The Tragedy of the Commons Revisited: Politics vs. Private Property

by Randy T. Simmons,
Fred L. Smith, Jr.,
and Paul Georgia

Executive Summary

One of the most powerful illustrations of the environmental problem is Garrett Hardin's 1968 article, "The Tragedy of the Commons," which claims to show that many environmental problems are caused by a system of open access to commonly owned resources. Hardin summarized conventional wisdom about common property as follows: "Ruin is the destination toward which all men rush, each pursuing his own best interest in a society which believes in the freedom of the commons. Freedom in a commons brings ruin to all." Hardin's article became one of the most cited environmental articles ever published and his call for "mutual coercion, mutually agreed upon" has been the intellectual justification for nearly three decades of environmental legislation in the United States.

As that legislation developed, ideology and politics combined to select a narrow set of tools for managing the environment, primarily prohibition and command-and-control regulations. But these policy tools do not address underlying causes of environmental problems, ignore some fundamental lessons of the "Tragedy of the Commons" and place impossible demands on the political process.

To illustrate the management challenges faced by those who wish to avoid the tragedy of the commons, we extend Hardin's village example by considering the two different forms of social arrangements he suggested as possible solutions to the problem: Political management vs. private property. In our extension, political management requires that the village establish a management body — the Pasture Protection Agency (PPA) and it's head the PPA Administrator. The PPA, of course, is directly analogous to our own environmental protection and resource management agencies. It is intended to show the difficulties and shortcomings of political management.

The private property method divides the commons into plots, deeding a plot to each family, and enforces these rights through fencing the plots and branding the cows. We also look at the common law as a powerful tool for protecting privately owned resources from the tragedy of the commons.

The pros and cons of each arrangement are evaluated for a series of management issues, including enforcement, risk management, information costs, cost-benefit calculus, site-specific management, flexibility, incentives, innovation, time frames, priorities, and transaction costs. Our conclusion is that private management through clearly defined property rights is superior to political management on every point. We can improve resource management greatly by relying more on property rights and market forces and less on political management.

The Tragedy of the Commons Revisited: Politics vs. Private Property

by Randy T. Simmons,
Fred L. Smith, Jr.,
and Paul Georgia

One of the most powerful metaphors of the environmental problem is Garrett Hardin's 1968 article, "The Tragedy of the Commons." The tragedy idea suggests that many environmental problems are caused by a system of open access to commonly owned resources. Hardin summarized conventional wisdom about common[1] property as follows: "Ruin is the destination toward which all men rush, each pursuing his own best interest in a society which believes in the freedom of the commons. Freedom in a commons brings ruin to all."[2] Hardin's article became one of the most cited environmental articles ever published and his call for "mutual coercion, mutually agreed upon" has been the intellectual justification for nearly three decades of environmental legislation in the United States.[3]

"Freedom in a commons brings ruin to all."

As that legislation developed, ideology and politics combined to select a narrow set of tools for managing the environment, primarily prohibition and command-and-control regulations. But these policy tools do not address underlying causes of environmental problems, ignore some fundamental lessons of the "Tragedy of the Commons" and place impossible demands on the political process. In what follows we review these problems and propose property rights and market institutions as superior means of conserving environmental resources.[4]

The Tragedy of the Commons

Hardin used a pasture as an example of how the commons can produce tragedy. As long as grazing on the commonly owned pasture is below carrying capacity, each herdsman may add another cow without negatively affecting the amount of grazing available for the other cows. But once carrying capacity is reached,[5] adding the additional cow has negative consequences for all users of the common pasture.

The rational herdsman faced with adding the extra cow calculates his share of the benefits (100%) and his share of the cost (1/n herdsmen) and adds another cow. And another....As do all other herdsmen. Each may care for what is common but can do nothing about it since one person exercising restraint only assures himself a smaller herd, not a stable, preserved commons. Thus, the commons is a trap—

an individual acting in his own self interest makes himself and everyone else worse off in the long run, but acting in the group interest cannot stop the inevitable ruin.

It is sometimes argued that the core problem of the tragedy of the commons is lack of conscience. If people simply developed a land ethic, were less greedy, less inculcated with Western values, and more caring of the community, the tragedy would not happen. Hardin rejected appeals to conscience out of hand: "To make such an appeal is to set up a selective incentive system that works toward the elimination of conscience from the race."[6] Natural selection will tend to eliminate those with "susceptible consciences." Further, to conjure up conscience in the absence of pro-conservation sanctions would be "to browbeat a free man in the commons into acting against his own interests."[7]

Hardin analyzed the core problem to be lack of the kind of responsibility defined by philosopher Charles Frankel: "Responsibility is the product of definite social arrangements. . . .A decision is considered responsible when the man or group that makes it has to answer for it to those who are directly or indirectly affected by it."[8] Frankelian responsibility exists, then, when people taking an action must pay the costs of that action. Since costs also imply benefits, the other side of the responsibility coin is that the person taking the action also receives the benefits of that action.

On the commons, individuals have the authority to add extra cows and each gains the benefits of his actions. But the costs of each herder's actions are spread among all other users of the commons. Any action on a commons is intrinsically irresponsible because costs are socialized and benefits are privatized. Without the corrective feedback provided in a system establishing Frankelian responsibility, destructive actions are encouraged and, Hardin says, inevitable.

Social arrangements establishing responsibility, not preaching or propaganda, are called for to avoid tragedies of the world's commons. Hardin suggested two forms of social arrangements—political management and private property—and was neutral as to which is superior.[9]

Social arrangements establishing responsibility, not preaching or propaganda, are called for to avoid tragedies of the world's commons.

