

Economic Impacts of the 13 Mile Woods Community Forest in Errol, New Hampshire

*Prepared for the Community Forest Collaborative
By Elizabeth Reaves and Marta Ceroni*

Donella Meadows Institute (for Green Compass LLC),
2 Beaver Meadows Road, Norwich, VT 05055
mceronidmi@gmail.com, 802-432-8930



Acknowledgements

This work is a reflection of the generosity of many people who gave their time, shared their knowledge, and continue to work hard to support the Town of Errol, the 13 Mile Woods Community Forest, and the Community Forest Ownership Model.

In particular, the authors would like to acknowledge 13 Mile Woods Association members Bill Freedman, Charlie Kurtz, and Pierre Rousseau as well as New Hampshire Fish and Game Region 1, Wildlife Biologist, Will Staats, Fisheries Biologist, Diane Timmins, and Wildlife Programs Supervisor, Kent Gustafson. Phoebe Backler provided great insight into the economic benefits of paddlers along the Northern Forest Canoe Trail.

Greg Ainsworth, Consulting Forester for the 13 Mile Woods provided timber harvest data and knowledge about the past, present, and future of the forest industry in New Hampshire.

Special thanks to Julie Renaud Evans, Director of Forestry for The Northern Forest Center. Julie provided invaluable knowledge, time, and resources about the benefits of community ownership of forestland and insight into the unique and special ecological, recreation, and timber stocking attributes of the 13 Mile Woods Community Forest.

J.T. Horn, Project Manager for The Trust for Public Land, provided great insight into the unique qualities of the Great North Woods, perspective on the history of forest ownership and management in New England and the balance between conservation and working land, the process involved in the purchase of the 13 Mile Woods parcels, and the role The Trust for Public Land played in the process.

Prior work by the Community Forest Collaborative, the Northern Forest Center, and The Trust for Public Land provided case studies and research on the Community Forest Ownership Model that made our work easier. Sarah Parkinson, communication specialist at the Donella Meadows Institute, improved the manuscript with key editorial work.

Elizabeth Reaves is a social researcher who specializes in community development and sustainability. Her work is informed by deep listening, community-based research, and an appreciation for the complex interactions between social-economic systems and the environment.

Marta Ceroni directs the Sustainable Economies Program of the Donella Meadows Institute in Norwich, Vermont. She combines a background in forest ecology with expertise in the economics of sustainable forest management and conservation.

Contents

Executive Summary	4
Economic Impact of Timber (2005-2012)	4
Economic Impact of Recreation	5
Future Opportunities for Economic Contributions by the Community Forest	6
Economic Development	6
Marketing and Communication	6
Community Engagement	6
Goals and rationale of the study	7
Introduction	8
Regional Trends in Timber and Recreation	10
Land Purchase	11
Financing the Acquisition	11
Economic and Social Benefits of Community Forest Ownership	15
Economic Impacts	16
Timber Revenues	16
Other Timber Management Data	17
Jobs	18
Multiplier Effects of Timber Sales	19
Recreational Revenues	20
Multiplier Effects of Recreation and Job Creation	22
Opportunities	23
Economic Development Opportunities	23
Marketing and Communication Opportunities	24
Opportunities to Support the Community	24
Authors' Conclusions	25
Appendix	26
Cited References	39

Executive Summary

In 2005, the Town of Errol purchased 5,269 acres of forestland in their town, creating the 13 Mile Woods Community Forest. In 2009, they added 1,839 acres to this community forest. Now seven years into their ownership, this report analyzes and quantifies the current and future economic benefits realized by the Town of Errol, New Hampshire and the surrounding region from the 7,108 acres of community-owned forest known as 13 Mile Woods. Natural assets now owned and managed by the Town of Errol include rare flood plain forest, trout streams, and mature hardwood and softwood forests stocked with approximately \$6 million in standing timber value.

This report concludes that the Town of Errol made a wise timber investment for the Town and people of Errol, and the community forest successfully demonstrates an important ownership model that is an alternative to federally protected areas and to private timberlands, the latter of which are increasingly subject to short-term ownership changes.

This ownership structure also includes a working forest conservation easement that mandates sustainable forest management on the property, and permanently secures pedestrian access and rights to the forest resource for residents and visitors in perpetuity; this allows for sustained economic benefits and an opportunity to plan for long-term community development options.

A few elements that make the 13 Mile Woods Community Forest a success story include:

- the high value of timber on the land at the time of purchase (\$5.9 million)
- the pre-existing experience of the Town with owning forest
- two experienced organizations that secured resources to fund the purchase of the property and set up a governance structure
- use of New Market Tax Credits which reduced borrowing need from \$2.2 million to \$1.6 million
- local visionary leadership
- partnership with State of New Hampshire on easement and management

Economic Impact of Timber (2005-2012)

Ownership of forest land, and sustainable timber management and harvesting during the first seven years has allowed the Town of Errol to:

- own significant property without impacting local property taxes
- control the visual asset of a 13-mile gateway into the village center
- maintain a healthy well-stocked forest
- generate more than \$1.7 million in net revenues
- maintain two years of reserve funds for possible market fluctuations
- purchase an additional piece of property
- generate over \$2 million in earnings in the logging sector
- annually support two local full-time-equivalent jobs in forestry and logging
- indirectly support an additional ten jobs in other sectors of forest products manufacturing each year

Continued sustainable timber management planned for the next ten years (2013 – 2022) will result in further 22,229 cords of timber products to be harvested. This sustainable approach will generate an estimated stumpage revenue of over \$1,070,000 which will support loan payments by the town and employment in the forestry and logging sector.

Economic Impact of Recreation

The high natural quality of the forest and the proximity to the Androscoggin River make the Community Forest a primary Recreational Asset. Currently, impacts of recreational visits to Errol are based on visits that occur in the area including 13 Mile Woods, Mollidgewock State Park, and Umbagog National Wildlife Refuge and spending from state data.

- A large percentage of recreation and tourism activities in New Hampshire are linked to the forest, and every 1,000 acres of forest supports 2.4 forest-based recreation and tourism jobs, though capturing recreation expenditures is a challenge (NEFA 2011).
- Outdoor guides bring out-of-state visitors to the forest and river for hunting and fishing experiences.
- Snowmobiling, fishing, and hunting provide a total figure of more than \$2.2 million in visitor spending contributed to the Errol area in 2012.
- Hunting and fishing account for more than half of visitor economic impact (\$1.24 million in 2012).
- Estimated revenues from ATV recreation, assuming that the planned ATV trail is completed, could result in an average of 3,000 visitors and more than \$400,000 in spending in the first year after completion.
- Applying multipliers to recreational visitor data indicates over 20 jobs in Errol being supported by recreational activities, though this is not directly tied to the community forest ownership.

Future Opportunities for Economic Contributions by the Community Forest

Economic Development

1. Future timber revenues will be available for community needs and priorities.
2. Further recreational potential of the forest can be realized through:
 - an understanding of the present and future users of the forest
 - an assessment of lodging capacity and accessibility (especially for ATV recreation)
 - capitalizing on numerous natural assets such as the 11-mile trail through the parcel, Munn Pond, and access to the Northern Forest Canoe Trail
 - balancing motorized and non-motorized use when planning trails

Marketing and Communication

Effective communication, both local and beyond, will also contribute to capitalizing on recreation opportunities in Errol and the region, opportunities include:

- interpretative signage at access points
- communicating access and permitted uses in the forest
- educate business owners about recreational opportunities in the forest
- collaborate with others marketing the region's assets and opportunities

Community Engagement

Community forests both need and benefit from individual commitment as well as broader community engagement and involvement. Errol should continue to maintain the forest as a source of community activities, events, and pride such as:

- study feasibility of using low-grade wood from the 13 Mile Woods Community Forest to heat local homes or the school
- fully engage school children in the forest
- promote and celebrate the forest through regular field trips and events
- both share with and learn from other community forest owners and managers

Goals and rationale of the study

The goal of the study is to detail and quantify the current and future economic benefits realized by the Town of Errol, New Hampshire, local businesses, and the surrounding region from the 7,100 acres of community-owned forest known as 13 Mile Woods. Objectives included assessing the economic impact of sustainable forestry and outdoor recreation, identifying key economic benefits of community ownership structure, and discussing challenges and opportunities for 13 Mile Woods.

Overall the report should read as an attempt to describe the economic benefits of community-owned forest for the town of Errol, the local economy, and the region at large.

This report was commissioned by The Community Forest Collaborative, a partnership among The Trust for Public Land, Northern Forest Center, and the Quebec Labrador Foundation. The Collaborative seeks to expand community ownership and management of forestland in northern New England by building on the tradition of town-owned forests.

The Collaborative has developed a Community Forest Model that consists of the following components:

- Forests that are owned and managed by a municipal entity or by another group (e.g., land trust) on behalf of a community.
- The proposed acquisition and management structure ensures community participation in and responsibility for management decisions.
- The community has secure access to the value and benefits of the forest, both monetary and nonmonetary, that can support and reinforce community priorities and economic development objectives.
- The conservation values of the forestland are permanently protected.

The Collaborative has previously produced two reports that have laid out the general description of the Community Forest Model, presented case studies, and identified needs and resources to create and manage community forests.



