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## Incompetence

John Harte

A recent [review](#) of the fine new book on extinction ([The Annihilation of Nature](#)) by professor Gerardo Ceballos and Anne and Paul Ehrlich<sup>1</sup> illuminates two related problems in the struggle to achieve a sustainable society. The [review](#) itself, by environmental journalist Fred Pearce, is a collection of scientific errors. Pearce is famous for pressing the bizarre view that increasing population size is not a contributor to serious environmental problems, but increasing per capita consumption is. He refuses to see that the basic problem is the scale of overall consumption, and that is a product of the level of per capita consumption times the number of capita (population size). It is as if he claimed that the area of a rectangle is entirely the fault of its width – that length makes no contribution.

Pearce spends much of his review complaining about lack of knowledge of actual extinction rates, something not dealt with much in the book because the most recent [studies](#) make his discussion nonsense.<sup>2</sup> There is no question Earth is entering the sixth great mass extinction event, and that human activities, including population growth, are the cause. Pearce's lack of understanding about how scientists actually estimate species loss is illustrated by a quote from his review:

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*In the 1980s, ecologists developed a simple formula they called the “species-area relationship.” They argued that the number of species in a particular habitat could be derived from the area of that habitat. Big areas held more species, and if you halved the area, half the species would disappear. This formula became the basis for*

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<sup>1</sup> Fred Pearce, *The Annihilation of Nature: The Siege Approach to Conservation*. Los Angeles Review of Books. September 16th, 2015

<sup>2</sup> Ceballos G, Ehrlich PR, Barnosky AD, García A, Pringle RM, Palmer TM. 2015. Accelerated modern human-induced species losses: Entering the sixth mass extinction. *Science Advances* 1:e1400253.

*apocalyptic warnings about the impact of the massive destruction and fragmentation of rainforests, where a large proportion of the world's species are thought to live.*

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I follow and have contributed to the scientific literature on extinction rates. No scientist has ever, to my knowledge, made the wacky assumption, above, that Pearce asserts is the basis for published estimates of future extinction. He is clearly out of touch with the methods scientists use to make such estimates, and resorts, instead, to making up arguments out of thin air. There are in fact ways to use species-area relationships to estimate extinction rates under habitat loss, but they are not at all like the way Pearce describes.

One of the many strange statements in the review provides a clue to how Pearce views the scientific process. Laughably, he asserts that one can't claim scientifically that a beach is eroding unless you've counted the grains of sand. Would he assert that one can't claim that a chemical reaction is occurring without counting molecules? His ignorance of science is profound.

Pearce claims that from the author's perspective "the assumption is that the only way to protect nature is to sequester it behind fences in national parks where conservationists are king and the rest of us are excluded." Pearce is apparently ignorant of the major leadership role Ceballos and the Ehrlichs (with Ehrlich's former grad student, Gretchen Daily) have played in showing the opposite, with their [compelling work](#) showing how human-dominated landscapes can be modified to help preserve biodiversity.

Pearce seems to assert that invasive species will fill in for the losses that arise as a result of climate change, toxicity, and habitat loss. In fact, to that list of causes of extinction one should add invasive species, not subtract it! The increasing spread of invasive species such as kudzu (Japanese arrowroot) is displacing native species, not replacing the aesthetic pleasure and the ecosystem services that the displaced species provided. Such invasions provide disservices, not benefits. In that same category belong rats and cockroaches.

Pearce's review illustrates two broad concerns about scientific literacy and the media. One is illuminated by the review, itself; some journalists fearlessly ignore their own tenuous grip on science. The other is even more serious in my opinion for it allows the likes of Pearce to think they can get away with the dissemination of scientific confusion. I speak of the failure of editors, publishers, and producers to recognize when they are unleashing on the public journalists who are way over their heads. Editors at Cambridge University Press exemplified this failure when they only asked economists, not scientists, to review the egregious book, *The Skeptical Environmentalist*, proposed by Bjorn Lomborg a decade ago. Their lack of understanding of science was so deep that apparently they did not even perceive the need to bring in scientific review. The deeper issue here, of course, is the failure of general education to produce editors with the knowledge to know the difference between sound science and the kinds of mangled logic and scientific misrepresentations that pervade Lomborg's book and Pearce's review.

I urge everyone to read the gorgeously illustrated [book](#) by Ceballos et al. It is a treat for the eyes, and the bitter medicine of truth for the mind.

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