Managing the Commons

To illustrate the management challenges faced by those who wish to avoid the tragedy of the commons, we extend Hardin's village metaphor. Specifically, we explore the implications of "mutual coercion, mutually agreed upon."

Let us assume that our village is small but is blessed with large expanses of rich pasture. Let us also assume that our villagers are isolated and unaware of other villages. Because of the small number of villagers each can expand his herd greatly with little or no private or social cost. The tragedy of the commons is not a threat since the village can easily provide for its needs without threatening the viability of the pasture. At this point there is no thought of management. The social costs that management would entail far outweigh the small costs of using the pasture as a commons.

Over time, however, the village grows. Explorers from other villages discover our isolated village and return with stories of wonderful green pastures and savory beef. This induces people to migrate to the village in hopes of starting their own herds and benefiting from the good pasture. The village's comparative advantage in beef production also leads to a booming export business as other villages

develop a taste for beef. All of these factors combine to produce a greatly expanded beef industry. The village realizes that the tragedy of the commons is inevitable if something is not done. Because the social costs of continued expansion are now higher than the costs of remediation, the villagers decide to attempt to internalize costs by managing their commons. The rise in population and the greater commercial value of beef brought on by foreign demand combined to hasten the tragedy of the commons, but also make it worthwhile to establish social institutions for managing the commons.[10]

Political management requires that the villagers establish a management body—let's call it the Pasture Protection Agency (PPA).

The villagers decide to choose between two forms of management, political and private. Political management requires that the villagers establish a management body—let's call it the Pasture Protection Agency (PPA) and its head the PPA Administrator. The Administrator may be chosen by direct election or appointed by elected representatives. Either way, the Administrator is granted authority to make and enforce the rules he or she believes are necessary to manage the commons. The private method is to privatize the commons by dividing the commons into plots, deeding a plot to each family, and enforcing the rights through fencing the plots and branding the cows.

Clearly there are more choices than these two and there are many ways of implementing either approach. But we can learn a great deal about real-world approaches to commons problems by examining the potential results of these two cases.

Responsibility

Hardin argued that the fundamental problem of the commons was that none of the users were held responsible for his or her use. This is one area where private property is distinctly superior to political management. If a property owner degrades his property, he suffers the consequences because his wealth is reduced. On the other hand, if he improves his property, his wealth is increased. He captures the benefits of his actions and pays the costs of them as well. The only exception is if owners create costs for others by what they do on their own property such as dam a stream or pollute the air.

Political management is inherently irresponsible since political managers do not suffer the consequences of decisions that reduce wealth nor do they capture the benefits of decisions that increase the wealth of their society. Of course, as members of the society they gain their proportional share from good or bad decisions. But their share of loss or gain is so small, it approaches zero. The core problem of the tragedy of the commons is, thus, institutionalized by political management rather than overcome.

To overcome institutional irresponsibility, the villagers must contrive responsibility by surrounding the Administrator with rules, regulations, laws, customs and oversight. Effective oversight requires information about the Administrator's actions and their results, the best source of which is the Administrator who is also the person best able to control that information. Thus, there is a temptation to falsify, hide, and sabotage information. The villagers would be wise to view official reports from the Administrator with caution.

Stopping the private owner from creating costs for adjacent landowners also requires rules, regulations, laws, customs, oversight, and enforcement. But since private control draws clear lines of responsibility between parties it more closely approximates the Frankelian ideal of privatized costs and benefits. The resulting incentives strongly favor responsible action greatly reducing oversight and enforcement costs.

INFORMATION

Public and private managers face difficult information problems as they attempt to manage effectively. They need to know the most appropriate stocking rates and timing of grazing. Where information is not available or conclusive, they must sort between competing theories—do they choose to follow a high intensity, short rotation grazing plan or a low intensity, long rotation plan, for example. The proponents of competing theories are likely to disagree about measures of range condition, timing of grazing, the role of cattle in the ecosystem, and the number of cattle that may be supported by the pasture. After choosing a theory to guide management decisions, they must gather information about range conditions—are some areas prone to erosion, are others easily compacted, do some recover quickly from intensive grazing, are some more susceptible to drought than others, do these evaluations differ depending on the time of year and climatic conditions? To manage effectively, this information must be acted upon as particular conditions of time and place change.

Political management is inherently irresponsible since political managers do not suffer the consequences of decisions that reduce wealth nor do they capture the benefits of decisions that increase wealth.

The PPA Administrator must take the available information and translate it into a management plan complete with strategies and specific directives. These directives will determine who grazes, how much, when, and for how long. The plan might include rules about trading or selling grazing rights and whether profit is allowed. He must translate the rules into specific guidelines for each user of the commons, resolve how best to insure that these guidelines are observed, create incentives to improve performance over time, avoid having the PPA captured by some special interest group, and manage the risks associated with innovation.

All this takes place in a political environment in which the PPA administrator may be voted from office. The rules chosen, therefore, tend to be universal and relatively inflexible. Little variation can be allowed in a political system if for no other reason than the logistical one. It is simply far easier to enforce one rule than to sort among many rules adapted to different situations that might or might not arise.

Developing management plans will often require intensive planning efforts involving teams of planners who are expected to strike an acceptable balance between use and preservation in the face of competing political constituencies. As conditions change, the information guiding the management plan becomes outdated but policies based on the plan continue in force until new information and plans can be developed. In the real world, such processes take years, sometimes decades and by the time the plans are revised a new future requiring new information has presented itself. Therefore, the hand of the past continues to guide the new, different present. In such a situation, the Administrator's policies will produce good management only by serendipity.

