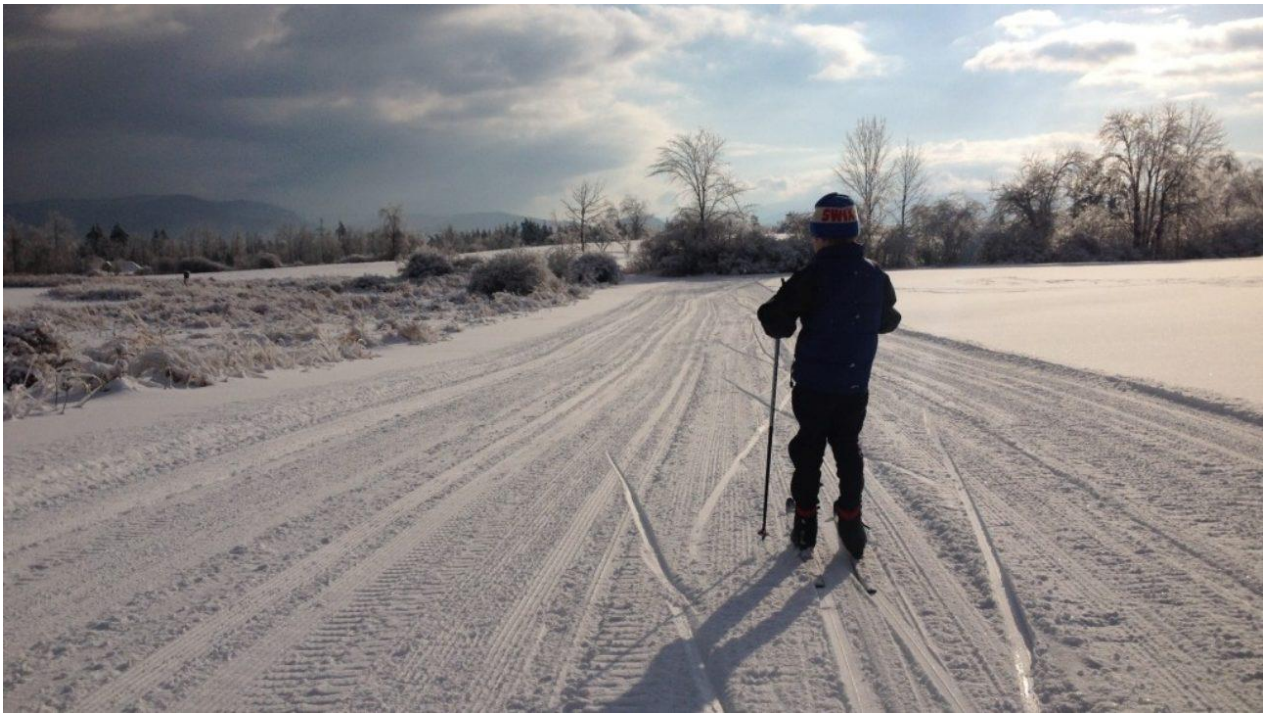

An Economic Impact Analysis of the Proposed Catamount Community Forest in Williston, Vermont

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Introduction

Protected recreation lands provide a multitude of vital services to the communities in which they lie. Undisturbed natural spaces provide an arena for various ecological services that maintain the balance of our ecosystems, while also enabling social interaction with nature in a healthy and sustainable manner. This report is concerned with one of these crucial spaces, namely, the Catamount Outdoor Family Center in Williston, Vermont. For almost 40 years this outdoor center has been privately owned and run by a single family, and now the owners are interesting in divesting themselves of this property. The Trust for Public Land and the Town of Williston have come together to purchase and permanently protect this important resource as the Catamount Community Forest. The purpose of this report is to investigate the economic value of this property as one of the many justifications for this conservation endeavor.

