

Tourism and Wilderness: Dancing With the Messy Monster

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Abstract—Currently, tourism offers one of the best prospects for conserving remaining areas of unprotected wilderness in most parts of the world. Tourism produces environmental impacts, and in heavily-visited protected areas these impacts may be a significant threat to conservation values and a major management issue; along with other anthropogenic impacts such as weeds, pests, pathogens, and pollution. The impacts of tourism are generally far less than those of other industry sectors such as forestry, farming, mining or commercial fisheries, however, so if tourism can displace these land uses, there is a net gain for wilderness despite the impacts of tourism itself. Tourism is not an ideal tool for conservation, but in most of the world, and at least in the short term, it is perhaps the only one with sufficient political and economic clout to be effective.

The human economy behaves like a rather messy monster which creates impacts on the global environment not only by consuming raw materials and excreting waste products, but by accidental damage caused through messy habits, clumsiness and inattention. The monster's size is increasing much faster than its manners, and its tentacles are probing further into every corner of its habitat. Using tourism and recreation as a tool for wilderness conservation is like dancing with the messy monster in a crowded cage: risky, but unavoidable.

The aim of this contribution is to argue that tourism is important for the conservation of wilderness. In wilderness areas which are already protected, commercial tourism is growing in scale, and in some cases has become a significant source of anthropogenic impact, and a major logistic and financial issue for land managers. For wilderness outside protected areas, tourism offers an economically valuable land use whose environmental impacts, though by no means negligible, are far less than those of alternative land uses such as logging, farming and fisheries. Tourism is hence a very important tool for wilderness conservation, albeit one whose use is fraught with danger.

The Human Economy as a Messy Monster

The traditional model of neoclassical economic theory is to view the human economy as a closed loop which cycles

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money between producers and consumers. Environmental economists have drawn attention to the deficiencies of this model, preferring Herman Daly's analogy of the human economy as a gut which consumes raw materials and converts them to waste products, the so-called externalities of the neoclassical model. Even the gut analogy, however, misses one important aspect of the human economy; many of its most serious impacts are accidental. More species, surely, have become extinct as an incidental consequence of habitat destruction, than through deliberate consumption of that particular species. If the human economy is a gut, it is one which feeds messily, excretes heedlessly, and blunders around both carelessly and clumsily: a messy monster. This model includes the resource economist's view of the natural environment as a commodity warehouse for human societies, as well as the environmental economist's view of the natural environment as the unwilling trashcan for human waste products. It also recognizes that damage to the natural environment can occur as an inadvertent consequence of human economic activity, as well as a deliberate one.

Wilderness as the Kitchen Cupboard

As the messy monster grows it has less and less space to play in. Already it is often eating food contaminated by its own crap. From the monster's own perspective, the critical significance of wilderness is that it contains the ingredients for future meals—clean air and water for immediate consumption, and biological diversity at both species and genetic levels, which provide the raw ingredients for the many recipes of agricultural production. As wilderness shrinks, so too do the future options available to the agricultural, forestry and fisheries industries. The messy monster needs wilderness, places where it treads lightly on the tips of its tentacles, simply so that the global ecosystem can continue to function and keep the monster fed. This is not to belittle the intrinsic value of wilderness, or its significance for the rights of other species, or its importance for human personal growth. Even for individuals, however, who ascribe little significance to these issues, wilderness is still the kitchen cupboard for the human economy. "In wilderness is the salvation of the world"—not just figuratively or philosophically, but quite immediately and literally.

Why Study the Messy Monster?

The innumerable ways in which the human economy depends on natural environments, their biological components and ecosystem functions, are the province of the natural sciences. If wilderness is to be protected, however,

practical steps must be taken within existing political systems; and this is the domain of the social sciences. Natural sciences show us why wilderness must be protected; social sciences show us how.

Is the Messy Monster Learning Manners?