One of the most ambitious planning projects ever undertaken in the United States was the Columbia Basin Project (CBP) in Washington State. That plan serves to illustrate the problems of planning for an uncertain future. In the early 1940s, the Federal Government hired a team of experts to construct a plan for settlement, irrigation, farm sizes, and infrastructure. The plan guided the development of the region and continues to be substantially in force today. That plan was based on the agricultural methods of the previous ten years and assumed, therefore, horse-drawn agriculture, flood irrigation, and a depressed economy. They could not, and no one could have expected them to, see a future of mechanized agriculture, sprinkler irrigation, and a prosperous economy.[11]

Private managers face the same information problems as do public managers, but they are able to respond differently.

Private managers face the same information problems as do public managers, but they are able to respond differently. They can experiment with competing theories without fear of being removed from their management positions by disgruntled constituents—a private manager is his own constituent. They can be far more flexible about issues of timing and stocking rates because they are not bound by relatively inflexible political rules. They can learn from neighbors who, by design or accident, make better choices. They also learn from those who make mistakes and change their management practices accordingly.

This entrepreneurial system of trial and error, of many simultaneous experiments, cannot be matched by political systems. Israel M. Kirzner[12] explains:

> It is this yeast that ferments the competitive-entrepreneurial discovery process, tending to reveal to market participants more and more of the relevant information scattered throughout the market. It is this...process that thus grapples with that basic knowledge problem we found inescapably to confront central planning authorities. Central planning has no tools with which to engage the problem of dispersed knowledge, and its very centralization means that the market's discovery process has been impeded, if not brought to a full halt."

Note also that each villager can do with his pasture land as he will including letting it lay fallow. Some may elect to raise sheep rather than cows, to preserve their plot as a natural refuge, or even to start a lawn tennis association. Since each villager can transfer his or her property to others and benefit from that transfer, all face strong, monetary incentives to make long-term investments, to consider land uses that others might value. Property owners will attempt to maximize the present value of the land by considering future costs and benefits. This means taking into account future supply and demand conditions, and other factors that may exist after death. Even though fraught with uncertainty, only in a system of private property will such attempts be made. If the investment is prudent, the owner's net worth increases because the expected future flow of benefits from the land has been increased. Thus, not only are private landowners forced to consider the costs and benefits of their actions on their neighbors but they must also consider future generations. Demsetz[13] states that under communally managed property, "future generations must speak for themselves. No one has yet estimated the costs of carrying on such a conversation."

ENFORCEMENT

The management plan can only be implemented if it is enforced. Each villager still has an incentive to add as many cows as possible without getting caught, so the PPA must guard against midnight grazing, surreptitious additions to herds, grazing at the wrong time of year or on fragile lands, and other violations of the plan. Penalties for violating the plan's directives and procedures for assessing the penalties must be put in place.

A strict property rights system, however, is self-enforcing. Private managers have every incentive to insure the long term viability of their pasture. On private land carrying capacity imposes a constraint on the decisions of private managers since they bear the full costs of their actions. The incentive to expand herd size beyond carrying capacity for short term profit is overcome by the realization that doing so will damage future income possibilities.

Although property rights systems are self-enforcing, other questions come into play. The establishment of legal institutions to enforce property rights against trespass is a necessary but not sufficient condition for effective private management. The ability to delineate, mark or fence property is also necessary in order that the rights be easily recognized. Clearly land is a resource for which concepts of private ownership are well established. Land is readily fenced; what about rivers and lakes? What should we do if there exists no readily available fencing techniques?

On private land carrying capacity imposes a constraint on the decisions of private managers since they bear the full costs of their actions.

These are good questions. There are several points that should be made however. The first is that the lack of a ready private sector solution does not mean that a political solution is superior. In the real world, both private and governmental pencils have erasers. Moreover, the way in which market forces bring into existence solutions when an economic reward for such innovations exists is worthy of note. Consider, for example, the factors that led to the invention of barbed wire.

The fencing techniques that had been used in New England and the midwest (stone or wood fences) didn't work on the Great Plains. Local wood and stone were lacking; moreover the low productivity of western land made large ranches essential to the survival of a family. The lack of local building materials and the great quantity needed to fence a ranch meant that ranches were largely unfenced. Private property, we might have inferred, didn't work.

The Federal government might have seen this as a "market failure" and hired returned Civil War soldiers to patrol ranch borders. Instead, the ranchers themselves found ways of self-policing their ranches. Several approaches were followed. First, ranchers would often join together to form Cattlemen's Associations, a sort of joint venture arrangement designed to resolve situations in which the cows of one rancher tended to gravitate to the grazing fields of another. Cattle were branded to reduce accounting costs. Also ranchers hired cowboys to camp out along geographic dividing lines—streams, trails, passes, ridges—to restrain most herds to the ranch. In effect, Westerners substituted labor for fence posts. Fencing of this type was primitive and costly; however, it worked reasonably well. Moreover, as the costs of this type "fencing" increased as the opportunities for cowboys improved, incentives were created for a "better way," a cheaper way to fence these large ranches. The

result was the invention of barbed wire which greatly increased the efficiency with which ranches could be fenced.[14]

The critical point to be noted here is that accepting the static inefficiencies of poor fencing technology (accepting a static market "failure") left in place the generalized incentives for someone to invent cheaper and more efficient fences. Those incentives would have been weakened had the government assumed the responsibility for managing these regions and policing boundary disputes. In effect, efforts to reduce static inefficiency (the standard argument for government involvement) by weakening the incentives for innovation might well lower welfare.