The report will begin by providing background on the property, describing its ecological and social assets and situating it in the larger context of the Vermont economy. A brief overview of economic impact analysis follows in order to familiarize the uninitiated reader to the techniques employed in this analysis. For the purpose of this report, the economic analysis will focus on activity generated through tourism dollars spent as a result of the outdoor center. This decision is discussed in the methodology section, and is rationalized by the use of tourism studies as a standard metric for many federally and state-managed recreation resources. The report will finish with a presentation of the results of this analysis and a brief discussion of these outcomes. These results show the economic activity that would be lost if this property were sold and developed, as has been the trend for most open land in Chittenden County. It is the author's hope that readers will interpret this report as a powerful rationalization for the permanent protection of this property as a public resource.

Background

Property Overview

The proposed Catamount Community Forest is situated on 375 acres of undeveloped forest and grassland in the eastern corner of Williston, Vermont. The property has been under the ownership of the McCullough family since 1873, and has seen use as a dairy farm, tree farm, and most recently, as the Catamount Outdoor Family Center (hereafter COFC, the outdoor center, etc.). Lucy and Jim McCullough began allowing public recreation on a network of over 20 miles of trails in the early 70's. In 2005, management of the center was turned over to the newly-formed non-profit Catamount Outdoor Family Center, while ownership of the property was retained by the McCulloughs. As the McCulloughs near retirement, they wish to step away from the strains of managing such a large piece of property and have decided to place most of the property on the market. The Trust for Public Land, in conjunction with the Town of Williston, aims to purchase this property and convert it into a public Town Forest, where both the recreation opportunities and the ecological assets will be protected in perpetuity.

The property encompasses a variety of unique ecological attributes and opportunities. It represents the single largest tract of undisturbed forest land in the Town of Williston and has been a high priority property for the Williston Conservation Commission. The property includes

bountiful timber reserves across a variety of age classes, eight acres of wetlands, two ponds and multiple vernal pools, temporary water sources that provide crucial habitat for a variety of endemic species. As the largest remaining tract of undeveloped land in a rapidly developing town within the most developed county in the state of Vermont, this property serves as a reminder of the landscape that once proliferated this corner of the state.

In addition to the ecological resources situated within the property, this piece of land also contains historically significant buildings and vistas. The homestead that serves as the centerpiece of the property was built by Thomas Chittenden, the first governor of Vermont, for his son Giles, and is the oldest house in the town of Williston. Although the McCulloughs will retain ownership of a small plot of land, including this historic structure, the potential for heavy housing development surrounding this building would threaten the quality of this site as a historic homestead. The property also includes a scenic vista, known as Indian Lookout, that is said to have been a strategic point for local tribes to survey for potential attackers along the Winooski River.

Recreation & the Vermont Economy

The primary focus of this economic analysis will be on the local benefits received via tourism dollars spent. This is fitting in that the state of Vermont is largely dependent on tourism as a major economic driver. Recent reports have found that outdoor recreation tourism generates 12.5 billion dollars annually, accounting for 12% of the state's gross product (Outdoor Industry Foundation, 2006). Recreation is a lynchpin in the state economy, bringing vital dollars to communities that exist in part as a result of outside money spent by visitors. COFC plays an important role in this industry, given that it is one of the only facilities of its kind in the heavily developed Chittenden County.

Limitations of Economic Impact Analysis

It is important to remember that an economic impact analysis can only provide a very rough estimate of the actual value that an asset provides to its community. Tourism impacts were chosen because there is a litany of research on this topic and a tradition that favors tourism activity as a benchmark for valuing land that is used mainly for the purpose of recreation. The field of ecological economics is still in its fledgling stage and, therefore, concrete methods do not yet exist for putting a dollar value on the clean air and water that healthy forests and wetlands produce. Furthermore, the ecosystem services that are provided by natural spaces are largely unknown, with scientific endeavors to understand them barely scratching the surface of this complex network of synergies and relationships. Thus, it is best to view the results of this, or any economic study, as a very conservative estimate of a portion of the value that this property brings to the Chittenden County community. Realistically, the economic value of a property of this size and ecological quality, in the context of an urbanizing region such as Chittenden County, is many times greater than this study would indicate.