The most serious threats to wilderness and other undisturbed natural environments are from large-scale habitat destruction, and air and water pollution, from the major primary and secondary industry sectors. All of these sectors are taking steps towards better environmental management, which might be seen as improving the messy monster's manners. To date, however, this improvement has occurred only for some companies, in some countries. It has been rather marginal and cosmetic in most cases (Beder 1997), and has certainly not compensated for growth in the overall size of the human economy. Whilst some industry sectors have adopted voluntary environmental initiatives, these have generally been rather weak and seem to be aimed principally at influencing public opinion and staving off government regulation (Beder 1997). Significant reductions in impacts seem to occur only when governments enact and enforce relatively stringent environmental standards and laws, with penalties that apply to individuals as well as corporations, and when the courts are prepared to enforce them. The ability of individual governments to introduce more powerful environmental legislation, however, is greatly restricted by international trade agreements, particularly the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO). The structures of international trade agreements reflect the interests of large transnational corporations, and are therefore unlikely to encourage more effective environmental legislation.

Messy Monster Martial Arts

Even if the fabric of international trade agreements were more representative of social opinion overall, it seems that this rarely achieves consensus, and in any event, changes very slowly. If we rely on public environmental concern to change first the GATT, then national environmental laws, and finally the actions of individual corporations, wilderness will all be long gone.

Instead, we must search for an existing social institution which can move fast. Markets are the obvious candidate. When new information reaches stock markets, they react in seconds, not decades. Because wilderness conservation needs rapid action, we need to enlist markets to lead the way.

Most emphatically, this does not mean that we should privatize wilderness, or let markets decide outcomes. It simply means that we should use markets to move society, to influence human behavior. Entrepreneurs do not wait for social consensus. They ignore it, or change it. To conserve our few remaining areas of wilderness will be a battle. And if it's a battle, we should steal the enemy's weapons.

Giving Wilderness a Recognized Value

To use markets, we must first give wilderness a value which is recognized in existing social systems, without destroying it in the process. The issue of recognition is critical. Wilderness already has value in human societies. If they can't get it for free, people are prepared to trade other things for it. But they are used to play without pay. It's like the difference between unpaid housework and a paid job. They have equal value to society, but one has far greater recognition.

Note also that in the democratic western nations whose economic and social values dominate most of the world, there are two recognized classes of value — money and votes. The exchange rate between these varies; and of course in most electoral systems, not all votes have the same value. Sometimes votes can be obtained directly. Stankey (this conference) referred to this as "Voice"—enlisting the assistance of people experienced in operating political systems. I have referred to this previously as "grey power" (Buckley 1988), a much less compelling term.

Value Through Tourism: Dancing With the Monster

By far the most promising opportunity to provide recognized values for wilderness, comparable to those ascribed to other land uses, is through tourism, recreation, and possibly real estate. These approaches all involve risks and costs. The question is how to stitch up deals with tourism interests which will protect as much wilderness as possible at the lowest price.

There is a crucial issue of timing. Globally, tourism is expanding in geographic scope and in economic scale and significance. Wilderness is declining in both area and quality, and tourism and recreation in wilderness areas is increasing even faster than tourism as a whole. The value of wilderness to the tourism industry is therefore increasing — an argument to delay any deals as long as possible. On the other hand, wilderness is being lost to other land uses at an ever-increasing rate, and its value for tourism is then vastly diminished. This provides an argument to make deals as quickly as possible.

Of course, no one scenario applies universally. For wilderness areas in imminent danger of destruction through logging, land clearance, overfishing, or large-scale mining and mineral processing, the best option will generally be to encourage the rapid growth of a large and politically powerful tourism industry. In areas where threats are more distant, or which are already protected, there is more opportunity to restrict tourism development to low-impact, high-value activities, closely integrated with conservation planning. Hence, tourism is a conservation tool principally for wilderness outside protected areas, where it has less impact than logging or livestock, whether in developed or developing nations.

