Privatizing Isle Royale? The Limits of Free Market Environmentalism

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ONE OF THE MOST RAPIDLY GROWING APPROACHES to the study of environmental policy calls for a greater use of market-based instruments to improve policy outcomes. As a result, we now have a coherent body of studies under the rubric of "free-market environmentalism" (FME; Baden and Leal 1990; Anderson and Leal 1992, 1996; Cordato 1997; Huber 1999; Anderson and Hill 2004; see also Stavins and Whitehead 1992 *inter alia*). The most notable success of FME have been the development of tradable emissions schemes in the United States and European Union, leading many to think about how best to extend the market to other environmental problems, such as endangered species.

This paper will focus on the problem of using FME approaches to manage preserved lands. Nearly 30% of the United States is federally owned, mostly in the form of national parks, national forests, national wildlife refuges, Indian reservations, and Bureau of Land Management (BLM) national interest lands. These lands have a variety of mandates, but recreation plays an important part in all of them except, in most cases, on Indian reservations. Advocates of FME have argued that the U.S. Forest Service (USFS) and BLM systematically undervalue recreation because they do not obtain significant revenue from providing it. Similarly, they argue that the National Park Service (NPS) undersupplies recreational infrastructure such as campgrounds because the fees are set too low and revenues generated go directly to the U.S. Treasury instead of staying in the park or the NPS. U.S. Fish and Wildlife Service management of national wildlife refuges would face a similar indictment (see, for example, Snyder and Shaw 1995). As a result of poor agency incentives, recreation is underprovided, and cash-strapped agencies lose a potentially significant source of funds.

The typical FME recommendation for national parks and national forests has been to align managers' incentives with social demands through price and similar market mechanisms. Charging users an entrance fee, raising camping fees to rates comparable with those charged by private campgrounds, or increasing the now-low royalty rates on concessionaires in national parks would better signal scarcity to potential users and prevent overcrowding. If the revenue from such fees were to go directly to each unit's manager, then those activities that society values most—recreation in most cases—would receive greater investment. Timber harvest and livestock grazing, which USFS and BLM managers currently favor because of subsidies and distorted incentives, would be disfavored under a

market regime. Switching to recreational users, who have less impact on parks than do loggers or grazers, might better serve environmental goals, among others.

Some of these suggestions have been introduced since the 1990s. Entrance fees to national parks are much higher, national forests now charge for parking at some trailheads, demonstration fee programs are in place at many sites, and many campgrounds do charge fees comparable with those of privately owned campgrounds with similar facilities and services. However, the supply side of the FME agenda has been less successful. Congress generally prefers to direct revenue to the U.S. Treasury instead of letting these fees remain in the unit where they were generated. Nor has revenue received by each unit necessarily made that unit better off since Congress can, and does, reduce appropriations accordingly even when it makes commitments to the contrary (for a non-FME introduction to these issues, see Lowry 1994).

Most important, this focus on manager incentives shrinks back from pursuing FME to its logical conclusion: privatizing public lands. Privatization would mean that Congress would no longer be able to distort manager incentives. If the FME argument is correct, new owners would seek out the highest and best use for the land, which is recreation in most cases. Though otherwise strong advocates of market incentives, Anderson and Leal (1996:75) refrain from recommending privatization "for reasons of political feasibility." Certainly a closer examination of the economics of the issue would be more appropriate than a weak dismissal.

Even if we reject privatization as inimical to the purpose of national parks, thinking about the problem has implications for other types of NPS reforms. For example, some critics of the National Park Service have suggested putting conservation trusts or environmental groups in charge of individual parks in place of the NPS, with these trusts having much stronger environmental mandates and less political interference (e.g., Baden and Stroup 1981; Hess 1993, chap. 5; Anderson and Fretwell 1999; LeRoy 2005). For example, the Presidio unit of Golden Gate National Recreation Area is governed by the Presidio Trust, a mix of conservation and economic development trusts that some hold out as an example of how to manage national parks in the coming century (but see Rothman 2004, chap. 9). Tallgrass Prairie National Preserve is overwhelmingly owned by The Nature Conservancy (TNC), and managed by the NPS in conjunction with TNC and the Kansas Park Trust. Some FME advocates have suggested similar types of trusts for the Arctic National Wildlife Refuge, handing over management to environmental groups who would be allowed to keep some or all of any oil and gas royalties, or to prohibit such development altogether if they wish (Snyder and Shaw 1995). Such trusts would still need to worry about revenue and expenses, and the present paper suggests the limits of what they would be able to do without on-going government subsidies—subsidies that would, if continued, permit the very political interference that conservation trusts are meant to prevent.

To evaluate the FME approach to national parks, and to provide a foundation for discussing the economics of conservation and other trusts for parks, this paper conducts a thought experiment: What would happen if the U.S. government were

to privatize Isle Royale National Park? I chose Isle Royale because it has many distinctive features that raise the challenges of FME in stark form: its primary resources are scientific- and wilderness-based, and its visitation rate is very low. I examine this problem with a series of rough estimates and back-of-the-envelope calculations (as in Anderson and Fretwell 1999). For example, if the U.S. were to privatize Isle Royale, what price would it demand? What revenue sources would be available to an imaginary private purchaser, the Isle Royale Company (ISROCO)? Would it turn a profit and, if so, under what conditions?

