the use of native plants to incorporate restored habitat in cities.

In recent decades, Jensen's native plant philosophy has joined with restoration ecology and conservation biology to become a prominent new narrative that promotes the

[63] Literal "living machines" have been built for wastewater treatment for factories, farms, and urban applications by John Todd, see Todd and Todd (1994)
[64] Spirn (1984) p. 5.
[65] Grese (1992)

conservation and restoration of native habitats in urban landscapes. Conservation biology established its role through the need to manage urban preserves for threatened and endangered species. Restoration ecology developed as a proactive technique not to just conserve remnant habitats and species but to actively restore degraded ecosystems.[66] The urban precedents of Jensen's work in Chicago and Olmsted's Fens in Boston added historical scope to urban restoration ecology. Although couched in positive terms of restoring lost habitat, there is a strongly negative discourse that emerges from Jensen's belief in the superiority of native plants and the threat of non-native species. The privileging of native species sets up non-native species as "exotics" and "aliens" who are invading our homeland. As conservation biology and restoration ecology was applied to urban landscapes, the dark view of the city as degraded second nature was deployed to frame a heroic narrative of resistance and expulsion of the invaders. Controversy arose 1992 with the publication by Groening and Wolschke-Bulmahn in *Landcape Journal* of "Some Notes on the Mania for Native Plants in Germany."[67] The article examined the 1930s in Germany and the National Socialist use of landscape "science" to justify the purification of the Aryan landscape by removing alien species. However, they also argued that the discourse of ecology was still being used "as if it conferred moral authority" to the idea that "exotic plants from other continents threaten our home nature," and that this is nothing short of xenophobia. The article spawned many defensive articles in *Landscape Journal* and the restoration ecology journal, *Restoration and Management*

[66] Jordan, Gilpin, and Aber. *Restoration Ecology: A Synthetic Approach to Ecological Research* (1987)
[67] Groening, Gert and Joachim Wolschke-Bulmahn. "Some Notes on the Mania for Native Plants in Germany." Landscape Journal 11 (1992): 116-26. other Egan, Dave, and Tishler, W. "Jens Jensen, Native Plants, and the Concept of Nordic Superiority," in *Landscape Journal*, 1999, pp. 11-29.

Notes, by supporters of restoration efforts denouncing the comparison and defending the exclusion of non-native species.[68]

In this version of the narrative of restorative urban nature, the trangressive weeds of marginal nature must be eradicated because they are aggressive aliens. The most controversial of these aliens are invasive species. Here again, the rhetorical comparison to war and invasion echoes ideological statements that Groening and Wolschke-Bulmahn found being used by National Socialists in Germany. This rhetoric is reinforced by the bad habit of many native species advocates to equate invasive species only with non-native species and by the corresponding bad habit of suggesting that all non-native species are "invasives."[69] However, not all introduced species become invasive. The "Tens Rule" is a heuristic for assessing the impact of species introductions based on statistical analysis introduced animals and plants in England.[70] The rule states that, on average, one in ten species introduced (either intentionally or accidentally) will escape from cultivation. Only one in ten of these escaped species will become naturalized and form self-sustaining populations. In turn, only one in ten of these naturalized species will likely become invasive. This rule does not dismiss the significant impacts of invasive species, but it does help address the blanket prejudice against all non-native species as potential invaders of native ecosystems.[71]

However, the restoration narrative has a strong hold on American conservation practice. The discourse of invasion and the malignant agency of non-native nature is

[68] Groening and Wolschke-Bulmahn's article inspired Michael Pollan to write an article in *The New York Times Magazine* entitled "Against Nativism" (May 15, 1994) which fanned the flames of response. See Jordan (1994) **"**The Nazi connection" and Marinelli (1995) "The Nazi Connection, Continued" for a defense of restoration ecology.
[69] See Warren (2007) "Perspectives on the 'alien' versus 'native' species debate: a critique of concepts, language and practice," for a thorough analysis of the issue.
[70] Williamson and Fitter (1996)
[71] Cohen (2005) for ecosystem service benefits of some urban invasive plant species.

even codified in Federal law. In 1999, the Federal Executive Order 13112 was signed establishing the National Invasive Species Council. The Executive Order requires that a Council of Departments dealing with invasive species be created. Subsequently, states began creating their own invasive species councils. In 2008, the Texas Invasive Plant and Pest Council (TIPPC) became formally established in the State of Texas. TIPPC originated as a motion from the floor at the second statewide Invasive Plant Conference held at the Lady Bird Johnson Wildflower Center, Austin, Texas in November 2007. The "Invaders of Texas" website was created by the Lady Bird Johnson Wildflower Center as a tool for mobilizing the public against these invaders and the website employs the rhetoric of war and a resistance composed of "citizen scientists" defending the homeland,

> The Invaders of Texas program provides training and materials to volunteers who find, track, describe and photograph invasive species and report occurrences to a centralized database on the texasinvasives.org website. The anticipated outcomes of this citizen scientist program include a statewide network of volunteers contributing to our knowledge of the distribution of invasive species in Texas and increased public awareness of the dangers imposed by invasive species and what steps citizens can take when they encounter them; and reduced spread of invasive species through more timely control and eradication.[72]

The negative goals of control and eradication and the use of citizens for surveillance cannot avoid echoes of past totalitarian projects.[73] Regardless of the scientific merit of the effort to control invasive species, restoration ecology and conservation biology have transformed the role of science in the city into a "socioecological" project, and, as we see here, this narrative of restoration supports the creation of a new army of citizen scientists

[72] From http://www.texasinvasives.org/ accessed April 10, 2009.
[73] Subramaniam (2001) "The Aliens have Landed! Reflections on the Rhetoric of Biological Invasions."

mobilized for surveillance under the banner of defending the Texas homeland against invasion by marauding plants and animals.[74]

Clearly, marginal nature as a mongrel mix of native and non-native invasive species will not fare well in this restoration ecology version of the narrative. Weeds are cast as villains in this account. Marginal nature fares somewhat better under McHarg's version of the restoration narrative. Some of McHarg's followers recognize marginal nature as a valuable type of urban habitat, there is a tension between designing with nature and allowing nature to flourish without human intervention.[75] Because of its totalizing vision of planned and managed nature integrated into the whole urban landscape, McHarg and his followers sanction managing marginal nature and the neglected, limnal urban spaces that marginal nature needs to flourish. Such attention can lead to the undoing of marginal nature.

[74] Warren (2007), "the justification for controlling and eliminating invasive species should not be their time, mode and place of origin but their potential for causing damage…a species exhibiting 'bad behavior' – defined according to context, priorities and values – deserves to be controlled or perhaps removed, whatever its history as an immigrant or a local." p. 442 and Dizard (2003) *Going Native: Second Thoughts on Restoration.*

[75] Spirn (1984) discusses "urban wilds" and Hough (1995) coins the term, "fortuitous habitat" to describe marginal nature. I will look more closely at their perspectives in Chapter 3.

Narrative of Functional Urban Nature

Figure 2.7: Steam from compost at Hornsby Bend

> **The metabolic requirements of a city can be defined as the materials and commodities needed to sustain the city's inhabitants at home, at work and at play…The metabolic cycle is not completed until wastes and residues of daily life have been removed and disposed of with a minimum of nuisance and hazard.**
>
> **Abel Wolman "The metabolism of cities" [76]**

Urban ecology shares the perspective of the previous narrative by regarding the city as an ecosystem, but its purpose is to study the city as an ecosystem for scientific understanding of how cities function ecologically and then apply that understanding to urban environmental management.[77] Urban ecologists approach the city as they would any ecosystem with the standard tools of ecology deployed for data collection to measure

[76] Wolman (1965) p. 179
[77] Sukopp (1995)

ecosystem function.[78] This information can then help us understand the city in comparison with other ecosystems, and data can be utilized for managing the city for better ecosystem function and enhanced ecosystems services.[79] For instance, the urban heat island effect can be mitigated by increased vegetation coverage.[80] Cities can present interesting opportunities for landscape and evolutionary ecologists since contemporary ecology recognizes nonequilibrium as the dominant model of dynamics and focuses on ecosystem function over community composition.[81] For ecologists, concepts like succession, island biogeography and patch dynamics apply in interesting ways to urban landscapes, and even evolutionary changes are readily measurable in the unique habitats of cities.[82] The narrative of functional urban nature that emerges from the study and practice of urban ecology is an account that could include marginal nature since it does not necessarily start with a list of good and bad nature (or native and non-native nature).

This does not mean, however, that the science of urban ecology is free of cultural influences. Influences are found in differences in attitudes and practices between European and American urban ecologists.[83] One finding has been that the ecosystems of cities of similar temperate regions of the world share species, and, perhaps, their plant communities are evolving as a generalized temperate urban plant community.[84] Urban ecology in Europe is more accepting of these unique population dynamics of urban ecosystems. For them, the given conditions of urban ecosystems are that species

[78] Grimm et al. (2008)
[79] For an overview of this "ecological services" approach see Daily (1997) *Nature's Services: Societal Dependence on Natural Ecosystems*.
[80] Bottyán (2005)
[81] Gilbert(1989), Kendle (1998), Wheater (1999), Zimmerer (2000), Adams et.al. (2006)
[82] Cheptou et al. (2008) for urban plant evolution research and Bradshaw (1999) for wastelands as "new niches and primary succession" in Liverpool.
[83] I will discuss these differences in greater detail in Chapter 4.
[84] Sukopp, (1979)(1987), Pysek (1998), Zerbe, Stefan, et al. (2003)

composition is very dynamic and that global connectivity is a defining feature of that dynamic community.[85] Although European urban ecologists take invasive species seriously, they are more accepting of introduced species as part of the long history of cosmopolitan mixing.[86] From this perspective, non-native species additions to biodiversity in urban ecosystems, and so the European view of urban ecosystems is that, "although wild and rather specialist species may be missing, cities are great havens for biodiversity, in terms of both ecology and species, even in industrial areas."[87] This contrasts with the views of many American urban ecologists, who generally insist that urban growth "replaces the native species that are lost with widespread "weedy" nonnative species (and) this replacement constitutes the process of biotic homogenization that threatens to reduce the biological uniqueness of local ecosystems."[88]

Urban wastelands have been studied in both European and American cities, but, where European ecologists celebrate wasteland species diversity, American ecologists describe them as degraded habitat.[89] From the American perspective, wastelands are the weedlands and biological slums from which invasions are launched on remnants of first nature.[90] European urban ecologists have shown more interest and have had more opportunity to study urban "wasteland" sites due to the urban destruction left after World War II, and this research dating to the late 1940s has fostered more openness to species

[85] Sukopp, (1979)(1982)(1987)(2002), Zerbe, Stefan, et al. (2003)(2004), Kowarik (1992)(2005)
[86] Bradshaw in Berkowitz, Nilon, and Hollweg (2003)
[87] Bradshaw in Berkowitz, Nilon, and Hollweg (2003) p. 92.
[88] McKinney (2002) p. 883, and Adams, Lindsey, and Ash (2006) for more of this view.
[89] Kendle and Forbes (1997) for a European perspective on urban habitat and Adams, Lindsey, and Ash (2006) for an American perspective.
[90] Adams, Lindsey, and Ash (2006) give only two pages to "successional habitat patches," which they only characterize as a "vacant lot" and which they claim are usually low in biodiversity and likely filled with "invasive exotic species." Yet they devote a chapter to the "gray spaces" of roads, airports, and landfills where urban wildlife must be managed as pests, nuisances, and hazards.

introductions as inevitable results of an urbanizing world.[91] Sukopp observed of Berlin that wasteland sites are,

> …the field laboratories where possibly new and well-adapted ecotypes of our native or naturalized wild plants will originate in the changed environmental conditions. Ecosystems which have developed in urban conditions may be the prevailing ecosystems of the future. Many of the most resistant plants in our industrial areas and in cities do not originate from Central Europe, but are non-natives.[92]

His openness to engaging the unique conditions of urban ecosystems (and wasteland sites in particular) without resorting to qualitative comparisons with lost native ecosystems is reflected in his rhetoric and his practice of urban ecology. Sukopp does invoke a cultural perspective on wasteland plant communities, but, rather than bemoan the lost of homeland purity like American ecologists do, he suggests that this dynamic mixture of native and non-native species evokes the social mission of urban settlements, and so he characterizes them as "cosmopolitan communities." [93]

In America, the distinct study of urban ecology dates from the mid-1960s when it emerged out of environmental engineering's metaphorical conceptions of the city as a vast organism with a metabolism regulated by environmental infrastructure, both natural and artificial,

> The metabolic requirements of a city can be defined as the materials and commodities needed to sustain the city's inhabitants at home, at work and at play…The metabolic cycle is not completed until wastes and residues of daily life have been removed and disposed of with a minimum of nuisance and hazard.[94]

[91] Sukopp (2002) for a history of European urban ecology and Lachmund (2003) for a history of urban wasteland research in Berlin, and Melosi (2003) for a general look at the history of concepts of urban ecology.
[92] Sukopp (1979)
[93] Sukopp (1979)
[94] Wolman (1965) p. 179.

In this engineering version of the functional narrative, the only relevant inhabitants of the city are humans, but a different version of the functional narrative emerges by the end of the 1960s pushed by the growth of urban environmentalism and an appreciation for urban nature.[95] Urban ecology emerged during the 1970s as the study of the biota (human and nonhuman) of the city and the function of the ecosystem in support of that biota.[96] Within American urban ecology, there has been more focus on urban wildlife albeit primarily for management as hazards and pests, but the study of urban bird and insect populations has a more positive orientation towards fostering urban biodiversity through "backyard" habitat creation.[97] Thus, the key elements of the functional narrative are metabolic flows of materials and energy and the human and non-human biota of the city.

But in the United States, urban ecology gained new status in the 1990s with the funding by the National Science Foundation of two Long Term Ecological Research (LTER) sites in Baltimore and Phoenix in 1997. These LTER ecologists are studying the functionality of the urban ecosystems, but, in conjunction with social scientists, they are looking for relationships between human society and nature. Early on, the Phoenix researchers began to promote the idea of the city as a "designer ecosystem" to explain the differences that they were finding between Phoenix and the surrounding desert ecosystem.[98] Out of a desert ecosystem defined by scarcity of water, nutrient availability, and vegetation, humans had created an urban ecosystem with an abundance of these scarce resources resulting in increased biodiversity. Whereas before the city was

[95] For instance, Rublowsky (1967)
[96] For instance, Gill and Bonnett (1973) and Berry and Kasarda (1977)
[97] See Adams, Lindsey, and Ash (2006) for the first comprehensive book on American urban wildlife management although the dominant perspective is managing the problems of urban wildlife. See Fergus (2008) for a survey of urban bird conservation.
[98] Hope, et al. (2003) "Socioeconomics drive urban plant diversity"

built, desert biodiversity was concentrated in the riparian habitat along the river, the built landscape distributes water over a much larger area with increased plant biomass and lakes. The result is that species not normally found in the desert lowlands like ravens and peach-faced lovebirds have moved down from the mountains to live in the city. [99] Moreover, they recognized a socioecological dynamic in finding that this biodiversity related to family income in neighborhoods. They found that landscape plant diversity related strongly to family income. Higher incomes correspond with greater plant diversity in landscapes. [100]

This narrative of functional urban nature is almost exclusively focused on the scientific understanding of ecology and the need to measure and monitor the urban ecosystem in the age of climate change and carbon footprints. Urban environmental managers and scientists measure functionality of the urban ecosystem by tracking flows of materials and energy through the artificial and natural infrastructure, as well as external urban ecosystem inputs and outputs.[101] Urban ecology promotes the understanding of ecosystem function and ecosystem services as part of urban environmental management. As mentioned above, this ecological discourse overlaps with the discourse of urban design and McHarg's mission of integrating nature with design. For proponents of McHarg's mission, the city must be integrated with its supporting ecosystem and biophysical flows in order to be sustainable.

The narrative of functional urban nature is that of ecology and biology applied to the most complex of social environments, and this ecological view of urban nature has been criticized as "ahistorical" and "arbitrary" by some geographers, because urban

[99] Britt (2004)
[100] Britt (2004) and Grove, et al. (2005)(2006) for similar socioecological studies in the Baltimore LTER.
[101] Melosi (2003) for an overview of concepts and frameworks for urban ecology.

ecology focuses only on an ecological view of the city and not the production of urban ecosystems as nature/society hybrids.[102] Gandy dismisses the ecological view for being critically deficient for understanding the city as a nature/society hybrid, because it "does not question the role of capital in the production of urban space and is largely silent on questions of social power," and he attacks "ecologically based urbanism" for its willingness "to replace the historical analysis of social change with an arbitrary alternative."[103] Out of these critical perspectives on functional and restoration narratives of urban nature, a new narrative emerged from geography which incorporated this critical analysis of the social with the ecological.

Figure 2.8: "Invasive species" *Ailanthus altissima*, Austin, Texas

[102] Kaika (2005) and Heynen, Kaika, and Swyngedouw (2006)
[103] Gandy (2002) pp. 10-11.

Narrative of Urban Political Ecology

Figure 2.9: Wastewater flow, Austin, Texas

> **It is in practice, hard to see where "society" begins and "nature" ends…in a fundamental sense, there is in the final analysis nothing unnatural about New York City.**
>
> **- David Harvey, *Justice, Nature and the Geography of Difference*[104]**

Urban political ecology is a new narrative of nature in which the scientific authority of urban ecology is acknowledged, but the political power of capital is given the central role, "To argue that capital is a key dimension to the production of an urbanized and commodified nature in New York City is not to deny the influence of other factors but simply to place political consideration at the center of our analysis."[105] Urban political ecologists argue that they correct the "ahistorical" account of urban ecology by emphasizing the role of capital in the shaping urban space.[106] Their historical materialist analysis includes the political and social aspects of urban nature which they claim are

[104] Harvey (1996) p. 31
[105] Gandy (2002) p. 5.
[106] Heynen, et al. (2006) Chap. 1 "Urban Political Ecology: Politicizing the production of urban natures," and Gandy (2002) p. 10.

missing from the ecological functional narrative.[107] David Harvey's *Justice, Nature and the Geography of Difference* (1996) is an influential text for urban political ecologists, and, in it, he endorses this broadened concept of urban nature by asserting inclusively that there is nothing particularly "unnatural" about New York City.[108] His assertion came in the context of the re-visioning of nature by geographers and social theorists that was going strong at the time and that resulted in a range of reinterpretations of the meaning of nature.[109] These reinterpretations of nature offered narrative options for urban political ecologists as they melded the realms of nature and culture in the city.

The resulting vision of the city as a nature/society hybrid stresses the interweaving of social and environmental processes and relies on metaphors of networks, flows, metabolism, but, also, disruptions and heterogeneity. Kaika's description of the city is representative of the urban political ecology view,

> Cities are dense networks of interwoven socio-spatial processes that are simultaneously human, material, natural, discursive, cultural, and organic. The myriad of transformation and metabolisms that support and maintain urban life, such as water, food, computers, or movies always combine environmental *and* social processes as infinitely interconnected…this intermingling of things material and symbolic combines to produce a particular socio-environmental *milieu* that welds nature, society and the city together in a deeply heterogeneous, conflicting and often disturbing whole.[110]

The city as a "conflicting and often disturbing whole" is a distinguishing feature of the urban political ecology narrative where heterogeneous interconnections are often the focus of accounts. Unlike urban ecology's focus on functionality, urban political

[107] Swyngedouw in Heynen et al. (2006) for a direct exposition of historical materialism and urban political ecology, pp. 21-40.
[108] Cited as an influence by Kaika (2005) p. 22 and Heynen, Kaika, and Swyngedouw (2006) p. 2.
[109] Just a few of the many scholars exploring the "socioecological" along with Harvey in the 1990s included: Katz and Kirby (1991), Oeschlager (1991), Evernden (1992), Wilson (1992), Soper (1995) Buell (1995), Cronon (1995) Soule and Lease (1995). The philosophical background to this exploration was influenced by philosophers who took an interest in nature/society issues – Deleuze and Guattari, (1987), Haraway (1991), Latour (1993), Abram (1996)
[110] Kaika (2005) p. 22.

ecologists often begin studies by focusing on disfunctionalities or discontinuities in the urban "socio-environmental" system as an entry points for exploration of hidden flows that link particular cities in a global network of commodities.

Gandy's *Concrete and Clay: Reworking Nature in New York City* (2002) analyzes nature from the perspective of urban political ecology, taking as his premise Harvey's assertion that there is nothing particularly unnatural about the city. Heavily influenced by Lefebvre and Harvey, Gandy is most interested in the economic and ideological forces that underlie the production of what he calls "metropolitan nature." For Gandy, this nature is primarily the abiotic components of New York City's environment such as concrete, clay, water, and roads. It is a "biophysical fabric"[111] or "biophysical processes" which "are mediated through human cultures."[112] He argues that, metropolitan nature, "captures something of the multiple meanings of modern nature, ranging from the preservation of wilderness for the consumption of an idealized natural beauty to the construction of complex networks for the provision of water.[113] Thus, nature in this urban political ecology text is closer to what people commonly call the environment since it focuses on the natural and human infrastructure of the city. However, for urban political ecology, "nature" or "environment" is meant to connote no ahistorical neutrality as they assert it does under the functional narrative.

However, Swyngedouw, Gandy, and other urban political ecologists appropriate the metaphors of the functional narrative. They, specifically, reference the 1960s urban metabolism views of environmental engineering where materials and commodities flow in and out of the city, but their perspective is a politicized vision of urban "metabolism"

[111] Gandy (2002) p. 7.
[112] Gandy (2002) p. 11.
[113] Gandy (2002) p. 3.

that flows in and out of the city through global networks of capitalism.[114] Swyngedouw acknowledges that the earlier view "while insightful in terms of quantifying the urbanization of nature…fails to theorize the process of urbanization as a social process of transforming and reconfiguring nature."[115] He declares "metabolism" and "circulation" as the "central metaphors" for "historical materialist and dialectical account" which is urban political ecology.[116] He explicitly identifies their origins in Marx's view of nature and the transformation of nature into property through human labor articulated in the *Economic and Philosophic Manuscripts*, "Actual labor is the appropriation of nature for the satisfaction of human needs, the activity through which the metabolism between man and nature is mediated."[117] This new form of historical materialist analysis of nature reveals "global flows of commodities, capital and ideas that linked metropole and nature together in tight political-economic and cultural circuits."[118] Thus, urban political ecology does not limit itself only to looking within a particular city, but the political ecology of every city leads outward through a globalized network of capitalist urbanization which "is the result of a historical geographical process of the urbanization of nature."[119]

Urban political ecologists are, also, heavily influenced by contemporary European philosophers and feminist theorists, and they employ a full array of metaphors of nature borrowed from these thinkers. Latour is a strong philosophical influence on urban political ecology with his Actor Network Theory (ANT) behind the metaphors of nature

[114] Wolman (1965) for this engineering urban metabolism view.
[115] Swyngedouw in Heynen, Kiaka, and Swyngedouw (2006) p. 35.
[116] Swyngedouw in Heynen, Kiaka, and Swyngedouw (2006) p. 25.
[117] Marx quoted in Heynen, Kiaka, and Swyngedouw (2006) p. 27.
[118] Braun (2005) p. 636.
[119] Kaika (2005) p. 25.

as networks of quasi-objects. Deleuze and Guattari provide metaphors of rhizomes, assemblages, and the dynamic space of flows to reinforce the Marxist discourse of metabolism and circulation, and, additionally, Haraway's creative prose provides cyborgs, tricksters, and hybrids.[120] For urban political ecologists, the city is a landscape populated by objects that Haraway calls "Cyborgs" or "Tricksters" and that Latour refers to as "Quasi-Objects." Kaika argues that these objects are "intermediaries that embody and mediate nature and society and weave networks of infinite transgressions and liminal spaces."[121] Swyngedouw utilizes the Deleuzean concept of assemblages to organize these "proliferating objects" of the urban landscape,

> These assemblages, like commodities, are simultaneously real, like nature; narrated, like discourse; and collective, like society. They take on cultural, social, and physical forms and enter social and ecological processes in new and transformed manners. The city, in its parts and as a whole, is a kaleidoscopic socio-physical accumulation of human/non-human imbroglios.[122]

The odd effect of all the discourse of network, flows, quasi-objects, hybrids, and metabolism is that there is very little living, biological nature to be found in the narrative of urban political ecology. Urban political ecologists write about nature and yet include few nonhumans in their account. The only nonhuman acknowledged in Gandy's book is the West Nile virus, which he characterizes as a "biological protagonist."[123] In their historical materialist and dialectical narrative of nature, nature is reduced primarily to the material environment (proliferating objects) and nonhumans are metabolized objects, too, that rarely appear as part of the story, especially in any robust, embodied way. In the best known examples of urban political ecology, the focus is on water (Kaika and

[120] Latour (1993)(2004), Deleuze and Guattari (1988), Haraway (1991)
[121] Kaika (2005) p.24.
[122] Swyngedouw in Heynen, Kiaka, and Swyngedouw (2006) p. 25.
[123] Anderson (2004) for a full review of Gandy's book in the journal *Philosophy and Geography* where I elaborate on this point.

Swyngedouw) or concrete and clay and water (Gandy) or some other material aspect of the abiotic environment. In a collection of essays put together by Heynen, Kiaka and Swyngedouw as a manifesto of urban political ecology, only one of the fifteen essays that comprise the book concerns itself with nonhumans.[124] For urban political ecology, nature is a passive, lifeless entity, where non-humans are reduced to "a static stock of 'things' that are necessarily mobilized in the urbanization process."[125]

Thus, although urban political ecology offers a rich account of the city as palimpsest landscape of "infinite transgressions and liminal spaces," those non-human others inhabiting the city are either absent from the accounts or treated as passive objects and not active subjects. This gap in their narrative of nature means that the methodology of urban political ecology is ill-equipped to respond to the challenge of accounting for the agency of nature as expressed by marginal nature. Although they profess to be influenced by Harvey and Haraway, urban political ecology has failed to respond to an issue raised in a well know exchange between Harvey and Haraway. The question of agency is a central concern of Haraway (and why she plays with metaphors like cyborgs, tricksters, and other hybrids)[126] and Harvey addresses the issue in conversation with Haraway in 1995,

> I like very much a little piece by Michel Callon which is about the problem with scallop fishing in Saint Briene Bay. It seems like a very conventional piece of sociological analysis talking about the various agents at work, until you come to the final agent, which is the scallops. Now at that point most people freak out: they say 'scallops? Agents?!' Now this struck me too at first as strange, but then I thought, 'Yeah, he's right, he's dead right'. I mean why do we say that the scallops have no agency in this. It does seem to me that one of the transgressive

[124] Heynen, Kiaka and Swyngedouw (2006).
[125] Braun (2005) p. 645.
[126] Telling urban political ecology does not employ Haraway's recent metaphor for nonhumans - "companion species" see Haraway, *The Companion Species Manifesto: Dogs, People, and Significant Otherness* (2003)

> points that Donna (Haraway) feels very strongly about is to try to dissolve that divide between nature and culture, and I think I would want to try to do that too, although it's extremely hard to do and this is where the language comes back and gets you again and again. We don't have, as it were, the discursive strategies that allow us to talk freely about the production of nature…I prefer to talk about socioecological projects in which it's not simply the social that's the activating unit but also, scallops and mice and all the rest of them.[127]

The narrative of nature offered by urban political ecology fails to answer Harvey's call for a discursive strategy that accounts for the agency of "scallops, and mice and all the rest of them," because its commitment to a rigorous historical materialist account of nature leads it to privilege humans in their account of a materialist chain of being. Their account denigrates nonhuman agency by treating them as passive objects and not embodied, lively subjects. Urban political ecology says little about the role of nonhumans in creating transgressions and liminal spaces in the urban landscape – and, thus, it is inadequate for a full account of marginal nature.

Figure 2.10: Balcony garden, Budapest, Hungary

[127] "Nature, politics, and possibilities: a debate and discussion with David Harvey and Donna Haraway", *Environment and Planning D: Society and Space* 1995, Volume 13, p. 515.

Towards a Narrative of Embodied Urban Nature

Figure 2.11: Green tree frogs, Hornsby Bend
By Greg Lasley used by permission

I think I could turn and live with animals, they are so placid and self-contain'd;
I stand and look at them long and long.

They do not sweat and whine about their condition;
They do not lie awake in the dark and weep for their sins;
They do not make me sick discussing their duty to God;
Not one is dissatisfied—not one is demented with the mania of owning things;
Not one kneels to another, nor to his kind that lived thousands of years ago;
Not one is respectable or industrious over the whole earth.

So they show their relations to me and I accept them,
They bring me tokens of myself, they evince them plainly in their possession.
I wonder where they get those tokens,
Did I pass that way huge times ago and negligently drop them?

- Walt Whitman, Song of Myself[128]

[128] Whitman (1855) verses 684-696.

Whitman was preoccupied with the everyday lifeworld of embodied nature, both human and nonhuman, and his question here evincing the relation between human and nonhuman is skillfully placed after the catalogue of animal virtues to suggest the superiority of nonhuman culture compared to human culture. Whitman affirms the fundamental similarity between humans and nonhumans, but, with a touch of irony, asks about the origins of those "tokens" of similarity between us and them. The poet has no hesitation in affirming that animals are agents of a superior sort compared to humans, whom he negatively assesses through the catalogue of the products of human agency. However, the question of nonhuman agency is a more difficult issue for geographies of nature. "The vexed question of agency…is that all entities have greater or lesser capacity to cause effects…how can one attribute agency to nonhumans?"[129] The starting point of "materiality" sets up the question of how inanimate matter becomes "inventive life" or how can we account for recalcitrant nature – those vexing nonhumans – from bacteria to mountain lions - who transgress boundaries and defy expectations about the order of nature. As we saw, urban political ecology, which purports to be about "nature," struggles to move beyond material nature to "lively embodied nature," that is, to move beyond nature-as-objects to nature-as-subjects. In the urban political ecology narrative, when agency is discussed, it is not treated as a property of individuals or species, but rather it is distributed as an emergent property of networks.

Within contemporary human geography, the work of Latour and Deleuze has been embraced to support this idea of distributed agency. Latour's Actor Network Theory (ANT) and his notion of "actant" and Deleuze's notion of agencement (usually translated

[129] Braun (2008) p. 670 and more on agency in Hinchliffe, Geographies of nature (2007)

as "assemblage") are the theoretical vehicles for arguments about agency within geography.[130] Latour and Deleuze developed these concepts to address the philosophical problem of agency and to move it beyond the modern liberal humanism that grounds agency in human attributes such as, intentionality, reason, and will. Modern humanist accounts focus on individual human capacities, because it warrants individual moral responsibility for actions and corresponding individual human rights. Latour and Deleuze and similar postmodern philosophers seek to render a posthumanist vision of agency that gives a fuller ontological account of the world,[131] and both of their notions are meant to address the ontological problems of how order in the world comes about (networks and assemblages) and the capacity to cause effects (agency). This posthumanist ontological account of agency has great appeal to geographers and social theorists, but the philosophical argument that defines agency as some sort of emergent property has a long history in metaphysics. Though this philosophical move avoids many of the problems of humanist agency (and morality) based on individual capacities, the question of the emergence of agency for individual nonhumans, Harvey's "scallops, and mice and all the rest of them," remains.

These posthumanist arguments about agency form a theoretical bridge between the narrative of urban political ecology and a new narrative that emerged in the 1990's - the narrative of embodied urban nature. Most of the geographers and social scientists engaged in this narrative of embodied urban nature take as their starting point, not the

[130] Latour (2004) Deleuze and Guattari (1987) for their ideas used by geographers see Braun (2008), Bonta (2004),

[131] Since Heidegger, it is no longer fashionable to call this a "metaphysical" account of the world, and, although I disagree with the fashion, I honor the fashionable discourse here. Heidegger (1977).

