

Reviews

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Creating Possible Futures: Hope in the Anthropocene

Eben Kirksey, *Emergent Ecologies*. Durham, NC: Duke University Press, 2015. 312 pp. \$94.95 (hb); \$25.95 (pb).



One of the great ironies of the anthropocene is that, while it marks humanity's overwhelming transformative influence on the world, it also testifies to a profound disempowerment. As the integrity of physical environments and ecological systems become further threatened by forces that bear the stamp of human influence, such as biodiversity loss, environmental pollution, dwindling primary forests, rising sea levels, and extreme weather events due to climate change, these forces all seem to exceed human control. Given the scale of ecological crisis and sense of powerlessness, it is unsurprising that discourse of political ecology often assumes tones of despair. While acknowledging this pessimism, Eben Kirksey's *Emergent Ecologies* forges possibilities for hope in the face of rapid ecological transformation.

There is nothing superficial about this hope, which Kirksey fosters by tarrying with ecological transformation at various locations, tracing entangled actors large and small, human and nonhuman, as they interact to build "possible futures" against the ever-present threat of destruction. Ruin — degradation, exploitation, death, and extinction —

lurks in each of Kirksey's field sites, which include the Canal Zone of Panama, Costa Rica's highland cloud forests and diverse lowland forests and pastures, Florida's riparian wilderness, and New York's art galleries. These sites represent interconnected "emergent ecologies," which are "multispecies communities that have been formed and transformed by chance encounters, historical accidents, and parasitic invasions" (1). From each case study Kirksey pulls together "interlocking tales" of assembled human and nonhuman actors thriving and dying, adapting and aligning, transforming and being transformed.

Emergent Ecologies is an important text in the growing and diversifying field of the environmental humanities, as it applies "insights from contemporary philosophy ... to reframe key problems in the field of conservation biology — relating to invasive species, extinctions, environmental management, and reforestation" (1). This strategy yields a number of conceptual tools and perspectives that advance the ways multispecies communities are understood and engaged with. Key figures in emergent ecologies are "ontological amphibians," which are plants and animals that are capable of moving between and inhabiting multiple worlds (4). A concept adapted from Peter Sloterdijk, ontological amphibians "always face a decision about what kind of ontology to inhabit," like "literal amphibians," who can opt to live in both land and water (18). In a similarly playful adaptation of Antonio Gramsci's term, Kirksey's book presents a series of "organic intellectuals," "thinkers and tinkerers" who seek out hope in devastated landscapes, "guiding interspecies collaborations ... by seeding them, nurturing them, protecting them, and ultimately letting go" (7). By tracing the "desires, affective attachments, and dreams motivating people to care for wild things and living systems," *Emergent Ecologies* draws attention to the messiness of ecological interventions, whether in the name of science, capital, or ethics.

The first three chapters take the reader to the forests of Panama's former Canal Zone, an area shaped through time by colonialism, militarism, commerce, and science. During the course of several research trips to study ants, Kirksey presents encounters with scientists, indigenous entrepreneurs, expatriate "Zonians," middle-class Panamanians, frogs, butterflies, and various alluring insects. Mixed into analyses of the fraught historical and political dynamics that has shaped the Canal Zone's physical environment and ecological conditions, are encounters with fascinating human and nonhuman actors. Kirksey devotes special attention to the charismatic ant species, *Ectatomma ruidum*, which inhabits "rich social and environmental worlds." Not only are these "ontological amphibians" capable of moving between, and thriving in, diverse environments, they exhibit collaborative tendencies with plants, other insect species,

and members of stranger colonies. Beyond a noteworthy partnership with caterpillars in which *Ectatomma ruidum* exchange protection for a “nutritious liquid” excreted by the caterpillar (34), these ants show signs of learning and gift exchange that suggest individual ants may be “rational economic actors” (31). The third chapter also examines the fraught history and future of previously restricted land that reverted to Panamanian sovereignty in 1999 called the “Reverted Zone.” Included in the Reverted Zone are former US bombing ranges that still contain military waste and unexploded bombs, areas that are resistant to development and commercial expansion and, thus, beneficial to certain endangered species (38). Drawing on ethnographic fieldwork, particularly volunteer work with the Panama Amphibian Rescue and Conservation Project, this chapter marks a transition in which frog worlds take center stage of the book.

Moving to the El Valle Amphibian Conservation Center (EVACC), a research facility in the Panamanian highlands, the fourth chapter observes the precarious status of frog species whose lives have become entangled with deadly disease, market forces, and bureaucratic institutions involved with species management. At the EVACC facility, Kirksey tracks the work of husband-and-wife team, Edgardo Griffith and Heidi Ross, in their conservation and breeding of frogs that have become devastated by numerous threats, most notably the chytrid fungus. “Bricoleurs and entrepreneurs,” Griffith and Ross began their operation in a couple vacant rooms of a “backpacker hotel” and eventually moved into their own facility, a “fragile bubble of happiness” that holds thousands of vulnerable animals. Central to their “practical labor” of caring for and maintaining these amphibians is the importance of fostering hope and happiness to both give their own work meaning, and to draw in additional support through the pleasures of caring (56). The fifth chapter turns attention to chytrids. While one species of chytrid is driving many amphibians towards extinction, chytrids in general are “liminal critters” that inhabit multiple forms and worlds, and often “perform critical ecological functions” (73).