The central finding of this paper is that ISROCO could not come close to making a profit from Isle Royale. Privatizing the park would therefore require highly concessional terms or on-going subsidies, raising serious questions about the FME approach when applied to national parks. A conservation trust would face similar challenges since it too would be dependent on subsidies, and these subsidies would encourage on-going political interference in its management.

Of course, existing public ownership and NPS management already represents a form of subsidy. This subsidy is effectively given to recreational and scientific users of the park. This implies that one can either subsidize the profit-making concessionaires or the recreational and scientific users. Since the users, as citizens, are also the collective owners of the resource, it makes the most sense to subsidize them instead of a private purchaser who would charge citizens to use the resource. These distributional issues, which apparently have been ignored by both sides in the debate over FME, are in fact central to the problem of allocating property rights in any market (North 1984, chap. 2).

Many criticize FME for excluding nonhuman values, the preferences of future generations, democratic discourse and the public weal, or for failing to recognize various market or political and legal imperfections (e.g., Blumm 1992; Smith 1995). These are serious issues but I will set them aside here. For others, FME is judged guilty by association because many advocates receive funding from corporations and politically conservative foundations (Beder 2001), an issue I address in the conclusion. For the thought experiment here, I take FME seriously on its own terms, imagining the implementation of FME prescriptions. This thought experiment highlights (1) the distributional consequences of a shift to FME recommendations; and (2) the practical limits of using FME for some kinds of environmental problems, especially for natural resources such as national parks that are, by definition, unique. These concerns will be found, albeit often in a less-severe form, when discussing privatization of any public lands.

Isle Royale: The nature of the resource

Critics sometimes accuse FME of wanting to turn Yellowstone into Disneyland. That objection raises serious questions of values, which I will set aside in this paper. That example neglects, however, another question: Could Disney make a profit from Yellowstone? I suspect that the answer is yes, given both the success of Disneyland and the large number of visitors to Yellowstone (about three million a year, though this is much less than the sixteen million that visit Disney's Magic Kingdom in Florida each year). In such cases, turning

Yellowstone over to the private sector would certainly maximize *some* social values, though doubtless a very different set of values than it currently serves.

Yellowstone and a few other "crown jewels" in the park system represent special cases. FME offers an analytical approach that aspires to be useful for all environmental issues at all times. Instead of evaluating that claim against high-attendance, high-revenue destinations such as Yellowstone, Great Smoky Mountains, Rocky Mountain, or Yosemite national parks, it makes more sense to examine a hard case of roughly similar size.[1] In light of its very different profile, Isle Royale National Park presents a good case against which to evaluate the limits of FME.

Because of its remote location in northwestern Lake Superior, Isle Royale attracts very few visitors each year. With only 17,070 visitors, it ranked 318th of 359 NPS units in 2006 (NPS 2007). Outside Alaska, it is the least-visited NPS unit designated as a "national park," and those other "non-national park" NPS units ranked below it in attendance tend to be obscure national historic sites. Interestingly, despite its low attendance, Isle Royale is also the most widely revisited park in the entire system (NPS, personal communication). This high revisitation rate hints at the existence of less-obvious social values being served by the park.

Isle Royale's major assets are wildlife and wilderness (see DuFresne 1991 [2002], part 1; Shelton 1997; for critical evaluation, see Wockner 1997). In 1940, Isle Royale became the first national park to be preserved largely on the basis of its wildlife resources, as opposed to its monumental scenery (see, more generally, Runte 1979 [1987]); Everglades National Park, much more well known, was established for similar reasons in 1947.[2] Though Isle Royale and Everglades were the first, parks based on wildlife and wilderness have become more common since then, notably in Alaska. These kinds of natural assets now provide a common justification for national park status, and must be considered in any proposal for reform.

Isle Royale's most famous fauna, the gray wolf, did not arrive until after park establishment, in the winter of 1948–49. The relationship between wolves and moose—who had themselves been on the island for only a few decades—provide the foundation for a classic study of predator–prey relationships that is the world's longest-running scientific study in a protected area (Allen 1993; Peterson 1995; see www.isleroyalewolf.org). This distinctiveness, and the park's scientific importance, have led the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to designate it as an international biosphere reserve. Because other wildernesses do exist in the Lake Superior region and elsewhere, these scientific assets are Isle Royale's most distinctive attributes.

From a political standpoint, Isle Royale's major resource is wilderness. About 99% of the park was designated a federally protected wilderness in 1976, with only a few developed campgrounds, three stores, and various administrative buildings excluded from the wilderness designation. Because the nearby Boundary Waters Canoe Area Wilderness (BWCAW) on the Superior National Forest sees about one million visitors a year, Isle Royale offers a remote, solitary wilderness experience not readily available elsewhere in the region.