"metabolism" of urban nature, but animals in the city. As Johnston describes them, these "animal geographers" focus on the relationships between humans and nonhumans,

> in order to consider the ways in which social and practical networks shape nonhuman life spaces and practices, and the ways in which nonhumans themselves might have subjectivities, agencies and practices through which they might create lifeworlds that impact on human ideas and communities.[132]

Whitman was unaware that he was doing "animal geography," but his interrogation of the "umwelt" of nonhumans, the questions about their intentions, perceptions, and lifeworlds, fits the agenda of this type of geography of nature.

Apart from the usual challenge of assessing what animals think within their subjective lifeworlds, a preoccupation of animal geography is how to accurately represent "their beastly natures within our discourses."[133] The urban focus emerged in animal geography with Wolch and Emel (1995) where they insisted that animals need to be "brought back in" to social theory. They argue that in social theory animals were marginalized in the analysis of, "environmental sustainability, economic and social order, personal relations and individual identity, and conceptions of justice and morality."[134] They also criticized Marxist approaches that focus on animals, which, as Johnston paraphrases their criticism "simultaneously reduce them to resources or commodities for control or consumption-flows in networks rather than beasts in their own right."[135] This echoes the criticism of urban political ecology that it reduces nature to a static stock of things shuttled around by networks, and so, animal geography and the narrative of embodied nature require a different methodology that takes animals as agents seriously.

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[132] Johnston (2008) p. 633.
[133] Johnston (2008) p. 633.
[134] Wolch and Emel (1995) p. 632.
[135] Johnston (2008) p. 634.

This methodology begins with assessing how animals use urban space and how they are represented in the discourse.

Leading theorists of animal geography recast the city as a habitat for humans and nonhumans. In this narrative, nonhumans are subjects actively using urban space, not just proliferating objects filling the urban landscape. Wolch advanced several approaches to placing animals in the discourse of urban space through concepts like "zoopolis" and "Anima urbis" which focused on how animals use the city.[136] Philo and Wilbert directly address both the issues of animal space and animal agency in *Animal spaces, beastly places* (2000) where they argue for the need to, "look at animals themselves as embodied, meaty beings who evade human attempts to place them in space, physically or conceptually" and to focus on places where animals, "inject their own agency into the scene, thereby transgressing, perhaps even resisting, the human placements of them."[137] Here, agency, subjectivity, and intentionality emerge as central issues both for rendering an embodied account of nature and for simultaneously establishing ethical justification for the moral standing of animals.[138]

Animal geography also utilizes Latour's Actor Network Theory (ANT) as a framework for an account of animal subjectivity and agency. Latour argues, "Subjectivity…is no more a property of humans, of individuals, of intentional subjects, than being an outside reality is a property of nature" in which agency is constantly in the making and circulating through networks [139] For animal geography, the appeal of ANT was most strong for its account of agency which is a step, "towards a conceptualization of

[136] Wolch (1998)(2002)
[137] Philo and Wilbert (2000) p. 14.
[138] Wolch (2007)
[139] Latour (1999) p. 23.

nonhuman subjectivity which negotiates a third way between naturalist denial and humanist notions of radical cleavage between human and nonhuman behavior."[140] However, although ANT suggests a vision of diffused agency as a property of networks (and one can envision an individual body as a network out of which the emergent property of agency arises like an epiphenomenon), Latour's theory suffers from an inadequate explanation of how agency emerges in particular instances of individuation. In reference to nonhumans, ANT fails to give "the specific reasons why certain nonhuman actors are enrolled into certain networks" and favors a materialist account over the embodied agency needed for animal geography.[141] The metaphor of networks, which works well within the narrative of urban political ecology and functional narratives, is less successful within the narrative of embodied nature and animal geography because it gives a weak account of the individual nonhuman subject actively creating its home in the urban habitat, for it simultaneously "highlights the role of nonhuman agents and obscures their precise contribution to relational agency."[142]

However, the promise of network discourse has prompted attempts to augment ANT with ideas borrowed from other philosophers that better capture the dynamism and hybrid relationality of embodied nature. In *Hybrid Geographies*, Whatmore still employs ANT to account for the relational and spatial patterns of actors in the world, but, she describes a "second maneuver" to position this work as one of animal geography,

> The second manoeuvre involves *animating the creatures* mobilised in these networks *as active subjects* in the geographies they help to fashion. Their constitutive vitality is acknowledged not in terms of unitary biological essences but as a confluence of libidinal and contextual forces.[143]

[140] Glendinning (2000) p.21.
[141] Johnston (2008) p. 638.
[142] Cloke and Jones (2001) p. 649.
[143] Whatmore (2002) pp. 14-15.

The "confluence" entangles animals in the "orderings" of society encoded in discourse which enrolls them in networks – "wildlife" or "organism" or "pest." The metaphor of hybridity is meant to allow for an account of their lively embodied agency. Hinchliffe has collaborated with Whatmore's project and in his *Geographies of nature* argues that the key to an account of animal agency is allowing for novelty to emerge as the marker of agency.[144] Whatmore and Hinchliffe have tried to retain the framework of ANT by supplementing Latour's idea of networks with Deleuzian processual discourse where "coalescences" form in novel ways, thereby opening up the fixed functionality of ANT as they see it to account for the creativity of nonhumans in making their home in the city. As well, with another nod toward Haraway, Whatmore focuses on "the partiality, provisionality, and incompleteness of our understandings of relations; we can never fully apprehend these hybrids as they are continually in process."[145]

That knowledge is partial and situated is now a prominent view of epistemology in geography, but here it is unclear how it helps retrieve the subjectivity of the individual from the subjectivity of the network or assemblage or hybrid. In this case, to say that our knowledge is incomplete is to say that we do not know. Johnston relates a telling detail from an article by Whatmore and Thorne about elephants in Paignton Zoo that illustrates the problem,

> After lengthy discussions of the circulating of elephants as figures, numbers and bodies, one small detail – that the elephants Duchess and Gay do not like the rain – seemingly added to provide context for a statement about a new elephant house, provides a flash of liveness (sic) a reminder that these official networks are woven within, between and through two individual nonhuman presences.[146]

[144] Hinchliffe (2007) p. 51.
[145] Johnston (2008) p. 638.
[146] Johnston (2008) p 639.

One small detail enlivens these elephants as individual agents. They do not like rain. Here emerges a simple literary insight about narrative and characterization that we will see demonstrated by the nature writers in Chapter 5. It is through particular, concrete, animating details that individuals, nonhuman and human, are brought to life on the page. This attention to crucial details and seemingly prosaic behaviors can engender insight and understanding, and, as literary theory recognizes, it is the elusiveness of these details that characters often "withhold" agency on the page from the writers who create them. A similar challenge faces animal geographers as they try to write the narrative of embodied nature.

This problem adds a new theme to this narrative, that of monitoring, detection, and observation of nonhumans. The attentive monitoring of mundane behavior is a familiar challenge for field biologists, naturalists, farmers, and ranchers who must comprehend the lifeworld of animals. This lesson may transfer to the project of animal geography. As Philo puts it,

> …might it not be that the animals – in detail, up close, face-to-face, as it were – still remain somewhat shadowy presences? They are animating the stories being told, but in their individuality – as different species, even as individuals – they stay in the margins more than is the case for humans in, say, the qualitative and cultural turns of the discipline over recent decades.[147]

Johnston describes this problem of "shadowy presence" as a discursive one for animal geography, that is, a search for, "how the beastly, embodied presence of nonhumans might be researched and written in a way that does not silence, overlay, or tidy them."[148] The way forward appears to be a collaborative engagement with the professionals tasked with monitoring the elusiveness and particularity of individual nonhuman behavior.

[147] Philo (2005) p. 829.
[148] Johnston (2008) p. 639.

Urban Wild Things and the Telling Detail

Figure 2.12: Armadillo at Hornsby Bend Sewage Ponds
By John Ingram used by permission

"I'll learn'em to steal my house!" he cried. "I'll learn'em, I'll learn'em!"

"Don't say 'learn'em,' Toad," said the Rat, greatly shocked. "It's not good English."

"What are you always nagging at Toad for?" inquired the Badger, rather peevishly. "What's the matter with his English? It's the same what I use myself, and if it's good enough for me, it ought to be good enough for you!"

"I'm very sorry," said the Rat humbly. "Only I think it ought to be 'teach'em,' not 'learn'em.'"

"But we don't want to teach'em," replied the Badger. "We want to learn'em – learn'em, learn'em! And what's more, we're going to do it, too!"

- Kenneth Grahame, *The Wind in the Willows*[149]

One starting point for the way forward is revealed by an interesting collaborative article involving Whatmore and Hinchliffe and other British human geographers, where

[149] Grahame (1908) p. 316.

once more a small detail of animal behavior has significant implications for the issue of research and writing about nonhumans in the city and for marginal nature.[150] The detail emerges as these British human geographers learn about nature in an urban wasteland in Birmingham. Environmentalists and conservation biologists have mobilized to protect a 50 hectare wasteland which they characterize as an "urban wild." The geographers' primary focus in the article is the politics of urban "wild" space built around nonhumans. Whatmore and Hinchliffe and the others volunteer to be trained as citizen monitors to document the presence of water voles (*Arvicola terrestris*) at the site. A water vole is the small, sleek, furred rodent which was introduced to English literature as "Ratty" in Kenneth Grahame's children's classic *The Wind in the Willows*. Ratty, so-called because water voles were commonly known as water rats, was the kindly animal who first showed Mole the world, introducing him to the racey, boastful and irresponsible Toad and the reclusive Badger. He had "a little brown face, with whiskers. A grave round face...small neat ears and thick, silky hair."[151] The water vole is found throughout riparian habitat in mainland Britain, but it has suffered a catastrophic decline in the last thirty years. After centuries as one of Britain's most prolific mammals, water voles have been driven to the edges of their traditional ranges by the American mink (an invasive non-native species), brown rats, and, in part, intensive agriculture that destroys riparian habitat. A survey carried out by the Mammal Society (1989-90) showed that the species had been lost in 94% of the sites where it had occurred earlier the 1900s. Thus, if they find a population

[150] Hinchliffe, Kearnes, Degen, and Whatmore (2005) "Urban wild things: a cosmopolitical experiment"
[151] Graham (1908) p. 5.

of water voles in this particular urban wasteland, they can give cause for protecting the site.[152]

Their training experience introduces them to the challenge of learning about a furtive nonhuman in its habitat and the complexity of detailed observation needed to detect the presence of water voles. By learning the practice of field observation, these human geographers are forced to move beyond theoretical engagement with non-humans and to struggle in the field to read the subtle signs of water voles,

> We start by looking for footprints, gazing about the ground with little confidence or direction…Prints are far from self-evident - to the unversed this might have been any small creature, even a bird. So, out comes the field guide, which, disappointingly, is far from being a definitive guide to the field…We learn that water vole footprints are similar to those of the brown rat slightly smaller and more star-shaped with the main adjudicator seeming to be the angle set by the first and fourth toes. But, when you add in the complexities of substrate, the variety of animal sizes that exist from juvenile to adult, the different speeds of movement, varieties of slope, and that water voles tend to cover their tracks (by treading on their fore prints with their back paws) then things become difficult…We learn, too, about water vole lawns and runs - neat grazing areas and well-trodden paths. We learn that the angle at which a rush has been severed can be indicative of water vole actions…We learn to add field observation to field observation – to discuss, to collaborate, to corroborate, to build a sense of water vole inhabitation.[153]

Through this process of engagement with the "inhabitation" of water voles, the geographers learn to look for the critical details which reveal the presence of watervoles. As they become more adept at recognizing the tracks, the geographers realize that they have learned much more than recognizing the traces of water voles. They have had to engage the lifeworlds and behavior of water voles to be able to track them.

Moreover, the tracking reveals surprises about urban water voles. The first surprise revealed is that in this urban wasteland habitat water voles and brown rats

[152] Source UK Wildlife Trust http://www.wildlifetrust.org.uk/urbanwt/ecorecord/bap/html/vole.htm
[153] Hinchliffe, Kearnes, Degen, and Whatmore (2005) p. 647.

"cohabit" unlike in rural habitat where the presence of brown rats usually assures finding few water voles. This insight has forced more study and a reassessment of assumptions about water vole ecology in England. Through this study, ecologists have been surprised to discover that urban water vole populations are doing much better than rural populations probably because there is less intensive management of riparian areas in urban wastelands and abandoned canals and no American minks, since they shy away from urban habitat. The ecologists discursively accommodate this new knowledge about urban ecology by labeling this new assemblage a "recombinant ecology,"[154] a new term coined for this urban wasteland habitat "which is so much more than a relict ecology or a restored ecology."[155] This new assemblage is one example of marginal nature, and here the European urban ecologists identify a positive effect of neglect and irregular disturbance in wasteland habitats.

The human geographers celebrate, what is for them, a new insight about the practice of knowing which is the study and detection of presence that results in new ecological knowledge that defies expectations. Although this insight is a common enough occurrence for naturalists and field biologists, in this context of animal geography the geographers realize that they have illustrated how presence is coproduced by human expectations and the technology of monitoring and detection, "It is…the ability to address nonhumans as colleagues in the process of producing knowledge that makes new knowledge possible. It is a form of address, then that treats people and water voles (in this case) as fellow subjects rather than as preformed objects."[156] They experience a particular instance where it is revealed that knowledge is not static (especially in ecology

[154] Falk (2000)
[155] Hinchliffe, Kearnes, Degen, and Whatmore (2005) p. 653.
[156] Hinchliffe, Kearnes, Degen, and Whatmore (2005) p. 653.

and biology) and is determined by environmental perception, research practices, and expectations about nonhuman behaviors. What most intrigues them is the revelation (a revelation to these human geographers, at least) that rodents do not just differ from other species but that individual populations (and perhaps even individuals?) differ from each other. This active engagement with nonhumans reveals in practice how these individual agents elude and transgress our expectations. When they do not do what we suppose they should do, they collaborate in the creation of new knowledge. The "shadowy presences" of animal others are not necessarily a fixed ontological feature, but rather the furtive nature of water voles, brown rats, and minks require of us a mode of engagement, of careful, prolonged, particular attention, to allow encounter to take place and collaborative knowledge to emerge. In other words, the animals do not just passively open their lifeworlds to our knowing, but they require something of us to get to know them. And so, we have circled back to Philo and Wilbert's starting premise where animals are, "embodied, meaty beings who evade human attempts to place them in space, physically or conceptually" who transgress and resist human placements of them.[157] Even water voles know how to learn'em, learn'em, learn'em!

[157] Philo and Wilbert (2000) p. 14.

Detectability and the Practice of Geography

Figure 2.13: Brilliant Homes For Sale, Waller Creek, Austin, Texas

> **…given that nature is not what we have imagined it to be, fixed in its identity and unrelated to societies, a crucial question remains as to what kinds of spaces there are for nature.**
>
> **- Steve Hinchliffe, *Geographies of Nature: Societies, Environments, Ecologies*[158]**

This experience with water voles suggests the way forward for animal geography and the narrative of embodied urban nature is through the theme of detectability of "urban wild things." Detectability is also of relevance to the account of marginal nature and its liminal presence in the margins. One storyline of detectability is traced through the recognition within conservation biology and ecology that detectability influences our knowledge of biodiversity. It is well known that "charismatic megafauna and megaflora"

[158] Hinchliffe (2007) p. 3.

receive more priority for conservation.[159] Jamie Lorimer makes this point by analyzing biodiversity data collected in the UK and pointing out significant taxonomic gaps where no data is being collected on taxa like nematodes (and most soil organisms smaller than worms) and other small furtive uncharismatic microfauna.[160] He attributes these gaps to "the distinguishing properties of a species, process or ecological complex that condition its relative awareness to human perception and subsequent evaluation" which he characterizes as "non-human charisma,"

> Nonhuman charisma can be understood as the distinguishing properties of a species, process or ecological complex that condition its relative awareness to human perception and subsequent evaluation. The detectability of a species relates to the ecological dimensions to this non-human charisma and describes how easy a species is for a surveyor to encounter, identify, differentiate and record.[161]

The issue of nonhuman charisma also affects the popularity of organisms among the humans engaged in collecting biodiversity data where birds and butterflies are both more attractive to humans and more represented in biodiversity databases than uncharismatic taxa like nematodes or algae. Another reason that charismatic taxa are overrepresented is the influence of large environmental NGOs focused on charismatic megafauna and megaflora and the use of these NGOs to support research and citizen science monitoring. In the United States, charismatic megafauna have also been disproportionately represented on endangered species lists.[162] Detectability is not wholly tied to the attractiveness of a species, since, for example, minute soil organisms like tartigrades (water bears) are quite attractive under magnification. The difficult of detection

[159] Metrick and Weitzman, (1998)
[160] Lorimer (2006) for a similar example American example see Gibbs, "Water balance in desert *Drosophila*: lessons from non-charismatic microfauna," (2002)
[161] Lorimer (2006) p. 549 and Lorimer (2008)
[162] Peterson (1999)

influences interest in developing expertise in a particular organism, and the paucity of trained biologists with expertise in a particular organism can influence biodiversity data. These are well known problems in conservation biology.

However, within the discourse of animal geography, Lorimer's insight highlights the understanding that detectability of nonhumans depends on an exchange, a coproduction of nematodes and humans, in which we expand the horizons of our understanding of biodiversity by directing attention towards microfauna and by developing new practices of observation that allow us to engage their lifeworlds. Braun argues that this engagement by Hinchliffe, Whatmore, and Lorimer with the practice of conservation biology is a way forward for animal geography, "The point is not just that there is no direct, unmediated access to the world, but that 'presence' is coproduced by the practices of the conservationist and the performances of the organism. Equally important, presence is a problem because that which *presences* is itself never static."[163]

Conversely, from the perspective of conservation biology, Zimmerer has argued since the 1990s that the new approaches emerging from human geography, like political ecology and nature/society hybrids, can aid the practice of conservation biology. Inclusion and exclusion are central issues of conservation, as are dynamism and nonequilibrium. Zimmerer points out that ,

> …perspectives on cross-over hybrids and nonequilibrium landscapes can support a scope for conservation analysis that extends beyond the proclivity toward parks and other protected areas, and toward the fuller understanding of utilized or "second nature." For the field of geography, the importance of this conservation analysis may help renew interest in selective integrations or synthesis of human and physical geographies.[164]

[163] Braun (2008) p. 672.
[164] Zimmerer (2000) p. 364.

These metaphorical and discursive exchanges between human and physical geography can reshape practices and enrich understandings. For instance, the question of how assemblages are constituted and maintained is engaged both by political ecologists and landscape ecologists. This exchange and enrichment has direct bearing on the questions of "urban wild things" as human geographers learn more about the practice of conservation biology in urban landscapes and acquire a fuller understanding of the practices of biology and ecology and physical geography. The incorporation of this understanding has already been translated into the discourse and practices of animal geography and appears as growing interest in an enriched engagement with the lifeworld of urban animals, similar to the engagement detailed by Hinchliffe and Whatmore with water voles. On the animal geography side of the exchange, the question of methodology for analyzing how assemblages are constituted and maintained is bound up in the commitment to honoring the active, nuanced *presence* of nonhuman agency.

The result is the reconfiguration of methods as a shift is made from animal geography to geography of nature where multiple methodologies are needed in order to support the engagement with nature as a complex, dynamic hybrid. Hinchliffe suggests how a geography of nature would assess a woodland,

> A woodland, for example, will be practised by and with many different species, people, habits, artefacts, in many different places (from soil horizons to government offices, from prevailing winds to balance sheets). So a natural history of the woodland could be written, but so too could a natural geography.[165]

Note here the shift from engaging animals to engaging habitats and natural history where "a woodland" is a collaborative production of human and nonhuman agents. However, natural history engagement with embodied urban nature has been out of favor in urban

[165] Hinchliffe (2007) p. 2.

cultural geography given the ascendancy of urban political ecology and its assemblages, networks, and flows and biogeographers are more focused on patch dynamics and remote sensing. And yet, Hinchliffe has argued his way back to affirming (and relearning) the practice of natural history. Johnston reaches a similar point in arguing that the solution for animal geography is "deep ethnographies" of nonhumans which sounds much like natural history with a Geertzian gloss.[166] For animal geography, the focus is still on nonhumans themselves, but this rich engagement with particular nonhumans forces animal geographers to engage these animals in the complex spaces they inhabit, that is, it returns us to the problem of placing them in space.

The narrative of embodied urban nature converges on this issue of the practice of animal geography, and the issue of agency forces these "geographers of nature" to engage the subjectivity and the "complex present" of nonhumans in the full complexity of their lifeworlds. Johnston enthusiastically argues that a way forward is possible through adopting Ingold's phenomenology of dwelling which she characterizes as "the notion of life as a process…in process – a complex and swirling movement…which envelops and is enveloped by the myriad of individual beings, environments and entities through whom it is realized."[167] Braun is more skeptical of this "Phenomenology Redux" as he characterizes it. He expresses concern that this "redux" not be a return to humanistic geography's engagement in the 1970's with a phenomenology which he faults for overemphasizing the visual and the human, and he argues,

> perception is still very much an issue, but it is understood now as something that emerges out of our 'messy encounters' with things and is as much about tactility as vision…we might say that perception names the capacity of bodies to enter into combination with other bodies. In what we might call a 'phenomenology without

[166] Johnston (2008) p. 644.
[167] Johnston (2008) p. 641 and see Ingold (2000)

> subjects', perception is already 'in' the world, rather than something that is brought to bear upon it.[168]

This is a misunderstanding of Merleau-Ponty's account of the phenomenology of perception, since his main point is to deconstruct the idea of detached perception.[169] However, Braun is correct that the contemporary renewal of engagement with phenomenology is focused on perception immersed in the world.

Both Braun and Johnston point to the example of Hayden Lorimer's "Herding memories of humans and animals" as a promising instance of employing this immersive phenomenological methodology (in this case, Ingold's version of "dwelling phenomenology") to understand relations between reindeer herders, reindeer, and the landscape of the eastern Scottish highlands.[170] Lorimer describes what he is doing as, "an exercise in possible narration"[171] as he spends time walking and conversing with herders attempting to glean "an understanding of the landscape in terms of the affectual relations of herd, land, and herders, read as a single, articulated unity, in which both herders and reindeer develop a kind of embodied knowledge of the land and of each other."[172] The modes of engagement with the land by the herder is discursive, the rich language of landscape known from,

> …old vantage points, the recognizable face of the country – its physiognomy – is seen and given expression using an exact typology of descriptive terms: folds, nicks, flats, glades, crags, screes, crests, and gaps. Any feature might then require specific scrutiny as each is given to alterations in appearance according to the time of day, the quality of light, or subtle play of shadow on surfaces, the wind bending the parting vegetation, and the passage of the clouds overhead.[173]

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[168] Braun (2008) p. 673.
[169] Merleau-Ponty (1962) for example, "The subject of sensation is neither a thinker who takes note of a quality, nor an inert setting which is born into, and simultaneously with, a certain existential environment, or is synchronized with it." p. 211.
[170] Ingold (2000)
[171] Lorimer (2006) p. 497.
[172] Braun (2008) p. 674.
[173] Lorimer (2006) p. 505.

Lorimer makes the point that this intimate knowledge of the landscape is a coproduction of herder and herd, of careful attention to how the reindeer move and feed and react to the land and the passage of time. Additionally, Lorimer forthrightly positions himself in the "exercise in possible narration" by including his own experience of walking and learning along with herder and herd. He must also extend his engagement beyond animal geography to practice a geography that engages the lifeworld of human and nonhuman alike in order to render a faithful account of this herding world. This account is similar to Hinchliffe and Whatmore's exploration of the urban habitat of the water vole where the practices and discourse of biologists lead them to a new narrative of "urban wild things," and where nonhumans were coproducers of knowledge.

Lorimer's use of phenomenology and Johnston's call for "deep ethnography" have precedent in the engagement with place and phenomenology begun by humanistic geographers like Tuan, Relph, and Buttimer.[174] Although its popularity has faded with the rise of other types of human geography, humanistic geography emerged in the 1970s in response to a similar dissatisfaction with abstract disembodied accounts of the human lifeworld. The turn to phenomenology opened a way for geography and related spatial arts and sciences to get back to place as an embodied, meaningful reality. The concept of place is unavoidable in a polysemous account of inhabitancy, of embodied nature, of water voles and humans who encounter each other - not in space but in place. However, this renewed engagement of geography with phenomenology must be reconciled with a posthumanist accounting of place as a coproduction of humans and nonhumans. Fortunately, ecophenomenologists like Abram and philosophers of place like Casey and

[174] Tuan (1974)(1977)(1978), Relph (1976)(1981)(1987), Buttimer and Seamon (1980).

Mugerauer have suggested fruitful ways forward for a new understanding of nature and place. Through this new engagement with place and nonhumans, new questions emerge about place as a collaborative creation of both human and nonhuman agency. By definition, humanistic geography was focused on the human lifeworld and not the non-human lifeworld, and, for philosophy, phenomenology invested most of its resources in expounding on the details of human subjectivity. However, the philosophical project of phenomenology was originally intended to clarify our being in the world through analyzing the immediate experience of the world as embodied, perceiving beings, and phenomenologists have been busy engaging the particularity of the lifeworld of nature/society hybrids and utilizing the methodology of hermeneutics to let "language take root, once again, in the earthen silence of shadows and bone and leaf."[175]

As pointed out above, misconceptions about the philosophical project of phenomenology persist in geography and limit the way forward toward new geographies of nature. The historical materialism of urban political ecology and the metaphorically tangled language of hybrid natures are missing a methodology and theory to address encounter and engagement with the dynamic, animate nonhuman world. For political ecology encounter seems to amount to bumping into objects in networks, and for animal geography encounter is hampered by the elusiveness of those shadowy subjects of study. Merleau-Ponty's theory of perception as participation, as an immersion in the animate, responsive world has fundamental relevance to a project like Lorimer's engagement with herds and herding landscapes.[176] The nuanced imaginative engagement with landscape

[175] Abram (1996) p.274.
[176] "…to return to things themselves is to return to that world which precedes knowledge, of which knowledge always speaks, and in relation to which every scientific schematization is an abstract and

and his "exercise in possible narration" are supported by Merleau's idea of our imaginative perceptual immersion in the world before language creates the distance of conceptualizations and definitions. Moreover, Merleau writes of how the sensible world that scientific materialism treats as passive objects is actively responsive to our perception - beckoning, responding, summoning, and taking possession of us. Merleau's world is one of perceptual reciprocity between perceiver and perceived mirroring the linguistic reciprocity between metaphors and the world.

The best known presentation of Merleau's theory of perception and language in the context of narratives of nature is Abram's *Spell of the Sensuous*. In this book, Abram argues that language is at the heart of the shift from human cultures attuned to the reciprocity of the nonhuman world to a culture of scientific materialism which reduces the world to measurable physicality. Abram points out that at the same time that Merleau was developing his ideas, American linguist Edward Sapir proposed his hypothesis of linguistic determination, "We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation."[177] Materialism and reductionism support a worldview where nature is perceived as a passive object. We have already seen through the narratives of nature how the inverse is also true - the hermeneutical choices we make in telling the story of nature determine discursive choices about how we speak of and for nonhumans. Thus, our attention, like Lorimer, must be directed towards how the language of landscape emerges as a co-production of inhabiting places and not empty spaces. Lorimer insists that his exercise in possible narration is about exploring place and not

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derivative sign-language, as is geography in relation to the countryside in which we have learnt beforehand what a forest, a prairie or a river is." Merleau-Ponty (1962) p. ix.

[177] Sapir (1949) p. 162.

space. His use of phenomenology and place are signs of a new emerging geography of nature focused on a complex engagement with the non-human lifeworlds and phenomenological methodology that accounts for the "shadowy presences" of nature.

The current engagements with "nature" in cities by geographers and social scientists are dominated by urban political ecology and social theory where space rather than place is the starting point for the geography of nature.[178] These projects struggle to find urban spaces that can accommodate the embodied, dynamic particularity of nature. Hinchliffe directly addresses the problem of nature and space in *Geographies of Nature*,

> …given that nature is not what we have imagined it to be, fixed in its identity and unrelated to societies, a crucial question remains as to what kinds of spaces there are for nature. What sorts of spaces can overcome the tendency to either assume nature is dead, or assume that it exists, neatly bounded, incarcerated in a self-sealed cell?[179]

These questions would open differently if he had asked about what kind of *places* there are for nature rather than *spaces*. Ironically, the discourse of these projects reveals an effort towards enclosure that is philosophically unpopular with these geographers and social theorists. For, although they do not seek to enclose nature in a "self-sealed cell," they do seek to position nature within the "relational force field" of urban space rather than the multiplicity and particularity of place. With the turn towards phenomenology, place returns to fill the abstract lifelessness of space. Moreover, phenomenological engagement with nature has been shown by Kohák, Abram, and other phenomenologists to be compatible with the ethical concerns that urban political ecologists and other social scientists insist must be part of the narrative of nature.[180]

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[178] Zimmerer (2007) mentions "place-based" studies (p. 234) but seems to mean "location studies" rather than the study of place that humanistic geographers developed.

[179] Hinchliffe (2007) p. 3.

[180] Kohák (1984), Braun (2008)

Placeways and the Ecology of Place

Figure 2.14: The gravel pit spoils mounds at Hornsby Bend
By John Ingram used by permission

> **In the ancient world, the Greek word nomós, with the accent on the last syllable, meant a place that was allotted or portioned out for use, such as a pasture, while nómos, with the accent on the first syllable, meant custom, institutions, or the way of life allotted to a certain people. Here we find what Whitehead called philosophic truth in the presuppositions of language. Within the structure of a word, the Greek language expressed the bond between ways and places.**
>
> **- E.V. Walter, *Placeways*[181]**
>
> **…at the most primordial level of sensuous, bodily experience, we find ourselves in an expressive, gesturing landscape, in a world that speaks.**
>
> **- David Abram, *Spell of the Sensuous*[182]**

The return to place in the context of narratives of nature requires a reassessment of place as a nature-culture hybrid and a reevaluation of how geographers explain these

[181] Walter (1988) p. 225
[182] Abram (1996) p. 81

hybrids. Thrift, Whatmore, and other human geographers have promoted a non-representational theory of explanation which focuses on practices of knowing rather than just the representation of products of knowing.[183] Lorimer described his account of reindeer herding as an attempt to bridge representational and non-representational modes of explanation, which he describes as "more-than-representational."[184] The key to his methodology is narrative. Demeritt suggests that narrative forms of presentation which move between fact and fiction may be the best epistemic vehicle for rendering an account of these hybrids in which human and nonhuman have co-standing as subjects or as protagonists of the tale,

> Narrative works its magic precisely by creating the illusion that it is not a work of fiction. Thus while proponents of so-called non-representational theory seek to take us beyond representation to explore affective and performative ways of sense making, insofar as their chosen vehicle for that journey is largely textual, perhaps the experiments of a decade ago with new forms of writing have not been entirely exhausted. Indeed, if we follow the advice of historian William Cronon, what's required is not avant garde experimentation but a return to narrative forms of presentation formalized about a century and a half ago.[185]

A return to older ways of engaging and explaining the world is necessary to correct the tendency, evidenced by urban political ecologists, to rely on the latest philosophical metaphors and theories. We can turn to E.V. Walter's account of placeways for a neglected voice in this debate over explanation and place.[186] He begins his book with this call for recovery of place-based modes of experiencing the world,

> A growing number of thoughtful and concerned people want to recover an environmental awareness that is not lost but driven underground. They are also looking for new ideas to change the world – but those new ideas, I believe, must include some old perspectives to grasp things whole and entire. We need to

[183] Thrift (2007) and Whatmore (2002)
[184] Lorimer (2005)
[185] Demeritt (2005) pp. 822-3 with reference to Cronon (1992) "A place for stories: Nature, history, and narrative."
[186] Walter (1988)

> recover a way of thinking that ancient people took for granted. The renewal of consciousness implies a restitution of grounded intelligence. We need to experience the world in a radically old way.[187]

A concern for holistic explanation is behind Walter's suggestions in *Placeways* for the "restitution of grounded intelligence" and the recovery of a "radically old way" of experiencing the world. Geography is uniquely positioned to respond to this call for "grounded intelligence," and the most evocative stories emerging from geographical imagination have this quality of grounded intelligence.[188] Walter makes the argument that the idea of "place" best reflects that grounded experience of being-in-the-world and that Plato and other ancient Greek philosophers understood place in a holistic way which has been lost in the abstractions of academic disciplines.