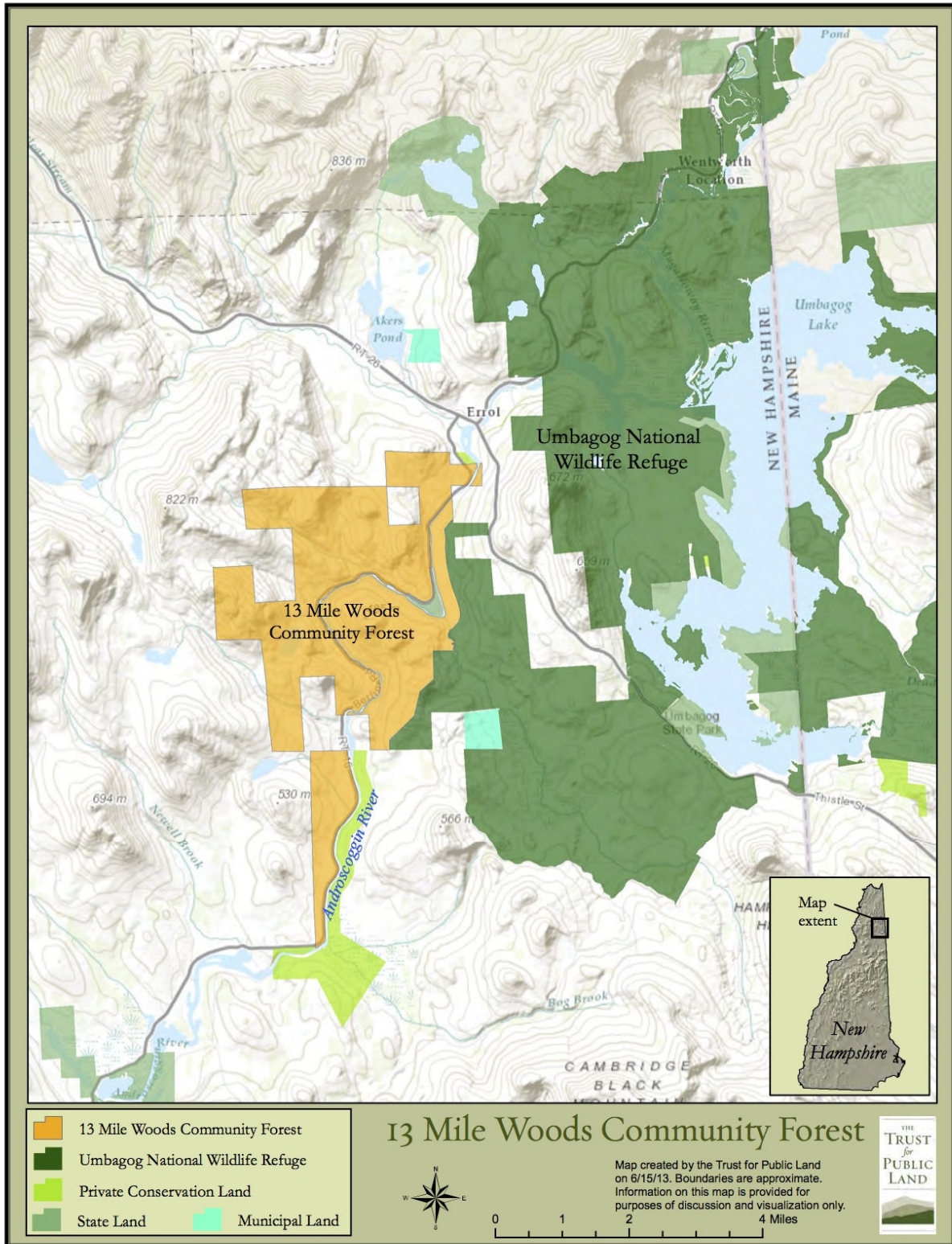
Introduction

The 13 Mile Woods Community Forest covers an area of approximately 7,100 acres (Figure 1). The property is managed to conserve open space, maintain a sustainable working forest, enhance recreational opportunities for residents and tourists alike, and to keep the forest open and accessible for multiple uses.

“Recreation will be a primary activity for both Errol residents and visitors at the 13 Mile Woods property. People believe this property should be used to benefit the Town and that visitors using the parcel for woods recreation is one way to boost the tourism trade for the businesses in town” (13 Mile Woods Stewardship Plan, 2006).

13 Mile Woods is a multi-use forest with opportunities for public recreation including hiking, hunting, fishing, cross country skiing, and snowmobiling. It includes nine miles of frontage on the Androscoggin River, Munn Pond, and mature hardwood and softwood forests. It is also an important wildlife corridor, containing rare flood plain forest and trout streams (13 Mile Woods Stewardship Plan, 2006). Historically the 13 Mile Woods parcel has not been excessively harvested compared to other timberland in the area, resulting in a relatively healthy timber stock able to be managed sustainably and to generate considerable income (13 Mile Wood Forest Stewardship Plan, 2006; Interview, Greg Ainsworth and Julie Renaud Evans).

Figure 1. Geographic location of the 13 Mile Woods Community Forest.



Regional Trends in Timber and Recreation



In 2002, faced with changing landownership pressures, the citizens of Errol decided to purchase the 13 Mile Woods property in order to manage it as a sustainable working forest for timber, recreation and community access benefits, and to protect the scenic entrance into town. The purchase, accomplished in 2005, put an end to a series of rapid ownership changes (described in Figure 2) that reflect a nationwide trend in commercial forest landholdings: 20-25% of all privately owned forestland has changed ownership since 1978 and approximately 75% of industry-owned private forestland has changed hands between 1996 and 2005 (Little, 2005). These trends were paralleled by the progressive disappearance of

vertically integrated forest industry companies, which owned both forestland and the facilities to process the wood. In their place, timberland investors emerged, such as Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs). These owners differ substantially from industrial owners in their landholding objectives and have shorter investment time horizons and different management capacities (Bliss et al., 2010).

Traditionally, much of the forestland in private timber company ownership has been open to public access. This access is threatened as timber companies sell their lands to other private owners (Smith and Darr, 2002). In the 1990s there was a significant shift in landownership patterns in northern New England. Between 1994 and 1999, over 3 million acres formerly held by industrial owners were sold to other owner types (NFC/NCC, 2008). Today's inventory reports no longer refer to "industrial lands," but "business owners" make up 9 % of New Hampshire's landowners. Each of these owners has different objectives for the use of their land, which may not include open access for recreation. In addition, new residents often bring different views regarding forest accessibility.

A large percentage of recreation and tourism activities in New Hampshire are linked to the forest because it so dominates the landscape (NEFA 2011). The UNH Cooperative Extension Service estimates that 75% of recreational activities would not take place in New Hampshire without the presence of the forest. The largest percentage of spending by outdoor recreation tourists is on food, lodging, and travel – directly benefiting local businesses that cater to recreation visitors (Outdoor Industry Association, 2012). About 11,041 people are directly employed in recreation and tourism as a result of the forest with payrolls of \$187 million annually due to forest related recreation in New Hampshire (NEFA 2011).

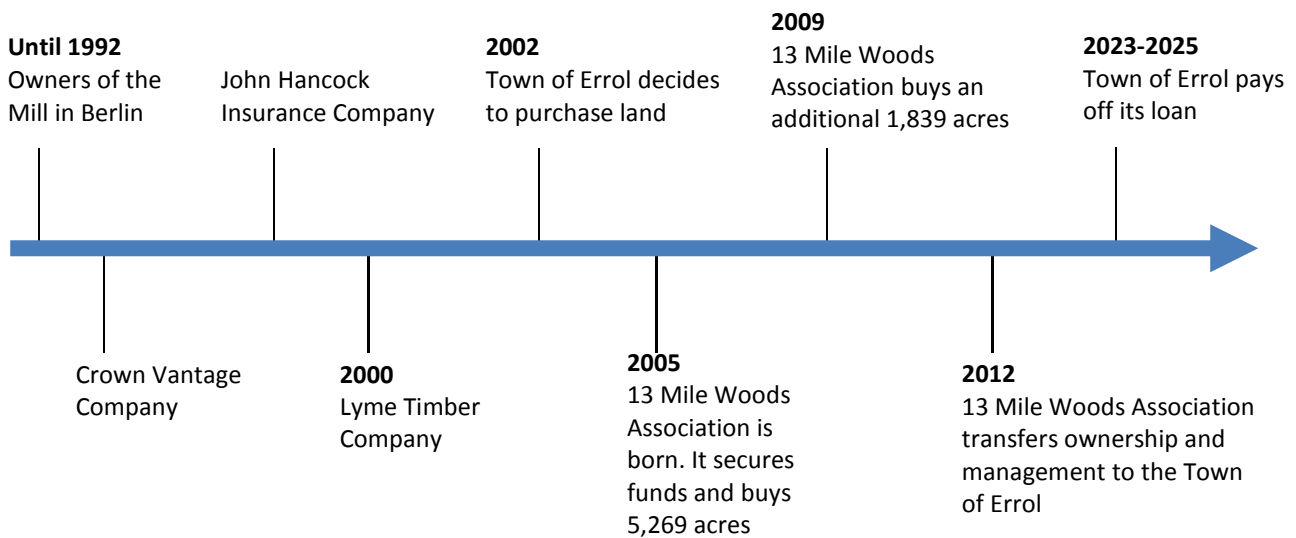
Overall, these documented and projected changes in ownership challenge forest-based communities to find new ways to maintain the rural character of the landscape, preserve

their traditions and culture, as well as protect a valuable economic asset; forest-based businesses and jobs, in both forestry and recreation-based industries.

Land Purchase

The 13 Mile Woods property has been owned and managed as timberland for over 100 years by a variety of owners. Figure 2 describes the changes of ownership in the past 20 years and salient phases of the land purchase by the Town of Errol. The scenic value of the 13 Mile Woods stretch of land was recognized as early as the 1970's when a multiple landowner agreement existed to maintain a scenic buffer along New Hampshire's Route 16.

Figure 2. Property Ownership Changes.



The decision to purchase this property came after three years of conversations at the town level. The townspeople understood the value of the timber investment, but also felt strongly that it was critical to protect and control this beautiful stretch of land leading into the village.

Financing the Acquisition

The purchase of the 13 Mile Woods in 2005 by the Town of Errol from the Lyme Timber Company was facilitated by the Community Forest Collaborative, especially Collaborative partners The Trust for Public Land and the Northern Forest Center. Funding to support the \$4,050,000 purchase price came from multiple sources.

The Trust for Public Land helped secure a commitment for a \$1,640,000 grant from the USDA Forest Legacy Program. Through this program the State of New Hampshire holds a conservation easement on the property to permanently protect it from development and to maintain it as a working forest. The Trust for Public Land also helped secure a \$350,000 grant from the State of New Hampshire's Land and Community Heritage Investment Program (LCHIP).