Isle Royale attracts a hardy group of backpackers, canoeists, and kayakers each

year. Of its 17,000 visitors, about 14,000 venture into the backcountry, for an average stay of over five days (NPS 2005). The remaining visitors are foot travelers who stay overnight in the small frontcountry zones or else are boaters who use motorized boats to travel the non-wilderness waters around the main island. For comparison, Isle Royale sees roughly the same number of backcountry campers as does Yellowstone, despite the latter park's three million or so visitors a year. Because the average stay at crown jewels such as Yellowstone and Yosemite is measured in hours, not days, Isle Royale clearly represents a unique recreational resource. For FME, the question is whether market incentives can lead to better management of this resource.

Surprisingly, in light of the low level of visitors, Isle Royale is subject to significant crowding in the backcountry. Current visitors already express concerns about overcrowding of both campgrounds and trails degrading the wilderness experience (NPS 2005:11). Policy changes that would increase visitation must take these issues into account.

Such complaints reflect several factors, which become more evident in comparison with a crown jewel park such as Yellowstone. First, Isle Royale's users are self-selected to those seeking a wilderness experience, and solitude is generally an important wilderness value (see Hendee et al. 1990 *inter alia*). As a result, they are likely to be more sensitive to any crowding effects than the motor tourists in a destination such as Yellowstone. This crowding is most noticeable in the northeastern part of Isle Royale, where motorized boating and NPS activity harm the soundscape. Jack Oelfke, the park's former chief of natural resources, admitted that "aircraft noise [and] propeller-boat noise diminish the feelings of the wilderness out there" (cited in Wockner 1997:197). Similarly, Rolf Peterson, the now-retired leader of the wolf–moose study, notes that "Isle Royale has always had a lot of boats run[ning] around making noise" (cited in Wockner 1997:203). Only Lake Yellowstone wilderness campsites, a small share of all wilderness campsites in Yellowstone, are subject to the same soundscape impact as the wilderness areas near Rock Harbor on Isle Royale.

Second, Isle Royale has a short season, and is closed from November 1 to April 15 each year. In contrast, Yellowstone is open year-round, though all but one of its roads close down for various periods. In addition, most visitors to Isle Royale avoid periods with heavy mosquito and fly populations, effectively limiting usage to the period from July 15 to Labor Day. The short season increases crowding on Isle Royale.

Third, Isle Royale's wilderness users are likely to encounter other parties despite its remoteness and low visitation. Isle Royale has about 230 campsites, including shelters and frontcountry sites at Windigo and Rock Harbor, which is not much less than Yellowstone's 300 backcountry campsites. With the shorter season on Isle Royale, those campsites often fill and visitors must double up (Isle Royale National Park 2005).

The fact that the resource is already subject to crowding effects at low levels of usage complicates the task of privatizing Isle Royale. Increasing visitation would attract a different category of users, those further along the "recreational use spectrum" along which land managers arrange visitors by their tolerance for crowding (Manning 1986). However, these more intensive users already have lower-cost

alternatives on the nearby mainland, and it is not clear why they would pay significantly more for an Isle Royale experience that can be had more cheaply in the BWCAW. The crowding issue poses challenges for valuing and pricing Isle Royale in the next section, warranting a somewhat cautious approach to any reform.

Valuing and pricing Isle Royale

If Isle Royale were privatized, could it make a profit? To answer this question, I will make a series of rough, back-of-the-envelope calculations about the revenue that our imaginary private company, ISROCO, would need. For simplicity, I will assume that ISROCO seeks profits of about 10% on total revenue, or a 10% return on capital, neither of which are uncommon returns for a business in the United States. It seems certain that this estimate is within an order of magnitude of the actual revenue that would be derived, and, as it turns out, an estimate within an order of magnitude is all we need to raise serious questions about privatizing this national park.

The most intractable issue for applying FME to a national park such as Isle Royale is the question of pricing the land. Yet pricing the land is essential for any reasonable application of FME to outdoor recreation: national parks and national forests provide large, mostly intact tracts of land whose very size represents a substantial part of the overall attraction. There are very few private sites with similar amounts of land (one example would be the Philmont Scout Ranch in New Mexico), making the national parks all the more valuable.

Before becoming a national park, Isle Royale historically had been exploited for copper, lumber, and fish. Copper mines were abandoned as uneconomical. Given the location, timber is probably just as uneconomical today. This leaves only the island's fishing resources as a potentially valuable economic resource. Those fisheries on Isle Royale's many inland lakes are probably valuable only as a recreational resource. The offshore fishery might be commercially viable, and is already exploited for the lodge on the island. Beyond this revenue, which I fold into the lodge operation, I was unable to estimate the value of this fishery. Commercial fishing operations before park establishment consisted of single-family operations earning only modest revenue. Because of the weather on Lake Superior in winter, an offshore fishery would be only a seasonal resource.