As used by humanistic geographers, place was only a manifestation of human perception of a meaningful physical setting, "The meanings of places may be rooted in the physical setting and objects and activities, but they are not a property of them – rather they are a property of human intentions and experiences."[189] Human intentions and experiences were paramount in these accounts of place. Walter insisted on broadening the concept to recognize that places were coproductions of all the beings inhabiting the place,

> A place is a unity of experience, organizing the intercommunication and mutual influence of all beings within it. Every place, then, implies a form of dwelling together, and all the realities in a place – living people, images, memories, animals, plants, as well as bacteria and other hidden forces – make a group of <u>effective presences</u> dwelling together…a system of <u>mutual immanence</u>.[190]

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[187] Walter (1988) p. 3.
[188] Lorimer's account of reindeer herding is a good example of such an evocative narrative explanation of placeways.
[189] Relph (1976) p. 47.
[190] Walter (1988) p. 23.

He utilizes Whitehead's process philosophy to reaffirm an understanding of Being as a dynamic system of mutual immanence where the notion of discrete, separate objects and "configurations of masses" are misperceptions based on, what Whitehead called, the fallacy of misplaced concreteness.[191] Whitehead's metaphysical insight was that fundamental reality is process, not stasis, and, in a processual world, all beings are "events" with temporal duration flowing into other "events" and connected through "mutual immanence."[192] Whitehead insisted that he was simply recovering an understanding of being present in Plato and the Pre-Socratics, and he famously said that all philosophy is just footnotes to Plato. This processual metaphysics based on the Greeks leads Walter to re-envision place as a dynamic commingling of presences and to emphasize "placeways" to enliven Relph's static container concept of place. Placeways recasts the structure of place as a dynamic interplay of beings, or in Whitehead's language – a nexus of experience.[193] This experience is the coming together of beings within a grounded context that is more than sheer physical setting, "all the realities in a place – living people, images, memories, animals, plants, as well as bacteria and other hidden forces – make a group of effective presences dwelling together…a system of mutual immanence."[194] Human and nonhuman collaborate to produce the novelty of place within a temporal duration, a historical moment imbued with memory, expectation, and intention that is not only human. However, in spite of his acknowledgement the "realities" of place, Walter's focus in *Placeways* is a revision of the human experience of place, a theory of the human environment. Rather than giving a full account of place as a

[191] Whitehead (1925) pp. 50-51.
[192] For more on Whitehead's metaphysics see Rescher, *Process Metaphysics: An Introduction to Process Philosophy* (1996)
[193] Whitehead (1925) pp. 50-51.
[194] Walter (1988) p. 23.

coproduction of human and nonhuman, he never presented an account of nonhuman placeways. However, his inclusive, dynamic understanding of place as "a system of mutual immanence" holds the potential for an "ecology of place."

Thrift utilizes this idea of "ecology of place" to highlight the particularity of the gathering of presences which he defines as "place" in contrast to the global connectedness of actor network theory. In his essay, "Steps to an ecology of place," Thrift argues that the dynamic, numenal reading of place, which he calls an "ecological" reading, is a corrective to the deficiencies of actor network theory. He praises actor network theory for its description of the dynamic of nature where parts become novel wholes, but these networks are built in space and are disconnected from place.[195] Place captures the sense of embodiment in the physicality of the world which is missing from actor network theory. He argues that the numinous "haunting" of our engagement with place involves three kinds of attunement to place: emotion, memory, and language. Although this is unacknowledged by Thrift, these three attunements happen to be fundamental components of narrative. Thrift concludes that "the ecology of place is a rich and varied spectral gathering, an articulation of presences…and it is (a) new style of describing becoming…which is allowing a different and more open sense of place to make its way into the open."[196]

Yet, it is not clear that Thrift grasps the complexity of ecology as a metaphor for articulating the presences of place, because he ignores the presence of nonhumans in his ecology of place. The necessary supplement to Thrift's ecology of place and Walter's placeways is to assert the role of nonhumans in the new ecology of place and placeways.

[195] Thrift in Massey, et.al. (1999) pp. 312.
[196] Thrift in Massey, et.al. (1999) pp. 316-17.

Casey has insisted that, "We need to reverse the usual assumptions and admit that place, the finite unit, is not (necessarily) human and that space, the more extensive notion, is the product of human thought of a particular historical era."[197] Accounts of urban space usually exclude nonhumans or conceptually confined them in "open space" or "green space," but these same nonhumans roam the city as urban wildlife or claim their own form of open space as marginal nature. Their claiming the shreds and scraps of urban space begins to transform these spaces into unique urban places that are nature/society coproductions. Comprehending the lifeworld of the wastelands requires an ecology of place.

The reassessment of place requires an engagement with ecology. Through this engagement with the ecology of place and nonhumans, new questions emerge about place as a collaborative creation of both human and nonhuman agency. In particular, ecology has reveled how disequilibrium dynamics must be central to any account of nature. These dynamics are heightened in the case of the urban wastelands and margins where marginal nature is encountered. Hence, with this multiplicity of agents engaged in creating place in wastelands, Walter's notion of placeways must be reintroduced to account for the complex nonequilibrium of the lifeways found there. Together they create a hybrid place that is not just a "cultural artifice" but home to the nature/society hybrid, marginal nature.

As I pointed out in the introduction, marginal nature is another shadow presence which engenders a lifeworld in the city, and, as this review has shown, our contemporary narratives of nature and methodologies of geography mostly ignore the lifeworld of

[197] Casey "Body, Self, Landscape: A Geophilosophical Inquiry into the Place-World" in Adams, Hoelscher, Till (2001) p. 420.

marginal nature. These narratives do shape the varieties of possibility for encounters and engagements with marginal nature, and they set the discursive conditions for its emergence from the shadows of awareness. Most importantly, they do not preclude that emergence. Marginal nature is neither pristine nor pastoral, and the varieties of possibility are open to more possibilities for new narratives of nature. We now can examine some actual engagements with marginal nature to see how new possibilities for accounts of marginal nature emerge in urban planning, urban ecology, and the literature of nature encounter.

Chapter 3

In the Wastelands: Marginal Nature and Urban Waste Space

Figure 3.1: Waller Creek at 7th Street, Austin, Texas July 2008 [compare to image page 38]

…**given that nature is not what we have imagined it to be, fixed in its identity and unrelated to societies, a crucial question remains as to what kinds of spaces there are for nature. What sorts of spaces can overcome the tendency to either assume nature is dead, or assume that it exists, neatly bounded, incarcerated in a self-sealed cell?**
– Steve Hinchliffe, *Geographies of Nature*[1]

…it is in those awkward-shaped parcels of ground – left over like a hem when the surrounding areas have been sewn up – often called 'marginal land'. These seem to be multiplying with the piecemeal extension of built-up areas: a sliver of land left over between two strictly rectangular factories, a disused car dump, the surrounds of an electricity substation. Nothing can be done with these patches. They are too small or misshapen to build on, too expensive to landscape. So they are simply ignored – at least until the bushes start shutting out the light from the machine shop.
- Richard Mabey, *The Unofficial Countryside*[2]

[1] Hinchliffe 2008, p. 3.
[2] Mabey (1973) p. 32.

The Improprieties of Waste Space

From the varieties of possibility, we turn to the actuality of nature in the urban landscape. The geography of marginal nature begins with the neglected spaces in the city that plants and animals can inhabit. These can be "slivers" of leftover marginal land or large parcels of vacant land, but all of this urban space is "wasteland" from the perspective of the economic and social functions of the city. Wasteland, vacant lot, derelict land, and brownfield are a few names for the kinds of spaces in which marginal nature makes a home. Wastelands and margins are common throughout the urban landscape from city centers to suburban fringes. Traditional narratives of good and bad urban space assess these waste spaces, labeling them as "wasteland" and "vacant/derelict land" in need of planning, management, and infill to be reclaimed for economic development and for proper social uses. This chapter focuses on the perspectives of urban designers, planners, and environmentalists who promote the appropriate uses of urban space.

Vacant land is a prime target for urban improvement schemes that replace marginal nature with what is viewed as appropriate land use. The list of social, economic, and environmental problems associated with waste space is long. Sites like vacant lots and brownfields can harbor pollution, vermin, and disease. They are portrayed as dangerous since they are used for illegal activity and since homeless people often utilize them as campsites, resulting in trash and trouble. The dominant view of urban waste space is that wastelands are "problem" sites for the institutions charged with maintaining public safety and environmental health. Proper management entails reclaiming control over these badlands through police surveillance and investment in

appropriate development. Narratives of redemption and restoration are used to justify turning negative spaces into positive spaces. However, there are social and environmental counter-narratives about positive values of these disreputable spaces.

The social counter-narratives are based on how urbanites utilize this kind of urban space as a different kind of "urban commons." This counter-narrative adds further complexity to the dualities entangled with this kind of urban space, because it suggests they can be viewed as liberated spaces beyond the control of planners and managers. In Kevin Lynch's posthumously published book, *Wasting Away*, he celebrates waste places for their social attractions,

> Many waste places have these ruinous attractions: release from control, free play for action and fantasy, rich and varied sensations. Thus children are attracted to vacant lots, scrub woods, back alleys, and unused hillsides…those screened, marginal, uncontrolled places where people can indulge in behavior that is proscribed and yet not harmful to others – are regularly threatened by clean-ups and yet are a necessity for supple society.[3]

Lynch's libertarian argument stands out in contrast to traditional urban design and planning narratives of waste space. He insists that allowing space for impropriety is necessary for society, and, just as "red-light" districts are part of urban culture, wastelands play a social role. Lynch appreciates wastelands as sites of freedom from surveillance and control for humans, but he acknowledges the negative aspects of the exercise of freedom that results in illegal waste dumping and contamination. The wastelands become unique spaces where freedom and marginality combine, but Lynch's social counter-narrative defines this wasteland solely as spaces for human activity.

The scrub woods themselves also find these spaces to be liberated zones where they find root-room to grow. The challenge for an environmental counter-narrative is to

[3] Lynch (1990) p. 26.

incorporate these weedy wastelands within the narrative of good nature. However, good urban nature is expected to stay put in sanctioned "open" or "green" spaces, like parks, preserves, and gardens, and the boundaries of these urban nature spaces are continuously transgressed by weedy marginal nature as it "invades" from the wastelands. Thus, urban environmentalists and nature preserve managers usually push to extend control over wastelands in order to restore them to culturally and ecologically sanctioned kinds of nature. Their control is also evidenced by the rhetorical embellishment of relabeling wastelands as "urban wildlands" or "open space" where sanctioned nature is officially cultivated and controlled. This renaming reconfigures expectations for what kind of nature is proper to these spaces. By examining the perspectives of urban designers, planners, and environmentalists, we will see how urban waste spaces are perceptual ecotones where the boundaries of proper and improper nature and society converge.

Figure 3.2: Street Marginal Habitat, Austin, Texas

What are the roots that clutch, what branches grow
Out of this stony rubbish? Son of man,
You cannot say, or guess, for you know only
A heap of broken images, where the sun beats,
And the dead tree gives no shelter, the cricket no relief,
And the dry stone no sound of water. Only
There is shadow under this red rock
(Come in under the shadow of this red rock),
And I will show you something different from either
Your shadow at morning striding behind you
Or your shadow at evening rising to meet you;
I will show you fear in a handful of dust.

- T.S. Eliot, The Wasteland[4]

Figure 3.3: Bricks and Vegetation, Austin, Texas

[4] Eliot (1922)

Elliot's "Wasteland" resonates with negative connotations of neglect, abandonment, and emptiness. Etymologically, wasteland has roots in the vastness of the barren, uninhabitable desert wilderness of Western biblical tradition. This linkage between wasteland and wilderness emerges in other ways in the discourse of marginal nature, but here it resonates through the basic spatial distinction between urban space inhabited by humans and space which is perceived as devoid of humans and "going to waste". "Waste" has roots in the Latin *vastare*, to lay waste, devastate - but as an adjective it evokes synonyms like discarded, worthless, valueless, profitless, useless, empty, barren, dreary, uninhabited, desolate, superfluous, unnecessary, functionless, purposeless. Indeed, wasteland warrants each of these adjectives when viewed from the perspective of urban growth and management in a narrow capitalist sense, but, as noted above, there are other more positive interpretations of wastelands which engender a wasteland discourse of freedom and attraction. Much of this wasteland discourse echoes the criticisms of weedy, degraded marginal nature.

The list of types of urban waste space is meant to characterize the diversity and ubiquity of this kind of space rather than to account for the economic and social reasons for waste space. The common names for these spaces are socially determined. In that sense, this is a typology of social space presented in the discourse of urban space, not urban ecology. Moreover, since it is part of the character of marginal nature to ignore boundaries, these spaces mix, transgress, and hybridize within the dynamic mosaic of waste and neglect within the urban landscape. The names of waste spaces convey an impression of the diverse landscapes of marginal nature and they signal that imaginative

engagement with these types of liminal, polysemous sites evoke both good and bad associations.

Table 3.1 - Types of Urban Waste Spaces

Wastelands - patches	**Margins – edges and ledges**
• Vacant lots • Dumpsites • Industrial Wasteland - Brownfields - Greenfields - Quarries and Gravel Pits • Urban Infrastructure Land - Power plants - Water treatment plants Reservoirs - Wastewater treatment plants Sewage ponds Constructed wetlands - Stormwater retention structures • Unusable Land - bits and pieces Slopes, gullies, corners, fragments	• Urban waterways Canals, drainage channels ▪ Utility corridors • Waysides road waysides railway verges • Alleys – paved, unpaved, grass • Walkways and pathways • Fencelines • Walls and ledges • Pillars and bridge abutments

Wastelands are the home-realm of marginal nature in the built landscape, but the territory of marginal nature reaches beyond literal wasteland sites and infiltrates the city. Urban waste space is deliberately a broader term than the category of "vacant land" used by planners, because it also includes smaller patches and scraps of habitat on developed

sites, as well as literal wastelands like dumpsites and sewage ponds. Types of waste space include whole parcels, like the iconic vacant lot, which may be an undeveloped industrial tract or a small backlot in a residential neighborhood. Marginal nature ventures forth from these larger wastelands to colonize the neglected drainage channels, alleyways, forgotten corners of developed tracts, and even claims walls and fencelines, creating habitat wherever the flora and fauna of marginal nature can find a home.

The ecological discourse of biogeography and landscape ecology works well for describing the spatial patterns of marginal nature and urban waste space.[5] These waste spaces form a network of habitat patches connected by ragged corridors throughout the urban landscape. From the perspective of landscape ecology, these urban waste spaces fit neatly into the conceptual tools of scales, mosaics, patch dynamics, and edges.[6] For example, patch dynamics is a well developed theoretical approach to landscape ecology, which focuses on the structure and function of spatial heterogeneity in ecological systems at any scale. Patch dynamics theory highlights the mosaic or graded structure of spatial heterogeneity, the flows among patches, the role of patch boundaries, and the temporal changes in individual patches as well as the entire mosaic. The mosaic of wasteland patches forms familiar patterns to landscape ecologists even if the urban setting is unusual. As we will see in the next chapter, patch dynamics and other theories of landscape ecology are readily used by urban ecologists to study the biophysical, infrastructural, and land use networks of urban ecosystems.[7] In the current context of

[5] Crowe (1979), Sukopp (1995), Bradshaw (1999), Alberti, et al. (2003)
[6] For example see Brady, et al, (1979) *A typology for the Urban Ecosystem and its relationship to larger biogeographical landscape units*, and Alberti (2005) and Davies (2008) and more in the journals, *Urban Habitats, Urban Ecosystems,* and *Landscape and Urban Planning.*
[7] Landscape mapping is a significant part of the Urban LTER studies in Phoenix and Baltimore, online at http://caplter.asu.edu/home/index.jsp and http://www.beslter.org/index.html

urban space, landscape ecology provides a useful vocabulary for describing the spatial characteristics of urban waste space.

The types of urban waste space are very complex because the scale of individual patches ranges from large industrial sites of several thousand acres to residential vacant lots of a quarter acre and even ones too small or misshapen to use. Furthermore, an equally complex and variable network of habitat linkages weaves throughout the fabric of urban space connecting these patches through corridors of waterways, fencelines, alleyways, rail and road waysides, sidewalk edges, ditches, and wall ledges. Moreover, the entire mosaic of urban waste space is dynamic. Imagine the entire network of urban waste spaces undergoing change as the business of the city continuously disturbs this landscape pattern, as vacant lots are developed and then abandoned for varying lengths of time and as linkages are broken and remade when fencelines are cleared and weedy regrowth returns.[8] Economic and social factors play into the dynamics of urban waste space. This disturbance speeds or slows depending on local and global economic trends since, to echo the discourse of urban political ecology, urban waste space is enrolled in a globally connected network of capital and labor. Environmental management also affects this dynamic through maintenance schedules and budget constraints.

However, the present task is to delineate more stable types of urban waste space. These are the familiar wastelands in the city that are ubiquitous but frequently overlooked and avoided. A study of the amount and importance of vacant urban land from the Lincoln Institute in 1999 concluded that vacant land was part of every American city,

> Perhaps it is a field that neighborhood children have turned into a playground or an old, abandoned factory that is secured by chain-link fencing and "Keep Out" signs. It might be a surface parking lot wedged between two office towers, or a

[8] Bates (1935)(1937) and Weiss, Joachim, et al. (2005)

> wetland where a variety of plant life flourishes. It could be an overgrown lot littered with garbage or a crumbling row house where cars without tires are permanently parked. It might be the future site of a gated community or a retail mall.[9]

The Lincoln Institute study found that the urban vacant land comprised of parcels scattered throughout the urban landscape range from 4% to more than 40% of the total area of American cities and with an average of 15%. This total includes undisturbed open space through abandoned, contaminated brownfields. Researchers also found that this waste space of abandoned, idle, or leftover land is more common in sprawling, postindustrial cities.[10]

- Cities in the South tended to have the most vacant land while cities in the Northeast had the least. Cities in the South reported the highest proportion of vacant land (19.3 percent of total land area). On average, cities in the Northeast reported the lowest amount of vacant land (9.6 percent).

- Cities in the Sunbelt, experiencing high levels of growth in population and land area, reported high levels of vacant land. For example, between 1980 and 1995, Phoenix grew its population by 55 percent and its land area by 30 percent; it reported 43 percent of its land as vacant. Similar cities include Charlotte and San Antonio.[11]

No formal or standardized definition of vacant land exists. U.S. Census data contain information about vacant residential structures, but neither data on vacant land nor data on non-residential structures. Moreover, the common designation of vacant land can refer to many different types of unutilized or underutilized parcels, such as perimeter agricultural land, uncultivated former farmland, recently razed land, derelict land, land with abandoned buildings and structures like brownfields or greenfields. This broad and varied designation makes it difficult to measure the amount of vacant land accurately.

[9] Bowman and Pagano (2004) p. 1.
[10] Bowman and Pagano (2004) p. 26.
[11] Bowman and Pagano (2004) Chap. 2.

Regardless of exact measure, the reasons for vacancy are linked to particular types of vacant land. Northam suggests five types of vacant land based on reasons for vacancy,

1. remnants that are small and irregular in shape that have not been developed in the past or that have long been idle
2. parcels with physical limitations that prohibit development like a steep slope or flood plain which can be quite large tracts
3. corporate reserve tracts – land held for future expansion or relocation
4. public reserve tracts – land purchased and set aside for future public use when development funds are available, frequently parkland is acquired in this way
5. land held for speculation in anticipation of future profit[12]

Although this is not an exhaustive list, it gives a good idea of the range of reasons for vacant lands. However, the main one is neglect, and so any neglected urban space is an opportunity for marginal nature. Life occupies neglected overgrown corners of developed land and runs along untended waterways and other waysides and fills more irregular urban spaces that allow for room to grow. Any urban waste space is a potential home for marginal nature.

Figure 3.4: Alleyway habitat, Austin, Texas

[12] Northam (1971) 345.

Urban Planning and Vacant Land: Traditional Views of Urban Waste Space

Figure 3.5: Vacant Lot for Lease, Austin, Texas

> **Vacant land is both ubiquitous and diverse and both a problem *and* a resource for city governments. Vacant land remains a key competitive asset for implementing a number of economic development strategies.**
>
> **- Bowman and Pagano. *Terra Incognita: Vacant Land and Urban Strategies*** [13]

Urban planning has a totalizing view of the city. All space is subject to planning, and idle spaces need a human purpose and a human plan. Planners perceive idle spaces

[13] Bowman and Pagano (2004) p. 1.

as "vacant land" or terra incognita that will be mapped and occupied.[14] Vacant land only has meaning when it fulfills a social and economic need, and so this idle land presents a problem for land use planners. The association of vacant land and "urban blight" effectively uses the rhetoric of disease to further reinforce the idea that vacant land is bad space. Planners then reframe the problem as a "hidden resource" for urban development, making unproductive land socially and economically productive. Hence vacant land is a prime target for "infill" development that supports denser urban cores. This New Urbanism draws on the narrative of redemptive nature in which nature is used strategically to heal social ills and improve human health. In the context of planning in Portland, Pyle directly addressed the problem that increased density presents for waste space,

> How much better if planners incorporated retention of unmanicured open spaces in their urban growth master plans. Unfortunately and ironically, exactly the opposite often occurs, for a conservation rationale: to prevent sprawl at the edges of towns the "New Urbanism" has embraced the concept of *infilling* with gusto—maximizing the density of development inside of cities instead of allowing it to dribble out the edges as always before. While infilling may help to maintain city limits, it is anathema for the lovers of vacant lots and "waste ground."[15]

Land use that maximizes density of development minimizes waste space for unplanned nature. As Pyle points out, the irony is that increased urban density is promoted as a way to conserve habitat outside the city. Parkland and open space does figure into these New Urbanism plans, but these planned green spaces are reserved for managed nature. The result is that marginal nature is replaced by officially sanctioned nature or development.

[14] Bowman and Pagano (2004) *Terra Incognita: Vacant Land and Urban Strategies.*
[15] Pyle in Kahn and Kellert (2002) p.321.

This chart from an urban planning study of Pittsburgh[16] succinctly summarizes this traditional narrative of the negative influences of vacant land and the positive recasting of them as potential sites for reclamation:

Putting Vacant Lots into Perspective

The City of Pittsburgh has no easy way of categorizing its vacant land. In fact, there is no one unifying definition used throughout the city. In some databases, vacant land means any land without a structure. Other databases classify it as any structure or parcel with no residents. There is no database that easily defines vacant land (no structure) that is un-maintained and not part of a right of way or park. Most of this variety of vacant land, (estimated between 6,000 and 12,000 lots), is symptomatic of communities with high levels of disinvestment, absentee landlords, and underserved low income residents. Vacant land can also be a cause, however, of many negative characteristics associated with urban blight. Thus, un-maintained spaces in the midst of urban communities create a vicious circle that many communities do not have resources to address.

Negative Influences, Positive Opportunities

A growing body of statistical research revolving around vacant lot issues in urban areas point toward direct, empirical correlations between vacancy and a variety of negative economic, environmental, and social influences. Thankfully, there is a flip side - equally strong evidence that reversing vacancy leads to stronger, healthier neighborhoods.

Negative Influences of Vacant Lots

The impact of vacant lots reaches beyond visual blight and decay, negatively affecting communities across economic, environmental, and social bounds.

Economic Influences

A study of vacant lots in Philadelphia estimated that the city and closely related public agencies spent $1.8 million annually on cleaning vacant lots.

Neighborhood blocks with higher concentration of unmanaged vacant lots decreased property values by close to 18% (Wachter, The Wharton School)

Environmental Influences

Vacant Lots are targets for litter, illegal dumping, and criminal activity.

Security Influences

The City of Richmond, Virginia found that of all the economic and demographic variables tested, vacant properties had the highest correlation to the incidence of crime. (The National Vacant Properties Campaign)

Positive Influences through Greening Strategies

Strategies that address vacant land through green means are proven to have positive effects on communities in economically feasible ways.

Economic Influences

Cleaning and greening of vacant lots can increase adjacent property values by as much as 30% (Wachter, The Wharton School)

Planting a tree within 50 feet of a house can increase its value by about 9% (Wachter, The Wharton School)

Location of a house within ¼ mile from a park increased property values by 10% (Wachter, The Wharton School)

Vacant properties located near newly constructed parks were the first to sell during a revitalization project in North Philadelphia. (Philadelphia Green - Urban Impact)

Health & Recreation Influences

When people have access to parks, they exercise more. Access to places for physical activity leads to a 25.6% increase in the percentage of people exercising on three or more days a week (Trust for Public Land)

Table 3.2: "Greening Vacant Land for Pittsburgh's Sustainable Neighborhood Revitalization"

[16] From Pittsburgh Green Forum Report, "Greening Vacant Land for Pittsburgh's Sustainable Neighborhood Revitalization" November 2006 Carnegie Mellon University H. John Heinz III School of Public Policy and Management Systems Synthesis Team

The argument of this Green Forum Report is that green nature of the right kind has instrumental value in healing the blight of unproductive vacant land. The "greening strategies" proposed here would fill vacant lots with parks to increase property values, and they even claim that parks lead to a 25.6% increase in people exercising. From an economic perspective, vacant land is a sign of economic stagnation or urban decay which generates little tax revenue for the city. Moreover, if not developed as parks, these spaces are often the target of urban agriculture for community gardens or urban farms which also inadvertently reclaims these wastelands from marginal nature.[17] Thus, green urban planning strategies supported by environmentalists usually do not include urban waste space as a positive green attribute of the urban landscape, but rather they require that the marginal nature found there be replaced by officially sanctioned nature.

Even in England, where wastelands are recognized by some as sites of ecological value for urban biodiversity,[18] a similar program of open space intervention is used by urban planners to support the reclamation of "wasted space." It is lead by a governmental body, the Commission for Architecture and the Built Environment (CABE), the government's advisory group on architecture, urban design and public space, and it is a well funded project to transform "wasted space" into public open space.

[17] Francis, et al. (1984) Community Open Space and Fox, et al. (1985) *Struggle for Space: the Greening of New York City 1970-1984*.
[18] Identified in the UK Biodiversity Action Plan as Open Mosaic Habitats on Previously Developed Land http://www.ukbap.org.uk/PriorityHabitats.aspx accessed November 7, 2009. And the Wildlife Trust for Birmingham and the Black Country. Habitat Action Plan 2005. Urban "Wasteland". http://www.wildlifetrust.org.uk/urbanwt/ecorecord/bap/html/main.htm. Last access date: 10/06/09.

The main webpage from their "It's Your Space" website[19] utilizes similar rhetoric to the American open space efforts -

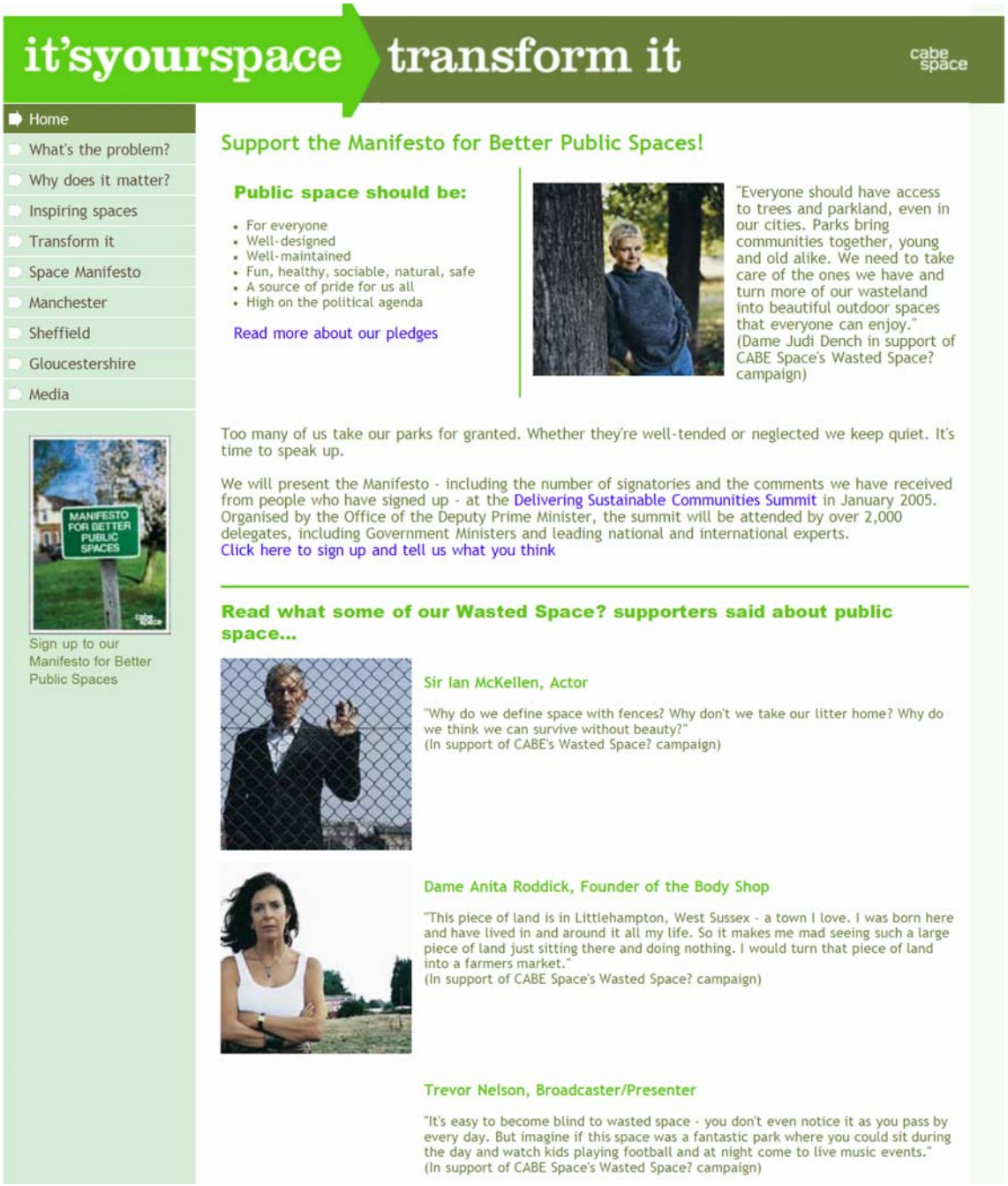

Figure 3.6: "It's Your Space" website

[19] "It's Your Space" website http://www.itsyourspace.org.uk/whatstheproblem.asp[accessed 3/18/2009 2:04:03 PM]

The use of celebrities enforces the popular appeal and unquestioned correctness of the urban planning project of intervening in waste space. Dame Judi Dench invokes the theme of transforming the wasteland into parkland which brings them into recognized categories of beauty for urban nature landscapes. Sir Ian McKellen follows with further landscape expectations for sanctioned urban nature in the form of rhetorical questions about litter and beauty. The narrative is rounded out with the perceptions that the wastelands sit and do nothing and are invisible until defined by socially acceptable human activity. Unquestioned in this rhetoric is the appropriateness of the interventions proposed to reclaim these waste spaces or if there are qualities of urban waste space or social virtues found there that will be lost through this intervention. Thus, even in a different cultural context where wastelands are more accepted for their value as urban habitat, the dominant discourse of urban planning calls for their conversion into pastoral parkland or green gardens.

