

## The Marketing of Nature

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### ABSTRACT

According to its advocates, an ecosystem-services-based approach to conservation will engender greater public support and produce more durable victories. Here, we identify three potential opportunity costs associated with such an approach: (1) diminished attention to protecting rare, localized species (the night parrot effect); (2) diminished attention to protecting wild, remote areas (the proximity-to-people effect); and (3) an emphasis on restoration projects near urban areas rather than the protection of relatively intact ecosystems (the rise-of-restoration effect). We encourage scientists and conservation practitioners to undertake the necessary monitoring and research to determine the magnitude of these opportunity costs.

*Key words:* biodiversity conservation; ecosystem services; endangered species; wildlands.

A CARICATURE OF CONSERVATION THINKING OVER THE PAST TWO DECADES RUNS SOMETHING LIKE THIS: Creating state-regulated parks and protected areas has not been sufficient to protect natural ecosystems, biodiversity, or the many natural services that benefit people; recognizing the economic values of these services will secure the necessary willingness to conserve the nature that provides them; *ergo*, conservation should be marketed based on its economic benefits to people. This has sparked an ongoing, contentious debate about the merits of a conservation strategy based on valuing ecosystem services, which is, in many ways, a non-debate. Few if any conservation scientists would deny the importance of protecting ecosystem services that are important to human welfare. And most advocates for protecting ecosystem services also support efforts to protect endangered species and to preserve wild places. Moreover, state-sponsored protected areas have safeguarded 15.4 percent of global land area thus far, and are on target to reach 17 percent by 2020, as called for by Aichi Biodiversity Target 11.

But in a world where personal time, financial support, and societal attention are limited, individuals and organizations must decide where to focus their efforts. Some advocate a conservation strategy focused on ecosystem services (sometimes referred to as ‘new conservation’, although there is nothing particularly new about it) and suggest that we can have our cake and eat it, too: By focusing on ecosystem services, we can ultimately protect more biodiversity than would otherwise be possible. They argue that by directing conservation efforts toward actions that produce direct (ecosystem) benefits for communities, we can engage a larger cross-section of the public in conservation. Thus, more

urban-dwellers will be interested in protecting a montane forest if they know it is the source of their drinking water rather than if they see it only as the home of a rare bird. A farmer who understands that patches of native vegetation near her fields harbor pollinators for her crops is less likely to convert those patches to additional farmland. And corporations that view environmentalists with suspicion might have a change of heart once they realize that their bottom line ultimately depends on, say, clean water to manufacture soft drinks or abundant fish to become fish and chips. Wider support for conservation leads to more resources and more durable victories, or so the argument goes.

Those are strong reasons for supporting ‘new conservation’, but they are also hypotheses. Although some studies have claimed to show that a focus on ecosystem services has indeed led to increased conservation funding and collateral benefits to biodiversity, the findings are, at best, preliminary. The frequency and scale of the success of these ecosystem services approaches in securing the conservation of biodiversity and reducing natural habitat losses remain contentious. Over time, a clearer picture should emerge.

Here, we wish to call attention to the likely *opportunity costs* associated with a growing focus on ecosystem services. Our predictions should also be viewed as testable hypotheses. These hypotheses focus on the potential limitations and vulnerabilities of the ecosystem services approach to conservation. By testing them, scientists will be better placed to understand the contributions and limitations of the ecosystem services approach and to place it within a wider conservation framework.

We foresee three emerging issues, which we will call: (1) the night parrot effect; (2) the proximity-to-people effect; and (3) the rise of restoration.