To determine a price for recreational use, I examined prices on the North Shore of Minnesota (www.cbnorthshore.com, accessed February 2007) and Michigan's Upper Peninsula near Houghton and Copper Harbor (www.c21-nca.com/, accessed February 2007). Minnesota land can be purchased for as little as $86,900 for ten undeveloped acres on a remote lake, but most prices were closer to $50,000–$100,000 per acre for undeveloped land that is zoned for development. If we assume that a privatized Isle Royale National Park will be zoned for development, then its 132,000 terrestrial acres are worth about $6–12 billion. Because undeveloped and more remote land is much cheaper, than figure may be high by a factor of ten, so an alternative estimation would be about $0.6–1.2 billion.

Using Michigan real estate prices yields similar estimates. Typical examples of undeveloped land for sale were: without a lakefront, 50 acres, $70,000 ($1,400 per acre); with a lakefront, 20 acres, $150,000 ($7,500 per acre). Obviously some Isle

Royale parcels will include a lakefront, while others will not. These prices are much closer to the low estimate from the North Shore, or again, about $0.6–1.2 billion for the entire island. To give ISROCO the best possible price for this thought experiment, I will use this low figure and round it off to $1 billion. In this case ISROCO would need revenues in the ballpark of $100 million a year to make its investment work.

To put these numbers in perspective, suppose that Isle Royale's 14,000 backcountry users were instead to form a cooperative to buy the island for their own recreational use. Because of the high revisitation rate, such a cooperative might be more feasible here than in other destinations. Using the lowest range of estimates above, purchasing the land would require about $43,000–86,000 per person, or $170,000–$350,000 for a family of four. If ISROCO purchased the island instead of the cooperative, it would require an annual return equal to about 10% of this—tens of thousands of dollars for each family of four to use the island.

As a going business, ISROCO would also have to take over the operating expenses of Isle Royale. In FY2002, the NPS budgeted about $3.2 million for Isle Royale, of which $1.1 million went to visitor services, $1.7 million to facility operations and maintenance, and $450,000 for resource preservation and management (NPS 2005; Isle Royale budget, www.nps.gov/archive/isro/pr-budge.htm, accessed February 2007). Each category might be subject to some cost savings if provided by private firms on a competitive market. Spread among 17,000 total visitors, these operational expenses amount to a little less than $200 per person each year. Since the NPS currently charges only $4 per person per day in user fees for an average visit of five days, the U.S. Treasury currently subsidizes about 90% of the operational cost of each recreational visitor.

Looking at these figures as a whole, the cost of buying Isle Royale would require annual profits on the order of $100 million in order to provide a reasonable return on investment for a private firm. Operating costs make up only a minor sum against this requirement, a few million dollars a year. It would be unreasonable for a private firm not to pay for the cost of land purchase. However, a conservation trust running a government-owned island in the public interest might only need to cover the operating costs if Congress wrote appropriate authorizing legislation. In this case, charging each visitor several hundred dollars each for a wilderness experience would suffice to cover expenses. This would represent a significant increase in the costs to visitors, but the price would not be out of line with those for other recreational opportunities.

Current revenue sources

Having examined costs, I now ask whether ISROCO might achieve the revenue it needs. Because existing revenue is privately held information, I use visitation and price data to estimate revenue.

Visitation is highly concentrated in Rock Harbor on the northeast side of Isle Royale. This port receives daily passenger service from the *Isle Royale Queen IV* out of Copper Harbor, Michigan, and service two times a week from the NPS boat, the *Ranger III*, out of Houghton, Michigan. The *Ranger III* can carry private boats such as cabin cruisers, sparing them a potentially dangerous trip from the mainland. Rock Harbor

also hosts the *Voyageur II* on its thrice-weekly trip around the island out of Grand Portage, Minnesota. To service visitors, NPS employees, and concessionaires, Rock Harbor has extensive facilities, including the Rock Harbor Lodge, gas pumps, two stores, showers, laundry facilities, sewage pump-out services, a campground, and NPS services such as a ranger station, visitor center, and auditorium. There is also a seaplane dock and further boat facilities at Tobin Harbor, a short walk across the narrow peninsula on which both harbors are located. The lodge employs about 60 workers in the peak season, who live in nearby dormitories (NPS 2005:142).

The lodge and each of the transportation services are run by different concessionaires, each of which the NPS regulates for quantity and price. Presumably NPS regulation leaves some revenue on the table, though any increase in transportation price would lead to some reduction in visitation, depending on the price elasticity of demand.

Of the 17,000 visitors to the park each year, let us suppose that 16,000 use the existing transportation concessionaires. Round-trip travel to Isle Royale is about $160, varying a bit by vendor and itinerary. (Air transportation costs about twice as much, but volume is small enough not to affect the estimates here.) Thus, transportation revenue is about $2,560,000. In addition, the company operating the *Voyageur II* has a contract to deliver the U.S. mail, and this boat also provides intra-island transportation for visitors and for some park employees and concessionaires. The boats also generate revenue from shipping excess baggage, kayaks, and canoes, and, in the case of the *Ranger III*, cabin cruisers. Finally, the *Ranger III* transports NPS personnel to and from the island; if privatized, this would generate revenue not included in the above total (the NPS currently owns the *Ranger III*). The transportation services also earn some revenue from shipping supplies to employees, volunteers, scientists, and other seasonal residents. Adding these sources brings transportation revenue above $3,000,000 but probably not above $4,000,000.

