



TABLE OF CONTENTS

1.	Introduction	1-2
2.	Coös County Background.....	2-3
3.	Land Conservation Background	3-4
3.1	Land Conservation Alternatives	3-4
3.2	Umbagog National Wildlife Refuge and the Comprehensive Conservation Plan	3-5
4.	Existing Conditions	4-7
4.1	Population.....	4-7
4.2	Employment and Unemployment Rate.....	4-8
4.3	Industries and Establishments	4-10
	Industries in Coös County.....	4-17
5.	Literature Review	5-18
	National Wildlife Refuge Visitation Impacts to the Economy	5-19
	Oregon’s Experience	5-20
6.	Stakeholder Interviews	6-20
	Interviews with Businesses and Residents	6-21
	Interview with Trust for Public Land	6-21
	Hunting and Trapping	6-24
	Recreational Activities	6-24
7.	Fiscal and Economic Impact Analysis.....	7-25
7.1	Economic Impact Analysis	7-26
	Timber Harvesting Impacts	7-26
	Camp Acquisition Impacts	7-28
	Refuge Employees	7-29
	Refuge Leases	7-30
	Tourism Impacts	7-31
7.2	Fiscal Impact Analysis	7-32
	Property Tax Revenue Impacts	7-34
	Timber Taxes	7-36
7.3	Conclusions and Recommendations	7-36
8.	References.....	8-38

1. INTRODUCTION

The federal government owns nearly 640 million acres, or 28 percent of available land in the United States. More than two-thirds of the land owned by the federal government is managed by the Bureau of Land Management (BLM) in the Department of the Interior (DOI) and the Forest Service (FS) in the U.S. Department of Agriculture (USDA). Federal land ownership varies greatly from state to state (0.3 percent of land in Connecticut vs. 81 percent of land in Nevada).

From 1990 to 2010, federal land ownership has declined by more than 18 million acres or 2.8 percent in the United States. In New Hampshire, however, federal land acreage increased by 5.9 percent (43,644 acres). Coös County, for instance, includes portions of the Umbagog National Wildlife Refuge, the Silvio O. Conte National Fish and Wildlife Refuge and the White Mountain National Forest. Overall, nearly half of the county is protected.

There are numerous issues affecting federal land management. One of the longest standing issues pertains to the desirable extent of federal land ownership. Some advocate disposing of federal lands to state or private ownership. They are concerned about the possibility of lower local tax revenues due to public ownership and oppose further acquisitions, arguing that federal budget difficulties are constraining agencies' abilities to protect and manage the lands and resources they already administer.

The extent to which federal lands should be made available for development, opened to recreation and/or preserved has also been controversial. For instance, the primary mission of the U.S. Fish and Wildlife Service (FWS) is to conserve plants and animals. Other uses (recreation, hunting, timber cutting, oil or gas drilling, etc.) are permitted, to the extent they are compatible with the species' needs, but wildlife-related activities (such as bird-watching, hiking and education) are considered "priority uses" and are given preference over consumptive uses (such as timber harvesting, grazing and minerals).

In an effort to better understand the impact of federal lands ownership on Coös County, particularly with respect to the Umbagog National Wildlife Refuge, Coös County has retained the services of HDR Engineering. Specifically, HDR has been asked to:

1. Qualitatively discuss the issues related to the Umbagog National Wildlife Refuge conservation alternatives, highlighted in the Comprehensive Conservation Plan (CCP) for the refuge.
2. Develop an existing conditions chapter focusing on short- and long-term trends in Coös County, including economic, demographic, fiscal, and conservation policy.
3. Conduct a literature review of other conservation efforts in the United States and federal land conservation programs.
4. Conduct stakeholder interviews and one public meeting to discuss and receive feedback on the local economy, industry, and conservation efforts.
5. Estimate the fiscal and economic impacts of different conservation alternatives.

The following report addresses each of these tasks.

2. COÖS COUNTY BACKGROUND

Coös County is the northern most county in New Hampshire, which is part of the White Mountains Region and Great North Woods Region of the state. Most of the region is reserved as national forest, wilderness, and state parks, and the federal government owns 206,942 acres, or 20 percent, of the total land in Coös County. More than 88 percent of federally-owned land is located within New Hampshire’s White Mountain National Forest.¹

A primarily rural and sparsely populated county, Coös County had 32,096 residents in 2012, 3.5 percent fewer residents than the county had a decade ago. Although the county contains nearly 20 percent of the total land area of the State of New Hampshire, only 2.6 percent of the state’s population resides there.² Historically, timber has played a large role in the county’s economy, although the timber industry has been shrinking in recent years. Four paper mills were open in Coös County as recently as 2003, but only one paper mill remains open today.

As mentioned previously, the share of federal lands ownership is significant in the county and is the focus of this study. As shown below, nearly 20 percent of Coös County is owned by the federal government. Another eight percent is state owned and an additional 1.7 percent is owned by the local governments. Approximately 70 percent of Coös County property is owned privately as shown in the table below.

Table 1: Coös County Property Ownership

Ownership	Total Acres	Percent of Total
National forest (11)	183,010	17.7%
Fish and Wildlife Service (23)	23,932	2.3%
State (31)	84,294	8.1%
Local (county, municipal, etc.) (32)	17,396	1.7%
Undifferentiated private (46)	726,487	70.2%
Total	1,035,119	

Source: New Hampshire Division of Forests and Lands

Publicly-owned lands in the county include the Umbagog National Wildlife Refuge, which was established in 1992, under the management of the Fish and Wildlife Service (FWS), to help protect and conserve the Umbagog Lake and surrounding land. When the refuge was first established, it covered only 128 acres of land and water. It has expanded almost every year since its creation. The largest single year increase was in 2001 when 8,847 acres were added. The refuge currently protects 25,650 acres of land in New Hampshire and Maine.³ Just over two-thirds of the refuge area is in New Hampshire and the remainder in Maine.⁴ The figure below shows the growth of the refuge since 1992.

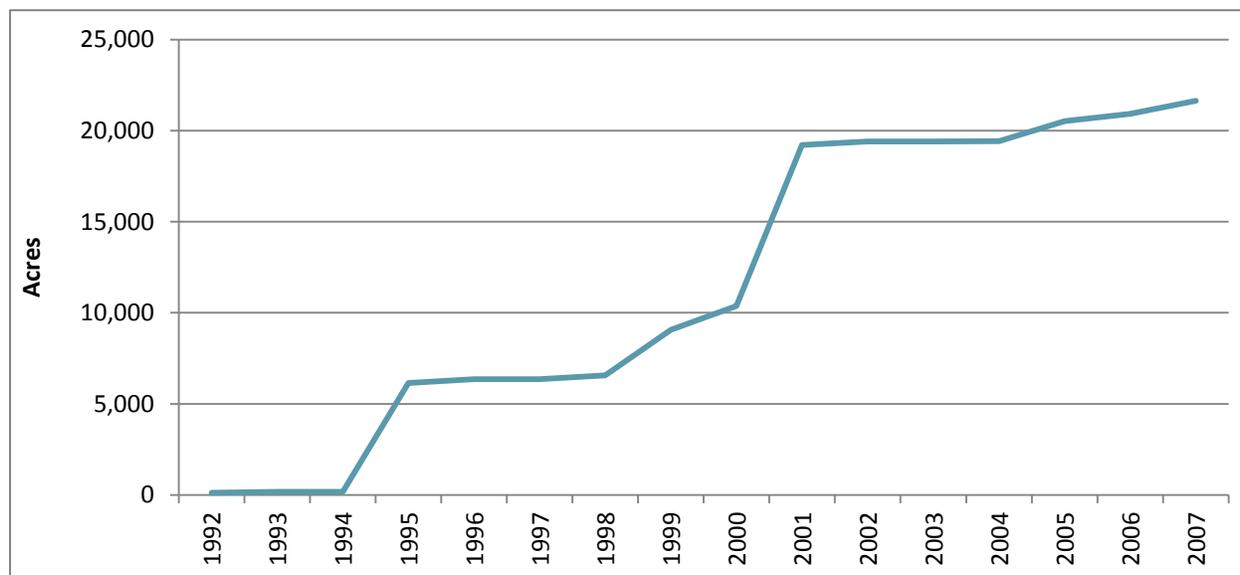
¹ New Hampshire Division of Forests and Lands

² Coös County website, <http://coosconh.vt-s.net/county-info/pages/history>

³ US Fish and Wildlife Service, Umbagog National Wildlife Refuge, Management, <http://www.fws.gov/northeast/lakeumbagog/management.html>

⁴ US Fish and Wildlife Service, Umbagog National Wildlife Refuge, Management

Figure 1: Cumulative Growth in Acres of the Umbagog National Wildlife Refuge



Source: Appendix A: Land Protection Plan, pA-3 CCP/EIS

3. LAND CONSERVATION BACKGROUND

Land conservation is provided by numerous public and private agencies, with public agencies present at all levels of government (local, state and federal). Enrollment in a conservation program can be accomplished through a variety of methods such as direct regulation of land use, direct purchase of the land or its development rights, payment to landholders to implement specific practices, or landholder education.

In the past, conservation was carried out chiefly through government regulation (zoning, planning, environmental controls, etc.) of the uses of privately-owned land, and public ownership (exercise of eminent domain) and management of land for recreation, preservation, and other purposes. Nowadays, most public and private agencies use incentive-based, voluntary solutions. Conservation methods tend to be economic in nature, meaning that there is some sort of financial compensation to the landowner.

3.1 Land Conservation Alternatives

There are basically two types of permanent land conservation by a public or private agency: fee simple acquisition and acquisition of a conservation easement. Fee simple acquisition is the most straightforward. The land, and all the property rights that go with it, are acquired. Assuming the agency acquiring the land is tax exempt, the entire value of the parcel is removed from the municipality's tax rolls. For Coös County, this would impact property taxes as well as timber tax revenues. These issues are discussed later in the report.

A conservation easement is a contract that divides portions of the land title between the landowner, or fee holder, and an easement holder. Typically a conservation easement transfers some development and management options (such as the right to cut trees) from the fee holder to a governmental or non-profit

land conservation organization. The fee holder may donate or sell the rights that are relinquished and pays property taxes only on the remaining value of the land (usually at a reduced rate). Very often the organization that enters into a conservation easement is a land trust (i.e., an organization dedicated to conserving land). Land trusts often use public grant programs (including the U.S. Forest Service's Forest Legacy and the U.S. Fish and Wildlife Service's National Fish and Wildlife Foundation) to offset their acquisition and operational costs.

Some federal programs offer technical assistance or education in lieu of direct payment or subsidy to the landowner. Cooperative Forestry, at the U.S. Department of Agriculture's Forest Service, manages two national conservation programs:

- The **Forest Stewardship Program (FSP)** provides technical assistance, through state forestry agency partners, to nonindustrial private forest (NIPF) owners to encourage and enable active long-term forest management. FSP helps landowners develop sustainable management plans. A primary focus of this program is the development of comprehensive, multi-resource management plans.
- The **Forest Legacy Program (FLP)** protects privately owned forest lands from being converted to non-forest uses. The program focuses on the acquisition of partial interests in privately owned forest lands. In particular, it directly supports property acquisition efforts, as well as efforts to acquire donated conservation easements.

Land conservation often involves federal lands expansion, which can present a number of specific challenges and opportunities to communities. On the one hand, there is the opportunity for growth in industries such as tourism. Fishing, hunting, camping, hiking and other recreational activities can support economic activity in a community. On the other hand, there is the potential for negative impacts on jobs in industries affected by an expansion. For example, federal lands acquisition of forest lands may impact the timber industry in a place like Coös County. This can impact the local economy but also tax revenues. When federal lands are expanded, however, the actual impact depends on the type of acquisition envisioned, as well as any restrictions placed on federal lands once acquired.

