In their recent article, Karp et al. (1) address a serious problem inherent in nature conservation: the necessity for prioritization when faced with competing conservation objectives (cf. ref. 2). In principle, the authors (1) provide a very useful approach toward tackling this problem. However, a closer look reveals at least one substantial flaw: the underlying typology of conservation objectives fails to serve Karp et al.’s purpose adequately. Although Karp et al. (1) explicitly distinguish seven types of conservation objectives, their approach is hampered by the problem identified by Game et al. (2) that “[c]onservation planners often have trouble explicitly defining prioritization problems because the objectives relevant to the decision have not been clearly articulated.”

The typology created by Karp et al. (1) fails to serve their purpose in at least two respects. (i) The types of objectives distinguished by Karp et al. are aggregate types, meaning that they group together several different individual conservation objectives. This is not a problem in itself; it is even necessary for Karp et al.’s purpose. Rather, the problem is that the individual conservation objectives, which are aggregated within one and the same type, do not all exhibit congruence as regards their realization. For example, there are fundamental trade-offs among different regulating services; a strategy that prevents the extirpation of species A can contribute to the extirpation of species B, and trade-offs exist among cultural services, like local identity, ecotourism, and recreation areas (3, 4). However, if the types used are not homogeneous in themselves, any inquiry into congruencies or trade-offs among these types becomes blurred. Theoretical insights into congruencies and trade-offs that would allow generalizations are hindered because the types behave as “black boxes” of sets of partially congruent, partially incongruent conservation objectives. (ii) The typology used by Karp et al. (1) does not represent a reliable classification because the extensions of the types of conservation objectives are not mutually exclusive. In particular the first three objectives (reducing extinction/extirpation risk, enabling evolution) are, at least partially, means for achieving the other objectives (naturalness, provisioning/regulating/cultural services). Besides, naturalness might represent a subtype of cultural services (4). These overlaps among the types—like their heterogeneity [see respect (i)]—hinder a systematic analysis of congruencies and trade-offs among different conservation objectives.

Thus, the research agenda proposed by Karp et al. (1) requires a consistent typology of homogeneous types of nonoverlapping conservation objectives. Creating such a typology is a task similar to the definition of “final ecosystem services” that has been proposed to avoid double-counting and other problems in the assessment of ecosystem services (5). Whether it is in fact possible to set up such a typology with more than only local validity for particular places is open to some doubt. Still, it is worth making the attempt to overcome the serious problems connected with nature conservation, to which Karp et al. (1) have rightly drawn attention.

Thomas Kirchhoff
Department of Theology and Science, Institute for Interdisciplinary Research, FEST e.V., 69118 Heidelberg, Baden-Württemberg, Germany

Author contributions: T.K. designed research, performed research, and wrote the paper.

The author declares no conflict of interest.

3Chan KMA, et al. (2012) Rethinking ecosystem services to better address and navigate cultural values. Ecol Econ 74:9–18.

www.pnas.org/cgi/doi/10.1073/pnas.1517860112

LETTER