Lodge revenue is comparable. Peak season runs from July 5 to September 7, or 65 days. The lodge has 60 rooms and charges $360 per night for two adults, all meals included (additional adults are $120, children $57). Full occupancy for the entire season with two adults per room would yield $1.4 million in gross revenue. Adding people would move revenue toward $2 million, while less-than-full occupancy would lower revenue toward $1 million.

The lodge's non-peak season runs from May 25 to July 4, or 40 days. Rates are $336 per night, with additional adults $114 each and each child $56. Full occupancy would yield $800,000, but that is very unlikely in the non-peak season. Combined with the peak season and incidentals, total lodge revenue may approach $3 million.

The lodge also offers 20 cottages at $232 per night in the peak season, with each additional person $49. Let us assume that these are attractive to families of four, and enjoy 100% occupancy during the peak season, yielding $429,000 in sales. Meals are not included in the cottages, and some visitors will take meals in the lodge restaurants, while others will prepare them in their cottage. Cottages cost $209 per night in the non-peak season, with each additional person $44. Assuming again a family of four and 75% occupancy, this yields $267,300 in revenue for the non-peak sea-

son. Throwing in some restaurant meals for cottage guests means that the full-season revenue is in the ballpark of $1 million.

Putting all those numbers together does not yield lodging and meals revenues in excess of $5 million. The lodge also offers a variety of other services, including water taxi, charter fishing trips, a snack bar, dining room, a general store, and a marina. Since meals are included in the cost of most lodge rooms, and most non-lodge visitors eat in the backcountry, additional revenue there will be relatively small. The water taxi and fishing charter can each yield hundreds of dollars a day for the 100-day season if kept busy; the marina and general store probably each yield comparable revenue. The lodge also offers daily boat excursions, charging $33 per adult with children half-price. These boats hold a couple of dozen passengers, so daily revenue from this program is likely $500–$1,000. Putting these revenue sources together adds up to perhaps $500,000 a year. To account for the possibility that I have grossly underestimated general store and marina revenues, let us call the revenues here $1 million.

All said, then, Isle Royale businesses currently generate something on the order of $10 million a year in revenue. At a rate of 10% of sales, these businesses would earn about $1 million a year in profit. Recall that the previous section suggested that a profitable ISROCO would require profits two orders of magnitude greater than this, or about $100 million a year.

Most of that requirement comes from the capital costs of purchasing the land, and the U.S. government could make privatization work by giving the land away. However, it is hard to justify such a giveaway in any public policy terms because it would give away profits to one firm without competitive bid. Alternatively, the U.S. government could continue to own the land while leasing it to a private firm or to a conservation trust. However, a market rate for leasing the land would have a clear relation to the underlying value of the land—and that value is just too great for a profit-making enterprise. Any lease cheap enough to make ISROCO a going concern would entail large implicit or explicit subsidies.

A similar analysis applies to any conservation trust. The U.S. government would be allocating some set of property rights to the trust, including the right to determine how assets are used and a claim on the residual earnings from those assets. (Another aspect of property rights, the right to sell the assets, would presumably be constrained by the terms of the trust.) Could such a giveaway be justified, or should the U.S. government be required to consider rival bids for management of a conservation trust?

If the government considers rival bids, then the value of the asset and its ability to generate revenue again enter into play, since this would distinguish rival bids. Moreover, the taxpayer public might reasonably request payment of some lump sum or annual fee in exchange for the right to manage the asset. Because the highest and best commercial use of Isle Royale is probably the building of lakeside vacation homes on very large lots, the value of the property as estimated above is again a reasonable point of reference—even for a conservation trust. If the government does not allow vacation homes when assigning the land to a conservation trust, then it is subsidizing that trust by the value of such development foregone.[3] These subsidies are no different in principle from the existing subsidy of backpackers and scientists.

Completeness requires discussion of a final existing revenue source. Like most other national parks, Isle Royale has a nonprofit cooperating association affiliated with the park. The association provides some volunteer and paid staff in stores and ranger stations in the park, and also sells books and similar items on-line and on the mainland. Revenue generated from these and other sources, including donations, can be used for park projects. In financial terms, this group provides park management with some revenue usable for discretionary purposes that would go directly to the U.S. Treasury if the NPS ran the bookstore itself.

If the island were turned over to ISROCO, presumably these volunteers, donations, and revenues would become unavailable to a profit-making firm, except for bookstore sales. However, a not-for-profit conservation trust running the park would probably be able to continue to call on the volunteers and donations. The numbers involved are not large, smaller than the existing general store, but must be included in any full accounting.

In summary, the key question remains what to do about the land, which is the major commercial asset of the park and whose purchase would represent the main expense for any business. A conservation trust allows greater flexibility in design but would essentially lie between two extremes. At one end, a conservation trust would work more like a business and would therefore be subject to the same challenges as ISROCO. At the other end of the spectrum, a conservation trust would be encumbered by many restrictions on its activities, making it look more like existing NPS management. The more restrictions, such as conservation easements, imposed on the trust, the greater the government subsidy of those users who are allowed to remain. In short, the trust would let us determine the mix of subsidies to backpackers, scientists, vacation home owners, and businesses more precisely, but any conservation trust entails an implicit or explicit subsidy to someone.

