

6 ECONOMIC BENEFITS OF PRESERVING NATURAL AREAS

For many of us, the aesthetic value of glimpsing a wild animal in an iconic natural setting or the serenity felt when you find yourself alone in a quiet wooded area at the edge of a brook cannot be labeled. In the past, the value of nature and open space was either ignored or underestimated and therefore overlooked when decisions about the land were to be made. More recently, there have been attempts to place monetary values on our natural resources in an effort to recognize their contribution to our quality and way of life. This section explores some of those studies about the economic impacts of open space.

6.1 QUALITY OF LIFE

The Grantham Master Plan, adopted in 2005, clearly states the town's desire to maintain the current quality of life through preserving its small town atmosphere and rural character. Maintaining open space resources such as conserved and protected lands, parks and trails, and recreational playing fields contributes to quality of place and community character.

While difficult to quantify, one measure of quality of life may be characterized by access to open space for recreation. Recreational playing fields are vital for encouraging children to exercise and play in our ever increasingly sedentary society. The trust fund that Grantham has set aside for the purchase of additional playing fields is important. Space should be set aside for playing fields before scarcity of open space makes it necessary to convert conservation lands. Public parks invite community events and other social activities.

Landmarks, such as the ridgelines and hills that characterize the Grantham landscape, give a community character and an identity (SPNHF, 2001). A place known to have a desirable quality of life may attract local and regional businesses and stimulate economic growth. Businesses recognize recreational opportunities and community character when considering location or relocation (Hitchcox, 2001). Second homes and retirement homes likewise search for areas considered to have a high quality of life. Land preservation can further protect resources such as drinking water supplies and local agriculture for future generations to enjoy.

Nationally, people have been willing to spend money for land preservation (Baker and Macdonald, 2004). This attitude was demonstrated in Grantham in 2006 when, at town meeting, community members voted to increase the amount of Current Use Change penalty tax allocated to the Conservation Fund from 50% to 100%. Conserved land is a public investment in one's community that will appreciate over time.

6.2 PROPERTY TAXES AND PROPERTY VALUES

Conserved lands comparatively pay more in taxes and use fewer services than residential properties (Hitchcox, 2001 and Auger, 1995). A review of four cost-of-community-service studies in New Hampshire revealed that residential land use revenues were consistently exceeded by expenditures while open space consistently generated more revenue than expenditures (Auger, 1995). The same study showed that commercial/industrial development also generated more revenue than it expended in services but it should be noted that commercial/industrial development is often followed by residential development and residential development is most often built on converted open space.

Property values, especially those properties close to water, typically increase the closer the property is to conservation lands or other open space (Hitchcox, 2001 and Resource Systems Group, 1999). While higher property values increase property taxes for the property owners, it also allows an increase in tax revenues for the town without the need for additional services or infrastructure.

6.3 OUTDOOR RECREATION AND TOURISM

In New Hampshire, outdoor recreation and tourism related to outdoor recreation, have an obvious economic impact on the local economy. Of 3.2 billion dollars spent in 1996/1997, an estimated 54%, or 1.7 billion, was spent on open space related activities such as hunting, fishing, wildlife watching, hiking, skiing, and camping (Resource Systems Group, 1999). In addition, it is estimated that 64,000 jobs were generated by these activities during the same time period (Resource Systems Group, 1999).

6.3.1 FISHING AND HUNTING

The U.S. Fish and Wildlife Service collects information on resident participation and expenditures related to fishing, hunting, and wildlife watching (see section 6.3.2). Table 6-1 demonstrates the number of participants and total expenditures spent in New Hampshire in 2006.

Table 6-1 Participation in Recreational Hunting and Fishing Activities and Total Expenditures of Each Activity in New Hampshire

ACTIVITY	PARTICIPANTS	TOTAL EXPENDITURES IN NH
Fishing	228,000	\$177,624,000
Hunting	60,000	\$80,404,000

Source: U.S. Fish and Wildlife Service, 2007

6.3.2 WILDLIFE WATCHING

Wildlife watching activities include bird watching, feeding birds, other wildlife observation, and wildlife photography. Table 6-2 demonstrates the number of participants and total expenditures spent in New Hampshire in 2006.

Table 6-2 Participation in Wildlife Watching Activities and Total Expenditures in New Hampshire

RESIDENCY	PARTICIPANTS	TOTAL EXPENDITURES IN NH
Residential	459,000	\$266,966,000
Non-residential	323,000	

Source: U.S. Fish and Wildlife Service, 2007

6.3.3 SURFACE WATERS

Water based activities such as boating and swimming are estimated to bring in an additional \$597-\$830 million dollars and generate 7,200-10,700 full and part-time jobs (Shapiro and Kroll, 2003).