3.2 Umbagog National Wildlife Refuge and the Comprehensive Conservation Plan

The primary purpose of the Umbagog National Wildlife Refuge, spanning northern New Hampshire and Maine, was to protect wetlands and wetland-associated wildlife and to protect migratory birds. The National Wildlife Refuge System Improvement Act of 1997 required the U.S. Fish and Wildlife Service to create a Comprehensive Conservation Plan (CCP) for all national wildlife refuges by 2012. Issued in 2009, the Umbagog National Wildlife Refuge's CCP fulfilled this requirement. The CCP set several broad goals in order to help make decisions in managing the refuge. The three most important goals are:⁵

1. Manage open water and submerged aquatic vegetation and wetlands to benefit federal trust species and other species of conservation concern.
2. Manage floodplain and lakeshore habitats to benefit federal trust species and other species of conservation concern.
3. Manage upland forest habitats, consistent with site capability, to benefit federal trust species and other species of conservation concern.

⁵ U.S. Fish and Wildlife Service, Umbagog National Wildlife Refuge Comprehensive Conservation Plan, Summary, January 2009.

The CCP also discusses three management alternatives for the refuge. These alternatives are much more specific than the CCP goals and include:

1. Alternative A – A “no action” alternative. Managements will remain the same. The refuge will be protected from threats and resources will be monitored. The lands will be open to wildlife observation, hunting and fishing, snowmobiling, and camping. Up to 7,482 acres of land will be acquired from willing sellers within the current refuge boundaries.
2. Alternative B – The top priority of this alternative is to protect the biological integrity, diversity, and environmental health of Umbagog Lake and its associated rivers and streams. A secondary priority is to conserve the upland mixed forest and sustain those native species dependent on the forest. This alternative would expand the refuge by acquiring up to 47,807 acres from willing sellers: 56 percent in fee simple and 44 percent in easements.
3. Alternative C – The focus of this alternative is to sustain natural ecological communities, rather than selected species. This alternative would acquire 74,414 acres, which would be purchased in fee simple from willing sellers.

The CCP encompasses the goals, objectives, and strategies from the Environmental Impact Statement (EIS) process, including outreach and feedback from the public, state agencies, commercial industry representatives, landowners, and conservation partners.

The three management options for expanding the Umbagog Refuge under the CCP are:

1. Management or acquisition by others – Support from or activities of partner organizations and agencies in the project area
 - a. Parcel is owned or managed by another conservation group or organization
2. Less-than-fee acquisition – purchasing only partial interest as a conservation easement
 - a. Parcel remains in private ownership
 - b. Easement supports permanent protection of existing forest lands
3. Fee Acquisition – purchasing the land from willing sellers. Allowing:
 - a. Habitat management, improvement or restoration
 - b. Provide public use opportunities and manage access
 - c. Manage for endangered or threatened species

In general, the refuge expansion in recent years has been closest to Alternative B, a combination of both fee and easement. Provisions have been made to reduce the amount of land acquired through fee, however, and these are discussed later in this report.

Regardless of the management option chosen for expansion, a larger refuge can offer an opportunity for tourism growth and tourist-related spending in the region. If the refuge is expanded through easement, however, the implications on other sectors of the economy is different than if the refuge is expanded through fee acquisition. Understanding the economic impact differences associated with the management option chosen for refuge expansion is a primary goal of this study.

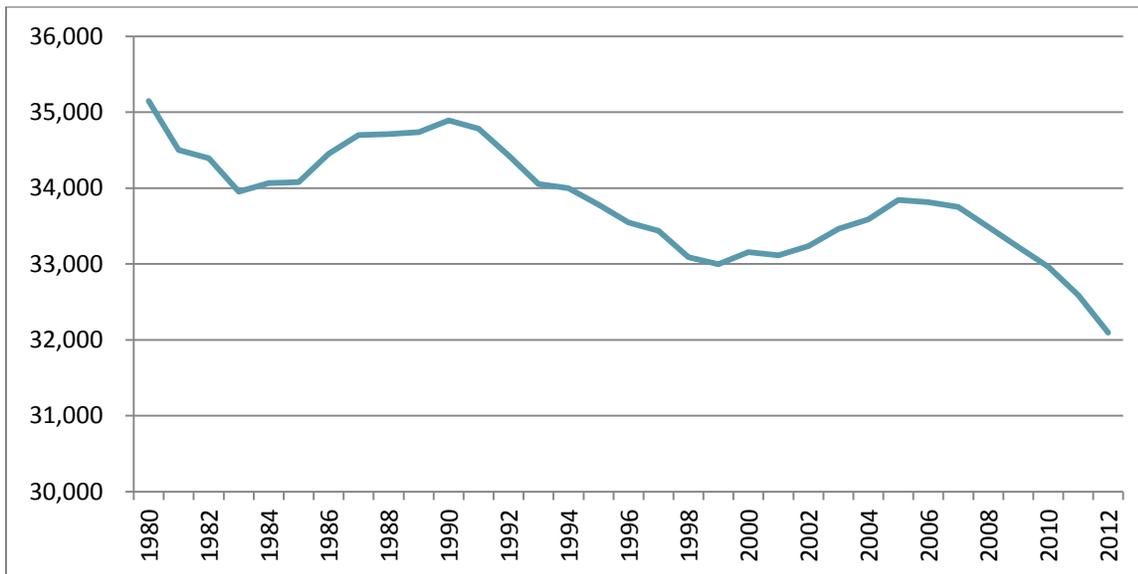
4. EXISTING CONDITIONS

The current economic and demographic picture of the county is important to understand prior to conducting an economic impact study. This section provides data and other information to better frame the conditions under which this proposed expansion will be executed.

4.1 Population

Coös County is the least populous county in the State of New Hampshire accounting for 2.4 percent of the state’s population. Coös County’s population has steadily declined and not kept pace with national or regional growth trends. In 2012, the population for Coös County was 32,096, according to the United States Census Bureau. As the figure below shows, the population has been trending downward since 1980. Since 2000, the county population has declined by 3.2 percent, whereas the overall state population grew by 6.3 percent.

Figure 2: Coös County Population, 1980-2012

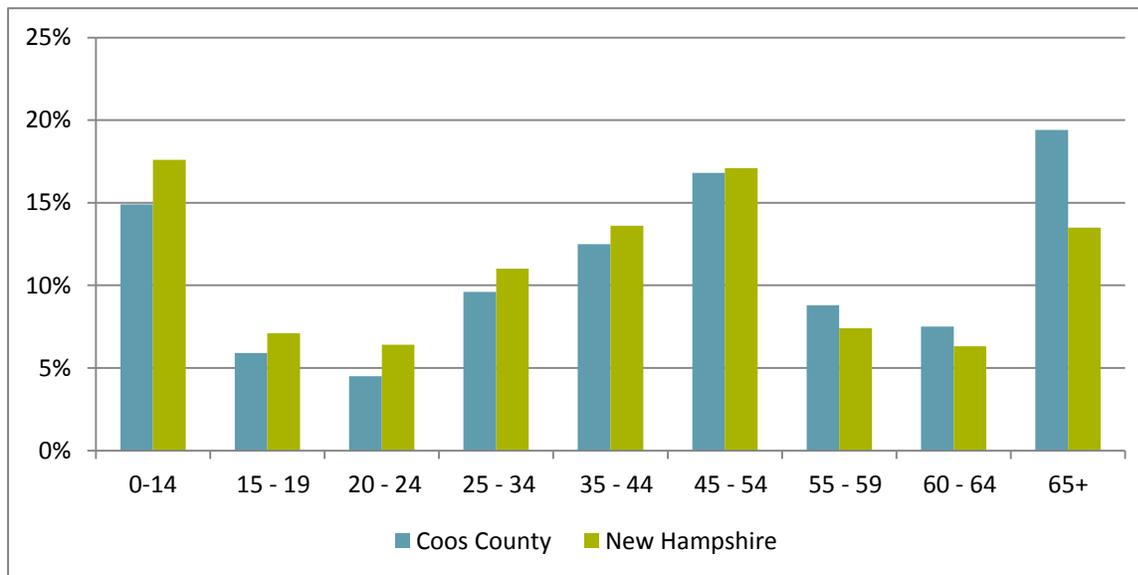


Source: Population Division, U.S. Census Bureau

In addition to the declining population, Coös County residents are relatively older than the state’s overall population. The median age in Coös County is 47 years old, compared to a statewide median age of 41. The largest age group in Coös County is people over the age of 65. As a result, Coös County has a much smaller share of school aged and labor force aged individuals than the rest of New Hampshire, as shown by the figure below.



Figure 3: Age Distribution of Coös County and New Hampshire

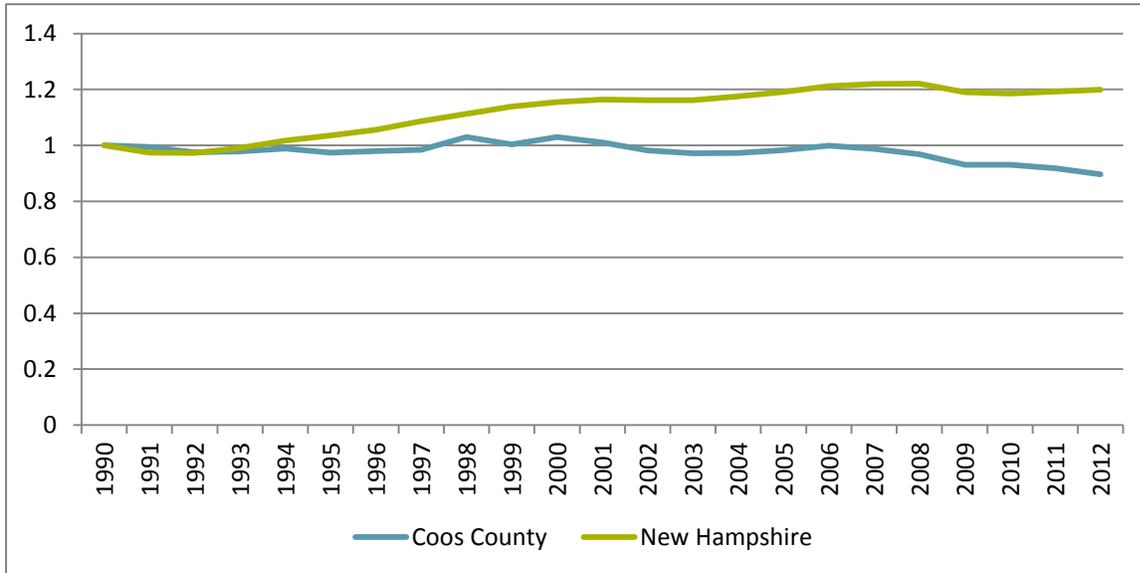


Source: US Census Bureau 2009-2011 American Community Survey 3-Year Estimates

4.2 Employment and Unemployment Rate

Historically, Coös County has either exhibited near zero growth or very slow growth in good years. Employment has declined over 10 percent from 1990 to 2012. In contrast, New Hampshire employment has increased 20 percent over the same time period, as shown in the figure below. The decline in Coös County jobs mirrors the downward trend of the county population, and jobs in the county make up a very small portion of the state's jobs. Less than three percent of New Hampshire jobs were in Coös County from 1990 to 2012.