New revenue sources for ISROCO

The previous section suggests a large gap between the revenue needed for a privatized park and the actual revenue available, with a similar gap faced by any reasonable conservation trust. Several new sources of revenue would be available with relatively small changes to the current management philosophy. Beyond this, further revenue enhancements would fundamentally change the nature of the resource, raising serious questions of values. In short, expanding revenue sources would likely not solve the basic revenue problem.

First, ISROCO could try to recover income from the wolf–moose study (see Mech 1969 [2002]; Allen 1993; Peterson 1993; Wockner 1997). It is not clear what a reasonable fee for scientific access should be, but let us suppose that ISROCO sets a fee in a manner similar to indirect cost recovery (ICR) on other grants. The principal investigators of the Isle Royale wolf–moose study (on-line at www.isleroyalewolf.org), located at Michigan Technological University, claim that they need $150,000 a year to continue the study. For discussion, consider an ICR rate of 30%. This implies that the wolf–moose study would have to pay ISROCO about $45,000 a year for access. This roughly equals existing secondary sources of income such as the gift shop—a help to cover operating expenses but a drop in the bucket if ISROCO has to buy the land.

Given the steady decline of federal

funding, and the unpredictable level of private donations, it seems unlikely that the wolf–moose study would be able to pay this rate out of existing funds. Alternatively, the wolf–moose study could simply raise the funding that it seeks from the National Science Foundation (NSF) and other sources by this amount. However, such an increase would obviously entail a federal subsidy to ISROCO out of the NSF budget, mediated by the wolf–moose study. For consistency, FME advocates should oppose any such on-going subsidy to support a privatized concern.

The more problematic aspect of the wolf–moose study is the externalities that it imposes on other uses of the island. For example, one long-standing trail was erased from the map (and is now well overgrown) to keep hikers from exploring a known pack denning location. Prohibitions on non-scientific uses of some areas would lower ISROCO's potential value, once again requiring implicit or explicit subsidy.

Higher user fees represent another possibility. I suggested above that it would take about $200 per backpacker per visit to cover existing management costs, or about $40 per day. This is probably a reasonable price, given that Disney parks charge about twice that much for admission. However, this fee would be much too low to cover the cost of the land.

Increasing usage would also generate more revenue. ISROCO might expand backcountry use by adding campgrounds, especially since many sites are already full during the peak season. The NPS has designed its trails and campgrounds to move overnight use to the shoreline, with a few exceptions along the Greenstone Ridge trail. ISROCO could revisit this decision and develop inland backcountry use.

ISROCO could also increase both visitation and revenue by offering guided backcountry tours for people who currently lack the equipment and skills to hike without a guide. Guided trips are popular in some parks, such as Glacier National Park, and can cost several hundred dollars a day. Adding backcountry cabins, as in the Porcupine Mountains Wilderness State Park in Michigan's Upper Peninsula, would also attract a different class of user. Guided kayaking trips, perhaps with cabin development near existing kayak campgrounds, would provide another possible source of revenue. However, based on experiences at these other locations, it is difficult to envision a doubling of visitation.

Similarly, ISROCO might also develop the small tour business currently found on the island. A few organizations such as Elderhostel already take groups to the island on tours. More modern resort facilities might attract more such groups, especially if transportation times could be shortened with the use of larger float planes or the addition of hydrofoil service.

ISROCO could also increase usage by opening the park to winter use. This would create opportunities for cross-country skiing, dog sledding, and snowmobiling. All these activities are growing in popularity in comparable regions such as parts of northern Wisconsin and Superior National Forest in Minnesota. However, ISROCO would be challenged to offer opportunities that warrant the much greater cost of reaching Isle Royale as compared with these alternatives. In addition, winter use would increase harassment of the wolves, who are much easier to see in winter. Indeed, visitor harassment of wolves was the reason why the park was closed for the winter in 1981 (Wockner 1997:134–137).

ISROCO could also open the park to wilderness hunting experiences. These experiences are not so common in the Midwest, despite the popularity of hunting in the region. However, wilderness hunting experiences are found in the U.S. Rockies and in large parts of Canada. Because hunters in these latter markets are willing to pay significant costs for access to remote locations, the cost of transportation would not pose the same challenges as it would for skiing. However, a significant harvest would essentially destroy the scientific value of the resource, which rests on a "natural" predator–prey system without human predation.

Finally, ISROCO could develop resort accommodations on Isle Royale. Many national parks have distinctive lodges with amenities such as swimming pools, tennis courts, and golf courses. Each of these existed on Isle Royale before park establishment (see Poirier and Taylor 2007), suggesting the existence of a latent market. The existing lodge at Rock Harbor, with a one-star rating from AAA, does not currently meet the standards for a luxury destination.