The existence of property rights creates incentives to find ways to protect those rights.

Thus, even when the immediate prospects for effective fencing are low, it still makes sense to argue for property rights concepts. To see fence development as independent from the marketplace misses one of the major lessons of this example—the existence of property rights creates incentives to find ways to protect those rights.

Risk Management

The decisions made by PPA Administrators and their deputies are critical to the village economy. To expand opportunities for growth, they must promote productivity improvements. Research on grazing policies, cattle and grass genetics, fertilizers and pesticide (biological and chemical)—all might well expand this capacity. Unfortunately, the Administrator receives no direct reward for wise choices, yet will be soundly criticized when his research efforts fail to improve or actually reduce productivity. An arduous debate will precede any large scale innovation or many marginal innovations. Perceived failures may lead to the PPA Administrator being replaced. Innovation is a chancy business and the reasons for a specific experiment failing are far more evident after the fact. The result is that there will be far more opportunities for criticism than praise. The rational Administrator will find it safer to avoid risk and the village will be less wealthy than what it might be if risk-taking were encouraged.[15]

Private property owners will have a greater incentive to innovate.

Unlike political managers, private property owners will have a greater incentive to innovate, because they will receive the full benefits of their actions. If their innovations fail the costs of failure will also be private. Some villagers are likely to stick with conventional wisdom and others will experiment. Each villager, based on his or her risk preference, will take rational risks. Differences in risk preferences and values will ensure a variety of approaches. Successful innovations will be imitated and unsuccessful innovations will be abandoned.

Allowing Variety

The PPA Administrator will have great difficulty allowing flexibility. An individual wishing to graze goats, for example, may well be denied. Mixed herd management is more complex and contentious. Administrators who wish to keep their jobs will avoid such difficulties. Certainly, the introduction of a "non-conforming" use such as a lawn tennis association would involve political conflict. Those groups wielding the most political power, the best organization, and the most influence will rule in

such a situation, regardless of the effects on the village's overall wealth. What matters will be who benefits and who pays.

The U.S. Forest Service responds to the problem of allowing variety by adopting multiple use management. The variety encouraged, however, has not meant better management of the land and has resulted in a uniform variety being applied to all lands. Further, it has given particular organized interests a tool to use to enforce their views on others. For example, motorized recreationists use multiple use to justify their use at the expense of those seeking solitude. Timber harvesters justify harvest on uneconomical forests as being mandated by multiple use. And environmentalists use multiple use to justify their opposition to oil and gas leasing. Marion Clawson, dean of natural resource economists, has argued that the result of multiple use management has been, "a little of everything everywhere, without regard to cost or effect."[16]

Election Problems

One problem public administrators face that is not faced by private managers is that administrators must face election from time to time (or appointment by elected officials). This political requirement will make administrators more attentive to those more likely to influence the next election—organized groups as opposed to individuals. In fact, as the village grows, it becomes less and less rational for most individual villagers to spend time learning about the candidate's qualifications or about the actual consequences of the Administrator's decisions. One individual's vote is not likely to affect the election's outcome so the rational villager becomes more informed about things over which he or she can have an effect.[17] Thus, information about the Administrator's decisions, even if factual, is not likely to be a form of contrived responsibility adequate to counter poor decisions. Only the organized pay attention and since they are most likely to be benefiting from the system, they will only act to check decisions creating costs for them.

Just as in the commons where each herdsman "needs" another cow, political interests dream up many needs from which they benefit but do not pay the costs.

A popular theory of politics is that competing groups will check the excesses of each other and the general good will emerge. This is surely the case sometimes, but other times groups will exchange support for each other's programs. Thus, benefits for one group are matched by those for another. Lawn tennis becomes viable on the commons not because it is the highest valued use of the land, although it may be, but because it can garner the support of the goat grazers, the dam builders, and the tourist attractors — all potential groups who could organize to affect the political association of the commons. In exchange, the lawn tennis association will support the wants of the other associations. The values of the less organized will be neglected.

Wants and Needs

All of the groups attempting to get their preferred use of the commons established and supported by the Administrator will claim their particular use is in the public interest: "We need recreation," "we need water development," or "we need tourism." When taxpayers can be made to pay the costs, "wants" easily become exaggerated into "needs." As there is little cost to exaggerating their wants, users of the commons will ask for more than if they paid the costs themselves.

In 1968, for example, the Sierra Club estimated that establishing the Redwood National Park would cost $100 million to purchase 72,000 acres of private land. The actual cost for just 30,500 acres exceeded $300 million and the trade of 15,000 acres of National Forest redwood timber lands to private hands. Estimates made in 1984 suggest the costs for completing acquisitions will be two to three times the Park Service's original estimates and five to eight times those made by the Sierra Club.[18]

The Sierra Club's insistence on the need of a national park was easily made as long as someone else was paying the bill. Just as in the commons where each herdsman "needs" another cow, political interests dream up many needs from which they benefit but do not pay the costs. Since the Sierra Club has not offered to spend its own money to establish Redwood National Park it is doubtful that it takes its own rhetoric seriously.