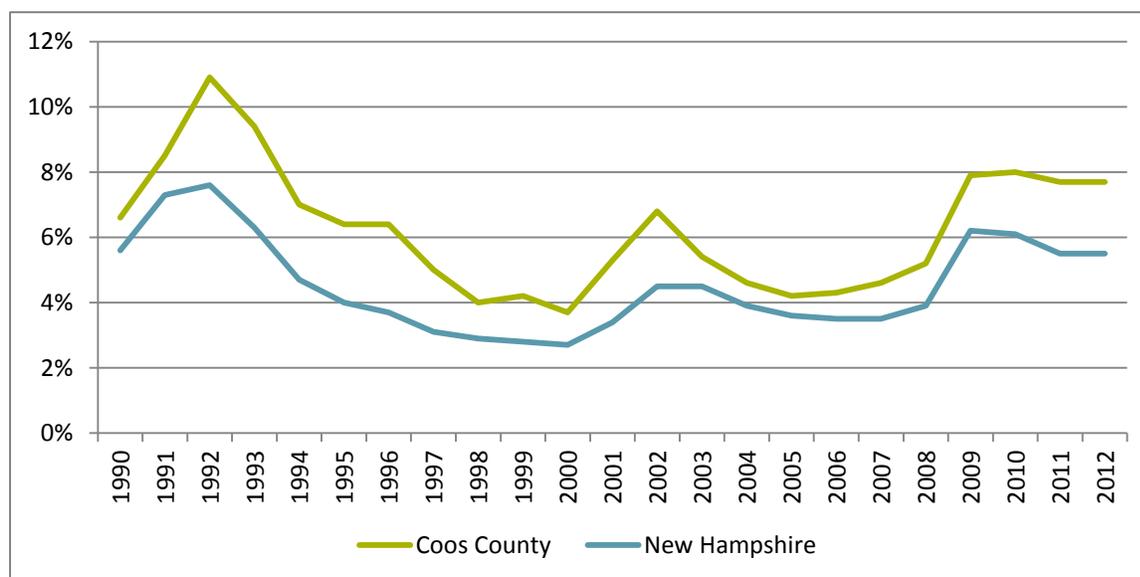
Figure 4: Employment Index for Coös County and New Hampshire, 1990-2012



Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics

In 2012, the unemployment rate for Coös County was 7.7 percent, 2.2 percentage-points greater than the state average, as shown in the figure below. Prior to the recession (2007), the unemployment rate for Coös County was 4.6 percent. Since the peak of the recession, however, the unemployment rate has remained high. For the past five years, the rate has only decreased by three-tenths of one percent, compared to the state’s recovery of seven-tenths of one percent over the same time period.

Figure 5: Coös County Unemployment Rate, 1990-2012



Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics

While the unemployment rate is a good measure of the economic condition, it does not capture the whole picture. The unemployment rate is based on active labor force participation, which means that individuals who have not found, or have stopped looking for, work in the last 12 months may fall into the “marginally attached to the labor force” or “discouraged workers” categories, which are not counted as participants in the labor force. These categories of workers are omitted from the unemployment statistics and may distort the actual conditions in the region. The labor force participation rate for Coös County is 59 percent, significantly lower than the New Hampshire state average of 70 percent. This reality may help to explain the 8.9 percent poverty rate in the county as compared to the state average of 5.5 percent.⁶

4.3 Industries and Establishments

Industry level job estimates and projections are presented in the table below. As shown, health care, accommodations, retail, government, and education are currently the top five industries in terms of jobs for Coös County. Health Care & Social Assistance, Arts, Entertainment, & Recreation, and Accommodation & Food Services are the only industries projected to increase employment between 2010 and 2020, according to the New Hampshire Department of Resources and Economic Development (DRED). These industries are shown in red below.

Average weekly wages range from \$325 to \$748 in those industries expected to grow. Despite anticipated growth, only healthcare jobs provide a living wage as defined by a 2006 University of New Hampshire study on the subject. Adjusting for inflation, the living wage in New Hampshire for a single person is \$399 a week. For a family of two working adults and two kids, the living wage increases to \$426 per adult, or \$852 for the family. This number falls to \$694 dollars if only one parent is working

⁶ Source: US Census Bureau 2009-2011 American Community Survey 3-Year Estimates

because it is presumed that the other parent can take care of the children, thus eliminating childcare expenses.⁷

Table 2: Coös County Estimated 2010 and Projected 2020 Jobs by Industry

Industry	Estimated 2010 Jobs	Projected 2020 Jobs	2010-2020 Percent Change	2011 Average Weekly Wage
Forestry, Fishing, etc.	381	371	-2.6%	\$635
Construction	392	383	-2.3%	\$847
Manufacturing	999	993	-0.6%	\$739
Utilities	103	100	-2.9%	\$1,450
Wholesale Trade	203	198	-2.5%	\$817
Retail Trade	1,884	1,827	-3.0%	\$473
Transportation & Warehousing	426	416	-2.4%	\$656
Information	67	60	-10.6%	\$928
Finance and Insurance	300	276	-8.0%	\$707
Real Estate & Rental	101	98	-3.0%	\$569
Professional Services	139	129	-7.2%	\$756
Educational Services	1,301	1,262	-3.0%	\$925
Health Care & Social Assist.	2,336	2,470	5.7%	\$748
Arts, Entertainment, & Rec.	425	468	10.1%	\$325
Accom. and Food Services	1,950	2,012	3.2%	\$364
Government	1,575	1,556	-1.2%	\$690
All other Jobs	1,618	1,547	-4.4%	n/a
Total	14,200	14,166	-0.2%	\$620

Source: Department of Resources and Economic Development; Note: Industries in red are projected to grow in Coös County.

Despite that health care jobs may provide a living wage, not all health care jobs are equal or equally likely to grow in number. Projected job growth in Coös County for different types of jobs in the health care industry is presented in the table below.

Table 3As shown, nursing and residential care services and social assistance jobs are the only two job categories projected to grow. These jobs pay less than the average health care wage, although nursing and residential care services still pay enough to cover the living wage of single people and a family of four if both adults are working. A family of four with only one working adult will not be making a living wage, and social assistance jobs do not meet any of the living wage thresholds discussed above.

Table 3: Coös County Estimated 2010 and Projected 2020 Jobs for Health Care Industry

⁷ New Hampshire's Basic Needs and Livable Wage, UNH Office of Economic Initiatives, 2006

Health Care & Social Assist.	Estimated 2010 Jobs	Projected 2020 Jobs	Percent change	2011 Average Weekly Wage
Ambulatory Health Care Services	799	775	-3.0%	\$920.24
Hospitals	683	662	-3.1%	\$1,056.40
Nursing & Residential Care Facilities	444	561	26.4%	\$544.26
Social Assistance	410	472	15.1%	\$383.54

Source: Department of Resources and Economic Development

Jobs in the arts, entertainment, recreation, accommodation, and food services industries are also projected to grow in the County, but they are some of the lowest paid. As the compensation table below shows, they provide \$60 million or 11 percent of the total compensation for the county, but represent 17 percent of its jobs. The same is true of the retail industry which employs a large number of workers, but pays less than the county average wage; meaning a large portion of the labor force is receiving low wages. As these are the few industries expected to grow in the county, it is expected that income potential will decline as these industries typically use unskilled labor and pay below a living wage, even for a single adult

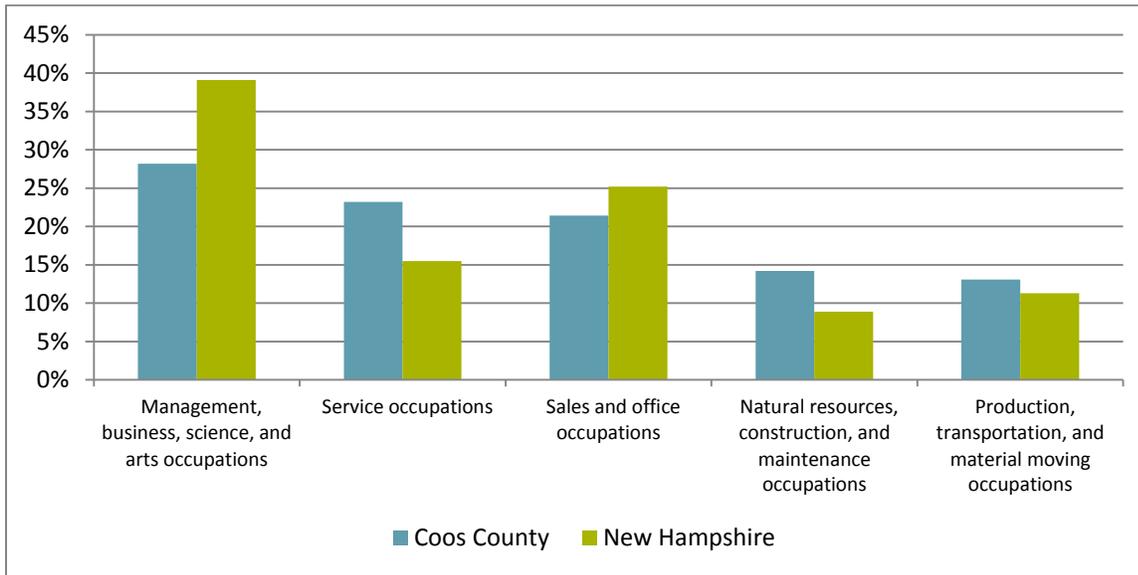
Table 4: Coös County Compensation by Selected Industries (\$000), 2011

Industry	2011 Compensation (in \$1,000s)	Percent of Total
Forestry, Fishing, etc.	\$7,723	1.4%
Utilities	S	S
Construction	\$26,025	4.7%
Manufacturing	\$42,036	7.6%
Wholesale trade	\$12,004	2.2%
Retail trade	\$55,514	10.1%
Transportation & Warehousing	\$16,873	3.1%
Educational Services	\$10,938	2.0%
Health Care & Social Assist.	\$49,433	9.0%
Arts, Entertainment, & Rec.	\$10,938	2.0%
Accommodations & Food Services	\$49,433	9.0%
Government	\$145,415	26.4%
All Other Industries	\$125,343	22.7%
Total	\$551,675	100.0%

S- Suppressed data; Source: Bureau of Economic Analysis.

Jobs in Coös County’s labor force are relatively more concentrated than the state in service, natural resources, construction, maintenance, production, and transportation occupations as shown by the figure below. Employment in the service industries is anticipated to grow according to the NH DRED projections, while better paying jobs, such as construction and natural resource jobs, are expected to decline, as shown in the tables previously.

Figure 6: Occupations in Coös County



Source: US Census Bureau 2009-2011 American Community Survey 3-Year Estimates

The two tables below provide the population, employment, and weekly wages by incorporated and unincorporated towns. As the tables show, the incorporated places have a population of approximately 33,000 and report 12,200 jobs. Berlin is largest in terms of jobs and population of the incorporated places, but the Towns of Columbia and Dalton have the two highest average weekly wages, \$858 and \$784 respectively.

Table 5: Coös County Average Employment and Population for Incorporated Towns

Town/City	Average Population 2007-2011	2011 Annual Average Employment	2011 Average Weekly Wages
Berlin	10,126	3,510	\$723
Carroll	651	981	\$562
Clarksville	313	S	S
Colebrook	2,167	1,193	\$569
Columbia	708	55	\$858
Dalton	972	47	\$784
Dummer	481	S	S
Errol	289	141	\$667
Gorham	2,860	1,811	\$547
Jefferson	865	403	\$444
Lancaster	3,505	1,726	\$696
Milan	1,269	263	\$604
Northumberland	2,296	291	\$617

Town/City	Average Population 2007-2011	2011 Annual Average Employment	2011 Average Weekly Wages
Pittsburg	953	237	\$436
Randolph	460	19	\$533
Shelburne	398	142	\$298
Stark	632	S	S
Stewartstown	1,081	339	\$526
Stratford	891	76	\$425
Whitefield	2,180	964	\$590
Total	33,097	12,198	\$581

S – Suppressed data

Source: (1) Department of Resources and Economic Development (DRED). (2) US Census Bureau 2007-2011 American Community Survey 5-Year Estimates

The table below shows the largest employers in the county, as well as the industry in which they are located. Hospitals are significant employers, as are the county’s hotels, ski areas, and other tourist attractions. The prison also employs nearly 200 people. There are also smaller broadband companies located in the county, though these are not reflected in the table below⁸.

⁸ Business NH Magazine, “The North Country: Tearing Away from Its Paper Past,” August 2013.