Methodology

Economic Impact Analysis is used to demonstrate the economic value that an asset brings to the region in which it is situated. This region is specified by the user of the analysis and can include national, state, county or town level parameters. Economic impact analysis is a vital tool in the decision making process, particularly in regards to conservation land with recreation potential because of the tremendous economic benefits generated via tourism spending. The end product of an economic impact analysis can be weighed against alternative uses of a piece of property to evaluate which use maintains the most benefits for the community in question.

Economic impact analyses that are geared towards tourism and recreation assets aim to answer the following questions[1]:

1. **How much money do visitors to the recreation attraction spend in the local area?**
2. **How does this spending impact other local sales?**
3. **How many jobs are maintained by visitor spending?**
4. **How much tax revenue is generated by this spending?**

The answers to these questions are found by applying visitation data to a variation of the following basic equation:

Economic Impact = # of Tourists * Average Spending per Visitor * Multiplier

The data necessary to complete this equation can come from a variety of sources. Number of tourist visits can come from expert estimates (i.e. managers of a park or outdoor center), from annual visitation logs or records, or from surveys sent to park visitors. Spending is calculated via the creation of spending profiles, again from survey data, or it can be adapted from studies containing similar parameters as the recreation asset in question. By multiplying these two figures together one can create an estimate for the direct spending as a result of tourism visits.

The last attribute of this equation is the most controversial and potentially confusing aspect of economic impact analysis. Economic multipliers are simple ratios that are multiplied by direct spending with the intent of capturing the ripple effects of money spent in an economy. A very simplified example serves to explain how multipliers work. Assume that a visitor spends $100 on a hotel room. A portion of this money input is invested on linens and other hard goods necessary for the upkeep of a hotel room, while another portion of this money goes to wages for hotel employees. This cycle continues to repeat as the linen manufacturer purchases raw goods and pays its own employees, albeit at a reduced rate as the initial impact of the $100 dollars is slowly dispersed throughout the larger production system. In this way, the dispersion of the initial input of money resembles ripples in a pool following a disturbance to its surface; the effects are felt throughout the pool although the greatest impact is observed at the point of initial disturbance.

Mechanically speaking, multipliers function in a very simplistic way. These ratios generally range from 1.0 to 2.0, and any portion of the ratio above 1.0 represents the ripple

[1] Questions and proceeding equation adapted from Stynes, 1999.

benefits of direct spending. In the economic lexicon, these ripple effects are known as secondary effects, which can be further categorized into indirect and induced impacts. Indirect impacts account for the changes in sales, jobs and incomes as a result of the backwards linkages encompassed in an economic system, i.e. the profits, wages generated and the raw goods purchased by the linen company in the above example. Induced impacts address the economic activity that is stimulated by household spending by the recipients of the new incomes from both direct and indirect spending. Returning to our example, the induced impacts would be the money spent by hotel and linen manufacturing laborers outside of work. If we were to assume that the initial $100 expenditure was made in a region with a sales multiplier of 1.72, then the direct impacts would be the initial $100 and the secondary effects would be the additional $72 generated through indirect and induced impacts.

Once the above mentioned equation is completed with the appropriate data, a total sales figure is used to figure out the tax and job supporting effects of tourist spending. By multiplying the total sales value by the income and sales tax rates of the area of focus, the study captures an estimate of the tax revenue generated by that activity. Similarly, a jobs-to-sales ratio (similar to an economic ratio) is multiplied against total sales to illustrate the number of jobs that are directly and indirectly generated from the tourism activity of focus in the study. Taken together, total sales, tax revenues and jobs generated account for the whole picture that an economic impact analysis attempts to paint.

In this particular study, the National Park Service's Money Generation Model (1990) was used to organize the economic impact analysis. The Money Generation Model is a simple fill-in form that was designed to standardize recreation-based economic impact analyses undertaken throughout the National Parks system. Additionally, this model was recently used on an economic analysis of the Barre Town Forest (Posner & Ceroni, 2011), another project that The Trust for Public Land spearheaded for the purpose of protecting public recreation assets. The use of the same economic model across both studies, as well as the similar nature of both projects, provides an opportunity for comparison that will enable both studies to encompass more meaningful results. The completed MGM form that was used in this analysis can be found in the Appendix at the end of this report.