However, even after taking these grants into account, there remained a gap of \$2,060,000 plus transaction costs. Errol residents voted to authorize the town to borrow needed funds to enable the purchase to occur, however, the amount needed to borrow, in excess of \$2.1 million, was much too high compared to the appraised value of the property with the conservation easement. As such, the loan would therefore not be a bankable loan.

The Northern Forest Center (the “Center”), working with the Town and The Trust for Public Land, addressed this barrier, enabling the project to be completed, by facilitating and coordinating the development of a New Markets Tax Credit (NMTC) financing to reduce the amount of funds needed to be borrowed by the Town. The Center brought in CEI Capital Management, which had an allocation from the U.S. Treasury Department to issue federal tax credits. NMTC financings involve a complex structure of limited liability companies that can receive an equity investment from a bank and can in turn provide subsidized financing to a project. The bank gets a significant return from receiving tax credits against their federal income taxes, and this in turn enables the NMTC program to provide a subsidized financing to a project.

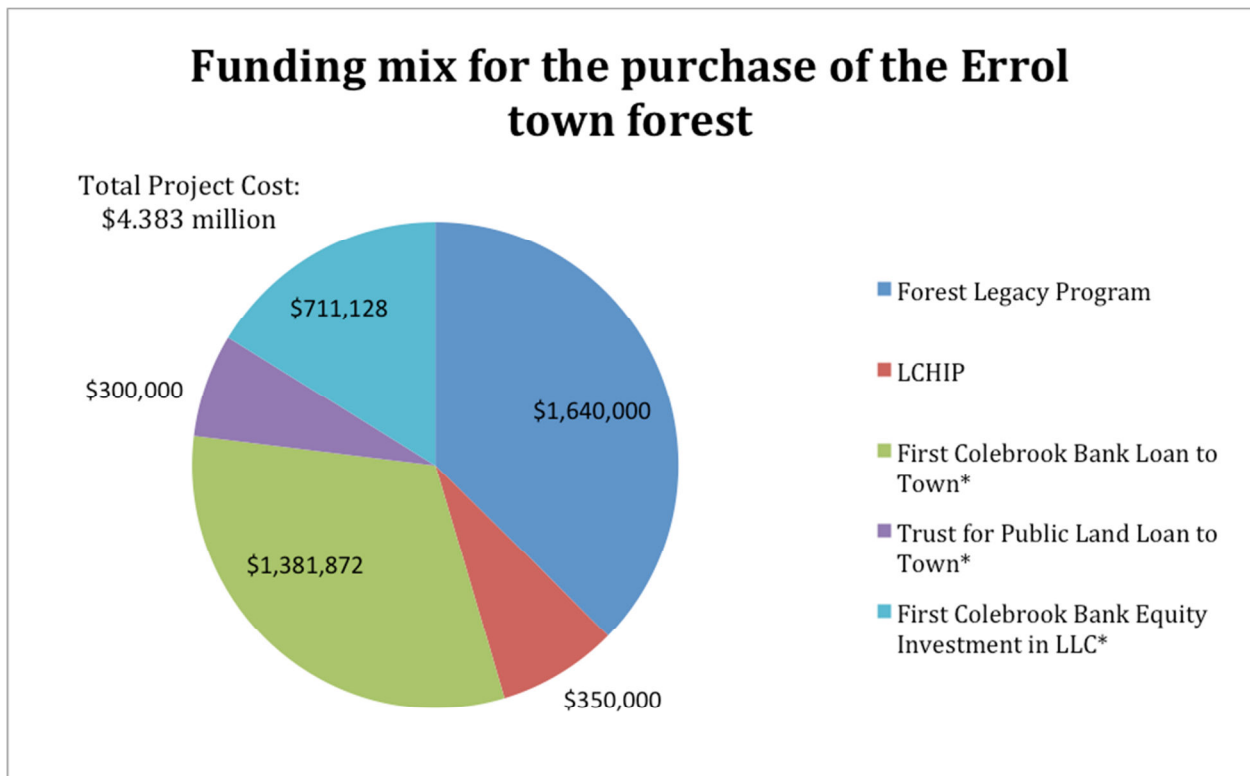
The result of using the NMTC program was that the Town of Errol needed to borrow less than \$1.7 million from a combination of First Colebrook Bank and The Trust for Public Land (using funds lent to it by the Open Space Institute). Given the economics of the project, this reduced amount of borrowing was indeed quite feasible and bankable.

The use of NMTC also resulted in the creation of a new non-profit, the 13 Mile Woods Association, which owned and managed the property on behalf of the community for the seven-year life of the NMTC structure. In December 2012, the NMTC structure was extinguished, and ownership of the property was transferred to the Town of Errol. The grants from Forest Legacy and LCHIP and the use of NMTC to finance the remaining project amount allowed the project to be completed without the need to use any local taxes. The total financing package of \$4,383,000 accounted for the purchase price of \$4,050,000, plus an aggregate total of \$333,000 in various transaction costs, fees, and carrying costs.

Sources of Funds for Purchase of 13 Mile Woods

Forest Legacy Program	\$1,640,000
LCHIP	350,000
Sources of Funds Channeled through NMTC	
First Colebrook Bank Loan to Town	\$1,381,872
Trust for Public Land Loan to Town	300,000
First Colebrook Bank Equity Investment in LLC	711,128
Total	\$4,383,000

Figure 3. Funding mix for the purchase of the 13 Mile Woods Community Forest.



Note: *Funding secured through the use of New Market Tax Credits.

Forest Management: In preparation for the December 2005 acquisition, the town worked with foresters to develop a comprehensive Stewardship Plan to guide the management of this parcel. The plan incorporated ecological conditions, timber inventory data, public input on management objectives, and the requirements written within the easement held by the State of New Hampshire.

From January 2006 until December 2012, the property was intensively and sustainably managed by the 13 Mile Woods Association board members, with the guidance of professional foresters, oversight from the State of New Hampshire (easement enforcement) and biologists with New Hampshire Fish and Game Department (representing county zoning laws). Multiple logging contractors were hired for many timber harvests. The board was also active in managing issues that accompany forestland ownership; gates, abuse of roads, signage, and the development of numerous policies. Throughout this time, the Board worked diligently to be wise in their timber harvesting and used that revenue to pay down their loan.

Additional Acquisition: In 2009, the 13 Mile Woods Association was able to acquire an additional 1,839 acres on the east side of the Androscoggin River as an addition to the community forest. The Trust for Public Land facilitated the acquisition. The tract had a fair market value of \$570,000 and the Town of Errol contributed \$75,000 for the purchase with The Trust for Public Land raising the rest. This parcel also has a Forest Legacy

conservation easement that prevents development of the land, but allows for sustainable forestry and recreational uses. By combining the two pieces of land and developing a single management plan, the 13 Mile Woods Association could show that they were able to harvest more timber annually while still keeping timber growth and harvest in a sustainable balance.

Recreational Investment: The Board also worked to develop an eleven-mile trail to provide alternative snowmobile access into town. Errol's economy depends upon significant snowmobile traffic in the winter that comes into the village for gasoline, food, and other services. The mosaic of trails, many of which go through private lands, can be vulnerable to bad snow years, but also when the landowners need to block trail use during winter timber harvests. The location of the 13 Mile Woods property is truly a gateway paralleling both the state highway and the state network of snowmobile trails into town. The construction of an eleven-mile stretch of new trail through the community forest property now provides an alternate route for winter visitors. The Board secured outside funds (\$150,000), obtained required permits, and built a new multi-use trail through the community forest.

End of Year 7: As of December 31, 2012, the remaining loan balance on the 13 Mile Woods property was about \$850,000. The timber continues to be harvested on a sustainable basis. Though the initial planned harvest levels outlined in the stewardship plan have been completed, the addition of new acreage in 2009 extended the inventory available for harvest. If environmental or market conditions prohibit harvesting in any given year, the town is able to cover costs and payments from reserve funds.

It has been calculated that beginning in 2015, the forest can sustain an annual harvest of approximately 2,500 cords. With sale prices per cord ranging from \$55 (after logging costs) to \$48 (after forester's fees)¹ mean annual revenues from timber may range from \$137,500 (gross figure) to \$120,000 (net figure).

¹ Figures provided by Greg Ainsworth

Economic and Social Benefits of Community Forest Ownership

Errol residents viewed the purchase of 13 Mile Woods as a way to maintain the rural character of the town and as an economic development opportunity. Sustainable forest management will provide sustainable revenue to the town. Additionally, the combined forest, trails, and river are important recreational assets in the town for residents and visitors (Interview, Pierre Rousseau and Julie Renaud Evans). There is great economic opportunity in providing support services to this recreational use.

The community forest model principles of long-term stewardship and sustainable forest management enable the forest to be managed so that it will predictably produce timber revenue and provide economic benefits back to the town; it is a long-term, low-risk investment. Depending on the size of the forest, forest type, quality of timber, and management plan, a town can realize revenues from timber harvesting operations and non-timber forest products; supporting local or regional enterprises such as consulting foresters, local loggers, and sawmills; not to mention the re-spending “multiplier effect” of those dollars within the local economy (Bisson and Lyman, 2003).

The community forest model also promotes community participation in management decisions. This process inherently results in the formation of new partnerships and opportunities, bringing together residents that may not have participated in previous town committees, but are interested in forest uses. Although difficult to quantify, often a community, as in the case of Errol, must form new associations and governance structures to manage the forest (Community Forest Collaborative, 2007). At its most basic level, it provides for new volunteer leadership opportunities and helps build overall community capacity.



Economic Impacts

The 13 Mile Woods Community Forest is a healthy well-stocked mixed-wood ecosystem. The forest's sustainable timber management is guided by a comprehensive Stewardship Plan, conservation easement details monitored by the State of New Hampshire, professional foresters, and wildlife biologists. During the initial seven years of ownership, the following financial benefits were realized from its timber management program:

Timber Revenues

- Total sales exceeded \$3.7 million and total net revenues were over \$1.7 million (Table 1).
- Payments to local logging contractors were over \$2 million.
- Revenues were used to pay 50% of initial purchase loan within seven years.
- Harvesting planned for the next ten years (2013 – 2022) will result in 22,229 cords of timber products, for an estimated stumpage revenue of \$1,070,000 (Table 2 and Figure 4).