Table 6: Key Industries and Major Employers in Coös County

Business	Community	Industry Sector	Employees
Androscoggin Valley Hospital	Berlin	Health Care Services	409
Mount Washington Hotel	Carroll	Accommodation and Food Services	350
Weeks Memorial Hospital	Lancaster	Health Care Services	320
Bretton Woods Ski Area	Carroll	Accommodation and Food Services	300
City of Berlin School System - SAU #3	Berlin	Educational Services	280
Gorham Paper & Tissue, LLC	Gorham	Manufacturing	214
Wal-Mart	Gorham	Retail Trade	204
Santa's Village	Jefferson	Arts, Entertainment, and Rec.	200
Mountain View Grand	Whitefield	Accommodation and Food Services	200
Northern NH Correctional Facility	Berlin	Government	198

Source: New Hampshire Economic and Labor Market Information Bureau

Unincorporated places in Coös County are mostly unpopulated and have fewer than 180 jobs. In fact, Dixville is the only unincorporated place to have both jobs and residents, based on 2011 data. The Balsams is located in Dixville, but is currently under renovation. As a result, these employment figures may be lower than shown in the table. It is also important to note that some data are suppressed. As a result, there may be small employers who are located in unincorporated places but not captured by DRED or reflected in these employment figures.

Table 7: Coös County Average Employment and Population in Each Unincorporated Place

Unincorporated Places	Average Population 2007-2011	2011 Annual Average Employment	2011 Average Weekly Wages
Atkinson & Gilmanton Academy Grant	0	2	\$812.32
Bean's Grant	0	0	\$0.00
Bean's Purchase	0	0	\$0.00
Cambridge	10	S	S
Chandler's Purchase	0	0	\$0.00
Crawford's Purchase	0	S	S
Cutt's Grant	0	0	\$0.00
Dix's Grant	0	0	\$0.00
Dixville	56	176	\$627.38
Erving's Location	0	0	\$0.00
Green's Grant	0	S	S
Hadley's Purchase	0	0	\$0.00
Kilkenny	0	0	\$0.00
Low and Burbank's Grant	0	0	\$0.00

Unincorporated Places	Average Population 2007-2011	2011 Annual Average Employment	2011 Average Weekly Wages
Martin's Location	0	0	\$0.00
Millsfield	22	S	S
Odell	0	0	\$0.00
Pinkham's Grant	5	0	\$0.00
Sargent's Purchase	0	S	S
Second College Grant	0	0	\$0.00
Success	0	0	\$0.00
Thompson and Meserve's Purchase	0	0	\$0.00
Wentworth's Location	34	0	\$0.00
Total	127	178	S

S – Suppressed data

Source: (1) Department of Resources and Economic Development. (2) US Census Bureau 2007-2011 American Community Survey 5-Year Estimates

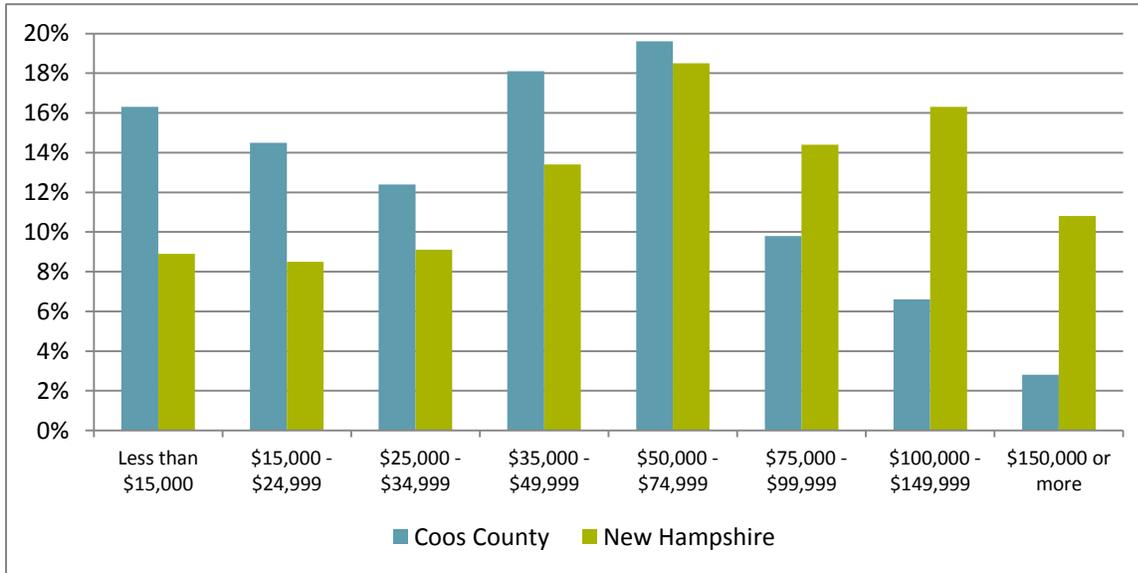
The table below shows the income distribution for Coös County and New Hampshire. Almost 82 percent of Coös County residents earn less than \$75,000 a year, compared to 58 percent for New Hampshire. The income distribution for Coös County is relatively more concentrated in the lower income brackets. Specifically, Coös County's median household income is \$35,995 and its per capita income is \$23,279. In contrast, New Hampshire's median household income is almost twice that, at \$63,168, with a per capita income of \$31,913.⁹

Although incomes are lower than the state average, housing prices are also lower. Specifically, the median house value in Coös County is \$131,200, which is significantly lower than the state median house value of \$243,000.¹⁰

⁹ US Census Bureau 2009-2011 American Community Survey 3-Year Estimates

¹⁰ US Census Bureau 2009-2011 American Community Survey 3-Year Estimates

Figure 7: Income Distribution for Coös County and New Hampshire



Source: US Census Bureau 2009-2011 American Community Survey 3-Year Estimates

Industries in Coös County

There are several industries in Coös County that have been historically significant to the region, or are projected to account for a larger share of employment over time. These include lumber and wood and tourism and lodging.

Lumber and Wood

With more than 84 percent forest cover, New Hampshire is the second most forested state in the country behind Maine. Of the 4.8 million forested acres in New Hampshire, 4.6 acres are considered “timberland,” meaning that these lands are capable of producing repeated timber crops. New Hampshire’s forests continue to be largely privately owned by individuals/families and business who together own over 76 percent of the forest. The state owns five percent of the forests and the federal government, primarily through the White Mountain National Forest, own 14 percent.¹¹ In Coös County, more than 70 percent of the land is owned privately. Approximately 20 percent is federally owned. Slightly more than eight percent is owned by the state, and local governments own another 1.7 percent.

In 2011, 1.315 million cords of wood were harvested in New Hampshire and 1.195 million cords were processed in New Hampshire. In the state, there are approximately 1,200 loggers, 500 foresters and technicians, 800 truckers and 161 sawmills operating. Thirty-five of these sawmills produce the majority of sawed volume. Landowners received approximately \$30 million in stumpage payments for timber

¹¹ “The Economic Importance of New Hampshire’s Forest Based Economy 2013,” North East State Foresters Association.

harvested in 2012 and, from these sales, approximately \$3 million was paid in timber tax to NH communities.¹²

In addition to lumbering itself, there are other jobs supported by this industry in the county. They include timber harvesting and related trucking, primary manufacturing (saw mills and wood energy plants), and secondary manufacturing (furniture, paper, tissue).

Tourism and Lodging

Forest-based recreation is a large and part of the economy in the State of New Hampshire. Thousands of people visit New Hampshire's forests for camping, hiking, hunting, downhill skiing, cross-country skiing, snowmobiling, wildlife viewing, and fall foliage viewing. The forest-based recreational activities listed above contribute \$1.4 billion in sales annually to the New Hampshire economy, according to a recently completed report.¹³ In Coös County and around the Umbagog Wildlife Refuge, popular activities include hiking, camping, wildlife viewing, picnicking, snowmobiling, fishing, hunting, boating, canoeing, and cross-country skiing.

While the number of visitors to the state was not available, a recent study conducted by Plymouth State University found that eight of the ten counties in New Hampshire had higher spending by travelers subject to the Rooms and Meals Tax in fiscal year 2012 than during the previous fiscal year. This is good news for the state but unfortunately, Coös County was not included among those counties; in fact, spending decreased 6.2 percent in Coös.¹⁴ A more complete discussion of tourism in the county is discussed in the economic impact section of this report.

5. LITERATURE REVIEW

The HDR team reviewed numerous reports and studies that address the economic impacts of federal lands expansion and related issues as a part of this work effort. A complete listing of these documents is provided in the appendix to this study. Generally, the review found that the experiences of communities where federal lands expansion has occurred are mixed. Some studies report that the recreational uses afforded by public lands availability had a positive economic impact on the community. For these communities, the lands encouraged tourism and other recreational activity that generated spending by visitors in the local economy. In other communities, the impact to the local economy was not positive. These studies suggest that industries have contracted significantly because of the federal lands expansion.

Throughout this study's development, reports, studies and data were collected and reviewed. The findings of these various studies are mentioned throughout the report. There are two studies, however, that are particularly relevant to Coös County and the following describes their key findings.

¹² "The Economic Importance of New Hampshire's Forest Based Economy 2013," North East State Foresters Association.

¹³ "The Economic Importance of New Hampshire's Forest Based Economy 2013," North East State Foresters Association.

¹⁴ "New Hampshire Travel Barometer, Summary for Fiscal Year 2012," Plymouth State University.

National Wildlife Refuge Visitation Impacts to the Economy

According to the study, *Banking on Nature, The Economic Benefits to Local Communities of National Wildlife Refuge Visitation*¹⁵, conducted by the U.S. Fish and Wildlife Service, recreational visits to national wildlife refuges generate substantial economic activity. The report focuses on final demand, employment, income and tax revenue impacts that refuge visitors have on the economies of local regions. In addition to the economic effects of refuge hunting and fishing programs in local communities, the study also measures the economic impact of “ecotourism.” This is defined as “large numbers of people traveling substantial distances to take part in non-consumptive uses of the natural environment.”¹⁶

For the study, daily visitor expenditures for both residents and non-residents were developed in four categories (food, lodging, transportation, and other expenses) for six activities (freshwater fishing, saltwater fishing, migratory bird hunting, small game hunting, big game hunting, and non-consumptive activities). Visitor days were factored in, and the total expenditures by category of spending for each activity were determined. These expenditures were allocated to industries, and the IMPLAN economic impact modeling system was used to calculate the final effects of these expenditures on the local economies.

It should be noted that this report focuses on only one of the values generated by national wildlife refuges; that is, how recreational visitors impact local income and employment. Spending and employment by the refuges themselves, payments in lieu of taxes, commercial activities on refuges, and many other economic impacts associated with refuge activity were not considered in this analysis.

The study focused on a significant number of refuges, 92 located across the country. The following are some of this study’s key findings:

- In FY 2011, 46.5 million people visited refuges, generating significant economic activity.
- Visitor spending generated \$2.4 billion in sales in regional economies, approximately \$51 per visitor.
- The spending resulted in more than 35,000 people employed and \$792.7 million in employment income.
- About 72 percent of total expenditures were generated by non-consumptive activities on refuges. Fishing accounted for 21 percent and hunting seven percent.
- Local residents accounted for 23 percent of expenditures while visitors coming from outside the local area accounted for 77 percent.
- Refuge recreational spending generated about \$342.9 million in tax revenue at the local, county, state and federal level.

¹⁵ *Banking on Nature, The Economic Benefits to Local Communities of National Wildlife Refuge Visitation*, by Erin Carver and James Caudill, Ph.D., Division of Economics, U.S. Fish and Wildlife Service, Washington, DC, October 2013.

¹⁶ *Banking on Nature, The Economic Benefits to Local Communities of National Wildlife Refuge Visitation*, by Erin Carver and James Caudill, Ph.D., Division of Economics, U.S. Fish and Wildlife Service, Washington, DC, October 2013.

Oregon's Experience

In contrast to the FWS report, a 2010 study found that federal lands expansion has had a negative economic impact on this region of the country. As highlighted in the report, more than 18 million acres of Oregon's forestland have come under federal ownership since the 1900s. As a result, about 60 percent of Oregon's forestland – an area three times the size of New Hampshire – is now federally owned.