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The night parrot is one of Australia's rarest birds. It lives in dense stands of saltbush and spinifex in remote parts of the Outback. It is strictly nocturnal and not especially striking in appearance. In fact, it looks a lot like a chunky budgie. Very few people live where it does; tourists do not flock to its habitat. Only the most fanatical of birdwatchers are likely to go to the trouble of trekking into the Outback and spending their nights in a near-futile quest to spot it. Ecotourism will not save the night parrot. We can think of no important ecosystem service that, if protected, would measurably improve its likelihood of survival. The night parrot, in short, stands for all those localized endangered species whose lives and homes may not be tied to an important ecosystem service and that lack a strong public following. Their ranks include the jellyfish tree, restricted to a few inselbergs on the island of Mahé in the Seychelles, and the Uncompahgre fritillary butterfly, found in a few patches of alpine habitat atop Colorado's San Juan Mountains. Such species are likely to be the losers in a world where conservation attention is diverted from their welfare in the direction of ecosystem services that their habitats cannot provide. It may be a trade-off worth making, but it is a trade-off nonetheless.

Although a few ecosystem services, such as carbon storage and sequestration, are fungible, most have clear spatial limitations. Watersheds, for example, have discrete boundaries; pollinators can travel only so far. All things being equal then, places closer to population centers are likely to yield greater benefits in terms of ecosystem services to large numbers of people. This will have the effect of moving conservation efforts away from remote wild lands and closer to cities, creating the proximity-to-people effect. Thus, ecosystem services have the potential to enhance biodiversity and semi-natural habitats within human-dominated landscape mosaics, but it is less likely that they will be able to secure the conservation of remaining wild lands. Paradoxically, the effectiveness of the ecosystem services approach for delivering conservation benefits may only be realized when certain wild landscapes become populated, exploited, converted, and degraded. The loss of some of the last remaining, relatively intact ecosystems on Earth will be a heavy price to pay if this happens.

If conservation organizations decide their priority is to directly benefit large numbers of people, they may be drawn to cases in which communities have already strained or depleted important ecosystem services. Efforts to restore a degraded fishery or a dying urban river can produce dramatic benefits for both nature and people. These are wonderful, important things to do, but what if they divert attention and resources away from protecting relatively intact ecosystems that harbor more sensitive spe-

cies? We have already seen evidence of the 'rise of restoration' in the promotional literature of some major conservation organizations that now emphasizes their work in repairing damaged ecosystems instead of preserving intact ecosystems.

We reiterate the point we made at the beginning: protecting the last remaining habitat of an imperiled species and helping a community develop a sustainable fishing plan are both worthy conservation goals. Both benefit biodiversity, and there may be many situations in which both goals can be pursued simultaneously. But in a world with limited resources, there likely will be trade-offs associated with following each. These trade-offs might be mitigated, or at least net benefits maximized, if conservation funds destined for ecosystem service projects are focused on those projects that have a high likelihood of success. This presumes clear evidence that the project will deliver the expected ecosystem services and associated biodiversity benefits. Such results are often assumed rather than demonstrated. Moreover, investments in ecosystem-service approaches to conservation typically have high start-up costs, so the most cost-effective investments would be those that provide benefits on large scales. This implies a greater need for research on ecosystem service approaches, but in a manner that is constructively critical rather than blindly accepting.

It is almost trivial to reiterate, as many have done before us, that ecosystem-services approaches are not a panacea. Nonetheless, it seems to us that they are often taken to be so, if not by scientists then at least, and increasingly, by policy makers, the wider public and, alarmingly, some of our students. We should recognise that engineered solutions might sometimes be preferable (*i.e.*, more functionally and financially effective) for achieving service delivery, even if conservation benefits are curtailed. In other cases, a conservation approach that does not explicitly focus on ecosystem services might be more appropriate to deliver conservation objectives. Even where an ecosystem-services approach is the preferred and most appropriate option, it might not remain so in the future. Demand for ecosystem services needs to be maintained to lend value to them, without which their justification as an approach to conservation is undermined. Similarly, continued provision of ecosystem services is subject to providers' willingness to bear the costs of service provision in view of the benefits gained (*i.e.*, the direct opportunity costs of ecosystem service provision).

A clear-headed discussion of those opportunity costs—backed by rigorous research instead of rhetoric—will allow all parties to make more informed choices about how they spend their time and money.