The High Line in New York City is an example of parkland reclamation of derelict space that illustrates the irony of green reclamation. This defunct elevated railroad track wanders for a mile and a half of Manhattan's West Side from midtown to Greenwich Village. The park opened in 2009 after decades of work by the Friends of the High Line organization to raise tens of millions of dollars for transforming the weedy, rusting railway into a landscaped pedestrian park. The new park was praised by architectural critic Martin Filler as an example of "the imaginative greening of an urban waste space."[20] His assumption, like that of the Friends of the High Line, is that we can "green" these places that nature has already greened and improve on nature's work. Filler asserts,

[20] Filler (2009) p. 12.

> The High Line marks a radical departure from the Classical model of the public park as *rus in urbe* —"country in city"—epitomized by London's Hyde Park and New York's Central Park, which allow one to imagine having been transported to an idyllic countryside. What makes walking the High Line such an intriguing experience is the way in which it celebrates rather than obviates the collision of natural and manmade environments.[21]

However, although the setting is a manmade environment, the new park is a facsimile of the former biotic community that inhabited the rusting railway.

The "improvements" in the case of the High Line involved replacing the actual nonhuman community which inhabited the High Line with a landscape which mimics the appearance of the actual marginal nature that formerly existed. As Filler puts it, the High Line plantings are meant to look "messy," "unkempt," and "scruffy" and "less like a park and more like a scruffy wilderness," but the weeds have been banished.[22] Thus, native sumac is used since it is, "a shrub with compound leaves reminiscent of *Ailanthus altissima*, the weedlike "tree of heaven" apostrophized in Betty Smith's best-selling novel *A Tree Grows in Brooklyn* of 1943 as an archetypal urban survivor accustomed to the toughest settings. (Conservationists now discourage use of that aggressively invasive species.)"[23] Filler points out that the new gardens are "meant to evoke the lush, self-sown greenery that thrived on the High Line during its three decades of desuetude" and the landscape design is an attempt, "to recapture some semblance of that volunteer vegetation."[24] That semblance excludes the unacceptable non-native species that transgress the code of native species championed by American conservationists, urban biologists, restoration ecologists, and landscape architects. The new park on the High Line represents the fulfillment of urban planning's green strategies for waste space.

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[21] Filler (2009) p. 12.
[22] Filler (2009) p. 12.
[23] Filler (2009) p. 14. Also see Shah (1997), The Checkered Career of Ailanthus altissima.
[24] Filler (2009) p. 14.

The irony is that the humans professing to be friends of this marginal place evicted the non-humans who had made it home and who drew some humans to the derelict High Line in the beginning. The "scruffy wilderness" of the original High Line did not fulfill the requirements of proper nature, so it is now replaced by a carefully planted and tended simulacrum of the wild echoing the third nature of Renaissance gardens. Similar to the argument that the human touch undoes the pristine wilderness, human intervention in places like the High Line frequently results in the loss of the sense of place.

This is an example of the paradox of meddling in wastelands and margins. However well intended, such interventions by humans may result in the undoing of marginal nature in waste space. These habitats are accidental from our perspective, but they are deliberate expressions by the flora and fauna of marginal nature. As we impose our expectations of nature on volunteer habitats like the High Line, we decide which organisms are allowed to remain. Nature's plan for these sites is rejected by human planning, and the ruinous attractions created by nonhumans are undone or, in the case of the High Line, they are replaced by simulated plantings based on landscape design. The urban planning ideas of filling vacant land with development or greening it with parks and gardens displaces marginal nature. In this contest between human and nonhuman intentions, these particular ruderal nonhumans lose, or as Gerard Manley Hopkins puts it,

O if we but knew what we do
When we delve or hew –
Hack and rack the growing green!...

Where we, even where we mean
To mend her we end her,
When we hew or delve:
After-comers cannot guess the beauty been.[25]

[25] Hopkins (1995) from the poem Binsey Poplars.

Design with Nature: Urban Landscape Architecture

Figure 3.7: Vacant lot, Austin, Texas

> **Non-native urban weeds, like ailanthus, and the seedlings from nearby street trees have joined the original native plants, and now a broken umbrella, apple cores, and trash litter the tiny, fenced landscape. It looks little different from thousands of vacant lots in New York City, except that a plaque explains its foiled intent.**
>
> **- Anne Whiston Spirn, *The Granite Garden*[26]**

Urban landscape aesthetics contribute to the transformation of marginal nature when attempts are made to transform waste space into parkland. Landscape architects impose their designs on nature, or, as McHarg promoted, they can design with nature. McHarg's students have been influential in raising awareness of nature outside planned urban spaces. Two of them, Ann Spirn and Michael Hough, have been particularly influential. In *The Granite Garden,* the landscape architect Ann Spirn argues that, "the

[26] Spirn (1984) p. 198.

city is a granite garden, composed of many smaller gardens, set in a garden world. Parts of the granite garden are cultivated intensively, but the greater part is unrecognized and neglected."[27] Spirn's metaphor of the city as a granite garden resonates back through the narratives of nature to the classical idea of second nature as the beneficent cultivation of first nature. Her optimistic view is that we can design and manage the urban landscape like a garden with intensively managed spaces, but unlike most urban designers she recognizes and values nature that emerges on its own in waste space. She was trained by McHarg to prioritize incorporating nature throughout the urban landscape and to use "landscape architecture as the instrument of environmentalism."[28] This association positions Spirn's garden metaphor within the narratives of functional nature and restorative nature where nature is viewed as a tool for restoring better ecological functionality to the urban landscape.

Like Cronin, she argues that nature is a continuum, "with wilderness at one pole and the city at the other…the city is neither wholly natural nor wholly contrived. It is not 'unnatural' but, rather, a transformation of 'wild' nature by humankind to serve its own needs, just as agricultural fields are managed for food production and forests for timber… Nature in the city must be cultivated, like a garden, rather than ignored or subdued."[29] This totalizing vision of the city as a garden to be cultivated is a deliberate attempt to restore the classical idea of second nature in the postindustrial city and to reinterpret the relationship between the city and nature. Spirn's activist project is deliberately discursive as metaphor and language becomes a tool for reinterpreting our relationship to the urban environment. Echoing McHarg's command to design with nature, Spirn's command to

[27] Spirn (1984) p. 4.
[28] Spirn (2000), p.92.
[29] Spirn (1984) pp. 4-5.

cultivate the granite garden is another version of planning urban space, but she is proposing planning urban space not just as economic and social space for humans but as a coproduction of human society and nature.

Spirn includes urban waste space and nature found there in her inclusive re-reading of nature in the urban landscape,

> Remnants of native plant communities still abound in forgotten and neglected spots throughout the city…These 'urban wilds,' so expressive of nature's regenerative powers, and so poignant a counterpoint to dense city streets, are now becoming recognized as a resource.[30]

She characterizes nature in urban waste space as an environmental "resource" rather than an economic or social problem. Spirn utilizes the discourse of natural resource management to argue for the value of urban waste space, "Ailanthus, sumac, sunflowers, and other weedy wildflowers colonize the wastelands and forgotten corners of the city and provide, at no cost, many of the same services that the cultivated plant communities do. In urban wastelands, they decorate what would otherwise be a desolate environment."[31] The ecosystem services of wasteland plant communities are one aspect of this resource, but the aesthetic service of improving the "desolate environment" through the decorative enhancement of nature is also a service to human culture.[32] But she acknowledges that most urbanites are "blinded" by traditional standards of natural beauty in a garden where neatness, orderliness, and sanctioned species are the expectation. To her credit, Spirn does her best to push aesthetic expectations for cultivated urban nature by pointing to the practice of allowing "successional plant communities" to take over less used parkland like some European parks as a way to save

[30] Spirn (1984) p. 24.
[31] Spirn (1984) p. 183.
[32] Cohen (2005) for more on ecosystem services of non-native urban plant species.

on maintenance costs, but she admits that this is a hard sell in America since our expectations are for "tidy" pastoral parkland,

> The introduction of a "natural" successional plant community into a downtown American park is difficult and risky. There have been many failures and few successes. If the meadow aesthetic is to be appreciated in an urban setting, care must be taken to select attractive plants, to design the edge between park and adjacent streets and buildings with great care, to devise a simple maintenance program, and to solicit the participation of people who live and work nearby.[33]

Note how quickly, in order to comply with American expectations of nature, the necessary meddling with nature and social perceptions gets complicated and extensive.

Spirn uses the "Time Landscape" in New York City's Greenwich Village as an example of why meddling is necessary for these kinds of successional plant communities. In 1978, Alan Sonfist set out to deliberately recreate a facsimile of precolonial forest on a small, angular bit of marginal space. The southern end of the plot is meant to be early successional cedars, birches, witch hazel, and sassafras and the northern end is dominated by mature deciduous species like oak, elm, and ash. The plot was planted with the intention of minimal intervention as the trees grew into a living sculpture of forest. A few years later, Spirn visits the site and gives this assessment,

> Non-native urban weeds, like ailanthus, and the seedlings from nearby street trees have joined the original native plants, and now a broken umbrella, apple cores, and trash litter the tiny, fenced landscape. It looks little different from thousands of vacant lots in New York City, except that a plaque explains its foiled intent.[34]

While living in New York City in 1985, I discovered the Time Landscape on my walks through Greenwich Village. I confirm Spirn's description but I am less certain that its intent was foiled. This small scrap of trash strewn space surrounded by a metal fence could only be distinguished from a vacant lot by the sign designating it as living art.

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[33] Spirn (1984) p. 195.
[34] Spirn (1984) p. 198.

However, I found it a fascinating puzzle to try to figure out what species had been planted and which have arrived unassisted. The whole site had a derelict charm of an overgrown garden. Other visitors were less engaged by the landscape. In 1991, Michael Pollan declared the Time Landscape "an impenetrable tangle" in his book *Second Nature*.[35] By 2000, Kelsch describes the interventions of the neighborhood stewards and city staff,

> …(one neighbor) voluntarily cares for the project, gradually pruning out non-native species and planting native ones. Her decisions about what to leave and what to pull out are very personal, but there is no question that she is having a significant impact on the forest. Many people thank her for caring for it, though one man told her that she shouldn't be there because the site is supposed to be "natural."[36]

By 2007, local attitudes toward the nature in Time Landscape were divided with disputes over the lack of maintenance and demands for the City to remove garbage and trim undergrowth and remove invasive species. Sonfist argued against the intervention, "This is an open lab, not an enclosed landscape. The intention was never to keep out all nonnative species, but rather to see how they come into the space with time." [37]

This complex social and ecological engagement with a deliberate piece of living art that grows into a seeming/real vacant lot illustrates the tensions unleashed when we alter these marginal spaces for human purposes. Ironically, Sonfist's original intention was to educate New Yorkers about indigenous landscapes and ecological processes like succession, and he has done just that but in ways that he did not anticipate. The range of reactions to this space is also indicative of the complex perceptions of urban nature in wastelands as untidy, weedy, and invasive. These perceptions strain against Spirn's

[35] Pollan (1991) in the evocatively titled chapter, "Weeds are us" p. 133.
[36] Kelsch "Constructions of American Forests: Four Landscapes, Four Readings," in Conan (2000) p 169.
[37] Bloomgarden-Smoke (2007)

claim that these urban waste spaces can be viewed as urban wilds and recognized as a resource. The nature which regenerates may not be the nature we expect or we want. Thus, the granite garden is not so easy to cultivate without the paradox of meddling producing unanticipated problems.

Part of the problem for Spirn and other landscape architects and urban designers is the belief that all residents in the granite garden passively accept human cultivation. The weeds may have intentions and plans that match the traditional definition as "plants out of place." Other landscape architects influenced by McHarg have drawn on the functional narrative of urban nature and the discourse of urban ecology in order to promote acceptance of marginal nature. In *Cities and Natural Process*, Michael Hough relies on the metaphor of "natural process" rather than pastoral metaphors of gardens to support his argument for design with nature.[38] Like McHarg, he conceptualizes the city as an urban ecosystem within a surrounding countryside ecosystem connected by natural processes and flows, and he argues that the sustainability of cities should mimic self-sustaining ecosystems. He perceives two landscapes coexisting in the city, "the first is the nurtured 'pedigreed' landscape of mown turf, flowerbeds, trees, fountains and planned places everywhere that have traditionally been the focus of civic design…the second is the fortuitous landscape of naturalized urban plants and flooded places left after rain, that may be found in the forgotten places of the city.[39] The first landscape requires constant inputs of resources and labor to maintain them. In contrast, Hough celebrates the self-sustaining ecology of the fortuitous landscape and the ecosystem services supported by this nature in the margins. It is here that we find,

[38] Hough (1995)
[39] Hough (1995) p. 6.

> naturalized and evolving urban plant communities, flourishing in the flooded places left after rain; plants, emerging through gratings and cracks in the pavement, that speak to the amazing adaptive power of nature; fortuitous meadows that support a marvelous variety of butterflies, animals, and birds; places where poor drainage systems have created small wetlands that help sustain a stable urban hydrologic balance and beneficial microclimate; sewage lagoons that store the wastes of the city and provide rich and diverse habitat for shorebird populations.[40]

His laudatory reading of the fortuitous landscape fits neatly within the narrative of functional nature where biodiversity, hydrology, and waste treatment are part of the urban planning and management.[41]

However, the unplanned fortuitous nature which Hough suggests should be encouraged as a second landscape of nature in the city challenges his own program of a rationally planned integration of nature in the city, since by definition fortuitous habitat is unplanned, self actualized, adventitious (and often perceived as an invasion or rebellion). This kind of nature does not always do what it is told, nor does it always do what we expect it to do. Its amazing adaptive power still does not make it the nature that we like to welcome into the city. By drawing attention to these urban waste spaces as cures for "environmental sterility and sensory undernourishment," he sets up expectations that this nature will behave like officially sanctioned pedigreed nature which knows its place. All goes well until weeds invade the park.

So the supporters of design with nature acknowledge life in urban waste spaces, as both charming, functional additions to the granite garden and as fortuitous, self sustaining landscapes. However, they struggle to accommodate unplanned urban space and marginal nature in their program of deliberate renewal of nature in the city. These urban landscape architects are designers of nature in the city, which usually is restricted

[40] Hough in Rutherford (1994) pp. 41-2.
[41] Sukopp (1979)(1995)

to vegetation design rather than the full cosmopolitan community of the marginal fauna. Although they recognize nature as an active subject also inhabiting the built landscape, they do not fully appreciate that this subject behaves differently than the pedigreed nature in the garden. It defies husbandry, and it resists our attempts to manage it. Yet, the attractions of this fortuitous habitat still draw people to the wastelands, and some to seek ways to protect it as open space. However, as we saw in the case of the High Line, the paradox of meddling creates unexpected problems for nonhuman residents of waste spaces as humans seek to improve this marginal nature. Thus, in contrast to urban planners focus on waste space as social space, the shift to viewing waste space as a space for nature requires an assessment of both society and nature. The metaphor of the city as a garden captures some of the idea of coproduction of waste space landscapes, but it accentuates the expectations for cultivating appropriate nature in the margins.

Figure 3.8: Hornsby Bend sewage ponds, Austin, Texas

Nature and Urban Open Space

Figure 3.9: Students at Hornsby Bend

What, to a curious kid, is less vacant than a vacant lot? Less wasted than waste ground?

– Robert Michael Pyle, *The Thunder Tree*[42]

In America, "open space" is a term used by public space advocates like the Trust for Public Land to designate spaces for nature in the city. Advocates apply it mainly to publicly owned land with public access, but that excludes some urban open space recognized by urban planners. Open space can include land with little or no public access, such as groundwater recharge and urban watershed management including riparian buffers along urban rivers and streams, land for wildlife conservation or scenic conservation, and private land protected by conservation easements or some other

[42] Pyle (1993) p. 149.

limitation on development rights. These various spaces are gathered under the collective title of "open space" to indicate that these spaces are actively managed for nature and that they are officially sanctioned "natural areas" in the urban landscape.

The seemingly benign idea of incorporating open space into urban planning would on the surface appear to support protecting habitat in urban waste space under this broad term. However, the designation of open space in some form usually impacts marginal nature in wastelands because open space requires active land management to assure that it is occupied by appropriate types of nature. This management imposes fixed landscape standards on the different types of open space. The pastoral landscapes of parkland are managed for human use and aesthetics, and so understory vegetation is removed to enhance sightlines and fields are mowed for sports and other recreation. Community gardens and other urban agriculture claim open space and replace weeds with cultivated crops of (ironically) mostly non-native origins. Preserves and other conservation lands are usually managed to restore native habitats and exclude non-native species. These management goals mean that waste space that is included in open space is destined for some form of management which can mean the undoing of marginal nature.

Beyond the physical interventions of land management, open space designation of wastelands transforms the social expectations for nature encounter there. Lynch argued for the social necessity of these liberated wastelands where social controls are loosened and children and adults can enjoy freedom from social constraints. Robert Michael Pyle makes a similar argument for freedom from planning and control of wastelands based on his belief in the necessity of unmediated contact with the nature there. For Pyle, they function like an American commons where trespass is both tolerated and part of the

attraction.[43] He argues that current urban generations are disconnected from firsthand experience of nature, and that these leftover lands are necessary for nature experience.[44] Pyle calls this disconnection the "extinction of experience" which he describes as occurring, "when experience of nature dries up within one's radius of reach – which is smaller for the very old, young, poor, and disabled – one tends to see less, know less, thus care less…I am convinced that this is one of the most insidious cycles driving the environmental crisis.[45] These marginal places can be nursery sites for "embryonic interest in natural history" which fulfills the need of fostering renewing generations of conservationists, and so he has a specific agenda for these kinds of places.

Pyle's awareness of the significance of urban waste spaces leads him to recognize the value of vacant lots and margins as sites of nature encounter in the city, and he defends them against misguided efforts to eliminate them in favor of urban density. These unique, memorable places cannot be replaced by a park or nature preserve, because such official open spaces are too manicured and managed and bounded by rules. Children especially need the freedom to explore nature without interpretive signs and naturalists programs which interfere with their spontaneous response to nature, and "they need to be able to do some clamber and damage. They need to be free to climb trees, muck about, catch things, and get wet—above all, to leave the trail."[46] Unmediated exploration of nature by children is a necessity uniquely fulfilled by wasteland because these spaces are unsupervised and unstructured "natural space." This freedom of

[43] Pyle in Hough and Cody (2000) p. 23.
[44] In America, there is a long tradition of this kind of concern stretching back at least to the Nature Study movement beginning in the late 1800's, see Schmitt (1969). Renewed concern seems to emerge at regular intervals, see Cobb, *The Ecology of Imagination in Childhood* (1977), Nabhan and Trimble, The Geography of Childhood: Why Children Need Wild Places (1994) and Louv, *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder* (2006).
[45] Pyle in Hough and Cody (2000) p. 22 and in Pyle (1993) Chapter 9 on the extinction of experience.
[46] Pyle in Kahn and Kellert (2002) p. 319.

encounter and learning is undone by the interventions of well intended open space planners and nature interpreters,

> But nature reserves and formal greenways are not enough to ensure connection. Such places, important as they are, invite a measured, restricted kind of contact. When children come along with an embryonic interest in natural history, they need free places for pottering, netting, catching, and watching…we all need spots near home where we can wander off a trail, lift a stone, poke about, and merely wonder: places where no interpretive signs intrude their message to rob our spontaneous response…For these purposes, nothing serves better than the hand-me-down habitats that lie somewhere between formal protection and development.[47]

These places need to remain free from supervision so that they retain a sense of openness and democracy of engagement. The accidental moment of nature amid urban ruins can be simulated perhaps, but one cannot recreate the experience of trespass and discovery offered by these urban waste spaces. To exert control and incorporate them as formal open space or nature reserve requires the imposition of management and undoes the very qualities that make these wastelands unique.

The liminal, polysemous qualities of urban waste space depend on marginality, and, when this kind of urban space is pulled out of the shadows and cleaned up, those qualities quickly fade away. Mabey ponders this problem at the end of *Unofficial Countryside* as he pays a visit to an abandoned overgrown brickyard where mounds of excavated sand and clay are covered in flowers and the pits have filled with water and aquatic life,

> What a place it would be for children! They could dip in the ponds, rummage through the piles of old wartime haversacks, and pick flowers to their heart's content – it would make no difference to the abundance of this place. But I doubt if they will get the chance. Such a desirable area of vacant ground, right on the edge of an expensive residential estate, will not stay as wasteland for long. It might be saved by being designated as a nature reserve (it is rich enough) and be improved into the bargain.

[47] Pyle (1993) p. 148.

> But I must confess that I cherish the hope that it will live out what little time is left to it unmolested by any humans, naturalists or not. They might keep the scrub back and introduce waterweeds to the ponds, but I fear they would lose the place its sense of wonder and surprise. Not many planned reserves could recreate the feeling of coming upon this place by accident: through the "executive villas," under the iron gate, past the crumbling brick ovens, already vanishing under the rose-bay, and on to this tangle of wildness, with Welsh poppies and teasels growing out of the mounds of bricks and broken glass.[48]

If one is wanted, is there a solution to this paradox of well intended human interventions undoing marginal nature? Since I have argued that the landscape of urban waste space is a coproduction of humans and nonhumans and since the intentions of human interventions are known, we need to understand more of the nonhuman lifeworld of these spaces to formulate alternative ways of intervening in wastelands which might preserve their character. The creativity and novelty of marginal nature, its opportunistic reclamation of urban wastelands and margins, reminds us that the built landscape is not just a homogeneous space of human action and domination but a heterogeneous nature/society hybrid. However, our perception of the built landscape as a nature/society coproduction is hampered by a narrative of urban space which delineates the value of the city by reference to human society only. And so the reinterpreting of urban waste space from the perspective of marginal nature requires us next to explore the ecology of wastelands and to assess the agency of the nonhuman collaborators in the creation and function of marginal nature.

[48] Mabey (1973) pp. 156-7.

Chapter 4

The Weeds and the Wild: Marginal Nature and Urban Ecology

Figure 4.1: Waller Creek Turtles, Austin, Texas

…the danger…is being tempted into some biological slumming. The habitats I've described in this book are in no way a substitute for the official countryside. Nor are they something to be cherished in their own right, necessarily.

- Richard Mabey, *Unofficial Countryside*[1]

(Wastelands)…have very high diversity (and) large connected vacant sites are particularly outstanding habitats, ranging from pioneer stages, in heavily disturbed areas, to pre-forest stages in others.

- Herbert Sukopp, *Development of flora and fauna in urban areas*[2]

[1] Mabey (1973), p. 13.
[2] Sukopp (1987) p. 41.

Biological Slumming in the Wastelands

Having located marginal nature in the landscape and having explored urban wastelands from outside and above as spaces filled with abstract nature, our pathway now enters the wastelands for an assessment of the biotic communities that inhabit them. A scientific mode of engagement with wasteland ecosystems holds the potential for a more objective and neutral narrative of marginal nature. However, we who study these fortuitous habitats are familiar with Mabey's ambivalence about his attraction to this marginal nature which he labels "biological slumming." This lifeworld is subject to a range of interpretive ecological readings: a weedland community of inappropriate nature, a cosmopolitan community of uniquely adapted ruderal organisms, or an invading force of alien species destroying the integrity of our homeland. There is some truth in each view, but all are influenced by cultural perceptions of good and bad nature. Thus, the assessment of the ecological standing of wasteland ecosystems is necessarily both scientific and cultural.

Wasteland ecology, also, requires addressing the question of nonhuman agency. The lifeworlds of wastelands and margins are coproductions of humans and nonhumans. They are the actualization of what Harvey called a "socioecological project," which result in a commingling of the proper and improper – social activities, natures, and agents. Urban waste spaces are filled with life through the agency of non-humans taking advantage of the open habitat and human neglect. These ruderal species claim the wastelands and thrive. Like Whatmore and Hinchliffe found through their encounters with water voles and biologists in a Birmingham wasteland, this starting point within the wasteland lifeworld grounds the abstract question of agency in the concrete immediacy

and the novel behavior of biological subjects, rather than in some abstract "nature" dispersed amidst urban space. Harvey noted the need for, "discursive strategies that allow us to talk freely about the production of nature…in which it's not simply the social that's the activating unit but also, scallops and mice and all the rest of them."[3] Here in the wasteland is the context of "all the rest of them," from nematodes to mice, from cryptogamic crust to ailanthus trees, whose collaboration in harsh environments produces marginal nature.[4] We will find that urban ecologists utilize a variety of discursive strategies to account for this collaborative agency.

Figure 4.2: Springtime in the Wasteland, Austin, Texas

[3] "Nature, politics, and possibilities: a debate and discussion with David Harvey and Donna Haraway", *Environment and Planning D: Society and Space* 1995, Volume 13, p. 515.
[4] Urban faunal studies range from soil organisms, Lussenhop (1973) and Smith (2006), to dung beetles, Wallace (2008), to rodents, Germaine (2001), to stray dogs, Beck (1973). Specific wasteland studies range from lichens Gilbert (1990) to centipedes Zapparoli (1997) and Shah (1997) Ailanthus.

Iterative Natures and Wasteland Ecology

Figure 4.3: Nonhuman agency - parking lot reclamation, Austin, Texas

> **… the reference point is not an original condition of a natural landscape, but rather a condition defined based on the current site potential and the greatest possible degree of self-regulation. From this perspective, therefore, the natural capacity for *process* is the central point, not a particular, retrospectively determined and often idealized, *picture* of nature.**
>
> **- Ingo Kowarik, *Urban Wild Woodlands*[5]**

The ecological setting for wasteland habitat begins with a presettlement ecosystem. In America, this setting is associated with the myth of wilderness as first nature. Wilderness is that pristine pre-Columbian place that continues be the standard of American nature despite the work of geographers, historians, and ecologists who have established the role of Native Americans in transforming the ecology of America.[6] For

[5] Kowarik (2005) p. 20.
[6] Denevan (1992), Crosby (1972)(1986), and Butzer (1992)

thousands of years, Native Americans had been busy manipulating and cultivating wilderness in ways that European American eyes failed to see, or chose not to acknowledge.[7] Now we reify native species as the embodiment of the original moment before our own arrival, a misapprehension bound up in the retrospective discourse of conservation biology and restoration ecology and then deployed as the focus of nature protection in America.

The issue of what is native or alien to a place is a question of biogeography which is transformed into scientific programs of conservation biology and restoration ecology. Here in the wastelands, the question of native species and first nature arises most sharply when a patch of remnant habitat is found. In the wastelands, these remnants are promoted as highly prized reminders of the past; benchmarks for restoration; and "shrines" for nature enthusiasts.[8] They are the standards used to judge the rest of wasteland nature and to label it as degraded habitat. The quest for these remnants is one aspect of engagement with wastelands, but one where only remnant shreds and scraps are valued. Habitat in urban waste space as a whole is devalued when compared to the few sites with remnant first nature. Moreover, this remnant first nature is the catalyst for restoration projects that seek to transform wastelands.

When no remnants are found, this ecological meddling in the margins can take the form of claiming them for the functional landscapes of second nature, which entails the transformation of the ecological community in wastelands for social purposes. The sports fields and lawns of urban pastoral parkland typically consist of non-native turf grasses. The reclamation of vacant lots into community gardens and urban farms

[7] Sauer (1950), Cronon (1983), Merchant (2003)
[8] Moskovits (2002) for Chicago, Houck (2000) for Portland

replaces wasteland weeds with cultivated plants, most of which ironically are non-native species. Vegetation managed as functional infrastructure in flood plains or along waterways also consists of native and non-native vegetation. Thus, the wastelands disappear as we turn them into landscapes of second nature.

The German urban ecologist, Ingo Kowarik, uses the iterative concept of nature to argue for appreciation of wasteland habitats.[9] The focus of his research is woodlands that grow without human help in urban industrial waste spaces. He argues that these "urban industrial woodlands" must be recognized as a distinct kind of ecological community. The woodlands that have grown in the derelict iron and steel foundries and mining areas in the Ruhr valley are well studied German examples.[10] They, also, have been extensively studied in old railyards, abandoned railways, and other vacant lands in Berlin. If these woodlands are compared to original mature woodlands outside of the city, they are classified as degraded woodlands. Kowarik argues that this comparison amounts to judging them with a retrospective standard of nature based on past conditions. He characterizes this standard as "a particular, retrospectively determined and often idealized, *picture* of nature."[11] This picture of nature is usually a first nature image of woodland. He argues for a "contemporaneous" approach to evaluating these urban woodlands which does not value them based on a retrospective judgment about the anthropogenic origin of the site. Additionally, they should be evaluated with a "prospective" approach which assesses their potential for capacity to grow without the intervention of humans. Both their self-generation and successful growth independent of

[9] Kowarik (2005)
[10] Dettmar (1999) and Weiss et.al. (2005)
[11] Kowarik (2005) p. 20.

human cultivation indicate their ecological functionality from the perspective of ecosystem process.

Based on these ecological attributes, Kowarik argues that urban industrial woodlands have more similarities to first nature woodland, to which they are usually negatively compared, than to cultivated, intensively managed forests or parkland/garden trees. He suggests a revision of the iterative classification of nature where urban industrial woodlands are recognized as a fourth nature following on traditional first and second nature and including the Renaissance idea of gardens as third nature. Fourth nature "encompasses the natural development that occurs independently on typical urban industrial sites, without horticultural planning or design," which emerges as a kind of "new wilderness."[12] One goal of his proposal is to shift the focus of urban nature conservation planning from particular sites which manifest first nature remnants or pastoral attributes to significant examples of each of the four types of nature.[13] A second goal is more controversial, especially in America, since he asserts a "fundamental equivalence of values" between these four kinds of nature which is a direct challenge to the primacy of wilderness,

> The second goal is to convey, through a simple distinction between natures of the first, second, third and fourth kind, that a fundamental equivalence of values exists among the four different nature types. The original nature, which is identified as the "correct" nature from a scientific perspective through the application of the retrospective perspective of naturalness…is therefore not automatically more valuable than the other manifestations of nature.[14]

Kowarik creates this new classification to overcome the prejudice that, even in Germany, sets first nature or preferred cultural landscapes as the correct nature to conserve. This

[12] Kowarik (2005) p.22.
[13] Kowarik (2005) p. 23.
[14] Kowarik (2005) p. 23.

sanctioning of original nature within conservation biology is based on a prejudice for wilderness or traditional cultural landscapes.[15] He is not alone in making this criticism of conservation biology, but his focus on urban nature conservation is relevant to assessing the value of marginal nature.[16]

Even though Kowarik is not arguing that first and fourth nature are the same ecological communities, his appeal to functionality and ecosystem processes undermines the dominance of first nature as the sole standard of appropriate nature. This socioecological revision contrasts sharply with the strong argument for pristine nature that we find in American environmental ethicists. For example, Katz argues that the intervention of human intentionality at any point undoes the authenticity of the natural, turns a once natural place into an artifact.[17] This absolutist belief in the authenticity of natural value relies on the strict divide between the natural and the human, with pristine nature as the only ground for natural value. Appeals to functionality also surfaced in debates between Katz and restoration ecologists. In this context, the debate was about the status of restored habitats compared to authentic first nature. Katz argued against functionality of an ecosystem as an equivalent value to authenticity because it generates the "substitution problem,"

> As long as our only concern is the ecological function of the system, then we may simply substitute more ecologically efficient components – as long as we have sufficient knowledge. This criterion eliminates any direct argument for the preservation of natural entities within the system. As long as ecological function is maintained, individuals may be replaced or destroyed.[18]

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[15] Kowarik (2005) p. 23.
[16] Zimmerer (2000) makes a similar argument for reassessing conservation priorities to include "hybrid-rich" second nature landscapes. For urban nature conservation priorities see Kendle and Forbes (1997) and McKinney (2002).
[17] Katz (1993) (1997) (2000)
[18] Katz (2000) p. 43. Tellingly, this argument relies on the idea of individuals being destroyed which appeals at the scale of megafauna, but it fails at the scale of microfauna like bacteria where individuals are harder to assess or admire.

