Tonia L. Payne
Nassau Community College, USA

John Kricher, *The Balance of Nature: Ecology's Enduring Myth* (Princeton, NJ: Princeton University Press, 2009), xi + 237pp.

John Kricher's argument is constructed to appeal to a nonscientific audience and aims to demonstrate that there is a "better" paradigm for understanding our planet than "the balance of nature." The idea of nature's balance may be scientifically invalid, but otherwise Kricher never clearly states why the belief is problematic. Perhaps Kricher feels people don't understand that our actions can have profound effects on our planet, causing damage that nature cannot redress without aid. It is obvious Kricher thinks we need better scientific understanding of how ecosystems work in order to improve decisions about "managing" those systems. The rest of his argument is less clear.

The book scores high on readability: there is a laudable lack of jargon, and when scientific terminology is needed, Kricher generally provides a definition. The breezy, colloquial tone also indicates that Kricher hopes to reach those who need persuading that 1) human beings cause environmental problems and 2) we "ought" to—and can—do something about it.

Early chapters trace the evolution of early humanity, the development of Western science, and attendant changes in understanding of how the world works. Much of that overview seems intended to demonstrate how the "myth" of nature's balance arose. In the process, Kricher makes some questionable assertions, which may not relate to his scientific point but are problematic nonetheless. For instance, he dismisses as irrelevant traditional environmental knowledge among indigenous cultures. Granted, such cultures may not practice science *per se*, but they still have valuable understanding of their environments. (Kricher also underrates the feats of memory that are a hallmark of oral cultures.) I was also troubled by his assertion that the "recognition that one's self is bound socially with one's group [...] mentally [sets] the identity group fundamentally apart from all the rest of the natural world" (27). Although Kricher later acknowledges that the human-nature split is found "particularly in Western society" (93), he fails to acknowledge that many human cultures do not, in fact, consider themselves "fundamentally" apart from nature. Even if his assertions are true in Western culture, a Cartesian human-nature duality does not explain why humans would conceptualize nature as having intrinsic balance—thus the purpose of the assertion with respect to his overall argument is unclear.

Kricher does better in explaining possible roots of the "myth" when he notes that conceptually important instabilities in natural systems occur over vast periods of time, too long for individual humans to observe. Further, although he does not explicitly make the point, one might infer that another reason for the myth is the comfort it gives to humans affected by the caprices of the natural world. After, say, a natural disaster, humans could understandably find comfort in the belief that there is a purpose in nature, whether that purpose is inherent or endowed by a spiritual force. Faced with calamity, it can be a balm to believe that the alteration one observes is transitory because nature is "actually" in balance.

Kricher works to show the flaws in that belief through numerous examples, from the effects of ice ages and invasive species to anthropogenic changes. Yet although Kricher states firmly that there is a difference between "balance" and "equilibrium," the latter being "highly dynamic, subject to frequent change" (82), nowhere does he

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demonstrate that "balance" necessarily equates with stasis. Further, it is apparent that the "myth" of nature in balance is pervasive, and deeply ingrained even among the scientifically sophisticated. As Kricher notes:

> [W]ell meaning conservationists continue today to argue against ill-conceived assaults on ecosystems as interfering with the balance of nature. Arguments are occasionally heard in which it is said that "nature knows best," and should be left to its own devices. Such a view is usually based upon the presumption of a natural balance. But if there is no natural balance, such arguments need to be reformulated. (87)

Let us set aside studies that demonstrate the increase in biodiversity in areas that are off-limits to humans (such as the North-South Korean DMZ, or the areas around Chernobyl), which indicate that perhaps nature does do quite well when left to its own devices.[1] Kricher's argument stumbles again when he works to reformulate reasons for protecting ecosystems after the myth of nature's balance is put to rest.