As wants become needs, disastrous policies follow. In politics, needs often create rights. If someone has a need, they have a right to have that need filled. Garrett Hardin describes the situation as follows:

> Scarcely a year passes without the creation of a new right, for example, the right of the hungry to an adequate diet, the right of the homeless to housing, the right of the aged to medical care, and the right of the deprived, whether deprived by their social history or by their heredity, to compensatory treatment. The asserted rights are implicitly absolute, without qualifying responsibilities; sometimes the implicit is even made explicit.[19]

In the unmanaged commons, each has a right to take all he or she can. In the politically managed commons, each will invent a similar right to take, given enough time. Thus, towns in Idaho need and therefore have a right to have their economy stabilized by timber sales on the national forests even if the income is less than the cost of administering the sales. San Joaquin Valley farmers have a need for and right to low cost water. So taxpayers spend $300 to $500 per acre foot to deliver water valued at $50 for a price less than $20 per acre foot.[20]

Another problem peculiar to the politically managed commons is policy stability.

In a private property system wants are not easily translated into rights and budgets are based on management, not prowess as a lobbyist or by timing actions to coincide with elections. Lacking access to the public treasury, owners of resources can only do things that improve their wealth. They cannot, for example, spend $1, take in less than that, and survive beyond the short run. They will not build dams that don't pay or harvest trees at a loss regardless of how much they "need" water or timber.

Policy Stability

Another problem peculiar to the politically managed commons is policy stability. Election outcomes may lead to major flip-flops in pasture management. "Grass loving" politicians may be replaced with "cow lovers."[21] Witness the changes at the U.S. Department of the Interior when Cecil Andrus, a noted environmentalist, was replaced by James Watt, an individual equally well known as a proponent of economic development. Users of the politically managed commons must invest large amounts of

time and resources attempting to keep their own position secure in a world of political uncertainty. Private managers, by contrast, are able to invest in managing their resource.

Short Sighted

A major problem facing both public and private managers is that of deciding the appropriate time-frame for evaluating the results of their choices. Do they, for example, take actions for which the benefits will only be evident in ten, twenty, or fifty years? Or do they choose actions that produce visible results this year? These are often mutually contradictory choices.

A close, upcoming election may lead the PPA Administrator to defer critical but painful decisions (herd cutbacks, for example) or to accelerate popular decisions (longer grazing times) even though these shifts may be unwise. In such an atmosphere it is difficult to manage for the long run. Policy cycles will be tied to election cycles and only the rare administrator will be able to implement policies for the long run if there are short term forces against them.

Private managers also face short-term pressures—a bank payment, a college education, a medical emergency—and may respond to those pressures. But there are also pressures promoting a consideration of the future. The security of a private owner's retirement is contingent on making present choices that will pay off in the future. A well managed pasture is also worth more to potential buyers and the possibility of selling the property someday exerts pressures against short sighted decisions. Future generations, thus, have a say in current, private management decisions.

Policy cycles will be tied to election cycles and only the rare administrator will be able to implement policies for the long run if there are short term forces against them.

Political and Private Budgets

Any management scheme requires a budget, but the means of generating income differ greatly between the private and public manager. The public administrator must have a budget to run the PPA and, as suggested above, considerations for protecting that budget will drive many agency decisions. When policies are based on their ability to attract budget dollars from a legislative bid they will often conflict with what is environmentally and even economically sound. Because legislators must attract votes, they support visible policies which benefit organized groups, especially if the costs are relatively invisible to (rationally ignorant) taxpayers. Thus environmental and economic follies can be supported by politicians and agency personnel.

One of the most compelling, recent studies of such behavior is found in Randal O'Toole's book, *Reforming the Forest Service*.[22] O'Toole says:

> I've visited national forests in every part of the country and have seen costly environmental destruction on a grand scale. Money-losing timber sales are costing taxpayers at least $250 to $500 million per year. Many of these sales are reducing scarce recreation opportunities, driving wildlife species toward extinction, and polluting waters and fish habitat. Yet few in the Forest Service seem to be concerned about these problems except as they affect public relations.

> Only recently did I realize that this lack of concern was due not to ignorance or maliciousness but rather to a lack of any incentive to be concerned. Most of the Forest Service's budget comes straight from Congress. Unlike a private company, whose job it is to keep stockholders happy by producing profits, the Forest Service must keep Congress happy by creating jobs and income for local constituents. Since neither the Forest Service managers, the local constituents, nor the members of Congress have to pay for those jobs — which often cost far more than the workers are paid — none of them has an incentive to compare expenses with income.

In addition, a large chunk of the Forest Service's budget — approaching $300 million per year — is retained by agency managers out of timber sales receipts. This income gives managers a powerful incentive to sell timber, since even timber that loses money can contribute to the manager's own budgets. This positive feedback from timber sales also gives managers little incentive to compare the total expense with the total income of those sales.

Private managers, in contrast to public managers, must compare expenses with income. If expenses exceed income, the private manager soon loses the pasture to his creditors and they sell it to someone else. The result is that, over time, private resources move from poor managers to better ones. Profits and losses are powerful incentives, they are feedback that tell the manager if his choices are wise or foolish. If he ignores that feedback he does not survive.

Allowing prices and markets to allocate resources is a way to reduce confrontation and promote cooperation.