With the implementation of the Northwest Forest Plan (NWFP) in the 1990s, the primary management goal for federal lands in Oregon shifted from providing a sustained yield of timber to conserving biodiversity with an emphasis on endangered species. The NWFP is in fact the result of a series of lawsuits that culminated in injunction against the harvest of timber in northern spotted owl habitat. Until the early 1990s, Oregon's forests supplied jobs, tax revenue and outdoor recreation. The economy of many rural communities, especially on the state's east side, revolved around the utilization of forest resources. However, with the adoption of the NWFP in 1994 and the near stoppage of timber harvest on federal lands that ensued¹⁷, these communities have experienced severe economic and social hardships. Timber-based businesses have closed, resulting in fewer jobs and less tax revenue. There have been unintended social and economic consequences as well, including loss of receipts from timber sales used to support roads and schools. Historic fire suppression and timber harvests that removed only large, fire-resistant pines, combined with lack of active management to restore forest resilience and health on federal forestland, have put eastside forests in dangerously overstocked conditions and at high risk of drought, disease or insect induced mortality, and intense wildfire.

In 2012, the Office of the Oregon Secretary of State conducted a Financial Condition Review of Oregon's 36 counties. The report recommended that eight counties be further monitored due to significant financial challenges that primarily relate to the loss of federal (timber) payments. Although not identified in the report as such, several counties are facing insolvency with the combination of the loss of federal timber payments, reduced economic activity and the lingering recession. The Governor's Office has been working with stakeholders to rethink the implementation of the NWFP so as to ensure stable county funding and stable timber supply in particular.

Congressional hearings have been held that address the issues raised in the Oregon paper. A transcript of a particularly relevant hearing is provided in the appendix to this report.

6. STAKEHOLDER INTERVIEWS

Along with third-party study review and data collection, numerous interviews were held with stakeholders for this economic impact assessment. The purpose of these interviews was to better understand the perceived and actual impact of the federal lands expansion related to the Umbagog Wildlife Refuge on Coös County. The interviews were conducted in person, via email, or over the phone, and they included:

- Coös County residents
- Local and regional businesses, including members of the timber community

¹⁷ Since the early 1990s, timber production from eastside federal forests has declined by 92 percent (OFRI, 2010).

- University personnel familiar with Coös County, state tourism and/or the issue of federal lands expansion
- Umbagog Wildlife Refuge personnel
- Conservation organizations
- North Country Council
- State of New Hampshire officials

Interviews with Businesses and Residents

Without question, federal lands expansion is an important topic to residents of Coös County, and residents vary in their views about whether or not there should be an expansion, how land should be conserved, and how the expansion might affect their community. Most of the residents who were interviewed felt that the refuge had sufficient land to achieve the goal of protecting the lake and its shores, which was its stated primary mission. They also expressed concern that adding more land to the refuge would diminish their existing tax base, potentially increasing taxes on the rest of the community.

Other issues included concern that continued refuge expansion would force businesses to close down and people to move out of the county. Several business owners were contacted for their perspective on this issue, and several did indicate that their businesses could be impacted. For example, those businesses involved in timber harvesting indicated that the harvesting on refuge lands would likely be less than it would be under private ownership. Retail and other businesses suggested that fewer people have been visiting the area in recent years. One retailer estimated that revenues have decreased 25 percent in the past 15 years. However, the extent to which this is attributable to federal lands expansion, as opposed to a general decrease in economic activity, is difficult to measure.

A related concern raised by residents and businesses was that the refuge manages the forest principally for wildlife values and that any harvesting is done to achieve a particular wildlife practice; for example, cutting trees to improve a Wood Cock habitat. In contrast, private land owners manage production timber – growing and harvesting – taking into account wildlife, but wildlife is not the primary objective. These differing objectives have potential implications on timber tax revenue. The outright ownership of property by the federal government may also have impacts on property tax revenues. These issues are discussed later in the report.

Even though some residents strongly oppose the expansion of the refuge, many saw little or no issue with the refuge using conservation easements. This was especially true if the conservation easements are open for a number of uses that the refuge does not permit on its owned lands. These residents feel that open conservation easements take away the tax issue by allowing the land to remain in private ownership. It can also allow for people to do things like trap or ride ATVs, which are prohibited on the refuge. Some residents said that the refuge was originally supposed to contain a lot more conservation easements than it currently does, and they expressed concern that FWS might have interest in acquiring these easements through fee over time.

Interview with Trust for Public Land

Interviews with the Trust for Public Land (TPL) corroborated what the HDR Team was told during its interviews with Coös County residents. Specifically, TPL was aware that there was a concern that the US Fish and Wildlife Service would still want to acquire the lands being protected by the state-held

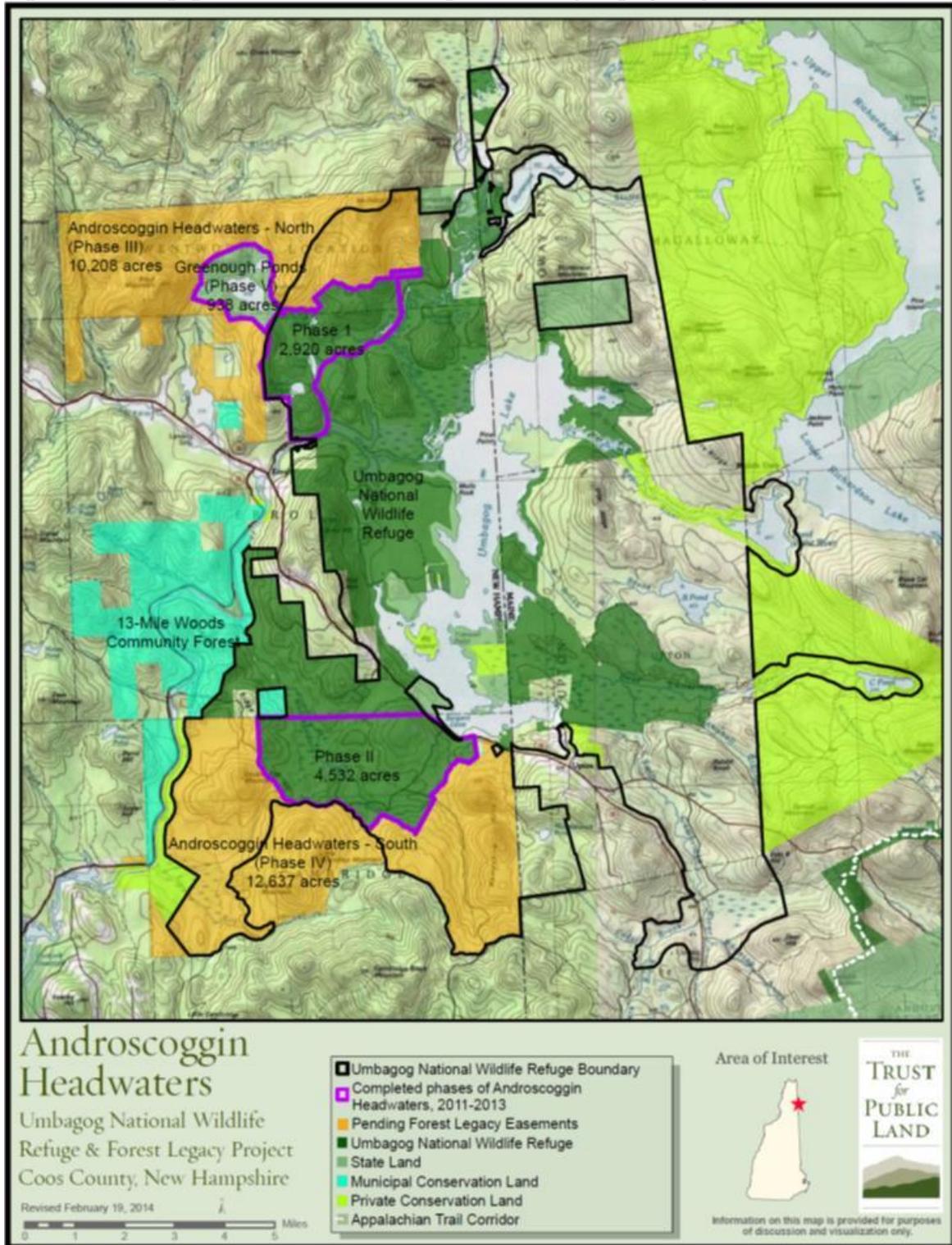
working forest conservation easements (See map below, Phases III and IV). For some people in the community who oppose Umbagog Refuge expansion and who do not trust the US FWS, this is a significant concern. To address this concern several steps were taken, as described below.

1. “TPL contacted the US Fish and Wildlife Service regarding concerns that the agency is interested in acquiring lands once they are protected with an easement. FWS responded and explained that they have no intention of acquiring the lands once they are protected with an easement. (Copy of the letter is included in the Appendix).
2. The conservation easement prevents subdivision of the tract into smaller parcels. In other words, neither the Phase III parcel nor the Phase IV parcel (see figure below) can be broken up into smaller pieces and sold to different owners. Based on the no-subdivision clause and the configuration of these tracts which goes far beyond the approved refuge acquisition boundary, it is impossible for the USFWS to acquire the property at this time.
3. The conservation easement contains a right of first offer for the State of New Hampshire that could block the sale to the Umbagog Refuge. Section 4 of the easement sets in place the requirement that if the landowner wants to sell the land to any agency of the federal government then they must first offer the land to the State of New Hampshire. The State has certain time periods by which it must respond, and it must have the funds available to purchase the land, but it puts the state “in the driver’s seat” in the event such a sale to the federal government is proposed. This right of first offer is not triggered in the event that the land is sold to a private party. This right of first offer also never expires.
4. The effect of the right of first offer creates a practical disincentive for the landowner to pursue a sale to the federal government. Any time there is such a right of first offer or right of first refusal, it adds significant uncertainties and hassles for a real estate transaction. TPL’s experience is that the mere existence of such an easement term is likely to dissuade any landowner from going through the difficulties associated with a sale to the federal government.”¹⁸

These steps were in response to community concerns related to easement versus fee acquisition of federal lands. The result is that property originally targeted for acquisition through fee is now being placed in an easement, thereby mitigating some of the concerns residents had related to the impact of federal lands expansion on timber harvesting and other activities on federal lands.

¹⁸ JT Horne, Trust for Public Lands interview.

Figure 8: Umbagog National Wildlife Refuge & Forestry Legacy Project



Source: Trust for Public Land

*Hunting and Trapping*¹⁹

There are a number of hunting activities that are either prohibited or restricted on refuge lands. They include:

- Turkey hunting: Not currently allowable.
- Bobcat hunting: Not allowed on the refuge or in the State of New Hampshire
- Night hunting of raccoons and coyotes: Not currently allowable.

According to the Umbagog Wildlife Refuge, they are considering opening to turkey and night hunting of raccoons and coyotes as part of a separate NEPA document that is being developed within a year or two. Discussions related to this issue are ongoing.

Other uses that are prohibited on the refuge include public trapping. The refuge can trap and does use trappers at its discretion as a management action to remove nuisance beavers where, for example, culverts are compromised. All baiting of wildlife for viewing and hunting is prohibited on National Wildlife Refuges by federal regulations, and no training dogs are allowed on the refuge property.

Other activities are allowable and include:

- Small game hunting with non-toxic shot: Small game species include coyote, fox, raccoon, woodchuck, red squirrel, grey squirrel, porcupine, skunk, snowshoe hare, ring-necked pheasant, and ruffed grouse. Additionally, hunting of woodcock, crow, waterfowl and geese is allowed.
- According to state law, rifles may be used to hunt these species on the refuge as well. Lead rifle rounds are allowed.
- For big game (bear, white-tailed deer, and moose), the refuge is open to hunting. Lead buckshot is allowed by state law and allowed on the refuge. Rifles are also allowed and lead rounds are acceptable.
- Hunting with dogs: Allowable.

