



Perspective

Ask not what nature can do for you: A critique of ecosystem services as a communication strategy

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ABSTRACT

Given the urgent need to raise public awareness on biodiversity issues, we review the effectiveness of “ecosystem services” as a frame for promoting biodiversity conservation. Since its inception as a communications tool in the 1970s, the concept of ecosystem services has become pervasive in biodiversity policy. While the goal of securing ecosystem services is absolutely legitimate, we argue that it has had limited success as a vehicle for securing public interest and support for nature, which is crucial to securing long-term social mandates for protection. Emerging evidence suggests that focusing on ecosystem services rather than the intrinsic value of nature is unlikely to be effective in bolstering public support for nature conservation. Theory to guide effective communication about nature is urgently needed. In the mean-time, communicators should reflect on their objectives and intended audience and revisit the way nature is framed to ensure maximum resonance.

1. The rise of ecosystem services

The concept of ecosystem services was developed as a communication tool in the 1970s to attract public interest in biodiversity conservation (e.g. Westman, 1977). Highlighting humanity's dependence on the services provided by nature was thought to be a way of “telling stories that link biodiversity to the things that matter to people” (Secretariat of the Convention on Biological Diversity (CBD), 2014).

Since then, the term has achieved global prominence and has evolved an economic focus, facilitating the valuation of biodiversity in monetary terms (Costanza et al., 1997). This puts decision-making in terms that are easier to communicate to decision makers, allowing trade-offs to be evaluated in a single (typically monetary) currency (Deliege and Neuteleers, 2015). Largely due to this fact, the last couple of decades have seen the economic interpretation of ecosystem services land squarely on the decision making table. While commodification of nature does not originate from the ecosystem services literature, the application of ecosystem services concepts often leads to attempts to quantify and monetize elements of biodiversity so that they can be valued and traded against other benefits.

The concept of ecosystem services is now pervasive in environment

policy agenda setting. For example, the publication in 2005 of the UNEP Millennium Ecosystem Goals (Millennium Ecosystem Assessment, 2005) focused heavily on understanding the links between ecosystems and human welfare; the Intergovernmental Platform on Biodiversity and Ecosystem Services has a specific mandate to report on the services we derive from nature; the European Commission Biodiversity Policy includes a major initiative focused on the Economics of Ecosystems and Biodiversity (European Commission, 2016) and the IUCN has committed substantial resources to implementing ecosystem services programs (International Union for Conservation of Nature (IUCN), 2016). Following this trend, a proliferation of programs focused on ecosystem services (sometimes mixed with intrinsic arguments for conserving biodiversity) has emerged from organisations such as The Nature Conservancy, Conservation International, World Wildlife Fund, and Wildlife Conservation Society (Goldman and Tallis, 2009). Market-based instruments that often involve the commodification of ecosystem services (Deliege and Neuteleers, 2015) are fast becoming the policy instruments of choice for biodiversity management around the world (e.g. Ecosystem Marketplace, 2016). While we acknowledge that the ecosystem service concept can encompass many types of services and values (Schröter et al., 2014), it is chiefly anthropocentric

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services, and often their corresponding economic valuation, that tend to be promoted through this frame.

2. The effectiveness of ecosystem services as a communications tool

Research in communication, sociology, psychology, and political science has shown that the way in which an issue is “framed” can influence the judgments an individual might make in relation to this issue. In reframing nature as a set of specific and quantifiable services, ecosystem services reinforces the market-driven view that nature is important only to the extent that it provides goods and services of (economic) value to humans (McCauley, 2006; Coffey, 2015). This ignores any intrinsic values people may have for nature (e.g. Schultz 2001), with its persuasive value relying on an assumption of human rationality informed by the “value” that is attributed to the services provided by nature. Many of the arguments for using the ecosystem services approach are centered on the idea that this allows the value of nature to be better included and properly considered by policy makers. By providing a dollar value for these hitherto “free” services, their value can be better weighed against competing values and interests, and thus afford “nature” greater regard than it has historically received in such cost-benefit analyses. Although far from clear-cut, this seems a reasonable approach to informing a cost-benefit analysis (which itself should be only one element of the decision making process).

However, the ecosystem services logic has not been confined to this context, and often appears in the wider conservation discourse, including as a deliberate technique for promoting nature conservation (Kusmanoff et al., 2017a). Given that humans are not strictly rational, are easily influenced by emotions and other biases (see particularly the advertising literature) and seldom change views owing only to being presented with new information (climate change is an example), there is a question as to the effectiveness of the ecosystem services approach as a communication tool. This raises the question of whether this shift in the way we frame our relationship to nature has delivered improvements in public engagement, conservation and environmental stewardship.