Table 1. Yearly timber revenues and logging costs from 2006 to 2012.

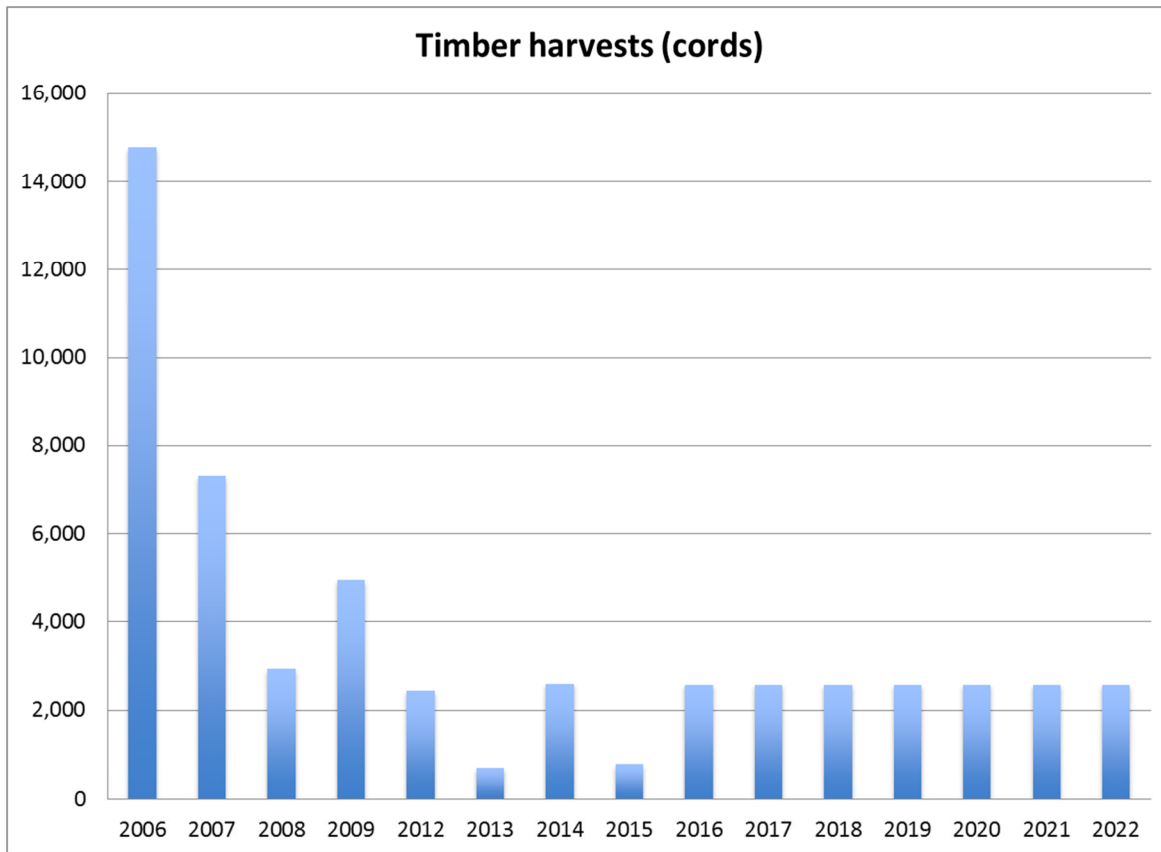
Year	Gross Revenue	Contractor Cost	Net Revenue
2006	\$1,799,310.70	\$1,087,437.70	\$711,873.00
2007	\$892,390.55	\$469,718.15	\$422,672.40
2008	\$288,651.40	\$107,954.18	\$180,697.22
2009	\$525,274.36	\$247,706.09	\$277,568.27
2012	\$209,236.61	\$96,449.03	\$112,787.58
TOTAL	\$3,714,863.62	\$2,009,265.15	\$1,705,598.47

See the Appendix for more information on species composition and timber products in the standing timber. The updated Stewardship Plan also projects a sustainable harvest schedule to 2022. Volumes and expected revenues are presented in Table 2.

Table 2. Estimated harvested timber and net revenue. Estimated cords express the volume of timber to be harvested within each of the three phases of the harvesting plan.

Year	Estimated cords	Net Revenue
2013-2015	4,134	\$200,000
2016-2018	7,755	\$370,000
2019-2022	10,340	\$500,000
TOTAL	22,229	\$1,070,000

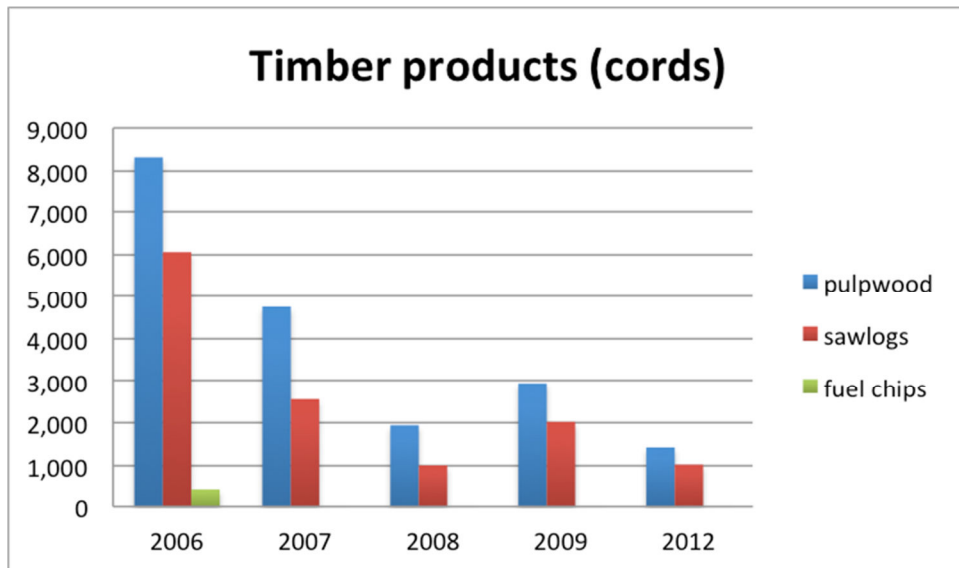
Figure 4. Cords of timber harvested annually starting in 2006 and projected into 2022. There was no harvest in 2010 and 2011 due to poor market conditions.



Other Timber Management Data

- In the first seven years of ownership (2006-2012), 32,425 cords of timber were harvested on the 13 Mile Woods property; the products extracted were 60% pulpwood, 39% sawlogs, and 1% fuel chips (Figure 5).
- A recent (2012) comprehensive inventory of the forest on each side of the Androscoggin River reveals a well-stocked property with 124,248 cords in timber volume for a total estimated stumpage value of over \$5.9 million.
- Eventual sustainable timber harvest amounts could represent 10% of Errol's typical annual municipal budget.

Figure 5. Annual harvests from 2006 to 2012 for different products (shown in blue, red and green).¹



¹ The accelerated harvest in 2006 and 2007 was consistent with the forest's sustainable timber management plan.

Jobs

Timber harvesting is a seasonal industry and each year's production time may depend upon weather, site conditions, planned silvicultural treatment, and market conditions. A timber management program with harvesting will include forester, logging contractor and employees, and truckers. Each will have multiple landowners or operations going on at any time. Therefore calculating jobs is done indirectly, using standards, multipliers, and full-time equivalencies. In New Hampshire every 1,000 acres of forest supports 1.7 forest based manufacturing jobs; these are further separated into five categories (NEFA 2011):

- Wood products manufacturing – 47%
- Paper manufacturing – 19%
- Furniture and related products – 16%
- Forestry and logging – 16%
- Wood energy- 2%

On the 13 Mile Woods Community Forest, there are 7,100 acres being actively managed, and therefore 12 jobs are being supported:

- 2 in forestry and logging
- 6 in wood products
- 2 in pulp and paper
- 2 in furniture and related products

The first category is the most obvious place for the impact to be felt, in fact Errol officials estimated the harvesting was supporting two full-time equivalent positions (interviews

Ainsworth and Rousseau). The others are indirect; wood from this forest is being sold to mills to be processed using human labor.

In the harvests of 2006 and 2007, the employment impact was probably much greater, perhaps seven full-time jobs just in the logging category, but in the future Errol will indeed be contributing to sustainable employment in the region (interview Evans).

Multiplier Effects of Timber Sales

Economic multipliers indicate how much a given increase in timber sales can ripple through the economy resulting in an increase in total output, earnings, and jobs in the supporting sectors. Ripple effects are higher for goods and services produced locally, such as in the case of timber and the lodging and restaurant services. In rural regions reducing economic leakage and returning dollars otherwise spent on imports (e.g. fuel) is the best way to build stronger economies and recirculate dollars multiple times.

Based on multipliers developed by the Bureau of Economic Analysis, timber sales rippling through the regional economy resulted in a total output of more than \$3 million dollars in 2006. The region in the case of the timber economy refers to the contiguous counties of Coos, NH, Oxford, ME, and Franklin, ME, covering the area where most of the forest related economic activity is likely to take place. Total earnings in the sector employed in logging were estimated at \$644,872 (Table 3). As timber harvests decreased in volume, so did the direct and indirect impacts on the forest industry.

Table 3. Multiplier effects of timber sales in the first seven years of ownership by the Town of Errol. Prices not in current dollars.