Results & Discussion

This analysis began with an examination of how many visitors use the center on an annual basis. Lucy McCullough, owner of the center, provided an expert estimate of 20,000 visits to the center per year. The investigation then turned to where visitors to the outdoor center travelled from and what activities they engaged in while using the center's trail network. This information is crucial for determining the area of study for the analysis, as well as in the development of spending profiles for visitors. The COFC maintains a database of visitor statistics and a mailing list that provided addressed for all visitors to the center. The results of the examination of these records is shown below in Figure 1.

Visitor Origin					
VT	Out-of-state	Chittenden	Out-of-county	Williston	Out-of-town
82%	18%	63%	37%	9%	91%
Usage					
Mtn Bike +	Cyclocross =	Total Bike	Trail Running	XC-ski	Other
22%	5%	27%	33%	15%	25%

Figure 1. Visitor origin and usage numbers

For the purpose of this analysis it was decided that the area of study would be Chittenden County. In an economic impact analysis it is important to avoid counting economic contributions made by residents of the area of study since it is assumed that these individuals would be spending their money in the area regardless of where and what they are spending it on. Therefore, only inputs from visitors coming from outside Chittenden County are considered to be net-new dollars. Thus, is we apply the 37% out-of-county metric to the visitor number estimate of 20,000 annual visitors, we get a working number of 7,400 net-new visits to the COFC, and by extension, to Chittenden County. This net-new visitor number forms the basis for the first input of the basic economic impact analysis equation.

In order to calculate the next input of the equation, average spending per visitor, the usage numbers in Figure 1 were applied to spending profile data that was created as a companion tool to the MGM model (Stynes & White, 2005). Spending was not differentiated between mountain biking and cyclocross in the spending profile report so this report considered both activities as one spending category. Additionally, trail running, wildlife viewing, hiking and snowshoeing were all aggregated into one single category, non-consumptive uses, since these activities were also aggregated in Stynes & White's spending profiles. As Figure 2 illustrates, the spending profile data from Stynes & White were multiplied by the percentage of usage that each activity generated at the center to calculate an average spending figure of $70 dollars (rounded to a whole dollar for simplicity) per each visitor.

Spending Profile			
	Biking	XC ski	Non-Consumptive
Spending ($)	$100	$97	$50
Usage %	27%	15%	58%
Average = $70			

Figure 2. Average spending per visitor

Finally, it is necessary to develop multipliers that will be applied to the visitor numbers and the average spending. In this study, it was deemed acceptable to adapt multipliers and ratios from similar studies in Vermont in order to conduct this analysis at a minimal cost. Multipliers

are available for purchase through IMPLAN and RIMS II analysis systems, but this study did not include a budget component that would have allowed for these costly expenditures. Instead, a sales Type II multiplier (accounting for indirect and induced spending effects) was adapted from Wood & Liang's (1999) study on the impacts of tourism on the Vermont economy. Additionally, a jobs-to-sales ratio from N'dolo, Selsky & DeCarlo (2016) was deemed appropriate, given the similar scope of this study. Finally, Vermont Tax information was used to calculate the taxes generated by the economic activity that results from visitors to Catamount.

By plugging in the various aforementioned inputs to the MGM model we can conclude that the Catamount Family Outdoor Center is responsible for 7,400 net new visitors to Chittenden, resulting in $518,000 of direct sales and $875,420 of total sales, accounting for secondary sales effects. This $875,420 in total sales generates $61,279.40 in sales tax and $9,323.22 in income tax, for a total of $70,602.62 in total tax revenues for the state. Furthermore, this total sales sum supports an aggregated total of 14 jobs in the Chittenden County economy. That is not to say that there are 14 jobs directly connected to the outdoor center. Rather, the ripple effects of the $875,420 spent in the local economy provide enough economic activity to support 14 additional jobs worth of labor spread throughout the workforce. This figure does not account for the various jobs that are directly necessary at COFC to upkeep and manage the recreation facilities. The Appendix contains a more detailed outline of the calculations used to develop these figures.