Tourism in Protected Areas

Inside protected areas, tourism has more environmental impacts than conservation alone, and tourism and recreation need to be managed to maintain the primary conservation value of the area concerned. Note, however, that tourism is often not the most serious source of anthropogenic impacts in protected areas. Weeds, pathogens, feral animals and pollution from external sources are at least as significant in many areas (Worboys 1997). In addition, tourism and recreation are one justification for the declaration of protected areas. And finally, there is the ever-present hope that tourism in protected areas will motivate people to vote or pay to conserve wilderness and increase the protected area estate.

Commercial tourism in wilderness and protected areas, including commercial outdoor sport, is growing faster than individual recreation, including outdoor education (Buckley 1998a, Watson this conference). This may probably be ascribed to three broad social trends. The main one is the increasing urbanization of the richer western societies, so that fewer and fewer people learn even basic backcountry skills during childhood. They see natural outdoor environments on television, so they know that these areas exist. They have less and less experience of these environments in their everyday life, so they want to visit them whilst on holiday. They don't know what to do when they get there, so they want an experienced guide. They have more money and less time, so they will pay to be taken directly to places which might take some time to find on their own. In addition, as more and more people begin to treat outdoor activities as holiday experiences rather than everyday recreation, there is a trend for them to try different types of activities and different holidays, rather than sticking to one. Since outdoor recreational equipment is becoming increasingly sophisticated and hence expensive, it makes sense for people to rent equipment as well as hire a guide. The overall effect is that outdoor recreation is perceived as a purchasable product, available to the unskilled and unequipped through commercial tour operators.

What difference does this make? What difference does it make to wilderness areas or land managers if visitors come as commercial tourists rather than private individuals? It makes a big difference. Whilst private individuals may form recreational clubs and associations, and may complain about restrictions imposed by land managers, they rarely have sufficient political power to oppose the authority of the land managers. In addition, they rarely ask for land managers to provide facilities. Their attitude is "let us in and leave us alone". Commercial tourism, in contrast, is part of very large industry sector which, though politically disorganized in the past, is fast becoming a powerful and vocal lobby group. And they lobby not only for access, but for facilities provided at the public expense, such as carparks and formed tracks and toilets and litter bins. Particularly where they have paid permit fees, they expect these fees and more to be spent on providing them with facilities. They often expect the right to construct private accommodation, and they may argue for preferential or exclusive use rights. They may expect land managers to provide rescue services and liability indemnities. Commercial tourism is not necessarily good or bad, but it is different from private recreation.

Environmental Impacts and Management Tools

Different recreational activities have different impacts in different ecosystems, and different impacts have a different ecological significance in different ecosystems. To use an oft-quoted example (Buckley 1998b, 2000, in press), trampling can cause significant and long-lasting damage to soils and vegetation in ecosystems such as alpine scree fields or arid areas with cryptogamic crusts, but has far less impact in tropical or subtropical rainforest with a dense understory filled with stinging trees and thorny vines. Weeds, pathogens and human voices, in contrast, are unlikely to have lasting impacts in extreme environments such as alpine mountain tops, but can have major impacts in temperate and tropical ecosystems.

In general, the environmental impacts produced by different types of recreational activities are known only at a qualitative level. Although a large number of quantitative and experimental studies have been conducted (Cole 1995), they have focused very heavily on one or two types of impact, particularly trampling; and though this is easy to measure, it is rarely of great ecological significance.

Historically, considerable effort has been devoted to quantifying the environmental impacts of trampling, probably because it is easy to measure experimentally. The most comprehensive review of visitor impacts currently available (Liddle 1997), for example, is devoted largely to the impacts of trampling. These include effects on the physical environment, such as changes in soil compaction, bulk density, penetrability, infiltration rate, moisture content and microflora. They also include effects on the biological environment, such as changes in plant biomass, cover, height, growth form, phenology, physiology and flowering, and behavioral and population changes in burrowing animals, animals moving above ground, and animals moving under snow.

