FROM THE PRESIDENT

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The Economics of Hunter-Conservation

The North American hunting community created this powerful notion of conservation more than 120 years ago. With the founding of the Boone and Crockett Club in 1887, Theodore Roosevelt and George Bird Grinnell created a mechanism to put meat on the bones of this nascent concept. A nation was awakened to the potential wildlife disaster confronting them and answered their call. This new evangelist, the hunter-conservationist, not only awakened North America to this pending disaster, but was at the nation's forefront in land habitat reform, land protection, wildlife management, and the creation of state and federal wildlife management legislation. The hunter-conservationist with his fishing brethren has financed the majority of this effort. This evangelist, the hunter-conservationist, created the ideas and spearheaded the efforts that have resulted in our 21st century abundance of wildlife along with conserving its spectacular habitat.

Few non-hunters think about the size of the economy that is generated by this passionate group. The National Shooting Sports Foundation says it succinctly, "Hunting in America is a force for conservation." Hunters are now spending annually over $40 billion on equipment, licenses, trips, and supplies. The money spent by these sportsmen and women create and support over 680,000 U.S. jobs. Hunter spending supports many rural communities and most importantly makes up the main source of wildlife conservation funding.

Most of our state agencies that protect our wildlife, their habitat and our state natural resources are financed by license sales to hunters and fisherman, user fees, and from certain restricted funds from excise taxes on user equipment and gear. The Pittman-Robertson Act of 1937, passed with significant help from the Boone and Crockett Club, was at the forefront of restricted funding for wildlife. For many years, state general funds provided the lion's share of funding for state natural resources agencies. But with many state budget crunches beginning in the 1970s, combined with fewer federal dollars flowing to state wildlife support, it is the hunter-conservationist and fishing communities that are providing the states with the vast majority of funding for the protection of all our resources.

The real tragedy for wildlife conservation is that initially license fees and restricted funds were meant to be used for specific wildlife and habitat management projects. Those funds must now, to a large degree, also finance the general and administrative expenses of our state natural resources management agencies. It has meant at the least, fewer conservation officers and fewer projects for wildlife and habitat enhancement.

Concurrently, there has been significant growth in the use of state natural resources by many different recreational user groups. Dispersed recreation such as hiking, camping, canoeing/kayaking, wildlife watching, etc., are all increasing in numbers and demanding greater access and more services. The irony of this additional demand is that it is largely financed by the sporting community, the hunters and anglers.

Hunters, fishermen, and the evolving outdoor hobby enthusiasts are not the only members of society who are placing significant demand on our natural resources. The economic potential of various state industries rely on healthy ecosystems and demand significant services from our state natural resources agencies. Let's use my birth state of Michigan as an example. Below is a list of major state industries that rely on state natural resources and the agency that manages them, listed alphabetically along with their annual economic impact (in billions of dollars):

Agricultural Production (total farm to fork)	**$96B**
Agricultural Production (food processing)	**$24B**
Forestry	**$14B**
Hunting	**$2.3B**
Mining	**$5.8B**
Oil and Gas	**$4B**
Recreational Boating	**$4B**
Sport Fishing	**$2.4B**
Target Shooting	**$0.4B**
Tourism (total Mich. tourism)	**$18.1B**
Wildlife Watching	**$1.2B**

Michigan is a microcosm of our U.S. in states where hunting and fishing are key regional pastimes. Like Michigan, most state governments rely on the passions and financial support of these recreational sportsmen and sportswomen to protect and enhance all natural resources. Michigan recreationists led the fight to have royalties from state-owned minerals put into a restricted trust only to be used for outdoor recreation, which to date has generated over $1 billion in grant awards for outdoor recreation. Later these same groups provided support to constitutionally protect these funds as well as funds from hunting and fishing licenses, from being used for other purposes. Revenue generated by forestry not only provides professional management of Michigan's 3.8 million acres of dual-certified sustainably managed forest (and great early successional wildlife habitat), it also pays a large portion of forest fire fighting. The state of Missouri has it correct: it uses a small portion of the state's general sales tax for the providential management of its natural resources. As our North American population continues to expand, there will be greater and greater demands placed on all of our resources, perhaps water more than any other. To manage these demands and the associated conflicts will require evolving skills, more management not less, and a public who truly values these resources and is willing to help pay the costs of maintenance and infrastructure on these precious outdoor resources.