Political and Private Prices

One issue facing the villagers as they move from an open access commons to land managed politically or privately and into expanding interactions with other villages is how to allocate the resources produced on the former commons. The polar choices are to allow markets and prices to allocate resources or to allocate them through a political process. Allowing prices and markets to allocate resources is a way to reduce confrontation and promote cooperation. Markets produce something for everyone—all tastes are considered. Politics produce something for the majority, if democratic politics works perfectly. But more often, politics produce what the powerful, organized groups want. To get attention, to get some of what they want, the minority or the less organized have to strike, demonstrate, or chain themselves to trees. Randal O'Toole[23] uses the modern supermarket dairy case to demonstrate the difference between politics and markets:

> For those who don't like chemicals, more and more stores are offering organic and pesticide-free produce, and even Wonder Bread is made with unbleached flour and no preservatives. Vegetarians and meat-eaters shop side-by-side with no rancor. Products like milk and eggs are sold in their raw or nearly raw form as well as in many processed forms. Milk, for example, is sold as whipping cream, half-and-half, whole, 2 percent, 1 percent, nonfat, powdered, and evaporated milk, and is also made into many varieties of yogurt, ice cream, and cheese. Yet you never see anyone chaining themselves to the milk counter demanding more ice cream or suing a dairy to force it to make cheese instead of yogurt.
>
> Prices therefore act as signals in two different ways: They help buyers decide how much to purchase and they help producers decide how much to make. There are lots of different dairies and other producers and even more buyers, so all these decisions are made on a very local level.

Prices coordinate human activity, act as condensed information easily accessible to people everywhere, encourage the search for substitutes and conservation, promote cooperation, and create incentives to consider carefully the costs and benefits of an action. When environmental goods are priced in markets people can register their wants and adjust their behavior based on the prices they face. Substituting political prices for market prices, however, produces very different results. Political management of resources from milk to wilderness requires that government set prices, determine allocations, organize distributions, and provide the myriad functions provided by markets.

To see how environmental as well as other priorities are met through the market, consider a traditional American activity that has been provided free of charge on public lands — recreation and especially hunting. Increased hunting pressures and reductions in available winter range have reduced hunting on public lands to a slummy togetherness with low rates of success. As this trend has continued, owners of large plots of private land have begun charging access fees for hunting and fishing rights on private land. As the potential income from fee recreation has increased, landowners have begun to regulate the timing and duration of cattle grazing and undertake other habitat manipulations. Trout streams are protected from destruction by cows and some ranchers have hired specialists to reclaim the trout streams. Many hire wildlife biologists as full time employees or as consultants. One spectacular example is the 200,000 acre Deseret Ranch in Utah which contains 0.6% of the state's elk habitat yet produces 15 percent of the state's elk. Deseret Ranch profits from an operation which includes cows, sheep, bison, elk, deer, mining, and native grass seed in its product mix. Many Texas ranches now produce more income from managing for wildlife than from managing for cattle.

The political pricing of recreation on public lands has led to a decrease in both the environmental health and recreational value of those lands.

The political pricing of recreation on public lands has led to a decrease in both the environmental health and recreational value of those lands. On private land, however, both values have been enhanced.

Much of the world experimented with alternatives to markets for most of this century and those alternatives have failed. Eastern Europe and the Soviet Union are monuments to the failures of attempting to allocate resources without prices.

We note that the public estate in the United States is managed in much the same way as was the economy of the Soviet Union. Production goals and limits on the National Forests are set by forest planners and politicians. Grazing prices on the public lands are set by Congress and the agencies. Wilderness is established arbitrarily. Parks are created by political fiat and entrance fees are set centrally. The fact that the U.S. system is more democratic than was the Soviet Union somehow justifies political management to many. But the fact remains that the mechanisms for determining the allocation of resources are the same in both systems.

Transaction Costs

In a commons, the cost of negotiating an agreement to curtail land use will be high because it is difficult to reach a satisfactory agreement when many people are involved. For the agreement to be binding there will have to be unanimous consent, since one hold-out can frustrate the entire process. Moreover, if an agreement is reached, policing costs will also be formidable. Political management

can reduce these costs somewhat by adopting some type of majoritarian rule making system or a system where people's representatives make the decision. Political management does reduce the number of people needed to reach an agreement, but it still involves the whole village and policing costs will be appreciable. Furthermore, the incentive problems discussed above will still exist.

Private management solves this problem by reducing the number of people who have an interest in a particular land use issue while protecting the incentives which are most likely to encourage wise stewardship. An individual's use of his or her own property will affect some neighbors, but will not affect all the land owners within the village. To illustrate this point, assume that one of the villagers in the commons decides to dam a stream. Another villager who wishes to grow crops downstream does not want a dam to be built, so he pays the builder to stop. The problem is that even though the farmer has succeeded in stopping one person from building a dam he has not stopped anyone else. Negotiating an agreement to prevent dam building in a commons requires that the farmer pay off every person in the village who may wish to build a dam. Under private management, the farmer only has to negotiate with upstream riparian owners, greatly reducing the transaction costs.[24]

Of course, private property rights cannot exist in the absence of law. Some institution—private or public—is needed to resolve trespass issues, as in the case of disrupting the flow of a river. What steps can be taken if cows trespass on another's field? Shoot them, shoo them away, impound them, charge storage fees? One of the ways these questions have been resolved, though not perfectly, is through the courts, the evolution of law, and custom.

Common Law

The use of common law in the West has been powerful means to protect against trespass. In order for a property owner to be an effective steward his or her property rights must be secure. In other words the law must protect the right of property owners to use their land in whatever way they believe will maximize their welfare. They must also be free from trespass or the external costs created by other property owners. Thus the common law maxim, "So use your own property as not to injure the property of another," was a very effective means to allow property owners the enjoyment of their land while preventing damage or trespass.

The use of common law for environmental protection is not solely a relic of the past.

To illustrate, assume that one of the property owners in our hypothetical village has a stream running through his property that has excellent trout fishing. The owner discovers that people are willing to pay a lot of money for the privilege of fishing on that particular stretch of stream. Seeing a prime profit opportunity the owner invests considerable time and money to insure that the stream is kept in excellent condition. He also makes sure that the stream is not overfished. By employing good conservation measures the property owner benefits greatly.