The major conclusions from all this work seem to be: (a) we still don't have enough information to predict or model the types and intensities of impacts from different types of trampling in different types of ecosystem in any general sense; (b) the sensitivities of different ecosystems to trampling vary enormously; (c) if trampling is heavy enough in any ecosystem, plant cover will die and local soil erosion, sometimes to considerable depth, will occur; (d) if trampling ceases, soil and vegetation will generally recover at least to some degree, over various timescales which may be very long; (e) 4WD vehicles, trailbikes, mountain bikes and particularly horses cause vastly greater impacts than hikers; and (f) with few exceptions as noted below, the direct impacts of trampling itself do not extend far beyond the actual track, and if trampling ceases, they do not continue to expand.

The main exception to the last of these is that in some soils, steep downhill tracks may continue to erode even if the track is no longer used. Even taking this into account, however, the overall conclusion is that the total area of soil and vegetation affected by trampling on tracks is a minuscule proportion of the total area of wilderness.

Of far greater ecological concern, therefore, are a number of related but less obvious impacts. These may include impacts on populations of rare or endangered animal species,

whether through noise, visual disturbance, barriers to movement, or the introduction of pathogens, which may occur over a far greater area than the tracks themselves. Another example is the introduction of weeds, soil pathogens and waterborne pathogens, which can also spread well beyond the extent of the tracks themselves, and which are generally impossible to eradicate once introduced (Buckley and Pannell 1990, Buckley 1998b, 2000, in press).

Quantitative studies of more critical impacts are still very sparse, and more are urgently needed. In particular, such studies need to investigate whether there is a threshold level of the activity concerned, beyond which impacts become effectively irreversible. In addition, they need to quantify the types and intensities of anthropogenic stresses, related to tourist activities, as well as the types and degrees of impact on different environmental indicator parameters in different ecosystems.

Such approaches require detailed scientific studies with adequate controls, replication, and sampling and measurement techniques, but this is expensive. Land management agencies rarely have adequate funding to support scientific research. The tourism industry has little interest in quantifying its own impacts, and government granting agencies for scientific research typically accord low priority to applied studies of this nature. The current shortage of quantitative data on the critical environmental impacts of tourism and recreation in protected areas is therefore likely to persist.

Even less quantitative information is available on the effectiveness of visitor management tools used by protected area agencies. Such tools include regulatory approaches such as quotas, zoning, permits, and restrictions of various types; economic instruments such as charges and fees to restrict numbers or particular activities; physical infrastructure to harden areas against human impacts; and education and interpretation programs to encourage minimal-impact behavior. In general the tourism industry tends to favor hardening, especially if carried out at the park's expense. It also favors education, but only if it is free and perceived as adding value to tours. It sometimes supports quotas, but only if they are grandfathered to existing operators and serve to reduce competition.

Information Requirements

Broadly speaking, the information which wilderness and protected area agencies need to manage tourism falls into three main categories. The first is the long-standing category of land and visitor management tools and indicators, as outlined above. The second category is economic. Land managers often want to know how much their land is worth

for tourism, in order to lobby more effectively for government funding. They also want to know how much they can charge visitors and commercial tour operators, to make up the shortfall in their operational budgets when government funding is inadequate, as it nearly always is. The third category relates to operational management for parks which do allow commercial tourism operations. Three specific issues in this category are attracting particular attention at present: (a) accreditation, screening and auditing of individual operators; (b) potential liabilities of the management agency and tour operators to each other and to clients under various circumstances; and (c) requirements for minimal-impact equipment, education and practices. Most of this research is still in its infancy.

Conclusions

I have argued above that those who value wilderness conservation need to join forces with the tourism industry to gain political and market power before it is too late. Such partnerships will not always be easy. If we are to dance with the messy monster, we must do so with decorum and at arm's length, because there will be no chaperone. The fundamental reason for conserving wilderness is to prevent the collapse of the planetary ecosystem, not to provide a tourist playground. For wilderness conservation, tourism is a means, not an end.

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