6.4 FORESTRY AND AGRICULTURE

Forestry based activities are estimated to contribute \$3.9 billion to the New Hampshire economy and generate over 16,600 jobs (Resource Systems Group, 1999). It should be noted that paper manufacturing, an industry that has drastically changed in NH in the last several years, is included in this figure. However, using wood as biomass energy is an ever increasing sector that may be comparable in the near future.

Agricultural activities dependant on open space, such as local farm operations, hay fields, and tree farms, contribute \$377 million to the State economy and generate over 5,400 jobs (Resource Systems Group, 1999).

6.5 ECOSYSTEM SERVICES

Ecosystem services are perhaps one of the most difficult—and most important—of natural resources to quantify. They are the natural systems that give us clean air and drinkable water, allowing us to survive. The cost to replicate these systems if they are lost is unimaginable; to create the flood control provided by natural wetlands, for example, would cost over one-hundred times that of protecting the naturally occurring resource (Hitchcox, 2001). Globally, ecosystem services have been valued at trillions of dollars (Baker and Macdonald, 2004). The preservation of open space lands and natural resources ensures that ecosystem services continue.

6.5.1 DRINKING WATER

By the late 1980's, development began to seriously threaten the water quality of the Catskill-Delaware watershed which supplies 90% of New York City's drinking water supply. It was predicted that a filtration system, at a cost of \$4-6 billion for construction and \$250 million in annual operating expenses, would have to be built to maintain water quality. Instead, the city invested in adding acreage to the publicly held land in the watershed, particularly critical lands threatened by development, and engaged in stream corridor restorations and better stewardship of city owned lands. They developed the Whole Farm planning program, engaging local farm operations in a partnership that integrated environmental protection and business improvement. Whole Farm is considered to be one of the most successful non-point pollution control programs in the United States and has played a major role in stabilizing and reducing watershed pollution loads. Finally, New York City carried out the largest water conservation program in American history, permanently reducing its per capita water use by close to 20%. All this cost approximately 1/8 of the cost of a filtration system. (Appleton, 2002)

In New Hampshire, over 20,000 households and business customers rely on public drinking water supplies from surface water, generating \$276-\$301 million in revenue (Shapiro and Kroll, 2003). Groundwater users, such as the more than 200,000 private residential wells, are not included in these figures. Agricultural operations, commercial/industrial water users, and countless small public water systems such as mobile home parks are also excluded. Impervious surfaces and non-point pollution runoff from roads and other development create 90% of the surface water quality problems in New Hampshire and 10% of New Hampshire's critical water supply lands are already developed (SPNHF, 2001). Only 12% of water supply lands are permanently protected (SPNHF, 2001). New York City recognized the socio-ecological interactions between our natural and cultural resources and has provided a real-life example that investing in both is a smart choice.

6.6 CHILDREN AND THE ENVIRONMENT

Air pollution...water pollution...noise pollution...pesticides...all these environmental health threats reveal themselves every day in the form of respiratory and cardiovascular diseases, cancer, asthma, allergies and more. Perhaps the latest growing epidemic among society is "nature-deficit disorder." The phrase "nature-deficit disorder," is defined by the journalist who coined it, Richard Louv, as:

"the cumulative effect of withdrawing nature from children's experiences, but not just individual children. Families too can show the symptoms -- increased feelings of stress, trouble paying attention, feelings of not being rooted in the world. So can communities, so can whole cities. Really, what I'm talking about is a disorder of society -- and children are victimized by it." (Karnasiewicz, 2005)

Louv blames a number of reasons for the decline in children's contact with nature including television, the internet, fear of strangers, and even organized sports. He hypothesizes that a connection with nature is a missing element in the lives of children that is contributing to, or aggravating symptoms of, many childhood maladies such as obesity and ADHD. In one example, Louv cites a University of Illinois study that suggests that by reducing stress and increasing creativity and cognitive skills, unstructured nature-based play might be therapeutic for kids with ADHD (Karnasiewicz, 2005).

Health-care costs associated with ADHD are conservatively estimated at \$3.3 billion annually (Visser and Lesesne, 2005). The national cost of childhood obesity is estimated at approximately \$14 billion annually (Marder and Chang, 2005). While such environmental illnesses as cancer and allergies might be beyond the control of parents, nature-deficit disorder is certainly a malady a parent has the power to prevent or cure. If reconnecting a child with his or her natural surroundings is a remedy for more serious ailments, it is certainly worth the effort to do so.

6.7 SUMMARY OF RECOMMENDATIONS

- Practice strong stewardship of natural resources and impart these values onto our children. As a community and as part of society, Grantham shares in the responsibility to balance the needs of present generations with those of the future.