Total Economic Impact				
Net-new Visitors	Direct Spending	Total Sales Effects	Tax Revenues	Jobs Supported
7,400	$518,000.00	$875,420.00	$70,602.62	14

Figure 3. Economic Impact Summary

It is important to recognize that this study only captures a static picture of the economic impact of the center as it exists today. When considering the value of this outdoor center, it is equally important to consider future values that account for growth in the recreation economy. The Outdoor Industry Association (2016) estimates that outdoor recreation participation increased at a rate of 5% nationally between 2005 and 2011, while noting that this number is most likely artificially understated given that the data was taken during the recession that began in 2008. Additionally, Posner & Ceroni (2011) assumed that 10% growth would be a conservative estimate for activity at the Barre Town Forest, noting that Kingdom Trails, a recreation hotspot in the Northeast Kingdom has experienced a growth rate of at least 18% since 2004. It is virtually guaranteed that participation will grow steadily if the property is protected as a community forest, further increasing net-new visitors to Chittenden County and bringing increases in all of the aforementioned economic benefits outlined in this report.

Conclusion

A study of this nature surfaces just how crucial a recreation asset like Catamount Outdoor Family Center can be to a local economy. In addition to enriching the lives of the local

population through recreation experiences, it also brings new visitors to the community and generates considerable economic activity. The fact that a piece of land under single family ownership can provide close to a million dollars of economic benefit to Chittenden County showcases how unique the opportunity to conserve this land as a public asset is.

It is vital that readers of this report recognize this crucial opportunity as a fleeting chance, the outcome of which will play out far into the future of this region. As the single largest remaining tract of undeveloped natural forest in Chittenden County, it is nearly unimaginable that an opportunity like this will present itself again. Once a piece of property like COFC is developed, there are no second chances. Losing this property does not just mean losing out on the economic boons that have been outlined in this study. It also means losing out on the future benefits that will continue to grow as recreation maintains its steady growth as an industry. It means losing the opportunity to have a place in the Chittenden County community where citizens can go to experience the primeval quality that once characterized this region. Most importantly, it means losing out on an opportunity to prove that one of the things that makes Vermont such a special place to live is the foresight and care that goes into making decisions that affect the state's unique natural legacy. The economic framework does not yet exist to put a dollar amount on this, but rest assured that it is a figure far more compelling than the numbers outlined in this study.

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Appendix: MGM Worksheet

A. Sales Benefits from Tourism: Dollar value of goods and services purchased in the local area.

		Notes
1) Enter estimated non-local percent of center use	37%	
2) Enter annual visit #'s	20000	
3) Enter avg. spending per visit	$70.00	
4) Total Visitor Spending (1 x 2 x 3)	$518,000.00	
5) Enter sales multiplier (Type II)	1.69	
6) Total Sales Effects (4 x 5)	$875,420.00	

B. Tax Revenue Benefits from Tourism

1) Total Sales from line A6 above	$875,420.00	
2) Combined state and local retail sales tax rate	7%	
3) Calculate Sales tax collections (1 x 2)	$61,279.40	
4) Sales-to-income ratio	30%	*1*
5) Combined state and local income tax rate	3.55%	*2*
6) Calculate income tax revenue (1 x 4 x 5)	$9,323.22	
7) Total tax revenue (3 + 6)	$70,602.62	

C. Income and Job Benefits from Tourism

1) Total Sales from line A6 above (in millions)	0.87542
2) Estimate job-to-sales ratio (per million $ of sales)	16
4) Calculate total employment effects (1 x 2)	14.00672

Notes

1 A sales-to-income ratio is similar to a jobs-to-sales ratio or a multiplier, in that it is a ratio that explains how much money is generated in employee incomes as a result of the initial total sales expenditure. The sales-to-income ratio used in this study is a generic estimate suggested by the MGM handbook.

2 An income tax rate of 3.55% was used because this is the tax rate for any income below $37,450 to provide a conservative estimate for income tax revenues.