Year	Total sales	Total output	Total earnings
2006	\$1,799,310.70	\$3,314,150.38	\$644,872.95
2007	\$892,390.55	\$1,643,694.15	\$319,832.77
2008	\$288,651.40	\$531,667.01	\$103,452.66
2009	\$525,274.36	\$967,502.84	\$188,258.33
2012	\$209,236.61	\$385,392.91	\$74,990.40

Recreational Revenues

Besides the forest industry, services supporting visitors and tourism rank second in economic importance in the region. Along with the Androscoggin River, much of the Umbagog National Wildlife Refuge and two state parks with campgrounds are located within the town as well. Errol's economy is very dependent upon significant snowmobile traffic in the winter and fishermen in the summer for services such as food, gasoline, and lodging. The ownership of the 13 Mile Woods Community Forest provides an important recreational asset, though revenue derived can be a challenge to document. Benefits from this ownership include:

- protection of lengthy scenic approach to the town center
- proper management of the forest resource which ensures high quality water in the streams feeding the Androscoggin River, an important resource for fishermen and boaters
- expansive and integrated snowmobile trail system within the town, with important component located in the community forest; Errol occupies a strategic position in the trail network

Bill Freedman, a long-time supporter of the Community Forest often says "If not healthy forests and clean water, why else would they [visitors] come?"

These healthy resources do attract visitors, and the state of New Hampshire tracks visitor spending for a variety of recreational activities. Data below is extracted for the area of Errol and surrounding amenities.

According to the State of New Hampshire, visitor spending includes:

- Annual visitor spending of over \$2.2 million for snowmobiling, fishing, and hunting in 2012 (Table 4).
- Snowmobiling has highest visitation estimates of all uses, well above 5,000 visits per season (including day and overnight visitors).
- Snowmobiling brings around \$1 million per season to the area.
- Hunting and fishing bring \$1.24 million to the area.

Snowmobiling, ATV use, hunting, and fishing are recreational activities that are currently benefiting from the use of the forest and have been identified in the 13 Mile Woods Stewardship Plan as activities that are important to local recreationalists and tourists. These are also the four most measurable recreational activities. Use of the river continues to increase, but activities such as canoeing, kayaking, and tubing are difficult to track without intensive surveys. 13 Mile Woods is open to hunters and is located in one of the most popular areas for hunting in New Hampshire.



The study focuses on estimates of visitor spending that occurs in the region including 13 Mile Woods, Mollidgewock State Park, and Umbagog National Wildlife Refuge. While the study is unable to attribute visitation specifically to the 13 Mile Woods, it is well known in the region that the section of the Androscoggin in the community forest has excellent quality fishing. Likewise, the forest is highly appreciated by professional hunting guides for the quality of the hunting experience that they can offer to their customers. Visitor spending data focus on the two milestone years of 2012 and 2022, based on the timeline set by the harvesting schedule. The ATV trail won't be functional until later in 2013.

Table 4 shows the number of estimated visits and spending for in-state and out-of-state visitors to the Errol area and its natural amenities. Visits are estimated from local registrations and licenses data, and recorded visits to Mollidgewock State Park and Umbagog National Wildlife Refuge. Annual recreational values were derived by multiplying estimates of 1) recreational visits, and 2) visitor spending. For example, if the community forest is expected to cause an increase of ten additional snowmobiler visits per year, and snowmobiler visits typically result in spending of \$100 per visit, then the potential annual recreational value is \$1,000. The ATV trail, which will be accessible starting in 2013 pending the completion of state and federal land swap, is expected to bring 3,000 visitors annually with an associated potential spending of \$420,000.

Table 4. Estimated visitation and spending from in-state and out-of-state visitors in 2012.

Activity	Type of visitor	Number of visits	Days per visit	Visitor Daily Spending	Total
Snowmobiling	State resident	3,559	1.35	\$83.74	\$402,319.00
	Non-state resident	2,181	2.42	\$120.80	\$637,854.00
ATV	State resident	0	0	\$0.00	\$0.00
	Non-state resident	0	0	\$0.00	\$0.00
Hunting	State resident	471	7	\$186.30	\$614,643.85
	Non-state resident	83	7	\$227.70	\$132,570.24
Fishing	State resident	434	5	\$90.85	\$197,144.50
	Non-state resident	266	5	\$266.60	\$301,311.50
TOTAL					\$2,285,843.09

Estimating projected recreation use in the Errol region was challenging given the contrasting trends, a national trend of decline (e.g. for hunting and fishing) and a local trend that indicates some level of growth given the uniqueness of the area and the fact that the forest will continue to provide high quality recreational experiences in the future. In terms of snowmobiling, projections assume inconsistent future snowfall amounts in northern New Hampshire. Due to the lack of region specific data and the conflicting trends mentioned above, we deemed reasonable to assume a limited level of yearly growth that we conservatively set at 1% across all recreation types as discussed in more detail in the Appendix.

Multiplier Effects of Recreation and Job Creation

RIMS II multipliers indicate how much a given increase in tourism spending output or in timber sales can result in increase in total output, earnings, and jobs by stimulating the demand for goods and services in the supporting sectors. The tourism earnings multiplier tends to be higher in larger regions and lower in smaller regions where earnings leak out of the economy through importing goods and services to satisfy tourism demand. In addition, job estimates can be distorted by part-time and seasonal positions and different wage rates across sectors. These are more specifically described in the Appendix.

Applying various appropriate multipliers to our recreation user data gives these results for recreational job impact in the Errol area:

- Approximately 11 jobs are assumed to be generated in the region as a result of snowmobiler spending, of which five are in the hospitality sector.
- Projected ATV jobs created are about 50% of snowmobiling estimates, so the job multiplier results in five jobs due to ATV use.
- Current visitation rates for hunting result in seven jobs.
- Four jobs are estimated to be associated with the current and projected visitor spending of anglers.

As the hospitality capacity of Errol increases with local investment, especially in the lodging sector, there are measurable impacts to be forecasted: For instance, for every \$1 million dollar increase in spending on lodging there would be 13 full or part-time jobs created.

Opportunities

The 13 Mile Woods Community Forest is a community and economic asset. During the first seven years of ownership the managers rightfully focused on revenue generation to service the purchase debt. Looking forward however, the town has many opportunities to seek maximum returns from this investment, both in economic and social terms.

In a local context this 7,100 acres will grow timber, support jobs in the forest products industry, and provide numerous chances for community engagement and participation. From a more regional view, the forest is part of a larger landscape that draws visitors who will spend their money here.

Timber revenues can be reinvested in promoting recreation for even greater benefits for the town. In addition, the 13 Mile Woods Forest could play a central role in branding the area for particular recreation experiences, functioning as a catalyzer of economic development.

Local focus, combined with regional activity and collaboration will serve Errol in continuing to build wealth from this community asset.

Economic Development Opportunities

The forest needs to be managed as both a timber asset and a recreational asset in order for the town to maximize benefits realized.

- Timber
 - Continue to approach forest management in a comprehensive manner so that the full spectrum of value is realized and sustainable.
 - After the loan payments are retired, the community will decide spending priorities for the annual revenue received.
 - Carbon credits should be explored.
- Recreation
 - Investigate the perceived lodging capacity issue related to ATV visitation.
 - Capitalize on the proximity of the 13 Mile Woods to the Mollidgewock State Park and consider creating a walking trail and fishing access to Munn Pond.
 - Promote non-motorized recreation and explore potential collaboration with the Northern Forest Canoe Trail.
 - Identify and understand who the current users of the forest are and who the target users of the forest are, so as to develop strategies for making Errol a destination for such users.
 - Maintain a balance of motorized and non-motorized infrastructure to support both types of recreation in and around the community forest.

Marketing and Communication Opportunities

Errol and the region would benefit from an effort to communicate the special nature of the forest through promotion, permanent signage, and educational opportunities. More communication with the public and a clear point of contact for questions about the forest are needed. In interviews with local area residents, the access rules, permitted uses, and access points for the forest were not clear. For example, residents were confused about blocked roads and about what type of hunting was permissible and if permission was needed to hunt on the property. There is a perception that the forest, while accessible, is not welcoming.

- Invest in interpretative signage placed at forest access points and in the town.
- Educate local business owners about the forest's natural assets such as Munn Pond, the eleven-mile trail, and other special places.
- Provide a map to local businesses highlighting forest access points and recreational opportunities.
- Clarify the uses of and access to the forest.
- Identify how to widely communicate policy changes regarding use and access of the forest.
- Designate a point of contact and publicize that contact with local organizations and businesses in the area.
- Collaborate with business, agencies, and organizations who are working to bring and support visitors to Errol.

Opportunities to Support the Community

An engaged citizenry makes for an effective community. There are multiple opportunities to use the forest to bring people together and to ensure a commitment to sustainable stewardship.

- Study the feasibility of heating town buildings with wood.
- Fully engage the teachers and school children – children invested in the community forest will be tomorrow's board members and supporters.
- Encourage more participation by community members through committees, events and educational programs.
- Schedule regular field trips and celebrations in the forest to help community members get to know it.
- Share the experience and expertise with other communities who want to acquire and manage land.

Authors' Conclusions

The Town of Errol demonstrates a highly successful investment strategy, which builds on the assets of a sustainably managed forest including access for multiple recreation uses, revenue to the town, jobs, research, and education functions.

The 13 Miles Woods Community Forest highlights an effective alternate ownership model to federally protected areas and to private timberlands, the latter of which are increasingly subject to short-term ownership changes. On the route to success, the Town of Errol benefited from strong community leadership, from the high value of the timber on the 13 Miles Woods property, from engaging with two experienced organizations that smoothed out the complexity of the purchasing process, and from having prior experience with owning forest land.

Overall, the data presented in this report can be used as a baseline that informs the collection of future information as a way to measure impact. The report raises the question of what success will look like once the Town of Errol is able to direct revenues from timber harvests into the community and into adding value to the forest by improving access and fruition. Additional measures of success might be necessary, based on a shared sense of community priorities.

Appendix

Methods

Four main objectives guided the analysis:

1. Assess past and projected revenues from sustainable timber harvests.
2. Estimate current and projected changes in the number of outdoor recreationists and total spending to the region.
3. Determine spending profiles for non-local (overnight) and local (day) visitors.
4. Apply multipliers to estimate economic impacts of visitor spending and timber sales in the regional economy.

