

Normativity and the Meaning of *Endangered*: Response to Waples et al. 2007

MICHAEL P. NELSON,* JOHN A. VUCETICH,† AND MICHAEL K. PHILLIPS‡

*Lyman Briggs College and Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI 48825, U.S.A., email mpnelson@msu.edu

†School of Forest Resources and Environmental Science, Michigan Technological University, Houghton, MI 49931, U.S.A.

‡Turner Endangered Species Fund, 1123 Research Drive, Bozeman, MT 59718

There has been increased interest recently in better understanding the meaning of *endangered species* as defined in the 1973 U.S. Endangered Species Act (ESA). Waples et al. (2007) provide an account that is, in part, a reaction to a position presented by us in Vucetich et al. (2006). Here, we extend this discussion with comments focused on Waples et al. (2007).

In the ESA an “endangered species” is defined as one “in danger of extinction throughout all or a significant portion of its range” (SPOIR). Although we (Vucetich et al. 2006) claim that the term *SPOIR* is fundamentally normative, Waples et al. develop a specific definition for the critical phrase *significant portion of its range* (SPOIR) and suggest that the “apparently normative language” can be a “largely scientific exercise.” If their definition is used to replace the SPOIR wording in the ESA’s definition of an endangered species, then an endangered species would be defined as one “in danger of extinction throughout all [of its range or in] geographic area(s) that contains population unit(s) that, if lost, would cause the entire species to be in danger of extinction or likely to become so in the foreseeable future.”

Waples et al. appear to be motivated, at least in part, by what may be a common misunderstanding among scientists of the nature of normativity. First, however, we identify one independent concern with the solution presented by Waples et al.

At the very least, the awkward and obfuscating grammar of the definition of Waples et al. is problematic. Accepting the interpretation by Waples et al. of SPOIR, however, might allow endangered species in the ESA to be redefined as a species that is either (1) “likely to become in danger of extinction in the foreseeable future” or (2) “in danger of extinction.”

To apprehend the possibility of these meanings consider an example. Imagine a species that includes a population that is in danger of extinction; a population that occupies a geographic area just large enough that its extinction would cause the entire species to be at risk of extinction or likely to be at risk of extinction in the foreseeable future. This species would seem to be endangered according to Waples et al. This species would just as aptly, and more parsimoniously, be described as “likely to become in danger of extinction in the foreseeable future.” It is problematic to define an endangered species in terms of foreseeable future for at least two reasons. First, Congress explicitly distinguished threatened species from endangered species on the basis of foreseeable future, and recovered species differ from threatened or endangered species (i.e., nonrecovered species) on the basis of SPOIR. Because contemporary notions of extinction risk fundamentally entail a temporal component (i.e., extinction risk is expressed as a probability of extinction over some period of time), it seems that Congress meant for *recovered* and *not recovered* to represent different kinds of species condition and for *threatened* and *endangered* to represent different degrees of the same kind of condition. The Waples et al. definition obliterates what is likely an important set of distinctions. Moreover, meaning 1 does not meet an explicit goal of Waples et al., namely, to replace the normative dimension of SPOIR with a scientific exercise. Meaning 1 merely replaces one normative concept with another.

The possibility of meaning 2 is supported by the subtle distinction that may exist between “being at risk of extinction” and “being at risk in the foreseeable future,” given that extinction risk is fundamentally expressed in terms of

future time periods and the tight connection that Waples et al. make between the scientific concept of viability and the legal-normative concept of endangerment. For example, Waples et al. write, “some [species] might be viable with substantial reductions compared with historic conditions.” Waples et al. also claim that “the ESA is primarily about avoiding species’ extinctions.”

Although the equating of endangered species with species viability is common, its inadequacy is revealed by considering the ESA’s Congressional history and predecessors (Vucetich et al. 2006: 1388). Congress apparently thought that recovered species ought to be well distributed throughout their former or historic range. The ecological basis of this principle was recently validated in a report by the National Research Council (1995). Recently, an Interior Solicitor Opinion (2007) proposed interpreting SPOIR in a manner that also would have effectively reduced the legal meaning of endangered species to merely “in danger of extinction.” This opinion was met with criticism by many leading environmental scientists and ethicists (Flesher 2007), and the opinion was reported to have been rejected by the U.S. Secretary of the Interior (Hebert 2007). Although viability and preventing extinction are fundamental to the ESA, the ESA fundamentally entails more than this (i.e., the elements associated with SPOIR; Vucetich et al. 2006).

Ultimately, Waples et al. may provide a reasonable, coherent assessment of what *they* think an endangered species *ought* to be (a normative claim). Nevertheless, developing a coherent meaning for endangered species is not adequate. The challenge is to develop an ecological understanding of Congress’s definition of endangered species and indicate, if necessary, how it may, or may not, be inadequate.

Waples et al. appear to be prompted by the belief that Vucetich et al. (2006) unnecessarily and inappropriately treated SPOIR as a normative issue. First, Waples et al. believe that our treatment of SPOIR implies that other important normative dimensions (e.g., “at risk of extinction” and “foreseeable future”) would be neglected. Treating one normative issue as fundamental and irreducible, however, does not preclude treating others as important or fundamental.