Recreational Activities

Many recreational activities are allowed on refuge property, some with restrictions. These activities include:

- Berry picking: Allowable. Specifically, “recreational gathering of blueberries, blackberries, strawberries, raspberries, mushrooms, fiddleheads and antler sheds for personal use” is permitted.
- Snowmobile Use: Only allowed on designated trails. New trails could be allowed on a case-by-case basis, but would need to be to a connecting trail not a spur trail. Trails are re-routed occasionally to avoid logging operations.
- ATV Use: ATV use and ATV trains are prohibited on the refuge. Snowmobile clubs have been granted permission to use ATVs to maintain trails, however, through a Special Use Permit issued by the refuge.
- Wildlife Observation, Research and Photography: Allowable.
- Environmental Education and Interpretation: Allowable.

¹⁹ Umbagog National Wildlife Refuge 2013-2014 Hunt Regulations, U.S. Fish and Wildlife Service.

- Fishing: Allowable.
- Dogsledding on snowmobile trails: Allowable.
- Bicycling and Horseback Riding: Allowable.
- Camping: Allowable
- Motorized and non-motorized boating: Allowable.
- Commercial Timber Harvest: Allowable.

Some changes related to recreational uses have been made, in addition to those listed above. For example, the refuge indicates that the former North 1, North 2, and North 3 campsites were closed. North 1 and 2 were closed by the refuge through the CCP, and North 3 was closed by the state prior to refuge ownership. According to refuge personnel, North 1 and 3 are in the planning stages to become wildlife watching areas.

In addition to camping changes that have resulted since the refuge was established, there have been some modifications to water access. Specifically, the refuge closed Parson's landing on the Magalloway River due to erosion issues and litter and sanitary issues. That access was replaced with a new canoe launch in Wentworth's Location across from the Mount Dustan Store. This facility has hardened access and a restroom.

7. FISCAL AND ECONOMIC IMPACT ANALYSIS

Economic Impact Analysis (EIA) measures three types of impacts: direct, indirect, and induced. The direct impacts are strictly related to the initial spending resulting from direct project expenditures or spending associated with a particular activity. For this study, an example of a direct impact would be a fisherman purchasing tackle at the local sporting goods store. The indirect impacts measured in an EIA refer to the “spin-off” economic activities that occur when production inputs, goods, and services are purchased during the initial activities. The induced impacts represent income impacts generated from additional spending; for example, an employee buying groceries.

The direct expenditures that are analyzed in this report relate to:

1. Timber industry impacts resulting from less timber harvesting on federal lands
2. Tourism generated by the expanded refuge
3. Cabin removal from federal lands
4. Economic impacts related to refuge employees

These direct expenditures impact other spending in the local economy. For example, a tourist who purchases a meal in Coös County represents a direct impact, but an indirect impact would be the restaurant that buys its food from a local supplier. The waitress who works at the restaurant spends her wages in the economy as well, and this represents an induced impact generated by the tourist who had dinner at a restaurant in Errol.

Fiscal impacts relate to the tax revenues that are generated by economic activity in a local area. This study considers the following fiscal impacts:

1. Property tax
2. Timber tax

It is important to note that in New England, local governments are more reliant on the property tax than they are in other regions of the United States. As a result, changes in the property tax base are even more important to local governments in New Hampshire than they are in most other states. The tax consequences of permanent land conservation projects also vary according to the acquiring agency or organization, and this has an impact on local tax revenues.

7.1 Economic Impact Analysis

Throughout the study, numerous impacts that may have economic consequences were mentioned by individuals interviewed by the study team. These include reduced timber harvesting, increased tourism, reduced ATV use, changes in the number of fisherman and hunters, and so forth. Not all of these changes have been documented or quantified because data that would facilitate the analysis is not available. As a result, the team was not able to quantify all of these stated impacts. Instead, two primary industries impacted by federal lands expansion in Coös County were the focus: timber and tourism. The impact of camp closures and refuge employee spending are also estimated in the analysis.

Timber Harvesting Impacts

The refuge owns approximately 22,000 acres in New Hampshire, with 4,390 acres designated as wetlands (roughly 20 percent of the total). When the CCP was developed, the refuge had data showing that there were 3,019 acres of wetland, 1,438 acres of restricted zone (i.e., steep slope, thin soil, or buffer to a wetland), and 5,450 acres in their General and Special Management zones. Of that 5,450 acres, 4,000 acres in New Hampshire were identified as meeting the criteria for management in the 15 years following the publication of the CCP (i.e., greater than 35 feet tall and greater than 60 percent canopy closure as defined by Sewall aerial photography interpretation).

The tracts purchased by the refuge most recently have smaller percentages of wetlands and less topography; specifically, purchases since 2008 include 10,722 acres of uplands and 1,371 of wetlands. Based on wetland acres to buffer acres (restricted management zone) for the CCP ownership, refuge personnel estimate that 48 percent of the total wetland acres are in a restricted management zone. This translates to approximately 658 acres in restricted management zones.²⁰

When the Refuge acquires properties, either through fee or easement, the timber management practices generally change. According to Refuge personnel, 313 acres per year are being targeted for timber harvesting. It is expected that this number will increase to approximately 626 acres within 15 years, as forests mature. The manner in which these lands are harvested, however, depends on a number of factors. In some cases, single tree cuts are performed and in other cases, larger areas of land are harvested for timber. Interviews with timber harvesting professionals indicate that private timber companies generally harvest one-third to four-tenths of a cord per acre per year. In an intensively managed forest, the harvesting is likely to approach half a cord per acre per year.

In order to compare the jobs, output, and wage impacts of Refuge-owned versus privately-owned land from a timber harvesting perspective, estimates based on the timber harvesting professionals' practices were utilized to estimate how much lumber would be harvested once the Refuge is fully expanded versus how much lumber would have been harvested had the land remained in private hands. The analysis

²⁰ Ian Drew, Umbagog Wildlife Refuge.

suggests that Refuge-ownership generates approximately 5,000 cords per year. A private timber harvester would remove 7,000-8,000 cords per year. Historic State of New Hampshire data related to the share of timber that is wood chips, pulpwood, fuel wood and sawlogs harvested in Coos County was utilized to allocate the estimated number of cords by type. Once the harvested timber is assigned to a type of wood product, the value of wood chips, pulpwood, fuel wood and sawlogs was estimated and utilized in the economic impact analysis.

Sawlogs vary significantly in their value. As a result, a low and a high estimate were calculated. Assuming a low value of \$12.50 per cord, harvesting by the refuge would generate approximately \$52,000 per year in revenue. If the value of the sawlogs is \$165 per cord, the total value would be \$263,265.

A private harvester is assumed to be likely to harvest more acreage and more aggressively than the refuge. This is because a private harvester would harvest when the ground is frozen and would be likely to have narrower buffers when determining what property is harvestable. It is estimated that a private harvester would generate \$83,663 with low valued sawlogs and \$423,290 with high valued sawlogs.

When the timber is sold, this expenditure is considered a direct impact. That spending generates induced and indirect spending as well. The table below presents the direct economic impacts generated by the timber sale each year. Assuming a high sawlog value, the refuge harvesting is estimated to generate slightly more than 3 job-years and \$162,580 in labor income. If the land was harvested by a private harvester, the number of job-years would increase to roughly 5 and labor income would be \$261,403. Total economic impacts are also presented below. These include direct, indirect and induced impacts. The employment impact in the private harvesting scenario is higher than the refuge-managed scenario, significantly so when the sawlog stumpage values are higher.

Table 8: Timber Impacts, Refuge vs. Private Ownership

Direct Impacts				
	Employment	Labor Income	Value Added	Output
High Sawlog Value				
Refuge	3.28	\$162,580	\$115,477	\$263,265
Private	5.28	\$261,404	\$185,669	\$423,290
Low Sawlog Value				
Refuge	0.65	\$32,134	\$22,824	\$52,034
Private	1.04	\$51,667	\$36,698	\$83,663

Total Impacts (Direct, Indirect, and Induced)				
	Employment	Labor Income	Value Added	Output
High Sawlog Value				
Refuge	4.46	\$204,358	\$183,962	\$381,733
Private	7.17	\$328,577	\$295,783	\$613,768
Low Sawlog Value				
Refuge	0.88	\$40,392	\$36,360	\$75,450
Private	1.42	\$64,943	\$58,462	\$121,311

Camp Acquisition Impacts

Since the Refuge was established in 1992, FWS has removed a total of 24 camps. Five of these were considered inhabitable. In Errol, five camps were acquired and two uninhabitable. In Wentworth's Location, 19 camps have been removed. Of these, three were uninhabitable. No cabins have been removed in Cambridge. On average, one cabin per year has been removed as the Refuge has expanded.



The cabins that were acquired by the refuge are considered seasonal. According to interviews, most of these cabins would have been inhabited three months per year. If four people are assumed to have lived in each cabin during the season, and assuming expenditures of \$86 per day²¹, we would expect that these cabin residents would have directly spent \$588,240 per year had the cabins not been removed. This daily rate based on Plymouth State University survey results for tourists. Because many of these cabin residents are likely to be spending less money than a typical tourist, the impacts of a conservative spending estimate of \$20 per day is presented in the tables below. This could be due to lower spending than the Plymouth study suggests or fewer inhabitants spending on a daily basis.

²¹ Plymouth State University, Institute of New Hampshire Studies.

Table 9: Economic Impacts of Camps

Direct Impacts				
	Employment	Labor Income	Value Added	Output
Camps @ \$86/day	5.56	\$179,433	\$324,262	\$588,240
Camps at \$20/day	1.29	\$41,729	\$75,410	\$136,800

Total Impacts (Direct, Indirect, and Induced)				
	Employment	Labor Income	Value Added	Output
Camps @ \$86/day	7.66	\$254,446	\$458,549	\$827,183
Camps at \$20/day	1.78	\$59,173	\$106,639	\$192,368

While the elimination of these 24 camps may not seem significant, over time the spending on the part of their inhabitants adds up. Conservatively, nearly \$200,000 in total economic impacts would have been generated by the presence of these camps if they were still occupied.

Refuge Employees

The refuge includes an office on the property. Currently, the refuge employs:

- Refuge Manager GS 13
- Deputy Refuge Manager GS 12
- Biologist GS 12 (vacant)
- Biologist GS 11
- LMRD Coordinator GS 13
- Administrative Assistant GS 6 (shared position located in Vermont)
- Park Ranger GS 9 (shared position located in Vermont but spends 50% of the time at Umbagog)
- Two Maintenance Workers WG 7.

The staff is approximately seven full time equivalents. Based on salary information provided in the economic impact study conducted for the refuge,²² the following economic impacts were estimated.

²² “Economic Impacts of Current and Future Proposed Management Alternatives for Lake Umbagog National Wildlife Refuge,” prepared by Lynne Koontz, Ryan Donovan, Natalie Sexton, and Dana Hoag.

Table 10: Economic Impacts of Refuge Salaries

Direct Impacts				
	Employment	Labor Income	Value Added	Output
Refuge Spending	2.12	\$68,471	\$123,738	\$224,472

Total Impacts (Direct, Indirect, and Induced)				
	Employment	Labor Income	Value Added	Output
Refuge Spending	2.92	\$97,096	\$174,982	\$315,652

The refuge indicated that they would like to increase the number of employees should Alternative B in the CCP be pursued. Although the combination of fee and easement acquisition is similar to Alternative B, limited federal funding has not made it possible to increase the staff on the refuge. If employees are added over time, the total economic impact will increase.

Refuge Leases

While some camps have been removed, others continue to be leased. It is important to note, however, that these leases would likely have been maintained even if the refuge had not acquired the land on which the properties are located. As a result, no net economic impacts are generated by these refuge leases. Because they do exist, however, a discussion is included in this report.

There is a legacy of large landowners leasing sites for small hunting cabins to local people in the North Country. Under the terms of the lease, the leaseholder owns the building and all the improvements, while the landowner retains ownership of the land. The lease can typically be canceled on short notice and the leaseholder has few rights for recourse. Historically, this occurred when the lands were owned by paper companies and the workers at the mill could arrange a lease on company owned land.