Data for the analysis came from several key sources:

- input from local experts and businesses
- review of literature on economic impacts of tourism, recreation, and park systems
- New Hampshire State Economic Impact Reports on the benefits of ATVs, Snowmobiling, Hunting, and Fishing
- Umbagog and Mollidgewock State Park visitation data
- fishing license sales
- New Hampshire Annual Deer Hunter Mail Survey
- timber harvest and sales data

The study included a two-day site visit to Errol in September 2012, in-person meetings with key stakeholders, and a visit to the forest under the guidance of Julie Renaud Evans.

Interviews were conducted with:

- Pierre Rousseau, Charlie Kurtz, and Bill Freeman, members of the 13 Mile Woods Association
- Christine Cote, Business Manager, LL Cote Sport Shop
- Julie Renaud Evans, Northern Forest Center
- Greg Ainsworth, 13 Mile Woods Consulting Forester
- Kent Gustafson, Wildlife Programs Supervisor, New Hampshire Fish and Game
- Diane Timmins, Fisheries Biologist, New Hampshire Fish and Game
- Will Staats, Wildlife Biologist, New Hampshire Fish and Game
- Chris Gamache, Chief, NH Bureau of Trails
- Gail Hansen, Executive Director, New Hampshire Snowmobile Association
- Phoebe Backler, Northern Forest Canoe Trail

Timber data

Timber harvest estimates were made using inventory and timber sales data provided by 13 Mile Woods Association Consulting Forester Greg Ainsworth and forecast based on the 2012 13 Mile Woods Stewardship Plan. The data presented in this report is based on 2012 market values as opposed to net present values that would reflect the progressive growth of the timber stock. This is motivated by the type of data available and by the fact that the property is well stocked with mature wood ready to be harvested at any one time. Monetary figures are not corrected for inflation. Figure 1 shows the percentage of standing timber in each timber product. Pulpwood products amount to 63% of the current standing volume (52% in hardwood and 11% in softwood). Of the 37% volume in sawlogs, 15% is hardwood and 22% is softwood. Figure 2 shows the composition in species based upon 2012 inventory.

Figure 2. Percent of standing timber within the different timber products.

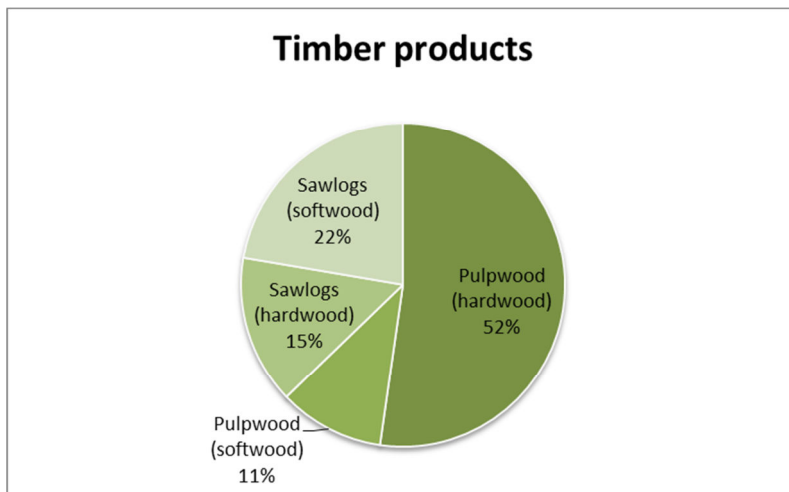


Figure 3. Species composition of the standing timber (just sawlogs)

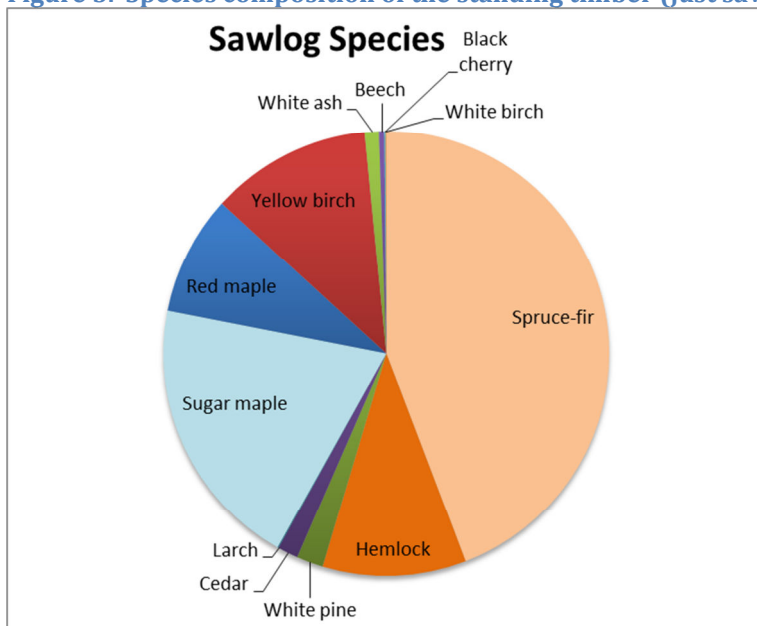


Table 1 lists the main sources for data on visitation (percent in-state and out-of-state, average daily spending, average length of stay, distribution of spending across sectors).

Table 1. Sources used for data on visitation.

Source	Sector
U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. (2006) National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.	Hunting and Fishing
Emerson, D., and Schafermeyer, A. (2004). An Evaluation of a Tailwater Trout Fishery on the Upper Connecticut River. New Hampshire F5R20.	Fishing
Institute of New Hampshire State Studies Plymouth State University. (2011). The Economic Impact of Spending by Snowmobilers on New Hampshire's Economy. Okrant, M., and Goss, L.	Snowmobile
Institute of New Hampshire State Studies Plymouth State University. (2003). The Impact Of Spending By ATV/Trailbike Travel Parties On New Hampshire's Economy During July 2002 To June 2003. Okrant, M., and Goss, L.	ATV

Average number of visits and length of stay in the area were informed by the Umbagog and Mollidgewock State Park visitation figures; number of anglers using the stretch of river along the Androscoggin that borders 13 Mile Woods were estimated based on fishing license sales (all types) sold in Errol; and number of deer hunters hunting in the Errol area were estimated based on the New Hampshire Annual Deer Hunter Mail Survey. Estimates about visitation trends and visitor spending were based on economic impact assessments for the State of New Hampshire.

The sections below describe in more detail the assumptions and the data used to calculate visitor spending for each recreational activity.

Snowmobiling

A number of different sources were used to estimate snowmobile visitation, including, New Hampshire snowmobile registrations in 2010-2011, registration numbers from the Umbagog Snowmobile Association, a personal communication with Charlie Kurtz, a member of the Umbagog Snowmobile Association, and an interview with Christine Cote, Business Manager, at the Errol sporting goods store, L.L. Cote.



Estimates for local and non-local visitation, average number of days per trip, and average spending per visit were estimated using the survey results published in the 2010-2011 Economic Impact of Spending by Snowmobilers on the New Hampshire Economy.

An annual growth rate of visitation of 1% was assumed for snowmobiling. The limited amount of growth is based on the likelihood that the region will continue to see great variability in snowfall, lacking a fully reliable snow commercial season. The 2010-2011 Economic Impact of Spending by Snowmobilers on the New Hampshire Economy reported that from a good snow year to a bad snow year, statewide registrations can decline 18%. The Umbagog Snowmobile Association noted similar trends, reporting that registrations dropped by 50% during the most recent bad snow year. Overall temperature trends for New Hampshire indicate increasingly warmer winter temperatures, less snowfall, more winter rain, and earlier melting of snowpack resulting in high economic losses (Burakowski and Magnusson, 2012). Frumhoff et al (2007) report that the length of the snow season in the northern part of New Hampshire, Vermont, and Maine - currently snow-covered for almost the entire winter season - could be reduced by 50 percent by the end of the century, under higher-emissions scenarios and by more than 25% under lower emissions scenarios. According to the study, only northern New Hampshire would retain a snowmobile season longer than two months if higher emissions prevail.

ATVs

ATV use visits were projected with estimates from local area experts, an interview with Chris Gamache, Chief, New Hampshire Bureau of Trails, and results from a 2003 study on The Impact of Spending By ATV/Trailbike Travel Parties On New Hampshire's Economy During July 2002 To June 2003.

Estimates for local and non-local visitation, average number of days per trip, and average spending per visit were estimated using the survey results published in The Impact of Spending by ATV/Trailbike Travel Parties on New Hampshire's Economy during July 2002 To June 2003.

ATV visitation and estimated direct spending totals assume that the proposed ATV trail is approved by the state and completed in time for the 2013 season. Taking into account the newly established trail connecting to the larger ATV network there is no doubt that there will be increased ATV visitation, but because of the limited availability of beds in Errol, and statewide trends that show a stagnation in ATV use due to the lingering effects of the economic recession, it reasonable to estimate a limited growth rate of 1% per year.

Hunting

Hunting visitation estimates were projected using estimates from local area experts including Will Staats, Wildlife Biologist, and Kent Gustafson, Wildlife Programs Supervisor for New Hampshire Fish and Game. Final estimates were made using visitation estimates from the New Hampshire Fish and Game Deer Hunter Mail Survey, an annual survey sent to every hunter registered for the year. In this survey hunters are asked to report their residency and where they hunt. Using only the Deer Hunter Mail Survey to estimate hunter

visitation reflects an underestimate of visitation estimate, as it does not account for visitation during the popular moose, bear, and turkey seasons. However, the Annual Deer Hunter Mail Survey was the most accurate source of visitation estimates available for the Errol area.

Estimates for percentage of visitation that is local and non-local were also made using the New Hampshire Fish and Game Annual Deer Hunter Mail Survey. The average number of days per trip, and average spending per visit were estimated using the survey results published in The 2006 National Survey of Fishing, Hunting, and Wildlife Recreation: New Hampshire.

Nationwide and statewide statistics show a decreasing trend in hunting. The percent change in the number of hunters from 1996-2000 decreased by 7%, and decreased by 4% from 2001-2006. However, given that the North Country remains a prime hunting destination and based on interviews with local area experts, we deemed it plausible to project an annual visitor growth rate of 1%.