While academic publication on the topic of ecosystem services has grown exponentially in recent years (Cornell, 2011; West 2015), interest in biodiversity conservation by the media has over the same time period has plateaued (Legagneux et al., 2018). This is in contrast to the topic of climate change which has up to eight times the level of media covered compared to biodiversity, a discrepancy that cannot be explained by different scientific output between the two issues (Legagneux et al., 2018). This does not prove that the increased attention to ecosystem services is *causing* a plateau in media interest in biodiversity conservation, but these trends do suggest that the aim of increasing public interest in nature conservation has not been achieved via the increase in attention to ecosystem services. Importantly, over a similar period, almost every indicator of the status of the world's biodiversity has trended negatively, including increasing deforestation rates and increasing average risk of extinction for birds, mammals and amphibians (Secretariat of the Convention on Biological Diversity (CBD), 2014). Legagneux et al. (2018) argue that these biodiversity conservation challenges are simply not reaching the public and that improved communication strategies are urgently needed to raise public awareness.

3. Why ecosystem services may not be the best frame for public engagement

The concept of ecosystem services has arguably been very successful at integrating conservation in mainstream economics and sustainable development ideology and convincing academics to engage with concept (Norgaard, 2010). Other analyses have focused on the failure of the concept to deliver effective conservation action, particularly with

respect to payment for ecosystem services schemes (e.g. Büscher, 2012; Wynne-Jones, 2012). Here we are focusing on the success of the term at engaging the public in biodiversity conservation.

There are a number of possible explanations as to why use of ecosystem services may not have had the desired effect of promoting conservation engagement. The first is that programs focusing on ecosystem services are adopted at the expense of targeted conservation programs for biological diversity at genetic, species and ecosystem levels of organization (McCauley, 2006). The focus on ecosystem services is not delivering umbrella protection to biodiversity, rather it is taking attention and resources away from threatened species (McCauley, 2006). But this claim goes against the available evidence, with some studies arguing that threatened species programs have not suffered as a result of the focus on ecosystem services (Goldman and Tallis, 2009).

A second possibility is that the capacity for the public to engage with environmental issues has been dominated by climate change at the expense of biodiversity. Veríssimo et al., 2014 found evidence to support such trends in the coverage of these topics within the scientific and newspaper press, as well as the relative distribution of funding from key agencies. But does the public really have an upper limit to their capacity to consider environmental issues? Does concern for one necessitate a lesser concern for the other? While correlation does not imply causation, this result *does* point to the failure of conservation advocates to communicate the biodiversity crisis in as compelling a way as has been articulated for climate change, and this is supported by recent analyses (Legagneux et al., 2018).

It could be that framing biodiversity in terms of ecosystem services is not an adequately broad or effective communication approach to result in widespread change. People are generally more motivated to change behaviour by antecedent values, attitudes and social and personal norms than by rational thought (Ajzen, 1991). Hence, supplying technically correct, logical information about the value of a tree to the economy is unlikely to effectively communicate to the public why we shouldn't cut it down. Combining ecosystem services and empathy arguments is also unlikely to work. Confusing the message by selling the idea of the economic benefits of nature, while also appealing to its emotional qualities feels incongruent and possibly offensive for some people who have an emotional connection to nature (Futerra, 2015).

4. Ecosystem services may undermine intrinsic values

The intention behind the use of ecosystem services to promote conservation is that representing arguments for nature as services that nature provides ultimately leads to a deeper appreciation of the intrinsic value of biodiversity (Goldman and Tallis, 2009). This argument suggests that such an approach may engage people who do not already have high levels of intrinsic care for nature. We know of no evidence that indicates that reinforcing instrumental values can actually generate intrinsic values, however, as we discuss in the following paragraph, there is evidence that it can *undermine* intrinsic values.

Motivational crowding-out is the process whereby intrinsic altruistic motivations for behaviour are replaced by extrinsic self-interested motivations when an external (generally monetary) reward is offered for the behaviour. The classic example is the child who is paid by her parents to complete a household chore; once the child expects to receive money for the task, they are willing to do it again only if they receive a similar monetary reward (Frey and Jegen, 2001). This is a concern for monetary incentives in conservation (Bekessy and Cooke, 2011; Rode et al., 2015). By framing nature as a collection of ecosystem services, these anthropocentric benefits have the capacity to act as extrinsic motivations for practicing conservation and may act to crowd-out intrinsic motivations to care for the environment. It has been demonstrated that even communicating an aspect of nature in terms of economically framed ecosystem services (i.e. in terms of valuation) can crowd-out intrinsic motivations for conserving that aspect of nature (Kusmanoff, 2017) and lead people to contribute less money to a

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