Today, these leases are managed by a new type of landowner who owns the land as part of a timberland investment. They collect lease fees as a supplementary income source to their timber harvesting. Based on information provided by TPL, the lease fees generally range from \$700 to \$2,000 per year. Rent is collected on an annual basis. Rents have been increasing in recent years, however, as landowners realize that there is more income potential from these properties.

When the Umbagog Refuge acquires a leased cabin site, they usually provide a long period of time for the leaseholder to exit the property (30-50 years). This is a much longer term arrangement than the existing lease provision, which is often a year-to-year arrangement with no long-term commitment. The leaseholders typically want to keep the lease in perpetuity, as has been tradition, but there are no guarantees that this will occur. Often, the lease provisions state that the landowner can cancel the lease on 30 or 90 days notice and require that the leaseholder vacate the premises.

The refuge has inserted a 30-50 year sunset clause into its leases, and this is controversial. While there are not many examples of leases being terminated by landowners today, it does happen and the

economics of the leases are changing for private landowners. Some lots get sold to new landowners and leases are immediately canceled. Some lease sites have been identified for sale at a high price by the landowner. Typically the first offer is to the leaseholder, but if the leaseholder cannot afford it, then they can lose the lease site to another buyer²³.

There are several cabins located within the refuge. These cabin owners have leased the land from the refuge. The revenue collected annually from these leases is shown in the table below. There were 24 leases in 1996. In 2007, there were 27 leases.

Table 11: Camp Lot Lease Information and Revenues Generated, 1996-2007

Year	No. of leases	Range of fees charged	Total lease revenue for year
1996	24	\$50-\$1,881	\$27,461
1997	24	\$50-\$1,515	\$27,032
1998	24	\$50-\$1,515	\$27,077
1999	23	\$70-\$1,650	\$29,289
2000	26	\$1-\$1,650	\$31,603
2001	29	\$1-\$1,650	\$39,944
2002	25	\$1-\$1,650	\$32,524
2003	24	\$1-\$1,650	\$32,530
2004	26	\$1-\$1,650	\$31,160
2005	25	\$1-\$1,650	\$30,248
2006	28	\$1-\$1,650	\$33,773
2007	27	\$1-\$1,650	\$33,703

Source: Chapter 3: Affected Environment, p3-18 CCP/EIS

Tourism Impacts

The actual economic impact associated with tourists who are visiting the refuge is very difficult to quantify. The refuge does not have a visitor center and does not document the number of visitors it receives. An economic impact analysis conducted for the refuge did estimate between 40,000 and roughly 90,000 visitors, based on fishing and hunting permits and other information. It is difficult to know, however, how many of these visitors would have traveled to Coös County even if the refuge properties had remained in private hands or if the refuge had not expanded. Based on the study conducted by Plymouth State University, visitors spend \$86 per day. This spending generates additional spending and the total economic output of that single visitor equals \$124.70. This means that for every visitor to the refuge (or the county generally), \$38.70 is generated in induced and indirect impacts along with the \$86 in direct visitor spending.

The issue of tourism in Coös County is an important one. While refuges across the country are generally credited with supporting the tourism industry, Coös County has actually experienced a decrease in

²³ Source: Trust for Public Lands interview findings.

spending by travelers subject to the Rooms and Meals Tax. Specifically, spending decreased 6.2 percent in Coös County between 2011 and 2012.²⁴ Prior to that, spending oscillated considerably.

Given the lack of visitor data and the variable visitor spending patterns in the county, it is not currently feasible to isolate the actual economic impact associated with the refuge in terms of tourism. Should the refuge collect visitor data, quantifying the economic impact of all the visitors, rather than a single visitor, will be possible.

7.2 Fiscal Impact Analysis

When the U.S. Forest Service acquires land in New Hampshire, the federal government makes two payments in lieu of taxes that benefit local taxpayers: the **25 percent Fund Payment**, which is paid to the school district, and the **payment in lieu of taxes (PILT)**, which is paid to the town²⁵. If the federal payments do not equal the amount of tax that the town would receive if the land were enrolled in the current use program (at an average value determined by the state), the state makes a payment to ensure that the town receives at least that amount. In most towns and in most years, the federal payments exceed the amount that the land would pay if it were enrolled in current use.

When the U.S. Fish and Wildlife Service (part of the U.S. Department of the Interior) acquires land, local governments receive revenue sharing payments. The Refuge Revenue Sharing Act (16 U.S.C. §715s) offsets the loss of local tax revenues from federal land ownership through payments to local taxing authorities. This Act provides for payments to counties in lieu of taxes, using revenues derived from the sale of products from refuges. Annual payments are based on the following formulas, which are chosen depending on which provides the largest return:

- \$0.75 per acre;
- 25 percent of the net receipts collected from refuge lands; or
- Three-quarters of one percent of the fair market value of refuge lands, determined by an appraisal every five years.²⁶

According to FWS, the refuge receipts were not sufficient to make the county payments beginning in fiscal year 1976, and the payments were reduced accordingly. It was partly because of this that the Refuge Revenue Sharing Act was again amended in 1978 and the following changes were made:

- U.S. Congress can appropriate funds to make up any shortfall in the revenue sharing fund.
- All lands administered solely or primarily by the Service (not just refuges) qualify for revenue sharing payments.
- The payments to units of local government can be used for any governmental purpose.

As indicated above, Congress is authorized to appropriate money to make up the difference if the refuge receipts are insufficient. If the amount Congress appropriates is not enough, the units of local

²⁴ “New Hampshire Travel Barometer, Summary for Fiscal Year 2012,” Plymouth State University.

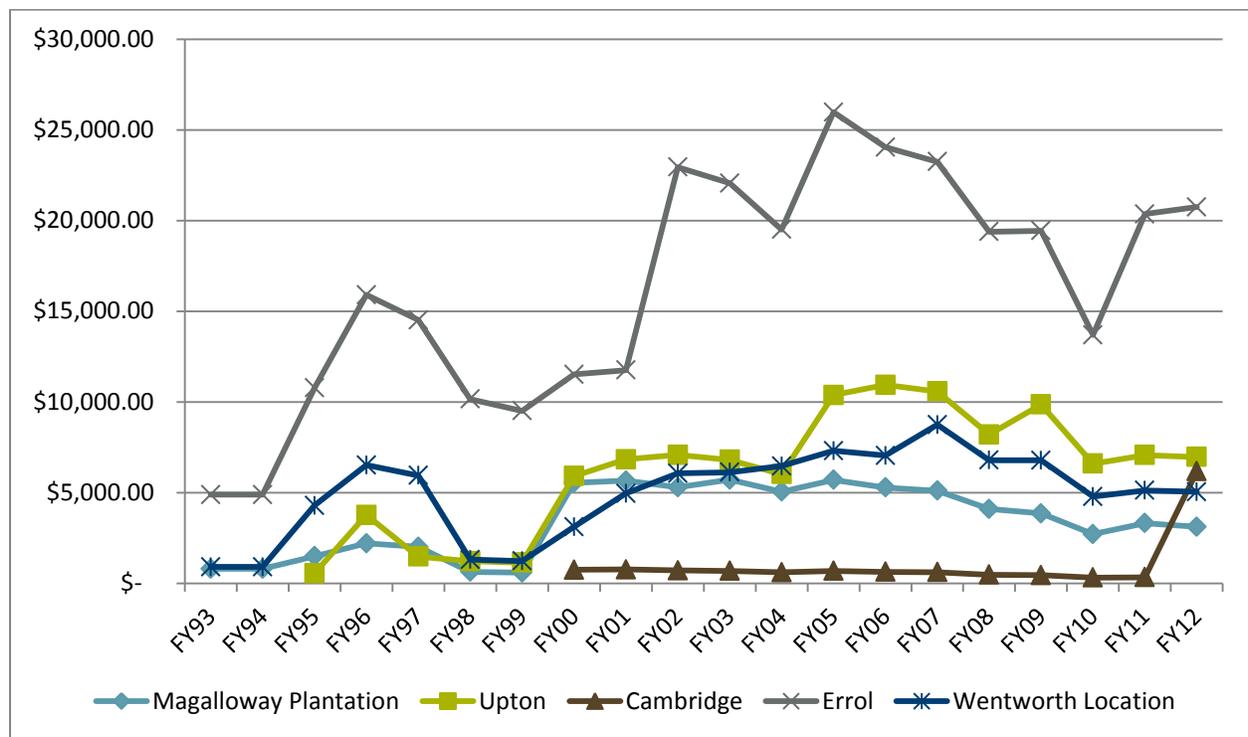
²⁵ PILT are federal payments that help offset losses in property taxes due to nontaxable federal lands within their jurisdiction. PILT payments may be used for any governmental purpose relative to public safety, environment, housing, school and transportation.

²⁶ <http://www.fws.gov/laws/lawsdigest/refrev.html>

government receive a pro-rata share. In New Hampshire, for example, \$103,076 was paid in fiscal year 2001. They were entitled to \$202,724. This represents only 51 percent of what should have been paid to counties in the state.²⁷ The share received by the counties has continued to decrease since then, and counties have not received what they are technically entitled to.

The following table shows the history of RRS payments for Coös County. As illustrated, the payments are quite dynamic. This is in part because property has continued to be acquired over time and payments have subsequently varied, but it is also because payments are not consistent from year to year. A discussion of the revenue sharing payments as compared to the property taxes that would have been paid if the refuge lands had remained in private ownership is provided later in this section of the report.

Figure 9: Refuge Revenue Sharing Payments (FY1993-FY2012)



Source: Umbagog Wildlife Refuge

Most private non-profit conservation organizations enroll the land that they own in fee in the current use program and pay taxes on it. However, the town may waive the tax requirement. Private non-profit conservation organizations are more likely to conserve land through conservation easements than through fee acquisition. If the land was already assessed at current use there would be no change to the municipality after the acquisition of an easement. If the land was previously assessed at full value, there would be a decrease in the taxable value due to the easement.

A 2005 study conducted by The Trust for Public Land (TPL) investigated the effects of land conservation and development on municipal taxes, using four scenarios representing commonly used municipal

²⁷ <http://www.fws.gov/refuges/realty/rrs-summary-state.html>

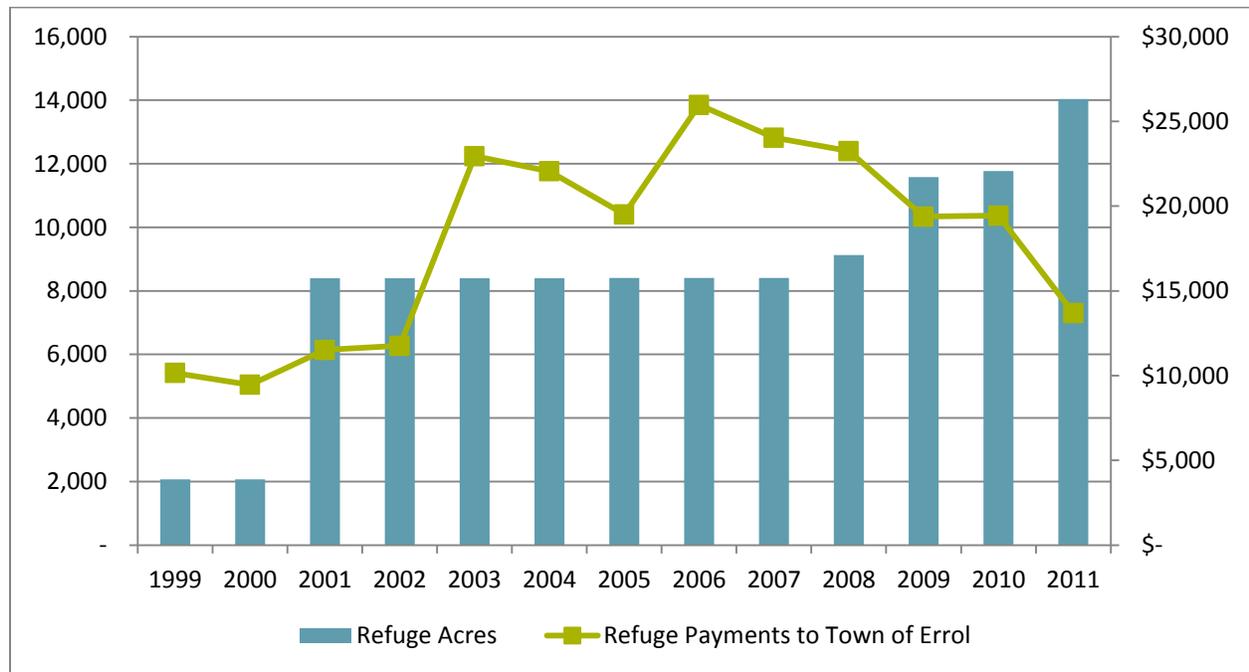
funding and ownership structures. The study was designed to provide voters, planners and decision-makers with a methodology and framework that will allow each community to make informed choices about allocating municipal resources. It was found that in the short term, land protection, by fully or partially exempting land from taxation, often reduces the tax base and results in a tax increase for a finite period. In the long term, contrary to the common perception that development will bring lower taxes, property tax bills are generally higher in more developed towns than in less developed towns.