Fishing

Some of the best fishing waters in New England lay along the stretch of the Androscoggin River that borders 13 Mile Woods Community Forest. A number of different sources were used to estimate visitation including a 2000 survey of 313 anglers along the Upper Connecticut River, the number of fishing licenses (all types) sold in 2011 in Errol, an interview with Diane Timmins, Fisheries Biologist, Region 1, and an interview with a local area fishing expert and business owner.

Estimates for local and non-local visitation, average number of days per trip, and average spending per visit were estimated using the survey results published in The 2006 National Survey of Fishing, Hunting, and Wildlife Recreation: New Hampshire and through interviews with local area experts.

Nationwide and statewide decreases in angling reported in both the 2006 National Survey of Fishing, Hunting, and Wildlife Recreation for New Hampshire and the 2000 Upper Connecticut River Study. The Upper Connecticut River Study, a study done in a region comparative to Errol and the Androscoggin River watershed, discusses the decrease in the context of yearly variability in weather, concluding that the Upper Connecticut remains an important destination for fishing. In interviews with Diane Timmins (Fisheries Biologist, Region 1), she felt that that a similar conclusion could be reached for the Errol area. Therefore, it was deemed plausible that visitation in the region over time would remain steady if not increase slowly. For this reason this report adopts an estimated annual visitor growth rate of 1% in angling.

Economic multiplier analysis

This study employs multipliers derived from the RIMS II regional Input-Output model developed by the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce (Bureau of Economic Analysis 1997). Benchmark series multipliers (2002/2010) were purchased for the three contiguous counties of Coos, NH, Oxford, ME, and Franklin, ME

covering the area where most of the forest-related economic activity is likely to take place (both for recreation and timber harvesting and processing). The multipliers can be applied to estimate the direct, indirect, and induced effects of changes in final demand for one sector or industry in any single county or multi-county economy in the U.S. (see glossary for more details).

Glossary of terms

Direct impacts are changes in sales, income, or jobs in the recreation and timber industry sector. These effects are captured by the businesses directly involved in the sales of goods and services to tourists, such as retail shops, restaurants, and lodging.

Indirect effects are the changes in sales, income, or jobs in sectors within the region that supply goods and services to the recreation and the timber industry. Two examples: 1) the increased sales in professional kitchen equipment resulting from more restaurant sales or 2) increased demand for logging equipment as a result of increased timber sales.

Induced effects (not considered in the study) are the increased sales within the region from households spending the income earned in the tourism and logging industry and supporting sectors.

Final demand is demand for goods that are not used to produce other goods, typically: personal consumption expenditures, exports, government spending, and private fixed investment (investment on machinery, land, buildings, and vehicles).

Type I multipliers, which consider only direct and indirect effects, were deemed more suitable for application to the region than Type II multipliers, which also include induced effects. Where applicable, sale taxes were removed from spending before multipliers were applied. RIMS II multipliers are designed to be applied to producer prices as opposed to consumer prices. If consumer prices are to be used, transportation costs, wholesale margins and retail margins should be subtracted. Timber sales and services in the hotel and restaurant sector reflect producer prices. In this report, retail sales in visitor spending were not expressed in producer prices due to the lack of accurate estimates of transportation costs for goods sold, wholesale margins, and retail margins. This issue was addressed by considering no multiplying effect for gas expenditures, as money spent on gas simply leaks out from a community. Multiplier effects of all other retail trade should be evaluated with caution, as retail expenditures are expressed in consumer prices in this report.

Logging multipliers

Stumpage sales were added to cut-and-haul timber sales to generate final demand values. Alternatively, we could have considered the next node down the supply chain (saw mills) and assess the change in output of saw mill products resulting from an increase in timber available on the market from 13 Miles Woods' operation. This approach was judged more

unreliable by staff of the Bureau of Economic Analysis due to the difficulty of tracking sawmill output data back to the community forest. By applying the logging multiplier to both stumpage and cut-and-haul timber, we accepted to introduce a level of inaccuracy that brings estimates on the more conservative side. Multiplying each of the Logging RIMS II final-demand multipliers (Table 2) by the final demand produced the estimates of total output, earnings, and employment.

Table 2. RIMS II multipliers for the logging industry.

RIMS II Industry	Output multiplier	Earnings	Employment
113300 Logging	1.8419	0.3584	10.6948

Visitor spending multipliers

Spending for overnight and day visitors was broken into expenditures for lodging, restaurants, retail, and transportation based on the reports mentioned in earlier sections and separate final demands were obtained. This enabled us to separate the different multiplying effects of spending in the sectors affected by visitation. The visitor spending multipliers applied to final demand are shown in Table 3. The distribution of spending for each category is shown in Table 4.

Using the example of hotel expenditures, Table 3 can be read as follows: per each dollar spent in hotels, 0.16 dollars are generated as output and 0.30 dollars in earnings in the supporting industries on which hotels depend for goods and services (e.g. laundries). The job multiplier assumes that 13.3 full-time or part-time jobs are created as a result of each \$1 million increase in visitor spending. Gas expenditures were assumed to have no multiplier effect. The category of spending that the Bureau of Economic Analysis names as “food services and drinking places” is the one with highest multiplier effect. Ripple effects are higher for goods and services produced locally, such as in the case of the lodging and restaurant services.

It should be noted that small-scale hunting and fishing, when considered as economic activities, do not carry any multiplier effect in the RIMS II model. In this study the multiplier effects of hunting and fishing are captured through visitor spending. Due to limited information from published reports on visitor spending distribution for hunting, it was assumed to be the same as for fishing. On-site retail expenditures for hunting were assumed to be at least equal to boating expenses for fishermen and this portion was included into other retail trade expenditures for hunting.

Gas expenditures are not listed as such in the RIMS II tables and were assumed to have no multiplier effect.

Table 3. RIMS II multipliers for different sectors of visitor spending.

RIMS II multiplier title	Output Multiplier Type I	Earning Multiplier Type I	Job Multiplier Type I
Hotels and Motels	1.1643	0.3072	13.3296
Food Services and drinking places	1.1780	0.3503	18.2783
Retail trade	1.1479	0.3480	13.1089
Retail trade (Gas)*	1.0000	0.0000	0.0000

* Not included as such in RIMS II tables of multipliers

Table 4. Distribution of visitor spending (percentage).

	Activity	In-state visitors	Out-of-state visitors
Snowmobiling	Hotels and Motels	0.17	0.26
	Food Services and drinking places	0.17	0.19
	Retail trade	0.42	0.33
	Retail trade (gas)	0.24	0.22
ATV	Hotels and Motels	0.16	0.18
	Food Services and drinking places	0.19	0.18
	Retail trade	0.49	0.47
	Retail trade (gas)	0.16	0.17
Fishing	Hotels and Motels	0.08	0.12
	Food Services and drinking places	0.24	0.34
	Retail trade	0.13	0.15
	Retail trade (gas)	0.27	0.36
	Boating	0.28	0.03
Hunting	Hotels and Motels	0.08	0.12
	Food Services and drinking places	0.24	0.34
	Retail trade	0.41	0.18
	Retail trade (gas)	0.27	0.36

Additional results for visitor spending

Table 5 details the estimated number of visitors, length of stay, and total direct spending by recreation type for 2022. Estimates for 2012 are discussed in the main report and are provided here only for direct comparison.

Table 5. Visitation and spending from state and non-state visitors for year 2012 and 2022.

	Activity	Type of visitor	Number of visits	Days per visit	Visitor Daily Spending	Total
2012	Snowmobiling	State resident	3,559	1.35	\$83.74	\$402,319.00
		Non-state resident	2,181	2.42	\$120.80	\$637,854.00
	ATV	State resident	0	0	\$0.00	\$0.00
		Non-state resident	0	0	\$0.00	\$0.00
	Hunting	State resident	471	7	\$186.30	\$614,643.85
		Non-state resident	83	7	\$227.70	\$132,570.24
	Fishing	State resident	434	5	\$90.85	\$197,144.50
		Non-state resident	266	5	\$266.60	\$301,311.50
TOTAL						\$2,285,843.09
2022	Snowmobiling	State resident	3,931	1.35	\$83.74	\$444,410.23
		Non-state resident	2,409	2.42	\$120.80	\$704,588.11
	ATV	State resident	2,559	1.9	\$77.55	\$377,112.13
		Non-state resident	722	4.2	\$59.86	\$82,091.39
	Hunting	State resident	526	7	\$186.30	\$685,738.69
		Non-state resident	93	7	\$227.70	\$147,904.42
	Fishing	State resident	484	5	\$90.85	\$219,947.88
		Non-state resident	297	5	\$226.60	\$336,163.70
TOTAL						\$2,997,956.54

Snowmobiling

Table 6 presents estimates of spending by residents and non-residents for the period 2012 - 2022.

Table 6. Visitor spending for in-state and out-of-state snowmobile visitors.

Year	# Local Visitors	# Non-Local Visitors	Total Spending by Local Visitors	Total Spending by Non-Local Visitors	Total Spending by Local and Non-Local Visitors
2012	3559	2181	\$402,319	\$637,854	\$1,040,173
2013	3594	2203	\$406,342	\$644,233	\$1,050,575
2014	3630	2225	\$410,405	\$650,675	\$1,061,081
2015	3667	2247	\$414,509	\$657,182	\$1,071,691
2016	3703	2270	\$418,655	\$663,754	\$1,082,408
2017	3740	2292	\$422,841	\$670,391	\$1,093,232
2018	3778	2315	\$427,069	\$677,095	\$1,104,165
2019	3816	2339	\$431,340	\$683,866	\$1,115,206
2020	3854	2362	\$435,654	\$690,705	\$1,126,359
2021	3892	2386	\$440,010	\$697,612	\$1,137,622
2022	3931	2409	\$444,410	\$704,588	\$1,148,998
TOTAL			\$4,251,236	\$6,740,102	\$12,031,511

ATV Visitation

Table 7 presents 10-year projections of ATV visitation and estimated direct spending totals assuming that an ATV trail is approved by the state and completed in time for the 2013 season. A conservatively estimated annual visitor growth rate of 1% reflects the current limited capacity to lodge ATV trail users in Errol and the lingering effects of the economic recession on ATV use.