The NPS is already planning some additional development, namely the rehabilitation of two historic properties on the island (Isle Royale National Park 2007). Crystal Cove was originally a summer retreat in the 1920s, and served as the site of a commercial fishery from the 1950s to the 1980s. Wright Island was a commercial fishing base from the 1860s though the 1970s. The park's new general management plan proposes to use both sites for overnight camping (but not for lodging). Interestingly, the park proposes to pay for development of these sites in partnership with the Isle Royale Boaters Association and the Lake Superior Fund. Such subsidies for recreational site development would probably not be available to a private business owner, though they would likely be on offer to a conservation trust.

All these options have significant negative implications for the nature of the resource. Dog sledding would expose the wolves to rabies and canine parvovirus. (Domestic animals have been excluded from the park since 1980.) Snowmobiling generates significant noise pollution and has various effects on wildlife, as debates in Yellowstone National Park have illustrated. Greater backcountry use in the interior could affect wildlife. Wilderness hunting would mark a significant change in views toward the wildlife resources. Snowmobiling and resort accommodations would damage or destroy the wilderness experience. Preserving wildlife resources would require that ISROCO locate sites carefully to reduce the effects of greater human impact—a mission that already guides NPS decision-making.

Clearly the NPS could sell Isle Royale to ISROCO with conservation easements and similar covenants to prevent such developments. Such restrictions would lower the value of the asset to investors. The size of that diminution of value makes clear the size of the subsidy that the status quo enjoys. Not imposing such restrictions would represent an effective transfer of consumer surplus from current users, scientists, and wildlife to ISROCO and currently excluded users such as hunters.

All such developments would not only damage existing wilderness and scientific resources but would also require a significant rebranding of Isle Royale. The NPS currently markets the park in terms of wilderness, wolves, and moose, and constructs a particular image of wilderness around these totems (Wockner 1997). If

Isle Royale were privatized, the recreational experience on the island could no longer be packaged in the same way. The Minnesota mainland near Isle Royale already provides an extensive "North Woods" experience in resorts, hunting lodges, and the BWCAW. If Isle Royale were open to similar development, its remoteness would make it hard to compete with these other recreational opportunities on price.

The NPS does not seem to be missing out on large sources of revenue. Even if all the opportunities discussed in this section were to increase visitor revenue tenfold, ISROCO would not be able to cover the cost of the land. It could cover operating expenses, but these expenses would also increase with greater visitation. ISROCO would also need to pay taxes to the state of Michigan, taxes that the NPS need not pay. A conservation trust might avoid paying such taxes, but in that case Michigan would strongly resist providing police and other services to the island.

Summary and implications

Many readers' initial reactions to the title of this article will be that the very idea of privatizing Isle Royale is preposterous. In some ways, it is. As far as I know, no one has ever suggested privatizing Isle Royale National Park. On the other hand, at least 34 units of the national park system have been delisted over the years (Hogenauer 1991; Rettie 1995, chap. 5). Many remain public lands of one sort or another, such as state parks or national wildlife refuges. One such unit, Michigan's Mackinac Island, is a highly developed miniature Isle Royale. Castle Pinckney National Monument, opposite Fort Sumter, was delisted in 1956 and is now privately owned. The city of Cody, Wyoming, took over Shoshone Cavern National Monument in 1954. It was run privately until 1966, when it closed. Lake Texoma National Recreation Area failed as a recreational destination under NPS management and is now managed by the U.S. Army Corps of Engineers. It now has two state parks, 40 campgrounds and 20 private resorts. Mar-a-Lago National Historic Site was never used by the NPS and is now owned by Donald Trump.

Privately held nature reserves are common around the world. TNC is the most well-known private owner, and could certainly manage Isle Royale as it does many other properties. In some countries, most nature preserves are privately owned, as in Costa Rica (Brown 2001). In addition to servicing tourists, many of these reserves support scientific research and sustainable agriculture of various kinds.

Another option would be to establish a conservation trust to manage the current park. Karl Hess (1993:111–116), a strong critic of NPS elk management, proposes such a trust for Rocky Mountain National Park. He suggests that the trust be mandated to preserve the montane-to-alpine ecosystem of the central Rocky Mountain chain. In his plan, the original trustees would consist of current park staff and professors from the University of Colorado and Colorado State University. Interested persons and groups could buy shares in the trust, receiving participation rights and perhaps seats on the board of trustees. The trust's income would largely depend on entrance fees from the park's three million visitors a year.

In the case of Isle Royale, there are essentially three options. First, we might decide to destroy existing resources by developing the park for vacation homes, resorts, motorized recreation, and what lit-

tle extractive activity it can support. The resulting property still might not be self-supporting. The pre-park history of the island suggests that money-making opportunities are constrained by transportation costs.

Second, we might privatize the island with two provisos: (1) conservation easements limiting impact on existing scientific and wilderness resources; and (2) a significant subsidy, which would include not asking either ISROCO or a conservation trust to pay the true cost of the resource.

Third, we could maintain the status quo of NPS management, with continued subsidy of recreational and scientific users of the resource. This overlaps with the trust option because the NPS currently holds use rights in the island and its management is constrained by de facto conservation easements written into park legislation and the NPS Organic Act of 1916. If it received most or all of the revenue the park generates, it would look more like the conservation trust option. Conversely, the more conservation easements placed on any private actor, and the more conditions imposed on its management choices, the more that ISROCO would look like a licensee of the U.S. government, which is essentially what the NPS already is.