Katz's fear is that there then is no end to substitution, and so all of first nature could be replaced by second nature as long as it functioned sufficiently well. "Nature itself – a nature unmodified by human intention, knowledge, technology, and power – will lose its value."[19] Between Katz and Kowarik is a divide that marks one of the key differences between American and European perceptions of nature. Kowarik is open to including in his definition of first nature areas that still have a strong connection to pristine ecosystems despite human impacts. This acceptance of some human involvement with habitats considered pristine acknowledges the reality of human habitation in ancient European natural landscapes. For Katz, this openness is the betrayal of the authenticity of pristine nature. Katz would object to the very notion of "new wilderness" since this wasteland habitat is just another human artifact. This same kind of reasoning influenced McKibben who announced the end of nature since humans have so modified the natural processes of the entire planet.[20]

The American idea of nature as pristine wilderness, also, generates another problem since, once altered, nature can never recover its pristine status. From Katz's perspective, there is no possibility of a new wilderness. American first nature is an object that can only be blemished and degraded, and it is not a resistant (or resilient) subject. The agency of nature emerges here again as a question since there is nothing that nature can do to recover its honor or its authenticity once human intervention sullies it. In contrast, Kowarik begins his ecological engagement with nature (urban or otherwise) from an analysis of its agency and its natural process. All four kinds of nature in

[19] Katz (2000) pp. 46-7. The science of restoration ecology has moved on to focus on the practical goal of restoring functionality to ecosystems, but the practitioners of restoration ecology who still privilege only native species are influenced by the authenticity debate.
[20] McKibben (1990)

Kowarik's scheme are mixtures of nonhuman and human agency with fourth nature being a unique response of nonhuman agency to human intervention and neglect. A defining characteristic of marginal nature is this opportunistic agency, this resistant pushing back against human intentions and transgressive infiltration of urban space through the wastelands. As a coproduction, marginal nature opens new possibilities for nature and human society to interact through commingling intentions. By looking more closely at some specific ecological engagements with urban wastelands, we can better understand how this commingling of agency occurs.

Figure 4.4: Hornsby Bend wasteland tree, Austin, Texas

Wasteland Ecology in Berlin: Cosmopolitan Communities and Fourth Nature

Figure 4.5: Südgelände Berlin
Image from Wikimedia Commons accessed October 5, 2009

> **(Wastelands are) the field laboratories where possibly new and well-adapted ecotypes of our native or naturalized wild plants will originate in the changed environmental conditions. Ecosystems which have developed in urban conditions may be the prevailing ecosystems of the future.**
>
> **- Herbert Sukopp, *The soil, flora, and vegetation of Berlin's waste lands*[21]**

The study of wasteland ecology in Berlin was largely a historical accident. Largely destroyed in World War II, extensive areas of the city could not be rebuilt before vegetation covered them. Of Berlin's 72 square kilometers in 1945, 28.5 square kilometers were destroyed.[22] Rubble mounds grew as bombed out areas were cleared and, although some bricks were reused for new building, large amounts of rubble remained and for West Berlin there was no accessible suburban area to which to move it. Existing parkland was used as dumps for this rubble which was piled up to simulate hills

[21] Sukopp (1979) p. 57.
[22] Lachmund (2003) p. 237.

and planted with vegetation. With the division of the city between east and west after the war, biologists and botanists at the Institute for Ecology in the Berlin Technical University in West Berlin adapted to their unique situation by studying these easily accessible rubble sites within the city.[23] This combination of large areas available for research and trained ecologists needing nearby sites meant that urban ecology research in Berlin followed a distinct path within the boundaries of West Berlin. Without access to the surrounding countryside and original habitats like other Western Europeans, these ecologists studied succession in rubble wastelands with the progressive perspective described by Kowarik.

A key figure in this research program is the botanist Herbert Sukopp who has studied Berlin's urban wastelands since the 1960s and who has championed urban ecology as a valuable part of the science of ecology.[24] One of his interests is the successional patterns of spontaneous vegetation in wastelands which he correlates with disturbance patterns. The irregular disturbance creates opportunities for different plant species, and the result is that wastelands "have very high diversity (and) large connected vacant sites are particularly outstanding habitats, ranging from pioneer stages, in heavily disturbed areas, to pre-forest stages in others."[25] This diversity contrasts with another feature of urban ecosystems that Sukopp highlights, "The dominance of certain plants and animals, particularly in the inner portions of European cities, is so complete that different cities can look very similar as far as their flora and fauna are concerned."[26] The ecosystems of urban regions of the world are coming to share a generalized global urban

[23] Lachmund (2003) pp. 244-5 and Jones (1957) for similar studies of London rubble sites.
[24] Sukopp (2002)
[25] Sukopp (1987) p. 41.
[26] Sukopp (1967) p. 11.

plant community based on climatic zones. This non-native community of travelers finding home in temperate zone urban landscapes utilizes humans to facilitate this distribution as we deliberately and inadvertently introduce them into cities. Working with Sukopp, Zerbe has measured enhanced biodiversity in Berlin wasteland sites, but they allow non-native species to count as enhancements to overall species diversity.[27] This list of the most common non-native species that spontaneously grow in Berlin includes many native North American species which have found their way to Europe, and similar lists of non-native urban plants for American cities show the impact of European species now considered common here,

Most frequent non-native tree species, occurring spontaneously in different habitats in the city of Berlin (data basis: 1,383 vegetation relevés and species lists)

Species	Wasteland	Built-up area	Green space	Forest	Wetland
Robinia pseudoacacia	●	●	●	●	●
Acer negundo	●	●	●	●	●
Prunus serotina	⊙	○	○	●	●
Quercus rubra	○	–	●	●	●
Aesculus hippocastanum	○	●	○	●	–
Ailanthus altissima	⊙	⊙	⊙	–	–
Populus alba	●	○	–	○	–
Malus domestica	○	⊙	○	○	–
Taxus baccata	–	○	⊙	○	–
Populus × canadensis	⊙	–	–	○	–
Prunus domestica	–	○	○	○	–
Juglans regia	–	–	○	○	–
Laburnum anagyroides	–	○	○	–	–
Pyrus communis	–	–	–	○	–
Prunus mahaleb	○	–	–	–	–
Ulmus pumila	–	–	○	–	–
Larix decidua	–	–	–	○	–
Picea abies	–	–	–	○	–

(●) High frequency, (⊙) medium frequency, (○) low frequency (data are taken from Kowarik, 1992).

Table 4.1: Berlin Non-native Tree Species, From Zerbe, et al. (2003)

Berlin wastelands are, "the field laboratories where possibly new and well-adapted ecotypes of our native or naturalized wild plants will originate in the changed environmental conditions. Ecosystems which have developed in urban conditions may be the prevailing ecosystems of the future."[28] For Sukopp, this last statement is not a lament

[27] Zerbe, et al. (2003)
[28] Sukopp (1979) p. 57.

but a fact. Urban ecosystems should be studied because the world is urbanizing, and wasteland ecosystems are the best sites for tracking this change since these volunteer habitats most readily exhibit the mixture of native and naturalizing species in cities.

Zerbe, Sukopp and other urban botanists have found that these wastelands can have greater biodiversity than other parts of the urban landscape. In Berlin, urban ecologists documented that intensive management in residential areas and parkland resulted in less diversity than that found in wastelands and margins. Additionally, the high number of species in less managed sites includes endangered species of plants, which in Berlin are most often found in wastelands and margins, "14 plant species endangered in Berlin were found mainly in marginal, less managed areas of lawns or tenant gardens."[29] The higher biodiversity in wastelands is in part the result of introduced species combining with remnant populations of native species. These Berlin ecologists accept alien species as part of the biodiversity of the city, and, from this perspective, they are seen as an enrichment of the urban ecosystem.[30] This openness to the reality of biotic mixing in urban ecosystems is shared by other European urban ecologists, and their studies show that increased biodiversity is the result of the combination of unique compounding of native and non-native species and of increased habitat diversity across the whole urban landscape.[31] Sukopp points out that enhanced diversity has been shown to be the case with urban ecosystems globally,

> Recent research in (biodiversity) revealed that not only natural and semi-natural landscapes can be highly diverse in flora, fauna, and habitats, but that urban and industrial areas also display a wide variety of habitats, communities, and organisms…Special attention is paid to non-native species, which…are

[29] Zerbe, Sukopp, et.al. (2002) p. 5.
[30] Lachmund (2004) p. 249.
[31] Pysek (1998). Schadek et.al (2008), Zerbe, et.al. (2004)

considered to play a major role in enhancing biological diversity in settlement areas.[32]

This favorable reading of urban biodiversity in contemporary urban ecology can be traced back to the work of ecologists in the wastelands of Berlin who embraced these habitats as legitimate places for scientific study of nature. With the fall of the Berlin Wall and the large-scale rebuilding of the city, these same places have become sites of struggle over open space in the city entangling Sukopp, Kowarik, and other urban ecologists in the social aspects of a Berlin wasteland.[33]

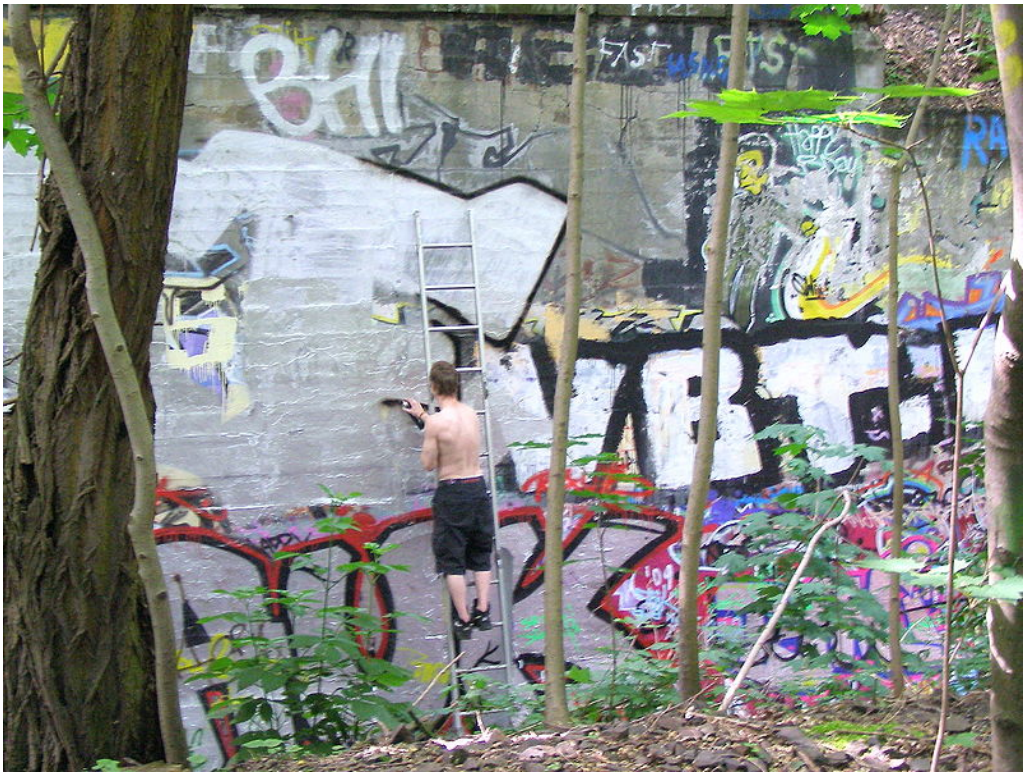

Figure 4.6: Graffiti at Work, Südgelände, Berlin
Image from Wikimedia Commons accessed October 5, 2009

[32] Zerbe, Sukopp, et.al. (2002) p. 2 .
[33] Lachmund (2003) and Kowarik (2005)

Südgelände Nature Park and New Wilderness

Figure 4.7: Südgelände Berlin woodland
Image from Wikimedia Commons accessed October 5, 2009

The original nature…which is identified as the "correct" nature from a scientific perspective through the application of the retrospective perspective of naturalness is therefore not automatically more valuable than the other manifestations of nature. An urban industrial woodland can also be identified as especially valuable.

- Ingo Kowarik, *Urban Wild Woodlands*[34]

According to a survey conducted in 1980, the area contained about 334 species of fern and blossom plants, about one third of Berlin's total… Among the animals of the Südgelände were, for example, foxes, falcons, and a rare species of spider which is usually only found in caverns in Southern France, and which might have been transported to Berlin by freight trains during the war. In 1981, three hitherto unknown species of beetle were discovered in the area.

- Jens Lachmund, *Knowing the Urban Wasteland: Ecological Expertise as Local Process*[35]

[34] Kowarik (2005) p. 23
[35] Lachmund (2004) p. 248

The Südgelände is an abandoned railyard in the Schöneberg district in the south of Berlin which grew into an urban woodland over the decades after World War II. Caught between East and West Berlin jurisdiction, the overgrown railyard was the focus of interest for botanists like Sukopp and Kowarik and local residents who, beginning in the late 1970s, pushed to have the site protected from development. This wasteland was one of the long term research sites that the Berlin ecologists have studied for decades, and local residents had grown used to having this unofficial commons nearby. The wasteland was designated for nature protection only after reunification in1995, when it was placed under the management of Grün Berlin, a quasi-governmental agency tasked with balancing the claims of various interest groups about the planning of the site. Planning the nature park at Südgelände proved challenging for reasons grounded in diverse perceptions of the value and kind of nature in the overgrown railyard.

Urban ecologists were one interest group that asserted itself in the planning of the nature park, and they utilized conventional nature conservation arguments for protecting the site based on their decades of scientific monitoring. The botanists like Sukopp and Kowarik pointed out that the site had high species diversity and that it was home to threatened species for Berlin. Biologists pointed out that the site was home to "a rare species of spider which is usually only found in caverns in Southern France, and which might have been transported to Berlin by freight trains during the war."[36] Additionally the site had good diversity of habitat types, which was a further reason for calling for preservation. Most interestingly, Kowarik used his four natures model to argue that the habitat at the site represented a new kind of nature that deserved conservation for its own

[36] Lachmund (2004) p. 248.

value.[37] His argument that this "new wilderness" was valuable as a unique expression of nature in a city was supported by the residents and conservationists who wanted the Südgelände protected as a nature park.

However, Kowarik's discursive positioning of the habitat as a "new wilderness" generated an issue familiar to all conservation biologists and urban nature preserve managers. The urban ecologists interpreted the meaning of "wilderness" differently than the non-scientist supporters of the new nature park.[38] The greatest species diversity of plants on the site is in the open meadow areas, and succession had the woodland rapidly encroaching on this high conservation value area. Kowarik and the other ecologists proposed intensive management in these meadows that involved killing the encroaching brush and trees to protect the species diversity of the new wilderness. To the non-scientists, this type of intervention seemed out of place in a "wilderness" where humans are by definition absent. The idea that nature had reconquered the site so captured the imaginations of the artists involved in the project that one of the artists insisted, "making decisions on which plants to accept and which to extinguish was a kind of fascism."[39] Thus, even in Germany, the discursive power of "wilderness" entails expectations that we cannot touch nature without undoing wilderness even when all agree that this "new wilderness" is defined in part by human intervention in nature.

A similar tension arose from a different quarter in regards to non-native species management in the park. The maintenance staff for Südgelände was drawn from the Berlin nature conservation administration, which oversees the nature preserves for native habitats on the edges of the city. In these Berlin nature preserves, non-native plant

[37] Lachmund (2004) p. 250.
[38] Lachmund (2004) p. 247.
[39] Lachmund (2004) p. 255.

species were the focus of eradication efforts. However, in the Südgelände, this staff was puzzled by urban ecologists telling them to avoid harming the same non-native species that they killed in the nature preserves, because the ecologists wanted to continue studying "natural" succession in the wasteland. Conservation management gets confusing when the weeds become the new wilderness. This disorientation stems in part from competing interpretations of wilderness; "wilderness" for Kowarik can include human traces, but "wilderness" for lay people implies no human interference. The disorientation in a wasteland is also the hybrid space itself which resists tropes like wilderness which imply the sole agency of nonhumans rather than its reality as a coproduction of nonhumans and humans.[40]

Figure 4.8: Wall for graffiti at the Südgelände, Berlin
Images from Wikimedia Commons accessed October 5, 2009

The artifacts of human society were caught up in these competing claims for design and management of this "new wilderness" as the local non-experts pushed back against restrictions on human access to parts of the central meadow which the ecologists

[40] Recall Turner's poem in Chapter 2 about his "not even natural corner of Texas."

insisted needed to be fenced off as a strictly protected area. The ecologists suggested a viewing platform at the edge of the meadow, and then they compromised by accepting a wooden foot bridge across part of the meadow. At this point, some of the artists intervened with a solution that utilized the very human artifacts which defined the old railyards of Südgelände.

> A group of metal sculpture artists who had their workshop in an old railway shed on the fringe of the Südgelände proposed an alternative design for the pathway. This "walkable sculpture" (begehbare Skulptur), was made of rusty steel and consisted of a narrow path which rested on low metal rolls. At some points, further sculptures also made out of rusty steel were added along the track. The rusty material and the wheel-like shape of the rolls were an explicit allusion to the history of the site as a railway station.[41]

Figure 4.9: Südgelände Berlin Walkway
Images from Wikimedia Commons accessed October 5, 2009

This creative melding of the aesthetic, the practical, and the natural taps into the unique sense of place which urban industrial wastelands can have. Here a design emerged from the site (rusting steel walkway) which links the past and future of the place, rather than the conventional structure of a nature park (wooden foot bridge). Moreover, it reflects the polysemous quality of this wasteland turned nature park which will retain its landscape history as an abandoned railyard both through the successional plant

[41] Lachmund (2004) p. 252.

community growing there and through the materials used for the pathway that leads visitors through the park.

In the Südgelände, like Mabey in the unofficial countryside, we lose our bearings in a landscape both industrial and natural. It is a seeming wilderness yet does not echo back our expectations of wilderness nor can it be protected in the same way as pristine nature. Here biodiversity is not just about native species. Here is a hybrid natural/cultural landscape that challenges our notions of a nature park or any other sort of parkland. Berliners respond to the idea that nature has reconquered this place, but they struggle to understand the implications of this assertive new nature. As Kowarik recognizes, marginal nature is more closely related to first nature, but it is not a new wilderness since it is not a return to that mythic setting. Rather, marginal nature is a new kind of nature with characteristics that we identify with wildness, since it "invades" or "reconquers" urban waste space during periods of desuetude when humans are busy developing other areas. As well it is stubbornly local, responding to unique initial conditions of a wasteland and then to unique disturbance patterns affected by a myriad of social causes from war to trash dumping. And so, it is also global, influenced by forces like war and commerce which bring together this mix of cosmopolitan flora and fauna.

In Südgelände, these characteristics of the nature growing at the site lead to close attention to the sense of place at this abandoned railyard, where the derelict structures were part of the nature park landscape. The comprehension of this kind of place required a melding of built and natural landscapes grounded in the particularity of this old reclaimed railyard,

> The juxtaposition of nature and the remnants from former railway traffic became a visual motif which articulated a new sense of place. The images of trees

> growing in the middle of former railway tracks or the silhouette of a wild grove which was dominated by the water tower of the former freight station became the emblematic representation of the place. This visual scenario evoked imaginations of nature which had reconquered human artifice.[42]

Although the idea of a wilderness with human traces strains American sensibilities about the concept of wilderness, in a German context amidst the regrowth of Berlin, this reading works. This interpretation of Südgelände is a way of mythologically accounting for the appeal of nature reconquering human artifice. The visual scenario of a new form of wilderness in the midst of Berlin invokes a familiar myth. Even if it strains the conceptual boundaries of wilderness, it works for discursively animating this place. Moreover, it establishes a complex aesthetic context for valuing the landscape of this urban wasteland as a new kind of natural place. Thus, in this context of Berlin, the engagement with wasteland place is grounded in plant ecology and a narrative of new wilderness bound up in urban memory of railyards reconquered by nature. This openness to allowing natural processes to continue contrasts with the design of the High Line where the fortuitous habitat was replaced with a simulated wildness.

Figure 4.10: Südgelände Berlin Structures
Images from Wikimedia Commons accessed October 5, 2009

[42] Lachmund (2004) p. 249-50.

American Urban Ecology and Native Biodiversity

Figure 4.11: Native hackberry butterflies on non-native poison hemlock
Hornsby Bend, Texas

> …**although wild and rather specialist species may be missing, cities are great havens for biodiversity, in terms of both ecology and species, even in industrial areas.**
>
> **- Anthony Bradshaw, *Natural Ecosystems in Cities: A Model for Cities*[43]**
>
> **(Urban growth) replaces the native species that are lost with widespread "weedy" nonnative species. This replacement constitutes the process of biotic homogenization that threatens to reduce the biological uniqueness of local ecosystems.**
>
> **- Michael McKinney, *Urbanization, biodiversity, and conservation*[44]**

American urban ecology is lacking in examples of prolonged engagement with urban wastelands like those in Europe.[45] There have been some survey studies of ruderal

[43] Bradshaw in Berkowitz, Nilon, and Hollweg (2003) p. 92.
[44] McKinney (2002) p. 883.
[45] Although there have been some periodic study of wasteland vegetation, there are no long term studies of wasteland vegetation comparable to Berlin. This is changing with the start of the LTER projects in Phoenix and Baltimore and other flora projects like those in New York, Moore (2003), and Chicago Moskovits (2002).

plant communities in vacant lots during the 1970's and 1980's.[46] In his 1985 study of the vacant lots in Wooster, Ohio, Whitney confirms Sukopp's recognition of a urban plant community mixing Old and New World temperate vegetation by documenting, "a strong resemblance to the ruderal plant communities of the more urbanized areas of central Europe. Apparently the exigencies of the urban environment have evoked a similar response in both the Old and the New Worlds."[47]

As noted above, this mixing of species in urban landscapes leads European urban ecologists to perceive urban ecosystems, and wastelands in particular, as high in biodiversity and worthy of ecological study.[48] This inclusive definition of biodiversity is at odds with the common paradigm of conservation biology in America which proclaims non-native invasive species as a global disaster on the scale of global climate change. E.O. Wilson and other biologists are rightly concerned with lost biodiversity, but in the hands of journalists this scientific concern becomes the transformation of the Earth into a desolate "planet of weeds" overrun by undesirable species, "In gardening usage of the word "weed" may be utterly subjective, indicating any plant you don't happen to like, but in ecological usage it has…firmer meanings. Biologists frequently talk of weedy species, meaning animals as well as plants."[49] This rhetorical extravagance of an environmental journalist is supported by the discourse of biologists who demonize certain species as weeds.

[46] Boehmer (1976), Crowe (1979) Westbrooks (1981), Whitney (1985)
[47] Whitney (1985) p. 158.
[48] Zerbe, Sukopp, et.al. (2002) p. 2.
[49] Quamman (1998) p. 67.

This obsession with species out of place is one of the central concerns of conservation biology and divides the world's biota into native and nonnative species.[50] The issue of the introduction of exotic species dominates the biological restoration narrative of American conservation biology which laments the loss of biodiversity by urbanization.[51] The discourse of American urban ecology, urban conservation biology, and restoration ecology is often preoccupied by a retrospective longing for lost pristine nature and native habitats, and the rhetoric of warfare with invasive non-native species combines with a vision of urban landscapes as weedlands to paint a bleak picture of urban ecosystems in America.[52] This preoccupation with the threat of non-native species displacing native species is insistently reinforced by a narrative of lost biodiversity,

> (Urban growth) replaces the native species that are lost with widespread "weedy" nonnative species. This replacement constitutes the process of biotic homogenization that threatens to reduce the biological uniqueness of local ecosystems. Urban-gradient studies show that, for many taxa, for example, plants and birds and butterflies, the number of nonnative species increases toward centers of urbanization, while the number of native species decreases.[53]

This comes from an article by McKinney in *Bioscience* about recent research on "Urbanization, Biodiversity, and Conservation." With the natives only focus, conservation biologists construct a bleak picture of lost biodiversity in biotically homogenized local ecosystems dominated by nonnative weeds, and, like environmental journalists, they utilize the power of rhetoric to further their cause. McKinney uses the concept of an "urban-rural gradient" through which species diversity is measured across

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[50] Peretti, (1998), Hall (2003)
[51] Sax and Gaines (2008) and Zimmer (2008) where he quotes Sax and Gaines, "But Dr. Sax, Dr. Gaines and several other researchers argue that attitudes about exotic species are too simplistic. While some invasions are indeed devastating, they often do not set off extinctions. They can even spur the evolution of new diversity. "I hate the 'exotics are evil' bit, because it's so unscientific," Dr. Sax said."
[52] See Warren (2007) "Perspectives on the 'alien' versus 'native' species debate: a critique of concepts, language and practice"
[53] McKinney (2002) p. 883.

the urban landscape from intensely developed core to rural fringe, to depict the core of American cities as conquered by invading nonnative species. The depiction exploits the idea that true nature is beyond the walls of the city, and the loss is shown with a smoothly falling curve depicting the loss of native species as one journeys from the countryside into the heart of a city, as seen in this chart from McKinney,

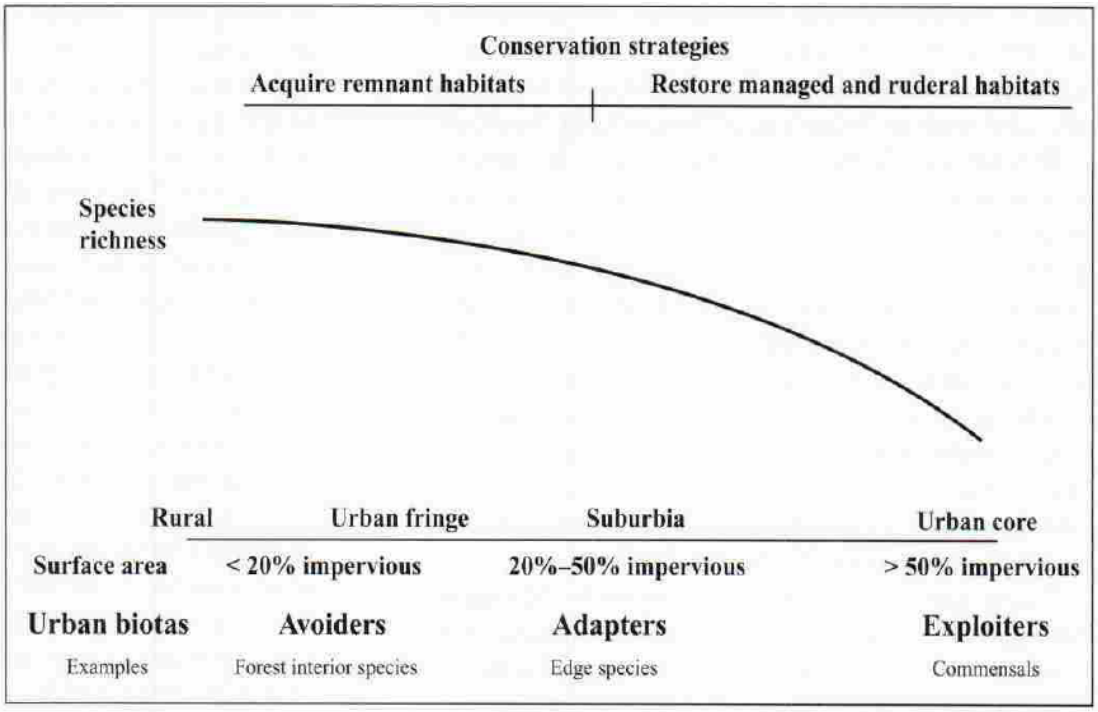

Figure 2. Urban–rural gradient. This is a very generalized and simplified depiction of changes in surface area, species richness, and composition, as compiled from a number of sources discussed in the text. Two basic conservation strategies with respect to urban sprawl are shown at the top.

Table 4.2: Native species biodiversity urban-rural gradient from McKinney (2002)

The key phrase in the chart caption is "very generalized" as indicated by the wide ranges of impervious cover assumptions about the segments of the gradient and the misleadingly smoothly declining curve. Also note the discursive strategy of characterizing species as "Avoiders" then "Adapters" and, at the low point of the arc, "Exploiters" who invade the urban core. Exploiters are, very generally, characterized as "weed species" which "probably represent the most homogenized of the world's biotas," and are "a very small

subset of the world's species" that "are not native to a region but tend to leapfrog from city to city," and the narrative finishes with the line-up of Quamman's usual suspects, "thus, rock doves, starlings, house sparrows, Norway rats, and the house mouse are found in all cities in Europe and North America."[54]

The simplicity of the smooth curve ignores what happens in areas of the city with higher heterogeneity in the landscape. McKinney glosses over this aberrant data in his generalization of urban degradation because his agenda behind the construct is to convince urbanites to support native biodiversity conservation by eliminating non-native species, all of which are bad by definition,

> Public biodiversity education would be most effective if we draw on these familiar suburban community assemblages and species to promote an understanding of concepts such as ecological succession and the role of native plants in promoting native animal diversity. Because of its enormous size, wealth, and political influence, a more ecologically informed suburban population could greatly improve the social support for conservation of native species in all ecosystems.[55]

American urban ecologists and conservation biologists complete devotion to retrospective ecology and pristine nature leads them to conceptualize the urban ecosystem in a way that excludes non-native species as legitimate members of that community. Conservation of native species is prioritized and used to legitimize the extermination of alien species and wastelands. From this conservation perspective, all ruderal habitats have value only if restored to native purity.[56] Little attention is given to whether this goal of native purity is realistic in urban ecosystems.

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[54] McKinney (2002) p. 888.
[55] McKinney (2002) p. 889.
[56] McKinney (2002) p. 886 and the same agenda is promoted by The Center for Urban Restoration Ecology, a collaboration between Rutgers University and Brooklyn Botanic Garden with the disturbing acronym CURE.

Figure 4.12: Texas Dandelion (False Dandelion) *Pyrrhopappus carolinianus*

"the sun never sets on the empire of the dandelion"[57]

- Alfred Crosby, *Ecological Imperialism*

"I'll learn'em to steal my house!" he cried. "I'll learn'em, I'll learn'em!"
"Don't say 'learn'em,' Toad," said the Rat, greatly shocked. "It's not good English."
"What are you always nagging at Toad for?" inquired the Badger, rather peevishly. "What's the matter with his English? It's the same what I use myself, and if it's good enough for me, it ought to be good enough for you!"
"I'm very sorry," said the Rat humbly. "Only I think it ought to be 'teach'em,' not 'learn'em.'"
"But we don't want to teach'em," replied the Badger. "We want to learn'em – learn'em, learn'em! And what's more, we're going to do it, too!"