Second, Waples et al. suggest that our treating SPOIR as a normative issue somehow represents an inappropriate human perspective where a species perspective is appropriate. This seems to reflect a misapprehension of the nature of normativity and an equivocation on the term *perspective*. Normative perspectives are not fundamentally human perspectives (except, inasmuch as any thought by a human, including scientific thought, represents a human perspective). That is, although normativity might be an anthropogenic perspective, this does not mean that it is an anthropocentric perspective. In fact, the ESA itself is a wonderful example of a normative expression, conceived of by humans (anthropogenic), yet fundamen-

tally concerned with the preservation of other, nonhuman species (*nonanthropocentric*) (Callicott 2005).

Third, Waples et al. suggest our approach to dealing with SPOIR will bring to the forefront disagreements about the operational meaning of SPOIR in case-by-case discussions of SPOIR. We, however, believe that highlighting disagreement when disagreement is legitimate and significant is a benefit, not a shortcoming, of our position.

As noted earlier Waples et al. are impelled by reducing the “apparently normative language [of SPOIR to] . . . a largely scientific exercise” and the biased presumption that scientific treatments are somehow inherently superior to normative treatments. It is biased to consider it a serious mistake to misapprehend an objective or formulaic issue as a normative issue while having little concern or sensitivity for the misapprehension of a fundamentally normative issue as an objective or formulaic issue. Given scientists’ limited expertise with normative issues and limited collaboration with those possessing such expertise, such bias may be expected. Nevertheless, such bias can be pathological when scientists are serving an interest such as conservation, which is broader than science alone. Avoiding this bias requires transdisciplinary thought arising from interdisciplinary collaboration, not reductionist thought arising from disciplinary imperialism. The confused treatment of conservation “facts” and “values” is liable to hinder the development of wise conservation policy in the same way that confused treatment of economic facts and values is detrimental to economic policy development (Putnam 2002). We stress that this criticism is intended to challenge a larger community of scientists over a tendency for which Waples et al. may be merely symptomatic.

Conservation professionals may tend to think that normative issues are given due attention as social science is increasingly employed to treat conservation problems. The inclusion of social-science dimensions of conservation is valuable and provides some treatment of normative issues. Inasmuch as social science is a science (i.e., descriptive of values) and inasmuch as science is non-normative (i.e., is not evaluative and not prescriptive), however, the mere inclusion of social science is inadequate for treating the many normative issues in conservation, many of which are evaluative and prescriptive. (Here, *evaluative*, *prescriptive*, and *descriptive* are technical terms sometimes used to distinguish boundaries of scientific thought and normative thought. Evaluative and prescriptive activities entail making value judgments, and descriptive activities are intended to be value-free [Putnam 2002].)

To fully address a normative issue is ultimately to address the question, How ought we to live? Although this question lies within the domain of social and political philosophy and ethics, it underpins conservation and conservation biology as well. Debate and controversy about the appropriateness and meaning of the ESA represents

profound uncertainty about how our society thinks we ought to live with nature. This profound uncertainty needs to be treated with widespread dialogue: dialogue about how much the welfare and ranges of species ought to be diminished by humans. A large portion of such dialogue would concern the question, What counts as a significant portion of a species' range? Given that every citizen has a stake in this issue, it would be tragic if a rich dialogue on this topic were reduced to a rarified exchange among technocrats (i.e., the small subset of conservation professionals that readily understand formal statements concerning viability and extinction risk (Vucetich and Waite [1998] explain how such risk statements can often be deceptively confusing, even to experts.). An important obstacle to effective dialogue on this topic is the grossly limited ability of average citizens or even conservation professionals to have discussions appropriately informed by environmental ethics: the field of inquiry devoted to the normative challenge of assessing how we ought to live with nature. Marginalizing environmental ethics from important conservation dialogues—such as those emanating from the ESA—paves the way for potentially tragic and unethical decision making.

Literature Cited

- Callicott, J. B. 2005. The intrinsic value of nature in public policy: the case of the Endangered Species Act. Pages 279–297 in A. Cohen and C. Wellman, editors. *Contemporary debates in applied ethics*. Blackwell, Oxford, United Kingdom.
- Flesher, J. 2007 (May 1). Scientists protest proposed species rule. News release. Associated Press, New York.
- Hebert, H. J. 2007 (May 25). Changes to Endangered Species Act scrapped. News release. Associated Press, New York.
- Interior Solicitor Opinion. 2007 (16 March). The meaning of “in danger of extinction throughout all or a significant portion of its range.” Memo M-37013. U.S. Department of the Interior, Washington, D.C.
- National Research Council. 1995. *Science and the Endangered Species Act*. National Academy Press, Washington, D.C.
- Putnam, H. 2002. *The collapse of the fact/value dichotomy and other essays*. Harvard University Press, Cambridge, Massachusetts.
- Vucetich, J. A., and T. A. Waite. 1998. On the interpretation and application of mean times to extinction. *Biodiversity and Conservation* 7:1539–1547
- Vucetich J. A., M. P. Nelson, and M. K. Phillips. 2006. The normative dimension and legal meaning of *endangered* and *recovery* in the U.S. Endangered Species Act. *Conservation Biology* 20:1383–1390.
- Waples R. S., P. B. Adams, J. Bohnsack, and B. L. Taylor. 2007. A biological framework for evaluating whether a species is threatened or endangered in a “significant portion of its range.” *Conservation Biology* 21:964–974.