In the same way, a 2010 study conducted by the Middle Peninsula Planning District Commission (MPPDC) in Virginia examined the relationship between property taxes and land conservation. As interest in conservation easements and conservation land holdings expanded in and around the Dragon Run Watershed, Middle Peninsula localities started to be concerned about tax revenue impacts and their effects on local economies. As a result, Commissioners of the Middle Peninsula Planning District Commission initiated a two-pronged project to address these issues. Phase I of this project focused on gaining a quantitative understanding of the current fiscal impacts of conservation easements and conservation land holding by tax-exempt entities in Middle Peninsula localities.

Property Tax Revenue Impacts

The figure below shows the total refuge acres in the Town of Errol, as well as the revenue sharing payments that the town receives to help compensate for the property taxes it no longer receives. As presented in the figure, acquired acreage has increased while the revenue sharing payments have decreased. Since 2006, the average revenue sharing payment has decreased from \$3.09 to \$0.98 per acre.

Figure 10: Acres in the Umbagog Wildlife Refuge and Revenue Sharing Payments to Town of Errol

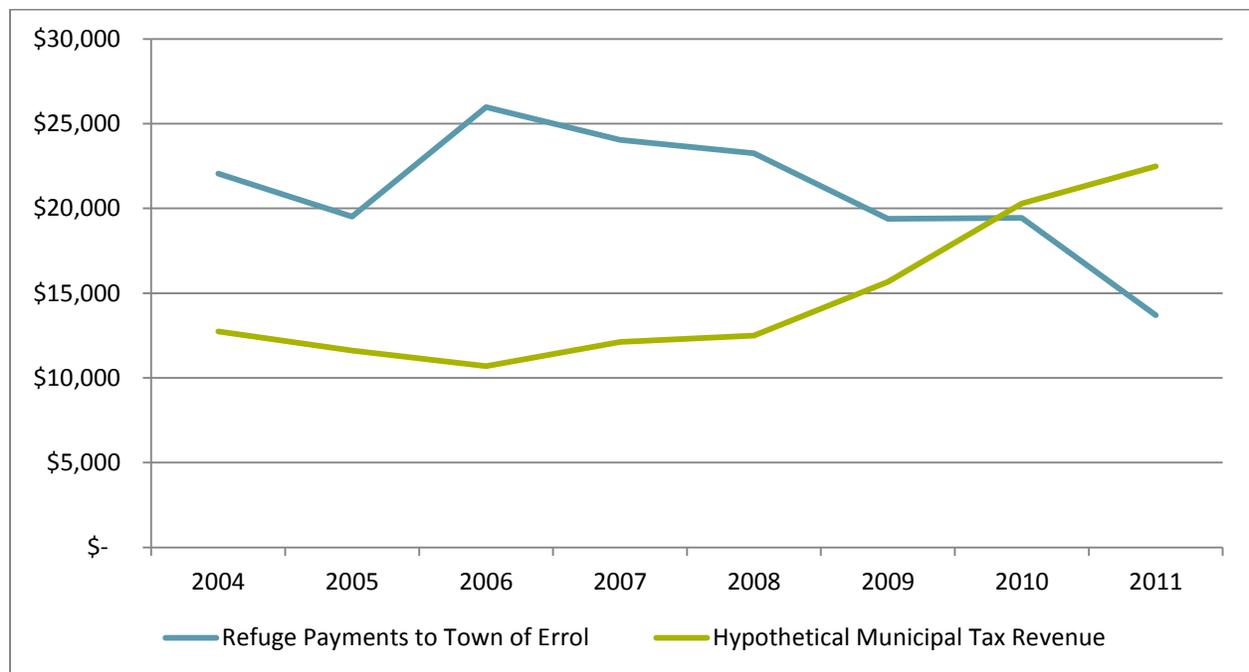


The figure below compares the Revenue Sharing Payments paid to the Town of Errol over the past 12 years and an estimate of the property tax that the town would have received if the properties were still

taxable. This estimate was jointly determined by refuge and town officials. Before 2010, the RRS payments covered or exceeded the estimated property taxes that would have been generated by the property, had it remained in private hands. Since that time, however, the RRS payments have not been meeting the property taxes that could have been received.

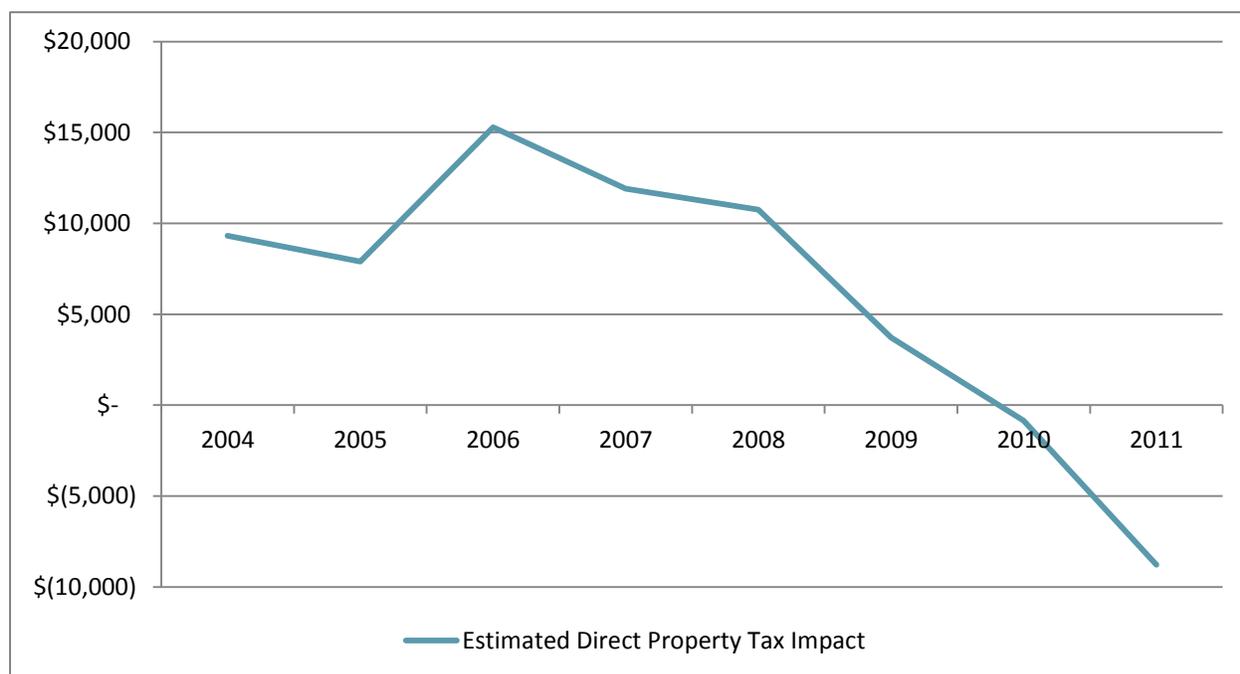
The actual direct tax impact to the Town of Errol is presented in Figure 12. It is the difference between the Revenue Sharing Payment and the estimated property tax revenue that would be generated if the land was still taxable. It is an estimate, based on town assessments and rates in 2011. The gap between the tax revenue estimates and the Revenue Sharing Payments was \$8,319 in 2011. Although the figures are preliminary, it is estimated that the gap in 2012 was \$8,767.

Figure II: Refuge Payments and Property Tax Revenue Estimates for the Town of Errol



Source: Town of Errol and Umbagog Wildlife Refuge

Figure 12: Property Taxes Adjusted by RRS Payments



Source: Town of Errol and Umbagog Wildlife Refuge.

Timber Taxes

In New Hampshire, property owners file what is called an “Intent to cut” with the town. This document indicates the numbers and species of wood they anticipate being cut. The town then provides that information to the State of New Hampshire for permitting. When the cut is done, the owner files a “Report of cut,” which is then filed with the state. The town computes the timber tax, which is 10 percent of the assessed value of the timber. The tax is typically paid by the landowner. In the case of the refuge, however, it is paid by the logger.²⁸

Based on the timber revenue estimates generated earlier in the report, it is estimated that refuge harvesting will generate between \$5,203 and \$22,854 in timber taxes annually. If the refuge lands were in private hands, the timber taxes are estimated to be \$8,366 to \$36,747 annually. On the low end, this represents a loss in timber tax revenue of roughly \$3,000 annually. On the high end (assuming more valuable sawlogs are harvested), \$13,893 in lost revenue annually.

7.3 Conclusions and Recommendations

While the expansion of federal lands in Coös County provides the opportunity to support the tourism industry in the county, the magnitude of the tourism impact is not clear. Nationally, refuges have supported economic activity but in the county, tourism spending has actually decreased during the last year and been dynamic in years prior. Without refuge visitor data, combined with the recent decline in

²⁸ Source: Town of Errol interview findings.

visitor spending in the county, it is difficult to quantify the economic impact of the refuge on the tourism industry.

The difference in total economic value added between revenues generated through timber harvesting by the refuge and revenues generated by a private timber harvester ranges from approximately \$22,000 to \$111,000. Private harvesters will tend to harvest more land and at a more intense rate than the refuge. The variability in the value-added estimates is contingent on whether saw logs are of a higher or lower value.

Other economic impacts associated with the refuge expansion include negative impacts due to the removal of camps and positive impacts due to refuge employee spending. Refuge employees contribute nearly \$175,000 in value added annually. The elimination of camps when the refuge acquired properties as part of their expansion is estimated to have resulted in \$106,639 to \$458,000 in lost value added each year.

Timber taxes are 10 percent of the total stumpage value of timber. Based on the estimate of timber revenues generated by the refuge versus the private timber harvester, it is expected that timber tax revenues are about \$13,900 less than they would be if the timber was harvested by a private entity. In terms of property taxes, the RRS payments historically have covered the property taxes lost with the acquisition of land by the federal government. This has been the case since 2009. Since that time, however, the RRS payments have been less than the estimated property taxes that would have been collected on lands owned by the Refuge.

There are a number of recommendations that could support both the refuge's goals of conservation and the county's fiscal solvency. First, the Refuge Revenue Sharing from the Land and Water Conservation Fund should be fully funded, and Revenue Sharing should be funded to at least 41 percent of the approval formula. This was the amount analyzed in the Refuge CCP. Continued coordination between the Town of Errol and the refuge should be made to ensure that the gap between the property tax estimates for the refuge properties and the actual RRS payments are fully documented. Efforts to educate the congressional delegation on this important issue should also be made. Second, the Fish and Wildlife Service should work with the Town of Errol to make sure that leased camps pay taxes on the fair market value of the camp. Finally, efforts should be made to explore moving the refuge lands into the PILT program that the National Forests' use.

In terms of further supporting tourism growth, adding an informative museum similar to other national parks would attract more visitors. It would also facilitate the collection of important visitor data that could help better quantify the true economic impact of the refuge on the county. Improved trails and signage would also encourage visitors to the refuge, further supporting tourism in the county.

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