Chapter six tracks the *Xenopus* frog, a suspected transmitter of the chytrid fungus, as it becomes an actor in human social and biological systems. Also known as the African clawed frog, this durable and charismatic amphibian is not only a popular pet, but it can be used to detect human pregnancy: a female frog releases eggs within a day after being exposed to a hormone contained in a pregnant woman’s urine, which is injected into the frog. Perhaps most illustrative of the creativity of Kirksey’s methods, which meaningfully connect art to ecological science, this chapter features a “performative experiment” in which Kirksey and other collaborators from the arts and sciences offered to give free pregnancy tests to women and free fungus tests to *Xenopus* frogs at a gallery in New York (91). Even though the tests would be harmless to the frogs, after

receiving considerable media attention and fielding concerns from animal welfare activists, the pregnancy tests were cancelled and the group instead focused on giving chytrid tests to pet frogs. This project — like the “*The Utopia for the Golden Frog*” experimental art installation in chapter four, in which Kirksey and collaborators converted a refrigerator into an ecosystem suitable for Golden Frogs that were being euthanized by zoos (61) — shows inventive ways “art interventions at the edge of standard scientific practices” might prompt novel ideas and feelings that shape our orientations to multispecies communities.

The seventh and eighth chapters are set in Florida, as Kirksey focuses on multispecies encounters, both in the “wild” and the home. Both chapters feature “flat” accounts of interactions between human and nonhuman animals, in which neither group is exceptional, with Kirksey’s thick description of human and monkey interactions in “contact zones” along Florida’s Silver River in chapter seven, foregrounding the complicated social practices of each group. A popular spot for recreational boaters, Silver River also hosts several colonies of rhesus macaques. Kirksey depicts several extended sequences of boaters feeding the monkeys, particularly noting the ways social orders are both reinforced and disrupted in these encounters. This section also notes the complicated ways troubled racial and class dynamics factor into wilderness management practices in Florida. Also troubling is the commodification of animal life, which signals the asymmetrical power dynamics that give shape to emergent ecologies. In chapter seven’s interviews with monkey trappers who sell to medical laboratories, and in chapter eight’s account of exotic snake breeding, market forces seem to take precedence over the felicity of individual animals. While these chapters reveal the ways breeders and traders often do exhibit intense care for animal well-being, the animals remain “flexible persons.” A notion Kirksey borrows from Dafna Shir-Vertesh, flexible persons are nonhuman animals who are loved and “incorporated into human lives, and addressed with kinship terms. But they can be demoted at any moment, moved outside of the home and the family, as household income or personal circumstances shift” (135). Here Kirksey’s analysis of the biopolitics of captivity and breeding is appropriately grave, as there seems to be little equity or safety for nonhuman animals in many of the “multispecies families” he depicts.

The final two chapters explore the complicated ways physical environments and ecosystems become reshaped according to diverse and often conflicting interests that include farming, ecotourism, duck hunting, and the preservation of precarious species. Most interesting are the contentious relationships between various plant and animal species, whether competitive, parasitic, and/or cooperative. In one of chapter nine’s

anecdotes, for example, Kirksey describes the historical transformation of tropical forest to savannah due to the cooperative and mutually beneficial activities of introduced cattle, rhizomatic jaragua grass, and cattle ranchers. After the government evicted cattle with the hopes of regenerating forest in the newly formed Palo Verde National Park, the intrusion of dense cattails and jaragua grass interfered with reforestation efforts. Once conceived as an enemy of conservation, cattle were enlisted as an ally in controlling grasses (171). Also noteworthy is a North American duck hunters organization that helped fund the effort to control the cattails in Palo Verde National Park, with the goal of providing habitat that would ultimately lead to more hunting game. The proliferating ducks in the area, however, plundered local farmers' rice crops. Here and in chapter ten, set in the highland cloud forest of Monteverde, the complexities of conservation science and landscape management come to the fore. Milton Brenes, an "organic intellectual" who coordinates a reforestation program at the Monteverde Cloud Forest School, receives special attention, as his reforestation philosophy focuses less on "preserving rare forms of life" than cultivating "alliances with robust trees that are helping him generate convivial assemblages" (195). Thinking through "possible futures" always involves negotiating competing interests, in which some species are favored over others, some receive "benign neglect" that enables unexpected multispecies assemblages to flourish, and some species must die.

In its cross-disciplinary travels, *Emergent Ecologies* compromises some analytical depth that may irk readers who expect more comprehensive engagement with the various fields touched upon in this adventurous book. While the project could go deeper into specific biological dynamics, provide deeper inquiry into the historical and cultural contexts shaping human behavior at his field sites, and ground its philosophical flourishes, these additions would likely narrow Kirksey's analytical connections and curb the appeal his disciplinary amphibiousness. Of greater concern is the book's light engagement with the politics of environmental justice. Even while legacies of colonialism, capitalism, and militarism are rarely far from Kirksey's sightlines, his infectious wonder and attraction to ecological novelty occasionally feels out of touch with the mundane, everyday environmental politics that are driving ecological collapse. For example, it would have been useful to include case studies of emergent ecologies in urban and industrial spaces.

Kirksey's final comments about loving and killing, that "taking a stand for creatures one loves means taking a stand against enemies that present existential threats to them," drive home the stakes of inhabiting emergent ecologies with beautiful clarity and conviction: "When we participate in market economies, or grow our own vegetables, we are casting our lots with some ways of life and not others. Life and death

are at stake every time we eat, buy clothes at the store, or flip an electric light switch” (219). Impressively, beyond fostering hope, Kirksey’s project also reminds readers of our own agency as ecological actors. Whether we are “thinkers and tinkerers” or passive consumers of ecological resources, our actions matter. In spite of the numerous widespread ecological crises affecting the world today, Kirksey not only finds hope, but illustrates its importance for motivating more thoughtful and ethical “convivial alliances” within the emergent ecologies we inhabit. Through these alliances, we may learn to make space in which newness, amphibiousness, and love might thrive (218).