- Kenneth Grahame, *The Wind in the Willows*[58]

[57] Crosby (1986) p. 7.
[58] Grahame (1908) p. 316

In America, restoration ecology grew out of efforts to restore forest and prairie habitat where it had been degraded or destroyed. As noted in Chapter 2, the restoration narrative may serve as a recovery story where the lost wilderness of America can be restored through the intervention of the humans who destroyed it. The near exclusive focus on native species sets the stage for conflict when the restoration projects are focused on urban ecosystems, and, as noted before, the ruderal community of marginal nature in urban waste space does not fare well within this restoration narrative. The most developed expression of the urban restoration zeal is found in Chicago where the recovery of indigenous habitats within the city takes the form of the grandly titled "Chicago Wilderness."

This coalition of governmental and non-governmental groups formed in 1996 for the protection and restoration of native biodiversity in the Chicago area on a landscape scale, and they discursively framed the project in familiar recovery rhetoric,

> The lands stretching south and west from the shores of Lake Michigan hold one of North America's great metropolises. Nearly eight million people live in northwestern Indiana, northeastern Illinois, and southeastern Wisconsin. Living among them, on islands of green, are thousands of native species of plants and animals, species that make up some of the rarest natural communities on earth. We call these communities and the lands and waters that are their homes Chicago Wilderness.[59]

The heroic task of restoration is to save the remnant "islands of green" and restore the lost glory of the former landscape.[60] Throughout the project, discursive strategies have been deliberately employed to foster public support for the effort, beginning with the displaced title for the project and its stated goal of reconnecting "a landless urban

[59] Chicago Wilderness atlas of biodiversity (1999) p. 5.
[60] This sense of heroic mission is demonstrated in the account of restoration in Chicago forest reserves, Stevens (1995) *Miracle under the Oaks: The Revival of Nature in America.*

population with the pulse of nature."[61] Here is a clever twisting of Cronin's call to rethink wilderness which on the surface laudably focuses on everyday urban landscapes. However, with the claim that they will reconnect a landless urban population with the pulse of nature, they reveal their belief that the city and the urban population is disconnected from proper nature and real land. The existing nature and open land in the city are not "real" nature or land, since this pulseless urban nature is not even alive. It must be restored to life with the appropriate communities of nature, "Communities like these—prairies, oak savannas, woodlands, marshes, fens, sedge meadows and others." [62]

Controversy arose in 1996 as people reacted to the removal of trees, in particular European buckthorn (Rhamnus cathartica), in forest preserves and other non-native plant species in nature preserves slated for tallgrass prairie and oak savannah restoration. The Chicago Sun-Times picked up the story and announced, "Half Million Trees May Face the Ax: DuPage Clears Forest Land to Create Prairies." Battles raged over the next years in the press and at public meetings between restorationists who were convinced of the correctness of their views of nature and opponents who resented being told that the nature was inauthentic and needed killing.[63] The battles were retold and the issues debated in the pages of *Restoration and Management Notes* (later changed to *Ecological Restoration*) for years. The echoes of those battles continue to reverberate through urban nature management and restoration ecology.

The echoes of the Chicago Wilderness narrative can be heard in most American cities where native nature is being restored and can be seen in print wherever the primacy

[61] Moskovits, et.al., (Spring, 2002) p. 154.
[62] Moskovits, et.al., (Spring, 2002) p. 154.
[63] The controversy is full recounted in Gobster and Hull (2000)

of native species is questioned.[64] My interest here is rethinking this controversy from the perspective of the marginal nature that was scorned by the Chicago Wilderness supporters. *An Atlas of Biodiversity* was the first publication of the Chicago Region Biodiversity Council, who started the Chicago Wilderness project.[65] Its sole focus was remnant communities of presettlement Chicago, and biodiversity was defined only in terms of native species. The first targets for restoration were managed nature preserves and reserves, and so the disputes arose over, not just the actual activities of the Chicago Wilderness restorationists, but over conflicting perceptions and expectations of urban nature. Unfortunately, by defining nature as only native species, the Chicago Wilderness restorationists precluded dialogue over any other sort of nature besides first nature. One remembrance from the controversy is indicative of the conflicts,

> The controversy has spawned an all-out war to win on both sides…According to the critics, this is because the restorationists never really wanted a dialogue. They wanted to persuade the public and teach but not listen. For the restorationists, the failure of a public discussion is due to the critics' dishonest refusal to accept the region's ecological peril and their desire to destroy the restoration movement with exaggeration and lies on behalf of some unrelated political agenda.[66]

The commonality of concern for "nature" is insufficient if the definitions of nature are incommensurable. Echoes of Toad from *The Wind in the Willows* return as one side means to "learn'em, learn'em, learn'em!" and the other reacts. However, it is not possible to overcome incommensurable definitions of nature, and the Chicago Wilderness restorationists still cling to the vision of purifying nature of the non-native weeds which degrade the urban landscape. Here the voice of Toad returns exclaiming, "…whack'em,

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[64] See letter exchange in *Orion* Jan 2007 between Pyle and Nature Conservancy representatives, and Del Tredici (2004) "Neocreationism and the illusion of ecological restoration"
[65] Sullivan (1997)
[66] Helford "Constructing Nature as Constructing Science: Expertise, Activist Science, and Public Conflict in the Chicago Wilderness," in Gobster and Hull (2000) p. 138.

and whack'em, and whack'em!" This exclusion included discursive practices involving the purging of references to nonnative species by restoration supporters in a brochure about plant species in a prairie preserve,

> … one of the species that was on the preserve we were promoting was called the prairie dandelion. Well, no one is going to get too excited about the conservation of a dandelion, even though this was a rare species. They changed the name to "prairie lion's tooth" to avoid it sounding like a weed. We just laughed about it.[67]

Here language is used to separate types of nature, the good from the bad. In this restoration narrative, there is no place for weeds or even a reference to weeds.[68]

Ultimately, the Chicago Wilderness is a totalizing vision of recovery of wilderness in the city which needs constant management and excludes any other laudable urban nature,

> …the proponents of prairie restoration could not accept the fact that not only are there different ways to "love nature," there are also different natures to love…Far from returning nature to an unmanaged pristine whole, the restorers created a landscape that required quite heavy-handed management regimes, which the unconverted found unacceptable.[69]

From the margins of this restoration narrative come the questions of marginal nature where wastelands are unmanaged, unacceptable nature in American cities. In wastelands, marginal nature has many of the characteristics of the nature that restorationists admire. It grows on its own. It is biologically diverse. It permeates the urban landscape in patches and corridors. It is close at hand for everyday reconnection to nature. However, it is not officially sanctioned nature of our choosing or our making and does not fit the retrospective recovery plot of this narrative of restored nature. Like in Chicago, urban restoration ecology is the attempt to make nature fulfill our expectations for proper

[67] Helford (2000) p. 135.
[68] More on language and restoration ecology in Hull and Robertson (2000) The Language of Nature Matters: We Need A More Public Ecology.
[69] Dizard, "Going Native: Second Thoughts on Restoration," in Minteer and Manning (2003) p. 50.

American nature mixed with nostalgia for the mythical lost Pre-Columbian wilderness.[70] In practice, this means creating a culture of nature dedicated to curing American cities of the disease of nonnative species – and the end of cosmopolitan marginal nature.

The Natural History of Unnatural Nature

Pale Male the famous redtail hawk
Performs wingstands high above midtown Manhattan
Circles around for one last pass over the park
Got his eye on a fat squirrel down there and a couple of pigeons
They got no place to run they got no place to hide
But Pale Male he's cool, see 'cause his breakfast ain't goin' nowhere
So he does a loop t loop for the tourists and the six o'clock news
Got him a penthouse view from the tip-top of the food chain, boys
He looks up and down on fifth avenue and says "God I love this town"
But life goes on down here below
And all us mortals struggle so
We laugh and cry
And live and die
That's how it goes
For all we know
Down here below

Pale male swimmin' in the air
Looks like he's in heaven up there
People sufferin' everywhere
But he don't care
But life goes on down here below
And all us mortals, struggle so
We laugh and cry

- Steve Earle[71]

It takes a relocated Texas songwriter to capture the irony of Pale Male, the red-tailed hawk who nests on the edge of Central Park in New York. This kind of ironic

[70] The University of Rutgers and the Brooklyn Botanical Garden have joined forces to create C.U.R.E. "The Center for Urban Restoration Ecology is the first scientific initiative in the U.S. established specifically to study and restore human-dominated lands"
[71] Steve Earle, "Down Here Below", song on *Washington Street Serenade* (2007)

perspective on urban wildlife, with a bird more at home in the city than the suffering humans down below, suggests the possibilities for reinterpreting narratives of nonhuman agency from the vantage point of city margins as habitat. We can imagine Pale Male as an agent making his way through the city picking off squirrels and courting and nesting while New Yorkers line up below to watch. He is an active subject intentionally using the city, rather than simply a passive object shuttled about in flows of urban metabolism. The mobility of urban wildlife like birds and large mammals allows them to exploit the entire city as habitat, but many come home to the wastelands as part of the marginal community. The agency of marginal nature is a more collective undertaking, a gathering of nonhumans in a collaborative project to make home in a particular place in the city. The less mobile members of marginal nature do not have the ability to elude the human interventions of restorationists or environmental managers, and so they take advantage of more discrete opportunities like high alkalinity of soil which some flora and fauna tolerate better than others. Soon the community has begun to gather and the coproduction of marginal nature has begun. Besides professional scientists and environmental managers, amateur naturalists seek out these marginal communities for nature encounter.

Urban naturalist observation ranges from birders tracking Pale Male to amateur botanizing in waysides. Natural history offers a different engagement with the flora and fauna in American wastelands reflected in 1940s and 1950s urban natural histories. Mabey references Fitter's *London's Natural History* (1945) as a guide to his exploration of London, and, in America, we have examples like Kieran's *A Natural History of New York* (1959), and both books include sewage ponds, waysides, and other habitats of

marginal nature as part of their natural histories. They both turn a naturalist's eye to the margins of the city and discover a richness of flora and fauna usually overlooked in the everyday landscape of the city. These books are survey accounts of native and non-native flora and fauna combined with environmental history. More recent natural histories of cities focus on native biodiversity. They are written by native species advocates who exclude or demonize non-native species in their account of appropriate nature in the city. The habitats that they celebrate tend to be remnant habitats within the city, rather than sewage ponds or vacant lots.[72]

These recent texts contrast with general urban nature guidebooks that usually include both native and non-native species. Garber updates this natural history tradition and documents this diversity of urban flora and fauna in a generalized presentation for his 1987 book about urban nature in America.[73] He focuses on the common urban organisms that can be found in American cities, including house flies and bamboo as part of his account of everyday urban nature. The Peterson nature guidebook series, also, recognizes everyday urban wildlife with its beginner's fieldguide. Again, native and non-native wildlife are included. In the book's introductory note from Roger Tory Peterson, he justifies the legitimacy of urban nature encounter with reference to the wild by insisting, "we don't have to go to wild places to find wildlife."[74]

The focus on urban wildlife or natural history of particular places presents opportunities for engaging marginal nature as a part of urban nature, rather than outright exclusion or condemnation of it. The place-based particularity of some natural history accounts of urban and suburban sites reveal a similar openness to all the organisms

[72] Other recent examples include Greenberg (2002) for Chicago, McCully (2007) for New York.
[73] Garber (1987), *The Urban Naturalist.*
[74] Landry (1994), *Peterson First Guide to Urban Wildlife*, p. 3.

making home in these everyday places. Popular natural history accounts of particular suburban backyards, like *A Lot of Insects* and *The Natural History of a Yard* were published in the 1940's and 1950's, and they focused on all the insects and wildlife found there.[75] Among contemporary place-based accounts, Gehlbach's *Messages from the Wild: An Almanac of Suburban Natural and Unnatural History* stands out as a long-term engagement with nature in a suburban ravine on the edge of Waco, Texas.[76] Gehlbach is a biologist who structures the book, like Mabey's, as a classic natural history journal stretching across a year, with the conventions of natural history writing observed with seasonal change monitored and species names listed. Like White's *Selborne*, Gehlbach bases the book on decades of observations, since he has lived near the ravine since the 1960s. Gehlbach's book focuses mostly on native species and a sharp contrast is drawn between the "natural and unnatural." For him, the natural is native species that would have inhabited the undamaged ravine before European settlement, and the unnatural is the non-native species found there now as the result of human disturbance. These discursive choices are another instance of the American ambiguity over the value of second nature landscapes. However, the book is more a celebration than a lament, as he details seasonal change and the diverse nonhuman occupancy of his suburban ravine.

An example of the natural history approach that focuses on nature in specific type of urban waste space is Vessel and Wong's *California Natural History Guide No. 50: Natural History of Vacant Lots* (1987). Vessel and Wong point out that, although Californian vacant lots contain plants specific to the climate of California, they contain a large number of plants that are common to most urban landscapes across America and

[75] Lutz (1941) and Dubkin (1953)
[76] Gehlbach (2002)

beyond. The presence of hardy exotic species provides the commonality, for instance Gingko trees (*Gingko biloba*) or Tree of Heaven (*Ailanthus altissima*) introduced from Asia or Field mustard (*Brassica campestris*) from Europe. In terms of plant species composition, these new habitats which emerge in urban margins reflect the cosmopolitan influence of urbanization. In Central Texas, this cosmopolitanism takes the form of Chinaberry (*Melia azedarach*), Japanese honeysuckle (*Lonicera japonica*) and Texas Oaks (*Quercus buckleyi*) growing together in marginal places. However, unlike Gehlbach's ambiguous valuation of this kind of habitat, this field guide simply catalogues the native and non-native species one might find in a vacant lot in California.

Houck and Cody's *Wild in the City: A Guide to Portland's Natural Areas* (2000), combines this place-based habitat account with an urban nature history approach as an collection of essays and site descriptions of the "natural areas" in and around Portland. The book is the distillation of almost twenty years of the journal *Urban Naturalist*, which documented the natural history of Portland including non-native species. Although utilizing the traditional discourse of wildness and green nature and focusing primarily on the pedigreed nature of parks and preserves, it openly addresses the attractions of marginal nature in wastewater ponds and vacant lots by identifying them as sites of nature encounter. Perhaps this is influenced by Robert Pyle who contributes an essay on the value of vacant lots entitled "No Vacancy" in which he argues, "The big urban wilds…are extraordinarily important. But the little places, the corners and crannies and ravines, the urban greenspaces write small, claim their own significance."[77] Pyle is insistent that more opportunities for nature encounter in cities are needed, and vacant lots

[77] Pyle in Houck and Cody (2000) p. 23.

and other waste spaces are important for urban access to nature. It is this shift from nature study to nature encounter that opens another pathway into marginal nature.

The focus of urban ecologists, biologists, and naturalists is on the nonhumans who inhabit the urban landscape, but, as we have seen in this chapter that nonhuman focus is insufficient to account for the socioecological community in the margins. For that account we must turn to writers like Pyle and Mabey who enter the wastelands in search of community with nonhumans and lose their bearings amidst the ruinous attractions of marginal nature. Urban ecology is one anchor point for taking bearings on nature in wastelands, but we have seen that these scientific readings are culturally influenced. Moreover, as these writers venture into the wastelands, the expectations derived from the scientific assessments of marginal nature shadow the experience of encounter with it. As we saw with Mabey, he qualified his attraction to marginal nature with the insistence that he was not condoning "biological slumming."[78] Thus, fitting way to end this chapter on ecology and habitat by going "biological slumming" with Mabey as he looks out across an abandoned water filled gravel pit on the edge of London,

> A red-crested pochard, a rare vagrant from Eastern Europe with a bill so luridly crimson that it looks like Bakelite. A solitary cormorant overhead, as dark and reptilian as a pterodactyl. Kingfishers, siskins, herons, teal.
>
> At times like this I would find in myself an affection for these grubby landscapes that I could never have predicted and would be hard put to excuse. Visually, they were without exception ugly. Although the healing processes of natural growth were everywhere in evidence (they were what I had been looking at the whole year), each one of these habitats represented an assault upon some green country. They had none of the restful predictability of ancient countryside, that feeling of seasoned flow and stability that you find in downland and forest.
>
> Yet it is the disorder and incongruity that I find so exciting and irresistible.[79]

[78] Mabey (1973), p. 13
[79] Mabey (1973) p. 154.

Chapter 5

Meaning in the Margins: Encounters with Marginal Nature

Figure 5.1: Blue Bonnet and Compost Pile, Hornsby Bend

Beautiful flower in your garden
But the most beautiful by far
Is the one growing wild in the garbage dump
Even here, even here, we are

- Paul Westerberg[1]

[1] Song by Paul Westerberg, "Even Here We Are" (*14 Songs*, 1993)

Urban Nature and Literature

Heidegger stresses that hermeneutical interpretation has ontological implications since it discloses worlds. Interpretation involves both the disclosure and the recovery of meaning. We have examined the lifeworld of the wastelands as space and ecology, and we have found varied perceptions of marginal nature from these perspectives. In this chapter, we follow nature writers into the wastelands and margins. Nature writing focuses primarily on remnant wilderness or pastoral nature. A subset of the genre does examine nature in cities, but it is dominated by accounts of urban wildlife or natural history.[2] These accounts may mention nature in wastelands and margins, but only a few writers directly seek out these habitats and assess their ecological and cultural meaning.[3]

From this limited set, I have selected key representative texts about encountering nature in wastelands and margins in order to illuminate the meaning of marginal nature. Each writer engages marginal nature from a different perspective and with different expectations for the outcome of the encounter. The discursive challenge for these writers is to find language to celebrate the weeds and their lifeworld. The strategies that they use to position marginal nature within the rhetorical boundaries of nature literature disclose new aspects of the wasteland world and point the way toward an ecology of place.

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[2] Lutz (1941) *A Lot of Insects: Entomology in a Suburban Garden* is a classic example of the natural history genre and Winn (1998) *Red-tails in Love: A Wildlife Drama in Central Park* for recent account of urban wildlife in New York, Bosselaar (2000) *Urban Nature: Poems about Wildlife in the City,* and Dixon (2002) *City Wilds: Essays and Stories about Urban Nature*.

[3] Some recent literature that indirectly addresses marginal nature: Sanders (1987) *The paradise of bombs*, Rockland (1994) *Snowshoeing through Sewers: Adventures in New York City, New Jersey, and Philadelphia.* Dillard (1987) *An American Childhood*, Sullivan (1998) *The Meadowlands: Wilderness on the Edge of a City,* Siebert (1998) *Wickerby: An Urban Pastoral*, Lamberton (2000) *Wilderness and Razor Wire: a naturalist's observations from prison*. Gehlbach (2002) *Messages from the Wild: An Almanac of Suburban Natural and Unnatural History*, and the poet Mary Oliver's essay about a Cape Cod garbage dump, "Waste Land: An Elegy," Oliver (2003).

Unofficial Countryside and Inventive Nature – London, England

Figure 5.2: Bald Cypress and Bridge, Austin, Texas

Richard Mabey's *Unofficial Countryside* sets the standard for the minute genre of marginal nature literature. As noted before, Mabey frames his year of exploration of "unofficial countryside" within the context of attitudes toward nature in the United Kingdom. "Our attitude towards nature is a strangely contradictory blend of romanticism and gloom. We imagine it to 'belong' in those watercolour landscapes where most of us would also like to live."[4] It is in reference to those Romantic landscapes that the British get their bearings on attitudes towards nature. The content of those Romantic watercolor

[4] Mabey (1973) p. 11.

paintings are visual counterparts to the poetry and prose of Southey, Wordsworth and other Nineteenth century Romantic celebrants of nature. Although in the 1800s, the Romantics wrote lyrically about wild and sublime landscapes, they were also attracted to the pastoral landscapes of the countryside and desolate ruins reclaimed by wild, unceasing Nature. Southey's poetic description of this reclamation portrays natural process as a belligerent force at war with the built landscape,

> So Nature wars with all the works of man.
> And, like himself, reduces back to earth
> His perishable piles. [5]

The bleak, burgeoning industrial cities of England were urban landscapes dominated by Blake's "dark, satanic mills" from which to escape through a healing engagement with nature. For Wordsworth, nature became a consoling presence of "a sense sublime of something far more deeply interfused" which balanced the changing relationship of humans and nature during the Industrial Age.[6] As pastoral second nature was overshadowed by degraded industrialized second nature, the Romantics embraced a faith in wild nature which could endure and recover from the ravages of humankind and redeem the world.[7] Mabey also employs this redemption narrative of nature as a cheering reminder of the power of nature to persist amidst urban rubble and grime,

> If the ability of wildlife to survive literally on our doorsteps is remarkable, its persistence in the face of this ceaseless change is amazing. It is also, I find, amazingly cheering. For it is a bleak view to see this story as nothing more than one of survival, with Nature irrevocably opposed to Man, forever just holding on. Looked at more hopefully it is a story of co-existence, of how it is possible for the natural world to live alongside man, even amongst his grimiest eyesores.[8]

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[5] "The Ruined Cottage," Robert Southey in Barrell, *A Book of English Pastoral Verse* (1975)
[6] Wordsworth, "Lines Written a Few Miles Above Tintern Abbey" in *The Major Works* (1984)
[7] See Bate (1991) *Romantic Ecology* for more on ecological implications of Romanticism.
[8] Mabey (1973) p. 12.

Thus, Mabey comes close to recognizing that these places are coproductions of human and nonhuman agency, but he is still caught in the dualism of "co-existence" where nature is reconquering the city in these neglected spaces. His Romantic ambivalence about the relationship between the works of man and the natural world leads him to echo Southey and to characterize natural agency in wastelands as seeking refuge and revenge, "The most delicate of flowers, hounded by new roads and car-bourne trippers, had found refuge amongst the clutter, and was having its revenge.[9]

This view of nature can, also, be seen as a product of contemporary environmentalism in which a primary theme of environmental literature is ecological crisis. This literature frames the narrative around humans saving an imperiled planet. The crisis narrative characterizes nature as both a passive object degraded by humans and a potentially vengeful subject that can rid itself of the human species through climate change or some other ecological catastrophe.[10] Mabey employs some of the tropes of crisis, but he positions his account of nature within the most degraded landscapes as a positive story of the survival of nature. "For it is nature's fight back which is such an inspiration, her dogged and inventive survival in the face of all that we deal out. It is a survival story, and what it can mean for us, that is the subject of this book."[11] He recognizes that marginal nature is not just passive, but rather it is a community of active agents creating the unofficial countryside. This recognition of the creative agency of nature balances contemporary gloom and echoes Romantic perspectives on wild nature reclaiming and redeeming ruins. The persistent, inventive renewal in the most damaged

[9] Mabey (1973) p. 157.
[10] Such a view was portrayed in the ABC television program *Earth 2100* aired in June 2009. More online at http://abcnews.go.com/Technology/Earth2100/ Accessed June 2, 2009.
[11] Mabey (1973) p. 14.

places as a meaningful corrective to the environmentalist narrative of crisis and the end of nature and a defining feature of marginal nature.

However, Mabey still struggles with his attraction to this inventive nature and the tension between official and unofficial countryside, between good natural landscapes and bad human landscapes. This struggle reflects a cultural ambivalence to the ecological status of this weedy habitat. He is so uncomfortable with the implications of celebrating redemptive moments of encounter with marginal nature that he repeatedly backtracks from his enthusiasm and qualifies his delight, which is tinged with guilt for cherishing these places. In Mabey's bipolar discourse of slumming and cherishing, dereliction and delight, we see the struggle to redraw the conceptual map of nature. Cronin, Harvey, Haraway and others describe the project of rethinking nature in terms of overcoming the dualisms of natural and unnatural.[12] From this perspective, Mabey's project is a geographical one in which he attempted to redraw the conceptual continuum of British urban nature by exploring the unexplained spaces in the city, and he questioned the "proper place" of nature. For geography, Mabey's exploration is a model of a different geographical mode of engagement with nature in cities that blends empirical study and emotive response. However, his struggles over the meaning of marginal nature and unofficial countryside indicate that this geography of nature requires forthright attunement to emotion, memory, and language, like Thrift's ecology of place.[13]

[12] Cronon (1996), pp 88-89.
[13] Thrift (1999)

The Balm of the Accidental Wild – Denver, Colorado

Figure 5.3: Drainage canal habitat, Austin, Texas

Robert Michael Pyle accepts Mabey's invitation to explore the wastelands, and, in *The Thunder Tree,* he reveals that his childhood secret garden was a weedy drainage canal on the edge of Denver, Colorado to which he has returned throughout his life in order to renew his connection to nature. As a professional lepidopterist and founder of the Xerces Society, the leading conservation organization for butterflies and other invertebrates, the admission involves some risks of being accused of biological slumming, since, as we have seen, such habitats are not traditionally held in high

esteem.[14] Pyle is undeterred and declares that, "this book is my love song to damaged lands, a serenade for all such places."[15] It is unusual for American nature writers to be this forthright about cherishing damaged land. Usually there is more of a struggle to get bearings in such landscapes and a stronger tendency toward apologetics in the American nature literature that focuses on urban wastelands. This does not mean that Pyle's love is unconditional or that he does not struggle to articulate it, but for American nature literature his unapologetic serenade is unique.

Pyle acknowledges Mabey's precedence in writing about these places, and deliberately juxtaposes Mabey's metaphor of country in the city with his own rhetorical inventions based on American metaphors of nature.[16] He utilizes a strategy that mirrors Mabey's contrast between official and unofficial countryside. From the start he acknowledges that the authenticity of wilderness is central to American sensibilities about what counts as nature,

> More and more, we are discovering that the authentic wilderness of the mountains and deserts, though essential, is not enough to provide for a largely urban and overbloated population of humans. We need to keep some vacant lots, some big old hollow trees, some brush. We need the Country in the City, the balm of the "accidental wild."[17]

For Pyle, the weedy watercourse becomes an "imaginary wilderness" and an "accidental wild" in order to position the nature in the drainage canal in relation to authentic American nature. Recall that Cronin's argument for a reassessment of authentic

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[14] See Pyle "Urbanization and Endangered Insect Populations" in *Urban Entomology: Interdisciplinary Perspectives* (1983)
[15] Pyle (1993) p. xvii.
[16] Pyle (1993) p. 148 "Richard Mabey, a British writer and naturalist, describes them as the "unofficial countryside." He uses the term for those ignominious, degraded, forgotten places that we have discarded, which serve nonetheless as habitats for a broad array of adaptable plants and animals: derelict railway land, ditchbanks, abandoned farms or bankrupt building sites, old gravel pits and factory yards, embankments, margins of landfills. These are the secondhand lands as opposed to the parks, forests, preserves and dedicated rural farmland that constitute the "official countryside."
[17] Pyle (1993) p. xiv.

American nature turns on the role of wilderness in our judgments of nature which he sees as demeaning nature in "humble places" by too high a standard of authenticity.[18] In the context of urban ecology, we found Kowarik making a similar argument about authenticity undermining appreciation of "new wilderness" in urban woodlands. By declaring the canal an imaginary wilderness, Pyle enters the debate over whether urban nature is sufficiently authentic in comparison to wilderness and metaphorically positions marginal nature as valuable for engaging imagination and providing contact with the wild.

Although he acknowledges a lesser status for marginal nature, Pyle does not apologize for his cherishing this degraded habitat. In fact, Pyle expresses no sense of guilt and no worry over whether his encounter with this nature is biological slumming. However, as his metaphors signal, the appreciation of the accidental wild must support the agenda of environmentalism and lead urbanites to become conservationists. Pyle's argument for the meaning of this nature in leftover land and his answer to the questions that prompted this dissertation are that the shreds and scraps are a means to this end. The crux of his argument is that this conversion can best come through unmediated contact with urban nature in nearby places. However, these places need to remain free from official interpretation and supervision so that they retain a sense of openness and democracy of engagement,

> Parks are normally too manicured and chemically treated to offer much of interest to the adventuring youngster. And as for nature reserves, they might as well be paved over for all they offer in the way of boundless exploration. For special places to work their magic on kids, they need to be able to do some clamber and damage. They need to be free to climb trees, muck about, catch things, and get wet—above all, to leave the trail. Such activities are normally proscribed in reserves and for good reason. I support the strict protection of natural areas

[18] Cronon (1996) p. 87.

> wherever possible, for the careful perpetuation and management of scarce elements of diversity. But the unofficial countryside—the domain of unsupervised outdoor play—needs to be recognized and protected among the built landscape, as well as the official preserves.[19]

The accidental moment of nature amid urban ruins can be simulated perhaps, but one cannot recreate the experience of trespass and discovery offered by these waste spaces. To exert control and incorporate them as open space or nature reserve requires the imposition of management and undoes the very qualities that make these wastelands unique.

Pyle is unabashedly writing as an advocate for these kinds of habitats, but, rather than just habitats, he is celebrating them as places for encounters with nature. Pyle shifts from the general issue of the place of nature in urban space to the particular engagement with nature in a wasteland place. Because of his life-long connection to this particular place, the canal is numinous with memories of the humans and non-humans that he has encountered there. Unlike Mabey, these memories are of family and friends who have shared adventures in this place and not just lone exploration, and so the canal reveals itself as a richly embodied community of humans and nonhumans. These places are memorable as sites of initial connection with the nature, but not abstract Nature. This connection is made with particular creatures and trees and landscape features like creeks, ditches, or wetlands. To enable this depth of experience, Pyle argues that nature must be near-at-hand, and vacant lots and urban margins are just as capable of engendering a concern for conservation as parks and preserves.

Most importantly, because of their ubiquity and proximity, they hold the potential for the depth of engagement that he experienced with his canal. They can become

[19] Pyle in Kahn and Kellert (2002) p. 319

something more than open space or green space. They can become cherished places with almost sacred status, "The total immersion in nature that I found in my special spots baptized me in a faith that never waivered, but it was a matter of happenstance too. It was the place that made me."[20] For American nature literature, this kind of reverence is usually reserved for wilderness, and so the significance of Pyle's declaration has broad cultural implications for the status of marginal nature and wastelands. However, he does not escape the dualisms which lead him to view these damaged places as means to the end of nature conservation rather than ends in themselves. But Pyle has taken us a step closer to recognizing the significance of wastelands and the marginal nature that inhabits them.

Figure 5.4: State Grass of Texas, Sideoats Grama

[20] Pyle (1993) p. 152.