Now assume that a rancher who lives upstream allows his cows to tromp through the stream, eroding the banks, and polluting the water, lowering the quality of the stream and affecting the first owner's stretch of the stream. Under the common law the first owner would be able to take action against the rancher to redress the harm. The rancher would either have to cease the damaging activity or compensate the first owner if he wishes to continue allowing his cows to use the stream.

The use of common law for environmental protection is not solely a relic of the past, particularly in England. In 1951 the Pride of Derby Angling Club and the Derby Angling Association requested, under the common law, an injunction against three corporations that had been polluting the Derwent and Trent rivers. This important case is but one example of the private enforcement of the common law against polluters in England.[25]

However, in the U.S. judges have greatly weakened common law remedies over the years. For example, in a 1947 Ohio court case, *Antonik v. Chamberlain,* Court of Appeals Justice Arthur Doyle wrote:

> It is not everything in the nature of a nuisance which is prohibited. There are many acts which the owner of land may lawfully do, although it brings annoyance, discomfort, or injury to his neighbor. . . .
>
> People who live in organized communities must of necessity suffer some damage, inconvenience and annoyance from their neighbors. From these. . .they are generally compensated by the advantages incident to living in a civilized state.[26]

In 1911 the Georgia Supreme Court determined that: "The pollution of the air, so far as reasonably necessary to the enjoyment of life and indispensable to the progress of society, is not actionable."[27]

The court in each of these cases subordinated property rights to the "public good," which returns us to the problem found in the commons. If property owners have no means of seeking recourse for damage then polluters will not consider the costs of their actions. Costs will once again be socialized and the benefits privatized.

Legislatures have also weakened the common law by replacing it with statute law. Former Representative James J. Florio, an advocate for political environmental management, acknowledged as much when he said: "Most governmental regulations are aimed at overseeing the permitted release of toxic chemicals into surrounding neighborhoods during a company's normal operations."[28] The result of this legislative fiat has been to deny property owners the ability to remedy damage inflicted upon their person or property. By creating legally permissible amounts of pollution legislatures implicitly subsidize polluters by shifting part of the production costs to others — the same problem we find in the commons.

Political management of the commons is difficult, troublesome and rigid. It does not resolve the tragedy of the commons, it institutionalizes the tragedy.

Lessons for Current Policy

Political management of the commons is difficult, troublesome and rigid. It does not resolve the tragedy of the commons, it institutionalizes the tragedy. Management will avoid innovation, be short sighted, and reward the few at the expense of the unorganized many. Budgets will reflect interest group pressures and administrators will respond to political pressures even at the expense of environmental considerations. In such a system good intentions can only lead to good policy by accident, especially since there is little incentive to examine carefully the consequences of actions.

Obviously private management in the real world is not as simple as we presented in our extension of Hardin's commons parable. Besides fencing problems, there are others. Businesses, owners, and

producers seek government subsidies for their activities and protection from competitors. Costs are often passed on to others; the most prominent examples being pollution and industrial wastes. Many resources are not easily privatized. But a private property approach can greatly improve on political management. Many of these ideas have surfaced during the last several years as federal, state, and local budgets have not grown at previous rates while demands on the environment and for natural resources have increased. Some promising applications have been developed, but many of these are intermediate steps toward a true property rights solution. Implementing even partial property rights, however, can have positive effects.

About the Authors

Randy T. Simmons is professor of political science and director of the Institute of Political Economy at Utah State University and research fellow at The Independent Institute in Oakland, California. He received his Ph.D. in political economy from the University of Oregon, and he has been a policy analyst in the Office of Policy Analysis at the U.S. Department of the Interior and a fellow of the National Science Foundation.

Dr. Simmons is co-author (with William C. Mitchell) of the book *Beyond Politics: Markets, Welfare, and the Failure of Bureaucracy* (Westview Press, 1994) and the author of the forthcoming book from The Independent Institute, *Endangered Species*. He has contributed chapters to many books including *Rationality and Society: Framing Social Dilemmas* (D. Schroeder, ed.), *Controversies in Environmental Policy* (S. Kamieniecki, R. O'Brien, and M. Clark, eds.), and *Earth Day Reconsidered* (J. Baden, ed.). His many articles and reviews have appeared in *American Political Science Review, BYU Law Review, Contemporary Policy Issues, Forest Watch, Journal of Contemporary Studies, Policy Review, Public Choice*, and many other journals as well as in the *Baltimore Sun, Deseret News, Los Angeles Daily News, Salt Lake Tribune,* and *Washington Post*.

Fred L. Smith, Jr. is the President and founder of the Competitive Enterprise Institute in Washington, D.C. Mr. Smith is a frequent guest on various radio and television programs where he has debated free-market approaches to vexing public policy problems. In this role he has appeared on ABC's This Week with David Brinkley, PBS' MacNeil/Lehrer Newshour, and CNN's Crossfire, among others. Mr. Smith has contributed chapters to several books, including *Market Liberalism: A Paradigm for the 21st Century* (D. Boaz and E. Crane, eds.), *The True State of the Planet* (R. Bailey, ed.), and *An American Vision* (E. Crane and D. Boaz, eds.). His writings have appeared in a wide range of publications, including the *Wall Street Journal, New York Times, Washington Post, Regulation, Contemporary Economic Policy*, and the *Cato Journal*. Mr. Smith co-edited the book *Environmental Politics: Public Costs, Private Rewards* (Praeger, 1992) that discusses the involvement of special interest politics in environmental policy.