Table 7. Visitor spending for in-state and out-of-state ATV visitors through year 2022.

Year	# Local Visitors	# Non-Local Visitors	Total Spending by Local Visitors	Total Spending by Non-Local Visitors	Total Spending by Local and Non-Local Visitors
2012*	0	0	\$0	\$0	\$0
2013	2340	660	\$344,809	\$75,059	\$419,868
2014	2363	667	\$348,257	\$75,810	\$424,067
2015	2387	673	\$351,739	\$76,568	\$428,307
2016	2411	680	\$355,257	\$77,334	\$432,590
2017	2435	687	\$358,809	\$78,107	\$436,916
2018	2459	694	\$362,397	\$78,888	\$441,286
2019	2484	701	\$366,021	\$79,677	\$445,698
2020	2509	708	\$369,682	\$80,474	\$450,155
2021	2534	715	\$373,378	\$81,279	\$454,657
2022	2559	722	\$377,112	\$82,091	\$459,204
TOTAL			\$3,607,461	\$785,288	\$3,972,881

*Note: ATV trail is estimated to be completed in 2013.

Hunting Visitation

Table 8 presents estimated visitor spending by residents and non-residents.

Table 8. Visitor spending for in-state and out-of-state hunting visitors through year 2022.

Year	# Local Visitors	# Non-Local Visitors	Total Spending by Local Visitors	Total Spending by Non-Local Visitors	Total Spending by Local and Non-Local Visitors
2012	471	83	\$614,644	\$108,467	\$723,110
2013	476	84	\$620,790	\$133,896	\$754,686
2014	481	85	\$626,998	\$135,235	\$762,233
2015	486	86	\$633,268	\$136,587	\$769,855
2016	490	87	\$639,601	\$137,953	\$777,554
2017	495	87	\$645,997	\$139,333	\$785,330
2018	500	88	\$652,457	\$140,726	\$793,183
2019	505	89	\$658,981	\$142,133	\$801,115
2020	510	90	\$665,571	\$143,555	\$809,126
2021	515	91	\$672,227	\$144,990	\$817,217
2022	521	92	\$678,949	\$146,440	\$825,389
TOTAL			\$6,494,840	\$1,400,848	\$8,618,798

Fishing Visitation

Table 9 presents estimates of spending by residents and non-residents for the years 2012-2022.

Table 9. Visitor spending for in-state and out-of-state fishing visitors through year 2022.

Year	# Local Visitors	# Non-Local Visitors	Total Spending by Local Visitors	Total Spending by Non-Local Visitors	Total Spending by Local and Non-Local Visitors
2012	434	266	\$197,145	\$301,312	\$498,456
2013	438	269	\$199,116	\$304,325	\$503,441
2014	443	271	\$201,107	\$307,368	\$508,475
2015	447	274	\$203,118	\$310,442	\$513,560
2016	452	277	\$205,149	\$313,546	\$518,695
2017	456	280	\$207,201	\$316,681	\$523,882
2018	461	282	\$209,273	\$319,848	\$529,121
2019	465	285	\$211,366	\$323,047	\$534,412
2020	470	288	\$213,479	\$326,277	\$539,756
2021	475	291	\$215,614	\$329,540	\$545,154
2022	479	294	\$217,770	\$332,835	\$550,606
TOTAL			\$2,083,193	\$3,183,909	\$5,765,558

Multiplier effects of recreation

Tables 10 through 13 list the multiplier effect of visitor spending by recreation activity for the year 2022. Estimates for the year 2012 are provided for comparison.

Snowmobiling, due to visitor numbers and the spending per visit, shows the highest multiplier effect with more than \$250,000 in earnings in 2012. Approximately 11 jobs are assumed to be generated in the region as a result of snowmobiler spending, five of which are in the hospitality sector.

Table 10. Multiplier impacts of snowmobiling.

	RIMS multiplier title	Visitor spending	Sales taxes	Total output	Total earnings	Total employment
2012	Hotels and Motels	\$178,017	\$16,022	\$188,611	\$49,765	2.16
	Food Services and drinking places	\$177,885	\$16,010	\$190,689	\$56,705	2.96
	Retail trade	\$435,877	\$0	\$500,343	\$151,685	5.71
	Retail trade (Gas)	\$248,395	\$0	\$248,395	\$0	0.00
	TOTAL	\$1,040,173	\$32,031	\$1,128,038	\$258,155	10.83
2022	Hotels and Motels	\$299,831	\$26,985	\$317,675	\$83,818	3.64
	Food Services and drinking places	\$218,435	\$19,659	\$234,158	\$69,631	3.63
	Retail trade	\$377,784	\$0	\$394,629	\$119,637	4.51
	Retail trade (Gas)	\$252,948	\$0	\$230,182	\$0	0.00
	TOTAL	\$1,148,998	\$46,644	\$1,176,645	\$273,086	11.78

Total earnings associated with projected ATV spending for the year 2022 are approximately half of those generated by snowmobiling spending (\$126,422). The job multiplier is of five jobs (Table 11).

Table 11. Multiplier impacts of ATV for year 2022.

	RIMS multiplier title	Visitor spending	Sales taxes	Total output	Total earnings	Total employment
2022	Hotels and Motels	74,684	6,722	79,128	20,878	0.91
	Food Services and drinking places	88,519	7,967	94,890	28,217	1.47
	Retail trade	222,202	\$0	255,066	77,326	2.91
	Retail trade (Gas)	73,799	\$0	73,799	\$0	0.00
	TOTAL	459,204	14,688	502,883	126,422	5

Of the non-motorized recreation activities, hunting has highest impact, generating a total output of more than \$800,000 per year, \$175,587 of total earnings and approximately seven jobs in 2012. Projections for 2022 forecast almost \$200,000 in total earnings and approximately eight jobs (Table 12).

Table 12. Multiplier impacts of hunting.

	RIMS multiplier title	Visitor spending	Sales Taxes	Total output	Total earnings	Total employment
2012	Hotels and Motels	\$65,080	\$5,857	\$68,953	\$18,193	0.79
	Food Services and drinking places	\$192,588	\$17,333	\$206,451	\$61,392	3.20
	Retail trade	\$275,867	\$0	\$316,667	\$96,002	3.62
	Retail trade (Gas)	\$213,679	\$0	\$213,679	\$0	0.00
	TOTAL	\$747,214	\$23,190	\$805,750	\$175,587	7.61
2022	Hotels and Motels	\$72,608	\$6,535	\$76,929	\$20,298	0.88
	Food Services and drinking places	\$214,865	\$19,338	\$230,331	\$68,493	3.57
	Retail trade	\$307,776	\$0	\$353,296	\$107,106	4.03
	Retail trade (Gas)	\$238,395	\$0	\$238,395	\$0	0.00
	TOTAL	\$833,643	\$25,873	\$898,950	\$195,897	8.49

With approximately half million total output, fishing brings total earnings of approximately \$87,000 in 2012 and around \$94,000 in 2022 (Table 13). Four jobs are estimated to be associated with the current and projected visitor spending of anglers.

Table 13. Multiplier impacts of fishing.

	RIMS multiplier title	Visitor spending	Sales taxes	Total output	Total earnings	Total employment
2012	Hotels and Motels	51,929	4,674	55,019	14,517	0.63
	Food Services and drinking places	149,761	13,478	160,540	47,740	2.49
	Retail trade	70,826	\$0	81,301	24,647	0.93
	Retail trade (Gas)	161,701	\$0	161,701	\$0	0.00
	Boating	64,240	\$0	64,240	\$0	0.00
	TOTAL	498,456	18,152	522,801	86,904	4
2022	Hotels and Motels	57,935	5,214	61,383	16,196	0.70
	Food Services and drinking places	167,083	15,037	179,110	53,262	2.78
	Retail trade	79,018	\$0	82,541	25,023	0.94
	Retail trade (Gas)	180,405	\$0	164,168	\$0	0.00
	Boating	71,670	\$0	65,220	\$0	0.00
	TOTAL	556,112	20,252	552,423	94,481	4

Cited References

Ainsworth, G. M., (2012). Stewardship Plan – 13 Mile Woods Association, Inc. – Errol and Cambridge, NH.

Bisson, K., and M. Lyman. (2003). Valuing Forests as Community Assets in the Mount Washington Valley: A Study of the Economic, Environmental, and Social Contributions of Public and Private Forests and Their Potential Role as a Component of a Regional Economic Development Strategy. Mount Washington Valley Economic Council.

Bliss, J.C., E. C. Kelly, J. Abrams, et al. (2010). Disintegration of the U.S. industrial forest estate: dynamics, trajectories, and questions. *Small-Scale Forestry*. 9: 53–66.

Community Forest Collaborative. (2007). Community Forests: A Community Investment Strategy.

http://www.communitiescommittee.org/pdfs/Community_Forests_Report_web.pdf

Evans, J.R., Ainsworth, G.M., and Shear, L. (2005). Stewardship Plan – 13 Mile Woods Property. – Errol, NH.

Little, J. “Embarking on New Territory: The Community-Owned Forest Conference.” *Communities and Forests*, vol. 9, no. 2, Fall 2005.

NEFA (2011). The Economic Importance of New Hampshire’s Forest Based Economy. Report of the North East Foresters Association.

NFC/NCC (2008). Status of Northern Forest Region States’ Forestry and Forest Products Industry. Report of the Northern Forest Center and North Country Council.

Outdoor Industry Association (2012). *The Outdoor Recreation Economy*, Outdoor Industry Association.

http://www.outdoorindustry.org/images/researchfiles/OIA_OutdoorRecEconomyReport2012.pdf

Smith, W., and D. Darr. (2002). *U.S. Forest Resource Facts and Historical Trends*. U.S. Department of Agriculture Forest Service.

<http://www.nhdf.org/forest-industries-and-business/forest-statistics.aspx>