Learning from Nature in the City – Cincinnati, Ohio

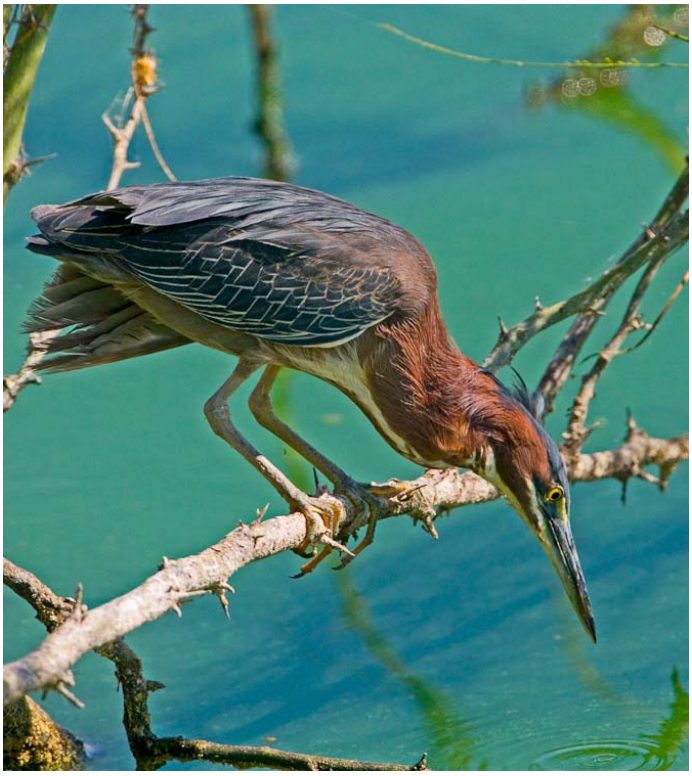

Figure 5.5: Green Heron at the Hornsby Bend Sewage Ponds
John Ingram used by permission

Unlike Pyle, John Tallmadge struggles in *The Cincinnati Arch: Learning from Nature in the City* to accept urban nature as something more than an oxymoron. His struggle contrasts with Pyle's enthusiastic embrace of nature in cities, but his resolution of that struggle leads him to confront the authenticity question more directly than Pyle. In doing so, he recognizes aspects of marginal nature which Pyle ignores. The occasion for writing the book was his moving to Cincinnati from Minnesota, which he perceives as banishment from the real nature of the West and the Wild to the pollution of the Rust Belt.[21] His engagement with urban nature is all about the authenticity of wilderness and an elegiac quest for the meaning of nature in the urban landscape. He wanders his new

[21] Tallmadge (2004) p. 3 "I never wanted to live in Cincinnati, Ohio. What wilderness lover would ever dream of settling deep in the Rust Belt astride polluted rivers? One might long for places like Bozeman or Spokane, hard by Yellowstone or the Bitterroots, but certainly not Cincinnati, a town known less for forests or lakes than for jet engines, floating soap, and indigestible chili."

city trying to get his bearings in the degraded landscape and to position urban nature within the conceptual framework of first and second nature in ways that are familiar to us now,

> Urban nature is not sublime…There's too much sterility in the form of roofs and pavement, and, oddly enough, there's also too much wildness, too many weeds and wooded borders and tangled banks, not to mention vacant lots going to brush. Of course, "wilderness" won't do to describe such landscapes either. Despite the degree of wildness, there's too much human impact, too many alien species, too few large animals to meet the legal and cultural criteria.[22]

Tallmadge is too bound to these traditional categories of nature to recognize that he is describing a different kind of nature, but his articulate interrogation of urban nature is illuminating. Where Pyle focuses on the balm of the accidental wild, Tallmadge is overcome by the cognitive dissonance of urban nature's mixture of garbage and flowers, and he despairs of making sense of it all. Thus, he finds incoherence and chaos as the defining elements of urban nature,

> The fact is that urban landscapes are just too mixed up, chaotic, and confused to fit our established notions of beauty and value in nature. … Maybe it's not really nature at all, not a real ecosystem, just a bunch of weeds and exotics mixed up with human junk.[23]

The conclusion that he reaches echoes the postmodern abandonment of traditional concepts of nature, since these concepts are perceived as no longer adequate for understanding the chaos of urban nature. However, rather than declare the end of nature or escape into worlds of information flows, he documents his explorations of Cincinnati in search of encounters with nature that help him find meaning in the shadow of the citified whole.

[22] Tallmadge (2004) p. 42-43.
[23] Tallmadge (2004) p. 42-43.

He begins to analyze his disorientation in order to find a way to connect to nature in the urban landscape or just to accept the conceptual possibility that urban nature is not an oxymoron. He summons a mental image of wilderness and finds himself imagining an Ansel Adams photograph of a lone, ancient Jeffrey pine tree growing from a crack atop the granite surface of Sentinel Dome in Yosemite. For him, this image embodies what it means to be wild and in the wilderness. Turning his imagination to his urban home he begins again,

> Now imagine another smooth rock surface – specifically, a concrete sidewalk in Cincinnati. Soil has accumulated along a joint, and one day a ragweed seed lodges and sprouts. It grows for one hundred days, buffeted by wind and sun, gnawed by insects, beaten and bruised by passers-by. It is small, dusty looking, of no more account to the casual eye than any of hundreds of other vigorous, opportunistic, and street-tough weeds that flourish like some green stain at the edge of the human world. By summer's end it too has attained an eloquence of form that testifies to a lifelong spirit of survival. Both plants are dead now, yet who can say that one was more wild than the other?[24]

This focus on process and the opportunistic dynamics of ruderal plants is an opening for him to admire urban nature and place it within the continuum of wildness that connects set pieces of wilderness to urban ecosystem processes. Like Pyle, the redemptive element in this recovery tale is wildness. Tallmadge echoes him in declaring that wildness can be found within the built landscape, which is sufficient cause for accepting that there is "nature" in the city.

The book culminates in a tour to the city's wastewater plant located on a creek. The odors and the waste overwhelm Tallmadge and his loathing of the urban returns. However, as he tours the plant he is surprised to find birds utilizing the site as habitat. One bird in particular engages him as it forages near the wastewater outfall viaduct to the creek, "…framed by the immense parabolic truss that supported the viaduct, a small gray

[24] Tallmadge (2004) p. 71.

and black bird with a long slender bill stood hunched on a rock."[25] It was a black-crowned night heron which nested within the fenced site of the wastewater plant which protected it from coyotes that predated other heron nests. The juxtaposition of adventitious wildness amidst degradation awakens him to new possibilities for urban nature and new interpretations of "wild" nature in the shadow of the citified whole. He finds redemption for the city in the image of the heron flourishing amidst the waste, "In the days that followed, my mind kept coming back to that image of the heron perched above soiled water on the edge of wildness framed by a concrete arch. How could a place so foul and lethal to us prove tolerable, even inviting to such a beautiful wild creature?"[26] This encounter is the antidote to Tallmadge's despair, and he finds grounds for hope, like Mabey, in the inventive, dogged determination of urban nature. The tension between his expectations of nature/wildness and his experience of urban waste places is made explicit and overcome.

Wastelands are odd mixtures of sublime encounter and mundane degradation, and the combination disorients a writer like Tallmadge, who is so committed to the defense of unsullied nature. He relies on the discourse of wildness to redeem the degradation and bring order to chaos. For Tallmadge, the redemptive power of encounters with wild otherness helps him find his way in the city and engenders hope that humans have not ended nature. The novelty of the return of wildness to degraded landscapes is sufficient for Tallmadge to find hope, but it does not resolve the bipolar dilemma that he constructs with his dependence on wilderness as the positive pole of true nature and the city as the negative pole. With the pastoral in between these two poles, he never resolves where on

[25] Tallmadge (2004) p. 201.
[26] Tallmadge (2004) p. 202.

this continuum he would place the heron and the viaduct. For all his hermeneutical digging, he ends up, like Pyle, with the balm of the accidental wild as the healing tonic. Also like Pyle, he fails to recognize that he has encountered a different kind of nature in the shadows of the city which is a hybrid of nature and culture. Both look beyond the litter of human artifice for redemptive encounters with wild nature in the city. The final text that we will examine turns a beholding eye on the same type of urban landscapes and takes in both the garbage and the flowers as an engaging and admirable landscape.

Figure 5.6: Great Egret at Hornsby Bend Sewage Ponds

Cretaceous Limestone Gutter – Austin, Texas

Figure 5.7: Waller Creek at University of Texas, Austin, Texas

In this unassuming way, Joseph Jones begins *Life On Waller Creek*, his extraordinary account of a trash-filled urban creek in Austin, Texas which he characterizes as a "Cretaceous limestone gutter." The stretch of creek adopted by Jones runs through the campus of the University of Texas. Every day for over 50 years, Professor Jones would come down to the creek from his office in the English Department to eat his lunch and explore the creek.

> Forty years and more I have packed my lunch to Waller Creek. Only since retirement, though, have I felt I had time to spend undertaking small improvements along its rugged banks: ephemeral gestures to be sure, but good for body and spirit alike – an hour or so, three or four days a week, before lunch. Instead of going up the wall I go down to the Creek.[27]

At one level, this book is a standard natural history of a stream with its limestone bed speckled with fossils anchoring the geological timescale of the history and framing the timeline of biological occupancy. At another level, the book is a deep ethnography of 50

[27] Jones (1982) *Life on Waller Creek: A Palaver about History as Pure and Applied Education,* p. 1.

years of engagement with place like Pyle's long history with his weedy canal. However, two aspects of this book set it apart from the previous texts.

First, Jones does not just go to the creek in search of redemptive encounters with wild nature like Mabey, Pyle, or Tallmadge. Unlike Tallmadge, he does not ask the creek to redeem the degradation of the urban nature. Like Pyle, he writes about a place that he knows intimately and, although he makes an argument for its conservation, he presents himself as an engaged observer and unapologetic meddler in this place. Everyday Jones putters around in the creek bed maintaining informal trails and collecting various bits of interesting natural and manmade detritus. In my early years as a graduate student, I met Jones and followed his trails along the creek. The frequent floods that filled the creek with urban detritus would also obliterate the temporary trails. Jones did not seem to mind. Unlike Pyle and Tallmadge, Jones engages this place not as just a site for the observation of nature but as a lifeworld encounter through constructive meddling. This kind of limited, engaged meddling contrasts with the wholesale transformation of wastelands and margins that occurs when they are declared open space or nature preserves. Here then is the beginning of a solution to the paradox of meddling where wastelands retain their outlaw status, and yet they are lightly transformed into more accessible places.

The second aspect of this book which sets it apart is, perhaps, a more radical departure from the conventions of narratives of nature than anything envisioned by the new geographers of nature. In his journals, Jones kept a record of each day's visit to the creek with detailed observations of what he saw there. Where the conventional expectation is that these catalogues would be a naturalist's observations of nature, Jones

was not a naturalist, but rather an engaged literate observer encountering a marginal urban place. He carefully records what he sees and experiences without censuring the detritus of the urban landscape in favor of redemptive moments of nature. He calls these lists of prosaic observations "Inventories," and they are interspersed throughout the text like phenomenological snapshots of the place. Through the uncensored immediacy of recorded perceptions, they suggest the placeways of the creek. He introduces the first inventory with a deliberate repositioning of humans, himself and his readers, as part of the continuum of nature and not outside of it,

> **Inventory**: I would hope…that the reader, if he should tire of being reminded overmuch of what an efficient trash-receiver (up to a point) the Creek has become in our day, will…first accept himself as part of the continuum and become his own short-term archeologist: such fugitive creek-things as I will be cataloguing here, when carried and buried, might be thought of as archeology going somewhere to happen. Thus, for example: Plastic beer cups (Brand X with blue map of Texas) in addition to the ever-ongoing deposit of beer cans…A grackle's reflection as he flies low over a still pool…After a flood, young willows keep reminding us, for many days, "It went that-a-way,"…High-visibility translucent bluish plastic bags – like Portuguese-men-of-war on a Gulf beach, but not biodegradable…scars of the sewer builders, still evident after twenty, twenty-five years…A much-twisted-and-battered yellow umbrella.[28]

Jones justifies these inventories as part of his natural history of this waste-filled margin by insisting that, "the casual, the accidental, the wayward all have a little more scope than straight narrative will stoop to tolerate."[29] These inventories are the "telling details" that animate wastelands and animate nature. Elephants are individuals with particular dislikes including rain.

Wastelands are a commingling of human and non-human and not a juxtaposition of the two. Marginalized by traditional narratives of nature, marginal nature usually is only allowed onstage as redemptive black-crowned night herons or thunder trees.

[28] Jones (1982) pp. 4-5.
[29] Jones (1982) pp. 4-5.

Instead, Jones embraces the full continuum of the placeways of marginal nature and wastelands, including the human. Jones captures the commingling of nature and culture which occurs in urban margins where these traces speak of cohabitation which is not restored to fit our expectations of nature. The inventory is a catalogue of emotion, memory, and language revealing a unique ecology of place,

> **Inventory:** A closer-mechanism for a metal casement window (not in operating order) …The name "Billy" neatly scratched with a stick through the algae onto the Creek bottom…A sky-blue tin lid, decorated with gold trim and other fancywork: American Louis XIV…Roots projecting straight out from between strata at the base of a cliff, groping for water: what trunk do they feed, at what distance?... The patriarchal pecan tree on the west bank a few rods south of the Drama Building, sometimes called "Old Geronimo," has seen not only the days of Geronimo himself but probably everybody and everything else in Texas history, and much more. Now slowly dying back, what a life it has had! …A rusty bucket-bottom caught through one of its holes on a ragweed stub, two feet up…Dandelions and some other yellow flowers are out on sunny days in early January…I'm almost as glad to see readers on the Creek bank as I am to see longear sunfish in the pools…A pink plastic spoon.[30]

The longear sunfish in the pools juxtaposed with a pink plastic spoon washed up on a bank are emblematic of the question of marginal nature. The degrading artifacts of humankind that so deeply disturb Tallmadge are accepted by Jones as part of the landscape and in his presentation they have a poignancy and novelty akin to the wild moments of nature that touch Tallmadge. Jones gives a faithful account of the degradation and delights of the margins by simply cataloging what he encounters along an urban creek without a longing for this place to be something else. This rare openness reveals some of the liminal appeal that these incongruous assemblages hold as not-quite-natural, not-quite-manmade places.

[30] Jones (1982) p. 34.

There is playfulness to his engagement with this place that he clearly loves as a site for nature encounter and for reflection, but he deliberately undermines the seriousness of the conventions of nature literature through these inventories,

> **Inventory:** A yellow candy-wrapper…Plastic bottle for duplicator ink…Half a cement block…I don't know whether or not, in these palmy days of the occult, anyone has yet experienced a genuine illumination or mystical rapture at Waller Creek. I haven't, myself, but I still would like to suppose that at a predestined place beside the easy-flowing water, to someone walking alone along the milky limestone arched and fringed by pecan and cypress shade, there could come a moment that would go-for-broke: when the luminescence of the darting sunfish would be instantaneously intensified a thousand powers…and from masses of radiant leaves the grackles, no longer wheezing out half-whistles, would carol hymns of glory to God in seraphic harmonies; and the palpable elements of water, earth, and air would blend with the fire of such vision that, at essence lifted clear of its engagement with space and time, the many would coalesce and cohere and rejoice at one. Maybe they do already and we can't perceive it; but then even if we could, who would believe us? ... A largish sheet-metal cylinder, very rusty…Cypress needles help traction, too, on a slippery bank.[31]

Traction is the best metaphor for what Jones gives us with grackles, cypress needles and a yellow candy-wrapper. His inventories have the specificity and immediacy to reflect the phenomenological complexity of wastelands. They are like prose poems that embody the scattershot encounters with the ever changing assemblages of natural and manmade detritus gathered by the creek. Most importantly, Jones demonstrates with them that he does not look beyond this particular place, this limestone gutter, for redemptive meaning. They document the labor of his hands and all those decades of meddling with the creek and harvesting insights about appropriate occupation with inappropriate nature in the margins. In doing so, he demonstrates another practice for engaging the placeways of wastelands and the nature/society hybrid of marginal nature. Jones does not require the balm of the accidental wild to redeem the engaging nature/society hybrid of marginal nature. In this way, he suggests a move beyond the dependence on traditional narratives of nature

[31] Jones (1982) pp. 296-7.

toward the beginnings of a new, more open narrative of marginal nature which is, to answer Mabey, necessarily worthy of cherishing in its own right.

With these examples of different practices of engagement with marginal nature in urban wastelands, we see a new variety of possibility for what Lorimer describes as, "an exercise in possible narration."[32] Where he focused on place-based geographical interpretation of the "affectual relations" between herders, reindeer, and the landscape that they inhabit, these texts about marginal nature are focused on landscapes of urban waste space. Through deliberate engagement, waste spaces become places understood through practices of knowing which require participation in the human and nonhuman lifeways of the place, or, as Walter characterizes it, we must understand the bond between ways and places – this is how meaning emerges as a coproduction of the placeways of humans and nonhumans.[33]

Through this new engagement with the collaborative placeways of humans and nonhumans, new questions are generated about place as a collaborative creation of both human and nonhuman agency. As these texts demonstrate, when attention is turned towards the neglected margins of the city as sites of nature encounter, they become unique sounding boards for measuring perceptions of nature, since they provoke ambiguous responses of attraction and repulsion. Each of these writers searches for language and techniques of writing which position marginal nature in relation to the tradition of nature writing and environmental discourse. They, also, demonstrate that part of the attraction of waste places is the frisson of discovery when moments of incongruous nature and culture are discovered, bringing order to disorder and novelty from chaos.

[32] Lorimer (2006) p. 497.
[33] Walter (1988) p. 225.

Part of the strategy used by each of these writers is to shift from the general issue of nature in urban space to the particular engagement with nature in this kind of urban wasteland place. Thus, their encounters are both about "urban wild things" and the novelty of these kinds of urban places in a richly embodied socioecological context. Wastelands are promising sites for answering Harvey's challenge of finding socioecological projects that dissolve the divide between nature and culture. This dissolving of the divide requires geographers of nature to return to place and narrative as the explanatory tools. We need to balance the reliance on the abstraction of urban space and the patches and mosaics of urban ecology, with the rich specificity of human encounters with marginal nature through which a space becomes a place. This shift from space to place is a critical turn towards a deeper geographical understanding of the nature-society hybrid "marginal nature" and points the way forward along the pathway toward a different geographical engagement with marginal nature.

Figure 5.8: Waller Creek at Martin Luther King Boulevard, Austin, Texas

Chapter 6

A World that Speaks: Towards An Ecology of Place

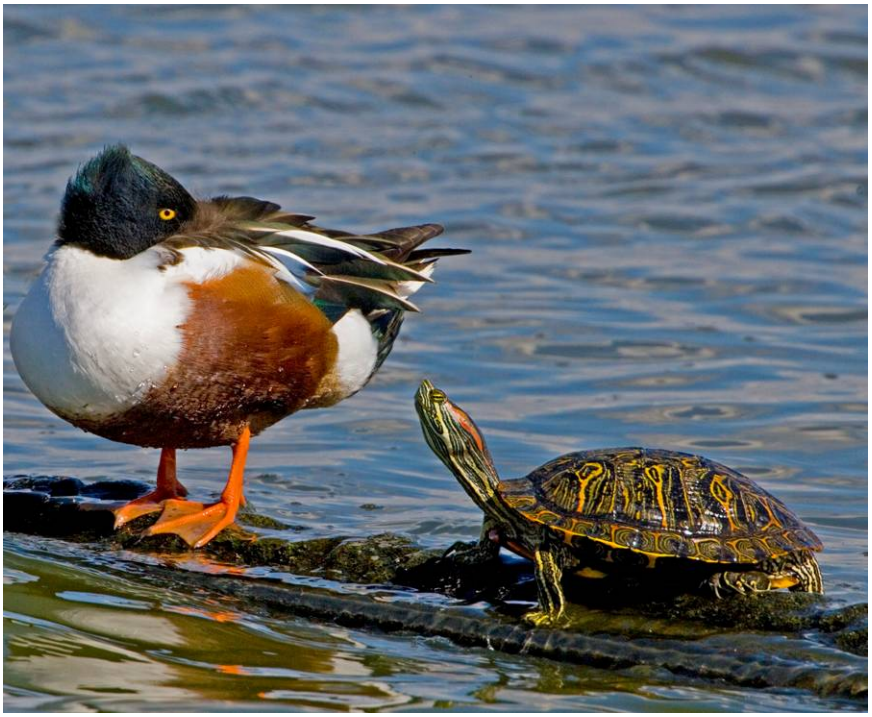

Figure 6.1: Northern Shoveler and Red-eared Slider turtle at Pond 1 East Hornsby Bend
By John Ingram used by permission

A place is a unity of experience, organizing the intercommunication and mutual influence of all beings within it. Every place, then, implies a form of dwelling together, and all the realities in a place – living people, images, memories, animals, plants, as well as bacteria and other hidden forces – make a group of effective presences dwelling together…a system of mutual immanence.

- E.V. Walter, *Placeways*[1]

What follows is a narrative exercise about two geographical modes of narration. I live and work at an urban wasteland in Austin, Texas, and I have spent almost 15 years exploring, mapping, meddling, and contemplating this polysemous place. Since this ending is the beginning of a search for a narrative form that expresses an ecology of

[1] Walter (1988) p. 23

place, I offer two contrasting geographical narratives: one is a journey from space to place and one is an account of placeways. My conviction is that the latter best expresses the dynamic, numenal reality of this place, but, as a professional geographer, I do not intend to abandon traditional spatial and temporal narratives entirely, since it works well to explain the facts of environmental change and land use which led to the creation of this wasteland. It is also an exercise in conventional plot structure with a beginning, middle, and end. I end it with a tale of my initial meddling in this wasteland in 1996. Since then I have come to work at this place which is viewed with disaffection by some and great affection by others.

In my own practice of geography, I have found myself positioned between the physical and cultural sides, and I spend a large part of my time telling this conventional story. My concern with the conventional geographical narrative is that it excludes the rest of the story about self and place. So from conventional beginnings I position myself in the narrative as this wasteland gathers me into its story. The second account is a narrative about the novelty of place within a shorter temporal duration, a historical moment imbued with memory, expectation, and intention that opens retrospectively towards the first account. A recent experience, it is shaped by over a decade of exploring this wasteland where I now live and work. This account of the lifeworld of one evening is a glimpse of the complex coproduction of place and placeways in this wasteland where I live. The bridge between the two narratives is perception and the practices of engagement used by the communities who inhabit this place. And so, the end is a beginning intended to open outward into a new ecology of place.

Hornsby Bend: From Space to Place

Figure 6.2: The Colorado River downstream of Austin.
Left to Right - The Dog's Head Bend, Hornsby Bend, and the Dogs Paw Bend

From above, we can understand Hornsby Bend as a place in space, a bend in a meandering river in Central Texas just downstream from the Dog's Head Bend and before the Dog's Paw. If rivers are strong brown gods, this one has a playful streak. Once a bottomland forest stood here, but the bend was claimed and settled by the Hornsby family in 1832, and they replaced the forest with farm fields and cattle pastures. Their bottomland neighbors did the same, and today we only know of the ancient forest through historical accounts of the late 1800's and Spanish explorer diaries. In April 1709, two Franciscan priests and 15 soldiers came from the Rio Grande all the way to the Colorado looking for a delegation of Tejas Indians and it is probable that they crossed the river at Hornsby Bend. "We came to the river, which has a guard on either side of luxuriant trees, nut trees, ash trees, poplars, elms, willows, mulberries, and wild grapevines much taller and thicker than those in Castile. It has sand banks which mark

how high it rises, a quarter of a league wide. The water is of the best we have found…the monte (forest) that offered itself to our sight was so much that we could not penetrate it."[2] The Spanish did not linger along the river, for they did not like the forest which elsewhere in this account they label "El Monte Grande del Diablo."

The story changed with the arrival of Stephen F. Austin and his entrepreneurial "Little Colony" which he established along this stretch of the Colorado in the 1820's and 1830's. The Hornsby's were part of this wave of settlement inspired by Austin, and they claimed the furthest upriver land grant in 1832. But other settlers followed quickly, claiming the other bends of the river and leaving a legacy of environmental transformation and place names like Hunters Bend, Wilbarger Bend, and others.[3]

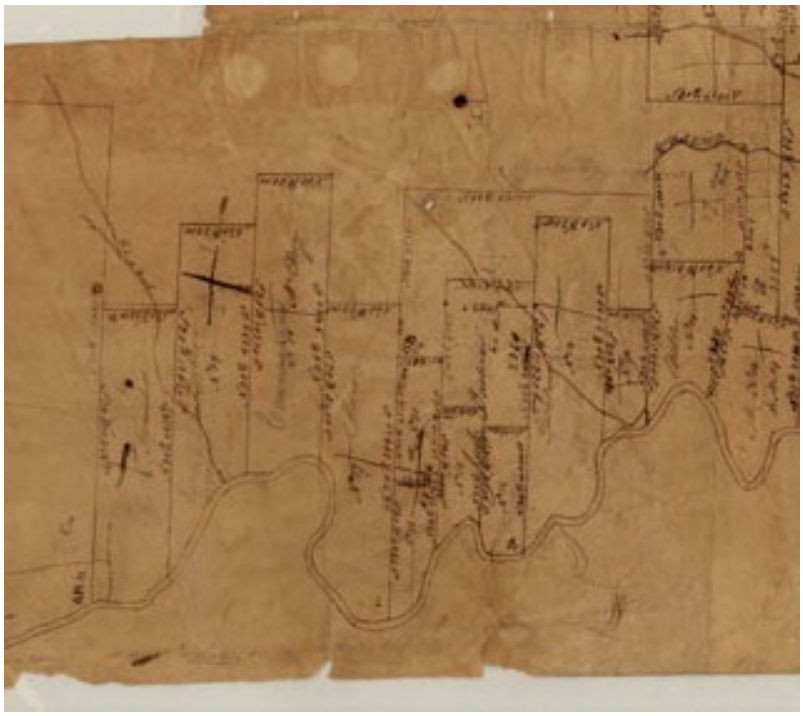

Figure 6.3: Early hide map of land grants
The Dog's Head and Hornsby Bend below Austin, 1839 Survey Texas General Land Office

[2] Gonzales (1982)
[3] Smithwick (1900), Jenkins (1958), and Doughty (1983)(1987)

The "long-lot" land grants stretched from the river's edge to the upland alluvial terraces several miles from the river.[4] The bottomlands were flood-prone, and so homesteads were usually located on the uplands. However, floods meant rich soil for cotton, and cotton required slave labor. Thus, the Hornsby's were also the first slave-owners in the area. Mexican labor was also used, and this cultural mix of populations can be seen in the Hornsby family cemetery near the old homestead site where the Hornsby's and their descendants are buried in one section while another "Cementario Mexicano" plot sits adjacent and the graves of blacks (first slaves and then share-croppers) are in another adjacent plot. With slave and Mexican labor and increasing numbers of Anglo settlers, the transformation from impenetrable forest to cropland and pasture took only a few decades, as the Hornsbys and their neighbors cleared the river bottomlands.

The timber was used in part to build the city of Austin, which was founded in 1839 just nine miles upriver. The city grew and spread across the eastern uplands following transportation corridors traced along ancient trails shaped by humans and wildlife as they moved across the landscape. These pathways were graveled and then paved, but the old maps demonstrate how the roads either kept to the high ground along the upper alluvial terraces or crossed the river at long established fords. One of these crossings was at Hornsby Bend, and the ford was used as a shortcut into the city until 1917. This map from the 1890s shows how these pathways written on the landscape still followed the contours of the land. However, as the map shows, the rational grid structure of the city was already moving east towards Hornsby Bend with straight lines imposed on the curves created over thousands of years of habitation.

[4] Jordon (1974)

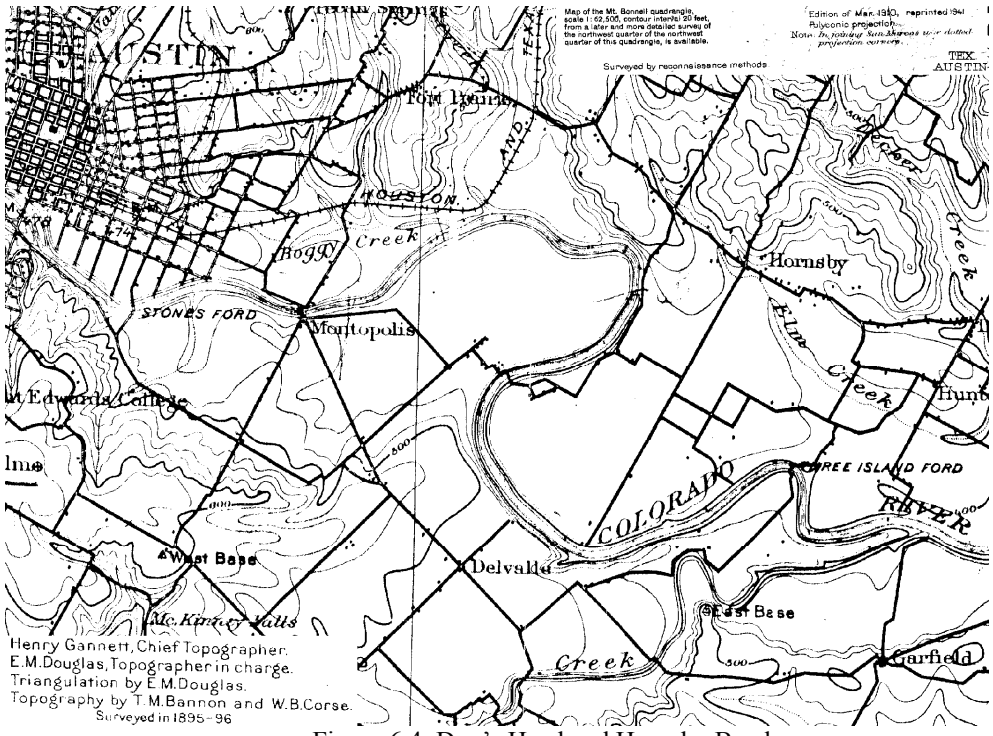

Figure 6.4: Dog's Head and Hornsby Bend,
USGS. Survey Map 1895-96

The Hornsby's subdivided their land grant among their children and the process repeated itself as land was distributed through their descendants resulting in smaller plots, more intensive land use, and more houses built in the bottomland. River regulation begun in the 1930's controlled flooding and opened the bottomland to more development. Grazing was pushed into the riparian margins, and long-term overgrazing further degrading the last strips of forest along the river. Agriculture shifted in the 1950s to hay production and cattle, as cotton exhausted the once rich soil and prolonged drought denied the rain needed for crops to grow. But it was the growth of Austin that dominates the transformation of Hornsby Bend since the 1950s as agricultural land was claimed for development and highways no longer followed old pathways. Now their paths were determined by city growth itself, as expanding beltways encircling the city.

Figure 6.5: Dog's Head Bend and Hornsby Bend 1940

Figure 6.6: Dog's Head Bend and Hornsby Bend 2008

In the 1950's, the city arrived at Hornsby Bend. The Hornsby's descendants began sell off land, and one buyer was the City of Austin. In 1956, the City of Austin paid $120,000 to acquire 270 acres of Hornsby Bend for the construction of sewage ponds. Between 1956 and 1958, three ponds were constructed totaling 191 acres.[5] Why was Hornsby Bend chosen? One reason is physical geography. As a low point downstream from the city's only wastewater plant at the time, the Austin Water Utility's engineers recognized that Hornsby Bend was perfectly located to allow gravity to assist

[5] Fergus (1999)

the pumping of sewage sludge, the solids removed from wastewater, which were accumulating at the city's lone wastewater plant.

Figure 6.7: Sewage sludge arrives at Hornsby Bend

The ponds received sludge. The water flowed from pond to pond by gravity, and then it was discharged into the river. On its way, nutrients in the water decreased as they were utilized by the rich ecosystems of the ponds. Cultural geography was another reason for building the ponds at Hornsby Bend. They were out of sight range and odor range of the city at the time, and only a few people lived on that part of the bend in the 1950's.

Figure 6.8: Hornsby Bend 1951

Figure 6.9: Hornsby Bend 1964

With the completion of the ponds, Hornsby Bend began its transformation into a wasteland. Literally, the ponds were the end of the pipeline for Austin's waste, but, most significantly, the public was allowed in. When four new bird species for the Austin area were discovered at the sewage ponds during the first visits of birders in November 1959, the Hornsby Bend ponds were suddenly on the map of birding sites for Central Texas. Since then, Hornsby Bend has become one of the most popular birding locations in the Austin area with a reputation for a rich diversity of species and occasional rarities especially during migration.[6] In contrast to this positive engagement by birders, Hornsby Bend has occasionally been cast as a part of the unspoken conspiracy to fill the poorer areas of Austin with waste facilities, but this environmental justice narrative of the sewage farm has not yet found much traction with the public.[7] In part, the positive engagement with Hornsby Bend comes from the openness of the site, which is also used by locals as an access area for fishing in the river.