Before founding CEI, Mr. Smith served as the Director of Government Relations for the Council for a Competitive Economy. He has also served as a senior research economist at the Association of American Railroads, and as a senior policy analyst at the Environmental Protection Agency. He received his B.S. from Tulane, with further training in economics and operations research at the University of Pennsylvania.

Paul Georgia is a Research and Development Analyst with the Competitive Enterprise Institute in Washington, D.C. Mr. Georgia specializes in international lending institutions and foreign aid as well as federal funding of environmental science and topics dealing with sustainable development. His writings have appeared in many publications, including the *Christian Science Monitor, Journal of Commerce, The Freeman* and *Washington Times*.

Mr. Georgia graduated from Utah State University with a B.S. in international relations and a M.A. in political economy. He is currently a Ph.D. candidate at George Mason University in economics.

ENDNOTES

[1] Since Hardin first wrote about the commons, scholars have distinguished between common property in which there are no relevant institutions (open access) and common property as a social institution complete with use rights, sanctions, and norms. Any reference we make to the commons or common property should be understood as open access.

[2]Garret Hardin, "The Tragedy of the Commons," *Science*, vol. 162, 1968, pp. 1243-1248.

[3]The interventionist implications of this formula are clear. A more positive approach, and one that has been neglected, would be "mutual cooperation, mutually agreed upon." Such mutual, peaceful cooperation occurs in the marketplace, where each person's desires can be met through voluntary exchange.

[4] Our analysis and proposals are for developed countries primarily and the United States specifically. They do apply to developing countries in that all successful attempts we know of to manage the commons rely on various means of equalizing private and social costs (to use the economists' terminology).

[5] Carrying capacity is not a constant measure across all systems of grazing. The absolute number of cows able to use a particular pasture without destroying it varies according to timing of the grazing, rest periods, moisture, weather, etc.

[6]Hardin.

[7]Hardin.

[8]Charles Frankel, *The Case for Modern Man* (New York: Harper & Row, 1955), p. 203.

[9]See Hardin's essay, "An Operational Analysis of Responsibility" in Garret Hardin and John Baden, *Managing the Commons* (San Francisco: W. H. Freeman and Company, 1977), pp. 66-75, for his discussion of the advantages and disadvantages of different management schemes.

[10]Harold Demsetz, "Toward a Theory of Property Rights," *American Economic Review*, vol. 57, 1967, pp. 347-359.

[11]Randy Simmons, "The Progressive Ideal and the Columbian Basin Project," *The Political Economy of the American West*, Terry L. Anderson and P.J. Hill, ed. (Lanham, Maryland: Rowan & Littlefield, 1994), p. 95-111.

[12]Israel M. Kirzner, "Economic Planning and the Knowledge Problem," *The Cato Journal*, Fall 1984, pp. 407-418.

[13]Demsetz.

[14]Terry L. Anderson and P.J. Hill, "The Evolution of Property Rights: A Study of the American West," *Journal of Law and Economics*, vol. 12, 1975, pp. 163-179.

[15] One of the lessons from Edward Banfield's *Moral Basis of a Backwards Society* (New York: The Free Press, 1958), is that backward societies are those with incentives against risk-taking.

[16]Marion Clawson, "The National Forests," *Science*, vol. 191, 1976, pp. 762-767.

[17] Only a small percentage of American voters can even name their Member of Congress and fewer know what the Member voted on last week or how he/she voted. For example, a poll conducted by the *Washington Post* in conjunction with the Kaiser Family Foundation and Harvard University found that two-thirds of those polled didn't know the name of their Congressman. Richard Morin, "Who's in Control? Many Don't Know or Care," *Washington Post*, January 29, 1996, p. A1.

[18]John Walker, "Tall Trees, People and Politics: Opportunity Costs of the Redwood National Park," *Contemporary Policy Issues*, vol. 5, 1984.

[19]Garret Hardin and John Baden, *Managing the Commons* (San Francisco: W. H. Freeman and Company, 1977), p. 4.

[20]William C. Mitchell and Randy T. Simmons, *Beyond Politics: Markets, Welfare, and he Failure of Bureaucracy* (Boulder, CO: Westview Press, 1994), p. 154.

[21]Since politicians represent bundles of values they will likely vote against positions one holds from time to time.

[22]Randal O'Toole, *Reforming the Forest Service* (Washington, D. C.: Island Press, 1988), p. xi.

[23]Randal O'Toole, *Appropriate Economics: Saving the Environment with the Ecology of Human Institutions* (Draft Manuscript, 1992).

[24] Demsetz, p. 357; Ronald H. Coase, "The Problem of Social Cost," *Journal of Law and Economics*, October 1960, pp. 1-44. Coase showed, in a world of zero transaction costs, that whether the farmer pays the dam builder not to build or the builder pays farmer to be allowed to build the final wealth distribution would be the same. The Coase Theorem, of course, operates in a world where economic efficiency is the dominant value of society. Below, in a discussion of the common law, we will discuss a world in which property rights is the dominant value.

[25]Kent Jeffreys, *Who Should Own the Ocean?* (Washington, D. C.: Competitive Enterprise Institute, 1991), pp. 17-18. Also, Roger Bate, "Water Pollution Prevention: A Nuisance Approach," *Economic Affairs*, April 1994.

[26]Jorge E. Amador, "Take Back the Environment," *The Freeman*, August, 1987, pp. 309-315.

[27]Amador.

[28]Amador.