Kricher does acknowledge the crucial questions: after offering incontrovertible evidence of the decline of global biodiversity, he asks "But who cares? Why is biodiversity loss of concern, other than the esthetics of losing an irreplaceable species?" (178). And Kricher does pay heed to the importance of the esthetic value of nature, citing E. O. Wilson's biophilia concept (198), and implies that our sentimental concern for charismatic megafauna is beneficial, as caring for them requires care for their habitats (172). Further, when he asks, "does humanity have a right to act in such a way as to cause the extinction of, say, polar bears?" he answers that "most enlightened people would say 'no'" (199), deftly manipulating the reader into agreement lest he or she be considered unenlightened. Still, he never quite answers the crucial question he poses: "What does biodiversity do for us?" (171)

Kricher implicitly acknowledges that not everyone will be persuaded by arguments about the beauty or intrinsic value of the nonhuman world. He argues, cogently and carefully, that biodiversity is good for "functioning ecosystems," though why the healthy functioning of a grassland, for instance, matters to an urban dweller is not explained. He also says there is an important economic rationale for maintaining "natural" ecosystems: they "have the potential for greater societal economic gain than do ecosystems converted for narrow economic objectives" (194). Those who feel strongly about defending the intrinsic value of nature will certainly wince when Kricher reduces environmental concerns to an economic equation, but the argument is undoubtedly useful in persuading the unconverted. Still, Kricher never defines "greater societal economic gain." He cites a study that demonstrates the "'marginal values of goods and services delivered by a biome when relatively intact'" (194) but never defines what such "marginal values" may be, or why—if they are "marginal"—they outweigh the gains of converting ecosystems entirely to human use.

Indeed, Kricher's economic argument works against him: he acknowledges that when ecosystems are converted to our use, there is an immediate, often significant, economic gain. Arguing that such gains also diminish rapidly, and that meanwhile problems arise (such as lack of protection against tsunamis provided by coastal mangrove stands), is unlikely to counter the desire for that immediate economic boost.

[1] John Kricher, "Biodiversity Down the Barrel of a Gun," *New Economist,* 10 Feb. 2010: n. pag. ProQuest. Web. 31 Aug. 2010, or Alan Weisman, *The World Without Us* (New York: Thomas Dunn Books-St. Martin's Press, 2007).

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Kricher further acknowledges the "tragedy of the commons" (borrowing the phrase from the well-known article by Garrett Hardin),[2] in which

> when human population and technology exceeds [*sic*] the carrying capacity of the commons, "tragedy" ensues in that there is no incentive for the various exploiting parties to cease what has, by then, become overexploitation. Indeed the contrary is true. It becomes in the best interest of the most affluent parties to increase the rate of exploitation, maximizing their gain, since in the short run they gain more than they lose. (189)

An argument favoring a small, steady drip of (undefined) economic gain from intact "natural" ecosystems is unlikely to persuade those affluent, exploiting parties.

So say we puncture the myth of the balance of nature and replace it with a scientific understanding of ecosystems that would allow us to "manage" them more sustainably. To date, scientific understanding hasn't altered our behaviors, so what will induce us to exchange short-term gains for the affluent in favor of long-term benefits for all? Kricher states, "Using game theory and simulation, it can be demonstrated that reciprocal cooperation, *based merely on establishment of a reputation for honorable reciprocity*, will overcome the tendency toward greed that degrades the commons" (193; emphasis added). Since Kricher recognizes that "it is a long way from game theory simulation to global politics and economics" (193), suggesting "mere" establishment of a desire for an honorable reputation seems disingenuous. Despite its lack of scientific validity, the myth of nature's balance at least has the benefit of providing a sentimental basis for ethical concern about the nonhuman world. Many "affluent exploiters" are unlikely to be persuaded by any argument other than one that speaks to their sentimentality or to their desire to preserve their lifestyles. Unless Kricher—or someone of his stripe—can provide a new paradigm that gives us clear and emotionally powerful reasons to alter our behaviors for the benefit of the metaphoric commons, replacing the myth of nature's balance with the truths of ecological science will not, I fear, help us make the difficult choices we must make if we hope to maintain a habitable planet.

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[2] Garrett Hardin, "The Tragedy of the Commons," *Science* 13 December 1968; available on the web through various sites, among them The Garrett Harden Society (www.garretthardinsociety.org/articles/art_tragedy_of_the_commons.html).

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