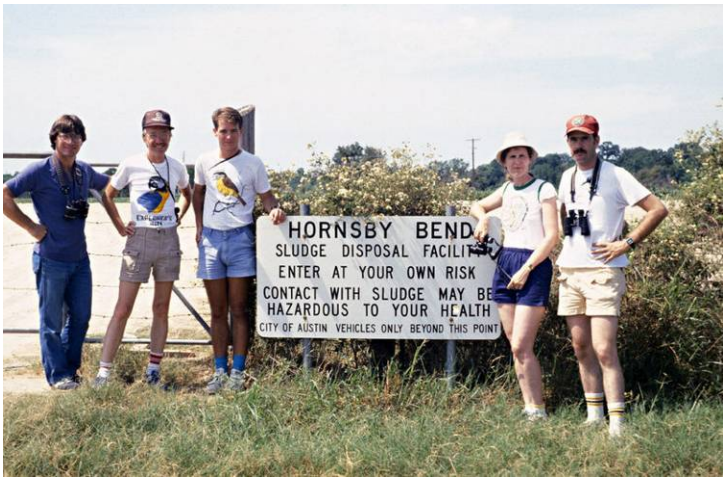

Figure 6.10: Birders at the Hornsby Bend ponds 1970's
By Greg Lasley used by permission

[6] For the full history of birds and birding at Hornsby Bend see Fergus (1999).
[7] Toohey (2008)

In Austin, the threats to close Hornsby Bend have come, not from environmentalists, but from the Austin Water Utility itself. The potential closure that spurred the Travis Audubon Society, the local chapter of the national organization, into action in 1995 was not about the whole site, but about a part of the site which is most important to birders – the shallow treatment pond, Pond 1 West.[8] The emergent wetland in this pond has been the most productive birding site of the facilities three treatment ponds since birders first visited the site. Most of the rare species have been aquatic bird species drawn, in particular, to the shallow water and mudflats of this pond. But by now, the facility had grown with the city from being just ponds receiving sludge from one small plant to a major sludge recycling facility receiving a million gallons a day from Austin's two large wastewater plants.

Figure 6.11: Hornsby Bend facility site 2008

[8] Reyes, Nina. "Hornsby Bend changes worry bird-watchers; Plans to reduce sewage plant's odor might make area less attractive to birds." *The Austin American-Statesman*. November 13, 1995.

By the 1990's, the "Hornsby Bend Biosolids Management Facility" had been built to complement the ponds and recycle Austin's sewage. The facility transformed sludge into "biosolids" by anaerobic digestion which kills most disease organisms in the sewage. Most of the biosolids are then recycled as manure to fertilize hay fields on the site.[9] The rest is composted with all of Austin's yard waste on a 15 acre concrete composting pad. By 1995, the Hornsby Bend plant had become critical infrastructure for the city an award winning treatment facility. As part of efforts to improve the performance of the plant, the Utility planned to empty Pond 1 West in order to remove the accumulated sludge in the pond. As another irony of the site, the best habitat at Hornsby Bend had formed from neglect and natural agency. This pond was not meant to be shallow or a wetland, but it had become both to the delight of birds and birders. The Utility found no delight in the marginal nature that had claimed the pond. It would be cleaned out. Moreover, they announced that they would not refill it so they could use the space for other plant operations.

When the birders learned that they might lose Pond 1 West, they organized to "save" the pond. The irony of environmentalists fighting to save this "hardly natural" pond was overlooked. Their anger was sincere, and they were determined to defend the pond for birds and for themselves. Like most mobilization by environmentalists in Austin, they headed straight to the City Council to get these elected officials on record stating their opposition to this change. In a carefully worded resolution, the engineering and cultural narratives of the ponds, or lagoons as they are called here, are detailed in all their socioecological complexity,

[9] By 2008, the facility covered 1200 acres and over 3 miles of the river.

RESOLUTION February 1996

Be It Resolved by the City Council of the City of Austin, Texas:

Whereas, the Hornsby Bend Biosolids Management Facility (HBBMF), a facility purchased and operated by the City of Austin Water Utility, has received more than eighteen local, state, and national awards for environmental excellence as a biosolids recycling facility; and

Whereas, the primary mission of the HBBMF is to safely and effectively treat and dispose of sewage sludge produced in the wastewater treatment processes at the City of Austin's wastewater treatment plants; and

Whereas, the HBBMF contains lagoons that serve both as a stopover for many migratory birds on the flyway from the Arctic to Argentina and as habitat for numerous resident bird species; and

Whereas, the HBBMF now houses the Center for Environmental Research (a joint effort to the City of Austin, the University of Texas, and Texas A&M University), a valuable facility that could serve a wider range of environmental purposes such as environmental education and information dissemination; and

Whereas, the long-term plan for HBBMF improvements ("Hornsby Bend Sludge Management Facility Improvements" by CH2M Hill for the City of Austin) includes a plan for modifying the existing wastewater lagoon system to improve treatment, and

Whereas, the Travis Audubon Society is committed to assisting in the articulation of a management plan for the HBBMF lagoon system, to assist in development of educational programs and materials, to providing field trip leaders and equipment to student groups, to seeking additional funding, to pursuing collaboration and additional expertise in the area of lagoon management;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Austin directs the City Manager to make use of the wildlife expertise offered by Travis Audubon Society to articulate a limited revision of the aforementioned management plan in order to manage the lagoons at HBBMF in compliance with the City's wastewater permits and provide for continuing birdwatching opportunities; and

BE IT FURTHER RESOLVED that the revised plan is to consider the management of access to the HBBMF for students, tourists, biologists and wildlife, thereby improving the overall value of this extremely important community asset.

This resolution by the city council was the result of the first phase of their activism in which they lobbied the city political leaders and demanded that the Utility and the City Council consider the role of the sewage ponds as bird habitat and a community asset for nature recreation, ecotourism, and environmental education. This nature protection narrative of Hornsby Bend was a new, unfamiliar story for the Utility management. The Utility's contrasting narrative was purely functional. For them, Hornsby Bend was simply an urban waste treatment facility that had won awards for its biosolids recycling program. In this functional narrative, the facility's only purpose was an engineered one – in the words of the resolution, "to safely and effectively treat and dispose of sewage sludge produced in the wastewater treatment processes at the City of Austin's wastewater treatment plants." In this narrative, a waste treatment facility is about the "environment" and not "nature." The facility has a permit to operate from the Texas Commission on Environmental Quality, which is the state level equivalent of the Federal level Environmental Protection Agency. This kind of facility would be encompassed easily by the urban political ecology narrative of urban metabolism, since here the thousands of miles of urban pipeline infrastructure culminates in one pipe and one accumulative expression of city life.

Figure 6.12: Biosolids beltpress, the last stop for Austin's sewage, Hornsby Bend

The engineers who ran the Utility had no such elaborate cultural narrative in mind when they objected to the Travis Audubon Society's nature narrative for Hornsby Bend. Instead, they were just worried about the facility's permit and all that sludge in Pond 1 West. They viewed the accumulated sludge as a potentially expensive regulatory offense. If, during the facility's annual inspection, the regulators found that the Utility was "storing" sludge in the pond, the City would receive a large fine and the reputation of the Hornsby Bend facility would suffer. The estimated cost of cleaning and closing the pond was $5 million dollars, and so the Utility managers were not eager to do this project. However, they began planning for it through a consultant, the large engineering firm CH2M Hill.

Figure 6.13: The Hornsby Bend plant ponds and treatment area

The Audubon Society's counter-narrative of Hornsby Bend as a nature protection site had begun with those first birders arriving in 1959 and discovering new species. Over the decades of birding, the reputation of the ponds grew among the birding

community with every new species and rarity found there. That these ponds were for sewage treatment and had a foul odor only added to the counter-narrative and spurred ironic renaming like "Petunia Ponds, Lily Lakes, Rose Acres."[10] However, for most of the birders, the function of the ponds was to gather birds for viewing and any engineered function was incidental to their narrative of the place. Their stories were of birds and birding adventures at the ponds, of the red-necked phalarope identified through capture by a young birder who swam out into one of the ponds to secure the bird or of the time the ponds froze over and birders walked upon them. The ponds were represented as decidedly a human mediated nature place for encounters with nature and communal memories of birds and birding adventures. [11] To the birders, it was a cherished place of nature encounter that the Utility threatened to destroy.

Figure 6.14: Frozen ponds at Hornsby Bend
By Greg Lasley used by permission

[10] Adams (2005) p. 75
[11] See Fergus (1999) and Adams (2005) for birding tales and examples of Hornsby Bend as a birding space.

The usual strategy of city government when faced with a controversy of this sort is to create a "stakeholder" committee in order to facilitate communication and to demonstrate that steps are being taken. The City Council resolution directs the City Manager, who has authority over the Austin Water Utility, to "make use of the wildlife expertise" from the Travis Audubon Society to revise the CH2M Hill plan for Hornsby Bend, and this input would be done through a new "Hornsby Bend Steering Committee." But the resolution goes further than just creating a stakeholder committee and directs that the plan "consider the management of access to the HBBMF for students, tourists, biologists and wildlife, thereby improving the overall value of this extremely important community asset" which meant that henceforth both the functional and nature protection narratives of Hornsby Bend would be formally supported by the Austin Water Utility.

The two narratives of Hornsby Bend were embodied in the Hornsby Bend Steering Committee with representatives of the birding community and the Austin Water Utility making up the majority of the committee. Between these two cultures were a few representatives of the educational community from the University of Texas, two professors from the Department of Geography and the Environment, Robin Doughty and Ian Manners. They both had birded at the Hornsby Bend ponds since the early 1970s, and they would bring their graduate and undergraduate students with them for tours and bird counts. I was one of those graduate students brought to the ponds in 1995.

My first impression of Hornsby Bend was that the place was abounding with irony. Birders drove their expensive SUVs around the treatment ponds in this wasteland, voyeuristically studying waterfowl with equally expensive birding scopes perched out their windows. Meanwhile, sewage workers at the facility drove by in their rusting white

City of Austin pickup trucks staring at the spectacle of birders blocking the roadways at their waste treatment workplace. The birders and workers did not interact much, although the Audubon Society was proud of having once giving the workers a microwave for their break room. Over my first year of visits, I was struck by the distance between these two cultures. Birders perceived the ponds as a recreation area and bird habitat. Workers perceived the ponds as sewage treatment facilities. And over the year, round and round, they circled the ponds. All the while, the aroma of sewage at various stages of treatment wafted over the landscape.

I began attending the Hornsby Bend Steering Committee meeting in the fall of 1996. I found it constructed around the two cultures. The Audubon Society representatives construed their role as defenders of birds and birder access to the ponds. Further, they prioritized the environmental function of the ponds as bird habitat and demonstrated little grasp of the waste treatment function of the ponds. The Austin Water Utility was represented by engineers and staff committed to defending the ponds as treatment units for water removed from the sludge. They were puzzled by the passion for birds exhibited by the birders, and they were frustrated by the perceived indifference toward sewage treatment by the Audubon Society members. For the birders, birds defined the place. For the Utility, biosolids defined the place. The narrative of nature protection stood opposed to the narrative of functional nature. I did not see these as incommensurable narratives, and so I positioned myself between the two cultures and began the volunteer mediating and meddling that I now get paid to do.

One of the concerns that the Utility expressed was liability for visitors at the facility, and, in particular, they were concerned about the behavior of birders who would

wander into the sludge processing areas in pursuit of birds and with utter obliviousness to large front-end loaders and dump trucks roaring by. We all agreed that signs, information kiosks, and formalized trails would address the Utility's concerns about how the public used the facility, and I saw this project as a mediating practice which could bring the cultures closer since the birders would have to learn to perceive the site from the insider perspective of the Utility and the Utility representatives would learn how birders perceived the site as outsiders.[12]

Figure 6.15: Warning sign, Hornsby Bend plant

The first step in this learning was done through creating a map of the ponds area in 1996. The map depicted "trails" designating how birders moved through the landscape, which we later constructed with volunteers. It also delineated treatment process areas where the plant staff felt that safety was an issue and the public needed to avoid. The mapping was a way of learning/teaching the site through representations of

[12] Alford, Andy. "Watching birds just got easier with trails; Ponds at city sewage-recycling plant." *The Austin American-Statesman*. November 8, 1997.

the key landscape features that combined the environmental perceptions of both cultures and, hopefully, not having to whack anyone in the process.

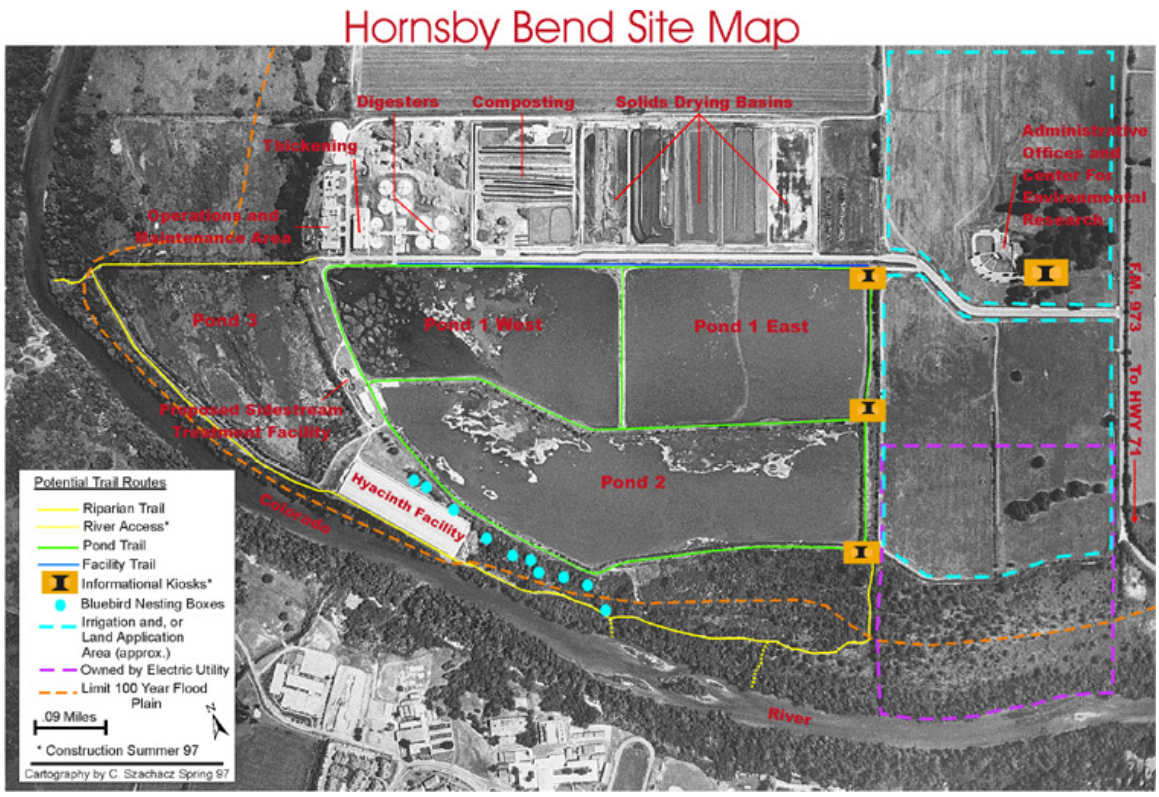

Figure 6.16: First Hornsby Bend trails map, 1996

Birders learned the confusing numbering of the ponds where four ponds are considered three. This mapping was also my first step in discursive reinterpretation of the site as we began to label ponds and areas of the plant which had been terra incognita on the mental maps of Hornsby Bend for most of the birders. They also learned the place names of the workers territories where the treatment process for the sludge took place: thickening, digestion, solids drying, and composting. The plant staff learned the routes used by the birders as they visited the site and the environmental features of the site that were not part of their work-world: riparian wetlands, riverside forest, and islands in the river.

Since this first map, the representations and discursive strategies of naming have evolved into this current one created in 2002 where trail names are added and birding activity sites like the hawkwatch and birding shelter are labeled.

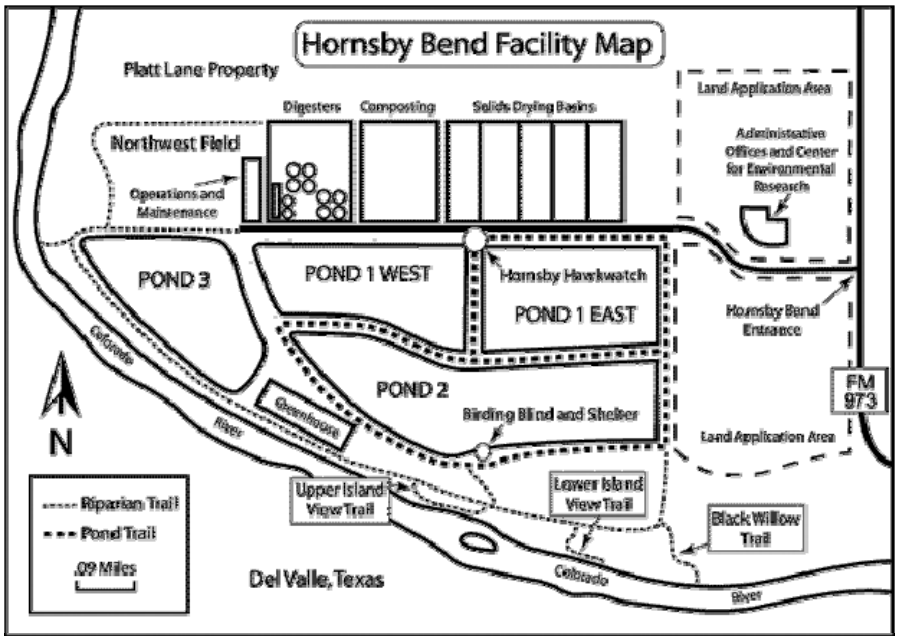

Figure 6.17: Current Hornsby Bend trails map, 2009

This map is not just a practical guide to navigating Hornsby Bend, but, to answer Mabey's challenge, it is the conceptual map of an unexplained space in the city. It is a depiction of a richly embodied socioecological context and practices. Thus, it is a measure of the transformation of space to place. From a blank space, we now have a wasteland place by birding shelters and hawkwatches juxtaposed with land application and composting areas. This first narrative of space to place ends here with a map the practices of place. The map represents the transformation that has unfolded at Hornsby Bend, and it brings use the final question about meaning and meddling.

The map does not preclude other interpretations of this place, and most visitors wander through unaware of this mapping. Hornsby Bend remains an in-between place where I play wasteland ranger enforcing a limited set of rules and allowing maximum

freedom to engage the ruinous attractions. The trails are just mown tracks following old pathways to forgotten fishing sites and old river crossings. Although I get to play Arch-Meddler in this wasteland, most of my work would disappear with a few years of forest growth, like Jones's trails along Waller Creek. The maps and trails are meant to guide people on first visits and alert them to the industrial purpose of the plant, but Hornsby Bend still offers itself as a unique opening in the urban landscape for which visitors can find their own explanations and their own ways of engaging nature.

Figure 6.18: Black vulture at Hornsby Bend digesters

Coda 2009: *a wide road leads you through the new main gate with its empty guardhouse, a gesture toward Homeland Insecurity. The current plant managers have decided that the facility needs cleaning up, and so the entrance to the plant is carefully groomed, trimmed, mowed to give the appearance of concern.*

However, it is all undermined by that empty guardhouse and the litter that accumulates each day around the main gate.

A new sign proclaims "Wastewater Sludge Treatment Facility" to warn the buyers of new homes going in across the road in the housing development by Main Street Homes, honestly, called "Hornsby Glen," where 500 plywood houses will eventually be built. My response was to suggest renaming the housing development "Hornsby Vapors" since they will be downwind of the plant when the north winds blow. This new wooden sign was put up hastily to be more visible than the original limestone marker for "Hornsby Bend Wastewater Treatment Plant" and "Center for Environmental Research" which has weathered to mottled gray and is easily overlooked as a large stone landscape feature.

Another new sign at the entrance has a roadrunner symbol and number marking Hornsby Bend as a "nature tourism" destination on the Central Texas Wildlife Trail created by the Texas Parks and Wildlife Department. Hornsby Bend is assigned a number and description on a map which guides tourists through Central Texas in search of officially sanctioned "nature" experience. Here the trail leads them to a sewage plant, and frequently the tourists come to my office looking for the "bird sanctuary" at Hornsby Bend. This assemblage of signs at the entrance to this place is indicative of the complex meanings attached to Hornsby Bend. The irony of this entrance, so harshly mowed and maintained, is that within the plant it is neglect that has allowed marginal nature to flourish and make Hornsby Bend so attractive to the public.

Evening Song: A Narrative of Placeways

Figure 6.19: Sunset at Hornsby Bend Sewage Ponds
By John Ingram used by permission

To the sensing body all phenomena are animate, actively soliciting the participation of our senses, or else withdrawing from our focus and repelling our involvement. Things disclose themselves to our immediate perception as vectors, as styles of unfolding – not as finished chunks of matter given once and for all, but as dynamic ways of engaging the senses and modulating the body. Each thing, each phenomenon, has the power to reach us and to influence us. Every phenomenon, in other words, is potentially expressive.

- David Abram, *The Spell of the Senuous*[13]

Six sandhill cranes fly low over our house at Hornsby Bend just after sunset, perfect silhouettes against a radiant orange sky. They labor south across the mown hayfields towards the treatment ponds, wings fighting the stiff southeast wind that has slowed their fall migration. As they reach the ponds, their ordered flight-line totters and folds, and their crane song reaches me on the wind. The birds circle three times

[13] Abram (1998) p. 81

querulously discussing whether to land at the emerald algae-rich ponds or to slide west and to spend the night in the larger gravel pit ponds on the Dog's Head Bend. As they circle, an airplane approaches, roaring towards the airport on the Del Valle bluff another mile south. Birds and plane look too close together, even though I know they are far apart. Distances are deceptive in Texas-scale landscapes, but I know that the red lights on the airport control tower are three miles from where I sit. The cranes are a mile and a half away although they look closer in this evening light. They bank against the wind. A decision is made, and the small band bends west towards last light. Perhaps the jet roar reminded them that a human flight path also crosses these ponds, and they seek a quieter resting place for the night.

As they cross the river and blend into the horizon, their crane song still reaches me, ringing across the bend as the voice of the wild departing. As it fades, I refocus on my twilight vigil. No wilderness here. Scanning the sky and fields, I sit watch on one day's end. My view across the wide 300 acre field of the sewage farm between our house and the sludge plant is the stage upon which the evening drama takes place. Act one is all entrances and exits, when the creatures of light retire and the creatures of night emerge. The deer are first, drifting out of the bottomland forest to graze in the greening fields in small groups. A lone coyote shows itself along a far fence line. The coyote and I watch headlights moving along the chain-link fence along the north side of the plant. The nighttime operators are beginning their evening rounds. A white truck drives the back road along the sludge storage basins and heads towards the belt press to measure flows and check pumps. The day shift is long gone, having arrived at early dawn and clocked out at 3pm. At night only two operators monitor the machinery, and I can watch their

headlights trace paths through the plant. The sharp whistle of wings signals a flight of ducks; four wood ducks shoot low and fast round the house and towards the river.

Figure 6.20: Hornsby Bend Sewage Farm Fields and Cattle Egrets

Darker now and below the horizon the sun sends last vertical shafts of ginger and crimson across the western sky. It saturates the landscape with the last glow. A northern harrier uses this light for a final low sweep across the fields, just one or two feet above the ground, wing-tips touching stubble. It swoops and settles on a round bale in the center of the field as this night's perch like a statue of wildness amidst waste. The wind is slacking and fading with the light which allows dragonflies to hawk their last meal of the day consisting of the mosquitoes in the yard. I roll down my sleeves against bites and the welcomed autumn chill. No freeze tonight to end the season of mosquitoes, but it will reach the forties qualifying as Central Texas cold. Cricket song starts, another autumn sign. Leopard frogs and bull frogs plop and grumble onto the edge of the Cement Pond,

the derelict swimming pool that came with this house. The frogs had already claimed the pool, and so we added gambusia and plants to let nature take the perishing pool. The frogs croak their nightly office of praise to a beneficent god, or, in this case, gods since my wife is the aquatic habitat god and I am the lesser god of hydraulics and pond levels. My touch is the small pump that splashes in the pond and adds water music to the yard.

Figure 6.21: Northern harrier at Hornsby Bend
By John Ingram used by permission

The cool air brings the smell of hay from the fields and compost from the plant. Having grown up raising cattle, this place smells like home although Hornsby Bend manure is from the human herd. The scent of soil being born as compost reminds me of plowed fields and row crops from seasons past, but here we grow only hay and no plows are needed. Year by year we monitor the underground life of these fields as we try to rebuild the biological community devastated by over a hundred and fifty years of cotton, corn, and plowing. Incrementally, life returns as organic matter builds, but, although I know that plowing can set back that process, I miss the annual ritual of the plow and long hours on tractors meditating about the meaning of turning under winter residue in order to

bring on the spring. But these are autumn thoughts after the crops are in and the cool air soothes tired bodies, tempering memories of long, hot hours on machines.

Figure 6.22: Mushrooms on a compost pile, Hornsby Bend

The roar of another plane awakens me from the pastoral reverie and reminds me that Hornsby Bend is a sewage farm and a city looms on the horizon, replacing the sunset glow with city lights. The final act unfolds as Venus appears, sharp and bright the Evening Star. Another plane lands, passing just below our goddess. And from the gloaming, the crescent moon joins Venus in the darkening sky. On stage, the creatures of night have taken the field. I count thirty-two deer, but the coyote has disappeared. The barred owls begin calling from the river bottom saying that night is beginning as the last light fades. Before it goes, I rise from my chair and walk to the back fence for one more look across the field. My reward is the local flock of black-bellied whistling ducks, the avian emblem of Hornsby Bend. They are too hard to count accurately in the distance but over forty birds winging homeward towards the gravel pits and whistling the last gossip of the day before settling for night. They are the closing chorus as night falls, and I, a day creature by employment, retire.

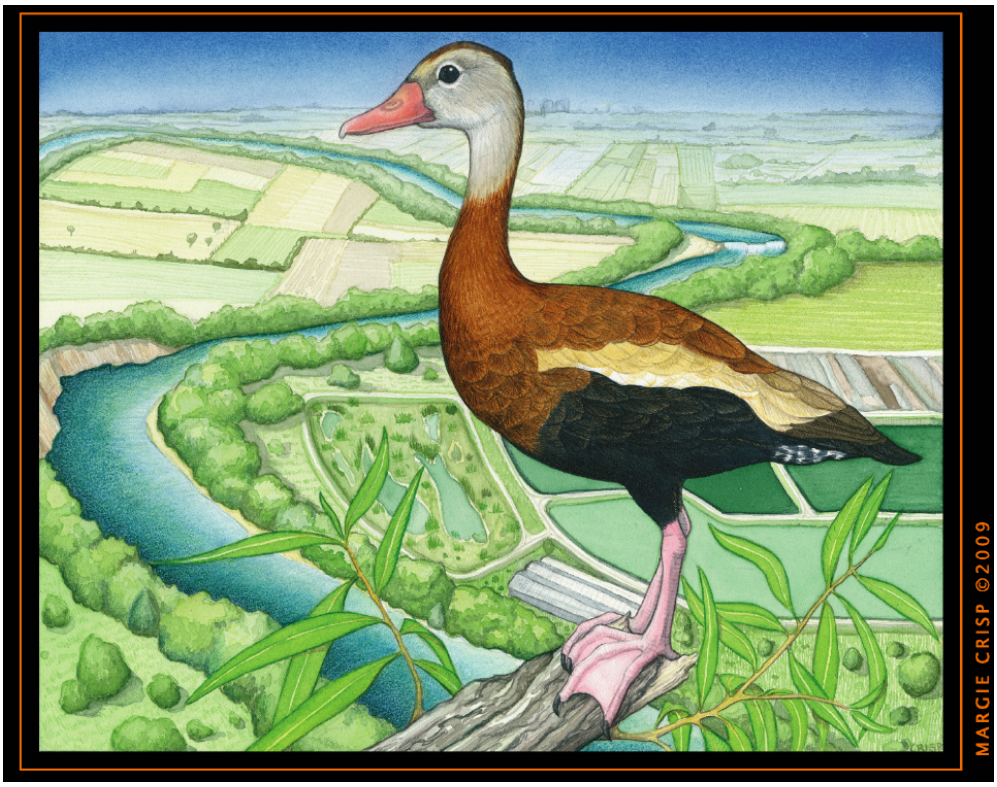

Figure 6.23: Black-bellied Whistling Duck and Hornsby Bend Ponds
By Margie Crisp, Artwork commissioned to commemorate 50 years of birding at Hornsby Bend, 2009

End Piece

Hinchliffe asks, "What sorts of spaces can overcome the tendency to either assume nature is dead, or assume that it exists, neatly bounded, incarcerated in a self-sealed cell?"[14] The current engagements with "nature" in cities by geographers and social scientists are dominated by space rather than place. These projects, from urban political ecology to animal geography, struggle to find urban spaces that can accommodate the embodied, dynamic particularity of nature. I have argued that the new geographers of nature will be more successful if they asked what kind of *places* there are for nature rather than *spaces*. The discourse of these geographers reveals an effort towards enclosure that they elsewhere find philosophically acceptable. Although they

[14] Hinchliffe (2007) p. 3.

may not mean to enclose nature in a "self-sealed cell," they do seek to position nature within the "relational force field" of urban space rather than the multiplicity and particularity and openness of place. The return to the phenomenology of place offers an alternative to the abstract lifelessness of space.

The concept of place was defined by humanistic geographers as a manifestation of human perception.[15] In *Placeways*, Walter insisted on broadening the concept to recognize that places were coproductions of all the beings inhabiting a system of mutual immanence. Walter re-envision place as a dynamic commingling of presences and emphasized "placeways" to enliven the static container concept of place. Placeways recasts the structure of place as a dynamic interplay of beings, or in Whitehead's language – a nexus of experience.[16] However, in spite of his acknowledgement of the "realities" of place, Walter's focus in *Placeways* is a revision of the human experience of place. He never presented an account of an ecology of place where humans and nonhumans collaborate to produce the novelty of place within a temporal duration, a historical process imbued with memories, expectations, and intentions. This project requires a re-engagement with phenomenology to support this dynamic, numenal understanding of place. Merleau-Ponty writes of how the sensible world, which scientific materialism treats as passive objects, is actively responsive to our perception, sometimes beckoning us, sometimes repelling us. Merleau-Ponty's world view is one of perceptual reciprocity between perceiver and perceived, which mirrors the linguistic reciprocity between metaphors and the world. This dissolving of the divide requires geographers of nature to return to place and narrative as explanatory tools. We need to balance the

[15] Relph (1976)
[16] Whitehead (1925) pp. 50-51

reliance on the abstraction of urban space and the patches and mosaics of urban ecology, with the rich specificity of human encounters with marginal nature through which a space becomes a place. Thus, our attention must be focused on how the language of landscape emerges as a co-production of inhabiting places and not empty spaces.

I come to these conclusions through studying the ecology of urban wastelands. Pyle's questions presented the occasion to think about the meaning of wastelands, not merely as ecological phenomena, but as places filled with a cosmopolitan community of non-human agents. Marginal nature in the urban landscape is neither pristine nor pastoral, and I have tried to demonstrate that it is a kind of nature whose ecological and cultural meaning resists containment within the metaphors of nature used to assess it. Marginal nature is variously dismissed as weeds, destroyed by restoration efforts, or simply overlooked in accounts of urban nature. Others declare it to be illegitimate nature out of bounds and in need of control. The dark rhetoric of invasion and war reflects its liminal hold on our imagination as a kind of shadow nature in the urban landscape. As I end, I accept that marginal nature resists containment or summation. However, we now can see more of what the shreds and scraps of the natural scene mean in the shadow of the citified whole, and, hopefully, this dissertation has been a first step toward a new narrative of marginal nature.

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