Two factors make the case for privatization difficult. The first would characterize any national park: parks represent a significant subsidy of existing users. Privatizing the park would mean that the seller (the U.S. government) would need to subsidize the purchaser. Subsidizing a private buyer instead of the public users is normatively very difficult to defend.

Second, Isle Royale has a set of attributes that make privatization difficult: its remoteness, moderately large size, and low visitation. This made it possible to make heroic assumptions within only an order of magnitude or so and still demonstrate the core point that privatization is not financially feasible. In addition, Isle Royale's core attributes, its wilderness and its scientific value, are difficult to exploit for greater revenue. These attributes characterize many other distinctive parks. Concerns for distinctive resources might not constrain heterogeneous units such as urban parks and national recreational areas, which probably represent more attractive targets for novel management arrangements.

In short, Isle Royale is not a good candidate for privatization or for a conservation trust. This may not surprise many people. Those with philosophical objections to FME in general will doubtless find this paper a *reductio ad absurdum* that proves the error of FME's ways. This is not my intention. Instead, by acknowledging that every mode of analysis has its limits, I seek to explore a relatively extreme case to delineate the issues that arise in a wider range of FME applications. Once we move beyond a few parks with commercial resources that could be exploited without changing the character of a park's resources, the case for privatization or creating a conservation trust for many other national parks would not withstand close scrutiny.

Conclusions

Free-market environmentalists argue that existing policy in national parks and forests involves many subsidies that favor some activities over others. To end such subsidies, they recommend privatizing lands and management to the extent possible.

This article finds that the first claim is correct. Current management on Isle

Royale does subsidize some activities, including backpackers seeking a wilderness experience, basic scientific research, and probably also the business operations of the park's concessionaires. After working through a thought experiment, this article also argues that privatization would entail many subsidies of its own if the new owners were to make a profit. The question then becomes, Whom would we rather subsidize as a matter of policy? Subsidizing current users has a stronger democratic rationale than subsidizing private business owners on a privatized Isle Royale.

Isle Royale is in many ways a distinctive national park, though every national park is by definition distinctive in some way. Isle Royale's distinctiveness makes visible the important distributional questions associated with FME, issues that are less obvious when privatizing campgrounds on national forests as part of a program to increase the quality and quantity of the recreational visitor experience.

The Isle Royale case also raises questions about the cases that advocates of FME and conservation trusts bring forth, such as the Presidio Trust in Golden Gate National Recreation Area, Grand Staircase–Escalante National Monument, or Rocky Mountain National Park. These too are pretty exceptional, with opportunities for revenue generation that would not be found in, say, Nebraska's NPS units—Scotts Bluff and Agate Fossil Beds national monuments, Niobrara National Scenic River, or Homestead National Monument of America. Though some NPS units could probably be better managed by a private firm or conservation trust, many others will face the same financial obstacles as Isle Royale.

While emphasizing the money questions, this paper has not examined the politics of privatization legislation. FME is built on a critique of political intervention in effective land management in national parks and forests, yet it assumes that reform efforts will be politics-free. Experience at Golden Gate suggests some of the dangers. The park's founding legislation provides for a Citizens' Advisory Committee (CAC), consisting of federal and local officials and citizen advocates, which plays an important role in supporting NPS management. In the Presidio district, however, the Presidio Trust dominates decisions. It gives a dominant role to large business interests in the San Francisco area, yielding very different outcomes than the CAC in other Golden Gate units (see Rothman 2004). Advocates of privatization or conservation trusts need to explain how they will keep their enabling legislation from being made the target of non-environmental political interventions.

FME advocates should also ponder a political problem suggested by the analysis here. I have suggested that privatization or trusts may make sense for some NPS units but not for others. FME partisans may reasonably conclude that privatization (or trusts) should be pursued when economic conditions are favorable but should not be attempted in cases such as Isle Royale National Park. Though this seems reasonable, private businesses will seek privatization of the exact same set of NPS units because those are the units where profits can be made. In other words, sincere FME advocates might be observationally indistinguishable from business interests, and vice versa. In this setting, FME will have trouble establishing its credibility with the public at large, a public whose support will be essential if the enabling legislation for conservation trusts is to remain true to its conservationist principles.

Endnotes

1. Isle Royale is about 540,000 acres, 75% of it water; Rocky Mountain is 265,000 acres; Great Smoky Mountains, 520,000; Yosemite, 760,000; Yellowstone, 2,200,000.
2. I use here the dates of formal establishment, not legislative authorization or initial land purchase, though the sequence is the same no matter which dates are used.
3. For reference, TNC recently set aside $6.25 million to buy conservation easements on 75,000 acres of second-growth forest in Minnesota (www.nature.org/wherewework/northamerica/states/minnesota/presspress1997.html, accessed February 2007). At that price, conservation easements on Isle Royale would be worth about $11 million.

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