It is imperative that we adequately fund natural resource conservation in our states. Hunter-conservationists have played a critical role in creating awareness for adequately funding natural resource management and have led efforts to provide additional earmarked revenue for those critically important components of our way of life. We hunter-conservationists must remain vigilant to protect the integrity of restricted funds and support additional funding for public and private land management that will enhance outdoor recreation, especially hunting and fishing. Today, the most effective way to engage in the political process is through state-level organizations such as political action committees to ensure that the voice of the hunter-conservationist is heard. ■

Theodore Roosevelt: Ecosystem Service Pioneer

By Dr. Stephanie L. Gripne and Mr. Mark E. Rey

Important wildlife habitat is being lost at a rapid pace because it is worth far more financially as fragmented subdivided parcels for development. Even though this land produces many positive benefits—wildlife habitat, wildlife, open space, water filtration and carbon sequestration—many of these benefits are either undervalued or not valued at all by the market. This market failure often results from not being able to exclude users from accessing the benefits, which in turn allows these users or free-riders to consume the resource without payment. Today, we face this four-part problem head-on: biodiversity and ecosystem function, market failure from our inability to exclude people from benefits, an increase in the cost of conservation, and declining resources. There has been an increasing effort by the natural resource organizations and agencies to address this market failure by developing ecosystem service markets in order to conserve wildlife habitat.

Economists classify goods into four types—private, common, club, and public goods—based on the classification of whether or not a good is rival or excludable (Figure 1). Rival goods are goods whose consumption by one consumer prevents simultaneous consumption by other consumers. A good is said to be excludable when it is possible to prevent people who have not paid for it from having access to it. An example of a market good is a vegetable. Market goods are both rival and excludable. The market does an exceptional job of providing the socially desirable number of goods and services such as vegetables at a price that individuals are willing to pay for the good or service. However, the market does not do such a good job of producing socially optimal solutions for public, club or common goods. For example, a common good is a good that is rival but not excludable. An example of a common good is fish stocks in international waters. Since there is no practical way to exclude people from harvesting the fish, essentially anyone who can harvest the fish can do so for free. In the cases of common and public goods, there is a demand-side failure where it is difficult or impossible to charge the consumer what they are willing to pay for the good or service. How do you get people to pay for it when they can enjoy it for free? Since it is difficult to prevent people from gaining this benefit, non-excludability leads to free-riders, which eventually leads to non-provisioning of the good.

RIVAL	EXCLUDABLE: Yes	EXCLUDABLE: No
Yes	Market Good Fresh Vegetables	Common Good Fish Stocks
No	Club Good Private Parks	Public Good Fresh Air

Economists generally classify goods into four types and distinguish them by whether they are rival or excludable.

Market Failure Solutions

An argument could be made that the first ecosystem service transactions originated from wildlife conservationists such as Theodore Roosevelt and George Bird Grinnell. Quelling nineteenth-century market hunting is one of the earliest examples in the U.S. of private and public partners working together to solve the market failure of free-riders; our inability to exclude individuals from accessing the resource resulted in restructuring property rights and developing incentives to conserve wildlife and solve a conservation problem related to a market failure. Early wildlife conservationists, led by Roosevelt, partially solved the market failure excludability problem by passing laws that restructured property rights. The laws essentially assigned property rights to wildlife in the form of the state trust and then monetized these rights through consumer surplus—selling permits and habitat stamps, which captured the hunter's willingness to pay. By doing so, they conserved wildlife populations and developed important funding streams for fish and wildlife.

The challenge is clear: we need to work together to create the rules that create markets. Society values wildlife habitat and other ecosystem services. It is up to us as leaders, policymakers and entrepreneurs to develop rules like the wildlife laws to make new markets to provide the same revenue streams Roosevelt did for wildlife, their habitat, our land, water, and air. ■

It is the hunter-conservationist and fishing communities that are providing the states with the vast majority of funding for the protection of all our resources.